EUROMAT 2017

FEMS 30
FEDERATION OF EUROPEAN MATERIALS SOCIETIES
1987 – 2017
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EUROPEAN CONGRESS AND EXHIBITION ON ADVANCED MATERIALS AND PROCESSES

Final Program

17-22 SEPTEMBER 2017
THESSALONIKI, GREECE

CONFERENCE CULTURAL CENTER
"Thessaloniki Concert Hall"

www.euromat2017.fems.eu

EURO MAT 2017

HELLENIC METALLURGICAL SOCIETY (HMS)

HELLENIC SOCIETY FOR THE SCIENCE & TECHNOLOGY OF CONDENSED MATTER (HSSTCM)

Thessaloniki

Established in the 4th c. BC, Thessaloniki has always maintained its urban character and remained a civic center and hub of the region. The city's centuries-old multicultural history has been associated with great empires, such as the Roman, Byzantine and Ottoman. The town was also greatly influenced by many ethnic and religious groups (Jews, Latins, Armenians and others) as well as Greeks from Constantinople, Pontus [modern-day northeastern Turkey] and Asia Minor [a.k.a. Anatolia]. The numerous monuments, dating to various historical periods, coexist in a singular and charming way and manifest Thessaloniki's historical multicultural and cosmopolitan nature. Nowadays, the historic capital -by right- of Macedonia, the land of Alexander the Great, has evolved into a modern and particularly charming metropolis. A multitude of monuments and cultural assets and the town's traditional ways exist in harmony with modern trends and high quality infrastructure, the relaxed atmosphere, the spirit of hospitality, the vitality of the locals – particularly the young – setting the pace of town life, the diversity of artistic events, the long list of choices for entertainment, the exceptional culinary tradition, and the fresh breezes coming from the seafront and the coolness of the northwest wind, Vardaris. Thessaloniki is situated at the heart of an extensive area of incomparable historical monuments and natural assets and provides the opportunity to visit archaeological sites known the world over (Ancient Pella, Vergina, Dion, Petralona Cave and so on), to areas of exquisite nature (river deltas, lakes, Mt Olympus), to the monastic state of Agion Oros [the Holy Mountain better known as Mount Athos] as well as to Halkidiki, a famous tourist destination. Of course, there is always an opportunity for sports (swimming, skiing, golf and so on) or to indulge in health tourism (hot springs and spas). In short, Thessaloniki is a city that caters to even the most demanding needs year round.

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Program at a glance

TIME	SUNDAY 17th	TIME	MONDAY 18th	TUESDAY 19th	WEDNESDAY 20th	THURSDAY 21st	FRIDAY 22nd
08:00		08:00 - 13:00	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	
		09:00 - 15:00 15:00 - 19:30	COMMERCIAL EXHIBITION	COMMERCIAL EXHIBITION	COMMERCIAL EXHIBITION	COMMERCIAL EXHIBITION	COMMERCIAL EXHIBITION
11:00-19:30	REGISTRATION/ CONFERENCE SECRETARIAT	09:00 - 10:30	OPENING/ PLENARIES AM1	PLENARIES AM1	PLENARIES AM1	PLENARIES AM1	PLENARIES AM1
09:00-13:00	TUTORIALS	10:30 - 11:00	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
		11:00 - 13:00	AM 2 (22 PARALLEL SESSIONS)	AM 2 (22 PARALLEL SESSIONS)	AM 2 (22 PARALLEL SESSIONS) MATCHMAKING EVENT	AM 2 (22 PARALLEL SESSIONS)	AM 2 (22 PARALLEL SESSIONS)
13:00-14:30	LUNCH	13:00 - 15:00	G3	G1 POSTER SESSION 1	G2	G4 POSTER SESSION 1	LUNCH
			LUNCH	LUNCH	LUNCH	LUNCH	
14:30-18:30	TUTORIALS	15:00 - 17:00	PM1 (22 PARALLEL SESSIONS)	PM1 (22 PARALLEL SESSIONS)	PM1 (22 PARALLEL SESSIONS) MATCHMAKING EVENT	PM1 (22 PARALLEL SESSIONS)	PM1 (22 PARALLEL SESSIONS)
		15:00 - 19:30	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	REGISTRATION/ CONFERENCE SECRETARIAT	
		17:00 - 17:30	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	CLOSING CEREMONY
		17:00 - 19:30	PM2 (22 PARALLEL SESSIONS)	PM2 (22 PARALLEL SESSIONS)	PM2 (22 PARALLEL SESSIONS)	PM2 (22 PARALLEL SESSIONS)	
20:00	WELCOME RECEPTION	20:00		CULTURAL / SOCIAL EVENT			
		21:00			CONGRESS DINNER		

	MONDAY 18 SEPTEMBER			TUESDAY 19 SEPTEMBER			WEDNESDAY 20 SEPTEMBER			THURSDAY 21 SEPTEMBER			FRIDAY 22 SEPTEMBER	
	AM1			AM1			AM1			AM1			AM1	
	Opening Ceremony			Prof. Anna Fontcuberta i Morral			Prof. Oliver Gutfleisch			Prof. John Ågren			Prof. Luis Liz-Marzán	
	Prof. Doros Theodorou (FEMS EMM 2017)			Prof. Andrés-Fabián Lasagni (FEMS MSTP 2017)			Prof. Thierry Chartier (FEMS MIM 2017)			Prof. Spyros Pantelakis			Prof. Dimitris Lagoudas	
	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1
A1												A1	A1	A1
														A1
A2								A2	A2	A2	A2			
A3	A3	A3	A3	A3										
A5	A5	A5	A5	A5	A5	A5	A5	A5	A5					
A6												A6	A6	A6
A7			A7		A7	A7	A7	A7	A7	A7	A7	A7	A7	
A8	A8	A8	A8	A8										
A9												A9	A9	A9
B1				B1	B1	B1	B1	B1	B1	B1	B1	B1	B1	B1
						B1								
B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	B2	
B3	B3	B3	B3	B3	B3	B3	B3	B3	B3	B3				
B4										B4	B4	B4	B4	B4
B5	B5	B5	B5	B5	B5									
B6					B6	B6	B6							
B7								B7	B7	B7	B7	B7	B7	B7
B8							B8	B8	B8	B8	B8	B8		
B9										B9	B9	B9		
B10	B10	B10	B10	B10	B10	B10	B10	B10	B10		B10			
B11	B11	B11	B11	B11	B11	B11	B11	B11	B11	B11				
C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1	C1
C2	C2	C2	C2	C2	C2									
C3											C3	C3	C3	C3
C4							C4	C4	C4	C4	C4	C4	C4	C4
C5												C5	C5	C5
														C5
C6	C6	C6	C6	C6	C6									
C7						C7								
C8										C8	C8	C8	C8	C8
C9										C9	C9	C9	C9	C9
C10							C10	C10	C10	C10	C10	C10	C10	C10
C11										C11	C11	C11	C11	C11

	MONDAY 18 SEPTEMBER			TUESDAY 19 SEPTEMBER			WEDNESDAY 20 SEPTEMBER			THURSDAY 21 SEPTEMBER			FRIDAY 22 SEPTEMBER	
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	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1	PM2	AM2	PM1
D1				D1	D1	D1	D1	D1	D1	D1	D1	D1	D1	D1
D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2	D2			
D3							D3	D3	D3	D3				
D4	D4	D4	D4	D4	D4	D4	D4	D4	D4					
D5											D5	D5	D5	
D6													D6	D6
D8							D8	D8	D8	D8	D8	D8	D8	
D9	D9	D9	D9	D9	D9	D9	D9	D9	D9					
D10							D10	D10	D10	D10	D10	D10	D10	D10
E1	E1	E1	E1	E1	E1	E1								
E2	E2	E2	E2	E2	E2	E2	E2							
E3	E3	E3	E3	E3	E3	E3	E3	E3	E3					
E4						E4	E4	E4	E4	E4				
E6										E6	E6	E6	E6	E6
F1	F1	F1	F1	F1	F1	F1								
F2							F2	F2						
F3									F3	F3	F3			
F4	F4	F4	F4											
F5													F5	
F6											F6	F6	F6	F6
G1				G1										
G2							G2							
G3	G3													
G4										G4				
H1	H1	H1	H1	H1	H1	H1								
H2	H2	H2	H2	H2	H2									
H3	H3	H3												

Poster sessions chart

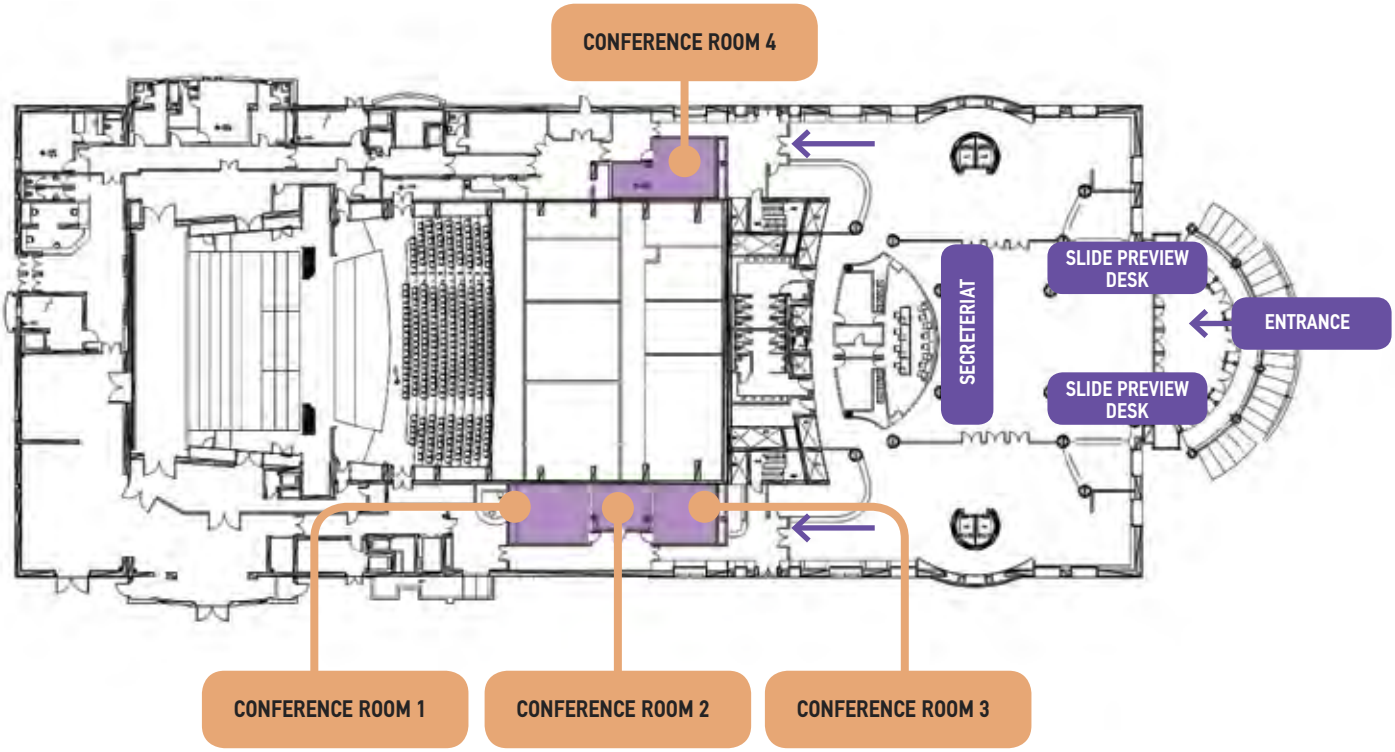
TIME: 13:00-15:00 | ROOM: Foyer, E1/M1

POSTER SESSION I	Tuesday, September 19th, 2017	
A3	C1-I	F1
A5	C2	F4
A6-I	C6	H1
A7-I	D1	H2
A8	D2	H3
B2	D4	G1
B3	D10-I	G2
B5	E1	
B6	E2	
B10	E3	
B11		

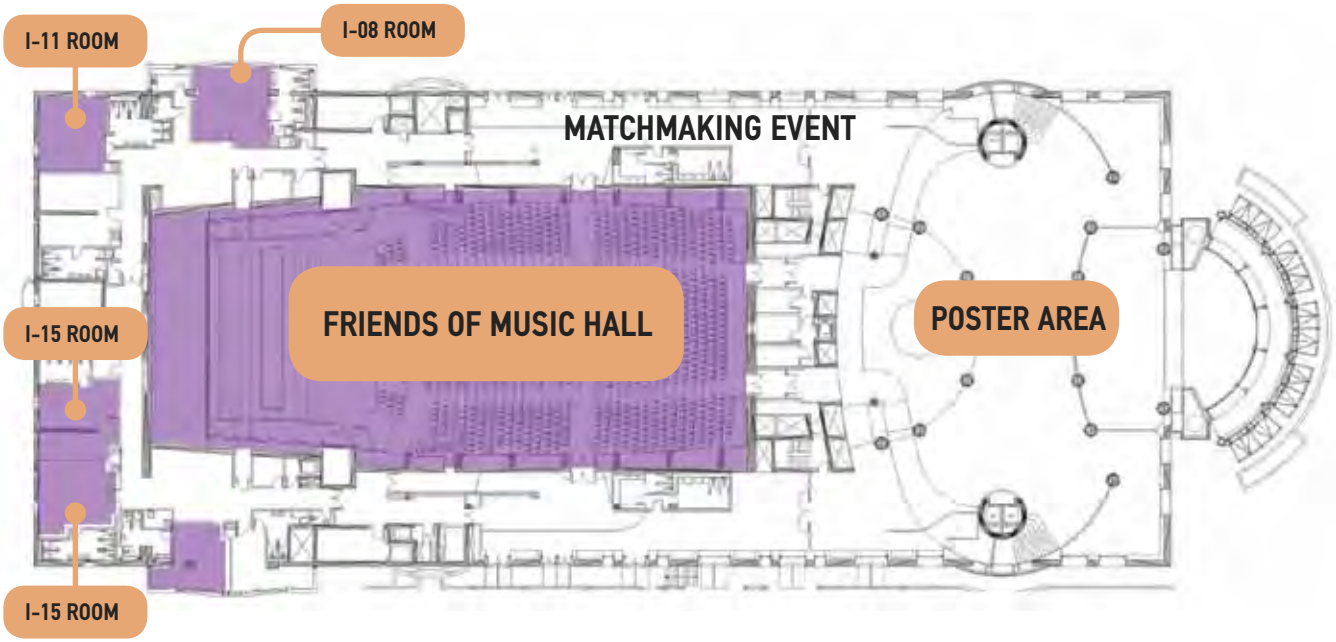
TIME: 13:00-15:00 | ROOM: Foyer, E1/M1

POSTER SESSION II	Thursday, September 21st, 2017	
A1	C1-II	E4
A2	C3	E6
A6-II	C4	F2
A7-II	C5	F3
A9	C8	F5
B1	C9	F6
B4	C10	G2
B7	C11	
B8	D3	
B9	D5	
D8	D6	
D10-II		

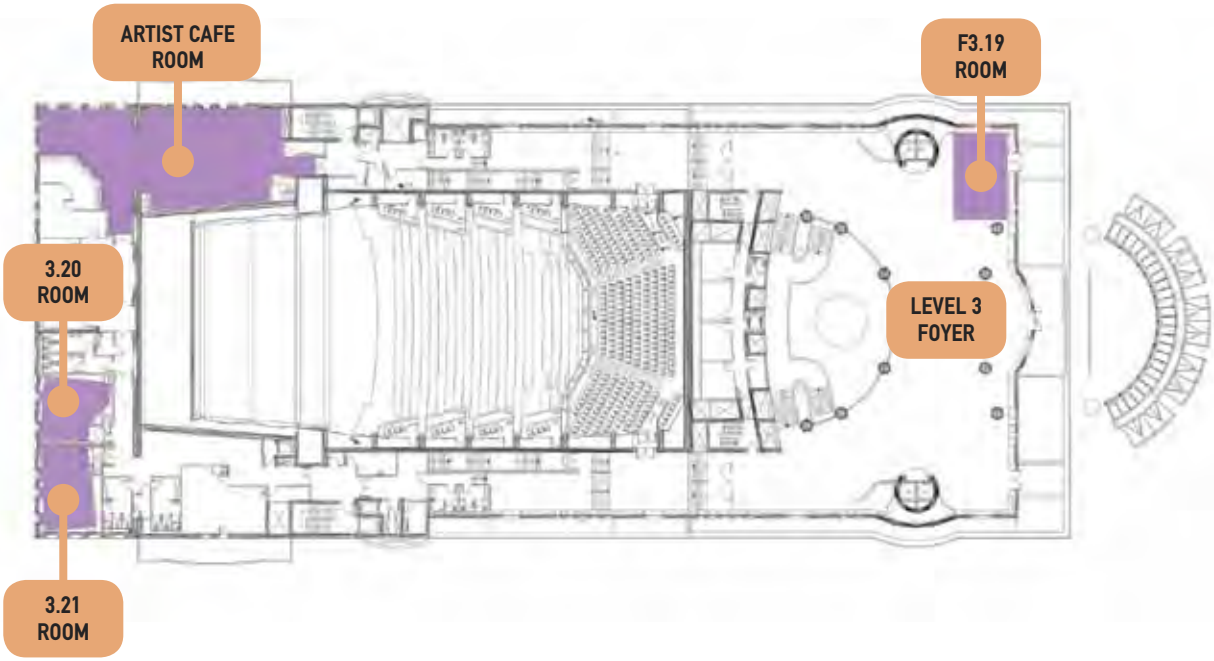
M1 building - level 0



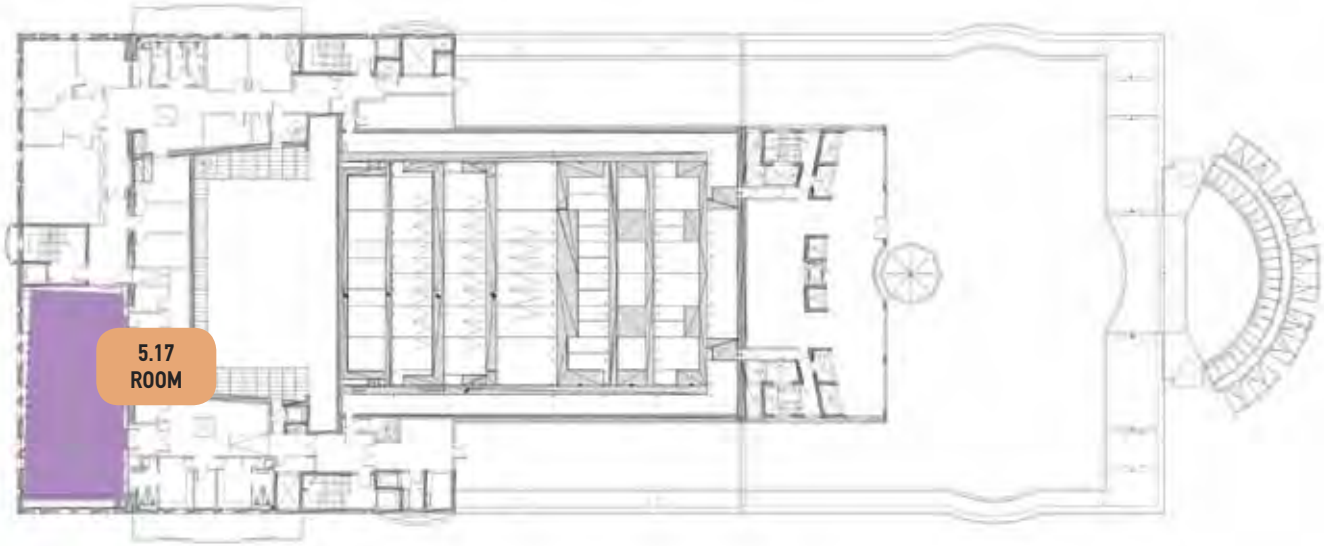
M1 building - level 1



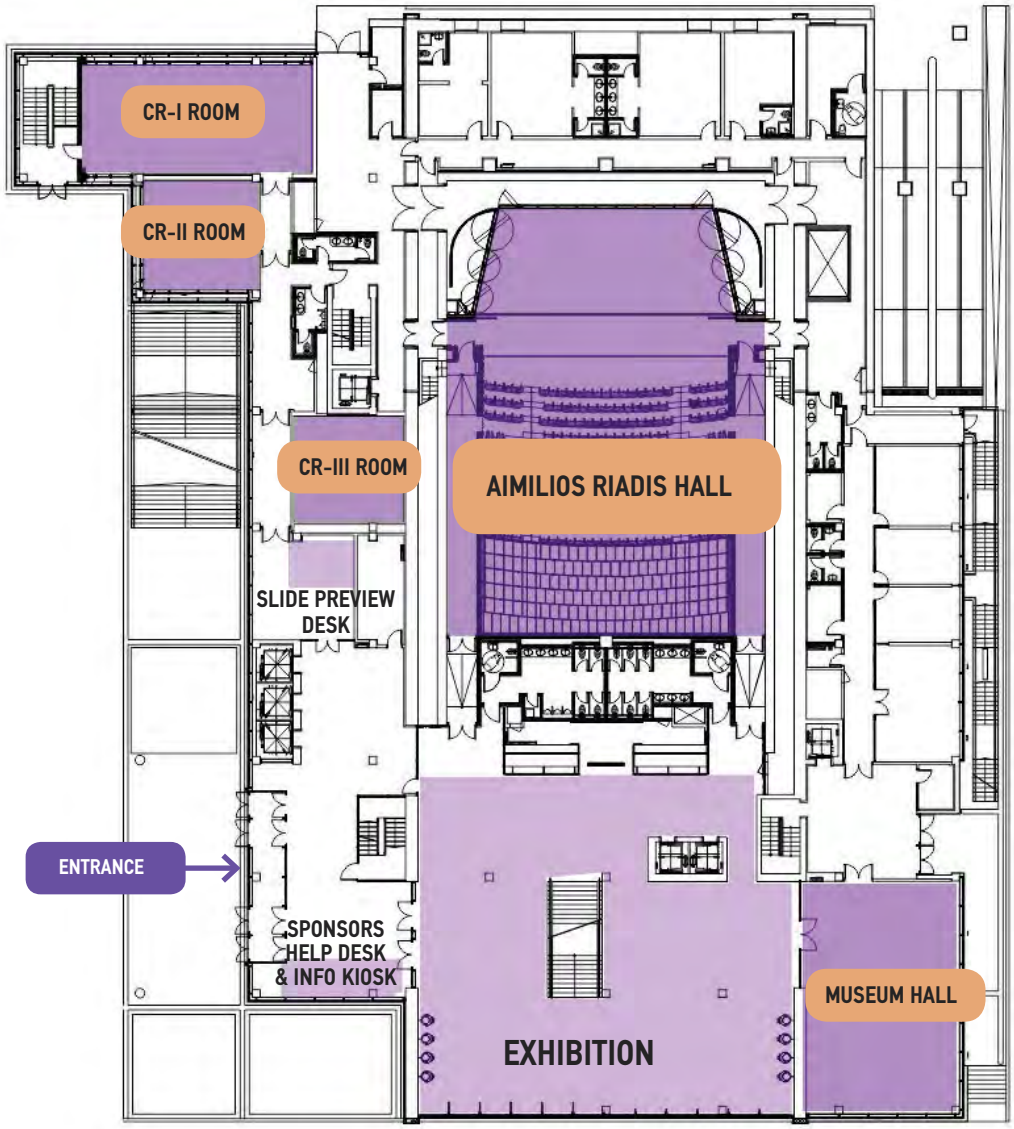
M1 building - level 3



M1 building - level 5

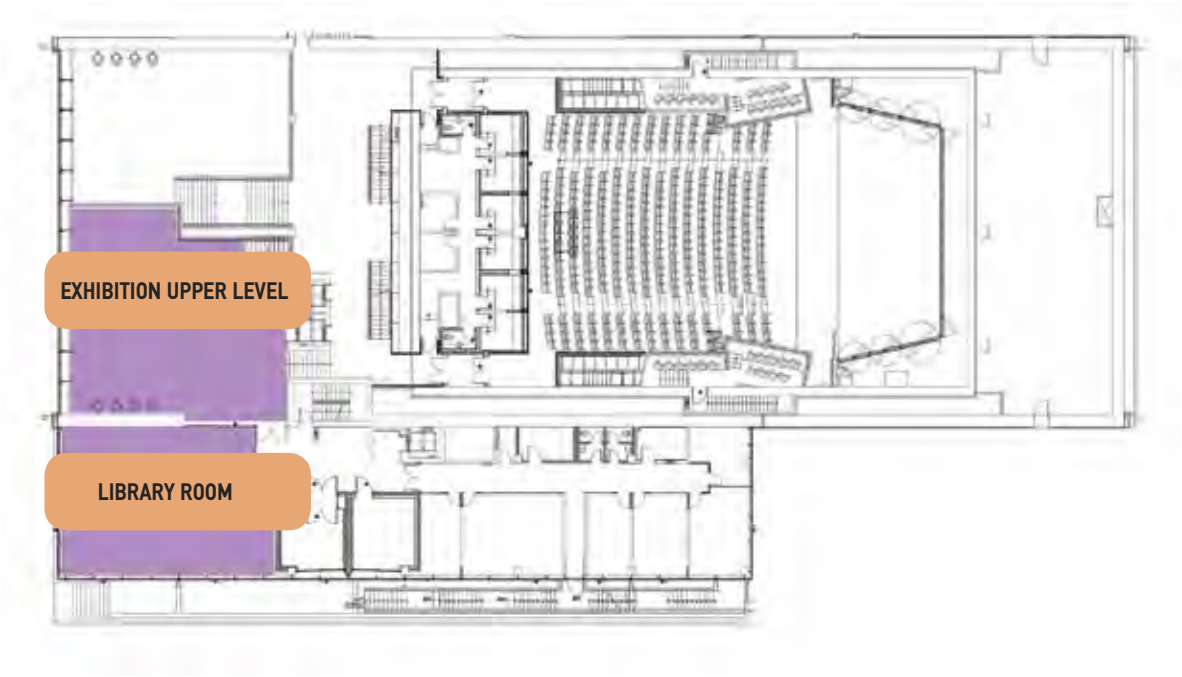


M2 building - level 1

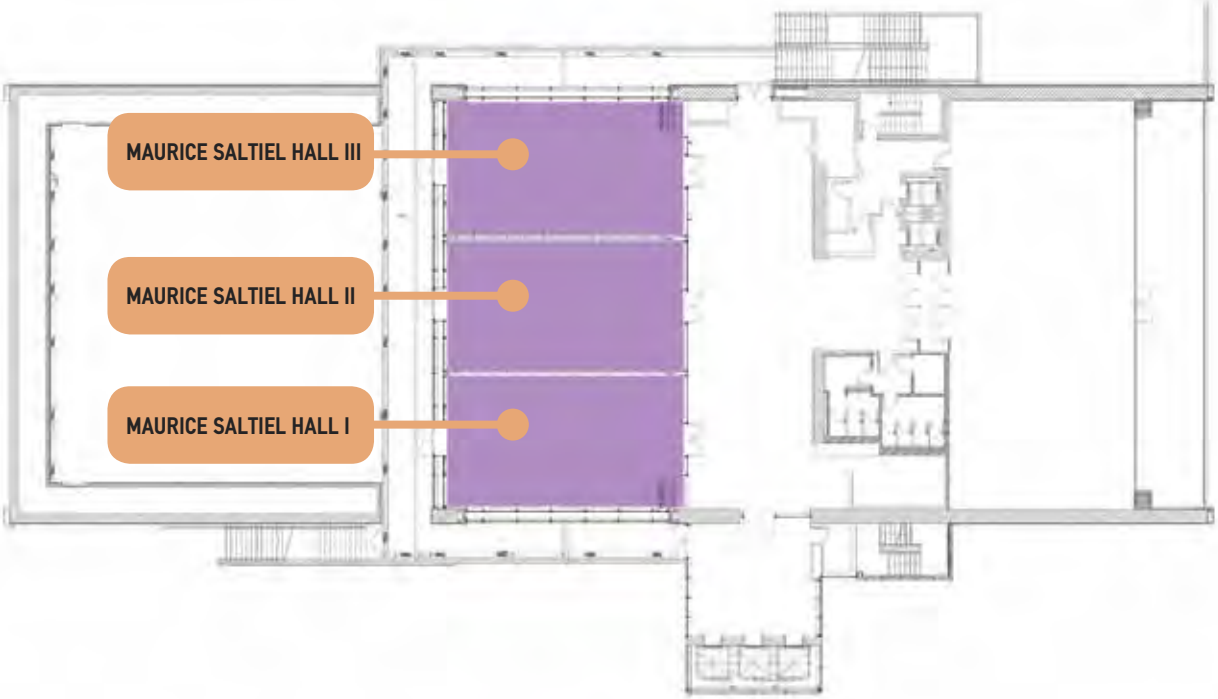


M2 building – level -1
Moysa Hall

M2 building - level 2



M2 building - level 5



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Welcome letter

Dear Delegate,

It is our great pleasure to personally welcome you to EUROMAT 2017 in Thessaloniki, the beautiful capital of Macedonia Prefecture in Northern Greece. In the year FEMS (The Federation of European Materials Societies) celebrates its 30th Anniversary, this is the 15th conference in the series of EUROMAT conferences, which are organised under the auspices of FEMS every two years since 1989. These conferences are well recognised internationally as the prime venue in Europe for the gathering of a wide community of academics and industrialists who are active in the field of Materials Science and Engineering (MSE) in Europe and around the world. The EUROMAT 2017 conference is co-organised by two of the 27 FEMS member societies, namely the Hellenic Metallurgical Society (HMS) and the Hellenic Society of the Science and Technology of the Condensed Matter (HSSTCM) both based in Greece.

The conference comprises 57 symposia grouped into 8 areas seven of which cover Functional and Structural Materials, Processing, Characterisation and Modelling, Energy and Environment, Biomaterials and Healthcare, Raw Materials and the eighth that is specifically dedicated to Education and Technology Transfer. All these areas are of great strategic importance for the future and the development of Materials Science and Engineering (MSE). Four topics were selected by The Minerals, Metals and Materials Society – TMS to be organised jointly by TMS and FEMS. This co-sponsoring refers to an agreement between the two societies to explore future cooperative ventures in the organisation of their respective conferences on both sides of the Atlantic Ocean. We look forward to continuing and strengthening this collaboration in future EUROMATs. As part of a reciprocal arrangement FEMS will be organising Symposia at TMS2018 in Phoenix, Arizona. We are grateful to the members of the scientific committee for their perseverance and devotedness to putting in place an outstanding list of symposia for each area of the conference.

Around 2725 abstracts were received from 65 countries by the closure of the deadline for abstract submission. 20% of the abstracts were submitted from outside Europe. Owing to the large number of contributions the committee decided to organise 22 parallel sessions, and to increase the number of oral presentations by 20% per session. This has led to a very intense programme covering a wide scope of subjects in which most recent advances in MST are highlighted.

Strong collaboration with national and international industrial, publishing, and commercial partners is what keeps MSE moving forward worldwide. We welcome the support of EUROMAT 2017 by 40 sponsors and exhibitors, and we are grateful to them for offering educational, networking and promotional opportunities for the conference delegates.

The organisation of the final programme involved the dedicated work of more than 200 experts in different fields that have acted as symposium organisers and co-organisers. On behalf of all the participants of the conference we express our sincere thanks to all of them for their hard work, leadership, commitment and enthusiasm to honour their tasks. Without their valuable commitment to deal with the high number of abstracts, the straightforward organization of the scientific programme would not have been possible.

The conference programme integrates approximately 1,850 oral presentations and 875 posters, the latter presented during two poster sessions. The conference starts on Sunday afternoon with 4 selected tutorials that address recent developments in emerging fields in MSE and start-ups. We have also organised what we hope will be an enjoyable social programme to accompany this conference to give you a flavour of Greece.

Following the practice of EUROMAT conferences, no general proceedings will be published for the whole conference. Some symposia organizers have arranged to have the papers of their symposium, or a sub-set of them, published after the conference in a special issue of a journal. The conference information including the titles, authors and abstracts submitted to the conference can be found on the USB stick within your delegate pack.

The programme is particularly highlighted by nine plenary lectures given by renowned researchers from the MSE community. The first plenary lecture will be given during the Monday opening session by Professor Doros Theodorou, who is the recipient of the FEMS European Materials Medal 2017. This is a recognition FEMS makes every year to some of the most active researchers in MSE. Five other senior and young scientists awarded last year with the Materials Innovation Prize, the Materials Science and Technology Prize, and two FEMS lecturers' prizes will also be given the opportunity to make relevant presentations at the conference.

All the tasks associated with such a large and complex conference are run under the direction of the managing committee. We are grateful for their continuous support.

We would like to thank each one of you for attending EUROMAT 2017 and bringing your research to the attention of the MST community. Throughout this conference, we ask you to stay engaged and proactive.

Our personal respect and thanks goes out to all of you.

Enjoy the conference, enjoy Thessaloniki.

Panos Tsakiropoulos
(Chair, Scientific Committee)

Anna Zervaki
(Chair, Managing Committee)

Brett Suddell
(FEMS President)

FEMS Awards

FEMS European Materials Medal 2017
Prof. Doros N. Theodorou

National Technical University of Athens, GR

Doros Theodorou holds a Diploma from the National Technical University of Athens, NTUA (1982), M.S. (1983) and Ph.D. (1985) degrees from M.I.T., all in Chemical Engineering.

He started his academic career at the University of California, Berkeley, where he became full professor in 1994. In 1995 he relocated to Greece, where he taught at the University of Patras and collaborated with ICE/HT-FORTH and NCSR "Demokritos". Since 2002 he has been professor and director of the Computational Materials Science and Engineering group at NTUA. Professor Doros Theodorou is known for his pioneering work in developing new statistical mechanics-based molecular and multiscale simulation methods for the calculation of thermodynamic, structural, mechanical, rheological, interfacial, and permeability properties of polymeric materials, as well as of sorption and diffusion in zeolites.

Recognitions he has received include the NSF Presidential Young Investigator Award (1988-1992), the Science Award of the Bodossakis Foundation in Chemistry (1996), the Danckwerts Lectureship of the AIChE (2006), the D. Medema Award of the Dutch PTN (2009), the John M. Prausnitz award of PPEPPD (2016), and the AIChE Institute Lecture (2016). In 2015 he was elected member of the U.S. National Academy of Engineering.

FEMS Materials Innovation Medal 2017
Dr. Thierry Chartier

Science des Procédés Céramiques et de Traitements de Surface (SPCTS), Limoges, FR

Thierry Chartier is Research Director and Head of the "Science of Ceramic Processes and Surface Treatments" CNRS Laboratory, Limoges, France. He received an engineers' degree from ENSCI, and an MSc in Ceramic Materials and Surface Treatments from the Univ. of Limoges (1982). He obtained his Ph.D. in 1985 concerning the relationship between elaboration-microstructure and properties of SiAlON.

His main research interests are ceramic processing with the understanding of fundamental mechanisms that take place during materials transformations. His current research concerns additive manufacturing which opened new additive routes in ceramics and lead to the creation of two start-ups (Ceradrop and 3Dceram). These processing developments have applications in healthcare, SOFC and catalytic membranes and a common lab has been established between CNRS and Air Liquide to pursue this research.

T. Chartier is the author/co-author of 170 reviewed papers and 38 patents. He was chairman of the 13th conference of the ECerS held in Limoges in 2013. He is member of the World Academy of Ceramics, Fellow of the European Ceramic Society. He received the "Chaudron" award from SF2M (2011) and the JECS Trust Award (2015).

FEMS Materials Science and Technology Prize 2017
Prof. Andrés-Fabiàn Lasagni

Technische Universität Dresden, DE

Andrés F. Lasagni received his M.S. degree in 2002 in Chemical Engineering from Comahue National University (Argentina). From 2003 to 2005 he carried out his PhD at the Universität des Saarlandes (Germany) and in 2007-2008 he conducted a postdoctoral stay at the Georgia Institute of Technology and the University of Michigan. Since 2008 he was group leader at the Fraunhofer IWS and since 2012 is professor at the Technische Unversität Dresden (Germany). Andrés Lasagni is author and coauthor of more than 150 publications and has been awarded several prizes including the German High Tech Champion in Photovoltaics 2011 from the Ministry of Education and Research (BMBF), the Green Photonic Award 2015 from the International Society for Optics and Photonics (SPIE), the Masing-Gedächtnispreis 2012 from the German Society for Materials Science (DGM) and Fritz-Grasenick-Prize from the Austrian Society for Electron Microscopy. Recently, he has received the Reinhart-Koselleck Grant (1.3 M€) from the German Research Foundation (DFG) to enable outstanding researchers to pursue exceptionally innovative or higher-risk projects.

TMS – FEMS Young Leader International Scholar Program
Dr. Mohsen Asle Zaeem

Missouri University of Science and Technology, Rolla USA

Mohsen Asle Zaeem is the Roberta and G. Robert Couch Assistant Professor of Materials Science & Engineering at Missouri University of Science & Technology. Dr. Zaeem received his B.S. (2003) and M.S. (2006) in Mechanical Engineering from Shiraz University, Iran, and his Ph.D. in Mechanical Engineering from the School of Mechanical and Materials Engineering at Washington State University (2010).

Dr. Zaeem has published more than 45 peer-reviewed journal articles, and he is currently serving as an editor of the Journal of Metals, and he is also a member of the editorial board of Mathematical Problems in Engineering and International Journal of Materials Engineering and Technology. Dr. Zaeem is a member of different technical committees of TMS, including Computational Materials Science and Engineering, Solidification, Phase Transformation, and Young Professionals Committees.

Dr. Zaeem is the recipient of 2016 Faculty Research Excellence Award of Missouri S&T, 2016 Certificate of Highly Cited Research in Computational Materials Science (Elsevier), 2015 Certificate of Excellence in Reviewing from Acta Materialia, 2015 TMS Young Leader Professional Development Award, 2015 Junior Faculty Award from Mines and Metallurgy Academy, and 2015 ACS New Investigator Award.

FEMS Lecturer Award for Excellence in Materials Science and Engineering 2016-2017
Prof. Jonathan Cormier

ISAE-ENSMA, Chasseneuil, FR

Jonathan Cormier, associate professor at ISAE-ENSMA (Futuroscope-Chasseneuil, France) since 2007, has an aeronautical engineering degree from ISAE-ENSMA, with specialization in mechanics of materials. He obtained his PhD degree in 2006 from the University of Poitiers on the non-isothermal creep behavior of a Ni-based single crystal superalloy for turboshaft-engine for helicopter applications.

His main area of research focuses on high temperature materials, especially Ni-based superalloys and their coatings, with a special emphasis on the impact of microstructure evolutions on their mechanical behavior and durability. He has both an experimental and constitutive modeling research activity. He has published 92 articles since 2005, 60 of them in internationally peer-reviewed journals.

He won the Jean Rist Medal in 2015 from SF2M (French Society of Metals and Materials) and the best paper awards at the Eurosuperalloys 2014 (Giens, France) and Superalloys 2016 (Seven Springs, PA, USA) conferences. Since September 2016 he is editor of the Metallurgical and Materials Transactions A journal.

FEMS Lecturer Award for Excellence in Materials Science and Engineering 2016-2017
Dr. David Maestre Varea

Universidad Complutense de Madrid, ES

David Maestre Varea is an Associate Professor at the Materials Physics Department, Universidad Complutense de Madrid. He is a member of the Physics of Electronic Nanomaterials Group (FINE), a research group focused on the study of semiconductor and electronic nanostructures with the aim to investigate their structure, morphology and physical properties. He attained his PhD from the Universidad Complutense de Madrid in 2007 and worked as post-doc at the Paul Cézanne-Aix Marseille III Université (Marseille, France) and at the Christian Albrechts Universität (Kiel, Germany) where he got insights in areas of research related to photovoltaics and electronic microscopy.

Recently he has focused on the fabrication and characterization of semiconducting oxide micro- and nanostructures based on SnO2, TiO2 and In2O3. He has published more than 50 manuscripts and 2 chapters of books and invented 4 patents, two of them finalists at the "Emerging Technologies Competition, Royal Society of Chemistry 2015". He received the "Fonda Fasella Award 2011".

Organizing Societies

Hellenic Metallurgical Society
www.met.gr

Hellenic Society for the Science and Technology of Condensed Matter
(HSSTCM) - www.hsstcm.eu

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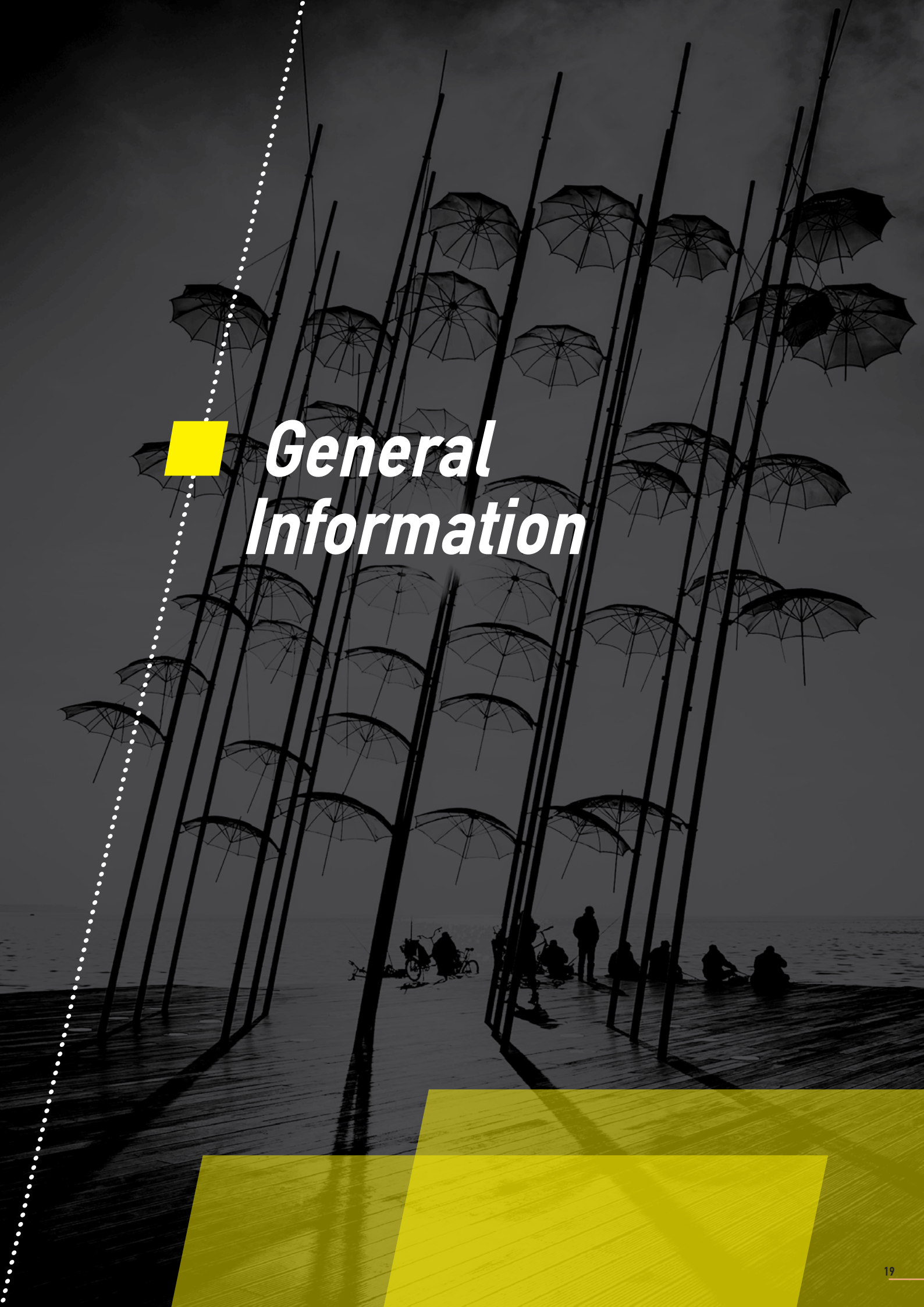
10672 Athens, Greece
Tel:+30 2103668853-54
Fax: +30 2103643511
email: euromat2017@afea.gr



General Information

Congress Dates: 17-22 September, 2017

Congress Venue:

Thessaloniki Concert Hall
Convention and Cultural Center

25 Martiou Str. & Paralia, Thessaloniki 546 46 - www.tch.gr

The Thessaloniki Concert Hall is just a seventeen-minute drive (14 km) from Thessaloniki International Airport "Makedonia", and is an important centre for performing arts in Thessaloniki, Greece. The complex consists of two main buildings: M1, with a 1,500-capacity auditorium; and M2, designed by the renowned architect Arata Isozaki. The hall is functionally designed to accommodate the needs of disabled people. Since its official opening in 2000, it has held numerous events, concerts, and conferences.

How to reach the venue:

BY BUS

The Thessaloniki Concert Hall stands 100 meters from the Georgiou bus stop where buses 5, 6, 8, 33 stop and 200 meters away from Martiou bus stop, where buses 30 & 78 stop.
www.oasth.gr

BY TAXI

There is a taxi stand right outside the Concert Hall, where taxis are available.

Congress Mobile APP

Download Euromat 2017 Mobile App for free, and gain access to:

- General information about the congress
- Detailed scientific program
- Personal agenda planning
- Sponsors & Exhibition
- Congress venue floor plans
- Information about Thessaloniki

Congress Secretariat

The Congress Secretariat is located at the foyer of the M1 building and will be operating from September 17th to 22nd, 2017.

Operating hours	
Sunday, 17 September 2017	09:00 – 20:00
Monday, 18 September 2017	08:00 – 19:30
Tuesday, 19 September 2017	08:00 – 19:30
Wednesday, 20 September 2017	08:00 – 19:30
Thursday, 21 September 2017	08:00 – 19:30
Friday, 22 September 2017	08:00 – 17:30

Exhibition

The Congress Exhibition is located at the M2 building and will be operating from September 18th to 22nd, 2017.

Operating hours	
Monday, 18 September 2017	09:00 – 19:30
Tuesday, 19 September 2017	09:00 – 19:30
Wednesday, 20 September 2017	09:00 – 19:30
Thursday, 21 September 2017	09:00 – 19:30
Friday, 22 September 2017	09:00 – 17:30

Congress material

Badges and Congress material will be provided to all registered participants by the Congress Secretariat. Congress badges are mandatory for admission and access to the meeting halls and exhibition, as well as all congress functions. Please wear your badge visibly at all times. Security guards or support personnel might ask you to make your badges visible. Remember to take it off when in the city.

Certificate of attendance

A certificate of attendance will be available to all registered participants for printing, at **www.euromat2017.fems.org** Kindly note that Certificates of attendance will be released upon completion of the event.

Internet access

Wireless internet access is available free of charge within the Congress venue. Please consult the Congress Secretariat Desk for further information and access code.

Language

The official language of the congress is English. No simultaneous translation will be provided.

Awards

A competition for the Best Oral Award and Best Poster Award per Scientific Area (with the exception of Area G) will run throughout the days of EUROMAT conference. All participants will have the option to vote for the best oral and the best poster presentation and the winners will be announced during the Awards session of Friday 22/09/2017.

Speakers Preview Desk

A Speakers Preview Desk is located at the M1 building, level 0 & at the M2 building, level 0.

Operating hours	
Sunday, 17 September 2017	11:00 – 20:00
Monday, 18 September 2017	08:00 – 19:30
Tuesday, 19 September 2017	08:00 – 19:30
Wednesday, 20 September 2017	08:00 – 19:30
Thursday, 21 September 2017	08:00 – 19:30
Friday, 22 September 2017	08:00 – 17:30

Useful Information for Oral presentations

Information for presenters

It is highly recommended that all the speakers upload their presentation files (USB or CD) at the Speaker Preview desk (M1/Level 0), at least one day and at the latest three hours before their presentation. Presentations will be distributed and projected to the meeting rooms via a central computer system. All meeting rooms are equipped with a laptop and an LCD Projector. Kindly note that the use of a personal laptop or/and any other device is not recommended and it is upon the speaker's responsibility. As a reminder, VHS videos, 35 mm slides, overhead projection (transparencies etc.) will not be available.

Important notes & recommendations

- All presentations must be in English
- Authors are expected to present their paper in person at the congress; in any other case, the congress organizers should be informed in advance
- All presenters/speakers are kindly requested to check their presenting room and be there at least 15 minutes before the session begins. The presenters are kindly asked to present themselves to the Session Chair Each presentation should not exceed the time allocated. Keeping to the time limit is crucial to allow delegates to move from one session to another

Useful information for Chairpersons

You are kindly requested to:

- Keep the session to the time allocated
- Give short introductions on the speakers and the papers to be presented
- Facilitate discussion by asking a number of pertinent questions for each one of the papers, if necessary
- Keep the discussion brief and relevant
- Be in the room 10 minutes before the session begins and introduce yourselves to the speakers
- Check speakers' names, titles and affiliations
- Start & end on time. Always should grant time for floor discussion
- Hold each speaker to the allocatted time
- If a presenter ends early or does not attend, please use that extra time for questions and remarks from the audience, the panel, or yourselves. Please make sure that the following presentation doesn't start earlier than scheduled
- In floor discussion, it is recommended that you ask participants to introduce themselves, by saying their name, country and institution and repeat the questions, to be sure that they are heard by everyone in the audience

Useful Information for Poster presentations

Poster Presentations

The Poster Area is located at the foyer of the M1 building (+1 level).
Poster reference numbers will be displayed at the top of the poster boards.
Participants are kindly requested not to remove or change the numbers.
The Congress Secretariat is not responsible for material left behind, lost, damaged or stolen. Authors are responsible for mounting/removing their posters, according to the below respective information.

Poster Session I

Poster Session I, is scheduled on **Tuesday, September 19, 2017 at 13.00-15.00**
All authors whose posters are accepted to Poster Session I, should mount their poster on **Tuesday, September 19, 2017** at **08.00-09.00** and remove them on **Wednesday, September 20, 2017**, by the end of the day.

Poster Session II

Poster Session II, is scheduled on **Thursday, September 21, 2017** at **13.00-15.00**
All authors whose posters are accepted to Poster Session II, should mount their poster on **Thursday, September 21, 2017** at **08.00-09.00** and remove them by the end of the day.

Green Policy

In maintaining a high standard of environmental awareness and compliance, Euromat 2017 follows a Green Policy.
Euromat 2017 is designated non-smoking.
Euromat 2017 has reduced the amount of printed material that is distributed at the Congress, but continues to print material considered essential for the effective organization or communication of the event. Although, Euromat 2017 still has a printed final program, previously printed material has been replaced by online information on the congress website, the congress application and a USB.

Liability and insurance

The Organizers accept no liability for any personal injury, loss or damage of property or additional expenses incurred to Congress participants, either during the Congress or as result of delays, strikes, or any other circumstances. Participants are requested to make their own arrangements with respect to health and travel insurance.

Catering services

Coffee breaks will be served at the foyer of buildings M1 & M2:
Monday, Tuesday, Wednesday, Thursday, Friday: 10:30-11:00
Monday, Tuesday, Wednesday, Thursday: 17:00-17:30

Lunches will be served at the foyer of buildings M1&M2:
Monday, Tuesday, Wednesday, Thursday, Friday: 13:00-14:30

Social Events

Welcome reception

Date: September 17, 2017
Time: 20:00
At Thessaloniki Concert Hall Convention and Cultural Center

Included in the registration fee

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Cultural event

Date: Tuesday, September 19, 2017
Time: 20:00
At Thessaloniki Concert Hall Convention and Cultural Center

Included in the registration fee

Special dedicated concert held by the Symphony Orchestra of the Municipality of Thessaloniki

The Symphony Orchestra of the Municipality of Thessaloniki was founded in 1987. Its first name was "Municipal Orchestra" and its first artistic director was Cosmas Galileas. The Orchestra is comprised by talented and renowned musicians and participates dynamically in the musical world of the city, giving concerts in Thessaloniki, as well as all over Greece and abroad. Since July 1993 and for five consecutive years, the Orchestra's artistic director was the conductor Dimitris Agrafiotis and right after him, until 2005, the conductor Byron Fidetzis. Today, the Orchestra is directed by the conductor Haris Iliadis.

During all these years, the Symphony Orchestra had the joy and the honor to work with outstanding soloists and conductors, such as: D. Sgouros, G. Demertzis, L. Kavakos, M. Tirimos, Y. Vakarelis, K. Katsaris, F. J. Sellheim, I. Ionescu - Galati, R. Moog, I. Oistrakh, R. Syracuse, V. Tretiakov, K. Kelly, G. Schuller, C. Studer, P. Badura – Skoda, and others.

Gala Dinner

Gala Dinner

Date: Wednesday, September 20, 2017
Time: 21:00
At Makedonia Palace Hotel
Price per person: 70 €

Not included in the registration fee
Dress code: Elegant smart casual

Local Information & facilities

City Info
For further information about Thessaloniki, please visit the City Desk (Thessaloniki Tourist Office), which will be located at the congress venue.

Electricity
Greece uses 220V alternating current. Plugs and sockets are European standard with two round pins.

Currency
Greece is a member of the Eurozone and euro is the official currency. You can buy euros from banks, exchange offices in the city center and the airport "Makedonia", while foreign exchange services are offered in many hotels. The opening hours of banks accepting foreign currency are:
Monday-Thursday: 8:00 -14:30 & Friday: 8:00 -13:30.

Time Zone
Thessaloniki, like the rest of Greece, belongs to the Eastern European Time Zone and is two hours ahead of Greenwich Mean Time (GMT +2). Like most European countries, Thessaloniki implements daylight saving time.

Wi-Fi Hot Spots

The Municipality of Thessaloniki offers the possibility of free wireless internet access from mobile devices such as smartphones, tablets, laptops in places of economic, tourist, and social interest of the city.

The free wireless access points are:
Mina Patrikiou Square
Municipal Swimming Pool
Floricultural park
New City Hall
Tsimiski Avenue – Angelaki Street
Entrance of Thessaloniki International Fair (TIF)
N.Germanou Street - Entrance of the Municipal Garden Theatre
Society for Macedonian Studies
White Tower Square
Romfei square
Aristotle Square

Useful Phone Numbers

Thessaloniki area code	(30) 2310
European Emergency	112
Police	100
Tourist Police	(+30) 2310554874
Fire Department	199
Ambulance	166
Port Authority	(+30) 2310593134
Traffic Police	(+30) 2310250740
Railway Customer Service Centre	14511
Urban Transportation	11085
Intercity coaches	(+30) 2310595400
TAXI	18300, 18180, 18288
Airport	(+30) 2310985000

Scientific Program

AREA A — FUNCTIONAL MATERIALS – Area Coordinator: Emmanouel Giannelis

	SYMPOSIUM	ORGANIZERS
A1	CARBON-BASED NANOMATERIALS	Eric Anglaret, Vladimir Falko Costas Galiotis, Maurizio Prato
A2	INNOVATIONS IN FUNCTIONAL NANOMAGNETS	Makis Angelakeris, Michael Farle Panagiotis Poulopoulos, Radek Zboril
A3	FUNCTIONAL POLYMERS AND RELATED (NANO)COMPOSITES	Jean-François Gerard, Philippe Dubois, Ton Peijs
A5	COLLOIDAL NANOPARTICLES: SYNTHESIS, FUNCTIONALIZATION AND APPLICATIONS	Antonios G. Kanaras, Wolfgang Parak, Liberato Manna, Catherine Dendrinou Samara
A6	ADVANCED MATERIALS FOR SPACE EXPLORATION	George Vekinis, Barrie Dunn
A7	FUNCTIONAL NANOMATERIALS FOR NOVEL APPLICATIONS	Paloma Fernàndez-Sanchez, Ana Cremades Oliver Rader, Peter Schaaf
A8	MATERIALS BY DESIGN	Julien Varignon, Nicholas C. Bristowe
A9	FUNCTIONAL MEMBRANES	Volker Abetz, Katja Loos

AREA B — STRUCTURAL MATERIALS – Area Coordinators: Hans-Jürgen Christ & Gregory Haidemenopoulos

	SYMPOSIUM	ORGANIZERS
B1	OVAKO ADVANCED HIGH STRENGTH STEELS	Wolfgang Bleck, Francisca Caballero Ronald Schnitzer
B2	TMS LIGHT WEIGHT METALS	Michele V. Manuel, Norbert Hort, Alan Luo, Eric Nyberg, Mathieu Brochu, Frank Monheillet
B3	HIGH-TEMPERATURE ALLOYS	Srdjan Milenkovic, Shigehisa Naka
B4	ADVANCED PROPERTIES OF SPD-PROCESSED METALLIC MATERIALS	Heinz Werner Höppel, Andrea Bachmaier Anton Hohenwarter
B5	ADVANCED CERAMICS	Thomas Graule, Jerzy Tadeusz Lis Athena Tsetsekou, Dariusz Kata
B6	ADVANCED COMPOSITES	Aravind Dasari, Bodo Fiedler
B7	HYBRID AND METAL ORGANIC FRAMEWORK (MOF) MATERIALS	Bartolomeo Civalleri, Jin-Chong Tan
B8	HIGH ENTROPY ALLOYS AND COMPOSITIONALLY COMPLEX ALLOYS	Glatzel Uwe, Easo George
B9	BULK METALLIC GLASSES	Jürgen Eckert, Jörg F. Löffler
B10	FATIGUE, WEAR AND CORROSION OF MATERIALS AND STRUCTURES	Georgios Savaidis Michael Vormwald, Wolfram Fürbeth
B11	MECHANICAL PROPERTIES AND MICROSTRUCTURE	Tilmann Beck, Frank Walther

AREA C — PROCESSING - Area Coordinator: Nikolaos Michailidis

	SYMPOSIUM	ORGANIZERS
C1	COATINGS AND SURFACE MODIFICATION TECHNIQUES	Elias Aperathitis, Albano Cavaleiro Rainer Cremer, Ru Lin Peng
C2	LASER-BASED PROCESSING AND MANUFACTURING	Robert Eason, Andrés F. Lasagni Römer Gert-willem, Ioanna Zergioti
C3	POWDER ROUTES: FROM SYNTHESIS TO PROCESSING	Claude Estournès, Christophe L. Martin
C4	ADDITIVE MANUFACTURING	Ugo Lafont, Alberto Molinari Sebastian Piegert, Eduard Hryha
C5	INTERFACE DESIGN AND MODELLING, WETTING AND HIGH-TEMPERATURE CAPILLARITY	Simeon Agathopoulos, Fabrizio Valenza
C6	JOINING	Ivan Kaban, Christof Sommitsch
C7	STEEL MAKING	Johannes Schenk, Spyros Papaeftymiou
C8	SOLIDIFICATION, CASTING, FOUNDRY AND LIQUID METAL PROCESSING	Alexandros Karantzalis, Andrew Kennedy
C9	MANUFACTURING PROCESSES	K.D. Bouzakis, Luca Settineri
C10	THERMOMECHANICAL PROCESSING, SEVERE PLASTIC DEFORMATION AND NANO-STRUCTURING	G. Angella, T. Grosdidier J. Ivanisenko, M. Krzyzanowski
C11	PROCESSES AND MATERIALS FOR NANOELECTRONICS	Dimitris Tsoukalas, Marco Fanciulli, Alain Claverie

AREA D — CHARACTERIZATION AND MODELLING - Area Coordinators: Eric Le Bourhis & Sotirios Ves

	SYMPOSIUM	ORGANIZERS
D1	MATERIALS SCIENCE WITH SYNCHROTRON RADIATION X-RAYS	Federico Boscherini Maria Katsikini, Peter D. Lee
D2	NANOSCALE MATERIALS CHARACTERIZATION AND MODELING BY ADVANCED MICROSCOPY METHODS	Thomas Walther, Georgios Dimitrakopulos Stawomir Kret, Georgios Fourlaris
D3	MATERIALS AT EXTREME CONDITIONS: STATIC OR DYNAMIC COMPRESSION COMBINED OR NOT WITH LOW OR HIGH TEMPERATURES	Jean Paul Itié John Arvanitidis, Ilias Zouboulis
D4	SMALL SCALE MECHANICS, FRACTURE, INTERFACE, EXPERIMENTS AND MODELING	Christophe Pinna, Eric Le Bourhis
D5	APPLICATION OF ICME PRINCIPLES IN THE DESIGN OF STRUCTURAL MATERIALS	Ulrich Prahl, Ernst Kozeschnik Javier Llorca, Yu Zhong

AREA D

CHARACTERIZATION AND MODELLING – Area Coordinators: Eric Le Bourhis & Sotirios Ves

	SYMPOSIUM	ORGANIZERS
D6	MULTI-LENGTH-SCALE INNOVATIONS IN DAMAGE EVOLUTION IN MATERIALS: CHARACTERIZATION, MODELING, AND VALIDATION	Bernard Normand, Ellen Cerreta George T Gray III, Damien Féron
D8	AB INITIO MODELS FOR THERMODYNAMIC AND ELASTIC PROPERTIES OF ADVANCED MATERIALS	Sergei Dudarev, Martin Friak
D9	QUALIFICATION AND MODELLING OF STRUCTURAL AND FUEL MATERIALS FOR SUSTAINABLE NUCLEAR REACTORS	Lorenzo Malerba, Marjorie Bertolus Jana Kalivodovà
D10	MULTISCALE MODELING OF MATERIALS	Karakasidis Theodoros, Kalliadasis Serafim Koumoutsakos Petros, Tserpes Konstantinos Schmauder Siegfried

AREA E

ENERGY AND ENVIRONMENT- Area Coordinators: Maria Luisa Di Vona & Emmanuel Giannelis

	SYMPOSIUM	ORGANIZERS
E1	HYDROGEN PRODUCTION, CONVERSION, AND STORAGE	Maria Luisa Di Vona, Bogdan Kuchta Ioannis Kallitsis, Toshiyuki Mori
E2	BATTERIES AND SUPERCAPACITORS	Philippe Knauth, Isabella Nicotera Alan V. Chadwick, Jean Scoyer
E3 Joint Symposium	MATERIALS FOR ENERGY HARVESTING	Spyros Diplas, Theodora Kyratsi Truls Norby, Paul R. Ohodnicki Amit Pandey, Monica Della Pirriera Susan Schorr, Joäo Manuel de Almeida Serra, Jianwu Sun
E4	MATERIALS FOR NUCLEAR ENERGY (FUSION, FISSION)	Thierry Angot, Christian Grisolia Dirk Engelberg
E6	ADVANCED MATERIALS FOR TRANSPORT APPLICATIONS	Dirk Lehmhus, Axel von Hehl Rene Alderliesten, Kambiz Kayvantash Jörg Hohe, Joachim Hausmann

AREA F

BIOMATERIALS AND HEALTH CARE- Area Coordinators: Jérôme Chevalier and María Vallet-Regí

	SYMPOSIUM	ORGANIZERS
F1	BIOMATERIALS FOR TISSUE ENGINEERING	Antonio Salinas, Aldo Boccaccini Chiara Vitale-Brovarone Katharina Schmidt Bleek Didier Letourneur
F2	BIOMATERIALS FOR THERAPEUTIC DELIVERY	Miguel Manzano, João Mano Maria Vallet-Regi
F3	NANOBIOMATERIALS AND NANOTECHNOLOGY FOR IMPLANTS, DEVICES AND THERANOSTICS	Alejandro Baeza Daniel Ruiz-Molina Maria Vallet-Regi
F4	THE NEXT GENERATION OF IMPLANTS WITH MULTI-FUNCTIONAL PROPERTIES: ADVANCED SYNTHESIS, PROCESSING AND SURFACE MODIFICATION METHODS FOR BIOMATERIALS	Aldo Boccaccini, Pieter Cools Laurent Gremillard, Paola Palmero
F5	TRANSLATION OF BIOMATERIALS RESEARCH TOWARDS INNOVATION AND PRODUCT DEVELOPMENT: FROM CONCEPTS TO CLINIC	Jérôme Chevalier, Hakan Engqvist Tobias Fuederer, Christophe Marquette Corrado Piconi
F6	EKSPLA BIO-INSPIRED MATERIALS: FROM STRUCTURAL MATERIALS TOWARDS MULTI-FUNCTIONAL BIOMATERIALS	Peter Fratzl, Julian Jones Sylvain Meille, Eduardo Saiz

AREA G

EDUCATION AND TECHNOLOGY TRANSFER - Area Coordinator: Heinrich Hofmann

	SYMPOSIUM	ORGANIZERS
G1	COMPETENCES AND BASIC KNOWLEDGE IN THE ICT ER	Paloma Fernàndez -Sanchez
G2	KEY MATERIAL FIELDS FOR MODERN CURRICULA	H.M. Polatoglou Mébarek Alouani, Michael Finnis
G3	CRITICAL MATERIALS IN DESIGN, MANUFACTURING AND RECYCLING	Margarethe Hofmann
G4	TRANSFERABLE SKILLS FOR MASTERS AND PHD's IN MATERIAL SCIENCE	Heinrich Hofmann, Emmanuel Giannelis

AREA H

RAW MATERIALS - Area Coordinators: Bart Blanpain & Patrice Turchi

	SYMPOSIUM	ORGANIZERS
H1	TMS CRITICAL MATERIALS: IMPACT ON NEAR-TERM ADVANCED ENERGY TECHNOLOGIES	Orlando Rios, P. E. A. Turchi Iver Anderson, Steve Constantinides Roderick Eggert
H2	SUSTAINABLE PRODUCTION OF (CRITICAL) MATERIALS	Dimitrios Panias Mishra Brajendra, Guo Muxing
H3	MATERIALS LIFE CYCLE APPROACH AND FLOW ANALYSIS	Margarethe Hofmann-Amtenbrink, Alessandra Hool, Roland Gauß Guido Sonnemann

Plenary Sessions

MONDAY 18 SEPTEMBER 2017	TIME: 09:00
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Panos Tsakiropoulos, Anna Zervaki, Brett Suddell

OPENING CEREMONY

MONDAY 18 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Brett Suddell

FEMS European Materials Medal 2017

Prof. Doros N. Theodorou

School of Chemical Engineering
National Technical University of Athens, Greece

"Molecular Modeling of Materials: Promises, Challenges, and Impact"

Molecular-based approaches for understanding and tailoring structure-propertyprocessing relations in materials, based on the fundamental principles of quantum and statistical mechanics, have gained ground in academic research and industrial practice. They have been greatly aided by an unprecedented growth in computer power, but also by new, efficient theoretical and computational methods and algorithms. The broad spectra of length and time scales governing structure and dynamics in real-life materials have demanded the advancement of multiscale modeling strategies, involving more than one levels of representation, to bridge atomistic constitution and interactions with macroscopic properties. In this talk we will discuss examples of molecular modelling of polymeric and nanostructured materials, addressing questions such as: How can we push the frontiers of predictability by appropriate design of multiscale theoretical and simulation approaches? Can computational high-throughput screening guide experimental efforts towards the development of new materials? What is the impact of materials modelling in industrial environments?

TUESDAY 19 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Panos Tsakiropoulos

Prof. Anna Fontcuberta i Morral

Laboratory of Semiconductor Materials

Ecole Polytechnique Federale
De Lausanne, Switzerland

"Semiconductor nanowires for next generation photovoltaics"

Semiconductor nanowires are filamentary crystals with a diameter in the range between few and hundred nanometers. Their special morphology and small size has inspired new applications and fundamental studies. In this talk we will present state-of-the-art and perspectives of III-V nanowires and related heterostructures in terms of growth and their application in photonic, quantum science and energy harvesting devices [1]. We will address the challenges of growing this kind of structures on silicon substrates and provide a path for reproducible growth of high quality structures [2-4].

Figure 1. Scanning electron micrographs of ordered GaAs nanowire arrays obtained on a (111) silicon substrates for different growth times. The scale bar represents one micrometer[4].

1. P. Krogstrup et al, Nature Photon. 7, 306 (2013)
2. E. Russo-Averchi et al Nano Lett. 15, 2869 (2015)
3. H. Potts et al, Nano Lett. 16, 637 (2016)
4. J. Vukajlovic-Plestina et al, submitted (2017)

TUESDAY 19 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Brett Suddell

FEMS Materials Science and Technology Prize 2017

Prof. Andrés-Fabiàn Lasagni

Institute for Manufacturing Technology

TU Dresden, Germany
Fraunhofer-Institut für
Werkstoff-und Strahltechnik IWS,
Dresden, Germany

"Bridging the gap between high resolution laser structuring and high throughput using Direct Laser Interference Patterning"

Starting from a simple concept, transferring the shape of an interference pattern directly to the surface of a material, the method of Direct Laser Interference Patterning (DLIP) has been continuously developed in the last 20 years. From lamp pumped to high power diode-pumped lasers, DLIP permits today for the achievement of impressive processing speeds, even close to 1 mÇ/min. The objective: to improve the performance of surfaces by the use of periodically ordered micro and nanostructures. This study describes the advances performed in the DLIP method, with the objective of bringing this technology to real industrial applications. From the structuring of thin metallic films to bulk materials using nano- and picosecond laser systems, going through different optical setups and industrial systems which have been recently developed. Several technological applications are discussed. In all cases, DLIP has not only shown to provide outstanding surface properties but also outstanding economic advantages compared to traditional methods.

WEDNESDAY 20 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Anke Kaysser-Pyzalla

Prof. Dr. Ing. habil. Oliver Gutfleisch

Institut für Materialwissenschaft
FG Funktionale Materialien
TU Darmstadt, Germany

Magnets as enablers for renewable energy and resource efficiency

Magnetic materials are key components in energy related technologies, sensors and information technology. Magnets are inseparable from our everyday life. "Green" energy technologies such as wind turbines, electro-mobility and solid state cooling, heavily rely on high performance magnetic materials which have to be available in bulk quantities, at low-cost and with tailored magnetic hysteresis properties [1].

The realisation of these technologies is closely linked to the sustainable availability of the strategic metals for magnetism such as the group of rare earth elements (REE) namely Nd, Gd, Tb, Dy, transition metals such as Co, Ga, Ge, In, and the platinum group metals. Resource criticality is understood here as a concept to assess potentials and risks in using raw materials for certain technologies, and their functionality in emerging technologies. The concept of criticality of strategic metals is explained by looking at demand, sustainability and the reality of alternatives of rare earth elements [2].

There is an ever-growing demand for the benchmark high performance Nd-Fe-B magnets, most importantly for use in e-motor applications, for example, in all kinds of machinery, automatization and robotics in industry (Industry 4.0). The key question will be whether Nd-Fe-B needs to be and could be substituted substantially in some of the existing and upcoming competing technologies. The arrival of a more widespread use of e-mobility and wind energy and other smart magnet usages has yet to have its impact on this application field in terms of Nd demand. No substitute is at hand for the massive amounts of high-energy density magnet materials needed to run fast moving automated industrial machinery, and the demand is expected to rise for these kinds of applications. The same applies to e-motors in hybrid electric cars, where motor designers find highly limited construction space [2, 3]. There are different concepts for wind turbines, including those that require less or no permanent magnet materials. However, permanent magnet - so-called permanent magnet direct drive wind turbines - are far superior in terms of energy efficiency and maintenance cost and seem to be becoming the dominating type of machinery in Europe and worldwide [4].

Gas-vapour compression technology for refrigeration, heating, ventilation, and air-conditioning has remained unchallenged for more than 150 years. There is a huge demand for a smarter, more flexible and more efficient cooling technology. Magnetic refrigeration could be that alternative working without gas-based refrigerants. Energy spent for domestic cooling is expected to outreach that for heating worldwide over the course of the twenty-first century.

The talk will address these different global trends and will attempt to scale bridge these challenges by discussing the modelling, synthesis, characterization, and property evaluation of novel magnetic materials considering their micromagnetic length scales and phase transition characteristics [5,6].

[1] O. Gutfleisch, J.P. Liu, M. Willard, E. Brück, C. Chen, S.G. Shankar, Magnetic Materials and Devices for the 21st Century: Stronger, Lighter, and More Energy Efficient (review), Advanced Materials 23 (2011) 821–842.

[2] R. Gauss, G. Homm, O. Gutfleisch, The resource basis of magnetic refrigeration, J. of Industrial Ecology, DOI: 10.1111/jiec.12488. (2016)

[3] O. Gutfleisch, M.D. Kuz'min, J. Gassmann, R. Gauss, Re-thinking rare earths: Demand, sustainability and the reality of alternatives, Proceedings of 23rd Int. Workshop on Rare Earth Magnets and their Applications, Annapolis, USA, August 2014.

[4] R. Gauss and O. Gutfleisch, Magnetische Materialien - Schlüssel komponenten für neue Energietechnologien, in Rohstoffwirtschaft und gesellschaftliche Entwicklung, ed. P. Kausch und J. Matschullat, März 2016, Springer Spektrum Heidelberg, Springer-Verlag GmbH, ISBN 978-3-662-48854-6, pp. 99-118.

[5] K. Loewe, D. Benke, C. Kübel, T. Lienig, K.P. Skokov, O. Gutfleisch, Grain boundary diffusion of different rare earth elements in Nd-Fe-B sintered magnets by experiment and FEM simulation, Acta Materialia 124 (2017) 421-429.

[6] O. Gutfleisch, T. Gottschall, M. Fries, D. Benke, I. Radulov, K. P. Skokov, H. Wende, M. Gruner, M. Acet, P. Entel and M. Farle, Mastering hysteresis in magnetocaloric materials, Phil. Trans. R. Soc. A 374: 20150308. http://dx.doi.org/10.1098/rsta.2015.0308. (2016)

WEDNESDAY 20 SEPTEMBER 2017	TIME: 09:00 - 10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Brett Suddell

Materials Innovation Medal 2017

Dr. Thierry Chartier

Science des Procédés Céramiques et de Traitements de Surface (SPCTS European Ceramic Center, France

Additive Manufacturing of ceramics: a new way to design and fabricate advanced ceramic parts

Since their introduction in the late 1980s, additive manufacturing technologies (AM) have become very attractive to produce accurate parts via an automated process. The part is directly built up from a computer-aided-design (CAD) file, allowing the user to have an immediate response on the shape, function or performance of the object.

Used in a wide range of industries, AM allows companies to turn innovative ideas into successful end products rapidly and efficiently. Depending on the nature of the final object, the AM techniques can be used to produce a cost-effective single item or a low - volume manufacturing. Today, AM technologies are currently becoming real manufacturing processes in various industrial fields.

In the domain of ceramics, AM technologies constitute an attractive answer to the need of shaping techniques to produce useful complex parts and specific architectures which cannot be produced with a traditional method, without costly tooling and/or machining. AM technologies of ceramics are flexible techniques that offer the ability to directly redesign parts (shape/dimensions) in the CAD file to optimize a property, restricted by conventional manufacturing methods, and with the great advantage not to have to modify the tooling.

Additive processes are likely going to transform the field of ceramic manufacturing and will open new ways of thinking about objects design and fabrication of advanced ceramic with improved or new functions.

AM technologies used in the ceramic domain, such as, Binder jetting, Robocasting, Ink-jet printing, Selective laser sintering and Stereolithography, are used or under development to build 3D ceramic parts. Among these methods, the space-resolved UV photopolymerization of a reactive ceramic system (Stereolithography) presents the advantage to makes it possible to fabricate useful, dense complex 3D objects, with a high dimensional resolution, a good surface finish and properties similar to those obtained by classical routes. This process is used to design and fabricate innovative advanced ceramic components for various applications (space, telecommunication, biomedical, engineering, jewelry…) requiring specific properties.

THURSDAY 21 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Panos Tsakiropoulos

Prof. John Ågren
Dept. of Materials Science and Engineering
Royal Institute of Technology (KTH)
Sweeden

"Computational modeling and Materials Design"

Over the last 15 years "Computational modeling and Materials Design" has become a hot topic demonstrated by a steady growth in number of yearly publications and citations. During 2016 there were around new 11000 citations! Thus materials design should now be considered as an enabling technology and a real game changer in strive for faster materials development. No doubt it is a key to the circular economy and a sustainable society. For example, it offers design of materials that fulfill certain performance requirements with available raw materials. For industry this is a strategic area because the companies that master the technology will have a strong competitive advantage.

The ability to perform materials design depends critically on efficient computational models capable of predicting properties and performance with sufficient accuracy. Typically a variety of approaches operating on different scales of length and time are needed and integrated in the design process. This is the basis for the concept of Integrated Computational Materials Engineering (ICME), a field that has evolved during the last decade. The models need highly processed data extracted from the pool of raw data, i.e. the protodata, stemming from experiments and ab-initio quantum mechanical calculations. Databases containing such highly processed data are referred to as genomic databases and are a part of the Materials Genome. The CALPHAD thermodynamic and kinetic databases are role models for genomic databases.

The talk will review some of the background and present the state of the art. Some recent examples, on hard materials, glassy alloys and high-strength steels will be presented and discussed.

THURSDAY 21 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Nikolaos Michailidis

Prof. Spyros Pantelakis
Department of Mechanical Engineering & Aeronautics
University of Patras, Greece

"Current advances and emerging needs in (r)evolutionizing aircraft structures"

Faster, safer, quieter and less polluting, operational at all weather, more cost efficient, fully recyclable are only some of the technological requirements set for modern and, especially, for future aircrafts. To respond to these demanding objectives requires for major advancements in the entire concept of designing and manufacturing an aircraft.

The aim of this work is to present current advances aircraft structures, underline the need for breakthrough concepts and technologies on designing and manufacturing aircraft structures in order to cope with the above highly demanding targets from the view point of aerostructures and present examples of some recent efforts towards revolutionizing aircraft structures.

At first, a brief overview will be made showing the evolution of aircraft materials and structures from the first all Aluminum alloy aircrafts to today's Airbus A350 made by 52% from composites. Then the work will focus on presenting significant milestones and major current achievements on material development, design concepts and manufacturing techniques allowing for the step changing evolution of aircraft structures from differential to integral. Characteristic examples such as large integral composite smart structures, involving shape morphing composite wing parts, multifunctional materials in structural applications, Structural Health Monitoring abilities by using embedded sensors, cost effective manufacturing techniques for producing thermoplastic composite structures, structural adhesive bonding, advancements on producing metallic parts made by involving Additive Manufacturing following to topology and shape optimization, etc. will be discussed. The progress achieved so far will be assessed against the technological targets set in Flight Path 2050 published by the European Commission in the year 2011. Finally, some ongoing efforts to achieve breakthrough solutions such as bio-inspired design concepts, development of aircraft wing structural concepts suitable for novel aircraft propulsion systems such as distributed propulsion combined to electrical power, use of multifunctional and self healing materials and structures, development of multifunctional structures, use of bio-composites, development of nanocrystalline aeronautical alloys, etc. will be presented.

FRIDAY 22 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Anke Kaysser Pyzalla

Prof. Luis M. Liz-Marzàn

Ikerbasque Research Professor
Scientific Director
CIC biomaGUNE, Spain

"Composite Plasmonic Materials for Sensing and Imaging"

Metal nanoparticles display very interesting optical properties, related to localized surface plasmon resonances (LSPR), which give rise to well-defined absorption and scattering peaks in the visible and near-IR spectral range. Such resonances can be tuned through the size and shape of the nanoparticles, but are also extremely sensitive towards dielectric changes in the near proximity of the particles surface. Therefore, metal nanoparticles have been proposed as ideal candidates for biosensing applications. Additionally, surface plasmon resonances are characterized by large electric fields at the surface, which are responsible for the so-called surface enhanced Raman scattering (SERS) effect, which has rendered Raman spectroscopy a powerful analytical technique that allows ultrasensitive chemical or biochemical analysis, since the Raman scattering cross sections can be enhanced up to 10 orders of magnitude, so that very small amounts of analyte can be detected.

In this communication, we present several examples of novel strategies to employ nanostructured materials comprising gold nanoparticles embedded in porous oxides or polymers, as substrates for ultrasensitive detection of various analytes, including biorelevant molecules such as bacterial quorum sensing markers, which require the design of novel techniques for trapping them close to the metal nanostructures or to avoid signal contamination by larger biomolecules. Hybrid colloidal nanomaterials will also be introduced as SERS-encoded tags for cell identification and bioimaging. Strategies toward the incorporation of multiple functionalities for improvement of sensitivity and imaging will also be introduced.

Keywords: Plasmonics, SERS, Biosensing, Bioimaging

FRIDAY 22 SEPTEMBER 2017	TIME: 09:00-10:30
ROOM:	Friends of Music Hall/M1
CHAIRPERSON:	Ioanna Zergioti

Prof. Dimitris Lagoudas

Department of Aerospace Engineering
Texas A&M University, USA

Recent Developments on Modeling and Characterization of Phase Transforming Shape Memory Alloys

Materials exhibiting generation or recovery of moderate to large inelastic deformations due to a reversible solid-to-solid phase transformation have gained interest in the materials community due to their existing and potential applications in the aerospace, automotive, petroleum, infrastructure and biomedical fields. In this talk, we focus on Shape Memory Alloys (SMAs), mostly NiTi and NiTiHf, which undergo a reversible austenitic to martensitic phase transformation, and we present our recent research efforts on the characterization and modeling of their behavior. These efforts aim to enhance the applicability of such complex materials in multiple engineering applications. The current work is divided into four main topics discussing the micromechanical modeling of SMAs, the application of Bayesian statistics for optimal experimental design, the modeling of fatigue and fracture of SMAs, and the multiscale modeling of SMA structural components. The current effort on micromechanical modeling of SMAs focuses on the prediction of the behavior of precipitation hardened SMAs. Precipitation hardened SMAs have gained significant attention in the materials community because their thermomechanical cyclic stability, phase transformation temperatures, and transformation strains can be adjusted through precipitation. Precipitates are nucleated during processing in which SMAs are subjected to solution annealing and subsequent aging. The predictions of the thermomechanical response of precipitation hardened SMAs are based on the modeling of representative volume elements, which take into account the presence of precipitates and the effects of diffusion of the constituent elements during precipitate formation. Bayesian approaches for optimal experimental design are coupled with the developed models to identify the optimal heat treatment and chemical composition to acquire materials with optimal performance for desired applications. The use of SMAs in novel applications also requires a thorough understanding of their fatigue life and fracture properties. Therefore, the phase transformation induced fatigue under load (or actuation fatigue) and fracture are investigated and their difference from the classical fatigue and fracture are discussed. Finally, we present multiscale modeling approaches that combine micromechanical modeling to acquire the material constitutive response with computationally efficient reduced order finite element models. These approaches enable the performance of computationally efficient simulations of the thermomechanical response of SMA structural components with particular focus on aerospace applications.

Area G / Side Events

MONDAY 18 SEPTEMBER 2017 **TIME:** 13:00 - 15:00

Symposium G3: Critical Materials in Design, Manufacturing and Recycling

ROOM	ARTIST CAFÉ/M1
CHAIR	Margarethe Hofmann

Prof. Dr. Armin Reller

Chair of Resource Strategy
University of Augsburg
Universitätstrasse1a, D-86159
Augsburg, Germany

IWKS, Fraunhofer Project Group
Materials Recycling and Resource
Strat., D-63755, Alzenau, Germany

Prof. Dr. Armin Reller is professor for resource strategy in Augsburg, at the Institute of Materials Resource Management, Germany. His research focuses on the synthesis and properties of functional materials relevant for energy and environment technologies, more specifically to ecological and socio-economic impacts of exploring and applying strategic resources.

Former professor for solid state chemistry at the Institute of Physics, he now serves as chairman of the Environmental Science Center (ESC), member of the board of the Application Center for Materials and Science (AMU), and as chairman of the Graduate School "Resource Strategy Concepts for Sustainable Energy Systems" at the Universität Augsburg. He received his Ph.D. at the ETH Zürich, was postdoc at Cambridge University, did research at the Indian Institute of Science, Bangalore and was professor at the Institute of Inorganic and Applied Chemistry at the Universität Hamburg. He coordinates the Programme Solar Chemistry/ Hydrogen/Regenerative Energy Carriers for the Swiss Office of Energy Berne, Switzerland. He publishes widely, including journals such as "GAIA. Ökologische Perspektiven in Natur-, Geistes- und Wirtschaftswissenschaften" (ökom-Verlag). Also, he is a member of the raw materials council of the Umweltbundesamt, UBA (Berlin, Germany).

Willem Bulthuis

Global High-Tech Executive,
Board Advisor, Business Angel, Investor

30 years of experience in Global High-Tech industries as Executive at Philips Electronics, NXP Semiconductors, Giesecke & Devrient, secunet Security Networks AG.

Founding Partner of TCF Partners (Amsterdam, Munich, London), investing in capital-intensive sustainability ventures. Active Business Angel and Board Member for start-ups. Board Advisor for Corporates on Digitisation and Corporate Venturing. Focus on Digitization of Industries, Sustainability, Energy, Recycling, Agriculture, Mobility, Logistics, Smart Factories.

Co-Founder of sustainabill and Investor & Board Member at Verso Globe, two sustainability management start-ups.

Held Executive positions as Member of the Board of Management of a stock listed company, as SVP Global Sales (1B$ turnover), Group CTO, Corporate Alliance Manager. Lived in USA (Seattle, Silicon Valley), Germany, The Netherlands. Worked in numerous industries, including Automotive, Consumer Electronics, Smart Home, Media, Smart Card, Mobile Payment, Cyber Security, Semiconductors, Components and ICT industries.

Building bridges between business partners, cultural teams, between large corporations and fast start-ups, between technology and sales and between Board and workforce.

13.15-13.40

From the Criticality of Functional Materials to Transparent Supply Chains

Armin Reller[1,2]
[1]Chair of Resource Strategy, University of Augsburg,Universitätstrasse1a, D-86159, Augsburg, Germany, [2]IWKS, Fraunhofer Project Group Materials Recycling and Resource Strat., D-63755, Alzenau, Germany

In advanced technical devices like mobile phones, laptops, cars, planes, etc. an ever increasing number of highly specific materials are assembled in order to fulfill appropriate functions. Many of these functional materials contain different metal species in various forms, most often in relatively tiny amounts or concentrations. Guaranteeing the supply of all these functional materials affords transparent supply chains and safe supplier frameworks. If it comes to the implementation of new technologies the said arguments become even more relevant. The criticality is a tool for analyzing and validating inherent criteria of the efficient usability of primary resources, i.e. of raw materials, but also of secondary resources. These qualitative and quantitative criteria or indicators comprise e.g. accessibility, scarcity, availability, technical specificity, socio-economic and ecologic issues, socio-cultural conditions, geo-political settings, etc. As a matter of fact the minimization of the dissipation of valuable materials and resources is discussed.

13.40-14.00

The potential of (big) data collection throughout the supply chain for sustainability management

Willem Bulthuis[1]
[1]WBX Consulting, Germany

Actively managing the acquisition, use and re-use of critical materials in products and processes requires factual information. Statistics and models form a good starting point, but even better would be factual information from each individual supply chain, which is specific (for each product and each supplier), actual (even for every batch) and is aggregated throughout the whole supply chain. While this currently still seems not feasible, the increasing digitalization of all production and logistics processes will enable such approaches in the future. Examples of such Sustainability Management approaches will be discussed.

MONDAY 18 SEPTEMBER 2017 | TIME: 13:00 - 15:00

Symposium G3: Critical Materials in Design, Manufacturing and Recycling

ROOM	ARTIST CAFÉ/M1
CHAIR	Margarethe Hofmann

Dr.-Ing. Margarethe Hofmann

FEMS Immediate Past President (2016 - 2017)
CEO, Mat Search Consulting
Lausanne, Switzerland

Margarethe Hofmann-Amtenbrink started her activity in 1968 as Assistant for Metallography and worked in industry for 6 years. She then studied foundry technology in Duisburg and materials science at Technical University Berlin and received her PhD in materials science at Max Planck Institute Stuttgart and Technical University Berlin, Germany.

Since 1987, when she started her own business (Mat Search Consulting Hofmann) in Switzerland, she is active in various consulting activities for industry, she was Managing Director and of various Swiss Societies, the Swiss Governmental Priority Program for Materials (PPM), the Foundation for Rare Metals, and Chairperson of the Biotechnology Programme at the AO Foundation, Davos Switzerland. Since 7 years M. Hofmann-Amtenbrink is member of the Executive Committee of the Federation of European Materials Societies, FEMS, and since 2012 Vice President, President and now Immediate Past President of FEMS for always two years. Beside other conferences she organised scientific sessions at FEMS EUROMAT conferences since 2013 and was the chair of the organisation committee of FEMS Junior Euromat 2016 at EPFL, Lausanne Switzerland. M. Hofmann was the representative of FEMS in European Projects like MatVal and MATCH (Materials Common House) and is partnering with MatSearch in HORIZON2020 Projects like e.g. FORAM and scientific coordinator of two large European projects (FP5 and FP7) in the field of nanoparticles for health applications. M. Hofmann is individual member of the Swiss Academy for Engineering Sciences, SATW, Switzerland was member of various Scientific Advisory Boards, e.g. EA European Academy of Technology and Innovation Assessment, Germany; Helmholtz-Zentrum Geesthacht, Germany; Competence Center for Applied Biotechnology and Molecular Medicine, Switzerland. She was awarded by the Rodolphe and Renée Haenny Award in 2005 in Switzerland.

Dr. Roland Gauß

Thematic Officer Substitution and Recycling
EIT RawMaterials GmbH
Europa Center
Berlin, Germany

Dr Roland Gauß is a Thematic Officer at EIT RawMaterials which is a pan-European Knowledge and Innovation Community (KIC) that involves more than 110 partners from industry, universities, and research organisations. He is responsible for the thematic areas of substitution of critical, toxic, and low performance materials as well as of recycling. In 2016, he joined the EIT RawMaterials KIC from Fraunhofer Project Group Materials Recycling and Resource Strategies IWKS in Hanau, Germany where he worked as Head of Department Functional Materials with the Business Units Magnetic Materials, Energy Materials, and Lighting. His personal research interest is related to metallurgy, the life cycles of materials, and how innovation processes are triggered and pursued by society. Roland Gauß was a research fellow at TU Bergakademie Freiberg (2004) and a Marie-Curie-Research-Fellow at University College London (2006). He received his PhD from the University of Tübingen in 2008 in the fields of economic geology of copper and extractive metallurgy in prehistoric societies.

14.00-14.10

Materials: the important part in the system whole value chain

Margarethe Hofmann-Amtenbrink
[1]*MatSearch Consulting Hofmann, Pully , Switzerland*

There is an increasing demand on defined functional and advanced materials for the changing requests in energy, mobility, communication, health etc. Such materials are composed of a variety of elements and components, they are more sophisticated in design and they need various steps in the manufacturing and finishing of the system.

Today some of the products contain more than 50 elements. Some of these elements are indispensable for the function and difficult to substitute. Many of the raw materials are mined only in some countries and are therefore subject to supply risk and a large price fluctuation.

Materials research and development is part of the whole value chain of materials in a system and it might be useful to reconsider it in a frame like the Circular Economy from the raw materials through design and process steps to recycling and reuse. The presentation will highlight the needs and constrains for a re-orientation of research policy in materials science.

14.10-14.35

Critical raw materials in energy technologies and future mobility

Roland GAUB[1]
[1]*EIT RawMaterials GmbH*

The transition towards renewable energy and e-mobility are vital components in establishing a Green Economy. This transition in mobility and energy use comes with a fundamental shift in raw materials use. Today, the accessibility and sustainable supply of critical raw materials directly impact the production and cost of advanced materials which form the basis for a number of latest green energy and mobility technologies. The presentation will discuss recent technological developments in the fields of energy storage and permanent magnet electric drives from a raw materials supply and demand perspective. Key elements of concern are cobalt and rare earth metals. The presentation highlights possible risk mitigation strategies and example projects of the EIT RawMaterials portfolio that follow these lines

TUESDAY 19 SEPTEMBER 2017 **TIME:** 13:00 - 15:00

Symposium G1: Competences and basic knowledge in the ICT ER

ROOM	ARTIST CAFÉ/M1
CHAIR	Paloma Fernández Sánchez

Dr. Elena Maria Tejado Garrido

Universidad Politecnica de Madrid
Madrid, Spain

Dr. Elena Tejado earned her Ph.D. in Materials Engineering at Universidad Politecnica de Madrid in 2017, where she is actually an Assistant Professor at the Department of Materials Science. Her thesis was based on the fracture mechanical properties of tungsten based materials at extreme conditions. During her Ph.D. studies, she performed a stay at the Department of Materials Science of the Oxford University (UK). At this moment, she is the author of 10 scientific peer-reviewed publications and her scientific work has been reported at more than 50 international congresses.

Her current research areas of interest include the characterization of materials at the nano and micro scale. The materials studied are mainly for energy applications, especially refractory alloys for fusion devices, composites, and coatings. Areas of current research include: fundamentals of fracture; High temperature mechanical properties (i.e. flexural, tensile and fracture properties) under special atmospheres (high/low temperature, high vacuum...) and up to temperature above 1500K; Micromechanics of metals and ceramics by means of instrumented indentation; Surface behavior of materials at high temperature by means of tribology studies; Microstructural analysis of materials (Scanning electron microscopy, EDX, EBSD, high temperature XRD...).

Dr. Teresa Palacios García

Technical University of Madrid
Madrid, Spain

Teresa Palacios García is an assistant professor at Technical University of Madrid. Her research is focused on determining the microstructural and mechanical properties of materials, mainly W-based alloys at high temperatures. As an assistant professor, she has implemented several education innovation methodologies as the flipped-classroom, the creation of a MOOC or the implementation of project-based learning methodology in a Materials Selection Course

13.15-13.35

The development of a Massive Open Online Course to analyse experimental data

Elena Tejado[1], Teresa Palacios[1], Jose Ygnacio Pastor[1]
[1]*Departamento de Ciencia de Materiales-CIME,*
Universidad Politécnica de Madrid, Madrid, Spain

Are your experimental results believable? Are they "accurate"?
Can you handle all the numerical data around you?

To answer those questions it is essential to have the right tools for a simple analytical insight of the results, while optimizing the measurement process. Engineering and science undergraduates perform routine error calculations in the physics laboratory towards this end; nevertheless this knowledge is restricted to official university students. Hence, opening the understanding of these techniques to the entire world will be of a great interest. Massive open online courses (MOOCs) have global reach, unlimited participation, and free access over the internet via a combination of social networking and video podcasts. Regarding those strengths, we have developed an Analysis of Experimental Data MOOC.

This talk addresses the development, from the very beginning of this MOOC as well as recommendations based on our experience and on the research we conducted to prepare for our MOOC design.

"To err is human; to describe the error properly is sublime."

-- *Cliff Swartz, Physics Today 37 (1999), 388.*

13.35-13.55

Implementing project-based learning for materials selection

T Palacios[1], E Tejado[1], JY Pastor[1]
[1]*Departamento de Ciencia de Materiales-CIME,*
Universidad Politécnica de Madrid, Madrid, Spain

A new pedagogical approach called the project-based learning was implemented. Here, we report our experience with students of a Materials Selection Course where they had to work in randomly-selected teams to conduct a project.
The goal of the project was to select a material to manufacture an already existing product by introducing an improvement (mechanical, physical, environmental…).
The adopted teaching approach was based on the project-based learning methodology, a student-centred pedagogy that involves a dynamic classroom methodology to gain knowledge and skills through active exploration of real challenges. It allows to enhance collaboration among members of the same team as well as the competition among different teams of students.
As a result, we have observed a higher level of involvement of the students than in previous years and therefore the development of very interesting projects.

TUESDAY 19 SEPTEMBER 2017 | TIME: 13:00 - 15:00

Symposium G1: Competences and basic knowledge in the ICT ER

ROOM	ARTIST CAFÉ/M1
CHAIR	Paloma Fernández Sánchez

Prof. Pedro Gamito

Head of the Computational Psychology Laboratory
Lusophone University
Lisbon, Portugal

Pedro Gamito earn his PhD from the University of Salford in the UK with a specializing in Information Technology in 2002, and the title of Aggregate in Rehabilitation by the University of Lisbon in 2012. Pedro is a Professor and the Director of the Psychology Computational Laboratory at the School of Psychology and Life Sciences of University Lusófona and senior researcher at COPELABS - Cognitive and People -centric Computing Laboratories, where he is also a vice-director. Since 2016, he is resident consultant at Instituto de Soldadura e Qualidade, in Portugal. He has been engage in a number of VR-based simulation projects under EU financing schemes.

13.55-14.15

Implementation of advanced technologies into Aeronautic integrated maintenance concept - Use of virtual reality in ground-floor training maintenance execution

MSc Nelson Matos[1], **PhD Pedro Gamito**[1], Joel Ferreira[2], Luis Oliveira[2], Margarida Pinto[1]
[1]ISQ, Portugal, [2]TAP Portugal - ME, Portugal

In the Maintenance aviation industry, Repair and Overhaul (MRO) procedures still rely on 2D support to assist practitioners in learning and training MRO tasks. These tasks are, no more than complex actions that require a 3D insight in order to be quickly and comprehensible absorbed. Virtual Reality (VR) apps are potentially a suitable option to turn these procedures closer to reality and, hence, better adequate in improving competences and skills.

Under the EU Clean Sky 2 Joint Undertaking programme, the AIRMES project is following this concept applied to maintenance execution by developing a VR app to help practitioners in the process of carrying out specific maintenance activities as removing and positioning components into aircraft structures. The system is a VR-based platform that uses a smartphone and a portable motion capture device coupled with a head mounted device. This mobile solution will allow practitioners to learn and to train onsite on how to proceed with the maintenance operations. An immersive and interactive environment displays the host aircraft structure section with the component and associated system parts, in which the 3D component can be removed by virtual hands that emulate, through the motion capture device, the hands of the user (Figure 1 - VR interactive system for aeronautical MRO operations).

The system in development will provide high level training and reliable information to the technician on the maintenance operations for a dedicated situation and facilitate the identification and execution of the procedure to be applied, improving the time for repair.

Prof. Paloma Fernández Sánchez

Departamento de Física de Materiales
Facultad de Ciencias Físicas
Universidad Complutense de Madrid
Madrid, Spain

I am a member of the Department of Materials Physics at the Faculty of Physics in University Complutense of Madrid since 1986, when I incorporated as Assistant and worked for my PhD. I obtained a permanent position in 1992 and the Professorship in 2007.

Presently, the research of my group (Grupo de Fízsica de Nanomateriales Electrónicos, FINE) is focused on the study of nanocrystalline semiconductors and their optical and electronic properties. I have also a research line focused on Materials Science Education, with special attention to Collaborative Work Strategies, Project and Game based Learning.

I am member of several scientific societies, at present Immediate- Past President of the Spanish Materials Society (SOCIEMAT), that I have chaired from January 2007 to January 2017 and Vice-president of the Federation of European Materials Societies (FEMS).

14.15-14.35

Web tools to foster creativity and autonomous learning: Collectables as learning tools

A.F. Aguilar[1], C.S. Amores[1], V. A. Cabezas[1], J.A. López-Orozco[2], **P. Fernández**[3]
[1]Facultad de Informática, Universidad Complutense, [2]Departamento de Arquitectura de Computadores y Automática, Facultad de Ciencias Físicas, Universidad Complutense, [3]Departamento de Física de Materiales, Facultad de Ciencias Físicas, Universidad Complutense

The use of games as learning tools is very extended in the lower education levels, especially in the Primary School. However, as we move to higher levels of education, games are scarcely used, and in the few occasions in which they are used are normally not linked to syllabus but seen as a padding activity, without any role in evaluation or core material. In this progression, when the University is reached, game has been completely abandoned as a learning tool, moreover it is considered as a waste of time. But the game dynamic has a series of characteristics which confer a great versatility to develop different competences, considered of the major importance in the present Society.

Two main aspects could be considered, which connect directly to two different game modalities, in both cases offering an enormous potential to be applied in the classroom. Competitive games help to learn how to tackle with unfavourable situations, to design more efficient strategies (winner strategies) and to develop the critical thinking. In the collaborative approach, group skills, resource managing, or negotiation strategies are reinforced.

TIC-TAC: COLECCIONA, reproduces a virtual collecting environment, in which through the solution of questions or small challenges, the students may collect all the elements of an "ad hoc" created set. The collectables are designed, in principle by the teacher, to fit the level and the contents of the imparted subject, and may be also used to elaborate additional support material for students. The collaborative side is introduced, allowing the students to Exchange elements. Finally, and that is very important to promote learning, there is not a single winner, but any student completing the collection is a winner.

WEDNESDAY 20 SEPTEMBER 2017 **TIME:** 12:00 - 13:30

Symposium G2: Key materials field for modern curricula

ROOM	3.20/M1
CHAIR	Hariton Polatoglou

Prof. Arash Mostofi

Director, CDT in Theory and Simulation of Materials
Imperial College London, UK

Arash Mostofi is an Associate Professor in the Departments of Materials and Physics at Imperial College London. He is Director of the Centre for Doctoral Training in Theory and Simulation of Materials at Imperial College London and of the Thomas Young Centre, the London Centre for Theory and Simulation of Materials.

Arash leads a research group that is dedicated to the application and development of theory and computational tools for studying problems in materials. He is an original author and developer of two major electronic structure simulation codes, ONETEP and Wannier90, used by research groups worldwide. His research interests span a broad range of phenomena and materials, including charge transport and screening in low-dimensional materials, structure-property relations in perovskite oxide thin films and interfaces, and polymer membranes for separation processes.

Arash graduated with a first class degree in Natural Sciences (2000) and a PhD in Condensed Matter Theory (2004), both from the University of Cambridge. Immediately before joining Imperial College London in 2007 he was a post-doctoral researcher at the Massachusetts Institute of Technology.

12.00-12.25

The Centre for Doctoral Training in Theory and Simulation of Materials

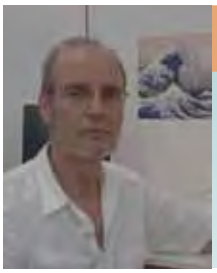
Dr Arash Mostofi[1]
[1]*Director, Centre for Doctoral Training in Theory and Simulation of Materials, Imperial College, London*

Materials underpin every modern technology, from electronic devices and telecommunications to nuclear reactors and high-performance jet engines, and Advanced Materials have been identified by the UK Government as one of the "eight great technologies"[1] that will propel future growth of the economy. Many important phenomena in materials span a range of length- and time-scales. These different scales, however, are traditionally confined within separate disciplinary silos, each with their own methods and language, which can have the effect of hindering multi-disciplinary collaboration.

The EPSRC[2] Centre for Doctoral Training (CDT) in Theory and Simulation of Materials (TSM)[3] at Imperial College London was established in 2009 with the mission to create a new generation of scientists and engineers with the theoretical and computational abilities to model properties and processes in materials across a range of length- and/or time- scales. To date, the Centre has recruited over 100 students in eight cohorts, supervised by over 70 supervisors at Imperial and 16 external organisations (including industry, research institutes and national laboratories).

In this talk I will discuss the added value brought by a Centre-based model for doctoral training, giving examples from my experience with the CDT in TSM, and I will highlight one or two examples of the transformative research that it has enabled.

[1] https://www.gov.uk/government/speeches/eight-great-technologies [2] Engineering and Physical Sciences Research Council; www.epsrc.ac.uk [3] www.tsmcdt.org



Prof. Hariton Polatoglou

Aristotle University Of Thessaloniki
Faculty of Sciences, School of Physics
Thessaloniki, Greece

Dr. Hariton Polatoglou is a Professor of the Solid State Physics Department of the School of Physics of the Aristotle University of Thessaloniki (AUTH) and is head of the EPG (Electronic Properties Group) and the Laboratory for Physics Didactics and Educational Technology (EDIFET). He obtained a BSc in Physics (1977) and MSc in Physical Electronics at the Aristotle University of Thessaloniki. At the same university he completed his PhD thesis on the electronic properties of binary compounds with an average valence of 5. As a post-doc he worked at the Institute for Solid State Research in Stuttgart, the Fritz Haber Institute in Berlin, the Physical Chemistry Department in Cambridge and the Materials Science Department in Oxford. Fields of interest include: Theoretical Solid State Physics, ab-initio, semi empirical methods, and finite element methods to study the structural, electronic, and optical properties of metallic and semiconductor alloys, and of nanostructures such as quantum wires, quantum dots, and surfaces, statistical physics methods to study the thermodynamic properties of the above structures, assistive technologies for the disabled tertiary students, standardization, quality systems, optimization, didactics of Physics, educational technology, computer modeling and simulation.

12.25-12.50

Material properties and simulations of thermal transfer processes for introducing sustainable development subjects into the curricula

Prof. Hariton Polatoglou[1], Mrs Stamatia Artemi, Mrs Anthoula Maidou[1]
Aristotle Univ. Of Thessaloniki, Thessaloniki, Greece

Education for Sustainable Development (ESD) is of universal importance and one of the main strands of UN's Framework 2030 for education. The introduction of subjects related to ESD in curricula is a difficult task as they are: a) interdisciplinary in nature, b) include scientific subjects that are not normally taught at schools or universities, c) are related to real-life situations, d) many times involve material properties and e) involve processes which have complicated mathematical description. The thermal behavior of structures like houses, schools etc. is crucial to the sustainable development and in addition building are places where people, students and educators experience every-day. Despite its the importance, the subject it is not included in the curricula for reasons stated above and like other ESD subjects. One important characteristic of the subject is, that it involves to a great extend materials, their properties and their thermal behavior. In this work, we propose that computer simulations can facilitate the introduction of ESD subjects to curricula of different levels of education and to lifelong education. As an example, we present a set of computer simulations with the aim study the thermal processes that occur in buildings and the role of materials properties in these processes. Grounded on that, one can explore how different materials can be utilized to design and build systems that contribute to the goal of sustainability. These simulations can be used as an integral part of a curriculum subject or as independent entities in many situations and scenarios which could be incorporated in existing subjects.

WEDNESDAY 20 SEPTEMBER 2017 **TIME:** 12:00 - 13:30

Symposium G2: Key materials field for modern curricula

ROOM	3.20/M1
CHAIR	Hariton Polatoglou

Prof. Jean-Pierre Bucher

Institut Universitaire de France
IPCMS, UMR 7504 CNRS
Université de Strasbourg, France

Jean-Pierre Bucher has been a full professor at Universy of Strasbourg since 1994.

He got a PhD from the Ecole Polytechnique Fédérale de Lausanne working on quantum size effects in metal clusters. Then he was an advanced research fellow from the Swiss Science Foundation at University of Virginia (1989): work on magnetic properties of atomic clusters by Stern-Gerlach deflection. KFA-Jülich, invited scientist : work in surface science with G. Comsa. EPFL (1992), research scientist with K. Kern, exploring new ways of nanostructuring surfaces. JPB has developed new spectroscopic approaches both, in SG and near- field microscopy experiments. He is co-author of 140 articles and book chapters. His research interest focuses on molecular nanoscience, in particular spin polarized transport through single objects in STM junctions with the main objective of furthering knowledge on nanosystems exhibiting multifunctional behavior. He was nominated a senior professor of the Institut Universitaire de France in 2010 and he is presently the director of the Doctoral School for Physics and Chemical Physics at the University of Strasbourg.

12.50-13.15

A Doctoral School in Advanced Material Science: from Recruitment of PhD Students to Professional Integration

Bucher Jean-Pierre[1]
[1]*University of Strasbourg, Assoc Institut de Physique et Chimie des Matériaux*

In this presentation, emphasis will be put on the training and follow-up of PhD students in material science. In particular, suggestions will be given on (i) how to make researchers and supervisors participate in the training process so that the whole community feels concerned with this issue. (ii) Favor international opening in the PhD curricula: PhD in cotutelle, participation in international programs. (iii) Organization and promotion of events dedicated to PhD students, such as thematic days,summer/winter schools and the Doctoriales©. (iv) The role of the follow-up committee; the mid-term PhD presentation and the thesis defense. (v) Integration in the real world: the skills-portfolio, the link with the world of industry, job opportunities, employment statistics and the alumni network. The case of the Doctoral School of Physics and Physical-Chemistry of Strasbourg will serve as an example in the general context of the IdEx and LabEx programs of the University of Strasbourg as well as Eucor – the European Campus.

THURSDAY 21 SEPTEMBER 2017 **TIME:** 13:00 - 15:00

Symposium G4: Transferable skills for Masters and PhD's in Material science

ROOM	ARTIST CAFÉ/M1
CHAIR	Heinrich Hofmann

Dr.- Ing. Flavio Soldera

EUSMAT General Manager
Dept. Materials Science & Engineering
Saarland University, Saarbruecken, Germany

Flavio Soldera (Dr.-Ing.) was born in Argentina, in 1973. He studied Mechanical Engineering at the Comahue National University in Argentina, obtaining his Engineering degree in 1997. In 2005 he obtained his PhD in Materials Science and Engineering from the Saarland University in Saarbrücken (Germany), being supported by a scholarship of the German Academic Exchange Service (DAAD).

His scientific interest includes: advanced materials for electrical application; 3D analysis of micro / nano structures; and electron microscopy and focused ion beam applications.

Since 1998 he is affiliated to the Saarland University, having co-authored 60 per-review publications. Since 2005 he is coordinating international study and research programs in the field of Materials Science and Engineering and since 2008 is the general manager of the European School of Materials (EUSMAT). Among others projects, he coordinates the Erasmus Mundus programes AMASE (Master) and DocMASE (Doctorate) as well as the RISE project CREATe-Network. Several projects of the European Commission, the DAAD as well as the German French University are part of the portfolio of EUSMAT. From 2012 he is also deputy director of the Steinbeis Transfer Institut CaMPlusQ, dealing with "on-the-job" Master studies and from 2017 is part-time researcher at the Steinbeis Materials Research Center Saar.

13.15-13.40

Multilingualism and intercultural skills support the internationalization in Materials Science and Engineering

Dr.-Ing. Flavio Soldera[1], M.A. Claudia Heß[1,2], Prof. Dr.-Ing. Frank Mücklich[1]
[1]European School of Materials, Department Materials Science and EngineeringSaarland University, Saarbrücken, Germany, [2]Romanische Kulturwissenschaft und Interkulturelle Kommunikation, Saarland University, Saarbrücken, Germany

The demand for social skills of students and graduates of technical studies, particularly in Europe, has been increasing continuously in the last years, mainly caused by the current social context: rapid changes and increased globalization, growing social complexity (multicultural and less uniform society), increased and varied migration flows, increased mobility (professional and geographical) of individuals, and finally the demographic structure represented by an aging population. Some demanded skills are multilingualism, intercultural communication capabilities, intercultural sensitivity, presentation abilities, team work and independency. These skills can be learned theoretically in lectures and in practical work, but mainly through the self-experience of students when they are confronted to real demanding situations, like for instance during an international exchange. At the programs of the European School of Materials (EUSMAT) we follow the different ways. On one side we have integrated language courses and training on intercultural communication in the study curricula, and on the other side the students have to spend a compulsory study period abroad. We will present the different programs of EUSMAT at Bachelor, Master and PhD level (see Fig. 1), as well as the different tools that we apply to support the mobility and the training on social competencies. One main distinctiveness of our programs is the multilingualism: all our students need to command at least two languages out of English, German, French and Spanish. We will present our language policy and discuss how we support the students to manage learning technical subjects in two languages and which are the positive effects for their later development. Moreover, we will demonstrate that our programs are attractive, even though the solely English command is not enough for the success. Finally, we will focus on the benefits and challenges of international study programs for students, for teachers, universities and the society.

THURSDAY 21 SEPTEMBER 2017 | TIME: 13:00 - 15:00

Symposium G4: Transferable skills for Masters and PhD's in Material science

ROOM	ARTIST CAFÉ/M1
CHAIR	Heinrich Hofmann

Prof. Emmanuel P. Giannelis

Walter R. Read Professor of Engineering
Materials Science and Engineering Department
Cornell University, USA

Emmanuel Giannelis is the Walter R. Read Professor of Engineering and the Associate Dean for Research and Graduate Education in the College of Engineering at Cornell University.His research interests include Nanomaterials for Energy, Biomedical, and Environmental Applications. His group is internationally recognized as one of the leading groups in nanohybrids and nanocomposites. He is a Fellow of the American Chemical Society and of the Polymer Materials Science and Engineering Division of the American Chemical Society. He has won the 2014 Cooperative Research Award from the American Chemical Society, and he is a member of the European Academy of Sciences.

13.40-14.05

A Program to Catalyze Innovation and Entrepreneurship at Research Universities

Emmanuel P. Giannelis[1]
[1]*Cornell University, Department of Materials Science and Engineering, Ithaca, NY 14853, United States*

A new initiative to increase the volume, velocity, and success rate of technology commercialization and start-up creation by affecting a culture shift from academic to entrepreneurial at Universities and Research Institutes will be presented. The initiative provides researchers with experiential learning opportunities and resources to de-risk technologies both technically and commercially with the ultimate objective of increasing start-up creation, industry engagement, and technology translation. The ultimate objective is to stimulate entrepreneurship and enhance future economic development and growth. The initiative is based on three main pillars: 1) an experiential learning program for PhD students and postdocs in Science and Engineering to work one-on-one with mentors and coaches to identify potential markets and build the business case for their technologies; 2) resources and expertise to de-risk technologies both technically and commercially; and 3) start-up creation through a new program that requires participants to launch their companies while supported by the program.

Modern economy is driven by technology and innovation and science and engineering are at the center of the technological innovation. Over the years science and engineering have been responsible for stimulating high-growth economic activity all over the world. Traditional companies are changing rapidly and new ones emerge as a result of new technologies. To become competitive in the knowledge/innovation economy we need to develop the workforce with the appropriate training, skills, culture, and mindset. Though technical advances are common in established companies, disruptive innovation is typically associated with start-ups. Regardless, as product life cycles shrink and the need for high productivity intensifies product development cycle times need to be shorten. Researchers, who combine in-depth science and technology training with entrepreneurial mindset, will provide the future industry innovators in both startups and established corporations.

Prof. Heinrich Hofmann

Powder Technology Lab
EPFL
Lausanne, Switzerland

Hofmann Heinrich, Prof. Dr.-Ing. Studied Material Science and Engineering at the Technical University of Berlin. 1983 he got his PhD in Material Science with a thesis prepared at the Powder Metallurgy Laboratory at the Max Planck Institute in Stuttgart. In 1985 he joined the R&D center of Alusuisse-Lonza Services AG, at Neuhausen-am-Rheinfall. He developmed new alumina, titania stabilized zirconia and silicon nitride powders for ceramic applications. 1993 he joined the Swiss Federal Institute of Technology (EPFL) as Professor and Director of the Powder Technology Laboratory at the Department of Materials Science and Engineering. His research area includes the synthesis of nanostructured materials based on nanoparticles and the modification of surfaces with nanoparticles using colloidal methods. He is a cofounder of ANTIA Therapeutics a company developing nanocomposites for cancer treatments. His publication list comprises over 170 publications in reviewed journals, 33 publications in proceedings, co-author of 8 books and he is co-inventor of 15 patents or patent applications.

14.05-14.30

Successful development of nanomaterials for medical applications: Necessary skills and knowledge

Heinrich Hofmann[1]
[1]*Ecole Polytecnique Fédérale de Lausanne, Institute of Materials, Powder Technology Laboratory, Lausanne, Switzerland*

Nanotechnology and especially nanomaterials have still an interesting potential for the development of new materials and applications. Beside electronic devices and coatings, medical applications of nanomaterials is one of the most investigated field. Interestingly is the fact, that independently of the huge amount of money invested into this area of research, only a very few number of products are reaching the clinics. In the field of inorganic nanomaterials, like nano-sized iron oxide for cancer treatment, as contrast agent for MRI, not one product is today fully accepted on the market. Working since more than 20 years with nanoparticles the author will give an overview of the needs that are, beside a very good understanding of material science, necessary to start and to bring the research and of such biomaterials ahead. It will be shown, that we have to understand first the needs of the patients and we have to transfer this needs into the right scientific questions to solve the diagnostic or therapeutic challenges. In parallel regulations in the field of pharmaceutical products, the standards for characterization and the situation regarding the IPR have to be evaluated. It is important to show that for synthesis and characterization of nanomaterials most of the standards and standard operational procedures (SOP) are missing, also the important challenge regarding good manufacturing practice (GMP), an essential guideline to start scale-up for the production of materials for preclinical and clinical trials, are often not taken in account. Therefore, material scientists and engineers have to develop in parallel to new products also the standards and has to develop the scientific base for the decisions of regulatory bodies. This very complex and multidisciplinary environment for the development of new (nano) materials for medical application is challenging and demands several important transferable skills to be successful.

iPROMEDAI
Young Scientist Forum

SUNDAY 17 SEPTEMBER 2017	TIME: 09:30-18:30
ROOM:	CR II Hall/M2
CHAIRS:	**Martijn Riool** – *Dept. of Medical Microbiology, Academic Medical Center at the University of Amsterdam, Amsterdam, The Netherlands* - **m.riool@amc.uva.nl** **Aldona Mzyk** – *Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Krakow, Poland* **aldonamzyk@googlemail.com**

MONDAY 18 SEPTEMBER 2017	TIME: 11:00-19:30
ROOM:	Artist Café/M1
CHAIRS:	**Martijn Riool** – *Dept. of Medical Microbiology, Academic Medical Center at the University of Amsterdam, Amsterdam, The Netherlands* - **m.riool@amc.uva.nl** **Aldona Mzyk** – *Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Krakow, Poland* **aldonamzyk@googlemail.com**

Supported by the TD1305 COST Action iPROMEDAI

The prime objective of the TD1305 COST Action iPROMEDAI is the identification and assessment of recently developed anti-DAI (Device-Associated Infection) approaches in a comprehensive pan-European effort. Understanding and combating DAI is a device-dependent, highly complex and trans-disciplinary challenge requiring collaborations between clinics to define the practical boundary conditions and unmet needs, material and surface engineering to elaborate on enhanced material/drug combination systems, pharmacology and (micro) biology to explore novel antimicrobial active compounds and establish advanced, DAI-relevant test systems in vitro as well as in dedicated animal models.

Goals of the iPROMEDAI Young Scientist Forum

The iPROMEDAI Young Scientist Forum will provide interactive discussion sessions on topics that concern every Early Stage Researcher in the field of Advanced Antimicrobial Biomaterials. It will provide an interactive networking platform to share knowledge on and exchange experience about career opportunities, grant possibilities, scientific communication as well as work for/collaborate with industry.

It will be an unique opportunity for the participants to:

- present their research interests
- learn about grant opportunities
- find other ESR partners for collaborative projects
- learn how to set up collaboration with industry
- be guided how to build your scientific career and network
- improve your scientific communication
- meet and establish cross-border contacts

SUNDAY 17th SEPTEMBER		
09:30 – 10:00	Registration	
10:00 – 12:15	**Session 1 – Ice Breaker**	Chair: Martijn Riool
10:00 – 10:15	Welcome & general introduction	Aldona Mzyk (PL)/Martijn Riool (NL)
10:15 – 12:20	Introduction talks	All participants
12:20 – 15:50	**Session 2 – Science & Communication**	Chair: Martijn Riool
12:20 – 13:00	From an editorial board point of view	Jolke Perelaer (DE)
13:00 – 14:30	Lunch break	
14:30 – 15:10	Scientific communication	Monika Aksamit-Koperska (PL)
15:10 – 15:50	Q&A	Speaker panel
15:50 – 16:10	Coffee & tea break	
16:10 – 18:30	**Session 3 – Funding Experience**	Chair: Aldona Mzyk
16:10 – 16:40	Experience from a grant awardee: ESR	Daniela Boehm (IE)
16:40 – 17:10	Experience from a grant awardee: Senior Scientist	Yannis Missirlis (GR)
17:10 – 17:50	From a referee point of view	Kostantin Sipos (FR) – live stream
17:50 – 18:30	Q&A	Speaker panel
20:00	**Welcome reception EUROMAT 2017**	

MONDAY 18th SEPTEMBER		
09:00 – 10:30	Opening EUROMAT 2017	*Plenary session*
10:30 – 11:00	Coffee & tea break	
11:00 – 13:00	**Session 4 – Funding Possibilities for ESRs**	**Chair: Aldona Mzyk**
11:00 – 11:30	Overview (inter)national funding possibilities	Aldona Mzyk/Martijn Riool
11:30 – 12:10	ERC & Marie Skłodowska-Curie Fellowships	*To be announced*
12:10 – 12:45	Q&A	Speaker panel
12:45 – 13:00	Group photo	All participants
13:00 – 15:00	Lunch break	
15:00 – 17:00	**Session 4 – From Academia to Industry**	**Chair: Aldona Mzyk**
15:00 – 15:40	Young entrepreneur *view from a start-up company*	Mateusz Dylag (PL)
15:40 – 16:20	Career paths in science *view from a large company*	Ricky Woofter (US)
16:20 – 17:00	Q&A	Speaker panel
17:00 – 17:30	Coffee & tea break	
17:30 – 19:30	**Session 5 – Mentorship**	**Chair: Martijn Riool**
17:30 – 18:30	Keynote: Building your scientific career and network	Erik Reimhult (AT)
18:30 – 19:00	Q&A	
19:00 – 19:30	Closure of the meeting	Aldona Mzyk & Martijn Riool
21:00	YSF dinner	

SUNDAY 17 SEPTEMBER 2017	
ROOM:	CR1/M1, CR3/M2

Tutorial No	Time	Title	Organizer
1	13:30 -17:00	FEMS 30th Anniversary Education Tutorial with Granta Design	Dr. Claes Fredriksson, GRANTA Design,UK
3	09:00 -12:30	3D microstructure analysis and tomography in the micro, nano and atomic scale	Prof. Dr.-Ing Frank Mucklich, Saarland University, DE
5	09:00 -12:30	Aluminium Metallurgy, Processing and Application in automotive design	Dr.-Ing. Jurgen Hirsch
7	16:30 -19:00	Opportunities for Start-ups in Materials Science and Industry	Willem Bulthuis, Global Executive and Investor

Matchmaking Event

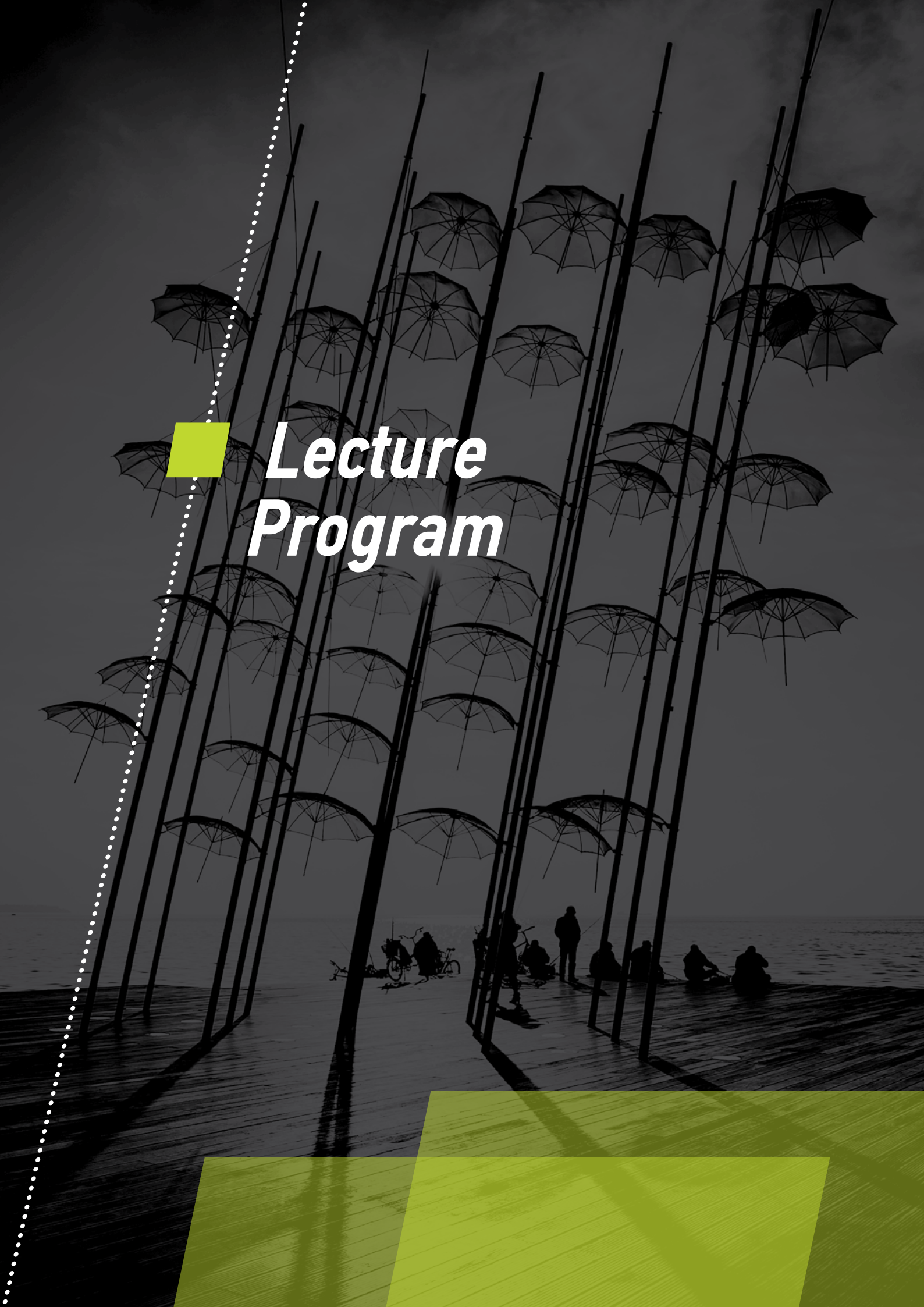
WEDNESDAY 20 SEPTEMBER 2017	TIME: 09:00-19:30
ROOM:	Foyer, E1/M1

A novelty is introduced during EUROMAT 2017 to boost networking opportunities. Participants are invited to join EUROMAT 2017 Matchmaking Event and further explore new cooperation possibilities.

The Matchmaking Event is organised by PRAXI Network and MIRTEC S.A. (both members of the Enterprise Europe Network - Hellas) in the framework of the European Congress and Exhibition EUROMAT 2017, in order to provide an opportunity for research, technology and business partnerships in the fields of Advanced Materials and Processes.

The event will take place on September 20th, 2017 in Conference Cultural Centre "Thessaloniki Concert Hall", Thessaloniki, Greece.

The aim of the Matchmaking Event is to provide a platform for bilateral meetings between technology developers and technology users in order to foster research, technology and business cooperation in the fields of advanced materials and processes.

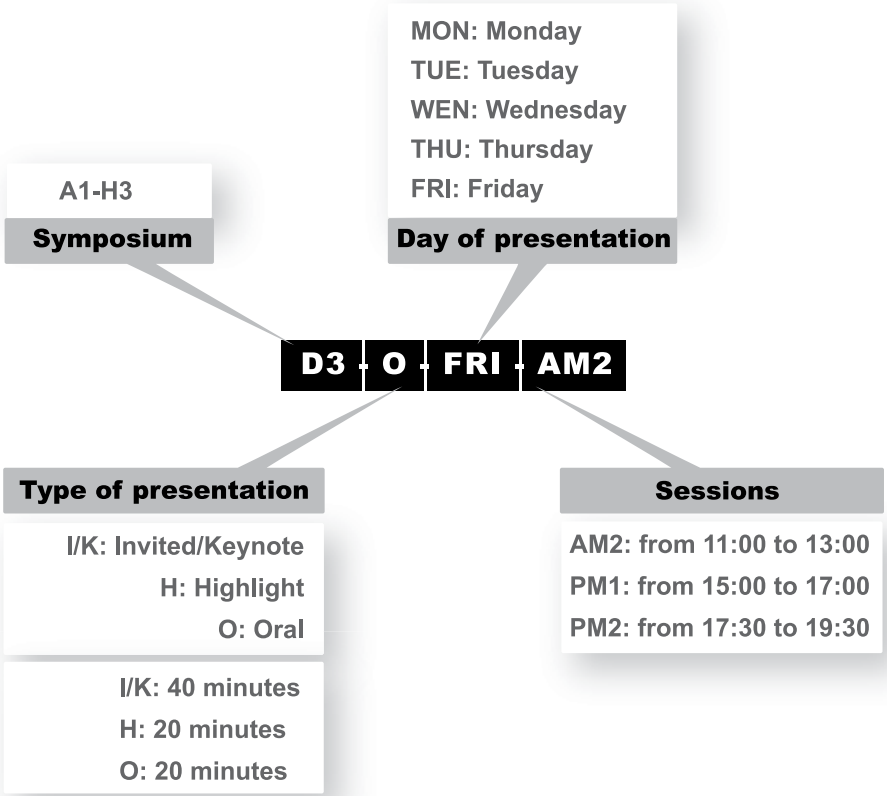


Lecture Program

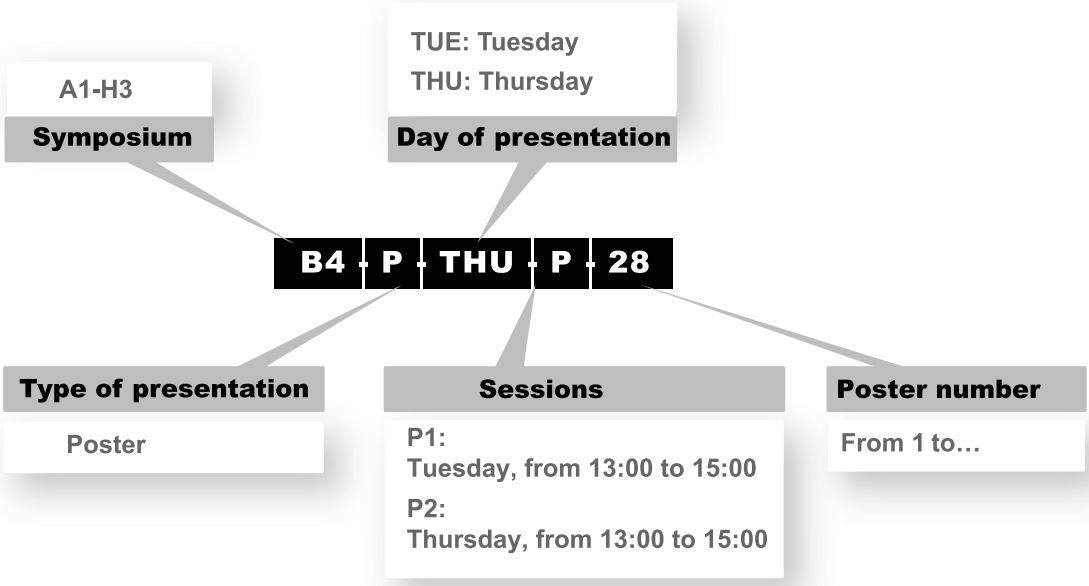
Coding Rules

This program is based on the data on September 4th, 2017

Oral Presentations



Posters



Oral Sessions

Symposium	A3	A5	A8	B2
Room	I-11/M1	MOYSA Hall/M2	I-08/M1	Aimilios Riadis Hall/M2
Session Title	Nanostructured polymers I	Nanoparticle Synthesis and applications I	Functional oxides 1	Opening Session
Chairperson	Jean-François GERARD	Antonios Kanaras	Julien Varignon	Michele Manuel
11.00	**INFLUENCE OF CARBON NANOPARTICLE MORPHOLOGY ON THE MECHANICAL AND ELECTRICAL PROPERTIES OF POLYMER NANOCOMPOSITES REGARDING THE SIZE EFFECT** **Christian Leopold**[1], Till Augustin[1], Thomas Schwebler[1], Jonas Lehmann[1], Dr.-Ing. Wilfried V. Liebig[2], Prof. Dr.-Ing habil. Bodo Fiedler *[1]Hamburg University of Technology - Institute of Polymer Composites, Hamburg, Germany, [2]Karlsruhe Institute of Technology - Institute of Vehicle System Technology, Karlsruhe, Germany*	**FACILE SYNTHESIS OF LEAD-FREE BISMUTH-BASED C3BI2I9 PEROVSKITE NANOCRYSTALS** **Postdoc Researcher Nimai Mishra**[1], PhD student Giuseppe M. Paternò[2], Porf Annamaria Petrozza[2], Researcher Mirko Prato[1], Porf Liberato Manna[1] *[1]Istituto Italiano Di Tecnologia, Genova, Italy, [2]Center for Nano Science and Technology @Polimi, Istituto Italiano di Tecnologia, Milano, Italy*	*KEYNOTE/INVITED* **EXOTIC ORDERS AND EMERGENT PHENOMENA IN FUNCTIONAL OXIDES** **Dr. Jorge Iniguez**[1]	*KEYNOTE/INVITED* **ALUMINIUM, CURRENT AND FUTURE DEVELOPMENT** **Jürgen Hirsch**
11.20	**MANIPULATION OF CONDUCTIVITY/PERMITTIVITY IN GRAPHENE OXIDE BASED INSULATION MATERIALS FOR STRESS CONTROL IN ELECTRICAL APPLICATIONS** **Dr Emmanuel Logakis**[1], Dr Roman Kochetov[1], Dr Alex Skordos[2] *[1]ABB Corporate Research, Baden-Dättwil, Switzerland, [2]Cranfield University, Cranfield, UK*	**THE ROLE OF THE CRYSTAL STRUCTURE IN CATION EXCHANGE REACTIONS INVOLVING COLLOIDAL Cu2SE NANOCRYSTALS** Graziella Gariano, Vladimir Lesnyak, Rosaria Brescia, Giovanni Bertoni, Zhiya Dang, Roberto Gaspari, **Luca De Trizio**, Liberato Manna	*[1]Luxembourg Institute Of Science And Technology, Belvaux, Luxembourg*	*Hydro Aluminium Rolled Products GmbH, R&D, Bonn, Germany*
11.40	**BORON NITRIDE NANOTUBES BASED POLYMER NANOCOMPOSITES FOR STRUCTURAL MATERIALS AND COATINGS** **Yadienka Martinez Rubi**[1], Mike Jakubinek[1], Behnam Ashrafi[2], Jingwen Guan[1], Christa Homenick[1], Keun Su Kim[1], Meysam Rahmat[3], Chris Kingston[1], Benoit Simard[1] *[1]Security and Disruptive Technologies Portfolio, National Research Council Canada, Ottawa, Canada, [2]Aerospace Portfolio, National Research Council Canada, Montreal, Canada, [3]Aerospace Portfolio, National Research Council Canada, Ottawa, Canada*	**FUNCTIONAL NANOPARTICLES, COLLOIDS AND THIN FILMS FOR BIOIMAGING AND ENERGY APPLICATIONS: ZnO, SiO2 AND TRANSITION METAL CLUSTER** **Director of Research Fabien Grasset**[1], Dr. Wanghui Chen[1,2], Ms Ngan.T.K. Nguyen[1,2], Dr. Adèle Renaud[3], Dr. Benjamin Dierre[1,4], Dr. Noriko Saito2, Dr. Maria Amela-Cortes[3], Ms. Noée Dumait[3], Dr. Yann Molard[3], Dr. Stéphane Cordier[3], Dr. Naoki Ohashi[1,2,4], Dr. Tetsuo Uchikoshi[1,2,4] *[1]Cnrs, Tsukuba, Japan, [2]Research Center for Functional Materials, NIMS, Tsukuba, Japan, [3]ISCR UMR 6226 CNRS-University of Rennes [1], Rennes, France, [4]NIMS-Saint-Gobain COE for Advanced Materials, Tsukuba, Japan*	**UNDERSTANDING EMERGENCE AND ORDER IN LAO/STO HETERO-INTERFACE** **Dr. Arghya Taraphder**[1] *[1]Indian Institute Of Technology, Kharagpur , Kharagpur, India*	*HIGHLIGHT* **CHALLENGES AND POTENTIALS FOR NEXT GENERATION AUTOMOTIVE LIGHTWEIGHT CONCEPTS** **Prof. Dr. Horst E. Friedrich**[1], Dr. Elmar Beeh, Gundolf Kopp *[1]Deutsches Zentrum Für Luft- Und Raumfahrt (dlr) E.v., Stuttgart, Germany*
12.00	**NANOMECHANICAL CHARACTERIZATIONS BY AFM TO UNDERSTAND THE STRUCTURE AND BEHAVIOR OF POLYMER BLENDS COMPATIBILIZED WITH IONIC LIQUIDS** **Benjamin Megevand**[1], Dr. Sébastien Pruvost[1], Pr. Jannick Duchet-Rumeau[1] *[1]Université de Lyon, INSA Lyon, UMR CNRS 5223, Ingénierie des Matériaux Polymères, 69621 Villeurbanne, France*	**INVESTIGATION OF THE ELECTRONIC PROPERTIES OF NANOPARTICLE BASED POROUS STRUCTURES** **Jan F. Miethe**[1], Franziska Lübkemann[1], Dr. Jan Poppe[1], Dr. Nadja C. Bigall[1] *[1]Leibniz Universität Hannover, Hanover, Germany*	**TUNNELING ANISOTROPIC MAGNETORESISTANCE IN COMPLEX OXIDE TUNNEL JUNCTIONS** Prof Benjamín Martnez[1], **Ms Laura Lopez-Mir**[1], Dr Regina Galceran[2], Dr Lluís Balcells[1], Dr Alberto Pomar[1], Dr Zorica Kostantinovic[3], Dr Felip Sandiumenge[1], Dr Carlos Frontera[1] *[1]Icmab-csic, Bellaterra, Spain, [2]Unité Mixte de Physique, CNRS, Thales, Palaiseau, France, [3]Center for Solid State Physics and New Materials Institute of Physics Belgrade, University of Belgrade, Belgrade, Serbia*	*HIGHLIGHT* **A COST EFFECTIVE 55KG PER VEHICLE LIGHTWEIGHTING SOLUTION, MAGNA'S ULTRALIGHT FUNCTIONALLY INTEGRATED ALUMINUM DOOR** **Tim Skszek** *Magna R&D*
12.20	**EXPERIMENTAL CHARACTERIZATION OF MAGNETO-RHEOLOGICAL ELASTOMERS FOR MODELING PURPOSES** **Dr Laurence Bodelot**[1], Jean-Pierre Voropaieff[1] *[1]Ecole Polytechnique, Palaiseau, France*		**MAGNETOELASTIC COUPLING IN EuTiO3 AND IN ITS MIXED CRYSTALS WITH SrTiO3 - POSSIBLE CANDIDATES FOR NOVEL FUNCTIONALITIES** **Prof. Jürgen Köhler**[1], Prof. Annette Bussmann-Holder[1] *[2]Max-Planck-Institute, 70569 Stuttgart, Germany*	*HIGHLIGHT* **EMERGING APPLICATIONS – THE WIDER APPLICATION OF MAGNESIUM ALLOYS IN CIVIL AIRLINERS AND ROTORCRAFT** **Dr Sarka Jeremic**, Martyn Alderman[1], *[1]Magnesium Elektron, Manchester, United Kingdom*
12.40				*HIGHLIGHT* **BULK METALLIC GLASSES FOR LIGHTWEIGHT APPLICATIONS** **Dr. Atakan Peker**[1] *[1]Washington State University, Spokane, USA*

Symposium	B3	B5	B10	B11
Room	CR I Hall/M2	Conference Room 1/M1	Maurice Saltiel Hall II/M2	Maurice Saltiel Hall III/M2
Session Title	Single Crystals Ni-base Superalloys I	Carbides and CNT's	Fatigue & Fracture I - Local Strain Approach and Applications	Fatigue of Metallic Materials
Chairperson	Srdjan Milenkovic	Natalia Sobczak	Georgios Savaidis	Tilmann Beck
11.00	*KEYNOTE/INVITED* **CHALLENGES FOR THE DESIGN OF Ni-BASED SX SUPERALLOYS COMPONENTS** **Dr. Eng. Jonathan Cormier** *Institut Pprime & ISAE-ENSMA, Futuroscope - Chasseneuil, France*	**COLLOIDAL PROCESSING AND LIQUID-PHASE ASSISTED FAST SINTERING OF SiC-CNTS NANO-COMPOSITES WITH ENHANCED SLIDING-WEAR RESISTANCE** Dr. Victor M Candelario[1], Dr. Angel L Ortiz[1], **Dr. Rodrigo Moreno[2]** *[1]Departamento de Ingeniería Mecánica, Energética y de los Materiales, Universidad de Extremadura, Badajoz, Spain, [2]Instituto de Cerámica y Vidrio, CSIC, Madrid, Spain*	*KEYNOTE/INVITED* **THE LOCAL STRAIN APPROACH FORMULATED AS A GUIDELINE FOR PERFORMING ASSESSMENTS OF THE FATIGUE STRENGTH OF COMPONENTS** **Melanie Fiedler**[1], Michael Vormwald[1], Michael Wächter[2], Alfons Esderts[2] *[1]Materials Mechanics Group, Civil and Environmental Engineering, Darmstadt, Germany, [2]Institute of Plant Engineering and Fatigue Analysis, Clausthal, Germany*	*KEYNOTE/INVITED* **STUDY OF FATIGUE SLIP MARKINGS AT THE SURFACE OF A MARTENSITIC STEEL** Gulzar Seidametova[1], Pr Jean-Bernard Vogt[1], **Dr Ingrid Proriol Serre[1]** *[1]Unité Matériaux Et Transformations - UMR Université Lille 1/CNRS/INRA/ENSCL, Lille University - 59655 Villeneuve d'Ascq, France*
11.20		**INFLUENCE OF HIP POST-TREATMENT ON MICROSTRUCTURE AND DENSITY OF SILICON CARBIDE SINTERED BY SPS** **Florimond Delobel[1,2]**, Dr Sébastien Lemonnier[1], Dr Elodie Barraud[1], Dr Julien Cambedouzou[2,3] *[1]ISL, 68301 Saint-Louis Cedex, France, [2]ENSCM, 34000 Montpellier, France, [3]ICSM, UMR 5257 CEA/CNRS/ENSCM/Université de Montpellier, 30207 Bagnols-sur-Cèze Cedex, France*		
11.40	**3D DISCRETE DISLOCATION DYNAMICS STUDY OF CREEP BEHAVIOR IN NI-BASE SINGLE CRYSTAL SUPERALLOYS BY A COMBINED DISLOCATION CLIMB AND VACANCY DIFFUSION MODEL** **Dr. Siwen Gao[1]**, Prof. Dr. Marc Fivel[2], Dr. Anxin Ma[1], Prof. Dr. Alexander Hartmaier[1] *[1]Interdisciplinary Centre For Advanced Materials Simulation (ICAMS)), Bochum, Germany, [2]University Grenoble Alpes/CNRS, SIMaP-GPM2, Grenoble, France*	**ELASTIC PROPERTIES OF Ti2AlC AND Ti3SiC2 MAX PHASE FOAMS WITH CONTROLLED POROSITY AND PORE SIZE PRODUCED BY POWDER METALLURGY** Ms Beatriz Velasco[1], Dr. Elena Gordo[1], Dr. Liangfa Hu[2], Dr. Miladin Radovic[2], **Dr. Sophia A. Tsipas[1]** *[1]Departamento de Ciencia e Ingeniera de Materiales e Ingeniería Química, IAAB, Universidad Carlos III de Madrid, Leganes 28911, Spain, [2]Materials Science and Engineering, Texas A&M University, College Station TX77843, United States of America*	**ANALYSIS OF RELEVANCE OF MONOTONIC PROPERTIES FOR ESTIMATION OF STRAIN-LIFE FATIGUE PARAMETERS** **Tea Marohnić[1]**, D. Sc. Robert Basan[1] *[1]Faculty Of Engineering, University Of Rijeka, Rijeka, Croatia*	**A STUDY OF LOW CYCLE FAGIUE LIFE AND ITS CORRELATION WITH MICROSTRUCTURAL PARAMETERS IN IN713C NICKEL BASED SUPERALLOYS** **Mr Jordi Salvat Canto**[1], Mr Sean Winwood[2], Ms Katie Rhodes[2], Soran Birosca[1] *[1]Materials Research Centre, College of Engineering, Swansea University, Swansea, United Kingdom, [2]Cummins Turbo Technologies, Huddersfield, United Kingdom*
12.00	**EARLY DISLOCATION PROCESSES DURING LOW TEMPERATURE (< 800°C) AND HIGH STRESS (> 600 MPA) CREEP OF NI-BASE SINGLE CRYSTAL SUPERALLOYS** Prof. Antonin Dlouhy[2], **Prof. Gunther Eggeler[1]**, Dr. Xiaoxiang Wu[1], Dr. Philip Wollgramm[1], Dr. Christof Somsen[1], Dr. Aleksander Kostka[1], MSc. David Bürger[1] *[1]Ruhr-Universität Bochum, Bochum, Germany, [2]Institute of Physics of Materials, ASCR, Brno, Czech Republic*	**SYNTHESIS OF MESOPOROUS SiC BY HARD-TEMPLATE** **Professor Javier Narciso**[1], Doctor Mario Caccia[1], Master Adrian Ortega[1], Doctor Jaime Garcia-Aguilar[1] *[1]Alicante University, Alicante, Spain*	**RESEARCH ON THE FATIGUE STRENGTH OF EN AW 1370 WIRES USED FOR OVERHEAD POWER LINES** **M.Sc. Bartosz Jurkiewicz[1]**, Prof. Tadeuusz Knych[1], Prof. Beata Smyrak[1], M.Sc. Matgorzata Zasadzińska[1], M.Sc. Marek Gnietczyk[1] *[1]AGH Universtiy Of Science And Technology, Kraków, Polska*	**FATIGUE GOVERNED BY MICROSTRUCTURE IN NANOSTRUCTURED BAINITE** **Dr. Lucia Morales-rivas**[1], Inga Mueller[1], Rosalia Rementeria[2], Dr. Matthias Kuntz[3], Dr. Thomas Sourmail[4], Dr. Francisca G. Caballero[2], Dr. Carlos Garcia-Mateo[2], Dr. Eberhard Kerscher[1] *[1]TU-Kaiserslautern, Germany, [2]CENIM-CSIC, Spain, [3]Robert Bosch GmbH, Germany, [4]Asco Industries CREAS, France*
12.20	**CREEP DISLOCATION STRUCTURE UNDER SLOW STRAIN RATE TENSILE TESTING IN SINGLE CRYSTAL NICKEL BASE SUPERALLOY AT 750°C** Dr Olivier Messe[1], Mr Ming Wangkoh[1], Dr Neil Jones[2], **Prof Cathie Rae[1]** *[1]University Of Cambridge, Cambridge, United Kingdom, [2]Rolls Royce plc., Derby, United Kingdom*	**GRAPHITIZATION OF SiC PARTICLES BY LASERS AND THEIR APPLICATION AS ANTI-BALLISTIC MATERIALS** **Mrs Aspasia Antonelou**[1], Dr Vassileios Drakopoulos[1], Dr Spyros N. Yannopoulos[1] *[1]Foundation for Research and Technology – Hellas, Institute of Chemical Engineering Sciences, (FORTH/ICE–HT), P.O. Box 1414, GR-26504, Rio-Patras, Greece, Patras, Greece*	**FATIGUE OF CASE HARDENED DIESEL INJECTION PARTS UNDER ELEVATED TEMPERATURES** Dr.-Ing. Andreas Diemar[1], Dipl.-Ing. Andreas Kleemann[1], Dr.-Ing. Susanne Kleemann[1], **Prof. Dr.-Ing. Joachim W. Bergmann[1]** *[1]MFPA Weimar, Weimar, Germany*	**MECHANISM- AND MICROSTRUCTURE-BASED CHARACTERISATION OF THE CYCLIC DEFORMATION AND FRACTURE BEHAVIOR OF THE ALUMINUM CAST ALLOY EN AC-ALSI7MG0.3** **Jochen Tenkamp[1]**, Stephan Knorre[2], Prof. Dr. Ulrich Krupp[2], Prof. Dr. Wilhelm Michels[2], Prof. Dr. Frank Walther[1] *[1]TU Dortmund University, Department of Materials Test Engineering (WPT), Dortmund, Germany, [2]University of Applied Sciences Osnabrueck, Institute of Materials Design and Structural Integrity, Osnabrueck, Germany*
12.40	**EVOLUTION BEHAVIOR OF SECONDARY REACTION ZONE DURING CYCLIC THERMAL FATIGUE IN A SINGLE CRYSTAL SUPERALLOY, CMSX-4** **Mr. Joong Eun Jung1,** Mr. In Soo Kim[1], Mr. Baig Gyu Choi[1], Mr. Jeonghyeon Do[1], Mr. In-yong Jung[1], Mr. Chang Yong Jo[1] *[1]Korea Institute Of Materials Science (KIMS), Changwon-si, South Korea*	**MICROSTRUCTURAL ANALYSIS OF TITANIUM MATRIX COMPOSITES WITH 40 AND 50 VOL.% TITANIUM CARBIDE CONTENT PRODUCED BY A COMBINATION OF SELF PROPAGATING HIGH TEMPERATURE SYNTHESIS AND SPARK PLASMA SINTERING** **Dr Andrew Norman**[1], Dr. Martina Meisnar[1], Dr. Miguel Lagos[2], Dr. Iñigo Agote[2], Dr. Laurent Pambaguian[1] *[1]European Space Agency, Noordwijk, The Netherlands, [2]Tecnalia, Paseo Mikeletegi, 2 - Parque Tecnológico E-20009 San Sebastián ,Spain*	**NUMERICAL DETERMINATION OF THE ENDURANCE LIMIT OF AUTOFRETTAGED COMPONENTS WITH RESPECT TO CYCLIC PLASTICITY AND TEMPERATURE EFFECTS** Darko Panic[1], **Prof.Dr-Ing. Michael Vormwald[1]** *[1]Technische Universität Darmstadt, Materials Mechanics Group, Darmstadt, Germany*	**THERMOMECHANICAL FATIGUE BEHAVIOUR OF AGED HEAT RESISTANT AUSTENITIC ALLOYS** **MSc Hugo Wärner[1]**, Phd Mattias Calmunger[1], Adjunct professor Guocai Chai[1,2], Professor Sten Johansson[1], Professor Johan Moverare[1] *[1]Department of Management and Engineering, Linköping University, Linköping, Sweden, [2]AB Sandvik Materials Technology R&D Center, Sandviken, Sweden*

Symposium	C1	C2	C6	D2
Room	Friends of Music Hall/M1	Conference Room 4/M1	I-15/M1	Museum Hall /M2
Session Title	Coatings and thin films 1/6 - Friction	Laser Induced Forward Transfer	Welding 1	Metals & Ceramics I: Interfacial structures and Phenomena
Chairperson	**Albano Cavaleiro, Ru Peng**	**Robert Eason**	**Christof Sommitsch**	**Frank Mücklich**
11.00 11.20	*KEYNOTE/INVITED* **CAN WE DESIGN FRICTIONLESS MATERIAL?** **Mr Tomas Polcar**[1] *[1]University of Southampton, Southampton, UK*	*KEYNOTE/INVITED* **USING LIFT FOR PRINTING HYBRID ELECTRONICS** **Dr. Alberto Pique**[1] *[1]U.S. Naval Research Laboratory, Washington, United States*	*KEYNOTE/INVITED* **MICROSTRUCTURE STABILITY DURING CREEP OF FRICTION STIR WELDED AA2024-T3 ALLOY** **Prof. Michael Regev**[1], Prof. Stefano Spigarelli[2] *[1]Ort Braude College, Karmiel, Israel, [2]Dipartimento di Meccanica, Università Politecnica delle Marche, Ancona, Italy*	*KEYNOTE/INVITED* **SOLUTE FIELDS AND GRAIN BOUNDARY MOTION** **Professor Wayne Kaplan**[1], Ruth Moshe[1], Hadas Sternlicht[1], Ran Akiva[1], Dr. Rachel Marder[1] *[1]Technion - Israel Institute of Technology, Haifa, Israel*
11.40	**ADHESION AND TRIBOLOGICAL PERFORMANCE OF HARD CAPVD COATINGS** **Gülşah Aktaş Çelik**[1], Fountas Konstantinos[2], Şaban Hakan Atapek[1], Helen Kamoutsi[2], Şeyda Polat[1], Anna D. Zervaki[2] *[1]Kocaeli University, Kocaeli, Turkey, [2]University of Thessaly, Volos, Greece*	*HIGHLIGHT* **MICRO/NANO DIGITAL PRINTING OF METAL STRUCTURES** **Dr Philippe Delaporte**[1], Mr Qingfeng Li[1], Dr Daniel Puerto[1], Dr David Grojo[1], Dr Anne-Patricia Alloncle[1] *[1]LP3 Laboratory - CNRS - Aix - Marseille University, Marseille, France*	**MICROSTRUCTURAL AND MECHANICAL PROPERTIES OF FRICTION STIR WELDED DISSIMILAR STRUCTURAL STEEL** **Prof. Dr. Tevfik Kucukomeroglu**[1], Lecturer Semin Mahmut AKTARER, Research Assistant Dursun Murat ŞEKBAN, Assistant Professor Doctor Güven İPEKOĞLU, Professor Gürel ÇAM *[1]Karadeniz Technicel University, Trabzon, Turkey*	**A TRANSMISSION ELECTRON MICROSCOPY STUDY OF PRECIPITATE PHASES THAT FORM AT 95°C AND 250°C IN A HEAT EXCHANGER ALLOY** **Dr. Calin Daniel Marioara**[1], Dr. Emmanuel Hersent[2], Dr. Anders Oskarsson[3] *[1]Sintef Materials And Chemistry, Trondheim, Norway, [2]Gränges Sweden AB Applied R&D, Finspång, Sweden, [3]Gränges AB Strategic R&D, Finspång, Sweden*
12.00	**DEVELOPING NANO-LAYERED COATINGS FOR APPLICATION ON HIGH SPEED CUTTING TOOLS** **Wang Qimin**[1] *[1]School Of Electromechanical Engineering, Guangdong University Of Technology, Guangzhou, P.r. China, China*	**LASER INDUCED FORWARD TRANSFER OF Cu INK: PRINTING AND JETTING STUDIES** **MSc Marina Makrygianni**[1], BSc Agamemnonas Kalaitzis[1], Dr Antonios Hatziapostolou[2], Dr Ioanna Zergioti[1] *[1]National Technical University of Athens, Zografou, Athens, Greece, [2]Technological Educational Institute of Athens, Department of Energy Technology Engineering, Aigaleo, Athens, Greece*	**A CONTRIBUTION FOR UNDERSTANDING THE BOND FORMATION MECHANISM OF FRICTION WELDED JOINTS** **Eric Heppner**[1], Christoph Rößler[1], Markus Körner[1], Professor Elmar Woschke[1], Doctor of Engineering David Schmicker[2] *[1]Otto-von-guericke University Magdeburg, Magdeburg, Germany, [2]Sampro GmbH, Magdeburg, Germany*	**SITE-SPECIFIC CHARACTERIZATION OF GRAIN BOUNDARY SEGREGATION DURING THE EVOLUTION OF PRIMARY RECRYSTALLIZATION IN A TERNARY Fe-Si-Sn ALLOY** **Nikolas Mavrikakis**[1,2], Dr. Myriam Dumont[1], Dr. Dominique Mangelinck[1], Marion Descoins[1], Dr. Wahib Saikaly[3] *[1]Aix-Marseille Université, CNRS, IM2NP UMR 7334, Marseille, France, [2]ArcelorMittal Research SA, Maizières-lès-Metz, France, [3]ArcelorMittal Global R&D, Gent, Belgium*
12.20	**EFFECT OF PERIOD ON PROPERTIES OF Ti0.54Al0.46/ Ti0.54Al0.46N MULTILAYER COATINGS DEPOSITED BY REACTIVE GAZ PULSING PROCESS** **Dr Marie-José Pac**[1], Dr Sylvain Giljean[1], PhD Yoann Pinot[1], Dr Christophe Rousselot[2], Dr Patrick Delobelle[3], Pr Marie-Hélène Tuilier[1] *[1]Université de Haute Alsace, Laboratoire de Physique et Mécanique Textiles, Mulhouse, France, [2]Université de Franche-Comté, FEMTO-ST/MN2S, Montbéliard, France, [3]Université de Franche-Comté, FEMTO-ST/DMA ,Besançon, France*	*HIGHLIGHT* **DIRECT EVIDENCE OF THE BUBBLES INVOLVED IN THE LASER INDUCED FORWARD TRANSFER DYNAMICS** **Dr. Michael Zenou**[1], Dr Tal Verdene[1] *[1]IO-tech ,Jerusalem, Israel*	**MICROSTRUCTURE IDENTIFICATION AND LOCAL MECHANICAL PROPERTIES OF A LINEAR FRICTION WELD OF Ti-5Al-2Sn-2Zr-4Mo-4Cr (Ti17) WITH A WIDMANSTÄTTEN MICROSTRUCTURE** **Dorick Ballat-durand**[1], Salima Bouvier[1], Jerome Delfosse[2], Marion Risbet[1] *[1]Université De Technologie De Compiègne Laboratoire Roberval, Compiègne, France [2]Hard Alloys & Processes, Suresnes, France*	**CHARACTERIZATION OF FINE INTERFACIAL STRUCTURES IN THE DIAMOND COATING ON THE ALLOY SUBSTRATES** **Professor Lianlong He**[1], Dr Xiaoju Li[1], Dr Yuanshi Li[2] *[1]Institute Of Metal Research, CAS, Shenyang, China, [2]Plasma Physics Laboratory, University of Saskatchewan, Saskatoon, Canada*
12.40	*HIGHLIGHT* **NON-REACTIVELY SPUTTERED ULTRA-HIGH TEMPERATURE TA-C COATINGS** **Dr. Helmut Riedl**[1], DI Heloise Lasfargues[1], Thomas Glechner[1], Dr. Valentina Paneta[2], Prof. Daniel Primetzhofer[2], Dr. Szilard Kolozsvári[3], Dr. David Holec[4], Prof. Paul Mayrhofer[1] *[1]TU Wien, Institute of Materials Science and Technology, Wien, Austria, [2]Uppsala University, Department of Physics and Astronomy, Uppsala, Sweden, [3]Plansee Composite Materials GmbH, Lechbruck am See, Germany, [4]Montanuniversität Leoben, Department Physical Metallurgy and Materials Testing, Leoben, Austria*	**PRINTING WITH LIGHT** **Dr. Gari Arutinov**[1], Merijn Giesbers[1], Guy Bex[1], Rob Hendriks[2], Dr. Ir. Jeroen van den Brand[1] *[1]Holst Centre, Eindhoven, Netherlands, [2]NovaCentrix, Austin, United States*	**JOINING OF MARINE STEELS BY SEVERE PLASTIC DEFORMATION-INDUCED FRICTION STIR WELDING** **PhD Student Murat Sekban**[1], Prof.Dr. Gencaga Purcek[2,3], PhD Student Semih Aktarer[4], Prof.Dr. Tevfik Kucukomeroglu[2] *[1]Department of Naval Architecture and Marine Engineering, Karadeniz Technical University, Trabzon-Turkey, Trabzon, Turkey, [2]Department of Mechanical Engineering, Karadeniz Technical University, Trabzon-Turkey, Trabzon, Turkey, [3]Engineering Faculty, Giresun University, Giresun, Turrkey, [4]Department of Automotive Technology, RecepTayyip ErdoganUniversity, Rize-Turkey, Rize, Turkey*	**NANOSTRUCTURE AND COMPOSITIONAL PROFILING IN EPITAXIAL Fe/MgO/Pt ULTRA-THIN FILMS** **Dimitrios Karfaridis**[1], Dr. Konstantinos Simeonidis[1], Nikolaos Pliatsikas[1], Laura Mihalceanu[2], Sascha Keller[2], Dr. George P. Dimitrakopulos[1], Dr. Thomas Kehagias[1], Dr. Evangelos Th. Papaioannou[2], Dr. George Vourlias[1] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany*

Symposium	D4	D9	E1	E2
Room	Library Hall/M2	Maurice Saltiel Hall I/M2	CR II Hall/M2	CR III Hall/M2
Session Title	Mechanical testing at micro/nano scales - Deformation Mechanisms I	Introduction and Advanced Nuclear Steels	Polymer Electrolyte Membranes	Na and Metal Batteries
Chairperson	Christophe Pinna & Eric Le Bourhis	J. Kalivodová	Maria Luisa Di Vona & Ioannis Kallistis	I. Nicotera
11.00	*KEYNOTE/INVITED* **COMPETING MECHANISMS BETWEEN DISLOCATION AND PHASE TRANSFORMATION IN PLASTIC DEFORMATION OF YTTRIA-STABILIZED TETRAGONAL ZIRCONIA NANOPILLARS** **Dr. Mohsen Asle Zaeem**[1], Dr. Ning Zhang	**THE JOINT PROGRAMME ON NUCLEAR MATERIALS OF THE EUROPEAN ENERGY RESEARCH ALLIANCE – COORDINATING RESEARCH ON GENIV NUCLEAR REACTOR MATERIALS FOR A LOW-CARBON ENERGY EUROPE** **Dr. Lorenzo Malerba**[1], Dr. Massimo Angiolini[2], Dr. Marjorie Bertolus[3], Dr. Angelika Bohnstedt[4], Dr. Jana Kalivodová[5], Dr. Karl-Fredrik Nilsson[6], Dr. Cristelle Pareige[7], Dr. Marta Serrano[8], Dr. Joseph Somers[9] *[1]SCK-CEN, Mol, Belgium, [2]ENEA, Casaccia, Italy, [3]CEA-DEN, Cadarache, France, 4KIT, Karlsruhe, Germany, [5]CVR, Rez, Czech Rep., [6]JRC, Petten, The Netherlands, [7]GPM/CNRS, Rouen, France, [8]CIEMAT, Madrid, Spain, [9]JRC, Karlsruhe, Germany*	*KEYNOTE/INVITED* **HYDROCARBON, SOLID POLYMER ELECTROLYTES FOR ACIDIC AND ALKALINE ELECTROCHEMICAL DEVICES** **Prof. Steven Holdcroft**[1] *[1]Simon Fraser University, Burnaby, Canada*	*KEYNOTE/INVITED* **Na-ION BATTERIES** **Prof. Stefano Passerini** *KIT-HIU, Ulm, Germany*
11.20	*[1]Missouri University of Science and Technology, Rolla, United States*	**UNDERSTANDING OF RADIATION EFFECTS AND DAMAGE IN NUCLEAR REACTORS MATERIALS USING JANNUS ION BEAMS** **Dr Celine Cabet**[1], Dr Aurélie Gentils[2] *[1]CEA, Gif-sur-yvette, France, [2]CSNSM, Orsay, France*		
11.40	**IN-SITU TEM CHARACTERIZATION OF DEFORMATION INDUCED MARTENSITIC TRANSFORMATION IN STAINLESS STEEL 304** **Djamel kaoumi**[1], Junliang Liu[2] *[1]North Carolina State University, Raleigh, United States, [2]University of South Carolina, Columbia, United States*	*KEYNOTE/INVITED* **IMPROVEMENT OF HIGH TEMPERATURE STRENGTH OF CONVENTIONAL GRADE 91 STEEL BY THERMO-MECHANICAL TREATMENTS** **Dr. Marta Serrano García**[1], Dr Mercedes Hernandez-Mayoral[1], Mr Javier Vivas[2], Dr Carlos Capdevila[2], Dr Jan Duzgan3 *[1]Ciemat, Madrid, Spain, [2]Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Avda Gregorio del Amo, 8; Madrid, E-28040, Spain, [3]COMTES FHT a.s., Průmyslová 995, 334 41 Dobřany, Czech Republic [1]Ciemat, Madrid, Spain, [2]Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Avda Gregorio del Amo, 8; Madrid, E-28040, Spain, [3]COMTES FHT a.s., Průmyslová 995, 334 41 Dobřany, Czech Republic*	**SELF CROSS-LINKED QUATERNARY PHOSPHONIUM BASED ANION EXCHANGE MEMBRANES** Pileas Papakonstantinou[1], Giota Aleksopoulou[1], **Assist. Professor Valadoula Deimede**[1] *[1]University of Patras, Patras, Greece*	**ION DIFFUSION IN TUNNEL-STRUCTURED $Nao._{44}MnO^2$ CATHODE MATERIAL FOR NAION BATTERIES** **Chiara Ferrara**, Piercarlo Mustarelli, E. Quartarone, Cristina Tealdi *Department of Chemistry and INSTM, University of Pavia, Italy Viale Taramelli 16, 27100 Pavia, Italy*
12.00	**MICRO-PLASTICITY CHARACTERIZATION OF MARTENSITE, FERRITE, AND DUAL - PHASE STEEL** **dr.ir. Johan Hoefnagels**[1], dr. Chaowei Du[1], prof.dr.ir. Marc Geers[1] *[1]Eindhoven University of Technology, Eindhoven, the Netherlands*		**COMPOSITE ANIONIC MEMBRANES BASED ON POLYSULFONE AND LAYERED DOUBLE HYDROXIDES** **Dr. PhD Riccardo Narducci**[1,2,3], Prof. Philippe Knauth[2,3], Prof. Maria Luisa Di Vona[1,3] *[1]Università Degli Studi Di Roma Tor Vergata (URoma2), Department of Industrial Engineering, Rome, Via del Politecnico 1, 00133, Italy, [2]Aix Marseille Université (AMU), CNRS, Madirel (UMR 7246), Electrochemistry of Materials Group, Marseille, Campus St Jérôme, 13397, France, [3]International Associated Laboratory (L.I.A.), Ionomer Materials for Energy (AMU, CNRS, URoma2), Marseille, Rome, France, Italy*	**EXPLORING THE Ni REDOX ACTIVITY IN POLYANIONIC COMPOUNDS AS CONCEIVABLE HIGH POTENTIAL CATHODES FOR Na RECHARGEABLE BATTERIES** **Mr. Huang Zhang**[1,2], Dr. Ivana Hasa[1,2], Dr. Daniel Buchholz[1,2], Mr. Bingsheng Qin[1,2], Dr. Dorin Geiger[3], Dr. Sangsik Jeong[1,2], Prof. Ute Kaiser[3], Prof. Stefano Passerini[1,2] *[1]Helmholtz Institute Ulm, Ulm, Germany, [2]Karlsruhe Institute of Technology, Karlsruhe, Germany, [3]Central Facility of Electron Microscopy, Electron Microscopy Group of Materials Science, University of Ulm, Ulm, Germany*
12.20	**THE EFFECT OF Y ADDITION ON THE DEFORMATION OF Mg BY MICRO-PILLAR COMPRESSION** **Dr Jing Wu**[1], Ms Shanshan Si[1], Dr YuLung Chiu[1] *[1]University of Birmingham, United Kingdom*	*KEYNOTE/INVITED* **DEFORMATION MECHANISMS IN ODS ALLOYS: RECENT HIGHLIGHTS OBTAINED WITHIN THE MATISSE PROGRAM** **Doctor Joël Malaplate**[1], Doctor Mickaël Dadé[1,2],Doctor Yann Decarlan[1], Doctor Frédéric Mompiou[3], Doctor Daniel Caillard[3], Doctor Ankur Chauhan[4], Doctor Jarir Aktaa[4], Doctor Mercedes Hernandez-Mayoral[5], Doctor Elvira Oñorbe Esparraguera[5], Doctor Marta Serrano Garcia[5] *[1]DEN-Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, F-91191 Gif-Sur-Yvette, France, [2]MINES ParisTech, PSL Research University, Centre des Matériaux, CNRS UMR 7633, BP 87, 91003, Evry Cedex, France, [3]Centre d'Elaboration des Matériaux et d'Etudes Structurales, BP 94347, 31055 Toulouse Cedex 4, France, [4]Institute for Applied Materials, Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein Leopoldshafen, Germany, [5]División de Materiales de Interés Energético, Centro Investigaciones Medioambientales y Tecnológicas (CIEMAT), Avda. Complutense 40, 28040 Madrid, Spain*	**CROSS-LINKED POLYMER ELECTROLYTE MEMBRANES FOR HT-PEMFCs** **Ms Aikaterini Andreopoulou**[1,2], Ms Rafaela Nannou[1], Mr Konstantinos Kallitsis[1], Mr Joannis Kallitsis[1,2] *[1]University Of Patras, Department Of Chemistry, University Campus, Greece, [2]FORTH/ICEHT, Platani Patras, Greece*	**ADVANCED BIFUNCTIONAL CATALYST BASED ON NOVEL ELECTROSPUN CARBON NANOFIBERS DECORATED WITH THE CoO-CO REDOX SYSTEM FOR ALKALINE METAL-AIR BATTERIES** **Dr. Vincenzo Baglio**[1], Dr. Cinthia Alegre[1], Dr. Concetta Busacca[1], Dr. Orazio Di Blasi[1], Ms. Esterina Modica[1], Dr. Vincenzo Antonucci[1], Dr. Antonino Aricò[1], Dr. Alessandra Di Blasi[1] *[1]Cnr-Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano", Messina, Italy*
12.40	**A VARIANCE OF PLASTIC DEFORMATION MECHANISMS IN DIFFERENT GRAIN TYPES OF ULTRAFINE-GRAINED ALUMINIUM** **Witold Chrominski**[1], Prof. Malgorzata Lewandowska[1] *[1]Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland*		**PROGRESS ON ELECTRODE INTERFACE STRUCTURE MODIFICATION FOR PROTON EXCHANGE MEMBRANE FUEL CELLS** Mr. Morten Gildsig Poulsen[1], Dr. Mikkel Juul Larsen[2], **Dr. Shuang Ma Andersen**[1] *[1]University Of Southern Denmark, Odense, Denmark, [2]EWII Fuel Cells A/S, Odense, Denmark*	**LITHIUM BATTERIES FOR AUTOMOTIVE AND STATIONARY APPLICATIONS: RESULTS FROM TESTS CAMPAIGN** **Dr Francesco Sergi**[1], Dr Giovanni Brunaccini[1], Dr Davide Aloisio[1], Nico Randazzo[1], Dr Marco Ferraro[1], Dr Laura Andaloro[1], Dr Vincenzo Antonucci[1] *[1]Cnr-itae, Messina, Italy*

Symposium	E3	F1	F4
Room	Rehearsal Room 5.17/M1	3-20/M1	3-21/M1
Session Title	Photovoltaics-New Materials I	Hydrogels for Tissue Engineering	Surface Modification Methods for Biomaterials
Chairperson	João Manuel de Almeida Serra	Antonio Salinas	Pieter Cools
11.00	**HIGH PRESSURE INDUCED PHASE TRANSFORMATIONS OF Cs_2SnX_6 PEROVSKITES STUDIED VIA RAMAN SPECTROSCOPY** **Dr. Andreas Kaltzoglou**[1], M. Sc. Maria Karnachoriti[2], Dr. Giannis Bounos[1], Dr. Athanassios Kontos[1], Prof. Yannis Raptis[2], Dr. Polycarpos Falaras[1] *[1]National Center for Scientific Research "DEMOKRITOS", Athens, Greece, [2]Faculty of Applied Sciences, National Technical University of Athens, Athens, Greece*	*KEYNOTE/INVITED* **INTRACELLULAR DELIVERY OF POLYETHYLENIMINE COATED-RNASE A LOADED NANOGELS FOR CANCER THERAPY** Neda Kordalivand[1], Dandan Li[1], Nataliia Beztsinna[1], Enrico Mastrobattista[1], Rene van Nostrum[1], Tina Vermonden[1], **Wim E. Hennink**[1] *[1]Department of Pharmaceutics, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, Utrecht, Netherlands*	*HIGHLIGHT* **DESIGN AND SURFACE ANALYSIS OF ANTIMICROBIAL COATINGS** **Prof Hans Griesser**[1] *[1]University Of South Australia, Adelaide, Australia*
11.20	**CORRELATIVE TRANSMISSION EBSD-APT ANALYSIS OF GRAIN BOUNDARIES IN $Cu(In,Ga)Se^2$ AND $Cu^2ZnSnSe^4$ BASED THIN-FILMS** **Dr. Torsten Schwarz**[1], M. Sc. Guillaume Stechmann[1], Dr. Baptiste Gault[1], Dr. Oana Cojocaru-Mirédin[1,2], Dr. Pyuck-Pa Choi[3], Dr. Alex Redinger[4], Prof. Susanne Siebentritt[4], Prof. Dierk Raabe[1] *[1]Max-planck-institut Für Eisenforschung GmbH, Düsseldorf, Germany, [2]RWTH Aachen, Aachen, Germany, [3]Korea Advanced Institute of Science and Technology, Daejeon, Republic of Korea, [4]University of Luxembourg, Luxembourg*		
11.40	**GROWING AND CHARACTERIZING SELF-ORGANIZING ALUMINIUM NANOWIRES IN AMORPHOUS SILICON** **PhD Annett Thogersen**[1], PhD Ingvild J. Thue Jensen[1], PhD Marit Stange[1], PhD Ole Martin Lovvik[1], PhD Alexander G. Ulyashin[1], PhD Spyros Diplas[1] *[1]SINTEF Materials and Chemistry, Oslo, Norway*	**DEVELOPMENT OF NOVEL TISSUE-ENGINEERING ALGINATE SCAFFOLDS TO AMELIORATE POST-MYOCARDIAL INFARCTION ELECTROPHYSIOLOGIC REMODELING** Dr. Eleonora Barka[1,2], Dr. Marianthi Kontonika[2,3], Dr. Eleni Bagli[4], Dr. Dimitrios Kouroupis[4], BSc Maria Markou[4], Dr. Agapi Vilaeti[2,3], BSc Maria Roumpi[1,2], Dr. Demetrios Papayannis[1], Dr. Theodoros Fotsis[4], Dr. Theofillos Kolettis[2,3], **Dr. Simeon Agathopoulos**[1] *[1]Ceramics & Composites Laboratory, Dept. of Materials Science and Engineering, University of Ioannina, Ioannina, Greece, [2]Cardiovascular research institute, Ioannina & Athens, Greece, [3]Cardiology Dept., School of Medicine, University of Ioannina, Ioannina, Greece, [4]Foundation for Research & Technology-Hellas, Institute of Molecular Biology and Biotechnology, Ioannina, Greece*	**SURFACE PROPERTIES IMPROVEMENT OF PEEK BY MULTI-CHARGED ION IMPLANTATION: DETAILS ON MICROSTRUCTURE AND TRIBOLOGY** Dr Massoud Dadras[1], **Dr Olha Sereda**[1], Dr Kaushik Vaideeswaran[1], Dr Christophe Yamahata[2] *[1]Csem, Material Science, Neuchatel, Switzerland, [2]IDONUS, Hauterive, Switzerland*
12.00		**SYNTHETIC EXTRACELLULAR MATRICES BASED ON MICROPOROUS ORGANOGELS** **Sophie Franceschi**[1], Emile Perez[1] *[1]Laboratoire des IMRCP, France*	**SURFACE TREATMENT OF POLYMERS BY ATMOSPHERIC PLASMA AND GRAFT POLYMERIZATION OF ACRYLIC ACID TO IMPROVE HYDROXYAPATITE DEPOSITION** Ms I-Yun Cheng[1], Professor Ko-shao Chen[1], **Mr Wei-Yu Chen**[2], Professor Allan Matthews[3] *[1]Department of Materials Engineering, Tatung University, Taipei, Taiwan, [2]Department of Materials Science and Engineering, University of Sheffield, Sheffield, UK, [3]School of Materials, University of Manchester, Manchester, UK*
12.20		**LATERAL ARRANGEMENT OF PHOSPHOLIPID MONOLAYERS AS INFLUENCED BY THE ADSORPTION OF HYALURONAN AND THE EFFECT OF HYDROSTATIC PRESSURE** **Dr D.C. Florian Wieland**[1], Dr Thomas Zander[1], Dr Vasyl Garamus[1], Dr Andra Dedinaite[2], Prof Per Claesson[2], Prof Regine Willumeit-Römer[1] *[1]Helmholtz Zentrum Geesthacht, Hamburg, Germany, [2]KTH Royal Institute of Technology, Stockholm, Sweden*	**IMPROVING THE SURFACE PROPERTIES OF AN UHMWPE SHOULDER IMPLANT WITH AN ATMOSPHERIC PRESSURE PLASMA JET** **Stijn Van Vrekhem**[1], Karen Vloebergh[1], Chris Vercruysse[2], Heidi Declercq[2], Alexander Van Tongel[3], Nathalie De Geyter[1], Rino Morent[1] *[1]Research Unit Plasma Technology, Department of Applied Physics, Faculty of Engineering and Architecture, Ghent University, Ghent, Belgium, [2]Tissue Engineering Group, Department of Basic Medical Sciences, Faculty of Medicine and Health Sciences, Ghent University, Ghent, Belgium, 3Department of Orthopedic Surgery and Traumatology, Ghent University Hospital, Ghent, Belgium*
12.40		**CELLULOSE NANOFIBRILS AS SCAFFOLDS OR TISSUE ENGINEERING** **Prof. Kristin Syverud**[1,2], Dentist Ahmad Rashad[3], PhD Ellinor Heggset[1], Prof. Kamal Mustafa[3] *[1]PFI ,Trondheim, Norway, [2]NTNU, Trondheim, Norway, [3]University of Bergen, Bergen, Norway*	**COMPARISON OF PLASMA-SPRAYED BIOACTIVE COATINGS DEPOSITED FROM DIFFERENT FEEDSTOCKS** **Mr. Eugeni Cañas**[1], Dr. Mónica Vicent[1], Dr. María José Orts[1], Dr. Aldo R. Boccaccini[2], Dr. Enrique Sánchez[1] *[1]Instituto de Tecnología Cerámica (ITC), Asociación de Investigación de las Industrias Cerámicas (AICE), Universitat Jaume I (UJI), Av. Sos Baynat s/n, 12006, Castellón, Spain, [2]Institute of Biomaterials, Department of Materials Science and Engineering, University of Erlangen-Nuremberg (FAU), Cauerstrasse 6, 91058, Erlangen, Germany*
13.00		**INJECTABLE HYALURONIC ACID BASED HYDROGELS FOR CARTILAGE REPAIR** Ms Evgenia Tsanaktsidou[1,2], Dr Olga Kammona[2], **Professor Emeritus Costas Kiparissides**[1,2] *[1]Department of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Chemical Process & Energy Resources Institute, Centre for Research and Technology-Hellas, Thessaloniki, Greece*	**IN-VITRO STUDY OF THE BIOACTIVITY AND BIOLOGICAL RESPONSE OF POWDER METALLURGY MODIFIED Ti SURFACES** Dip-Ing. Julia Ureña[1], **Dr. Sophia Tsipas**[1], Prof-Dr. Antonia Jiménez-Morales[1], Prof-Dr. Elena Gordo[1], Dr.-Ing. Rainer Detsch[2], Prof. Dr.-Ing. habil. Aldo R. Boccaccini[2] *[1]University Carlos III of Madrid, Department of Materials Science and Engineering, IAAB. Avda. Universidad 30, 28911, Leganés, Spain, [2]Institute of Biomaterials, Department of Materials Science and Engineering, University of Erlangen-Nuremberg, 91058, Erlangen, Germany*

Symposium	H1	H2	H3
Room	I -16/M1	Conference Room 2/M1	Conference Room 3
Session Title	Accelerating Materials Discovery	Bauxite Residue Valorization	Introuduction and theoretical approaches
Chairperson	Patrice Turchi	Joohno Lee, Zhang Yanling	Alessandra Hool, Guido Sonnemann
11.00	*KEYNOTE/INVITED* **EMERGING TECHNOLOGIES AND CRITICAL MATERIALS** **Dr. Alexander King**[1]	**CURRENT TRENDS ON SCANDIUM HYDROMETALLURGICAL EXTRACTION FROM BAUXITE RESIDUE** **Mr Panagiotis Davris**[1], Dr Efthymios Balomenos[2], Professor Dimitrios Panias[1], Professor Ioannis Paspaliaris[1] *[1]National Technical University Of Athens, Athens, Greece, [2]Aluminium of Greece, Ag. Nikolaos Plant, Viotia, Greece*	**CRITICALITY OF STRATEGIC RESOURCES** **Armin Reller**[1,2] *[1]Chair of Resource Strategy, University of Augsburg, Universitätstrasse1a, D-86159, Augsburg, Germany, [2]IWKS, Fraunhofer Project Group Materials Recycling and Resource Strat., D-63755, Alzenau, Germany*
11.20	*[1]Critical Materials Institute, Ames, United States*	**AN INTEGRATED PROCESS TO RECOVER IRON, TITANIUM SCANDIUM AND RARE EARTHS FROM BAUXITE RESIDUE** **Chiara Cardenia**[1], Chiara Bonomi[1], Dr. Efthymios Balomenos[1], Dr. Ioanna Giannopoulou[1], Prof. Dimitrios Panias[1] *[1]National Technical University of Athens (NTUA), Athens, Greece*	**INTEGRATING CRITICALITY ASPECTS INTO LIFE CYCLE SUSTAINABILITY ASSESSMENT - FIRST METHODOLOGICAL DEVELOPMENTS AND CASE STUDY** **Prof. Guido Sonnemann**[1], Mr Alexander Cimprich[2], Mr Christoph Helbig[3] Dr Eskinder Gemechu[1], Dr Andrea Thorenz[3], Prof. Axel Tuma[3], Prof. Steven B Young[2] *[1]University of Bordeaux, Bordeaux, France, [2]University of Waterloo, Waterloo, Canada, [3]University of Augsburg, Augsburg, Germany*
11.40	*KEYNOTE/INVITED* **ACCELERATING MATERIALS DISCOVERY AND DEVELOPMENT THROUGH MULTI-DISCIPLINARY RESEARCH** **Dr. James Roberto**[1]	**SYNTHESIS OF SCANDIUM CONCENTRATE FROM BAUXITE RESIDUE** **Mr. Bengi Yagmurlu**[1,2], Mr. Carsten Dittrich[1], Prof. Dr. Ing. Bernd Friedrich[2] *[1]MEAB Chemie Technik Gmbh, Aachen, Germany, [2]RWTH Aachen, Aachen, Germany*	**EXPLORING THE COMPLEMENTARITY AND INDEPENDENCE OF LIFE-CYCLE SUSTAINABILITY ANALYSES AND CRITICALITY ASSESSMENTS** **Torsten Hummen,** Luis Tercero *Fraunhofer Institute for Systems and Innovation Research ISI, Germany*
12.00	*[1]Oak Ridge National Laboratory, Oak Ridge, United States*	**ALTERNATIVE BINDER FORMATION AND IRON EXTRACTION FROM CHEMICALLY AND THERMALLY MODIFIED BAUXITE RESIDUE** **Tobias Hertel**[1], Prof. Dr. Bart Blanpain[1], Prof. Dr. Yiannis Pontikes[1] *[1]MEAB Chemie Technik Gmbh, Aachen, Germany, [2]RWTH Aachen, Aachen, Germany*	**SIMULATION BASED LIFE CYCLE ASSESSMENT OF CIRCULAR ECONOMY SYSTEMS** Antti Reuter[1], **Markus A. Reuter**[2] *[1]Outotec Oyj, Espoo, Finland, [2]Helmholtz-Institute Freiberg for Resource Technology, Freiberg, Germany*
12.20	*HIGHLIGHT* **ACCELERATED DEVELOPMENT OF SUBSTITUTES FOR CRITICAL MATERIALS IN CLEAN ENERGY TECHNOLOGIES** **Dr. Thomas Lograsso**[1] *[1]Ames Laboratory, Ames, United States*	**PROPERTIES OF BAYER RED MUD BASED FLUX AND ITS APPLICATION IN SEMI-STEEL DEPHOSPHORIZATION** **Professor Yanling Zhang**[1], Mr. Fengshan Li[1], Professor Zhancheng Guo[1] *[1]State Key Laboratory of Advanced Metallurgy, University of Science And Technology Beijing, Beijing, China*	**COMBINING "CIRCULARITY SCORING" CRITERIA AND LIFE CYCLE ASSESSMENT TO COMPARE RECOVERY ROUTES FOR ALKALINE BATTERY RECYCLING** **Edis Glogic**[1,2], Dr Steven Young[1], Dr Guido Sonnemann[2] *[1]University Of Waterloo, Waterloo, Canada, [2]University of Bordeaux, Bordeaux, France*
12.40	**RECENT DEVELOPMENTS IN RFe12-TYPE COMPOUNDS WITH LOW RARE EARTH CONTENTS FOR PERMANENT MAGNETS** **Daniel Salazar**[1], Andrés Martin-Cid[1], Ana Mara Schönhöbel[1], Jose Javier Garitaonandia[2], Jose Manuel Barandiaran[2], George Hadjipanayis[3] *[1]BCMaterials, Derio, Spain, [2]University of the Basque Country, Leioa, Spain, [3]University of Delaware, Newark, USA*	**METRONIDAZOLE AND IBUPROFEN ADSORPTION ON HTC-DERIVED ACTIVATED CARBON: EXPERIMENTAL AND THEORETICAL ADSORPTION STUDIES** **Asma Jeder**[1,2], Philippe Gadonneix[2], Abdelmottaleb Ouedern[1], Alain Celzard[2], Vanessa Fierro *[1]National School of Engineers of Gabes, gabes, Tunisie, [2]Institut Jean Lamour, epinal, France*	**SECURING RAW MATERIALS FOR SOCIETY: A CROSS-SECTORAL AND MULTIDISCIPLINARY CHALLENGE** **Wouter De Soete**[1], Jo Dewulf[1] *[1]Research Group Environmental Chemistry and Technology (ENVOC), Faculty of Bioscience Engineering, Ghent University, Campus Coupure, Coupure Links 653, B-9000 ,Ghent ,Belgium*
13.00			**EIT RAWMATERIALS – DRIVING INNOVATION IN THE RAW MATERIALS VALUE CHAIN** **Roland GAUB**[1] *[1]EIT RawMaterials GmbH*

Symposium	A3	A5	A8	B2
Room	I-11/M1	MOYSA Hall/M2	I-08/M1	Aimilios Riadis Hall/M2
Session Title	Nanostructured polymers II	Bio-nano Interface I	Functional oxides 2	Aluminium
Chairperson	Nektaria-Marianthi Barkoula	Mathias Brust	Jorge Iniguez	Suveen Mathaudhu
15.00	*KEYNOTE/INVITED* **ROSE-PETAL AND LOTUS EFFECTS OF BIOMIMETIC NANOSTRUCTURED POLYMER SURFACES** **Prof. Dr. Jean-francois Gerard**[1] [1]*Imp Umr Cnrs 5223 - Université De Lyon, Villeurbanne, France*		*HIGHLIGHT* **GRADIENT-MEDIATED COUPLINGS AT IMPROPER FERROELASTIC WALLS** **Massimiliano Stengel**[1,2], Andrea Schiaffino[1] [1]*ICMAB-CSIC, Bellaterra, Spain,* [2]*ICREA, Barcelona, Spain*	*HIGHLIGHT* **A MULTI-SCALE MODELLING OF PRECIPITATION HARDENING EFFECT IN Al AND Mg ALLOYS** **H. Liu**[1], J.F. Nie[2] [1]*Department of Metallurgy and Materials Engineering, Katholieke Universiteit Leuven, Kasteelpark Arenberg 44, B-3001, Leuven, Belgium,* [2]*Department of Materials Science and Engineering, Monash University, Victoria 3800, Australia*
15.20			**POLAR TWIN WALLS IN SrTiO3 VIA A FIRST-PRINCIPLES BASED MULTISCALE APPROACH** **Andrea Schiaffino**[1], Massimiliano Stengel[1,2] [1]*ICMAB-CSIC, Campus UAB, 08193 Bellaterra, Spain,* [2]*ICREA-Institució Catalana de Recerca i Estudis Avançats, 08010 Barcelona, Spain*	*HIGHLIGHT* **EXAMINING THE AGEING BEHAVIOUR OF HIGH TEMPERATURE Al-Zr-V PRECIPITATES USING SMALL ANGLE X-RAY SCATTERING** **Dr Mohammed Azeem**[1,2], Mr P Panagos[1,2], Dr Yiqiang Wang[1,2], Professor Graham McCartney[2,3], Dr Bita Ghaffari[4], Dr Mei Li[4], Dr J. W. Zindel[4], Professor John E. Allison[5], Professor Peter D Lee[1,2] [1]*School of Materials, The University of Manchester, Oxford Road, Manchester M13 9PL, United Kingdom,* [2]*Research Complex at Harwell, RAL, Didcot OX11 0FA, United Kingdom,* [3]*Advanced Materials Group, Faculty of Engineering, University of Nottingham, University Park, Nottingham NG7 2RD, United Kingdom,* [4]*Materials Research Department, Ford Motor Company, Research and Innovation Center, MD3182, P.O Box 2053, Dearborn MI48121, USA, 5Department of Materials Science and Engineering, University of Michigan, 2300 Hayward St., Ann Arbor, MI 48109, USA*
15.40	**ENGINEERED SELF-GROWTH OF MYCELIUM-BASED BIOCOMPOSITE MEMBRANES OF TUNABLE STRUCTURAL CHARACTERISTICS AND PHYSICAL PROPERTIES** **Athanassia Athanassiou**[1], Muhammad Haneef[1], Fabio Ferrando[1], Aidin Lak[1], José A. Heredia Guerrero[1], Luca Ceseracciu[1], Claudio Canale[1], Ilker S. Bayer[1], Despina Fragouli[1], Teresa Pellegrino[1], Roberto Cingolani[1] [1]*Istituto Italiano Di Tecnologia, Genova, Italy*	*HIGHLIGHT* **ADVANCED THERANOSTIC SYSTEMS BASED ON NANOSTRUCTURE MATERIALS** **Dr Eleni Efthimiadou**[1,2], M. Theodosiou[1,2], G. Kordas[1] [1]*Institute of Nanoscience and Nanotechnology, NCSR D. Athens, Greece, Aghia Paraskevi Attikis, Greece,* [2]*University of Athens,* [2]*Department of Chemistry, University of Athens, Panepistimioupoli Zografou, Athens, Greece, Greece*	**TUNABLE DIELECTRIC THIN FILM PEROVSKITES: FROM THE HIGH THROUGHPUT SYNTHESIS TO THE HIGH FREQUENCY DEVICES** **Dr Ioanna Bakaimi**[1], Dr Jin Yao[1], Dr Samuel Guerin[2], Dr John Kavanagh[1], Dr He Xingli[3], Professor Kees de Groot[3], Professor Brian Hayden[1,2] [1]*University of Southampton ,Southampton, United Kingdom,* [2]*Ilika Technologies, Southampton, United Kingdom,* [3]*Electronics and Computing Center, Southampton, United Kingdom*	**MICROSTRUCTURE – PROPERTIES RELATIONSHIP FOR 2024 ALUMINUM ALLOY AFTER HIGH-TEMPERATURE AGEING** **Louise Briez**[1], Dr. Vladimir Esin[1], Dr. Alain Köster[1], Matthieu Pachoutinsky[2], Dr. Jérôme Crépin[1] [1]*MINES ParisTech, PSL Research University, Centre des Matériaux (CNRS UMR 7633), BP 87, Evry cedex 91003, France, Evry, France, 2Dassault Aviation, Saint-Cloud ,France*
16.00	**WETTING ON MAGNETICALLY ACTUATED SUPERHYDROPHOBIC SURFACES** **Mrs Blandine Bolteau**[1,2,3], Dr Etienne Barthel[3], Dr Jérémie Teisseire[2], Dr Jérôme Fresnais[1] [1]*Laboratoire PHENIX, UMR CNRS 8234, UPMC Univ Paris 06, Paris, France,* [2]*Laboratoire SVI, UMR 125, CNRS/Saint Gobain, Aubervilliers, France,* [3]*Laboratoire SIMM, UMR CNRS 7615, ESPCI, UPMC Univ Paris 06, Paris, France*	**BIO-FUNCTIONALIZED MAGNETIC NANOPARTICLES FOR REMOTE CONTROL OF DIFFERENTIATION AND ORIENTED GROWTH OF NEURONAL CELLS** **Dr Emilie Secret**[1], Mr Elie Balloul[2], Mrs Aude Michel[1], Dr Cornelia Monzel[2], Dr Maxime Dahan[2], Dr Jérôme Fresnais[1], Dr Christine Ménager[1], Dr Jean-Michel Siaugue[1] [1]*Sorbonne Universités, UPMC Université Paris 6, CNRS, UMR 8234, PHENIX, Paris, France,* [2]*Laboratoire Physico-Chimie, Institut Curie, CNRS UMR168, Paris-Science Lettres, UPMC Université Paris 6, Paris, France*	**CONDUCTIVITY, SPIN-STATE AND MAGNETOSTRUCTURAL TRANSITIONS IN COBALT PEROVSKITES INVESTIGATED BY X-RAY SPECTROSCOPIES AND NEUTRON DIFFRACTION** Jessica Padilla-Pantoja[1], Javier Herrero-Martín[2], Sara Lafuerza[3], Arnau Romaguera[1], Francois Fauth[2], Javier Blasco[4], **José-Luis García-Muñoz**[1] [1]*Institut de Ciència de Materials de Barcelona ,ICMAB-CSIC, E-08193 Bellaterra, Spain,* [2]*ALBA Synchrotron Light Facility, E-08290 Cerdanyola del Vallès,Spain,* [3]*ESRF-European Synchrotron Radiation Facility, F-38042 Grenoble Cedex, France,* [4]*Instituto de Ciencia de Materiales de Aragón, IC-MA-CSIC-Universidad de Zaragoza, E-50009 Zaragoza, Spain*	**THE EFFECT OF SCANDIUM AND ZIRCONIUM ON THE MICROSTRUCTURE, MECHANICAL PROPERTIES AND EXTRUDABILITY OF A MODEL Al-Cu ALLOY** **Dr Thomas Dorin**[1], Dr Mahendra Ramajayam[1], Dr Timothy J. Langan[2] [1]*Deakin University, Geelong, Australia,* [2]*Clean TeQ Ltd., Melbourne, Australia*
16.20	**EPOXYDATION OF SUGAR-DERIVED FURANIC MOLECULES** **Angela Marotta**[1,2], Veronica Ambrogi[1], Alice Mija[2] [1]*Università degli Studi di Napoli Federico II, Napoli, Italy,* [2]*Université Nice Sophia Antipolis, Nice, France*	**ADVANCED PROBES FOR MULTIPLEXED INTRACELLULAR BIOMARKER DETECTION** **Miss Maria-eleni Kyriazi**[1], Dr Afaf El-Sagheer[2,3], Dr Tom Brown[2], Dr Peter Lackie[1], Dr Otto Muskens[1], Dr Antonios Kanaras[1] [1]*University Of Southampton, Southampton, United Kingdom,* [2]*University of Oxford, Oxford, United Kingdom,* [3]*Suez University, Suez, Egypt*	**ONE SITE, TWO SPIN ARRANGEMENTS: MAGNETIC ORDER IN MULTIFERROIC MN0.85C00.15W04 BY ELEMENT-SPECIFIC RESONANT MAGNETIC X-RAY SCATTERING** **Dr Javier Herrero-Martin**[1], Dr Claudio Mazzoli[2], Dr Sonia Francoual[3], Dr Jörg Strempfer[3], Dr Federica Fabrizi[4], Dr Peter Bencok[4], Dr Paul Steadman[4], Dr Alexander N. Dobrynin[4], Dr Alessandro Bombardi[4], Prof. Dr. Alexander A. Mukhin[5], Prof. Dr. Vassil Skumryev[6], Prof. Dr. José Luis Garca-Muñoz[7] [1]*ALBA Synchrotron Light Source, Cerdanyola del Vallès (Barcelona), Spain,* [2]*Brookhaven National Lab., Natl. Synchrotron Light Source, Upton, USA,* [3]*Deutsch Elektronen Synchrotron (DESY), Hamburg, Germany,* [4]*Diamond Light Source, Didcot, United Kingdom,* [5]*Prokhorov General Physics Institute, Russian Academy of Sciences, Moscow, Russia,* [6]*Departament de Fisica, Universitat Autonoma de Barcelona, Bellaterra (Barcelona), Spain,* [7]*Institut de Ciencia de Materials de Barcelona, ICMAB-CSIC, Bellaterra (Barcelona), Spain*	**CLARIFICATION OF RELATIONSHIP BETWEEN BAKE-HARDENING RESPONSE AND CLUSTER FRACTIONS IN AN Al-Mg-Si ALLOY USING A HIGH-DETECTION-EFFICIENCY ATOM PROBE** **Dr Yasuhiro Aruga**[1], Dr Masaya Kozuka[1], Dr Tatsuo Sato[1] [1]*Kobe Steel, Ltd., Japan*
16.40	**SWELLING BEHAVIOR AND STRUCTURAL CHARACTERIZATION OF POLYTETRAFLUOROETHYLENE ELABORATED BY DIFFERENT PROCESSES: MOLDING, EXTRUSION, AND SPARK PLASMA SINTERING** **Dr Ilham El Aboudi**[1], Drl Ahmed MDARHRI[1], Mourad RZAIZI[1], ODILE BABOT[2], Laurent SERVANT[2] [1]*University Cadi Ayyad, Laboratory of Condensed Matter and Nanostructures (LCMN), Faculty of Sciences and Technology ,Marrakech, Morocco,* [2]*University of Bordeaux, Institute of Molecular Sciences, Group of Molecular Spectroscopy, UMR5255, Talence, France*	**PHYSICAL-CHEMICAL CHARACTERIZATION OF FUNCTIONALIZED NANOPARTICLES** **PhD Robin Capomaccio**[1], PhD Isaac Ojea-Jiménez[1], PhD Dora Mehn[1], PhD Ines Osorio, Doctor Giacomo Ceccone[1], PhD François Rossi, PhD Douglas Gilliland[1], PhD Pascal Colpo[1], PhD Luigi Calzolai[1] [1]*European Commission Directorate General Joint Research Centre Directorate F - Health, Consumers And Reference Materials ,Ispra, Italy*	**NANOSCALE IMAGING OF RESISTIVE DOMAINS ACROSS THE FIRST-ORDER METAL-TO-INSULATOR TRANSITION OF NdNiO3** **Dr. Daniele Preziosi**[1], Dr. X. Li2, Dr. A. Sander[1], L. Lopez-Mir[3], Dr. K. Bouzehouane[1], Dr. A. Gloter[2], Prof. A. Barthélémy[1], Dr M. Bibes[1] [1]*Unité Mixte de Physique CNRS/Thales and Univ. Paris-Sud, 91405 Orsay, 1 avenue A. Fresnel, 91767 Palaiseau, France,* [2]*Laboratoire de Physique des Solides CNRS&Univ. Paris-Sud, 11 Bât. 510 - F91405 Orsay, France,* [3]*Centre d'Investigació en Nanociència i Nanotecnologia, CIN2 (CSIC-ICN), Edifici CM7, Campus UAB, E-08193 Barcelona, Catalunya, Spain*	

Symposium	B3	B5	B10	B11
Room	CR I Hall/M2	Conference Room 1/M1	Maurice Saltiel Hall II/M2	Maurice Saltiel Hall III/M2
Session Title	Single Crystals Ni-base Superalloys II	Borides and Nitrides	Fatigue & Fracture II - Case studies	High Temperature Deformation
Chairperson	Jonathan Cormier	Dariusz Kata	Michael Vormwald	I. Proriol Serre
15.00	**MECHANISMS OF M23C6 CARBIDE PRECIPIATION IN Ni-BASE SUPERALLOY SINGLE CRYSTALS** **Dr. Leonardo Agudo Jácome**[1], Bachelor Viola Mielke[1] *[1]Bundesanstalt Für Materialforschung Und Prüfung, Berlin, Germany*	**INVESTIGATING CRACK PROPAGATION IN ZIRCONIUM DIBORIDE-BASED COMPOSITE CERAMICS BY MULTI-PHASE FIELD MODELING** **Dr. Mohsen Asle Zaeem**[1], Arezoo Emdadi[1], Dr. Bill Fahrenholtz[1], Dr. Greg Hilmas[1] *[1]Missouri University of Science and Technology, Rolla, United States*	**S-N CURVES FOR FATIGUE ASSESSMENT OF TRUCK LEAF SPRINGS** **Dr. Georgios Savaidis**[1], MSc Themistoklis Kiritsis[2], MSc Nikolaos Providakis[2] *[1]Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]School of Pedagogical and Technological Education, Athens/N.Heraklion, Greece*	**ANALYSIS OF THE MECHANICAL RELAXATIONS OF 6061 AND 6082 (Al–Mg–Si) ALLOYS BY USING THE TIME-TEMPERATURE SUPERPOSITION PRINCIPLE** **Dr.-Eng. Jose I. Rojas**[1], Prof. Daniel Crespo[2] *[1]Department of Physics – Division of Aerospace Engineering, Universitat Politècnica de Catalunya, Castelldefels, Spain, [2]Department of Physics, Universitat Politècnica de Catalunya, Castelldefels, Spain*
15.20	**IN SITU REAL TIME DIFFRACTION STUDY OF PLASTIC TRANSIENTS WITHIN A SINGLE CRYSTAL SUPER-ALLOY FOLLOWING STRESS JUMPS DURING A HIGH TEMPERATURE CREEP TEST** **Roxane Tréhorel**[1], Thomas Schenk[1], Gabor Ribarik[1,2], Alain Jacques[1], Pierre Bastie[4,5], Jonathan Cormier[3], Lucile Dezerald[1] *[1]Institut Jean Lamour, Nancy, France, [2]Department of Physics, Eötvös University, Budapest, Hungary, [3]Institut P Prime, Futuroscope Chasseneuil , France, [4]LIPhy, Saint Martin d'Hères, France, [5]ILL, Grenoble, France*	**THERMAL CONDUCTIVITY MODEL OF Si3N4 CERAMICS** **Doctor Xiao-Shan Ning**[1], Mengmeng Peng[1], Xingli Liu[1] *[1]Tsinghua University, Beijing, China, Haidian district, CHINA*	**A FAILURE ANALYSIS INVESTIGATION OF A TRANSMISSION PRECISION ROLLER CHAIN** **MSc Sophia Papanikolaou**[1], Mr Alexandros Antonatos[2], Mr. Mihalis Fikas[2], MSc Dimitrios Fasnakis[1], Mr. Andreas Maropoulos[3] *[1]Technological Educational Institute of West Macedonia, Kozani, Greece, [2]Testing Research & Standards Center PCC, Athens, Greece, [3]School of Mechanical Engineering of the Aristotle University of Thessaloniki, Thessaloniki, Greece*	**INFLUENCE OF DIFFERENT COOLING REGIMES ON THE HOT DUCTILITY OF CONTINUOUSLY CASTED MICRO-ALLOYED STEEL** **Dipl.-Ing. Harald Radlwimmer**[1], Dipl.-Ing. Pierre Wiehoff[1], Dipl.-Ing. Tomasz Wojcik[1], Dr. Jakob Six[2], Dr. Sergiu Ilie[2], Prof. Ernst Kozeschnik[1] *[1]TU Wien - Institute of Materials Science and Technology, Vienna, Austria, [2]voestalpine Stahl GmbH, Linz, Austria*
15.40	**SECTION SIZE ON THE FORMATION TENDENCY OF THE PLATFORM STRAY GRAINS IN A Ni-BASED (HIGH Al) SINGLE CRYSTAL SUPERALLOY** **Haigen Zhao**[1], Shusuo Li[1], Yanling Pei[1], Shengkai Gong[1], Huibin Xu[1] *[1]School of Materials Science and Engineering, Beihang University, Beijing, China*	**PREPARATION AND CHARACTERIZATION OF BULK NANOCRYSTALLINE HAFNIUM DIBORIDE** **Assoc. Prof. NAZLI AKÇAMLI**[1,2], Preparation And Characterization Of Bulk Nanocrystalline Hafnium Diboride DUYGU AĞAOĞULLARI[1], Preparation And Characterization Of Bulk Nanocrystalline Hafnium Diboride ÖZGE BALCI[1,3], Preparation And Characterization Of Bulk Nanocrystalline Hafnium Diboride İSMAİL DUMAN[1], Preparation And Characterization Of Bulk Nanocrystalline Hafnium Diboride M. LÜTFİ ÖVEÇOĞLU[1] *[1]İstanbul Technical University, İstanbul, Turkey, [2]Bursa Technical University, Bursa, Turkey, [3]Koç University, İstanbul, Turkey*	**CHARACTERIZATION OF DAMAGE MECHANISM FOR INDUSTRIAL COMPONENTS SUBJECTED TO COMBINED DYNAMIC IMPACT LOADING AND SLIDING** **PhD student Reza Karimi Bakhshandi**[1], Associate Professor Anders Gåård[1], Professor Jens Bergström[1] *[1]Karlstad University, Karlstad, Sweden*	**MODELING THE THERMOMECHANICAL LOADINGS-INDUCED DAMAGE IN CERAMIC HONEYCOMB STRUCTURES: APPLICATION TO DIESEL PARTICULATE FILTERS REGENERATION** **Pr Michel Boussuge**[1], Dr Arnaud Beurotte[1], Dr Laurent Jeanfaivre[1] *[1]MINES-ParisTech Materials Center, Evry, France*
16.00	**EFFECT OF SUBSTRATE ORIENTATIONS ON MICRO-STRUCTURE EVOLUTION AND FAILURE BEHAVIOR FOR SINGLE CRYSTAL SUPERALLOYS IN RECAST LAYER** **Dr Tao Dong**[1], Dr Chengtong Gao[1], Dr Kaiming Liang[1], associate professor Yanling Pei[1], Professor Shusuo Li[1], Professor Shengkai Gong[1] *[1]School of Materials Science and Engineering, Beihang University, No. 37 Xueyuan Road, China*	**LOW-TEMPERATURE AUTOCLAVE SYNTHESIS OF CHROMIUM BORIDES** **Ph.D. Duygu Ağaoğulları**[1], Assist. Prof. Dr. Nazlı Akçamlı[2], Prof. Dr. Lütfi Öveçoğlu[1] *[1]Istanbul Technical University, Maslak, Turkey, [2]Bursa Technical University, Yıldırım, Turkey*	**CONSTITUTIVE LAWS AND FINITE ELEMENT MODELING FOR THE FATIGUE OF TEXTILES USED IN CAROTID ARTERY REPAIR** Dr. Leonidas A. Spyrou[1], **Ioannis D. Gavardinas**[2], Athanasios Athanasoulas[3], Dr. Konstantinos Spanos[3], Professor Athanasios D. Giannoukas[3], Professor Antonios E. Giannakopoulos[4] *[1]Institute for Research & Technology – Thessaly, Centre for Research & Technology Hellas (CERTH), Volos, Greece, [2]Department of Civil Engineering, University of Thessaly, Volos, Greece, [3]Department of Vascular Surgery, Faculty of Medicine, University of Thessaly, Larisa, Greece, [4]National Technical University of Athens, Mechanics Division, Athens, Greece*	**FATIGUE LIFE CALCULATION OF DUCTILE CAST IRON AND METASTABLE AUSTENITIC STEELS BASED ON MEASUREMENT OF PHYSICAL MATERIALS PROPERTIES** **Prof. Dr.-ing. Tilmann Beck**[1], Dr.-Ing. Marcus Klein[1], Dipl.-Ing. Benjamin Jost[1], Dr.-Ing. Marek Smaga[1], Prof. Dr.-Ing. Dietmar Eifler[1] *[1]Institute Of Materials Science And Engineering (WKK), TU Kaiserslautern, Kaiserslautern, Germany*
16.20	**EFFECT OF STRESS AND SECONDARY ORIENTATION ON THE OXIDATION-INDUCED RECRYSTALLIZATION BEHAVIOR OF A Ni-BASED SINGLE CRYSTAL SUPERALLOY** **Dr. Lu Qin**[1], Pro. Yanling Pei[1], Pro. Shusuo Li[1], Pro. Shengkai Gong[1], Pro. Huibin Xu[1] *[1]School of Material Science and Engineering, Beihang University, Beijing, China*	**GRADIENT COATINGS BASED ON UHTCs** **Dr Oleg Grigoriev**[1], Dr. Oleg Udovyk[1] *[1]Institute For Problems Of Material Science Of Nasu, Kiyv, Ukraine*	**FATIGUE PROPERTIES OF COCR SCAFFOLDS OBTAINED BY ADDITIVE MANUFACTURING** **Dr. Bram Neirinck**[1], ir Karel Lietaert[1,2], ir Antonio Cutolo[3], prof. Brecht van Hooreweder[3] *[1]3DSystems, Leuven, Belgium, [2]Department of Materials Engineering, KU Leuven, Leuven, Belgium, [3]Department of Mechanical Engineering, KU Leuven, Leuven, Belgium*	**NANO-INDENTATION CREEP BEHAVIOUR OF ROLLED AL-4.5Cu-5TiB2 IN-SITU COMPOSITE AND ITS CORRELATION WITH THE MICROSTRUCTURE BY ORIENTATION IMAGING** **Ms. Monalisa Mandal**[1], Dr. Rahul Mitra[1] *[1]Indian Institute Of Technology, Kharagpur, Kharagpur, India*
16.40			**FINITE ELEMENT MODELING OF THE RESPONSE OF CIRCULAR SIMPLY SUPPORTED GLARE FIBER-METAL LAMINATES UNDER FRICTIONLESS OBLIQUE INDENTATION** Dr. George Bikakis[1], **Prof. Dr.-Ing Alexander Savaidis**[1] *[1]Department Of Mechanical Engineering Educators, Athens, Greece*	**STATISTICAL APPROACH FOR THE AUTOMATED REGRESSION OF CREEP EXPERIMENTS** **Irina Roslyakova**[1], Ekaterina Turchenko[1], Philip Wollgramm[2], Gunther Eggeler[2], Ingo Steinbach[1] *[1]The Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Ruhr-Universität Bochum, Bochum, Germany, [2]Lehrstuhl Werkstoffwissenschaft, Institut für Werkstoffe, Fakultät für Maschinenbau, Ruhr-Universität Bochum, Bochum, Germany*

Symposium	C1	C2	C6	D2
Room	Friends of Music Hall/M1	Conference Room 4/M1	I-15/M1	Museum Hall /M2
Session Title	Coatings and thin films 2/6 Coatings structure I	Ultrashort pulsed laser processing	Brazing, diffusion bonding	Metals & Ceramics II: Phase transformations & plasticity
Chairperson	T. Polcar, D. Holec	Philippe Delaporte	Ivan Kaban	Wayne Kaplan
15.00	*HIGHLIGHT* **NOVEL THIN PROTECTIVE COATINGS FOR AUTOMOBILE ENGINE VALVES** **Prof. Zbigniew Grzesik**[1], M.Sc. Monika Drożdż[1], Dr. Monika Migdalska[1], Dr. Karol Kyzioł[1] *[1]AGH University of Science and Technology, Krakow, Poland*	*KEYNOTE/INVITED* **NON-ABLATIVE FEMTOSECOND LASER PROCESSING OF TRANSPARENT SUBSTRATES: FROM FUNDAMENTALS TO APPLICATIONS** **Dr Yves Bellouard**[1] *[1]EPFL - STI/IMT/GALATEA LAB, Neuchâtel, Switzerland*	*HIGHLIGHT* **EFFECT OF HEAT EVOLUTION ON MICROSTRUCTURE AND JOINT PERFORMANCE UPON SOLDERING WITH REACTIVE NANO-MULTILAYERS** **Dr. Bastian Rheingans**[1], Prof. Dr. Jolanta Janczak-Rusch[1], Dr. Axel Schumacher[2], Dr. Stephan Knappmann[2], Dr. Lars P. H. Jeurgens[1] *[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining Technologies & Corrosion, Dübendorf, Switzerland, [2]Hahn-Schickard, Villingen-Schwenningen, Germany*	**CRYSTAL PLASTICITY PARAMETER IDENTIFICATION BY INTEGRATED DIC ON MICROSCOPIC TOPOGRAPHIES** **Dr.ir. Johan Hoefnagels**[1], dr. Morgan Bertin[2], Dr. Chaowei Du[1], Prof. Francois Hild[2] *[1]Eindhoven University of Technology, Eindhoven, the Netherlands, [2]LMT, ENS Cachan, CNRS, Université, Paris-Saclay, France*
15.20	**EFFECTS OF ANNEALING ON THE NANOSTRUCTURE OF PVD CRCUAGN NANOCOMPOSITE COATINGS** **Dr. Xingguang Liu**[1], Prof. Allan Matthews[2], Dr. Adrian Leyland[1] *[1]The University of Sheffield, Sheffield, United Kingdom, [2]The University of Manchester, Manchester, United Kingdom*		**EFFECT OF SURFACE SELF-NANOCRYSTALLIZATION ON DIFFUSION BONDING BETWEEN TC11 TITANIUM ALLOY AND TiAl ALLOY** Xiao-chen Wang[1], **Xue-song Fu**[1], Guo-qing Chen[1], Wen-long Zhou[1] *[1]Dalian University Of Technology, Dalian,*	**COMBINING HRDIC, EBSD AND ECCI TO STUDY THE EFFECT OF PARTICLE SIZE ON THE DEFORMATION STRUCTURES OF A NICKEL-BASED SUPERALLOY** **Dr. Allan Harte**[1], Carsten Drouven[2], Stefan Zaefferer[3], Michael Preuss[1], João Quinta da Fonseca[1] *[1]The University of Manchester, Manchester, United Kingdom, [2]RWTH Aachen University Templergraben, Aachen, Germany, [3]Max-Planck Institute for Iron Research GmbH, Germany*
15.40	**MICROSTRUCTURAL CHARACTERIZATION OF Hf-DOPED CRALN THIN FILMS DEPOSITED BY DC MAGNETRON SPUTTERING** Prof. Dr.-Ing. Dipl.-Wirt.Ing. Wolfgang Tillmann[1], **Nelson Filipe Lopes Dias**[1], Dominic Stangier[1] *[1]Institute Of Materials Engineering, TU Dortmund, Dortmund, Germany*	**EXPERIMENTAL INVESTIGATIONS OF FUNDAMENTAL MECHANISMS INVOLVED IN FEMTOSECOND LASER MODIFICATION OF DIELECTRIC MATERIALS** **Dr Stephane Guizard**[1] *[1]Laboratoire Des Solides Irradiés, Palaiseau, France*	**MICROSTRUCTURE AND STRENGTH OF Ti ALLOY JOINTS BRAZED WITH Ag-28Cu** **Dr. Galina Kasperovich**[1], Dr. Joachim Gussone[1], Dr. Jan Haubrich[1], Elodie Boller[2], Prof. Dr. Guillermo Requena[1] *[1]German Aerospace Center (DLR), Cologne, Germany, [2]European Synchrotron Radiation Facility (ESRF), Grenoble, France*	**TEM CHARACTERIZATION AND PRECIPITATION SIMULATION OF SECONDARY PHASES IN Ni-BASE SUPERALLOY RENE 65** **Tomasz Wojcik**[1], Markus Rath[1], Prof. Ernst Kozeschnik[1] *[1]Institute for Materials Science and Technology, TU Wien, Wien, Austria*
16.00	**STUDY ON THE ATOMIC AND ELECTRONIC STRUCTURE IN CRN/ALN MULTILAYERS** **Dr. Zaoli Zhang**[1], Mr Xunlong Gu[1], Dr. David Holec[2], Dr. Matthias Bartosik[3], Professor Paul H Mayrhofer[3] *[1]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, [2]Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Austria, [3]Institute of Materials Science and Technology, TU Wien, Austria*	**ULTRAFAST LASER SURFACE STRUCTURING USING CYLINDRICAL VECTOR POLARIZATION STATES** **Mr Evangelos Skoulas**[1,2], Dr Emmanuel Stratakis[1,2] *[1]Foundation for Research & Technology-(IESL), Heraklion, Greece, [2]Material Science & Technology Departement - Univercity of Crete, Heraklion, Greece*	**MICROSTRUCTURE CHARACTERISTICS OF JOINTS AFTER INDUCTION BRAZING OF Ti-6AL-4V ALLOY WITH Ti-Zr-Cu-Pd-Sn AMORPHOUS FILLER FOIL** **M.Sc.Eng. Kamil Badura**[1], Anna Sypien[1] *[1]Institute Of Metallurgy And Materials Science, Polish Academy Of Sciences, Krakow, Poland*	**PRECIPITATION PHENOMENA AND STRENGTHENING MECHANISMS IN ULTRAFINE-GRAINED AND NANOCRYSTALLINE Al-Zn-Mg-Cu ALLOY** **Research Assistant Professor Haiming Wen**[1,2] *[1]Idaho State University, Idaho Falls, United States, [2]Idaho National Laboratory, Idaho Falls, United States*
16.20	**INSIGHTS INTO THE GROWTH OF GaN AND FE BASED NITRIDES USING ELECTRON BEAM PHYSICAL VAPOUR DEPOSITION.** **Dr Robert Davies**[1], Dr Michelle Moram[1], Miss Simona Pace[1], Miss Izzati Nadzri[1] *[1]Imperial College London, London, United Kingdom*	**WAVEGUIDE LASERS FABRICATED BY FEMTOSECOND-LASER INDUCED LOCAL MODIFICATION OF THE GLASS COMPOSITION** Dr. Jesus Hoyo[1], Dr. Pedro Moreno-Zárate[2], Dr. Germán Escalante[3], Dr. Juan Antonio Vallés[4], Prof. Paloma Fernández[2], **Prof. Javier Solis**[1] *[1]Laser Processing Group, Instituto de Óptica-CSIC, Madrid, Spain, [2]Industrial Engineering, Tepexi Higher Technological Institute, Tepexi de Rodríguez, Mexico, [3]Depto. de Física de Materiales, Facultad de Físicas, Univ.Complutense, Madrid, Spain, [4]Departamento de Física Aplicada-I3A, Facultad de Ciencias, Universidad de Zaragoza, Zaragoza, Spain*	**DIFFUSION BONDING OF TiAl TO Ti6Al4V ASSISTED BY NANOLAYERS** **Dr Sónia Simões**[1], Dr Filomena Viana[1], Dr. Ana Sofia Ramos[2], Prof. Teresa Vieira[2], Dr. Manuel F. Vieira[1] *[1]CEMMPRE, Department Of Materials And Metallurgical Engineering, University Of Porto, Portugal, Porto, Portugal, [2]CEMMPRE, Department of Mechanical Engineering, University of Coimbra, Portugal, Coimbra, Portugal*	**UNDERSTANDING THE NANOSTRUCTURES OF EPITAXIAL STRAIN-ENGINEERED FERH THIN FILMS** **Dr. Di Wang**[1,2], Dr. Ralf Witte[1], Dr. Sabine Schlabach[2,3], Dr. Robert Kruk[1], Dr. Christian Kuebel[1,2], Prof. Horst Hahn[1,4] *[1]Institute of Nanotechnology, Karlsruhe Institute of Technology, Eggenstein-leopoldshafen, Germany, [2]Karlsruhe Nano Micro Facility, Karlsruhe Institute of Technology, Eggenstein-leopoldshafen, Germany, [3]Institute for Applied Materials, Karlsruhe Institute of Technology, Eggenstein-leopoldshafen, Germany, [4]KIT-TUD-Joint Research Laboratory Nanomaterials, Technical University Darmstadt, Darmstadt, Germany*
16.40	**STRUCTURAL AND MECHANICAL PROPERTIES OF ZrMo THIN FILMS: FROM THE NANOCRYSTALLINE TO THE AMORPHOUS STATE** **MSc Alejandro Borroto**[1,2], Dr Stéphanie Bruyère[1], Dr. Nicolas Thurieau[1], Dr. Christine Gendarme[1], Dr. Emilio Jimenez-Piqué[3], Dr. Joan Josep Roa[3], Prof. Jean-François Pierson[1], Prof. Frank Mücklich[2], Dr. David Horwat[1] *[1]Institut Jean Lamour, UMR 7198, Université de Lorraine, CS 50840 Parc de Saurupt, 54011 Nancy, France, [2]Department of Materials Science and Engineering, Chair of Functional Materials, Saarland University, Campus D3.3, D-66123 Saarbrücken, Germany, [3]Department of Ciencia de Materiales e Ingenieria Metalurgica, Universitat Politecnica de Catalunya, C/Eduard Maristany 10-14 (EEBE), 08019 Barcelona, Spain*	**ULTRAFAST LASER FABRICATION OF BIOMIMETIC NANO STRUCTURED FUSED SILICA SURFACES WITH CIRCULAR POLARIZATION** **PhD Student Alexandros Mimidis**[1,2], PhD Student Antonis Papadopoulos[1,2], PhD Student Evangelos Skoulas[1,2], PhD Emmanuel Stratakis[1,2] *[1]Foundation for Research and Technology (FORTH), Institute of Electronic Structure and Laser (IESL), Greece, [2]University of Crete, Material Science & Technology Department, Greece*	**THE EFFECT OF A ZINC COATING ON THE BONDING OF ALUMINIUM TO LOW CARBON STEEL** **Mr Alireza Valizadeh**[1], Professor Isaac Chang[1], Dr Ian Stone[1] *[1] Brunel Centre for Solidification Technology, Brunel University London, Uxbridge, UB8 3PH, UK, Greater London, United Kingdom*	**SPONSOR PRESENTATION: FEI - LATEST DEVELOPMENTS IN ABERRATION CORRECTED LOW kV STEM IMAGING AND SPECTROSCOPY** **Dominique Delille**

Symposium	D4	D9	E1	E2
Room	Library Hall/M2	Maurice Saltiel Hall I/M2	CR II Hall/M2	CR III Hall/M2
Session Title	Mechanical testing at micro/nano scales - Deformation Mechanisms II	Advanced Nuclear Steels (II)	Electrodes/Hydrogen storage	Li air batteries / Li cathodes
Chairperson	Daniel Caillard & Mohsen Asle Zaeem	M. Serrano García	Bogdan Kuchta & Tanja Kallio	T. Zawodzinski
15.00	*HIGHLIGHT* **KINETICS OF DISLOCATIONS, SOLID SOLUTION HARDENING AND DYNAMIC STRAIN AGEING IN Fe, Fe ALLOYS, AND STEELS** **Daniel Caillard**[1] *[1]Cemes-cnrs, Toulouse, France*	*KEYNOTE/INVITED* **DISPERSION CONTROL OF OXIDE PARTICLES FOR HIGH PERFORMANCE ODS FERRITIC STEELS** **Professor Akihiko Kimura** *Kyoto University, Uji, Japan*	*KEYNOTE/INVITED* **HIERARCHICAL STRUCTURED FOAMS OF POROUS NITROGEN-DOPED CARBON FOR PEM FUEL CELLS** **Prof. Dr. Rolf Hempelmann** *Transfer center Sustainable Electrochemistry at Saarland University, Saarbruecken, Germany*	*KEYNOTE/INVITED* **CATHODE REACTIONS IN RECHARGEABLE APROTIC Li-O2 BATTERIES** **Prof Peter Bruce** *University Of Oxford, Oxford, United Kingdom*
15.20	**NEW UNDERSTANDING OF DEFORMATION IN TiAl ALLOYS USING A HYBRID STUDY OF IN-SITU TRANSMISSION ELECTRON MICROSCOPY EXPERIMENTS AND MOLECULAR DYNAMICS** **Dr. Seong-Woong Kim**[1], Jaemin Kim[3], Prof. Seung-Hwa Ryu[3], Dr. Young-Sang Na[1], Dr. Seung-Eon Kim[1], Prof. Andrew Minor[2] *[1]Korea Institute of Materials Science, Changwon, South Korea, [2]Lawrence Berkeley National Laboratory, Berkeley, USA, [3]Korea Advanced Institute of Science and Technology, Daejeon, South Korea*			
15.40	**THE INFLUENCE OF INTERGRANULAR CONSTRAINTS ON THE SLIP SYSTEMS OF TIMETAL-407 ALLOY** **Dr Bo Pang**[1], Prof M.H. Loretto[1], Dr Matthew Thomas[2], Dr Yu-Lung Chiu[1] *[1]School of Metallurgy and Materials, The University of Birmingham, Birmingham, United Kingdom, [2]Timet, Birmingham, United Kingdom*	**INVESTIGATION OF RECRYSTALLIZATION MECHANISMS IN A FERRITIC ODS STEEL USING EBSD AND MONTE CARLO MODELLING** **Benjamin Hary**[1], Pr Roland Loge[2], Dr Thierry Baudin[3], Dr Joel Malaplate[1], Dr Yann De Carlan[1] *[1]DEN-Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, F-91191, Gif-sur-Yvette, Gif Sur Yvette, France, [2]LMTM, Ecole Polytechnique Fédérale de Lausanne, 2002 Neuchâtel, Neuchâtel, Switzerland, [3]ICCMO, Université Paris-Saclay, UMR CNRS 8182, 91405 Orsay, Orsay, France*	*HIGHLIGHT* **HYDROGEN ADSORPTION STORAGE: LINKING MATERIALS DEVELOPMENT TO SYSTEM PERFORMANCE** **Richard Chahine**[1] *[1]Hydrogen Research Institute, Université du Québec à Trois-Rivières, Quebec, Canada*	**CHEMICAL STABILITY OF ETHER-BASED ELECTROLYTES IN Li-O2 BATTERIES** **Dr. Sergio Brutti**[1], Dr. Marco Carboni[2], Dr. Daniela Giacco[2], Dr. Riccardo Spezia[3], Dr. Andrea Giacomo Marrani[2] *[1]University Of Basilicata, Potenza, Italy, [2]University of Rome La Sapienza, Roma, Italia, [3]CNRS-LAMBE, Université d'Evry, Evry, France*
16.00	**UNDERSTANDING AND QUANTIFYING THE DEFORMATION MECHANISMS DURING SUPERPLASTIC DEFORMATION OF THE AZ31 Mg-ALLOY** **Thibaut DESSOLIER**[1], Dr Francine Rousel-Dherbey[2], Dr Frédéric Charlot[2], Pr Laurent Delannay[3], Dr Pierre Lhuissier[1], Associate Pr Guilhem Martin[1], Dr Jean-Jacques Blandin[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, Grenoble, France, [2]Univ. Grenoble Alpes, CNRS, Grenoble INP, CMTC, Grenoble, France, [3]Université Catholique de Louvain, Institut de Mécanique, Matériaux et Génie Civil, Louvain-la-Neuve, Belgium*	**APT AND TEM INVESTIGATION OF THE EVOLUTION OF THE MICROSTRUCTURE OF ION IRRADIATED ODS STEEL** **Dr Constantinos Hatzoglou**[1], Dr Bertrand Radiguet[1], Pr Philippe Pareige[1] *[1]Groupe De Physique Des Matériaux (gpm), Normandie Université, Université Rouen, France*	**DEVELOPMENT OF NEW INTERMETALLIC HYDRIDES FOR HYDROGEN STORAGE APPLICATIONS** **Dr. Bernard Tougas**[1], Dr. Jacques Huot[2] *[1]Centre de Métallurgie du Québec, Trois-Rivières, Canada, [2]Université du Québec à Trois-Rivières, Trois-Rivières, Canada*	**LiNi0.5Mn1.5O4 PARTICLES SYNTHESIZED BY AEROSOL SPRAY PYROLYSIS AND THEIR EVALUATION FOR NEXT - GENERATION Li-ion CATHODE MATERIALS** **Dr Georgia Kastrinaki**[1], Mr George Ganas[1], Mr Dimitrios Zarvalis[1], Dr Athanasios G. Konstandopoulos[1,2], Dr Daniele Versaci[3], Prof Nerino Penazzi[3], Prof Silvia Bodoardo[3], Dr Iratxe de Meatza[4], Dr Miguel Bengoechea[4] *[1]CERTH, Thessaloniki, Greece, [2]Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Politecnico di Torino, Torino, Italy, [4]IK4-CIDETEC, San Sebastian, Spain*
16.20	**MICROSTRUCTURAL EVOLUTION IN MULTILAYERED THIN FILMS WITH DIFFERENT INTERFACE STRUCTURE UNDER SLIDING CONTACT** **Ankush Kashiwar**[1,2], Dr. Zhao-Ping Luo[3], Dr. Xiaoke Mu[1,4], Dr. Horst Hahn[1,2], Dr. Ruth Schwaiger[1,5], Dr. Christian Kübel[1,5] *[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany, [2]Technische Universität Darmstadt, Darmstadt, Germany, [3]Shenyang National Laboratory for Materials Science, Shenyang, China, [4]Helmholtz Institute Ulm for Electrochemical Energy Storage, Ulm, Germany, [5]Karlsruhe Nano Micro Facility, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	**COMPOSITIONAL EFFECTS ON THE PRECIPITATE MICROSTRUCTURE OF RAFM STEELS AND INFLUENCE ON MECHANICAL PROPERTIES** **Athina Puype**[1], Lorenzo Malerba[2], Nico De Wispelaere[3], Roumen Petrov[1,4], Jilt Sietsma[1,4] *[1]UGent, Zwijnaarde, Belgium, [2]SCK CEN, Mol, Belgium, [3]OCAS, Zwijnaarde, Belgium, [4]TUDelft, Delft, Netherlands*	**DESIGN, DEVELOPMENT, CONSTRUCTION AND OPERATION OF A NOVEL METAL HYDRIDE COMPRESSOR** Dr. Henrik Von Storch[1], Dr. Georgios Karagiorgis[2,2], Dr. Chris N. Christodoulou[2,2], Dr. Georgios Tzamalis[2,4], Konstantinos Deligiannis[2], Demetrios Hadjipetrou[2], Marios Odysseos[2], Dr. Martin Roeb[1], **Dr. Christos Agrafiotis**[1], Prof. Dr. Christian Sattler[1] *[1]German Aerospace Center (dlr), Cologne, Germany, [2]HYSTORE Technologies, Nicosia, Cyprus, [3]Frederick University, Nicosia, Cyprus, [4]DEMOKRITOS (NCSRD), Athens, Greece*	**AQUEOUS ELECTRODE PROCESSING STRATEGIES FOR HIGH-ENERGY Li1.2Ni0.16Mn0.56Co0.08O2 LITHIUM-Ion CATHODES** **Arefehsadat Kazzazi**[1,2], Dr. Agnese Birrozzi[1,2], Dr. Nina Laszczynski[1,2], Dr. Jan von Zamory[1,2], Maral Hekmatfar[1,2], Dr. Dominic Bresser[1,2], Prof. Dr. Stefano Passerini[1,2] *[1]Helmholtz Institute Ulm (HIU), Ulm, Germany, [2]Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany*
16.40	**TEMPERATURE-DEPENDENT PLASTIC HYSTERESIS IN HIGHLY CONFINED POLYCRYSTALLINE NB FILMS** **Ms Sana Waheed**[1], Dr Daniel Balint[1], Dr Finn Giuliani[1] *Imperial College London, London, United Kingdom*	**CHARACTERISATION OF MECHANICAL PROPERTIES OF Fe10Cr4Al STEEL UNDER VACUUM AND IN PbBi EUTECTIC** **Fosca Di Gabriele**[1], Michal Chocholousek[1], Anna Hojna[1], Peter Szakalos[2], Zbynek Spirit[1] *[1]CVR, Rez, Czech Republic ,[2]KTH, Stockholm, Sweden*		**THERMODYNAMIC INVESTIGATION OF LAYER STRUCTURED LiNixMnyCoz02 AS LITHIUM ION BATTERY CATHODE MATERIALS** **Ms Maryam Masoumi**[1], Dr. Damian Marlon Cupid[1], Prof. Hans Jürgen Seifert[1] *[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*

Symposium	E3	F1	F4
Room	Rehearsal Room 5.17/M1	3-20/M1	3-21/M1
Session Title	Thermoelectrics I	Degradable and Natural Polymers for Tissue Engineering	Hard materials to repair bone and teeth
Chairperson	Alexander Burkov	Simeon Agatopoulos	Helen REVERON
15.00	*HIGHLIGHT* **HYBRID PHOTOVOLTAIC THERMOELECTRIC GENERATORS FOR ENHANCED SOLAR ENERGY CONVERSION** **Professor Dario Narducci**[1], Doctor Bruno Lorenzi[1] *[1]University Of Milano Bicocca, Dept. Materials Science, Milano, Italy*	*KEYNOTE/INVITED - ESB CONTRIBUTION* **ENGINEERING BIOMATERIALS FOR BONE TISSUE REGENERATION** **M. Chatzinikolaidou**[1,2], M. Kaliva[1,2], L. Papadimitriou[1,2], A. Georgopoulou[1,2], E. Mygdali[2], M. Vamvakaki[1,2] *[1]Dept. of Materials Science and Technology, University of Crete, P.O. Box 2208, 71003 ,Heraklio, Greece, 2IESL-FORTH, Heraklio, Greece*	*HIGHLIGHT* **MACROSCALE ARCHITECTURE OF HYDROXYAPATITE BIOCERAMICS AFFECTS BOTH OSTEOGENESIS AND ANGIOGENESIS** **David Marchat**[1] *[1]Ecole Mines Saint-etienne, CIS-EMSE, Saint-etienne, France*
15.20	**NANOMATERIAL-SOLUTIONS TO SHAPE-ADAPTABLE THERMOELECTRIC DEVICES** Silvia Ortega[1], Albert Massaguer[2], Toni Pujol[2], Andreu Cabot[1,3], Doris Cadavid[1], **Yu Liu**[1] *[1]Catalonia Institute For Energy Research - IREC, Sant Adria De Besos, Spain, [2]Departament d'Enginyeria Mecànica i de la Construcció Industrial, Universitat de Girona, Girona, Spain, [3]Catalan Institution for Research and Advanced Studies - ICREA, Barcelona, Spain*		**CHARACTERIZATION OF OPEN-CELL AND GLASS-CERAMIC FILLED CELLULAR ZIRCONIA STRUCTURES FOR BIOMEDICAL APPLICATIONS** **Professor Bruno Henriques**[1,2], Professor Márcio Fredel[2], Dr Joana Mesquita-Guimarães[1], Professor Júlio CM Souza[2], Mr Paulo Pinto[1], Mr Douglas Fabris[2], Professor Filipe S Silva[1] *[1]CMEMS-University of Minho, Guimarães, Portugal, [2]CERMAT - Federal University of Santa Catarina, Florianópolis, Brazil*
15.40	*HIGHLIGHT* **HIGHLY EFFICIENT IV-VI BASED THERMOELECTRIC MATERIALS AND DEVICES** **Prof. Yaniv Gelbstein**[1] *[1]Ben Gurion University, Beer-Sheva, Israel*	**DUAL SYRINGE DRUG DELIVERY NANOSCAFFOLD FOR EFFECTIVE IMPLANTATION IN ORTHOPAEDIC APPLICATIONS** **Mrs. Aikaterini-Rafailia Tsiapla**1, Mrs. Varvara Karagkiozaki[1,2], Mrs. Fotini Pappa[1,2], Mrs. Veroniki Bakola[1], Mrs. Eleni Pavlidou[3], Mrs. Theodora Choli-Papadopoulou[4], Mr. Ioannis Moutsios[1], Mrs. Panagiwta Gkertsiou[1], Mr. Stergios Logothetidis[1] *[1]for "Thin Films- Nanosystems & Nanometrology", Nanomedicine Group, Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]BL Nanobiomed P.C. Thessaloniki, Greece, Thessaloniki, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [4]Department of Chemistry, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece*	**CAN AGEING AND AIRBORNE-PARTICLE ABRASION JEOPARDIZE THE STRENGTH OF BIOMEDICAL-GRADE ZIRCONIA CERAMICS?** **Jasna Cotic**[1], Peter Jevnikar[1], Andraz Kocjan[2] *[1]Department of Prosthodontics, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia, [2]Department for Nanostructured Materials, Jožef Stefan Institute, Ljubljana, Slovenia*
16.00	**A HIGH-THROUGHPUT INVESTIGATION OF THE THERMOELECTRIC PROPERTIES OF MOLYBDENUM TIN TELLURIDE ALLOYS** **Dr Jin Yao**[1], Dr John Kavanagh[1], Professor Brian Hayden[1,2] *[1]University Of Southampton, Southampton, United Kingdom, [2]ILIKA TECHNOLOGIES, SOUTHAMPTON, UNITED KINGDOM*	**NANOMECHANICAL CHARACTERIZATION OF FIBROUS PVA:PEDOT:PSS SCAFFOLDS FOR NERVE GRAFT CONDUITS** **Foteini Pappa**[1], Varvara Karagkiozaki[1], Spiros Kassavetis[1], Maria Gioti[1], Sofia Aslanidou[1], Panagiota Gkertsiou[1], Eleni Pavlidou[2], Theodora Choli-Papadopoulou[3], Stergios Logothetidis[1] *[1]Lab for "Thin Films- Nanobiomaterials, Nanosystems & Nanometrology", Department of Physics, Aristotle University, Thessaloniki, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Biochemistry Laboratory, Department of Chemistry, Aristotle University of Thessaloniki, Greece*	**DELAYED DELAMINATION MECHANISMS OF DIAMOND-LIKE CARBON COATINGS ON ARTICULATING BIOMEDICAL IMPLANTS** **Emilija Ilic**[1,2], Dr. Roland Hauert[1], Dr. Patrik Schmutz[1], Dr. Thomas Suter[1], Prof. Stefano Mischler[2] *[1]Empa, Duebendorf, Switzerland, [2]EPFL, Lausanne, Switzerland*
16.20		**DEVELOPMENT OF FISH SCALE REINFORCED PHBV NANOFIBROUS SPONGE-LIKE SCAFFOLD FOR BONE TISSUE REGENERATION** **Oylum Colpankan Gunes**[1], Aylin Kara[2], Aylin Ziylan Albayrak[1], Hasan Havıtcıoglu[2,3], Gokcen Bilice[4], Guven Erbil+ *[1]Department of Metallurgical and Materials Engineering, Dokuz Eylul University, Izmir, Turkey, [2]Department of Biomechanics, Dokuz Eylul University, Izmir, Turkey, [3]Department of Orthopedics and Traumatology, Dokuz Eylul University, Izmir, Turkey, [4]Department of Histology and Embryology, Faculty of Medicine, Dokuz Eylul University, Izmir, Turkey*	**NUMERICAL STUDY OF THE MECHANICAL STABILITY OF CUSTOM-MADE IMPLANTS MADE BY SLM MANUFACTURING** **Paul Didier**[1], Boris Piotrowki[1], Pascal Laheurte[1], Marie Fischer[1] *[1]Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux LEM3 UMR CNRS 7239, Arts et Métiers ParisTech Campus de Metz, Université de Lorraine, Metz, France*
16.40			**MICROSTRUCTURAL AND MECHANICAL CHARACTERISATION OF DENTAL MATERIALS** **Teresa Palacios**[1], C Abad[2], G Pradíes[2], JY Pastor[1] *[1]Departamento de Ciencia de Materiales-CIME, Universidad Politécnica de Madrid, Madrid, Spain, [2]Departamento de Estomatología I, Universidad Complutense de Madrid, Madrid, Spain*

Symposium	H1	H2	H3
Room	I -16/M1	Conference Room 2/M1	Conference Room 3
Session Title	Critical Magnetic Materials I	Valorization of Secondary Resources	Implementation into practice and dicusssion
Chairperson	Tom Lograsso	Guo Muxing, Ioanna Giannopoulou	Roland Gauss
15.00	*KEYNOTE/INVITED* **MATERIAL CRITICALITY AND CARBON ABATEMENT, 2017-2030** **Professor Roderick Eggert**[1] [1]*Colorado School of Mines, Golden, United States*	**REUSE OF STEEL FLY ASH FOR CEMENT-BASED ELECTROMAGNETIC INTERFERENCE SHIELDING MATERIALS PRODUCTION** **Dr. Yong Fan**[1], Mr. Ling Zhang[1], Dr. Vladimir Volskiy[2], Prof. Guy Vandenbosch[2], Prof. Bart Blanpain[1], Dr. Muxing Guo[1] [1]*Department of Materials Engineering, KU Leuven, Leuven, Belgium,* [2]*Department of Electrical Engineering, KU Leuven, Leuven, Belgium*	**PROCESS MODEL BASED LCA USING HSC CHEMISTRY SOFTWARE. DEMONSTRATION WITH SILVER REFINING CASE AND POWER PLANT OPTIMIZATION USING EXERGY** Antti Roine[1], **Markus A. Reuter**[2] [1]Outotec Oyj, Espoo, Finland [2]Helmholtz-Institute Freiberg for Resource Technology, Freiberg, Germany
15.20		**HIGH STRENGTH CONCRETE USING BASALT AGGREGATE IN CONSTRUCTION AND CONCRETE MIX IMPROVEMENT** **Assistant Professor Mohmd Sarireh**[1] [1]*Tafila Technical University, Tafila, Jordan*	**LIFE CYCLE ASSESSMENT OF GOLD PRODUCTION: COMPARISON OF PRIMARY AND SECONDARY SUPPLY ROUTES** **Dr. David Turner**[1], Mr. Arthur Haarman[1], Dr. Roland Hischier[1] [1]*Empa, St Gallen, Switzerland*
15.40	**NANOCOMPOSITE SOFT MAGNETIC MATERIALS FOR ENERGY AND POWER CONVERSION APPLICATIONS** **Paul Ohodnicki**[1] [1]*National Energy Technology Laboratory / DOE, Pittsburgh, United States*	**DESIGN OF IRON-RICH INORGANIC POLYMER PASTES: INFLUENCE OF THE CHEMISTRY OF THE PRECURSOR SLAG AND ACTIVATING SOLUTION** **Arne Peys**[1], Jorn Van de Sande[1], Vincent Hallet[1], Tobias Hertel[1], Silviana Onisei[1], Hubert Rahier[2], Bart Blanpain[1], Yiannis Pontikes[1] [1]*KU Leuven Department of Materials Engineering, Leuven, Belgium,* [2]*Department of Materials and Chemistry, Vrije Universiteit Brussel, Brussels, Belgium*	**THE DEVELOPMENT OF A MATERIAL CIRCULARITY INDICATOR SOFTWARE TOOL** Dr Luca Petruccelli[1], **Dr Donna Dykeman**[1], Dr Claes Fredriksson[1], Dr Conny Bakker[2], Miss Wendela Huisman[3], Dr James Goddin[1] [1]*Granta Design, Cambridge, United Kingdom,* [2]*TU Delft, Delft, The Netherlands,* [3]*Schmidt MacArthur Fellowship, Isle of Wight, United Kingdom*
16.00	*HIGHLIGHT* **TAILORING OF MAGNETIC SOFTNESS AND GMI EFFECT IN FE-RICH THIN MAGNETIC WIRES** **Dr. Prof. Arcady Zhukov**[1], Dr. Mihail Ipatov[2], Dr. Ahmed Talaat[2], Dr. Juan Maria Blanco[3], Dr. Margarita Churyukanova[4], Dr. Valentina Zhukova[2] [1]*Dept. Phys. Mater., Univ. Basque Country and IKERBASQUE, Foundation for Science, San Sebastian, Spain,* [2]*Dept. Phys. Mater. and Dept. Applied Phys., Univ. Basque Country, San Sebastian, Spain,* [3]*Dept. Applied Phys., Univ. Basque Country, San Sebastian, Spain,* [4]*National University of Science and Technology «MISIS», Moscow, Russia*	**CONTROLLING THE RHEOLOGY OF INORGANIC POLYMERS PASTES DERIVED FROM NON-FERROUS SLAGS** **Sir Glenn Beersaerts**[1], Mrs Lubica Kriskova[1], Sir Yiannis Pontinkes[1] [1]*KU Leuven, Leuven, Belgium*	**SHOULD WE RECYCLE RARE EARTH ELEMENTS FROM FLUORESCENT LAMPS? - A CASE STUDY** **Dieuwertje Schrijvers**[1,2], Guido Sonnemann[1,2] [1]*University Of Bordeaux - ISM, France, 2CNRS - ISM, France*
16.20	*HIGHLIGHT* **CO-LEAN ALNICO: PATH TO A SUSTAINABLE HIGH TEMPERATURE PERMANENT MAGNET** **Matthew Kramer**[1], A. Palasyuk[1], Lin Zhou[1], A. Kassen[1], Lianfa Hu[1], Wei Tang[1], I. E. Anderson[1] [1]*Ames Laboratory/ Iowa State University, Ames, United States*	**SINTERING FLUE GAS DENITRIFICATION WITH DIFFERENT CARBON MATERIALS MODIFIED BY STEAM AND ACID** **Shan Ren**[1] [1]*Chongqing University, Chongqing, China*	**METAL STOCK ACCUMULATION AND SOCIO-ECONOMIC DRIVERS IN CHINESE MEGACITIES: A BOTTOM-UP ANALYSIS** **Dr. Gang Liu**[1] [1]*University Of Southern Denmark, Odense, Denmark*
16.40	*HIGHLIGHT* **HIGH-THROUGHPUT APPROACH TO DEVELOPING MAGNET ALLOYS WITH DECREASED CRITICAL MATERIALS** **Ryan Ott**[1], Ikenna Nlebedim[1], Emrah Simsek[1], Matthew Kramer[1] [1]*Ames Laboratory (USDOE), Ames, United States*		**DISCUSSION: DOES INDUSTRY NEED LIFE CYCLE CONCEPTS?**

Symposium	A3	A5	A7	A8
Room	I-1 1/M 1	MOYSA Hall/M2	F 319/M1	I-08/M1
Session Title	Nanostructured polymers III	Bio-nano interface II	Alloys at the nanoscale	Functional materials
Chairperson	**Alice MIJA**	**Zhenxin Wang**	**Paloma Fernández**	**Daniele Preziosi**
17.30	**DIFFERENT ROUTES TO GET STRUCTURATION AT NANOSCALE WITHIN POLYMER MATERIALS** **Professor Jannick Duchet-rumeau**[1], Dr Sébastien Livi[1], Dr Sebastien Pruvost[1], Pr Jean-François Gérard[1] *[1]Imp-university Of Lyon, Villeurbanne, France*	*HIGHLIGHT* **GOLD NANOPARTICLES AS CHARGE SHUTTLES IN MEMBRANES** **Prof. Mathias Brust**[1] *[1]University Of Liverpool, Liverpool, United Kingdom*	*KEYNOTE/INVITED* **INVESTIGATION VIA SYNCHROTRON RADIATION X-RAYS OF ORDERED PHASE CHANGE MATERIALS** **Raffaella Calarco**[1] *[1]Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany*	**TUNING THE ELECTROCALORIC EFFECT BY STRAIN, FIELD DIRECTION, AND DEFECTS: INVERSE ECE AND THE IMPACT OF HYSTERESIS** **Anna Grünebohm**[1], Madhura Marathe[2], Claude Ederer[2] *[1]University of Duisburg-Essen and CENIDE, Duisburg, Germany, [2]Materials Theory, ETH Zürich, Switzerland, Zürich, Switzerland*
17.50	**EFFECT OF ZnO GROWTH ON THE MORPHOLOGICAL, MECHANICAL, BARRIER AND ANTIMICROBIAL PROPERTIES OF CHITOSAN BASED FILMS FOR FOOD PACKAGING APPLICATIONS** Dipl.-Ing. Olga Boura-Theodoridou[1], PhD Aris Giannakas[2], Professor Petros Katapodis[3], Professor Haralambos Stamatis[3], Professor Athanasios Ladavos[2], **Professor Nektaria-marianthi Barkoula**[1] *[1]Department of Materials Science and Engineering, University of Ioannina ,Ioannina, Greece, [2]Department of Business Administration of Food and Agricultural Enterprises, Laboratory of Food Technology, University of Patras, Agrinio, Greece, [3]Department of Biological Applications & Technology, University of Ioannina, Ioannina, Greece*	*HIGHLIGHT* **EMPLOYING PHOSPHOPEPTIDES AS FUNCTIONAL AGENTS TO PRODUCE RENAL CLEARABLE NANO-DOTS FOR BIOIMAGING** **Professor Zhenxin Wang**[1] *[1]Changchun Institute Of Applied Chemistry, Chinese Academy Of Sciences, Changchun, China*		**INTERACTION OF LIGHT WITH HEMATITE HIERARCHICAL STRUCTURES: EXPERIMENTS AND SIMULATIONS** **Dr Monica Distaso**[1] *[1]Fau Erlangen Nuremberg, Erlangen, Germany*
18.10	**PMMA-BASED POROUS ORGANIC-INORGANIC COMPOSITES BY IN SITU SYNTHESIS OF ZnO NANOPARTICLES** **Dr Davide Morselli**[1], Dr Despina Fragouli[1], Dr Athanassia Athanassiou[1] *[1]Smart Materials Group, Istituto Italiano Di Tecnologia, Genova, Italy*	*HIGHLIGHT* **CANCER DIAGNOSIS AND PROGNOSIS WITH SERS AND/OR FLUORESCENCE** **Prof Ramon Alvarez-Puebla**[1] *[1]Icrea-URV, Tarragona, Spain*	**ALLOYING THE GROUP III AND GROUP II-IV NITRIDES: THE Al2xMg(1-x)Si(1-X)N2 ALLOY SYSTEM** **Mr James B Quirk**[1], Dr Mikael Råsander[1], Miss Shiny Mathew[2], Mr Jonathan Rackham[1], Dr Robert Palgrave[2], Dr Michelle A Moram[1] *[1]Department of Materials, Imperial College London, London, United Kingdom, [2]Department of Chemistry, University College London, London, United Kingdom*	**FeAl FOR SUSTAINABLE MAGNETOSTRICTIVE AND MAGNETOELECTRIC APPLICATIONS** **Wilhelm Huettenes**[1], Matteo Cialone[2,3], Prof Paola Tiberto[2], Prof Lindsay Greer[1], Prof Zoe Barber[1] *[1]University Of Cambridge, Cambridge, United Kingdom, [2]Istituto Nazionale di Ricerca Metrologica Torino (INRIM), Turin, Italy, [3]Università degli studi di Torino, Turin, Italy*
18.30	**ELECTROACTIVITY AND AGEING OF IMMERSED CONDUCTING HYDROGEL** **Dr. Caroline Duc**[1], Dr. Alexis Vlandas[1], Prof. George G. Malliaras[2], Dr. Vincent Senez[1] *[1]IEMN, CNRS, Univ. Lille, ISEN, Lille, France, [2]Ecole Nationale Supérieure des Mines CMP-EMSE, MOC, Gardanne, France*	**INTERACTIONS OF FUNCTIONALIZED GOLD NANOPARTICLES WITH SKIN** Dr Rute Fernandes[1], Dr Neil Smyth[2], Professor Otto Muskens[1], **Associate Professor Antonios Kanaras**[1] *[1]Institute for Life Sciences, Physics and Astronomy, University of Southampton, Southampton, UK, [2]General hospital, University of Souuthampton, Southampton, UK*	**PHASE STABILITY AND ATOMIC MOBILITY OF NANO-CONFINED AgCu ALLOYS IN AgCu/ALN NANO-MULTILAYERS UPON HEATING** **Dr Vicente Araullo-Peters**[1], Dr Mirco Chiodi[1], Dr Claudia Cancellieri[1], Dr Jolanta Janczak-Rusch[1], Dr Lars Jeurgens[1] *[1]EMPA, Dubendorf, Switzerland*	**FIRST PRINCIPLES STUDY OF ORBITAL ORDER IN MN DOPED FeV204** **Dr. Tulika Maitra**[2], Dibyendu Dey[1], Professor Arghya Taraphder[1] *[1]Indian Institute Of Technology, Kharagpur, Kharagpur, India, [2]Indian Institute Of Technology, Roorkee, Roorkee, India*
18.50	**HOMOCONJUGATION IN POLY(PHENYLENE METHYLENE)S: UNEXPECTED FLUORESCENCE IN NON-n-CONJUGATED POLYMERS** **Andreas Braendle**[1], Aleksandr Perevedentsev[1], Nathan J. Cheetham[2], Paul N. Stavrinou[3], Jörg A. Schachner[4], Nadia C. Mösch-Zanetti[4], Markus Niederberger[1], Walter R. Caseri[1] *[1]Department of Materials, ETH Zürich, Zürich 8093, Switzerland, [2]Department of Physics and Centre for Plastic Electronics, Imperial College London, London SW7 2AZ, United Kingdom, [3]Department of Engineering Science, University of Oxford, Oxford OX 1 3PJ, United Kingdom, [4]Institute of Chemistry, University of Graz, Graz 80 10, Austria*	**QUANTUM DOT-BASED BIOCONJUGATES FOR IMAGING CELLULAR MEMBRANE POTENTIAL** **James Delehanty**[1] *[1]Us Naval Research Laboratory, United States*	**FORMATION AND TUNABLE PROPERTIES OF DEALLOYED NANOPOROUS METALS STUDIED BY In-Situ RESISTOMETRY** **Eva-Maria Steyskal**[1], Matthias Graf[2], Roland Würschum[1] *[1]Institute Of Materials Physics, TU Graz, Graz, Austria, [2]Materials Physics and Technology, TU Hamburg-Harburg, Hamburg, Germany*	
19.10			*HIGHLIGHT* **THERMODYNAMIC STABILITY AND ELASTIC PROPERTIES OF PHASES IN Au-Ni MICRO-PARTICLES** A. Herz[1], **Dr. Martin Friak**[2,3], D. Rossberg[1], M. Hentschel[1], F. Theska[1], D. Wang[1], D. Holec[4], M. Sob[3,2,5], O. Schneeweiss[2], Prof. P. Schaaf[1] *[1]Department of Materials for Electronics and Electrical Engineering, Institute of Materials Science and Engineering and Institute of Micro- and Nanotechnologies MacroNano, TU Ilmenau, Ilmenau, Germany, [2]Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic, [3]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic, [4]Department of Physical Metallurgy and Materials Testing, Montanuniversitaet Leoben, Leoben, Austria, 5Department of Chemistry, Faculty of Science, Masaryk University, Brno, Czech Republic*	
19.30				

Symposium	B2	B3	B5	B10
Room	Aimilios Riadis Hall/M2	CR I Hall/M2	Conference Room 1/M1	Maurice Saltiel Hall II/M2
Session Title	Modeling and Simulation in Light Metals	Steels & Refractories	Oxygen ion conductors and electrolytes	Fatigue and Fracture III - Welded Joints and Fracture Mechanics
Chairperson	Alan Luo	S. Milenkovic	Maria Stefanidou	Alexandros Savaidis
17.30	*HIGHLIGHT* **ALLOY DEVELOPMENT AND ADVANCED PROCESSING FOR LIGHT METALS: THE ROLE OF INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING (ICME)** **Prof. Alan Luo** *[1]Ohio State University, Columbus, United States*	**AB INITIO-BASED DESIGN OF A HIGH-TEMPERATURE Cr-Ni-BASE ALLOY** **Dr Vsevolod Razumovskiy**[1], Dr Viktor Butrim[2], Alexander Beresnev[2], Anna Trushnikova[2], Sofia Varlamova[2], Prof. Igor Razumovskii[2] *[1]Materials Center Leoben Forschung Gmbh, Leoben, Austria, [2]Joint-Stock Company "Kompozit", Korolev, Russia*	**STUDY ON THE PREPARATION OF INERT ANODE MATERIALS AND ITS CORROSION PROPERTY IN MOLTEN SALT** **Mr Yihan Liu**[1] *[1]Northeastern University, China, Shenyang, China*	*HIGHLIGHT* **FATIGUE ASSESSMENT OF WELDED STRUCTURES BASED ON LOCAL STRAINS** **Dr. Michail Malikoutsakis**[1], Dr. Georgios Savaidis[1] *[1]Aristotle University of Thessaloniki, Thessaloniki, Greece*
17.50	*HIGHLIGHT* **INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING FOR LIGHT METAL ALLOYS - STATUS AND PERSPECTIVES** **Dr. rer. nat. Georg J. Schmitz**[1] *[1]Access E.v., Aachen, Germany*	**GRAIN BOUNDARY CHEMISTRY ENGINEERING ON THE EXAMPLE OF Mo-Hf ALLOYS** Daniel Scheiber[1], Katharina Leitner[2], Reinhard Pippan[3], Peter Puschnig[4], **Lorenz Romaner**[1] *[1]Materials Center Leoben Forschung GmbH, Austria, [2]Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Austria, [3]Erich Schmid Institut of Materials Science, Austrian Academy of Sciences, Leoben, Austria, [4]University of Graz, Institute of Physics, Graz, Austria*	**CERAMIC ELECTRODES FOR ADVANCED OXIDATION OF EMERGENT CONTAMINANTS** **Dr. Sergio Mestre**[1], Dña. María José Sánchez-Rivera[1], Dra. Ana Gozalbo[1], Dr. Valentín Pérez-Herranz[2] *[1]Universitat Jaume I, Castellón, Spain, [2]Universitat Politècnica de València, Valencia, Spain*	**FATIGUE STRENGTH OF WELDED ULTRA HIGH-STRENGTH STEEL JOINTS INCORPORATING LOW TRANSFORMATION TEMPERATURE (LTT) FILLER MATERIAL AND HIGH FREQUENCY MECHANICAL IMPACT (HFMI) POST-TREATMENT** **Dr. Martin Leitner**[1], Dipl.-Ing. Markus Ottersböck[1], Dr. Michael Stoschka[1], Dr. Wilhelm Maurer[2] *[1]Montanuniversität Leoben, Chair of Mechanical Engineering, Leoben, Austria, [2]voestalpine Stahl GmbH, Linz, Austria*
18.10	*HIGHLIGHT* **EXACT THEORY OF VACANCY-MEDIATED SOLUTE TRANSPORT IN MAGNESIUM** **Associate Professor Dallas Trinkle**[1], Ravi Agarwal[1] *[1]Univ. Illinois, Urbana-champaign, Urbana, United States*	**MICROSTRUCTURAL EVOLUTION OF BORON CONTAINING 9%Cr steel** **Evgeniy Tkachev**[1], Andrey Belyakov[1], Rustam Kaibyshev[1] *[1]Belgorod State University, Belgorod, Russian Federation*	**THE EFFECT OF THE PRECURSOR POWDER SIZE ON THE ELECTRICAL AND SENSOR CHARACTERISTICS OF FULLY STABILIZED ZIRCONIA-BASED SOLID ELECTROLYTES** **Dr Olga Kurapova**[1,2], Dr Alexander Shorokhov[1], Prof Vladimir Konakov[1,2] *[1]St Petersburg State University, Saint Petersburg, Russian Federation, [2]Peter the Great St. Petersburg Polytechnic University, Saint Petersburg, Russian Federation*	**CRACK GROWTH BEHAVIOUR OF ALUMINIUM WROUGHT ALLOYS IN THE VERY HIGH CYCLE FATIGUE REGIME** **Dipl.-Wirt.-Ing. Fatih Bülbül**[1], M.Sc. Marcel Wicke[2], Dipl.-Ing. Tina Kirsten[3], Prof. Angelika Brückner-Foit[2], Prof. Martina Zimmermann[3], Prof. Hans-Jürgen Christ[1] *[1]Universität Siegen, Siegen, Germany, [2]Universität Kassel, Kassel, Germany, [3]Technische Universität Dresden, Dresden, Germany*
18.30	**GINZBURG-LANDAU THEORY OF LPSO FORMATION** **Professor Alexander Umantsev**[1] *[1]Fayetteville State University, Fayetteville, United States*	**UNDERSTANDING THE INFLUENCE OF COMPOSITION GRADIENTS ON THE PRECIPITATION OF $M_{23}C_6$ IN CENTRIFUGALLY CAST STEEL FURNACE TUBES** Dr. Manuel Roussel[1], **Dr. Xavier Sauvage**[1], Mélina Vermont[1], Charly Mougel[1], Dr. Annie Hauet[1], Prof. Michel Perez[2], Dr. Thibaut Chaise[2], Dr. Antonin Steckmeyer[3], Dr. Mathieu Couvrat[3] *[1]GPM - Université De Rouen, Rouen, France, [2]MATEIS*	**TUNING THE ELECTRICAL AND DIELECTRIC PROPERTIES OF Na0.5Bi0.5TiO3 PEROVSKITE BY CHEMICAL DOPING** **Dr Fan Yang**[1], Prof Derek Sinclair[1] *[1]University Of Sheffield, Sheffield, United Kingdom*	**FRACTURE MECHANICS APPLICATION TO FATIGUE LIFE DETERMINATION** Prof. Dr. Uwe Zerbst[1], **Prof. Dr. Michael Vormwald**[2] *[1]BAM, Berlin, Germany, [2]Technische Universität, Darmstadt, Germany*
18.50	*HIGHLIGHT* **UTILITY OF A DIFFUSION MOBILITY DATABASE FOR LIGHT METALS** **Professor and Chair Michele Manuel**[1] *[1]University Of Florida, Gainesville, United States*	**EFFECT OF THERMAL CYCLING ON AGING OF AN AUSTENITIC STAINLESS STEEL** Dr Coralie Parrens[1,2], Dr Jacques Lacaze[1], Dr Benoit Malard[1], Mr Jean-Luc Dupain[2], **Pr Dominique Poquillon**[1] *[1]Cirimat, Univ Toulouse, Cirimat, INP-ENSIACET 4 Allée Emile Monso - BP443 31030 Toulouse Cedex 4, France, [2]Safran Landing Systems, 9 Rue Guynemer, 64400 Bidos, France*	**INFLUENCE OF Eu3+ AND Tb+3 DOPING CONTENT ON SCINTILLATION PROPERTIES OF Gd2O3 PRODUCED BY PECHINI Sol – GEL METHOD** **Tolga Taylı**[1], Behiye Yüksel[2], Berk Alkan[3], Canhan Şen[4], A. Umut Söyler5, Prof. Dr. Gökhan Orhan[1] *[1]Istanbul University, [2]Istanbul Aydın University, [3]Istanbul Technical University, [4]Sabanci University, 5Teta Cam Teknolojileri San. Tic. Ltd. Şti*	**FATIGUE CRACK GROWTH IN A SINGLE CRYSTAL NICKEL BASE SUPERALLOY** **MSc Frans Palmert**[1,2], Prof Johan Moverare[1], PhD David Gustafsson[2] *[1]Linköping University, Linköping, Sweden, [2]Siemens Industrial Turbomachinery AB, Finspång, Sweden*
19.10		**MODELLING HEALING PROCESSES IN CREEP STEELS** **Casper Versteylen**[1], Dr Marcel Sluiter[1], Dr Niels van Dijk[1] *[1]Technische Universiteit Delft, Delft, Netherlands*		**CORROSION FATIGUE BEHAVIOUR OF HFMI-TREATED WELDED JOINTS OF STEEL S355: CORRELATION OF TESTING METHODS** **Dipl.-Ing. Stefanos Gkatzogiannis**[1], M. Eng. Joscha Weinert[2], Prof. Dr.-Ing. Imke Engelhardt[2], Prof. Dr.-Ing. Peter Knoedel[1], Prof. Dr.-Ing. Thomas Ummenhofer[1] *[1]Kit Steel & Lightweight Structures Research Center For Steel, Timber & Masonry, Karsrluhe, Germany, [2]Munich University of Applied Sciences, Munich, Germany*
19.30				

Symposium	B11	C1	C2	C6
Room	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1	I-15/M1
Session Title	Shape-Memory-Alloys	Coatings and thin films 3/6 - Coatings structure II	Laser interference lithography/direct write	Welding 2
Chairperson	R. Everett	Z. Grzesik, A. Cavaleiro	Ioanna Zergioti	Christof Sommitsch
17.30	**ON THE SUPERELASTIC BEHAVIOR OF THE NiTi SHAPE MEMORY ALLOY AT VARIOUS HEAT TREATMENT CONDITIONS** **Boutheina BEN FRAJ**[1], Amen Gahbiche[2], Zoubeir TOURKI[1] *[1]Mechanical Laboratory Of Sousse, National Engineering School Of Sousse, University of Sousse, Sousse, Tunisia, [2]Laboratoire de Génie Mécanique LGM, Ecole Nationale d'Ingénieurs de Monastir ENIM, Université de Monastir, Monastir, Tunisia*	*HIGHLIGHT* **ROLE OF POINT DEFECTS FOR PREDICTING PHASE STABILITY: A CASE STUDY OF Ta-Al-N AND Nb-Al-N SYSTEMS** **Dr. David Holec**[1], Ferdinand Pacher[2], Nikola Koutná[2,3], Dr. Christian Koller[2], Prof. Paul Mayrhofer[2] *[1]Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Leoben, Austria, [2]Institute of Materials Science and Technology, TU Wien, Vienna, Austria, [3]Faculty of Science, Masaryk University, Brno, Czech Republic*	**FABRICATION OF PILLAR-LIKE MICROSTRUCTURES ON STAINLESS STEEL BY PICOSECOND DIRECT LASER INTERFERENCE PATTERNING** **M.Sc. Alfredo Aguilar**[1], Prof. Dr.-Ing. Andrés Fabian Lasagni[1,2] *[1]Fraunhofer Institute for Material and Beam Technol-ogy, Winterbergstr.28, Dresden, Germany, [2]Technical University Dresden, George-Bähr-Str. 3c, Dresden, Germany*	**EXPERIMENTAL INVESTIGATION AND STATISTICAL ANALYSIS OF KEY PARAMETERS IN SELF-PIERCING RIVETING OF AL BLANKS** **Bsc. Florian Hönsch**[1], Dipl.-Ing. Dr.techn. Robert Vollmer[1], Univ.-Prof. Dipl.-Ing. Dr.techn. Christof Sommitsch[1] *[1]Tu Graz, Graz, Austria*
17.50	**MICROSTRUCTURAL INVESTIGATION AND THERMODYNAMIC MODELLING OF Fe-Mn-Al-Ni SHAPE MEMORY ALLOYS** **Alexander Walnsch**[1], Mario J. Kriegel[1], Malte Vollmer[2], Olga Fabrichnaya[1], Thomas Niendorf[2], Andreas Leineweber[1] *[1]TU Bergakademie Freiberg, Germany, [2]Universität Kassel, Germany*	**SYNTHESIS OF (Nb,Ti)N ULTRATHIN FILMS BY CHEMICAL VAPOR DEPOSITION** **Dr Elisabeth Blanquet**[1], Dr Nikolaos Tsavdaris[1], Manoel Jacquemin[1], Gilles Renou[1], Dr Eirini Sarigiannidou[2], Stéphane Coindeau[1], Dr Michel Pons[1], Dr Frédéric Mercier[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, Grenoble, France, [2]Univ. Grenoble Alpes, CNRS, Grenoble INP*, LMGP, Grenoble, France*	**LASER MANUFACTURED PAPER DEVICES FOR MULTIPLEXED DETECTION OF BACTERIA AND THEIR RESISTANCE TO ANTIBIOTICS** **Dr Ioannis Katis**[1], Dr Peijun He[1], Dr Susanna Sherwin[2], Prof Charles Keevil[2], Prof Robert Eason[1], Dr Collin Sones[1] *[1]Optoelectronics Research Centre, University Of Southampton, Southampton, United Kingdom, [2]Environmental Healthcare Unit, Biological Sciences, University of Southampton, Southampton, United Kingdom*	**HEAT ASSISTED SELF-PIERCE RIVETING FOR HIGH STRENGTH LIGHT METAL ALLOYS** **Dipl.-ing. (fh), Msc Georg Kirov**[1] *[1]Ait Austrian Institute Of Technology, LKR Leichtmetallkompetenzzentrum Ranshofen GmbH, Ranshofen, Austria*
18.10	**NITINOL FOR VASCULAR STENT APPLICATIONS: AN EXPERIMENTAL STUDY ON FATIGUE PROPERTIES AND MICROSTRUCTURE** Dr Anna Zervaki[1], Dr Helen Kamoutsi[1], Prof. George Fourlaris[2], Dr Panagiotis Tsakiriidis[2], **Prof. Antonios Giannakopoulos**[3] *[1]Laboratory of Materials, Dept. of Mechanical Engineering, Pedion Areos, 38334 Volos, Greece, Volos, Greece, [2]Physical Metallurgy Laboratory, School of Mining and Metallurgical Engineering, NTUA, Heroon Polytehneiou 9, 15780, Zografou, Athens, Athens, Greece, [3]Laboratory of Strength of Materials and Micromechanics, Dept. Of Civil Engineering, Pedion Areos, 38334 Volos, Greece, Volos, Greece*	**EFFECT OF BIAS VOLTAGE INDUCED MICROSTRUCTURE ON THE MECHANICAL PROPERTIES OF NEW NANO-STRUCTURED Ti-Nb-Zr COATINGS FOR IMPLANT MATERIALS** **Doctor Emilio Frutos Torres**[1], Doctor Miroslav Karlik[2], Doctor José Antonio Jiménez[3], Doctor Tomas Polcar[1,4] *[1]Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague ,Prague, Czech Republic, [2]Department of Materials, Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University in Prague., Prague, Czech Republic, [3]Centro Nacional de Investigaciones Metalúrgicas, CENIM-CSIC, Madrid, Spain, [4]Engineering Materials, University of Southampton, Southampton, United Kingdom*	**LASER FABRICATION OF HIGH-PERFORMANCE FLEXIBLE PLASMONIC WAVEGUIDES** **Dr. Filimon Zacharatos**[1], Mrs Parva Chhantyal[2], Mr. Ioannis Theodorakos[1], Prof. Carsten Reinhardt[2], Prof. Dr. rer. nat. Boris N. Chichkov[2], Assoc. Prof. Ioanna Zergioti[1] *[1]National Technical University Of Athens (NTUA) - School of Applied Mathematics and Physical Sciences - Department of Physics, Athens, Greece, [2]Nanotechnology Department, Laser Zentrum Hannover e.V., Hannover, Germany*	**INVESTIGATION INTO MECHANICAL BEHAVIOR OF FRICTION STIR WELDED DUAL PHASE 600 STEEL PLATES** **Semih Aktarer**[1], Prof.Dr. Tevfik Kuçukomeroglu[2], Asst. Prof. Guven Ipekoglu[3], Prof.Dr. Gurel Cam[3] *[1]Recep Tayyip Erdogan University, Rize, Turkey, [2]Karadeniz Technical University, Trabzon, Turkey, [3]Iskenderun Technical University, Hatay, Turkey*
18.30	**PHASE TRANSFORMATIONS IN SUPERELASTIC NiTi DURING STRAIN PATH CHANGE** **Dr. Efthymios Polatidis**[1], Mr. Wei-Neng Hsu[1,2], Dr. Miroslav Smid[1], Dr. Steven Van Petegem[1], Prof. Helena Van Swygenhoven[1,2] *[1]Swiss light source, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland, [2]Neutrons and X-rays for Mechanics of Materials, IMX, Ecole Polytechnique Federale de Lausanne, CH- 10 12 Lausanne, Switzerland*	**AMORPHOUS ALUMINUM OXIDES: CVD PROCESSING, LOCAL COORDINATION AND MULTIFUNCTIONALITY** **Dr. Constantin Vahlas**[1], Dr. Vincent Sarou-Kanian[2], Pr. Brigitte Caussat[3], Mrs. Diane Samelor[1], Dr. Loïc Baggetto[1], Dr. Pierre Florian[2] *[1]CIRIMAT-CNRS, Toulouse, France, [2]CEMHTI-CNRS, Orleans, France, [3]LGC-INPT, Toulouse, France*	**DIODE-LASER-ASSISTED FABRICATION OF NANOCOMPOSITES BY SOLID - AND LIQUID-STATE SPINODAL DECOMPOSITION** **Dr. Karl-Heinz Heinig**[1], Dr. Mykola Vinnichenko[2], Eric Schumann[1] *[1]Helmholtz-Center Dresden-Rossendorf HZDR, Dresden, Germany, [2]Fraunhofer Institut für keramische Technologien und Systeme, Dresden, Germany*	**MECHANICAL CHARACTERIZATION OF TITANIUM LINEAR FRICTION WELDS** **Mr. Juan-Manuel Garcia**[1], PhD. Thilo Morgeneyer[1] *[1]MINES ParisTech, PSL - Research University, Centre des matériaux CNRS UMR 7633, BP 87 9 1003 Evry, France*
18.50	**ISOELECTRONIC DOPING EFFECTS ON THE MARTENSITIC TRANSITION IN NiMnSn BASED SHAPE MEMORY ALLOYS** **Dr. Nitya Ramanan**[1], Mr. Girish Hemraj[2], Dr. Wojciech Olszewski[1,5], Dr. Carlo Marini[1], Dr. Manvendra Kumar[3], Dr. Parasmani Rajput[4] *[1]Alba Synchrotron, Barcelona, Spain, [2]School of studies in Electronics and Photonics, Pt. Ravishankar Shukla University, 49200 1, India, Raipur, India, [3]Nanotechnology Application Centre, University of Allahabad, Allahabad, India, [4]Atomic & Molecular Physics Division, Bhabha Atomic Research Centre, Mumbai, India, 5Faculty of Physics, University of Bialystok, [1]L K. Ciolkowskiego street, Poland*	**SCANNING KELVIN PROBE BLISTER STUDIES OF THE DELAMINATION OF EPOXY FILMS ON ORGNOSILANE MODIFIED ZnMgAl ALLOY COATED STEEL** **M.Sc. Richard Grothe**[1], M.Sc. Martin Wiesing[1], Dr. Ignacio Giner[1], B.Sc. Dennis Meinderink[1], Prof. Dr.-Ing. Guido Grundmeier[1] *[1]Universität Paderborn, Paderborn, Germany*	**FABRICATION OF ADVANCED SECURITY ELEMENTS USING DIRECT LASER INTERFERENCE PATTERNING** **Dipl.-Ing. Florian Rößler**[1], Dr. Tim Kunze[2], Prof. Dr.-Ing. Andrés Fabián Lasagni[1,2] *[1]TU Dresden, Dresden, Germany, [2]Fraunhofer IWS, Dresden, Germany*	**IMPROVING THE BOND STRENGTH OF STEEL AND ALUMINUM JOINTS - TOWARDS NEW ASPECTS OF THE BONDING MECHANISM IN COLD WELDING** **Abdulrahman Altin**[1], Christiane Gerlitzky[2], Nicolas Peter[3], Dr. Christian Liebscher[3], Prof. Dr. Groche Peter[2], Prof. Dr. Andreas Erbe[1,4] *[1]Max-Planck-Institut für Eisenforschung GmbH, Department of Interface Chemistry and Surface Engineering, Düsseldorf, Germany, [2]Technische Universität Darmstadt, Institute for Production Engineering and Forming Machines, Darmstadt, Germany, [3]Max-Planck-Institut für Eisenforschung GmbH, Department of Structure and Micro-/Nanomechanics of Materials, Düsseldorf ,Germany, [4]Department of Materials Science and Engineering, NTNU, Norwegian University of Science and Technology, Trondheim, Norway*
19.10	**EFFECT OF LOW TEMPERATURE AGING AND DSC CYCLING ON THE MICRODOMAINS AND MICRO-STRUCTURES OF Ni50.6Ti49.4** **Saeid Pourbabak**[1], Dr. Xiebin Wang[2], Prof. Dirk Van Dyck[1], Prof. Jan Van Humbeeck[2], Prof. Bert Verlinden[2], Prof. Dominique Schryvers[1] *[1]Emat, University Of Antwerp, Antwerp, Belgium, [2]MTM, Department of Materials Engineering, University of Leuven, Leuven, Belgium*	**AB INITIO STUDY OF THE ATOMIC LEVEL STRUCTURE OF TiO2-TiN INTERFACES FOR ANTIBIOFOULING APPLICATIONS** **Dr Julio Gutierrez Moreno**[1], Dr Michael Nolan[1] *[1]Tyndall National Institute, University College Cork, Cork, Ireland*	**HIGH-REPETITION RATE FEMTOSECOND LASER PROCESSING OF ACRYLIC INTRA-OCULAR LENSES** **Dr. Daniel Sola**[1], Dr. MJ Clemente[2], Dr. Rafael Cases[3], Professor Pablo Artal[1] *[1]Laboratorio de Optica. Centro de Investigacion en Optica y Nanofisica. Universidad De Murcia, Murcia, Spain, [2]Instituto de Ciencia de Materiales de Aragon. Universidad de Zaragoza-CSIC. Dpto. Quimica Organica, Zaragoza, Spain, [3]Departamento de Fisica de la Materia Condensada, Universidad de Zaragoza, Zaragoza, Spain*	**HOT ROLL BONDING OF ALUMINUM TO TWIN ROLL CAST (TRC) MAGNESIUM AND ITS SUBSEQUENT DEFORMATION BEHAVIOR** **Haitham Saleh**, M. Schmidtchen, R. Kawalla *Tu Freiberg/ Institute of Metal Forming, Freiberg, Germany*
19.30		**EFFECT OF ELECTROPOLISHING ON CONVENTIONAL AND SEVER SHOT PEENED SURFACES PROPERTIES** **Dr. Gemma Vara Salazar**[1], Dr. Patricia López-Ruiz[1], Dr. M. Belén García-Blanco[1], Dr. Oihane Garrido[1], Dr. Inés Fernández-Pariente[2], Dr. MArio Guagliano[3], Dr. Sarah Bagherifard[3] *[1]IK4 CIDETEC, Surface Engineering Area, San Sebastián, Spain, [2]University of Oviedo, Department of Materials Science and Metallurgical Engineering, Oviedo, Spain, [3]Politecnico di Milano, Department of Mechanical Engineering, Milan, Italy*		

Symposium	D2	D4	D9	E1
Room	Museum Hall /M2	Library Hall/M2	Maurice Saltiel Hall I/M2	CR II Hall/M2
Session Title	In situ characterization I	Measurement techniques of mechanical fields at micro/nano scales	Advanced Nuclear Ceramics	Hydrogen Storage
Chairperson	**Martin Albrecht**	**Xavier Maeder & Eric Le Bourhis**	**M. Angiolini**	**Rolf Hempelmann & Toshiyuki Mori**
17.30	*KEYNOTE/INVITED* **IN SITU ELECTRON MICROSCOPY STUDIES OF FUNCTIONAL NANOSTRUCTURED MATERIALS – LINKING ATOMIC STRUCTURE TO PROPERTIES**	*HIGHLIGHT* **STRESS FIELD AND PLASTIC DEFORMATION MAPPING IN ROOM AND ELEVATED TEMPERATURE MICRO-CANTILEVER TESTING VIA IN-SITU HR-EBSD CHARACTERIZATION** Dr. Ast Johannes[1], Dr. Michler Johann[1], **Dr. Xavier Maeder**[1] *[1]Empa, Thun, Switzerland*	*KEYNOTE/INVITED* **JOINING OF SIC-BASED MATERIALS FOR NUCLEAR APPLICATIONS** **Professor Monica Ferraris**[1] *[1]Politecnico Di Torino, Torino, Italy*	*KEYNOTE/INVITED* **HIGH-DENSITY HYDROGEN FILMS ADSORBED IN ENGINEERED CARBON NANOSPACES** **Peter Pfeifer**[1], Andrew Gillespie[1], Elmar Dohnke[1], Lucyna Firlej[2], Bogdan Kuchta[3] *[1]Department of Physics, University of Missouri, Columbia, United States, [2]Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, 34095 Montpellier, France, [3]Laboratoire MADIREL, UMR 7246 CNRS-Aix-Marseille Université, 13396 Marseille, France*
17.50	**Professor Eva Olsson**[1] *[1]Department of Physics, Chalmers University Of Technology, Gothenburg, Sweden*	**FULL-FIELD DEFORMATION MEASUREMENTS OF PHASE TRANSFORMING MATERIALS DURING IN-SITU SEM MECHANICAL TESTING** **Dr. Miroslav Smid**[1], Wei-Neng Hsu[1,2], Dr. Efthymios Polatidis[1], Dr. Steven Van Petegem[1], Prof. Helena Van Swygenhoven[1,2] *[1]Swiss light source, Paul Scherrer Institute, Villigen, Switzerland, [2]Neutrons and X-rays for Mechanics of Materials, EPFL, Lausanne, Switzerland*		
18.10	*HIGHLIGHT* **DYNAMIC STUDIES OF NUCLEATION AND GROWTH PHENOMENA OF NANOMATERIALS** **Prof. Saso Sturm**[1], Bojan Ambrožič[1], dr. Marjan Bele[2] *[1]Jožef Stefan Institute, Ljubljana, Slovenia, [2]National Institute of Chemistry, Ljubljana, Slovenia*	**LOCAL STRAIN AROUND VERMICULAR GRAPHITE IN CAST IRON REVEALED BY SEM AND DIC COMBINATION** **Prof. Lei Zhang**[1], Dr. Cuihong Li[1] *[1]Institute of Metal Research, Chinese Academy of Sciences, Shenyang, China*	*KEYNOTE/INVITED* **IN SITU 3D OBSERVATION OF MECHANICAL DAMAGE WITHIN SIC-SIC CERAMIC MATRIX COMPOSITES FOR NUCLEAR FUEL CLAD** Mr Shixiang Zhao[1], Dr Biao Cai[2], Prof. Peter Lee[2], **Prof. James Marrow**[1,C] *[1]University Of Oxford, Oxford, United Kingdom, [2]Research Complex at Harwell, Harwell, United Kingdom*	**STRUCTURAL AND HYDROGEN ABSORPTION-DESORPTION PROPERTIES OF La^{2}-x-yYxMgyNi7 COMPOUNDS** Dr. Micheline Warde[1], Nicolas Madern[1], Dr. Junxian Zhang[1], **Dr. Judith Monnier**[1], Dr. Lionel Goubault[2], Dr. Patrick Bernard[2], Dr. Michel Latroche[1] *[1]Université Paris Est, ICMPE, CNRS-UPEC, Thiais, France, [2]SAFT, Direction de la Recherche, Bordeaux, France*
18.30	**IN-SITU TRACKING THE STRUCTURAL AND CHEMICAL EVOLUTION OF NANOSTRUCTURED CuCr ALLOYS** **Dr. Zaoli Zhang**[1], Mr Jinming Guo[1], Professor Gerhard Dehm[2], Professor Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, [2]Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany*	**DIC STRAIN ANALYSES AUGMENT MICRO-TENSILE CHARACTERIZATION OF TITANIUM ALLOYS** **Dr. Salahudin Nimer**[1,2], Dr. Richard Everett[2], Prof. Marc Zupan[2] *[1]Johns Hopkins University Applied Physics Laboratory, Laurel, United States, [2]University Of Maryland, Baltimore County, Baltimore, United States*		*HIGHLIGHT* **B-SUBSTITUTED NANOPOROUS CARBONS FOR HYDROGEN STORAGE: FROM COMPUTER SIMULATIONS TO EXPERIMENTAL VERIFICATION** **Prof Lucyna Firlej**[1,3], prof Bogdan Kuchta[2,3], prof Peter Pfeifer[3] *[1]Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, Montpellier, France, [2]Laboratoire MADIREL, UMR 7246 CNRS-Aix-Marseille Université, Marseille, France, [3]Department of Physics and Astronomy, University of Missouri, Columbia, USA*
18.50	**IN SITU TEM HEATING IN COMBINATION WITH ACOM-STEM TO FOLLOW THE PRECIPITATION OF NANO-SCALED CARBIDES IN A LOW-CARBON LATH MARTENSITE** **ME Ankush Kashiwar**[1,2], Lutz Morsdorf[3], Dr. Aaron Kobler[4], Dr. Horst Hahn[1,2], Dr. C. Cem Tasan[5], Dr. Christian Kübel[1,6] *[1]Institute of Nanotechnology, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany, [2]Joint Research Laboratory Nanomaterials, Technische Universität Darmstadt, Darmstadt, Germany, [3]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany, [4]ZEISS Microscopy, Peabody, USA, [5]Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, USA, [6]Karlsruhe Nano Micro Facility, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	**COMPREHENSIVE CHARACTERIZATION OF DISLOCATIONS BY ELECTRON CHANNELING CONTRAST IMAGING IN SCANNING ELECTRON MICROSCOPE: FUNDAMENTAL AND PRACTICAL ASPECTS** **Ms Hana KRIAA**[1], Dr Antoine GUITTON[1], Dr Nabila MALOUFI[1] *[1]Laboratoire d'Étude des Microstructures et de Mécanique des Matériaux (LEM3) – UMR CNRS 7239, University of Lorraine., Metz, France*	**THERMOMECHANICAL PERFORMANCES OF SIC/SIC COMPOSITES FOR NUCLEAR APPLICATIONS** **Frédérique Bourlet**[1], Christophe Lorrette[1], Thomas Guilbert[1], Cédric Sauder[1], Gérard Vignoles[2] *[1]DEN-Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, Gif Sur Yvette, France, [2]Université de Bordeaux, LCTS, Pessac, France*	**HYDROGEN STORAGE PROPERTIES OF AN INTERMETALLIC POWDER: ROLE OF THE POWDER MANUFACTURING PROCESS ON ITS PROPENSITY TO ACTIVATION** **Dr Anne Maynadier**[1], Dr HDR David Chapelle[1], Dr Dimitri Claudel[1], Pr Philippe Nardin[1], Pr Dominique Perreux[1], Pr Frederic Thiebaud[1] *[1]Univ.bourgogne Franche Comté; FEMTO-ST Institute; Département of Applied Mechanics; CNRS/UFC/ENS-MM/UTBM, Besançon, France*
19.10		**COMBINED MICRO-SCALE FULL-FIELD STRAIN MEASUREMENTS AND FINITE ELEMENT MODELLING FOR THE STUDY OF DAMAGE INITIATION IN DUAL-PHASE STEELS** **Dr Christophe Pinna**[1], Ms Nurrasyidah Rohaizat[1], Dr Khaled Alharbi[2], Dr Hassan Ghadbeigi[1], Dr Dave Hanlon[3] *[1]The University Of Sheffield, Sheffield, United Kingdom, [2]Taibah University, Madinah, Saudi Arabia, [3]Tata Steel R&D, IJmuiden, The Netherlands*	**STUDY OF MATERIALS BEHAVIOUR IN CONDITIONS SIMULATING HELIUM COOLANT IN V/HTR AND GFR SYSTEMS** **Jana Kalivodova**[1], Jan Berka[1], Jozef Dámer[1], Jan Vít[1], Pavel Hanus[2], Zuzana Skoumalová[3] *[1]Centrum výzkumu Řež s.r.o., Prague, Czech Republic ,[2]Technická Univerzita v Liberci, Studentská 1402/2, 461 17 Liberec I, Czech Republic, [3]ÚJV Řež a.s., Husinec- Řež, Hlavni 130, 25068 Husine-Řež, Czech Republic*	**REVIEW OF HYDROGEN ADSORPTION MODELING IN POROUS SYSTEM** **Prof. Bogdan Kuchta**[1], Prof. Lucyna Firlej[2], Prof. Peter Pfeifer[3] *[1]Aix-Marseille University, Marseille, France, [2]University of Montpellier, Montpellier, France, [3]University of Missouri, Columbia, USA*
19.10			**TOWARDS THE PRODUCTION OF PHASE-PURE Zr-BASED MAX PHASES** **Thomas Lapauw**[1,2], Bensu Tunca[1,2], Dr. Konstantza Lambrinou[1], Prof. Dr. Jef Vleugels[2] *[1]SCK CEN, Mol, Belgium, [2]KU Leuven, Leuven, Belgium*	

Symposium	E2	E3	F1
Room	CR III Hall/M2	Rehearsal Room 5.17/M1	3-20/M1
Session Title	Li cathodes / Li anodes	Piezoelectrics and Energy Harvesting	Materials for cartilage regeneration. Processing of scaffolds
Chairperson	J. Scoyer	Spyros Diplas	Sophia Tsipas
17.30	**Co(OH)2@MnO2 NANOSHEET ARRAYS WITH SUPERIOR LITHIUM STORAGE PERFORMANCE** **Dr Manab Kundu**[1], Dr Ann Mari Svensson[1] *[1]Norwegian University of Science and Technology (NTNU), Trondheim, Norway*	*HIGHLIGHT* **PROCESSING OF LEAD-FREE PIEZOELECTRIC MATERIALS** **Dr Mari-Ann Einarsrud**[1], MSc Mads Christensen[1], Dr Ky-Nam Pham[1], Dr Astri Bjørnetun Haugen[1], Dr Tor Grande[1] *[1]NTNU Norwegian University of Science and Technology, Trondheim, Norway*	**A GAM STRATEGY WITH MSC SUPPORTED ON COLLAGEN MICROSPHERES FOR THE REGENERATION OF CARTILAGE** Dr Sophie Raisin[1], Dr Marie Morille[1], Dr Marc Mathieu[3], Dr Daniele Noel[3], Pr Christian Jorgensen[3], Pr Jean-Marie Devoisselle[1], **Pr Emmanuel Belamie**[1,2] *[1]ICGM - MACS, Montpellier, France, [2]EPHE, PSL Research University, Paris, France, [3]INSERM U1183, Montpellier, France*
17.50	**FACILE ONE-POT SYNTHESIS OF METAL PHOSPHIDE -NITROGEN-DOPED CARBON HYBRID NANOSHEET AS ULTRA-STABLE ANODE FOR LIBS AND SIBS** **Professor Genqiang Zhang**[1] *[1]University of Science and Technology of China, Hefei, China*	*HIGHLIGHT* **PIEZOCERAMIC MATERIALS FOR VIBRATIONAL ENERGY HARVESTING** **Dr. Erling Ringgaard**[1], Dr. Tomasz Zawada[1], Ms. L.M. Bierregaard[1], Dr. Michele Guizzetti[1], Dr. Ruichao Xu[1] *[1]Meggitt Sensing Systems, Kvistgaard, Denmark*	**3D PRINTED SILICA-GELATIN SOL-GEL HYBRID SCAFFOLDS FOR CARTILAGE TISSUE ENGINEERING - EFFECTS OF MATERIAL GEOMETRY ON CARTILAGINOUS MATRIX FORMATION** **Dr. Siwei Li**[1], Dr. Maria Nelson[1], Prof. Molly Stevens[1], Prof. Julian Jones[1] *[1]Imperial College London, London, United Kingdom*
18.10	**HIGH POWER AND HIGH ENERGY OLIVINES FOR LITHIUM BATTERIES: FROM GRAMS TO TONS** **Dr. Michel Trudeau**[1], Dr Andrea Paolella[1], Dr Abdel Guerfi[1], Dr Pierre Hovington[1], Dr Ashok Vijh[1], Professor Alain Mauger[2], Dr Christian M. Julien[3], Dr Michel Armand[4], Dr John B. Goodenough[5], Dr Karim Zaghib[1] *[1]Hydro-Quebec Research Institute, Varennes, Canada, [2]Physicochimie des Electrolytes et Nanosystèmes (PHENIX), CNRS UMR 8234, Sorbonne University, UPMC Uni. Paris 6, Paris, France, [3]Institut de Minéralogie de Physique des Matériaux et de Cosmochimie (IMPMC), CNRS UMR 7590, Sorbonne University, UPMC Uni. Paris 6, Paris, France, [4]CIC Energygune, Minano, Spain, 5University of Texas at Austin, Austin, United-Sates*	*HIGHLIGHT* **ADDITIVE PRINT MANUFACTURE OF FILM BASED MICRO ENERGY HARVESTING DEVICES** **Professor Robert Dorey**[1], Dr Rebecca Townsend[1], Dr Ewa Jakubczyk[1] *[1]Centre of Engineering Materials, University Of Surrey, Guildford, United Kingdom*	**SOL-GEL DERIVED LITHIUM-RELEASING BIOACTIVE GLASS FOR CARTILAGE REGENERATION** **Dr. Siwei Li**[1], Dr. Anthony Macon[1], Miss Manon Jacquemin[1], Prof. Molly Stevens[1], Prof. Julian Jones[1] *[1]Imperial College London, London, United Kingdom*
18.30	**LASER PYROLYSIS FOR THE CONTROLLED SYNTHESIS OF AMORPHOUS OR CRYSTALLINE Si@C NANOPARTICLES - MATERIAL SYNTHESIS AND PERFORMANCE CHARACTERIZATION IN Li-ION BATTERIES** John P. Alper[1,2], Florent Boismain[1], Julien Source[1,2], Willy Porcher[2], Eddy Foy[1], Pierre Eugene Coulon[1], Aurélie Habert[1], Eric De Vito[2], Cecile Reynaud[1], Cedric Haon[1], **Nathalie Herlin Boime**[1] *[1]NIMBE, CEA - CNRS UMR3685, Saclay, France, [2]CEA, LITEN, 17 rue des martyrs, Grenoble, France*	**SPECTROSCOPY BASED CHARACTERIZATION OF BAND GAPS AND BAND ALIGNMENT IN MATERIALS FOR ENERGY HARVESTING** **Dr. Ingvild Julie Thue Jensen**[1], Dr. Klaus Magnus Johansen[2], Adj. Assoc. Prof. Spyros Diplas[1], Adj. Prof. Ole Martin Løvvik[1], Dr. Vishnukanthan Venkatachalapathy[2], Assoc. Prof. Øystein Prytz[2], Prof. Andrej Yu. Kuznetsov[2], Assoc. Prof. Anette E. Gunnæs[2], Prof Edouard Monakhov[2], Prof Bengt Svensson[2], Prof Leonard Brillson[3], Adj. Prof Randi Haakenaasen[4], Adj. Assoc. Prof Espen Flage-Larsen[1] *[1]SINTEF Materials And Chemistry, Oslo, Norway, [2]University of Oslo, Oslo, Norway, [3]Ohio State University, Columbus, USA, [4]Norwegian Defence Research Establishment, Kjeller, Norway*	**NON-THERMAL PLASMA COATED 3D ADDITIVE MANUFACTURED SCAFFOLDS FOR TISSUE ENGINEERING** **Pieter Cools**[1], Nathalie De Geyter[1], Rino Morent[1] *[1]Ghent University, Department of Applied Physics, Research Unit Plasma Technology, Ghent, Belgium*
18.50	**INVESTIGATING THE REACTION MECHANISM OF HIGH-PERFORMANCE NaFePO4 AS A CATHODE MATERIAL FOR Na-Ion BATTERIES** **Dr. Ghulam Ali**[1], Dr. Kyung Yoon Chung[1] *[1]Korea Institute Of Science And Technology, Seoul, South Korea*	**MATERIALS AND REACTORS FOR THERMOCHEMICAL ENERGY STORAGE** **Dipl. Chem. Eng., MSc. Kyriaki G. Sakellariou**[1,2], Dipl. Chem. Eng. Nikolaos I. Tsongidis[1,2], Dipl. Eng. in Materials Science and Engineering Chrysoula Pagkoura[1], Dipl. Chem. Eng., PhD George Karagiannakis[1], Chem. Eng., Ph.D., Head BD CERTH, APTL/CPERI/CERTH / Prof., Dep. of Chem. Eng., AUTH Athanasios G. Konstandopoulos[1,2] *[1]Aerosol & Particle Technology Laboratory- APTL/CPERI/CERTH, Thermi, Greece, [2]School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece*	**BIOMIMIC SCAFFOLD FABRICATION VIA DUAL SYRINGE ELECTROSPINNING SYSTEM FOR DUAL DRUG ELUTED STENTS** **Veroniki Bakola**[1], Varvara Karagkiozaki[1,2], Fotini Pappa[1,2], Aikaterini-Rafailia Tsiapla[1], Eleni Pavlidou[3], Theodora Choli-Papadopoulou[4], Ioannis Moutsios[1], Stergios Logothetidis[1] *[1]Nanomedicine Group, Lab for "Thin Films- Nanomaterials, Nanosystems & Nanometrology" Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]BL Nanobiomed P.C. Thessaloniki, Greece, Thessaloniki, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [4]Department of Chemistry, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece*
19.10		**THERMAL EMISSION BASED ENERGY HARVESTING AND CONVERSION USING FUNCTIONAL NANOMATERIAL INTEGRATED OPTICAL DEVICES** **Dr. Paul Ohodnicki**[1] *[1]National Energy Technology Laboratory / DOE, Pittsburgh, United States of America*	

Symposium	F4	H1	H2
Room	3-21/M1	I -16/M1	Conference Room 2/M1
Session Title	Innovative amorphous biomaterials and bioactive metals	Coproducts and Their Applications	Developments in Steel Industry
Chairperson	David MARCHAT	Orlando Rios	Inoue Ryo, Zhi Sun
17.30	*HIGHLIGHT* **CHITOSAN HYDROGEL BIOREACTORS FOR TISSUE ENGINEERING** **Pr Laurent David**[1] [1]*Université Claude Bernard Lyon 1, Lab. Ingéniérie des Matériaux Polymères CNRS UMR 5223, Villeurbanne, France*	*KEYNOTE/INVITED* **IMPACT OF SUBSTITUTING NICKEL AND COBALT IN LITHIUM MIXED TRANSITION METAL OXIDES FOR LITHIUM BATTERIES** **Prof. Dr. Hans Juergen Seifert**[1], Maryam Masoumi[1], Dr. Damian Cupid[1], Dr. Carlos Ziebert[1] [1]*Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	*KEYNOTE/INVITED* **RESEARCH AND DEVELOPMENTS FOR CO_2 EMISSION REDUCTION FROM THE IRON AND STEEL INDUSTRIES IN SOUTH KOREA: AN OVERVIEW** **Professor Joonho Lee**[1] [1]*Korea University*
17.50	**A FRUGAL SYNTHESIS METHOD TO DEVELOP TOUGH AND STRETCHABLE HYDROGELS** **MSc Laura Zorzetto**[1], MSc Daniela P. Pacheco[2], Dr. Paola Petrini[2] [1]*Department of Aerospace and Mechanical Engineering, Mechanics of Biological and Bio-inspired Materials Research Unit, University of Liege, Liege, Belgium,* [2]*Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Milan, Italy*		
18.10	**STUDY ON THE CORROSION, MECHANICAL AND CELL VIABILITY BEHAVIOUR OF A NEWLY DEVELOPED POROUS Fe-Mn-Si-Pd ALLOYS** **Jordina Fornell**[1], Yu Ping Feng[1], Nerea Gaztelumendi[2], Huiyan Zhang[1,3], Pau Solsona[1], Dolors Baró[1], Santiago Suriñach[1], Elena Ibáñez[2], Lleonard Barrios[2], Eva Pellicer[1], Carme Nogués[2], Jordi Sort[1,4] [1]*Departament de Física, Universitat Autònoma de Barcelona,Bellaterra, Spain,* [2]*Departament de Biologia Cel·lular, Fisiologia i Immunologia, Universitat Autònoma de Barcelona,Bellaterra, Spain,* [3]*School of Materials Science and Engineering, Anhui University of Technology,Ma'anshan, China,* [4]*ICREA, Pg. Lluís Companys 23, E-08010 Barcelona, Spain, Barcelona, Spain*	*HIGHLIGHT* **ELEVATED TEMPERATURE MATERIAL PROPERTIES IN THE Al-Ce ALLOY SYSTEM** **VP Engineering/R&D Dave Weiss**[1], Orlando Rios[2], Zachary Sims[2], Scott McCall[3] [1]*Eck Industries, Inc., Manitowoc, USA,* [2]*Oak Ridge National Laboratory, Oak Ridge, USA,* [3]*Lawrence Livermore National Laboratory, Livermore, USA*	**CONDENSATION OF RARE EARTH ELEMENTS IN STEELMAKING SLAG** **Ryo Inoue**[1], Nao Kasai[2], Yasushi Takasaki[1], Atsushi Shibayama[1] [1]*Akita University, Akita, Japan,* [2]*Kobe Steel, Kobe, Japan*
18.30	**NICKEL-FREE SUPERELASTIC TITANIUM ALLOYS IN MEDICINE : FROM THE ALLOY DESIGN TO THE REALIZATION OF MEDICAL DEVICE PROTOTYPES** **Prof Thierry Gloriant**[1], Dr Doina-Margareta Gordin[1], Dr Philippe Castany[1], Dr Lorène Héraud[1], Philippe Marx[2] [1]*INSA Rennes, UMR CNRS 6226 ISCR, Rennes, France,* [2]*AMF Company, Lury-sur-Arnon, France*	*HIGHLIGHT* **ADDRESSING FUNDAMENTAL CHALLENGES IN LITHIUM ION BATTERIES AND BEYOND** **Craig Bridges**[1] [1]*Chemical sciences division, ORNL, Oak Ridge, United States*	**SELECTIVE LEACHING OF PHOSPHORUS FROM STEELMAKING SLAG BY CITRIC ACID** Mr. Takayuki Iwama[1,2], **Dr. Xu Gao**[1], Mr. Chuan-ming Du[1], Dr. Sun-joong Kim[3], Dr. Shigeru Ueda[1], Dr. Shin-ya Kitamura[1] [1]*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan,* [2]*Nippon Steel & Sumitomo Metal Corporation, Japan,* [3]*Dept. of Materials Science and Engineering, College of Engineering, Chosun University, Gwangju, Korea*
18.50	**EFFECT OF THE IMMERSION IN αMEM SOLUTION ON THIN Mg WIRES FOR BIODEGRADABLE APPLICATIONS** **Karel Tesař**[1], Aleš Jäger[2], Karel Balík[3] [1]*Czech Technical University In Prague, Faculty Of Nuclear Sciences And Physical Engineering, Prague, Czech Republic ,* [2]*Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic ,* [3]*Institute of Rock Structure and Mechanics of the Czech Academy of Sciences, Prague, Czech Republic*	*HIGHLIGHT* **DEVELOPMENT AND APPLICATION OF A MATERIALS DESIGN SIMULATOR TO Al-Ce BASED ALLOYS** **Aurelien Perron**[1], Vincenzo Lordi[1], Orlando Rios[2], Davis Weiss[3], Patrice E.A. Turchi[1] [1]*Lawrence Livermore National Laboratory, Livermore, USA,* [2]*Oak Ridge National Laboratory, Oak Ridge, USA,* [3]*Eck Industries, Manitowoc, USA*	**EFFECTS OF MINERALOGICAL PHASES IN STEELMAKING SLAG ON ALKALI ELUTION** **Mr. Zuoqiao Zhu**[1], Dr. Xu Gao[2], Dr. Shigeru Ueda[2], Prof. Shin-ya Kitamura[2] [1]*Graduate School of Engineering, Tohoku University, Sendai, Japan,* [2]*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*
19.10		*HIGHLIGHT* **LIQUID CRYSTALLINE EPOXY NETWORKS WITH DYNAMIC COVALENT BONDS AND TUNABLE SHAPE MEMORY PROPERTIES** **Dr. Michael Kessler**[1], Dr. Yuzhan Li[1] [1]*Washington State University, Pullman, United States*	**EFFECT OF BASICITY AND OXYGEN PARTIAL PRESSURE ON THE MINERALOGY AND MICROSTRUCTURE OF SOLIDIFIED BOF SLAG** **Mr. Chunwei Liu**[1], Dr. Shuigen Huang[1], Dr. Lieven Pandelaers[1], Prof. Bart Blanpain[1], Dr. Muxing Guo[1] [1]*Dept. of Meterials Engineering, KU Lueven, Kasteelpark Arenberg 44 - box 2450, 3001 Heverlee, Belgium*
19.30		**USE OF SMALL-ANGLE NEUTRON SCATTERING TO CHARACTERIZE MODEL STEELS FOR NUCLEAR APPLICATIONS** **Dr. Kenneth C. Littrell**[1], Dr. Kevin G. Field[1], Dr. Samuel A. Briggs[2], Dr. Phillip D. Edmondson[1], Dr. Yukinori Yamamoto[1], Dr. Charles R. Daily[1], Professor Kumar Sridharan[2] [1]*Oak Ridge National Laboratory, Oak Ridge, United States,* [2]*University of Wisconsin, Madison, United States*	

Symposium	A3	A5	A8	B1
Room	I-11/M1	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1
Session Title	Nanostructured polymers IV	Nanoparticle Synthesis and applications II	Design of new properties	Advanced High Strength Steels I
Chairperson	Jannick Duchet-Rumeau	Raffaela Buosanti	Massimiliano Stengel	Sébastien Allain
11.00	**MECHANOCHROMIC EFFECT OF EPOXY VITRIMER COMPOSITES CONTAINING AROMATIC DISULPHIDE CROSSLINKS** **Alaitz Ruiz De Luzuriaga**[1], Nerea Markaide[1], Alaitz Rekondo[1], Hans-Jürgen Grande[1], Fernando Ruiperéz[2], José Mari Asua[2], Jon Mattin Matxain[2] *[1]Ik4-cidetec, San Sebastián, Spain, [2]Polymat, San Sebastián, Spain*	*HIGHLIGHT* **COBALT NANOWIRE BASED MODEL CATALYSTS FOR FISCHER TROPSCH SYNTHESIS** **Dr Katerina Soulantica**[1], Dr Justine Harmel[1,2], Adrien Berliet[3], Laurent Peres[1], Dr Sylvie Maury[3], Dr Antoine Fécant[3], Dr Bruno Chaudret[1], Prof Philippe Serp[2] *[1]LPCNO, Université de Toulouse, CNRS, INSA, UPS, Toulouse, France, [2]LCC, CNRS-UPR 8241, ENSIACET, Université de Toulouse, Toulouse, France, [3]IFP Energies Nouvelles, Solaize, France*	*KEYNOTE/INVITED* **NOVEL FUNCTIONALITIES IN ATOMICALLY CONTROLLED OXIDE HETEROSTRUCTURES BY PULSED LASER DEPOSITION** **Guus Rijnders**[1]	*KEYNOTE/INVITED* **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF TRANSFORMATION-INDUCED PLASTICITY STEEL PRODUCED BY LABORATORY SIMULATED STRIP CASTING** **Professor Elena Pereloma**[1], Mr Zhiping Xiong[1], Dr Andrii Kostryzhev[1], Dr Ross Marceau[2], Dr Ahmed Saleh[1], Dr Adam Taylor[2]
11.20	**Fe304/EPOXY NANOCOMPOSITES: MANUFACTURING, CHARACTERIZATION AND FUNCTIONALITY** **Mrs Aikaterini Sanida**[1], Mr Sotirios Stavropoulos[1], Dr. Thanassis Speliotis[2], Prof. Georgios Psarras[1] *[1]Smart Materials & Nanodielectrics Laboratory, Department of Materials Science, School of Natural Sciences, University of Patras, Patras, Greece, [2]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Athens, Aghia Paraskevi, Greece*	**PLATINUM NANOPARTICLES TO VERY EFFICIENTLY CATALYSE ALKENE HYDROSILYLATION** Dr Thomas Galeandro-Diamant[1,2], Dr Marie-Line Zanota[1], Dr Reine Sayah[2], Dr Laurent Veyre[2], Dr Sébastien Marrot[3], **Dr Valérie Meille**[1], Dr Chloé Thieuleux[2] *[1]LGPC-CNRS University of Lyon, Villeurbanne, France, [2]LC2P2-CNRS University of Lyon, Villeurbanne, France, [3]Bluestar Silicones France, St Fons, France*	*[1]University of Twente, MESA + Institute for Nanotechnology, Enschede, the Netherlands*	*[1]University of Wollongong, Wollongong, Australia, [2]Deakin University, Geelong, Australia*
11.40	**A NEW APPROACH TO THE PROTECTION OF STEEL FOR AEROSPACE APPLICATIONS** **Pierre Loison**[1,2], Loïc Exbrayat[1], Pr Juan Creus[1], Pr Sebastien Touzain[1], Bruno Rameau[2], Elisa Campazzi[3] *[1]Laboratoire des Sciences pour l'Ingénieur (LaSIE), La Rochelle, France, [2]Airbus Safran Launchers, Saint-Médard-En-Jalles, France, [3]Airbus Group Innovation, Suresnes, France*	**GREEN SYNTHESIS OF CUPROUS OXIDE NANOPARTICLES WITH ULTRASOUND ASSISTANCE** **Ing. Pietrogiovanni Cerchier**[1], prof. Manuele Dabalà[1], Katya Brunelli[1] *[1]University Of Padova, Padova, Italy*	*HIGHLIGHT* **THE ORIGIN OF UNIAXIAL NEGATIVE THERMAL EXPANSION IN LAYERED PEROVSKITES** **Dr Arash Mostofi**[1], Mr Chris Ablitt[1], Ms Sarah Craddock[4], Dr Mark Senn[3,4], Dr Nicholas Bristowe[1,2] *[1]Imperial College London, [2]University of Kent, [3]University of Warwick ,[4]University of Oxford*	**STRAIN-INDUCED TRANSFORMATION IN LOW ALLOY TRIP STEELS: CHARACTERIZATION BY MAGNETIC FORCE MICROSCOPY** Professor Greg Haidemenopoulos[1], Professor George Constantinides[2], Illias Bellas[3], Dr Daniel Krizan[4], **Dr Helen Kamoutsi**[3] *[1]Khalifa University, Abu Dhabi, United Arab Emirates [2]Cyprus University of Technology, Limassol, Cyprus [3]University of Thessaly, Volos, Greece [4]Voestalpine, Linz, Austria*
12.00	**EPOXY THERMOSETS / FIBRILLAR CLAY SUSTAINABLE NANOCOMPOSITES. AUTO-ORGANIZATION PHENOMENA AND COMPONENTS INTERACTIONS** **Associate Professor Alice Mija**[1], Dr Guillaume Falco[1], Dr Romain Castellani[2], Dr Nicolas Volle[3], Sophie Pagnotta[4], Dr Françoise Giulieri[3], Dr Edith Peuvrel-Disdier[2] *[1]University of Nice Sophia Antipolis, ICN, Nice, France, [2]MINES ParisTech, CEMEF, UMR CNRS 7635, CS 10207, Sophia Antipolis, France, [3]SAS PIGM'Azur, Nice, France, [4]Université Nice Sophia Antipolis; Centre Commun de Microscopie Appliquée, Nice, France*	**FACILE SYNTHESIS AND CHARACTERIZATION OF Cu-BASED NANOSTRUCTURED MATERIALS** **Miss Shaima AlYafei**[1], Dr Georgia Basina*[1], Dr Vasileios Tzitzios[1], Dr. Balasubramanian Vaithilingam[2], Dr. Issam Ismail[1], Dr. Yasser Al Wahedi*[1] *[1]Department of Chemical Engineering, The Petroleum Institute, P.O. Box 2533, UAE, Abu Dhabi, United Arab Emirates, [2]Takreer Research Center, Abu Dhabi Oil Refining Company (TAKREER), P.O. Box: 3593, UAE, Abu Dhabi, United Arab Emirates*	**FABRICATION AND CHARACTERIZATION OF NANO-IMPRINTED ORGANIC-INORGANIC MULTIFERROIC NANOCOMPOSITES** **Pedro Sá**[1] *[1]Université Catholique De Louvain (UCL), Boltzmann A141, Croix Du Sud, 1 L7.04.02, Belgium*	**A CRITICAL REVISIT TO THE WORK HARDENING AND STRAIN RATE SENSITIVITY OF CARBON-ALLOYED HIGH MANGANESE AUSTENITIC STEEL** **Mr. Z.C. Luo**[1], Dr. M.X. Huang[1] *[1]Department of Mechanical Engineering, The University Of Hongkong, HongKong, China, [2]Shenzhen Institute of Research and Innovation, The University Of Hongkong, Shenzhen, China*
12.20	**OPTIMIZED PROCESSING CONDITIONS FOR HIGH-PERFORMANCE FERROELECTRIC P(VDF-TrFE) FILMS** **Nicoletta Spampinato**[1], Dr. Jon Maiz[1], Dr. Mario Maglione[2], Prof. Georges Hadziioannou[1], Dr. Eleni Pavlopoulou[1] *[1]Laboratoire de Chimie des Polymères Organiques (LCPO – UMR5629), Université de Bordeaux/Bordeaux INP/CNRS, Pessac Cedex, France, [2]Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB – UPR9048), CNRS, Pessac Cedex, France*	**THE EFFECT OF STRAIN ON Ag+ CATION SUBSTITUTION IN CdSe NANOCRYSTALS** **Dr Urko Petralanda**[1], Dr Luca De trizio[1], Prof Liberato Manna[1], Dr Sergey Artyukhin[1] *[1]Italian Institute of Technology, Italy*	**NEW ROUTES TO VERTICALLY ALIGNED MULTIFERROIC NANOCOMPOSITES: DESIGN AND MAGNETO-ELECTRIC COUPLING** **Mr. Sergey Basov**[1], Doc. Catherine Elissalde[2], Prof. Luc Piraux[1] *[1]BSMA-IMCN, Université catholique de Louvain, Louvain-la-Neuve, Belgium, [2]ICMCB-CNRS, Université de Bordeaux, Pessac, France*	**STRAIN-HARDENING MECHANISMS IN HIGH-Mn TRIP/TWIP STEEL STUDIED BY IN-SITU SYNCHROTRON X-RAY DIFFRACTION** **M.Sc. Yan Ma**[1], Dr.-Ing. Wenwen Song[1], Univ.-Prof. Dr.-Ing. Wolfgang Bleck[1] *[1]Steel Institute, RWTH Aachen University, Aachen, Germany*
12.40	**POLYMER COMPOSITES FOR THE PHOTOACTIVATED OPTOCHEMOSENSING OF TOXIC CONTAMINANTS** **Despina Fragouli**[1], Maria Erminia Genovese[1], Athanassia Athanassiou[1] *[1]Istituto Italiano Di Tecnologia, Genova, Italy*		**FROM SINGLE TO MULTILAYER COATINGS TO INCREASE THERMAL STABILITY AND OXIDATION RESISTANCE** **Dr. Konstantin Kuptsov**[1], Mehran Golizadeh[1], Natalia Shvyndina[1], Prof. Dmitry Shtansky[1] *[1]National Univercity Of Science And Technology "misis", Moscow, Russian Federation*	**THE TRIP EFFECT OF AUSTENITIC STEELS UNDER MULTIAXIAL LOADING** **Dr. Efthymios Polatidis**[1], Mr. Wei-Neng Hsu[1,2], Dr. Tobias Panzner[3], Dr. Miroslav Smid[1], Prof. Prita Pant[4], Prof. Helena Van Swygenhoven[1,2] *[1]Swiss light source, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland, [2]Neutrons and X-rays for Mechanics of Materials, IMX, Ecole Polytechnique Federale de Lausanne, CH-1012 Lausanne, Switzerland, [3]Laboratory for Neutron Scattering, NUM, Paul Scherrer Institute, CH-5232 Villigen PSI, Switzerland, [4]Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay, Mumbai 400076, India*

Symposium	B2	B3	B5	B10
Room	Aimilios Riadis Hall/M2	CR I Hall/M2	Conference Room 1/M1	Maurice Saltiel Hall II/M2
Session Title	Titanium	Advanced Characterization	Shaping and Sintering of Oxide based Ceramics	Fatigue & Fracture IV - Microstructural Aspects
Chairperson	Dallas Trinkle	M. Azeem	Sophia Tsipas	Martin Leitner
11.00	*KEYNOTE/INVITED* **INFLUENCE OF INSTABILITIES ON THE REFINED DISTRIBUTION OF THE ALPHA PHASE IN METASTABLE TITANIUM ALLOYS** **Prof. Hamish Fraser**[1]	**IN SITU 3D INVESTIGATION OF DENDRITIC PATTERN FORMATION IN Ni, Fe AND Co ALLOYS** **Dr Mohammed A Azeem**[1,2], Dr Robert C Atwood[1,2,3], Dr Nghia Vo[3], Professor Peter D Lee[1,2] *[1]School of Materials, The University of Manchester, Oxford Rd, Manchester M13 9PL, United Kingdom, [2]Research Complex at Harwell, Harwell Campus, Oxfordshire OX11 0FA, United Kingdom, [3]Diamond Light Source Ltd., Harwell Science and Innovation Campus ,Didcot OX11 0DE, United Kingdom*	**FABRICATION OF CORDIERITE-MULLITE CERAMICS WITH HIERARCHICAL POROSITY INDUCED BY GAS FORMING AND CELLULOSE SPHERE TEMPLATES** **Dr.sc.ing. Ruta Svinka**[1], Dr.sc.hab.ing Visvaldis Svinka[1], Mg.sc. Martin Stumpf[2], Dr.ing. Tobias Fey[2] *[1]Riga Technical University Institute of Silicate Materials, Riga, [2]Friedrich-Alexander University Erlangen-Nuremberg Departament of Glass and Ceramic, Erlangen,*	**A MICROSTRUCTURE DRIVEN MODELING APPROACH FOR THE PREDICTION OF FATIGUE PROPERTIES** **Karl Gillner**[1], Prof. Dr.-Ing Sebastian Münstermann[1] *[1]Department Of Integrity Of Materials And Structures Of The Steel Insitute Of Rwth Aachen University, Aachen, Germany*
11.20	*[1]The Ohio State University, Columbus, United States*	**A COMPARISON OF METHODS FOR QUANTITATIVE ASSESSMENT OF TCP PHASE FORMATION IN NICKEL-BASE SUPERALLOYS** **Alison Wilson**[1], Katerina Christofidou[1], Alex Evans[2], Mark Hardy[3], Howard Stone[1] *[1]Department of Materials Science and Metallurgy, University Of Cambridge, UK, [2]Rolls-Royce Deutschland, [3]Rolls-Royce plc, Derby, UK*	**CERAMIC COMPOSITES VIA ADDITIVE MANUFACTURING** **Ezra Feilden**[1], Dr Claudio Ferraro[1], Dr Esther Garcia Tunon-Blanca[1], Dr Finn Giuliani[1], Dr Luc Vandeperre[1], Prof Eduardo Saiz[1] *[1]Imperial College London, London, United Kingdom*	**MICROMECHANICAL MODELING OF FATIGUE CRACK INITIATION IN ALUMINUM 2024** **Dr. Hamad Ul Hassan**[1], Wenye Ye[1], Prof. Alexander Hartmaier[1] *[1]Interdisciplinary Centre For Advanced Materials Simulation (ICAMS) at the Ruhr-Universität Bochum, Germany, Bochum, Germany*
11.40	*HIGHLIGHT* **USING METASTABILITY TO ENGINEER THE MICROSTRUCTURE OF A Ti ALLOY PRODUCED BY SELECTIVE LASER MELTING** **Prof. Dr. Guillermo Requena**[1,2], Dr. Pere Barriobero Vila[1], Dr. Joachim Gussone[1], Dr. Jan Haubrich[1], Dr. Stefanie Sandloebes[2], Dr. Julio Cesar Da Silva[3], Dr. Peter Cloetens[3], Dr. Norbert Schell[4] *[1]DLR Institute of Materials Research, Cologne, Germany, [2]RWTH Aachen, Germany, [3]ESRF, Grenoble, France, [4]HZG, Geesthacht, Germany*	**DEFORMATIONS OBSERVING AT HIGH TEMPERATURE USING DIGITAL IMAGE CORRELATION METHOD** **Yong Shang**[1], Shusuo Li[1], YanLing Pei[1], HuiBin Xu[1], ShengKai Gong*[1] *[1]School of material science and engineering, Beihang University, NO.37, Xueyuan Road, Haidian District, Beijing, China, China*	**THE INFLUENCE OF INITIAL FORM OF POWDER AND SINTERING CONDITIONS ON PROPERTIES OF THE CERAMIC, OBTAINED BY SPARK PLASMA SINTERING METHOD, ON AN EXAMPLE COMPOUNDS PrPO4 AND ZrO2+0.25(MOL.%)SM(Yb)O1.5** **Ekaterina Potanina**[1], Dmitry Mikhailov[1], Albina Orlova[1], Aleksey Nokhrin[1], Maksim Boldin[1], Nikita Sakharov[1], Evgeny Lantsev[1] *[1]Nizhny Novgorod State University, Nizhny Novgorod, Russia*	**MICROSTRUCTURAL AND EDGE-QUALITY EFFECTS ON THE FATIGUE PERFORMANCE OF HIGH STRENGTH STEELS** **Carlos Jiménez-peña**[1], Constantinos Goulas[3,4], Prof. Barbara Rossi[2], Prof. Dimitri Debruyne[1] *[1]KU Leuven, Department of Metallurgy and Materials Engineering, Leuven, Belgium, [2]KU Leuven, Department of Civil Engineering, Leuven, Belgium, [3]Materials innovation institute (M2i), Delft, The Netherlands, [4]Delft University of Technology, Department of Materials Science and Engineering, Delft, The Netherlands*
12.00	*HIGHLIGHT* **INVESTIGATION OF COMPLEX TITANIUM BASED ALLOYS BY ELECTRON MICROSCOPY AND X-RAY DIFFRACTION** **Florian Pyczak**[1] *[1]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany*	**IN-SERVICE ENVIRONMENTAL DEGRADATION OF AN INCONEL 625 FORMULA 1 CAR EXHAUST** **Dr Stella Pedrazzini**[1], Ms Hazel Gardner[2], Mr James Douglas[2], Dr Elena Kiseeva[3], Dr Robert Escoube[3], Ms Gabriella Chapman[2], Prof Didier De Lille[4], Dr Paul Bagot[1], Dr Howard Stone[1] *[1]Department of Materials Science and Metallurgy, University Of Cambridge, Cambridge, UK, [2]Department of Materials, University of Oxford, Oxford, UK, [3]Department of Earth Sciences, University of Oxford, Oxford, UK, [4]Good Fabrications Performance Exhausts, Aylesbury, UK, [5]Nuclear Decommissioning Authority, Harwell, UK*	**NATURAL BIOCERAMIC PRODUCTION AND CHARACTERIZATION FROM FISH BONES OF EUROPEAN ANCHOVY (ENGRAULIS ENCRASICOLUS)** **Assist. Prof. Yesim Muge Sahin**[1,2], Ismık Deniz Ismık[2], Ms. Esra Altun[3], Mr. Burak Ozbek[3], Dr. Hasan Gokce[4], Prof. Simeon Agathopoulos[5], Mr. Mehmet Onur Aydogdu[3], Prof. Faik Nuzhet Oktar6[3], Assist. Prof. Oguzhan Gunduz[7,3] *[1]Istanbul Arel University, Istanbul/ Buyukcekmece / Tepekent, Turkey, [2]ArelPOTKAM(Polymer Technologies and Composite Materials R&D Center), Istanbul/ Buyukcekmece / Tepekent, Turkey, [3]Faculty of Technology, Marmara University /Advanced Nanomaterials Research Laboratory, Istanbul / Kadikoy /Ziverbey, Turkey, [4]Istanbul Technical University / Prof. Dr. Adnan Tekin Material Science and Production Technology Applied Research Centre, Istanbul/ Maslak, Turkey, [5] University of Ioannina / Department of Materials Science and Engineering, Ioannina, Greece, [6]Marmara University /Department of Bioengineering/ Faculty of Engineering, Istanbul / Kadikoy /Ziverbey, Turkey, [7]Marmara University / Department of Metallurgy and Materials Engineering/ Faculty of Technology ,Istanbul / Kadikoy /Ziverbey, Turkey*	**3D IMAGING OF WHITE ETCHING CRACKS (WECs) IN BEARING STEELS** **Mr Matthew Curd**[1], Dr Timothy Burnett[1], Dr Ali Gholinia[1], Prof Phil Withers[1] *[1]University of Manchester*
12.20	*HIGHLIGHT* **HIGH THROUGHPUT INVESTIGATION OF SOLUTE EFFECTS IN BETA Ti ALLOYS** Chuanyun Wang[1], Dr. Yuwen Cui[1], **Dr. Maria Teresa Perez Prado**[1] *[1]Imdea Materials Institute, Spain*		**CORRELATTION BETWEEN MICROSTRUCTURE AND MECHANICAL PROPERTIES OF BORON SUBOXIDE B6O CERAMICS; A TEM STUDY** **Prof. Hans-Joachim Kleebe**[1] *[1]Technische Universität Darmstadt, Darmstadt, Germany*	**IN SITU TEM INVESTIGATION OF HIGH-CYCLE FATIGUE AND FAILURE IN NANOCRYSTALLINE Cu THIN FILMS** **Douglas Stauffer**[2], Daniel Bufford[1], William Mook[3], Brad Boyce[4], Khalid Hattar[1] *[1]Radiation-Solid Interactions Sandia National Laboratories ,Albuquerque, United States, [2]Radiation-Solid Interactions Sandia National Laboratories, Albuquerque, USA, [3]Center for Integrated Nanotechnologies Sandia National Laboratories United States, Albuquerque, USA, [4]Materials Mechanics and Tribology Sandia National Laboratories, Albuquerque, USA*
12.40			**INFLUENCE OF GRAIN SIZE ON THE MECHANICAL PROPERTIES AND SPUTTERING RESISTANCE OF h-BN CERAMICS** **Xiaoming Duan**[1], Dechang Jia[1], Zheng Wang[1], Zhuo Tian[1], Zhihua Yang[1], Yu Zhou[1] *[1]Harbin Institute Of Technology, China*	**OBSERVATIONS OF CRACK TIP STRAIN AND DISPLACEMENT FIELDS DURING FATIGUE UNDER VARIABLE MODE-MIXITY** **Professor Michael Vormwald**[1], Professor José L.F. Freire[2], Mr. G .L.G. Gonzáles[2], Mr. J.G. Diaz[2] *[1]Technische Universität Darmstadt, Darmstadt, Germany, [2]Pontifical Catholic University of Rio de Janeiro, Rio de Janeiro, Brasil*

Symposium	B11	C1	C2	C6
Room	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1	I-15/M1
Session Title	Advanced In-Situ Measurement Methods	Coatings and thin films 4/6 -Wear coatings	Laser surface texturing and deposition	Welding 3
Chairperson	F. Walther	N. Markocsan, E. Aperathitis	Gert-willem Romer	Ivan Kaban
11.00	*HIGHLIGHT* **RESIDUAL STRESSES IN Au-Cu-Ag ALLOYS: A NEUTRON DIFFRACTION EXPERIMENT** **Ms. Marina Garcia Gonzalez**[1,2], Dr. Steven Van Petegem[1], Prof. Dr. Helena Van Swygenhoven[1,2] *[1]Paul Scherrer Institute, Villigen, Switzerland, [2]École Polytechnique Fédérale de Lausanne, Laussane, Switzerland*	*HIGHLIGHT* **ELABORATION OF WEAR RESISTANT CARBIDE-BASE SURFACE LAYERS VIA CONCENTRATED SOLAR POWER** **Dr. Pandora Psyllaki**[1], Ph.D. canditate Athanasios Mourlas[1], Dr. George Vourlias[2], Dr. Eleni Pavlidou[2], Jose Rodriguez[3], Dr. Inmaculada Cañadas[3] *[1]Piraeus University of Applied Sciences, Department of Mechanical Engineering, Egaleo, Greece, [2]Aristotle Univesrity of Thessaloniki (AUTh), Physics Department, Thessaloniki, Greece, [3]Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), Plataforma Solar de Almería, Tabernas Almería, Spain*	*HIGHLIGHT* **TAILORING FRICTION OF LUBRICATED SURFACES BY FEMTOSECOND LASER TEXTURING** **Antonio Ancona**[1,2], Gagandeep Singh Joshi[1,4], Carmine Putignano[1,3], Caterina Gaudiuso[1,4], Annalisa Volpe[1,4], Pietro Mario Lugarà[1,4], Giuseppe Carbone[1,3] *[1]CNR- Institute for Photonics and Nanotechnologies Bari, Physics Dept. - Campus Universitario - via Orabona [4] - Bari, Italy, [2]Dept. of Engineering Science, University West, Trollhättan, Sweden, [3]Department of Mechanics, Mathematics and Management, Politecnico di Bari ,Bari, Italy, [4]Università degli Studi di Bari, Dept. Physics, Bari, Italy*	**IN-SITU POST WELD HEAT TREATMENT OF HIGH STRENGTH LOW ALLOY STEEL DURING ELECTRON BEAM WELDING** Ahmed Hussein[1], Christian Schneider[1], Dr. Wolfgang Ernst[2], Prof. Norbert Enzinger[1], **Prof. Christof Sommitsch**[1] *[1]Graz University of Technology, Institute of Materials Science, Joining and Forming, Graz, Austria, [2]voestalpine Stahl GmbH, Linz, Austria*
11.20	**MECHANICAL BEHAVIOR OF 316L STEEL SUBJECTED TO BIAXIAL STRAIN PATH CHANGES: MULTI-SCALE AND EXPERIMENTS** **Dr. Manas Upadhyay**[1], Dr. Anirban Patra[2], Dr. Wei Wen[2], Dr. Tobias Panzner[1], Dr. Steven Van Petegem[1], Dr. Carlos Tome[2], Dr. Ricardo Lebensohn[2], Prof. Dr. Helena Van Swygenhoven[3] *[1]Paul Scherrer Institute, Villigen Psi, Switzerland, [2]Los Alamos National Laboratory, Los Alamos, Usa, [3]Ecole Polytechnique Federale De Lausanne, Lausanne, Switzerland*	**STRESS REDUCTION IN HARD Ti(Al,V)N FILMS RESISTANT TO CRACKING BY ENERGY DELIVERED DURING THEIR GROWTH** **Martin Jaroš**[1] *[1]University Of West Bohemia, Pilsen, Czech Republic*	**LASER POWDER CLADDING OF WEAR- AND CORROSION-RESISTANT MATERIALS** **Ph.D student Rudolf Korsmik**[1], D.Sc., Prof. Gleb Turichin[2], Ph.D. Olga Klimova-Korsmik[1], M.Sc. Konstantin Babkin[1] *[1]Peter the Great Saint-Petersburg Polytechnic University, Saint-petersburg, Russian Federation, [2]Saint-Petersburg State Marine Technical University, Saint-Petersburg, Russion Federation*	**MICROSTRUCTURAL AND MECHANICAL CHARACTERIZATION OF AA2024 ALUMINIUM ALLOY – PURE COPPER LINEAR FRICTION WELDS** **Dr. Marie-Noelle Avettand-Fenoel**[1], Dr. Guillaume Racineux[2], Dr. Roland Taillard[1] *[1]Unité Matériaux Et Transformations (UMET), UMR CNRS 8207, Université Lille [1], Villeneuve d'Ascq, France, [2]Institut de Recherche en Génie Civil et Mécanique, UMR CNRS 6183, Ecole Centrale de Nantes, Nantes, France*
11.40	**TIME RESOLVED X-RAY DIFFRACTION FOR STRESS MEASUREMENTS DURING FATIGUE TESTS AT 20kHZ** Dr Nicolas Ranc[1], **Dr Olivier Castelnau**[1], Maxime Pelerin[1], Vincent Michel[1], Pr. Veronique Favier[1], Dr Dominique Thiaudiere[2], Dr Cristian Mocuta[2] *[1]Laboratory PIMM (Arts & Metiers ParisTech / CNRS), Paris, France, [2]Synchrotron Soleil, Gif-sur-Yvette, France*	**NANO-SIZED CARBON BLACK PARTICLE REINFORCED COMPOSITE COATINGS: MECHANICAL BEHAVIOR-STRUCTURE RELATION** **Dr. Orkut Sancakoglu**[1], Prof. Dr. Tevfik Aksoy[1] *[1]Dokuz Eylul University, İzmir, Turkey*	**LASER SURFACE STRUCTURING TO IMPROVE TRIBOLOGICAL SYSTEMS AT MIXED LUBRICATION** **Tobias Stark**[1] *[1]Robert Bosch GmbH, Renningen, Germany*	**ENABLING TZM SHEET WELDS BY PROPER FILLER METAL ADDITION** Johann Sebastian Kramer[1], **Markus Stuetz**[1], Matthias Ruettinger[2], Markus Koegl[2], Nikolaus Reheis[2], Norbert Enzinger, Heinrich Kestler[2] *[1]Institute of Materials Science, Joining And Forming, Graz University of Technology, Graz, Austria, [2]Plansee SE, Reutte, Austria*
12.00	**CHARACTERIZATION OF LOCAL DAMAGE MECHANISMS BY IN SITU SEM METHODS AND MATHEMATICAL IMAGE ANALYSIS** **Prof. Dr.-ing. Tilmann Beck**[1], Dipl.-Ing. Sebastian Schuff[1], Jun.-Prof. Dr.-Ing. Frank Balle[1], M. Sc. Jan Henrik Fitschen[2], Prof. Dr. Gabriele Steidl[2] *[1]Institute Of Materials Science And Engineering (WKK), TU Kaiserslautern, Kaiserslautern, Germany, [2]Department of Mathematics, TU Kaiserslautern, Germany*	**STRUCTURE, MECHANICAL AND TRIBOLOGICAL PROPERTIES OF HVOF SPRAYED (WC-Co+Al) COMPOSITE COATING ON DUCTILE CAST IRON** **Phd.Dsc.eng Marzanna Ksiazek**[1,2], Ms.Eng. Lukasz Boron[2], Prof. Marta Radecka[1], Prof. Maria Richert[1], Ms.Eng Adam Tchorz[2] *[1]AGH University of Science and Technology, Cracow, Poland, [2]Foundry Research Institute, Cracow, Poland*	**LASER DIRECT WRITING OF Ag NANOWIRES FOR FLEXIBLE ELECTRONICS** **Dr. Filimon Zacharatos**[1], Mr Ioannis Theodorakos[1], Mr. Agamemnon Kalaitzis[1], Prof. Ioanna Zergioti[1] *[1]National Technical University Of Athens, School of Applied Mathematics and Physical Sciences - Department of Physics, Athens, Greece*	**INFLUENCE OF MANDREL'S SURFACE ON JOINTS PRODUCED BY EMPT** **PhD Inês Oliveira**[1], Professor Ana Reis[2] *[1]INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering, Campus da Feup Rua Dr. Roberto Frias, 400, Portugal, [2]Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, s/n, Portgual*
12.20	**MICROSTRUCTURE AND MAGNETIC DOMAIN STRUCTURE OF GRAIN-ORIENTED Fes-3%Si STEEL AND ARMCO IRON IN UNDEFORMED STATE AND AFTER ELASTIC-PLASTIC DEFORMATION** **M.sc. Shayan Deldar**[1], Dr.-Ing. Marek Smaga[1], Prof. Dr.-Ing. Tilmann Beck[1] *[1]TU Kaiserslautern, Institute of materials science and engineering, Kaiserslautern, Germany*	**ZIRCONIA FILMS: MICROSTRUCTURES AND MECHANICAL STRENGTH** **Josiane Christelle Djuidje Dzumgam**[1], Pr Clotilde BERDIN[1], Dr Michel ANDRIEUX[1], Patrick RIBOT[1] *[1]ICMMO, CNRS UMR 8182, Université Paris SUD - Paris Saclay, Orsay, France*	**NANOSECOND LASER SURFACE TREATMENT OF STEELS. DIFFERENT APPLICATIONS IN THE FIELDS OF CORROSION, NUCLEAR INDUSTRY AND DECONTAMINATION** **Wilfried Pacquentin**[1], Luisa Carvalho[1], Michel Tabarant[1], Alexandre Semerok[1], Hicham Maskrot[1] *[1]Den – Service d'Etudes Analytiques et de Réactivité des Surfaces (SEARS), CEA, Université Paris-Saclay, F-91191, Gif sur Yvette, France, France*	**EFFECT OF BORON CONTENT ON LIQUATION CRACKING IN AUSTENITIC STAINLESS STEELS FOR WELDED COMPONENTS OF PRESSURIZED WATER REACTORS** **PhD Student Giai TRAN VAN**[1,2], Associate Professor Denis CARRON[1], PhD Vincent ROBIN[2], Professor Philippe LE MASSON[1], PhD Antoine ANDRIEU[2] *[1]University Of Southern-Brittany, Lorient, France, [2]EDF-R&D, Chatou, France*
12.40	**SEM/EBSD TENSILE TESTING OF HYDROGEN-CHARGED AUSTENITIC STEEL WITH ULTRA-FINE GRAINS** **Arnaud Macadre**[1], Toshihiro Tsuchiyama[1,2], Setsuo Takaki[1,2] *[1]International Institute For Carbon-neutral Energy Research, Japan, [2]Kyushu University,*	**HOT CORROSION BEHAVIOR OF HVOF CoNiCrAlY(HF) COATING ON Ni-BASED SUPERALLOYS** **Pimin Zhang**[1], Dr Ru Lin Peng[1], Dr Xin-Hai Li[2], Dr Sten Johansson[1] *[1]Department of Management and Engineering, Linköping University, Linköping, Sweden, [2]Siemens Industrial Turbomachinery AB, Finspång, Sweden*		**HYDROGEN SOLUBILITY IN WELDING FLUXES FOR ADVANCED HIGH STRENGTH STEELS** **Ph.D Sung Hoon Chung**[1], Professor Il Sohn[1] *[1]Yonsei University, Seoul, Korea*

Symposium	D1	D2	D4	D9
Room	Artist Cafe/M1	Museum Hall /M2	Library Hall/M2	Maurice Saltiel Hall I/M2
Session Title	NANOSTRUCTURES	Tomography, Imaging & Diffraction	Micro/nano-mechanics of interfaces	Structural materials for GenIV prototypes
Chairperson	**Artur Braun & Biao Cai**	**Thomas Walther**	**Gilles Patriarche & Christophe Pinna**	**K. Nilsson**
11.00	*KEYNOTE/INVITED* **IN-SITU SMALL ANGLE X-RAY SCATTERING CHARACTERIZATION OF NANOPOROUS MATERIALS FOR ACTUATION AND ENERGY APPLICATIONS** **Prof. Dr. Oskar Paris**[1] *[1]Montanuniversitaet Leoben, Leoben, Austria*	*KEYNOTE/INVITED* **IMAGING SOFT MATTER IN 2D AND IN 3D** **Prof Gustaaf Van Tendeloo1,2,** Prof Sara Bals[1] *[1]EMAT, University of Antwerp, Antwerp, Belgium, [2]Wuhan University of Technology, Wuhan, China*	*HIGHLIGHT* **LOCALLY MEASURING THE ADHESION OF InP MEMBRANES DIRECTLY BONDED ON SILICON** **Dr Gilles Patriarche**[1], Dr Konstantinos Pantzas[1], Dr Eric Le Bourhis[2], Gregoire Beaudoin[1], Dr Anne Talneau[1] *[1]Centre de Nanosciences et de Nanotechnologies (C2N), Marcoussis, France, [2]Institut P'- CNRS / Université de Poitiers, Poitiers, France*	*KEYNOTE/INVITED* **COMPATIBILITY OF STEEL WITH HEAVY LIQUID METALS-CORROSION MECHANISM AND ADVANCED MITIGATION STRATEGIES BASED ON MICROSTRUCTURAL CHARACTERISATION EXAMINATIONS** **Dr. Alfons Weisenburger**[1] *[1]Karlsruhe Institute Of Technology, Eggensten-Leopoldshafen, Germany*
11.20			**INDENTATION AND SCRATCH INDUCED DELAMINATION OF SILICON NITRIDE FILMS WITH STRESSED OVERLAYERS FOR INTERFACIAL ADHESION MEASUREMENTS** **Andreas Kleinbichler**[1,2], Priv. Doz. Dr. Megan Cordill[2], Dr Johannes Zechner[1] *[1]Kompetenzzentrum Automobil- Und Industrieelektronik Gmbh, Villach, Austria, [2]Erich Schmid Institute for Material Science, Austrian Academy of Sciences and Dept. Material Physics, Leoben, Austria*	
11.40	**CUBIC? NO, THANKS!** **Dr Antonio Cervellino**[1], Federica Bertolotti[2,8], Dmitry N. Dirin[3,4], Maria Ibáñez[3,4], Frank Krumeich[3], Ruggero Frison[5,6], Oleksandr Voznyy7, Edward H. Sargent7, Maksym V. Kovalenko[3,4], Antonella Guagliardi[6], Norberto Masciocchi[2] *[1]Paul Scherrer Institut, Villigen, Switzerland, [2]Università dell'Insubria & To.Sca.Lab, Como, Italy, [3]ETH Zurich, Zurich, Switzerland, [4]EMPA, Dübendorf, Switzerland, [5]University of Zurich, Zurich, Switzerland, [6]CNR-IC & To.Sca.Lab, Como, Italy, [7]University of Toronto, Toronto, Canada, [8]Aarhus University, Aarhus, Denmark*	**HOW DOES TOMOGRAPHY IN THE MICRO, NANO AND ATOMIC SCALE HELP TO UNDERSTAND 3D MICROSTRUCTURE FORMATION AND PROPERTIES?** **Prof.Dr.-Ing. Frank Mücklich**[1], Michael Engstler[1], Jeni Barrirero[1], Anastasia Kruglova[1] *[1]Saarland University, Saarbrücken, Germany*	**A MULTISCALE ANALYSIS OF INTERFACES IN 3D PRINTED COMPOSITES** Ms. Laura Zorzetto[1], Assistant Professor Francesco Briatico Vangosa[2], Professor Marta Rink[2], Assistant Professor Luca Andena[2], **Assistant Professor Davide Ruffoni**[1] *[1]University of Liège, Liège, Belgium, [2]Politecnico di Milano, Milan, Italy*	**OXIDATION OF STEELS IN STAGNANT Pb** **Dr. Massimo Emilio Angiolini**[1], Dr. Pietro Agostini[1], Dr. Serena Bassini[1], Dr. Fabio Fabbri[1], Dr. Elena Macerata[2], Dr. Stefano Matteo Cervino[2], Dr. Mario Mariani[2] *[1]Department for Fusion and Technologies for Nuclear Safety and Security, ENEA www.enea.it, Rome, [2]Nuclear Engineering Division, Department of Energy, Politecnico di Milano, Milano,*
12.00	**X-RAY NANO-DIFFRACTION ANALYSIS OF 3D STRAIN STATE IN CORE-SHELL SEMICONDUCTOR NANOWIRES** **Prof. Dr. Ullrich Pietsch**[1], Ali AlHassan[1], Arman Davtyan[1], Dr. Ryan Lewis[2], Hanno Küppers[2], Dr. Lutz Geelhaar[2] *[1]Department of Physics, University of Siegen, Siegen, Germany, [2]Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany*	**QUANTITATIVE ANALYSIS OF NANOPARTICLE ASSEMBLIES IN 3D** **Dr. Thomas Altantzis**[1], Mr. Daniele Zanaga[1],Dr. Ana Sánchez-Iglesias[2], Dr. Marek Grzelczak[2,3], Prof. Luis M. Liz-Marzán[2,3], Prof. Gustaaf Van Tendeloo[1], Prof. Sara Bals[1] *[1]EMAT, University of Antwerp, Antwerp, Belgium, [2]Bionanoplasmonics Laboratory, CIC biomaGUNE, San Sebastián, Spain, [3]Ikerbasque, Basque Foundation for Science, Bilbao, Spain*	**MECHANICAL BEHAVIOR OF FUNCTIONAL THIN FILMS UNDER CONTROLLED BIAXIAL LOADING** Nicolas POUVREAU[1], **Dr Dominique THIAUDIERE**[1], Eric LE BOURHIS[2], Philippe GOUDEAU[2], Pierre Olivier RENAULT[2], Raphaelle GUILLOU[3], Pierre GODARD[2], Cristian MOCUTA[1] *[1]Synchrotron Soleil, France, [2]Université de Poitiers, FRANCE, [3]CEA Saclay, FRANCE*	**SELECTION AND QUALIFICATION OF CANDIDATE MATERIALS FOR REACTOR SYSTEMS WITH HEAVY LIQUID METAL COOLANTS** **Erich Stergar**[1], P. Marmy[1], X. Gong[1], S. Gavrilov[1] *[1]SCK•CEN, Mol, Belgium*
12.20	**LABORATORY PRE-SCREENING OF PROCESSES AT THE NANOSCALE FOR DEDICATED SYNCHROTRON IN-SITU SAXS/GISAXS EXPERIMENTS** **Dr. Matej Jergel**[1], Dr. Karol Vegso[2], Dr. Martin Hodas[3], Mgr. Peter Nádaždy[1], Dr. Peter Šiffalovič[1], Dr. Vojtech Nádaždy[1], Dr. Eva Majková[1] *[1]Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia, [2]2 Japan Synchrotron Radiation Research Institute, Hyogo, Japan, [3]3 Institute of Applied Physics, University of Tubingen, Tubingen, Germany*	**ACCURATE STRUCTURE REFINEMENT OF EPITAXIAL THIN FILMS USING 3D ELECTRON DIFFRACTION DATA** **PhD Gwladys Steciuk**[1], Dr. Philippe Boullay[2], PHD Lukas Palatinus[1], MC Adrian David[2], PHD Helene Rotella[2], CR Olivier Copie[2], DR Wilfrid Prellier[2] *[1]Institute Of Physics Of The Czech Academy Of Sciences, Prague 6, Czech Republic ,* *[2]CRISMAT Laboratory UMR6508, Caen, FRANCE*	**FE SIMULATION OF INTERFACIAL DELAMINATION BETWEEN SiO_2 THIN FILM AND POLYMERIC SUBSTRATE** **Caroline Ho**[1,2], Olivier Dalverny[1], Amèvi Tongne[1], Joel Alexis[1], Anita Dehoux[2], Sébastien Chatel[2], Loic Lacroix[1], Bruce Faure[2] *[1]Laboratoire Génie de Production ENIT-INP, Tarbes, France, [2]Essilor International R&D, Créteil, France*	**RELIABILITY UNDER MONOTONIC AND CYCLIC LOADING OF THE T91 STEEL DEFORMED IN LEAD BISMUTH EUTECTIC: EFFECT OF OXYGEN CONCENTRATION** **Dr Ingrid Proriol Serre**[1], Carla Carlé[1], Pr Jean-Bernard Vogt[1] *[1]Unité Matériaux Et Transformations - UMR Université Lille [1]/CNRS/INRA/ENSCL, Lille University - 59655 Villeneuve d'Ascq ,France*
12.40	**MONITORING TiO_2 CRYSTALLIZATION KINETICS USING SYNCHROTRON RADIATION DIFFRACTION** Dr Hani Albetran[1,2], Professor Brian O'Connor[1], **Professor It-Meng (Jim) Low**[1] *[1]Curtin University, Perth, Australia, [2]Imam Abdulrahman Alfaisal University, Dammam, Saudi Arabia*	**ORIGIN OF THE MODULATED SUPERSTRUCTURE OF THE $Ce_{10}W_{22}O_{81}$ LANTHANIDE TUNGSTATE BY ELECTRON CRYSTALLOGRAPHY** **MSc Loïc Patout**[1], PhD Thomas Neisius[2], PhD Andrea P. C. Campos[2], Christian Dominici[2], PhD Claude Alfonso[1], PhD Ahmed Charai[1] *[1]Im2np-cnrs, Aix-Marseille Université, Faculté des Sciences, Campus de Saint-Jérôme, F-13397 Marseille, [2]CP2M, Aix-Marseille Université, Faculté des Sciences, Campus de Saint-Jérôme, F-13397 Marseille*	**INDICATING COATINGS FOR CFRP IN AERONAUTIC** **Prof. Eric Le Bourhis**[1], Dr. Sophie Senani[2], Dr. Laurence Rozes[3], Mr. Quentin Morelle[3], Dr. Manuel Gaudon[4], Dr. Etienne Duguet[4], Dr. Silvere Barut[2], Dr. Stéphane Guinard[2], Dr. Fabienne Touchard[1], Dr. Jean-François Letard[5], Dr. Pierre-Jean Lathierre6 *[1]Inst P', U. Poitiers, Poitiers, France, [2]Airbus Group Innovations, Suresnes, France, [3]UPMC – LCMCP, Paris, France, [4]ICMCB U. Bordeaux, Bordeaux, France, [5]OliKrom, Pessac, France, [6]MAPAERO ,Pamiers, France*	**IRRADIATION EFFECTS ON COMPATIBILITY OF STRUCTURAL MATERIALS WITH LEAD-BISMUTH EUTECTIC** **Dr. Yong Dai**[1] *[1]Paul Scherrer Institut, Villigen, Switzerland*

Symposium	E1	E2	E3
Room	CR II Hall/M2	CR III Hall/M2	Rehearsal Room 5.17/M1
Session Title	SOFC	Redox flow batteries / Li anodes	Photocatalysis
Chairperson	Peter Pfeifer & Jean-Yves Sanchez	P. Bruce	Jianwu Sun
11.00	*KEYNOTE/INVITED* **INVESTIGATION ON SOFC CATHODIC REACTION BY USING PATTERNED THIN FILM MODEL ELECTRODE**	*KEYNOTE/INVITED* **PHYSICAL CHEMISTRY AND TRANSPORT IN MATERIALS FOR REDOX FLOW BATTERIES**	*KEYNOTE/INVITED* **ARTIFICIAL PHOTOSYNTHESIS VIA SOLAR LIGHT DRIVEN CO2 REDUCTION INTO METHANOL**
	Mr. Koji Amezawa[1], Mr. Yoshinobu Fujimaki[1], Mr. Keita Mizuno[1], Mr. Yuta Kimura[1], Mr. Takashi Nakamura[1], Mr. Kiyofumu Nitta[2], Ms. Yasuko Terada[2], Mr. Keiji Yashiro[1], Mr. Fumitada Iguchi[1], Mr. Hiroo Yugami[1], Mr. Tatsuya Kawada[1]	**Dr. Thomas Zawodzinski**[1,2], Dr. Jing Peng[1], Dr. Gabriel Goenaga[1], Dr. Zhijiang Tang[2], Dr. Jamie Lawton[1], Dr. Che-Nan Sun[3]	Mr. Myung Jong Kang[1], Dr. Chang Woo Kim[1], **Dr. Prof. Young Soo Kang**[1]
11.20	*[1]Tohoku University, Sendai, Japan, [2]JASRI, Sayo, Hyogo, Japan*	*[1]University of Tennessee-Knoxville, Knoxville, United States, [2]Oak Ridge National Lab, [3]Electrosynthesis Co., Buffalo, USA*	*[1]Korea Center for Artificial Photosynthesis, Department of Chemistry, Sogang University, Seoul, South Korea*
11.40	**OPERANDO STUDY OF CERIA BASED SOLID OXIDE ELECTROCHEMICAL CELLS**	**ELECTROCHEMICAL CHARACTERIZATION OF ELECTROSPUN URCHIN-LIKE V2O3 -CNF COMPOSITE NANOSTRUCTURE FOR VANADIUM REDOX FLOW BATTERY APPLICATION**	**PHOTOCATALYTIC PROPERTIES OF TiO2 THIN FILMS DOPED WITH NOBLE METALS (Ag, Au, Pd AND Pt)**
	Dr. Catherine Dejoie[1], Dr. Fabiano Bernardi[2], Dr. Yi Yu[3,4], Dr. Nobumichi Tamura[3], Dr. Martin Kunz[3], Dr. Matthew Marcus[3], Dr. Bryan Eichhorn[4], Dr. Zhi Liu[3,5]	**Alessandra Di Blasi**[1], Concetta Busacca[1], Orazio Di Blasi[1], Nicola Briguglio[1], Marco Ferraro[1], Vincenzo Antonucci[1]	**Dr Maria Kandyla**[1], Cherif Moslah[2], Dr Muhammad Islam[3], Georgia Petropoulou[1], Dr George Mousdis[1], Dr Mohamed Ksibi[2]
	[1]ESRF - The European Synchrotron, Grenoble, France, [2]Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil, [3]Advanced Light Source, Lawrence Berkeley National Lab, Berkeley, USA, [4]Department of Chemistry and Biochemistry, University of Maryland, College Park, USA, [5]School of Physical Science and Technology, ShanghaiTech University, Shanghai, China	*[1]Cnr Itae, Messina, Italia*	*[1]National Hellenic Research Foundation, Athens, Greece, [2]University of Sfax, Sfax, Tunisia, [3]University of Tsukuba, Ibaraki, Japan*
12.00	**DESIGN OF HIGH FUNCTIONAL INTERFACE IN ANODE OF IT-SOFC**	**INFLUENCE OF CARBON NANO-PARTICLE PHYSICOCHEMICAL PROPERTIES ON VANADIUM REDOX REACTIONS KINETICS**	**SURFACE AREA VS. PHOTOELECTROCATALYTIC ACTIVITY OF HIGHLY ORDERED TiO2 NANOTUBES. APPLICATION IN A SOLID-STATE PHOTOELECTROCHEMICAL CELL FOR WATER SPLITTING**
	Dr. Toshiyuki Mori[1], Dr Andrii REDNYK[1], Mr Akira Suzuki[1], Dr Takayoshi Tanji[2], Dr Shigeharu Ito[1], Dr Fei Ye[3]	**M.Sc. Eugenio Rovera**[1], Ph.D. Francesco Fumagalli[1], Ph.D. Giorgio Nava[1], Ph.D. Matteo Zago[2], Ph.D. Andrea Casalegno[2], Ph.D. Fabio Di Fonzo[1]	Mr. Christian Fleischer[1], **Dr. Athanasios Chatzitakis**[1], Dr. Mathieu Grandcolas[2], Dr. Sen Mei[2], Prof. Truls Norby[1]
	[1]National Institute for Materials Science, Tsukuba, Japan, [2]Nagoya University, Nagoya, Japan, [3]Dalian University of Technology, Dalian, China	*[1]CNST@Polimi, Milano, Italy, [2]Politecnico di Milano, Milano, Italy*	*[1]University Of Oslo, Department Of Chemistry, Oslo, Norway, [2]SINTEF Materials and Chemistry, Oslo, Norway*
12.20	*HIGHLIGHT* **OXYGEN EXCHANGE KINETICS AND LONG-TERM STABILITY OF INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELL CATHODES**	**MICROSPHERES GRANULATED WITH MIXTURE OF SiOx NANOPARTICLES AND NANOWIRES FOR Li-ION BATTERY'S ANODE**	**TAILORING SURFACE OF BiVO4 PHOTOANODE FOR WATER SPLITTING**
	Dr. Edith Bucher[1], Dipl.-Ing. Christian Berger[1], Prof. Dr. Werner Sitte[1]	**Dr Boyun Jang**[1], Dr Joonsoo Kim[1]	**Mrs. Mahsa Barzgar Vishlaghi**[1,2], Mr. Abdullah Kahraman[1,2], Mrs. Sinem Apaydin[1,2], Dr. Shamsa Munir[1,2], Dr. Sarp Kaya[1,2,3]
	[1]Montanuniversitaet Leoben, Chair of Physical Chemistry, Leoben, Austria	*[1]Korea Institute Of Energy Research, Daejeon, South Korea*	*[1]Materials science and Engineering Department, Koc University, Istanbul, Turkey, [2]Koc University TUPRAS Energy Center, Istanbul, Turkey, [3]Chemistry Department, Koç University, Istanbul, Turkey*
12.40	**MANUFACTURE OF O2-/H+ CERAMIC-BASED CELLS: IMPROVEMENT THROUGH WET CHEMICAL ROUTES AND INFILTRATION**	**Li-ION BATTERIES:THERMODYNAMICS OF INTERMETALLIC ANODE MATERIALS SYSTEMS**	**CARBON NITRIDE GROWTH ON ZnO ARCHITECTURES FOR ENHANCED PHOTOELECTROCHEMICAL WATER SPLITTING APPLICATION**
	Dr. Julian Dailly[1], Dr. Mathieu Marrony[1]	MSc Alexander Beutl[1], Dr. Siegfried Fürtauer[1], Dr. Dajian Li[2], Dr. Damian Cupid[2], **Univ.Prof. Dr. Hans Flandorfer**[1]	**Špela Hajduk**[1]
	[1]European Institute For Energy Research, Karlsruhe, Germany	*[1]University of Vienna, Dep. of Inorganic Chemistry - Functional Materials, Wien, Austria, [2]Karlsruhe Institute of Technology, Institute for Applied Materials – Applied Materials Physics (IAM-AWP), Karlsruhe, Deutschland*	*[1]National Institute Of Chemistry, Ljubljana, Slovenia*

Symposium	F1	H1	H2
Room	3-20/M1	I -16/M1	Conference Room 2/M1
Session Title	Calcium Phosphates in Tissue Engineering	Critical Magnetic Materials II	Metals Recovery and Production I
Chairperson	Sonia Fiorilli	Roderick Eggert	B. Mishra, Nlebedim Ikenna
11.00	**PRE-OSTEOBLAST AND ENDOTHELIAL CELL RESPONSE TO 3D SILICON SUBSTITUTED HYDROXYAPATITE SCAFFOLDS TREATED AT DIFFERENT TEMPERATURES WITH ADSORBED VEGF** Miss Natividad Gómez-Cerezo[1,2], Laura Casarrubios[3], Daniel Fernández-Villa[3], Dr Sandra Sánchez-Salcedo[1,2], Dr. María Concepcion Serrano[4], Dr Maria Jose Feito[3], **Dr Daniel Arcos**[1,2], Prof. Dr. Maria Vallet-Regi[1,2], Prof. Dr. Maria Teresa Portolés[3] *[1]Department of Inorganic and Bioinorganic Chemistry, Universidad Complutense, Hospital 12 de Octubre, Madrid, Spain, [2]CIBER-BBN, Madrid, Spain, [3]Biochemistry and Molecular Department I, Universidad Complutense de Madrid, IdISSC, Madrid, Spain, [4]Hospital Nacional de Parapléjicos, Servicio de Salud de Castilla-La Mancha, Toledo, Spain*	*KEYNOTE/INVITED* **RARE EARTH MAGNETIC MATERIALS FOR ENERGY APPLICATIONS** **Dr. Matthias Katter**[1] *[1]Vacuumschmelze Gmbh & Co. KG, Hanau, Germany*	**MATERIALS RECOVERY AND REGENERATION FROM SPENT LITHIUM-ION BATTERIES USING PHYSIOCHEMICAL ACTIVATION APPROACHES** **Prof. Zhi Sun**[1], Xiao Lin[1], Hongbin Cao[1], Yi Zhang[1] *[1]Institute Of Process Engineering, Chinese Academy Of Sciences, Beijing, China*
11.20	**EXOGENOUS MINERALIZATION OF DENTAL HARD TISSUES USING IRON DOPED BIOMATERIALS AND FEMTOSECOND LASERS** **Dr Antonios Anastasiou**[1], Dr S. Strafford[4], Dr C.L. Thomson[2], Dr S.A. Hussain[2,3], Dr T.J. Edwards[2], Dr P.M. Azpiazu[5], Dr M. Malinowski[4], Dr C.T.A Brown[2], Dr M.N Routledge[5], Dr A.P. Brown[1], Prof. M.S. Duggal[4], Prof. A. Jha[1] *[1]School of Chemical and Process Engineering, University of Leeds, Leeds, United Kingdom, [2]SUPA, School of Physics and Astronomy, University of St Andrews, St Andrews, United Kingdom, [3]Cambridge Graphene Centre, Engineering Department, University of Cambridge, Cambridge, United Kingdom, [4]Leeds Dental School, University of Leeds, Leeds , Leeds, United Kingdom, [5]Leeds Institute of Cardiovascular and Metabolic Medicine, Faculty of Medicine and Health, University of Leeds, Leeds, United Kingdom*		**THERMODYNAMIC CHARACTERIZATION OF MOLTEN FLUORIDE-BASED FLUX FOR THE SUSTAINABLE PRODUCTION OF MAGNESIUM THROUGH SOLID OXIDE MEMBRANE (SOM) PROCESS** **Ms. Yumin Lee**[1], Dr. Jae Gyo Yang[2], Prof. Joo Hyun Park[1] *[1]Department of Materials Engineering, Hanyang University, South Korea, [2]Institute for Advanced Engineering (IAE), South Korea*
11.40	**ZCAP CERAMICS: THE EFFECTS OF SINTERING TEMPERATURE ON THE VIABILITY OF MRC-5 FIBROBLAST LIKE CELLS IN CULTURE** **Professor And Chairman Hamed Benghuzzi**[1] *[1]University Of Mississippi Medical Center, Jackson, USA*	*HIGHLIGHT* **3D PRINTING OF HIGH PERFORMANCE NdFeB BONDED MAGNETS** **Dr. Parans Paranthaman**[1], Dr. Ling Li[1], Dr. Orlando Rios[1], Dr. Brian Post[1], Dr. Vlastimil Kunc[1], Dr. I Nlebedim[2], Dr. Thomas Lograsso[2], Mr. Robert Fredette[3], Dr. John Ormerod[3], Mr. Aaron Williams[4], Dr. Scott McCall[5] *[1]Oak Ridge National Laboratory, Oak Ridge, United States, [2]Ames Laboratory, Ames, United State, [3]Magnet Applications Inc., DuBois, United States, [4]Arnold Magnetic Technologies, Rochester, United States, [5]Lawrence Livermore National Laboratory, Livermore, United States*	**CIRCULAR ECONOMY IN PERMANENT MAGNETS VIA MAGNET RECYCLING** **Dr. Ikenna Nlebedim**[1] *[1]Ames Laboratory, Us Department Of Energy, Ames, United States*
12.00	**IRON DOPED CALCIUM PHOSPHATE BIOMATERIALS FOR TISSUE ENGINEERING** **Mrs Emaan Alsubhe**[1], Dr Antonios Anastasiou[1], Dr El Mostafa Raif[1], prof Animesh Jha[1] *[1]University Of Leeds, Leeds, United Kingdom*	*HIGHLIGHT* **MAGNETIC PROPERTIES OF MICROSTRUCTURALLY-MODIFIED Pr2Co14B MELT-SPUN RIBBONS** **Dr. Ikenna C. Nlebedim**[1], Dr. Mianliang Huang, Dr. Kewei Sun[1], Dr. Lin Zhou[1], Dr. Matthew Kramer[1] *[1]Ames Laboratory, Us Department Of Energy, Ames, United States*	**SELECTIVE REDUCTION AND SEPARATION OF EUROPIUM FROM MIXED RARE-EARTH OXIDES FROM WASTE FLUORESCENT LAMP PHOSPHORS** Mark Strauss[1], **Professor Brajendra Mishra**[1], Patrick Eduafo[2] *[1]Metal Processing Institute, Worcester, United States, [2]Colorado School of Mines, Golden, USA*
12.20	**PRODUCTION OF TAILORED CALCIUM PHOSPHATE FOAMS SUITABLE FOR BONE TISSUE ENGINEERING APPLICATIONS** **Dr. Fani Stergioudi**[1], PhD candidate Emmanouil Smyrnaios[1], Dr. Konstantina Viglaki[2], Assistant Professor Maria Chatzinikolaidou[2], Professor Nikolaos Michailidis[1] *[1]Physical Metallurgy Laboratory, Department of Mechanical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Department of Materials Science and Technology, University of Crete, Heraklio, Greece*	*HIGHLIGHT* **DEVELOPMENT OF MnBi BASED PERMANENT MAGNET** **Prof. Jun Cui**[1], Dr. Matt Kramer[2], Prof. Duane Johnson[1,2] *[1]Iowa Sate University, AMES, United States, [2]Ames Laboratory, Ames, United States*	**STUDY OF TRIBUTYL PHOSPHATE AS COMPLEXING AGENT FOR Nd ELECTRODEPOSITION FROM IONIC LIQUIDS** **Phd Candidate Evangelos Bourbos**[1], Professor Dimitrios Panias[1], Doctor Ioanna Giannopoulou[1], Professor Ioannis Paspaliaris[1] *[1]National Technical University of Athens, Athens, Greece*
12.40		*HIGHLIGHT* **ADVANCED MANUFACTURING OF COMPACT RARE EARTH ELEMENT MAGNETS** **Scott Mccall**[1], Alex Baker[1], Sarah Baker[1], Joshua Kuntz[1], Jon Lee[1], Christine Orme[1] *[1]LLNL, Livermore, United States*	**PRELIMINARY STUDY OF MAGNESIUM PRODUCTION USING IONIC LIQUIDS** Mrs. Maria-Ioanna Pateli[1], **Dr. Ioanna Giannopoulou**[1], Prof. Dimitrios Panias[1] *[1]National Technical University Of Athens, Athens, Greece*

Symposium	A5	A7	B1	B2
Room	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1	Aimilios Riadis Hall/M2
Session Title	Nanoparticles: Synthesis and Applications III	Topological Insulators and Thermoelectrics	Advanced High Strength Steels II	Magnesium
Chairperson	Richard Curry	Oliver Rader	Elena Pereloma	Eric Nyberg
15.00	*HIGHLIGHT* **ENHANCING THE EXPLOITATION OF FUNCTIONAL NANOMATERIALS THROUGH SPATIAL CONFINEMENT** **Prof. Miguel A. Correa-Duarte**[1] *[1]University of Vigo, Vigo, Spain*	*HIGHLIGHT* **ELECTRO-STRUCTURAL COUPLING EFFECTS IN CHARGED TRANSITION METAL DICHALCOGENIDES** **Dr. Antonio Cammarata**[1], Prof. Tomas Polcar[1,2] *[1]Czech Technical University In Prague, Praha, Czech Republic, [2]University of Southampton, Southampton, United Kingdom*	*HIGHLIGHT* **NANOSTRUCTURAL ENGINEERING OF ADVANCED HIGH STRENGTH STEELS** **Dr Ilana Timokhina**[1], Dr Hossein Beladi[1], Prof Peter Hodgson[1], Dr Jiangting Wang[1], Mr Ilias Bikmukhametov[1] *[1]Deakin University, Geelong, Australia*	*HIGHLIGHT* **MICROSTRUCTURE EVOLUTION IN A Mg-Zn-Y ALLOY STUDIED BY ANNULAR DARK FIELD ELECTRON MICROSCOPY AFTER DEFORMATION UNDER HIGH PRESSURE TORSION** Dr. Dudekula A. Basha[1], Dr. Ryoji Sahara[1], Dr. Hidetoshi Somekawa[1], Dr. Julian M. Rosalie[1], **Dr. Alok Singh**1, Dr. Koichi Tsuchiya[1] *1National Institute For Materials Science, Tsukuba, Japan*
15.20	**ORGANOMETALLIC CHEMICAL LIQUID DEPOSITION: METASTABLE NANOPARTICLES AS PRECURSORS FOR CONFORMAL COPPER LAYERS IN 3D SILICON STRUCTURES** **Dr. Pierre Fau**[1,2], Dr. Jérémy Cure[1], Dr. Kilian Piettre[1], Dr. Alix Sournia-Saquet[1], Dr. Yannick Coppel[1], Dr. Jérome Esvan[2,3], Dr. Bruno Chaudret[4], Dr. Benoit Riou[5], Dr. Céline Bondoux[5] *[1]LCC-CNRS, Toulouse, France, [2]Université Fédérale de Toulouse, UT3 Paul Sabatier, Toulouse, France, 3CIRIMAT-ENSIACET, Toulouse, France, [4]LPCNO-CNRS-INSA, Toulouse, France, [5]STMicroelectronics SAS Tours, Tours, France*	*HIGHLIGHT* **ROLE OF NANOSTRUCTURING IN SILVER ANTIMONY TELLURIDE COMPOUNDS FOR THERMOELECTRIC APPLICATIONS** **Dr. Oana Cojocaru-Miredin**[1,2], M.Sc. Lamya Abdellaoui[2], Dr. Siyuan Zhang[2], Prof. Christina Scheu[2,3], Prof. Matthias Wuttig[1], Prof. Yaron Amouyal[4] *[1]Rwth Aachen University, Aachen, Germany, [2]Max-Planck Institut für Eisenforschung GmbH, Düsseldorf, Germany, [3]Materials Analytics, RWTH Aachen University, Aachen, Germany, [4]Technion–Israel Institute of Technology, Haifa, Israel*	**MICROSTRUCTURE AND TEXTURE EVOLUTION DURING ASYMMETRIC ROLLING OF A HIGH MANGANESE TWIP STEEL.** **Frederike Berrenberg**[1], Dr. Christian Haase[2], Prof. Dr.rer.nat. Dmitri A Molodov[1], Dr. Jiangting Wang[3], Dr. Ilana Timokhina[3], Dr. Rimma Lapovok[3] *[1]Institute of Physical Metallurgy and Metal Physics, RWTH Aachen University, Aachen, Germany, [2]Departement of Ferrous Metallurgy, RWTH Aachen University, Aachen, Germany, [3]Institute for Frontier Materials, Deakin University, Geelong, Australia*	**ACHIEVING FINE GRAIN STRUCTURE AND SUPERPLASTICITY IN Mg-9AL-1Zn (AZ91) MAGNESIUM ALLOY USING SHORT FLOW ROLLING PROCESS** **Associate Professor Min Zha**[1], Professor Huiyuan Wang[1] *[1]Jilin University, Changchun, China*
15.40	**ATOM PROBE TOMOGRAPHY OF FUNCTIONAL NANOMATERIALS** **Prof. Dr. Peter Felfer**[1] *[1]Fau Erlangen, Erlangen, Germany*	**SOLUTION-BASED SYNTHESIS AND PROCESSING OF DOPED Cu-BASED NANOMATERIALS AND THERMOELECTRIC GENERATORS** **Yu Liu**[1], Gregorio García[2,3], Silvia Ortega[1], Dr Doris Cadavid[1], Pablo Palacios[2,4], Perla Wahnón[2,3], Dr Andreu Cabot[1,5] *[1]Catalonia Institute For Energy Research-IREC, Sant Adria de Besos, Spain, [2]Instituto de Energía Solar, ETSI Telecomunicación, Universidad Politécnica de Madrid, Madrid, Spain, [3]Departamento de Tecnología Fotónica y Bioingeniería, ETSI Telecomunicación, Madrid, Spain, [4]Departamento de Física aplicada a las Ingenierías Aeronáutica y Naval. ETSI Aeronáutica y del Espacio, Madrid, Spain, [5]Institució Catalana de Recerca i Estudis Avançats-ICREA, Barcelona ,Spain*	**STRENGTHENING OF ADVANCED HIGH STRENGTH STEELS DURING BAKING TREATMENT** **Univ.Prof. Dr.-Ing. Wolfang Bleck**, Dr. Sonja Brühl, M. Sc. Sebastian Wesselmecking *[1]RWTH - Steel Institute, Aachen, Germany*	**CHARACTERIZATION OF PRECIPITATE FREE ZONES IN A Mg-8Al-0.5Zn ALLOY** **Prof. Jayant Jain**[1], Mr. Anuz Zindal[1], Prof. Rajesh Prasad[1] *[1]IIT Delhi, Delhi, India*
16.00	**INCORPORATION AND LOCALIZATION OF TRANSITION METAL IONS IN COLLOIDAL Mg(OH)2 AND Ca(OH)2** **Dr Ioana Dorina Vlaicu**[1], Dr Vasile Sergiu Nistor[1], Dr Mariana Stefan[1], PhD Student Alexandra Camelia Joita[1], Dr Valentin Adrian Maraloiu[1], Dr Leona Cristina Nistor[1], Dr Daniela Ghica[1] *[1]National Institute Of Materials Physics, Magurele-Ilfov, Romania*	*KEYNOTE/INVITED* **THE IMPORTANCE OF 3D TOPOLOGICAL INSULATOR FOR THERMOELECTRIC APPLICATIONS** **Prof. Dr. Kornelius Nielsch**[1], Dr Andy Thomas[1] *[1]Leibniz Institute for Solid State and Materials Research, Dresden, Germany*	**FATIGUE CRACK INITIATION ASSESSMENT IN Al-CONTAINING TRIP STEELS** MSc. Mechanical Engineer Petros Christodoulou[1], **Dr. Alexis Kermanidis**[1] *[1]University Of Thessaly, Volos, Greece*	**3D MICROSTRUCTURE CHARACTERIZATION OF SEMI-SOLID STATE CAST ZK60 MAGNESIUM ALLOY** **MSc Stefan Zaunschirm**[1], Dr. Guillermo Requena[2], Ph.D. Erenilton Silva[3], Dr. Haroldo Pinto[3], Dr. Johann Kastner[1] *[1]University Of Applied Sciences Upper Austria, Wels, Austria, [2]German Aerospace Center, Cologne, Germany, [3]Universidade de São Paulo, São Paulo, Brazil*
16.20	**DEPOSITION OF CdSe/CdS NANORODS ON CONDUCTING GLASS BY INKJET PRINTING** **Franziska Lübkemann**1, Dr. Ralf Anselmann[2], Torben Kodanek[1], Dr. Nadja C. Bigall[1] *[1]Leibniz Universität Hannover, Hannover, Germany, [2]Evonik Resource Efficiency GmbH, Marl, Germany*		**LIGHTWEIGHTING OF TRANSFORMATION-INDUCED PLASTICITY STEELS** **Dr. Jae-Bok Seol**[1], Dr. H.-S Park[2], Dr. C.-G. Park[1,2] *[1]National Institute for Nanomaterials Technology, POSTECH, Pohang, South Korea, [2]Department of Materials Science and Engineering, POSTECH, Pohang, South Korea*	**THE ROLE OF STRAIN LOCALIZATION BANDS IN MECHANICAL BEHAVIOR OF MAGNESIUM ALLOYS** **Dr. Konstantinos Baxevanakis**[1], Dr. Antonios Kontsos[2] *[1]Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough, United Kingdom, [2]Mechanical Engineering & Mechanics Department, Drexel University, Philadelphia, United States*
16.40			**ARREST OF HYDROGEN-ASSISTED SURFACE CRACKING IN hcp-TRIP AUSTENITIC STEELS** **Prof. Kaneaki Tsuzaki**[1] *[1]Kyushu University, Fukuoka, Japan*	**CREEP BEHAVIOR OF MRI-153 MAGNESIUM ALLOYS AND THE INFLUENCE OF A HEAT PRE-TREATMENT IN THE MORPHOLOGY OF THE PRECIPITATES DURING CREEP** **Dr Mónica Preciado**[1], José Calaf[1], Dr Pedro Miguel Bravo[1] *[1]University Of Burgos, Avda. Cantabria s/n, Burgos, Spain*

Symposium	B3	B5	B6	B10
Room	CR I Hall/M2	Conference Room 1/M1	I-11/M1	Maurice Saltiel Hall II/M2
Session Title	Phase Stability and Equilibria	Oxides	Advanced Composites - Sensing and Healing	Corrosion & Fatigue I
Chairperson	P. Tsakiropoulos	Helena Brunckova	Aravind Dasari	Nikolaos Michailidis and Brajendra Mishra
15.00	**HIGH-TEMPERATURE STABILITY OF PHASES IN BORON CONTAINING Co-Re ALLOYS FOR GAS TURBINE APPLICATIONS**	**EXPERIMENTAL INVESTIGATION AND THERMODYNAMIC MODELLING OF THE TiO2–MgO-Al2O3 SYSTEM**	**A CRITICAL ASSESSMENT OF MULTIFUNCTIONAL AND SELF-HEALING POLYMERS AND COMPOSITES WITH REGARDS TO THEIR POTENTIAL USE IN AERONAUTIC STRUCTURAL APPLICATIONS**	*HIGHLIGHT* **WEAR AND CORROSION PROPERTIES OF HIGH INTERSTITIAL STAINLESS STEELS FOR DRILLING APPLICATION IN SOUR GAS WELL ENVIRONMENTS**
	Dr. Pavel Strunz[1], Dr. Debashis Mukherji[2], Dr. Přemysl Beran[1], Dr. Ralph Gilles[3], Dr. Michael Hofmann[3], Lukas Karge[3], Prof. Joachim Rösler[2]	**Dr. Olga Fabrichnaya**[1], Galina Savinykh[1], Franz Baerthel[1], Tilo Zienert1	Dr Christos Katsiropoulos[1], **Dipl-Eng Panagiota Polydoropoulou**[1], Dr Spiros Pantelakis[1]	**Professor Brajendra Mishra**[1], Dr. Eunkyung Lee[1], Dr. Walid Khalfaoui[2]
	[1]Nuclear Physics Institute, Řež, Czech Republic, [2]Technische Universität Braunschweig, Institut für Werkstoffe, Braunschweig, Germany, [3]Technische Universität München, Heinz Maier-Leibnitz Zentrum (MLZ), Garching, Germany	*[1]Technical University Bergakademie Freiberg, Freiberg, Germany*	*[1]University Of Patras-laboratory Of Technology And Strength Of Materials (Itsm), Rion-patras, Greece*	*[1]Metal Processing Institute, Worcester, United States, [2]Texas A&M University at Qatar, University City, Qatar*
15.20	**NbTiAl+Si SYSTEM: PRECIPITATION OF THE O-Ti2AlNb PHASE AND INFLUENCE OF THE Si DOPING FOR LOW PRESSURE TURBINE BLADE**	**EXPERIMENTAL INVESTIGATION OF THE ZrO2—TiO2—MgO SYSTEM AND THERMODYNAMIC CALCULATIONS**	**LIVING MATERIALS: SMART ADAPTIVE MATERIALS WITH SENSING, HEALING AND SELF-SHAPING CAPABILITIES**	**EFFECT OF ARTIFICIAL AGING ON THE CORROSION-INDUCED HYDROGEN TRAPPING IN ALUMINUM ALLOY 2024-T3**
	Ms. Laurence Sikorav1, Pr. Philippe Vermaut[2,3], Mme Zhao Huvelin[1], Mme Anne Denquin[1]	**Dipl.-ing. Ivan Saenko**[1], Ph.D. Olga Fabrichnaya[1]	**Dr Eleonora D'Elia**[1], Miss Hanae Said[1], Prof Eduardo Saiz[1]	**Dr Helen Kamoutsi**[1], Panagiotis Floratos[1], Charilaos Karantonidis[1], Dr Gregory Haidemenopoulos[1]
	[1]ONERA- The French Aerospace Lab, Châtillon, France, [2]PSL Research University, Chimie ParisTech - CNRS, Institut de Recherche de Chimie Paris, Paris, France, [3]Sorbonne Universités, UPMC Univ Paris 06, UFR926, Paris, France	*[1]Institute of Materials science, TU Bergakademie Freiberg, Freiberg, Germany*	*[1]Imperial College London, London, United Kingdom*	*[1]University of Thessaly, Volos, Greece*
15.40	**PHASE EQUILIBRIA IN THE Ge-Nb-Si PHASE DIAGRAM**	**HYDRATION-INDUCED SPIN-GLASS STATE IN A FRUSTRATED Na-Mn-O TRIANGULAR LATTICE**	**MECHANICAL PERFORMANCE AND ULTRASONIC INSPECTION OF AN IMPACTED SKIN-STIFFENED COMPOSITE IMPLEMENTED WITH A SELF-HEALING FUNCTIONALITY**	**MORE EVIDENCE ON HYDROGEN EMBRITTLEMENT OF 2024-T3 AERONAUTICAL ALUMINUM ALLOY**
	Dr Claire Utton[1], Dr Ioannis Papadimitriou[2], Dr Hajime Kinoshita[1], **Professor Panos Tsakiropoulos**[1]	**Dr Ioanna Bakaimi**[1,2], Dr Rosaria Brescia[3], Professor Craig M. Brown[4,5], Dr Alexander Tsirlin[6], Professor Mark A. Green[7], Professor Alexandros Lappas[1]	**Mrs. Xenia Tsilimigkra**[1], Mrs Athanasios Kotrotsos[1], Dr. Stavros Tsantzalis[1], Dr. George Sotiriadis[1], Professor Vassilis Kostopoulos[1], Dr. Sonia Florez[2], Mr. Anthony Bosman[3]	Prof. Spiros Pantelakis[1], Prof. Nikos Michailidis[2], **Dr. Apostolos Chamos**[1], Mrs. Marina Vasco[1]
	[1]University Of Sheffield, United Kingdom, [2]University of Warwick, United Kingdom	*[1]Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Vassilika Vouton 71110 Greece, [2]Department of Physics,University of Crete, Voutes 71003 Greece, 3Nanochemistry Department, Istituto Italiano di Tecnologia, Via Morego 30 Italy ,[4]NIST Center for Neutron Research, 100 Bureau Drive, Gaithersburg USA, [5]Department of Chemical and Biomolecular Engineering, University of Delaware, Newark USA, [6]Experimental Physics VI, Center for Electronic Correlations and Magnetism, Institute of Physics, University of Augsburg, 86135, Germany, [7]School of Physical Sciences, University of Kent, Canterbury, United Kingdom*	*[1]Department of Mechanical Engineering & Aeronautics, University of Patras, Patras, University Campus GR 265 00 Patras, Greece, [2]Industry and Transport Unit, Tecnalia, ParqueTecnológico de San Sebastián, Paseo Mikeletegi,2, E-20009 San Sebastian, Spain, [3]SupraPolix BV, Horsten 1,5612 AX ,Eindhoven, The Netherlands*	*[1]University Of Patras, Patras, Greece, [2]Aristotle University of Thessaloniki, Thessaloniki, Greece*
16.00	**EFFECT OF COOLING RATE ON MICROSTRUCTURE EVOLUTION OF TI-45Al-8.5Nb-0.2W-0.2B-0.02Y ALLOY DURING MULTI-STEP HEAT TREATMENT**	**EXTERNAL HEALING OF CRACKS IN CEMENT-BASED MORTARS**	**STRUCTURAL HEALTH MONITORING OF GLASS FIBRE METAL HYBRID LAMINATES**	**THE EFFECT OF PRE-STRAINING ON THE CORROSION BEHAVIOUR OF 2024 AND 2198 ALUMINUM ALLOYS**
	Ph D Fengming Qiang[1], Pro Hongchao Kou[1], Pro Jinshan Li[1]	**Associate Professor Maria Stefanidou**[1], PhD Student Eirini-Chrysanthi Tsardaka[1], PhD Student Fotini Kesikidou[1], Associate Professor Eleni Pavlidou[1], Dr Spyridon Kassavetis[1]	**Prof. Dr. Bodo Fiedler**[1], M.Sc. Björn Bosbach[1], B.Sc. Ohle Christoph[1]	**PhD Student Christina Margarita Charalampidou**[1], Stavros Kourkoulis[2], Alexandra Karanika[3], Assistant Professor Nikolaos D. Alexopoulos[1]
	[1]State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an, China	*[1]Aristotle Univeristy Of Thessaloniki, Thessaloniki, Greece*	*1Hamburg University Of Technology, Hamburg, Germany*	*[1]University Of Aegean, Chios, Greece, [2]National Technical University of Athens, Athens, Greece, [3]Hellenic Aerospace Industry S.A., Athens, Greece*
16.20	**ASSESSMENT OF EUTECTIC TROUGH AND SOLIDIFICATION PATHS IN NiAl–Cr–W SYSTEM**		**EFFECT OF GEOMETRICAL IMPERFECTIONS IN THE ELASTIC-PLASTIC FAILURE OF LATTICE MATERIALS**	**CORROSION PERFORMANCE OF STAINLESS STEEL CONCRETE REINFORCEMENT IN ACID RAIN SIMULATING ENVIRONMENTS USING FLY ASH AS CORROSION INHIBITOR**
	Dr. Srdjan Milenkovic[1], Dr. Arcadio Varona Caballero[1]		Mr Bhapawin Boonkongchuen[1], Mr Chin Kerh Lim1, Dr William Ronan[2], **Dr Eral Bele**[1]	**Sofia Tsouli**[1], Angeliki Lekatou[1], Spyros Kleftakis[1], Alexandros Karantzalis[1]
	[1]Imdea Material Institute, Madrid, Spain		*[1]University College London, Department Of Mechanical Engineering, London, United Kingdom, [2]NUI Galway, Galway, Ireland*	[1]University Of Ioannina, Ioannina, Greece
16.40	**EXPERIMENTAL STUDY OF CLOSE-PACKED PHASES IN NICKEL-BASED SUPERALLOYS USING DIFFUSION MULTIPLES MANUFACTURED BY ENCAPSULATING CAST**		**METAL FOAMS AND ITS APPLICATIONS AS SEISMIC FUSES**	**IMPACT OF NOTCHES ON THE CORROSION FATIGUE BEHAVIOUR OF STRUCTURAL ALUMINIUM ALLOYS**
	Dipl.-ing. Robert Popp[1], Dr.-Ing. Rainer Völkl[1], Dr.-Ing. Thomas Göhler[2], Prof.-Ing. Uwe Glatzel+		**Dr. Hernan Pinto**[1], Dr Alvaro Pena[1]	**M. Sc. Francisco Duarte de Araújo**[1], M. Sc. Tom Engler[2], Dr.- Ing. Heinz Kaufmann[3], Dr.-Ing. Georg Andersohn[2], Prof. Dr.-Ing. Tobias Melz[1], Prof. Dr.-Ing. Matthias Oechsner[2]
	[1]University Bayreuth, Bayreuth, Germany, [2]MTU Aero Engines AG, Munich, Germany		*[1]Pontificia Universidad Católica De Valparaíso, Chile, Avda Brasil 2147, Chile*	*[1]Technische Universität Darmstadt, Research Group System Reliability, Adaptive Structures and Machine Acoustics SAM, Darmstadt, Germany, [2]Technische Universität Darmstadt, Chair and Institute for Materials Technology IfW, Darmstadt, Germany, [3]Fraunhofer Institute for Structural Durability and System Reliability LBF, Darmstadt, Germany*

Symposium	B11	C1	C2	C6
Room	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1	I-15/M1
Session Title	Advanced In-Situ Testing and X-Ray-Based Microstructure Analysis	Coatings and thin films 5/6 High-T coatings	Laser cladding and welding	Mechanical Properties and Modelling in Welding
Chairperson	M. Garcia Gonzalez	P. Psyllaki, R. Oliveira	Andres-Fabian Lasagni	Christof Sommitsch
15.00	**APPLICATION OF DIRECT FITTING METHOD TO THE MODIFIED WILLIAMSON-HALL METHOD** **Dr. Setsuo Takaki**[1], Dr. Fu-ling Jang[1], Dr. Daichi Akama[1], Dr. Toshihiro Tsuchiyama[1] *[1]Kyushu University, Fukuoka/ Nishi-ku/ 744 Motooka, Japan*	*HIGHLIGHT* **FUNCTIONAL COATINGS BY LIQUID FEEDSTOCK PLASMA SPRAYING** **Professor Nicolaie Markocsan**[1] *[1]University West, Trollhättan, Sweden*	**EXPERIMENTAL AND NUMERICAL STUDY OF THE MOLTEN POOL SHAPE DURING A COAXIAL LASER CLADDING PROCESS; WITH AND WITHOUT POWDER INJECTION** **Miss Emna Abouda**[1], Dr Morgan Dal[1], Dr Patrice Peyre[1], Dr Pascal Aubry[2], M Cyril Gorny[1], Dr Taha Nabil Tarfa[3] *[1]Ecole nationale des Arts et Metiers, 151 Boulevard de l'Hôpital, 75013 Paris, France, Paris, France, [2]Den – Service d'Etudes Analytiques et de Réactivité des Surfaces (SEARS), CEA, Université Paris-Saclay, 91191 Gif sur Yvette, France, Paris, France, [3]Velan Montreal, Montreal H4T 1G2, Canada, Montreal, Canada*	**STRAIN-RATE DEPENDENCY OF SIMULATED WELDING RESIDUAL STRESSES** **Dipl.-Ing. Stefanos Gkatzogiannis**[1], Prof. Dr.-Ing. Peter Knoedel[1], Prof. Dr.-Ing. Thomas Ummenhofer[1] *[1]Kit Steel & Lightweight Structures Research Center For Steel, Timber & Masonry ,Karsrluhe, Germany*
15.20	**DIRECT CORRECTION OF THE ELASTIC ANISOTROPY IN WILLIAMSON-HALL PLOTS FOR COLD WORKED METALS** **Dr. Fulin Jiang**[1], Prof. Setsuo Takaki[1,2], Dr. Daichi Akama[2], Prof. Toshihiro Tsuchiyama[1,2] *[1]Materials Strengthening Science Research Center, Kyushu University, Fukuoka, Japan, [2]Department of Materials Science and Engineering, Kyushu University, Fukuoka, Japan*	**STRUCTURE, MECHANICAL AND TRIBOLOGICAL PROPERTIES OF Zr-Si-B-(N) NANOFILMS WITH OXIDATION RESISTANCE UP TO 1400°C** **Dr. Philipp Kiryukhantsev-korneev**[1], Margarita Lemesheva[1], Dr. Daria Sidorenko[1], Dr. Andrey Bondarev[1], Prof. Evgeny Levashov[1] *1National University Of Science And Technology Misis, Moscow, Russian Federation*	**STUDY OF THE OPTICAL EMISSION DURING Cu-Al AND Al-Al LASER SPOT WELDING FOR MANUFACTURING OF SOLAR HEAT ABSORBERS** Dr Panayiotis Siozos[1], Mr Michalis Andrianakis[1], Ms Triantafyllia Magana[2], Professor Demetrios Anglos[1,3], **Dr Elias Hontzopoulos**[2] *[1]Institute of Electronic Structure and Laser of the Foundation for Research and Technology-Hellas, P.O. Box 1385, 71110, Heraklion, Greece, [2]PRIME Laser Technology SA, VIOPA Kerateas, P.O. Box 97, 19001 Keratea Attikis, Greece, [3]Department of Chemistry, University of Crete, P.O. Box 2208, 71003, Heraklion, Greece*	**NUMERICAL ESTIMATION OF THE INTERMETALLIC LAYER THICKNESS IN ALUMINUM-STEEL WELDING** **Zahra Silvayeh**[1], Dr. Rudolf Vallant[1], Prof. Dr. Christof Sommitsch[1], Bruno Götzinger[2], Werner Karner[2], Matthias Hartmann[3] *[1]Graz University of Technology; Institute of Materials Science, Joining and Forming, Graz, Austria, [2]Magna Steyr Engineering Austria AG & Co KG and Magna Steyr Fahrzeugtechnik AG & Co KG, Graz, Austria, [3]Austrian Institute of Technology; Light Metals Technologies Ranshofen GmbH, Ranshofen, Austria*
15.40	**EVALUATION OF DISLOCATION DENSITY IN COLD-WORKED AUSTENITIC STEEL SUS316L** **Takuro Masumura**[1,2] Fulin Jiang[1], Setsuo Takaki[1,2], Daichi Akama[1,2], Toshihiro Tsuchiyama[1,2] *[1]Department of Materials Science and Engineering, Kyushu University, Japan, 2International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan*	**CORROSION MECHANISM IN THERMAL BARRIER COATINGS DURING EXPOSURE TO A GAS MIXTURE CONTAINING SO2** **Krishna Praveen Jonnalagadda**[1], Xin-Hai Li[2], Ru Lin Peng[1] *[1]Department of Management and Engineering, Linköping University, Linköping, Sweden, [2]Siemens Industrial Turbomachinery AB, Finspång, Sweden*	**STUDY OF THE MICROSTRUCTURE AND PROPERTIES OF NiCrMoSi HARDFACING ALLOY ELABORATED BY LASER ADDITIVE MANUFACTURING PROCESS** Cecile Blanc[1], **Pascal Aubry**[1], Mohamed Sennour[2], Fanny Balbaud-Celerier[1], Hicham Maskro[1] *[1]CEA/SACLAY/DEN-DPC-SEARS, Gif Sur Yvette 91191, France, [2]MINES ParisTech, PSL Research University, MAT- Centre des matériaux, CNRS UMR 7633, BP 87, BP 87-91003 Evry cedex, France*	**PHASE-FIELD MODELING IN THE NUGGET ZONE OF FSW OF AZ31 Mg ALLOY** **Dipl. Eng. Christos Prosgolitis**[1], Dr Anna Zervaki[1] *[1]University of Thessaly, Laboratory of Materials, Dept. of Mechanical Engineering, Volos, Greece*
16.00	**DEFORMATION MECHANISMS OF MELT-CRYSTALLISED POLYMERS STUDIED BY IN-SITU X-RAY LINE PROFILE ANALYSIS AND HIGH RESOLUTION CREEP EXPERIMENTS** **Dr. Florian Spieckermann**[1], Dr. Gerald Polt[2], Harald Wilhelm[2,3], Mohammad Zare Ghomsheh[2], Dr Michael Kerber[2,5], Prof. Dr. Erhard Schafler[2], Dr. Sigrid Bernstorff[4], Prof. Dr. Michael Zehetbauer[1] *[1]Montanuniversität Leoben, Leoben, Austria, [2]Fakultät für Physik, Universität Wien, Wien, Austria, [3]Laboratory for Polymer Engineering LKT-TGM, Wien, Austria, [4]ELETTRA Sincrotrone Trieste, Basovizza, Italy, [5]Materials Center Leoben, Leoben, Austria*	**SINTERING BEHAVIOUR OF COLUMNAR THERMAL BARRIER COATINGS PRODUCED BY AXIAL SUSPENSION PLASMA SPRAYING** **Phd Student Ashish Ganvir**[1], Associate Professor Nicolaie Markocsan, Doctor Mohit Gupta, Doctor Frantisek Lukac, PhD Student Johanna Ekberg, Professor Robert Vassen *[1]University West, Trollhattan, Sweden, Trollhättan, Sweden*	**LASER CLADDING OF TOOL INSERTS FOR HOT FORMING OF SHEET METALS** **Dr. Josef Domitner**[1], Christoph Egger[1], Nino Müllner[1], Mustafa Kičin[2], Prof. Dr. Christof Sommitsch[1] *[1]Graz University of Technology; Institute of Materials Science, Joining and Forming; Research Group Tools & Forming, Graz, Austria, [2]Cosma Engineering Europe GmbH, Weikersdorf, Austria*	**PREDICTION OF THE REINFORCEMENT AREA (PRA) AND THE NUMBER OF BEADS (PNB) IN ROBOTIC STEEL ARC WELDING WITH CONSUMABLE WIRE: ANALYTICAL MODELLING AND EXTENSIVE EXPERIMENTAL VALIDATION** **Mr Marios Kazasidis**[1] *[1]National Technical University of Athens, Nea Philadelfia, Greece*
16.20	**FAILURE OBSERVATIONS IN SINTERED STEEL FOAMS FROM THE SUBMICRON TO THE MACRO SCALE** **Ali Can-Kaya**1, Dr. Paul Zaslansky[2], Prof.Dr.-Ing. Claudia Fleck[1] *[1]Technische Universität Berlin, Berlin, Germany, 2Charité - Universitätsmedizin Berlin, Berlin, Germany*	**MICROSTRUCTURE OF SELF-HEALING THERMAL BARRIER COATINGS DEPOSITED BY SUSPENSION PLASMA SPRAYING** Mr. Victor Carnicer[1], Mr. Eugeni Cañas[1], **Dr. María José Orts**[1], Dr. Rodrigo Moreno[2], Dr. Maria Dolores Salvador[3], Dr. Pablo Carpio[3], Ms. Lucía Navarro[3], Dr. Enrique Sánchez[1] *[1]Instituto de Tecnología Cerámica (ITC), Universitat Jaume I (UJI), Av.Sos Baynat s/n, 12006, Castellón, Spain, [2]Instituto de Cerámica y Vidrio (ICV), Consejo Superior de Investigaciones Científicas (CSIC), Kelsen 5, E-28049, Madrid, Spain, [3]Instituto de Tecnología de Materiales (ITM), Universitat Politècnica de València (UPV), Camino de Vera, s/n, 46022, Valencia, Spain*		**NUMERICAL MODELING AND EXPERIMENTAL MEASUREMENTS OF RESIDUAL STRESSES INDUCED BY MULTIPASS WELDING OF HIGH STRENGH STEEL PLATES** **Mr Constant Ramard**[1,2], Pr Philippe Pilvin[2], Dr Denis Carron[2], Dr Florent Bridier[3] *[1]IRT Jules Verne, Bouguenais, France, [2]IRDL – FRE CNRS 3744, Lorient, France, [3]DCNS Research/CESMAN, Bouguenais, France*
16.40	**ANISOTROPIC MECHANICAL BEHAVIOR OF NANO-LAMELLAR PEARLITIC STEEL** Dr. Pradipta Ghosh[1], **Oliver Renk**[1], Dr. Karoline Kormout[1], Dr. Ulrich Lienert[2], Prof. Jozef Keckes[1], Prof. Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Leoben, Austria,* *[2]Deutsches Elektronen-Synchrotron, Hamburg, Germany*	*HIGHLIGHT* **REQUIREMENTS FOR HIGH TEMPERATURE MATERIALS AND COATINGS IN FUTURE ENERGY SYSTEMS WITH GROWING CONTRIBUTION OF RENEWABLE ENERGY GENERATION** D. Naumenko[1], R. Pillai[1], A. Chyrkin[1], J. Quadakkers[1], **Prof. Dr. Lorenz Singheiser**1 *[1]Institute of Energy and Climate Resaerch (IEK-2) Forschungszentrum Jülich GmbH, Jülich, Germany*		**QUALITATIVE PREDICTION OF THE RESIDUAL STRESSES IN FRICTION WELDED FULL AND HOLLOW SHAFTS** **Christoph Rößler**[1], Dr. Eng. David Schmicker[2], Eric Heppner[1], Markus Körner[3], Prof. Dr. Eng. Elmar Woschke[1] *[1]Institute of Mechanics, Faculty of Mechanical Engineering, Otto-von-Guericke-University Magdeburg, Magdeburg, Germany, [2]Sampro GmbH, Magdeburg, Germany, [3]Institute of Materials and Joining Technology, Faculty of Mechanical Engineering, Otto-von-Guericke-University Magdeburg*

Symposium	D1	D2	D4	D9
Room	Artist Cafe/M1	Museum Hall /M2	Library Hall/M2	Maurice Saltiel Hall I/M2
Session Title	SPECTROSCOPIES-I	Epitaxial semiconductor heterostructures	Characterisation techniques of material properties across the length scales	Structural materials for GenIV prototypes and Advanced Modelling of Nuclear Structural Materials
Chairperson	Ullrich Pietsch and Mehmet Alper Sahiner	Philomela Komninou	Stanisław Kucharski & Eric Le Bourhis	C. Pareige
15.00	*HIGHLIGHT* **XAS/XES STUDIES OF ADVANCED MATERIALS** **Lucia Amidani**[1] *[1]Esrf - The European Synchrotron, Grenoble, France*	*HIGHLIGHT* **EXPERIMENTAL QUANTIFICATION OF THE HAADF CONTRAST USING EDX AND ITS APPLICATIONS TO QCL DESIGN AND FABRICATION** **Dr Konstantinos Pantzas**[1], Dr Ludovic Largeau[1], Dr Gilles Patriarche[1] *[1]Cnrs Center for Nanoscience and Nanotechnology, Marcoussis, France*	*HIGHLIGHT* **SIZE EFFECT IN INDENTATION TESTS: EXPERIMENTAL AND NUMERICAL INVESTIGATIONS** **Assoc.Prof. Stanisław Kucharski**[1], Professor Stanisław Stupkiewicz[1], Professor Henryk Petryk[1] *[1]Institute of Fundamental Technological Research, Warsaw, Poland*	*KEYNOTE/INVITED* **DESIGN RULES AND ASSESSMENT PROCEDURES FOR NUCLEAR COMPONENTS OPERATING AT HIGH TEMPERATURE** **Dr Karl-fredrik Nilsson**[1] *[1]European Commission DG-JRC, Petten, Netherlands*
15.20	**CHEMICAL AND MORPHOLOGICAL HETEROGENEITY IN ZINC OXIDE THIN FILMS UNDER HUMIDITY TREATMENT** **Kang Wei Chou**[1], Stanislas Petrash[2], Hua Jiang[3], Garth Williams[4], Juergen Thieme[4], Dmytro Nykypanchuk[5], Li Li[4], Gwen Wright[5], Fernando Camino[5], Yu-chen Karen Chen-Wiegart[3,4] *[1]Henkel Ibérica S.A., Bellaterra, Spain, [2]Henkel Corporation, Bridgewater, USA, [3]Stony Brook University, Stony Brook, USA, [4]National Synchrotron Light Source II, Upton, USA, [5]Center of Functional Materials, Upton, USA*	**ATOMIC RESOLUTION ABERRATION CORRECTED ANNULAR DARK FIELD IMAGING OF GaAsBi** **Dr Thomas Walther**[1], Dr Faebian Bastiman[1], Dr Toshihiro Aoki[2,3] *1University of Sheffield, Sheffield, United Kingdom, [2]Arizona State University, Tempe, USA, [3]University of California, Irvine, USA*	**A NEW APPROACH OF THE OLIVER AND PHARR MODEL TO FIT THE UNLOADING CURVE FROM INSTRUMENTED INDENTATION TESTING** **Stephania Kossman**[1,2], Thierry Coorevits[2], Alain Iost[2], Didier Chicot[1] *[1]Université Lille 1,FRE 3723 - LML - Laboratoire de Mécanique de Lille, Lille, France, +Arts et Métiers ParisTech, MSMP, Lille, France*	
15.40	**IN SITU HARD X-RAY PHOTOEMISSION SPECTROSCOPY OF METAL/PMN-PT INTERFACES** **Dr. Adrian Petraru**[1], Dr. Erik Kröger[2], Arndt Quer[2], Dr. Rohit Soni[1,6], Dr. Matthias Kalläne[2,3], Prof. Dr. N A Pertsev[4,5], Prof. Dr. Hermann Kohlstedt[1], Prof. Dr. Kai Rossnagel[2] *[1]Nanoelektronik, Technische Fakultät, Christian-Albrechts-Universität zu Kiel, Kiel, Germany, [2]Institut für Experimentelle und Angewandte Physik, Christian-Albrechts-Universität zu Kiel, Kiel, Germany, [3]Ruprecht-Haensel-Labor, Christian-Albrechts-Universität zu Kiel, Kiel, Germany, [4]Ioffe Institute, St. Petersburg, Russia, [5]Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia, [6]Department of Physics, Indian Institute of Science Education and Research Berhampur, Berhampur, India*	*HIGHLIGHT* **BASAL STACKING FAULT DOMAINS AS A SOURCE OF A-TYPE THREADING DISLOCATIONS IN III-NITRIDE EPITAXIAL LAYERS** **PhD Julita Smalc-Koziorowska**[1], MSc Calliope Bazioti[2], Dr. Martin Albrecht[3], Dr. George Dimitrakopulos[2] *[1]Institute of High Pressure Physics PAS, Warsaw, Poland, [2]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Leibniz Institute for Crystal Growth, Germany*	**CURRENT POSSIBILITIES OF STRESS-STRAIN CURVES BY NANOINDENTATION** **Philippe Kempe**[1], Dr Jirí Nohava[1], Aurélien Tournier-Fillon[1] *[1]Anton Paar TriTec, Peseux, Switzerland*	**FLUX EFFECTS ON RADIATION DAMAGE IN ANION-IRRADIATED MODEL Fe-3at.%Ni ALLOY** **PhD student Lisa Belkacemi**[1], Researcher Estelle Meslin[1], Researcher Jean Henry[1], Researcher Bertrand Radiguet[2], Researcher Brigitte Decamps[3] *[1]Cea Saclay, Saclay, France, [2]GPM, Universite de Rouen, Rouen, France, [3]CSNSM, Universite Paris Sud, Orsay, France*
16.00	**UNDERSTANDING THE ROLE OF CERIUM OXIDE IN H2O2 DISSOCIATION BY HERFD-XANES** Dr. Paola Luches[1], **Francesco Benedetti**[1,2], Jacopo Stefano Pelli Cresi[1,2], Prof. Sergio Valeri[1,2], Dr. Lucia Amidani[3], Prof. Federico Boscherini[4,5], Valentina Nicolini[4], Prof. Gianluca Malavasi[4] *[1]Istituto Nanoscienze, Consiglio Nazionale delle Ricerche, Modena, Italy, [2]Dip. di Scienze Fisiche Informatiche e Matematiche, Univ. di Modena e Reggio Emilia, Modena, Italy, [3]ESRF, Grenoble, France, [4]Dip. di Fisica e Astronomia, Università di Bologna, Bologna, Italy, [5]Istituto Officina dei Materiali, Consiglio Nazionale delle Ricerche, Trieste, Italy, [6]Dip. di Scienze Chimiche e Geologiche, Univ. di Modena e Reggio Emilia, Modena, Italy*	**STRUCTURAL AND ELECTRONIC CHARACTERIZATION OF III-NITRIDE MATERIAL ScGaN** **Simona Pace**[1], Dr Robert J Davies[1], Dr Michelle A Moram[1] *[1]Department of Materials, Imperial College London, London, United Kingdom*	**INDENTATION RELAXATION TEST: THEORETICAL AND EXPERIMENTAL ANALYSIS** **Mr. Paul BARAL**[1], PhD. Gaylord Guillonneau[1], Prof. Guillaume Kermouche[2], Prof. Jean-Michel Bergheau[3], PhD. Jean-Luc Loubet[1] *[1]Université de Lyon, ECL, LTDS UMR CNRS 5513, Ecully, France, [2]Ecole des Mines de Saint Etienne, Centre SMS, LGF UMR 5307, Saint Etienne, France, [3]Université de Lyon, ENISE, LTDS UMR CNRS 5513, Saint Etienne, France*	**EFFECT OF NI ON THE DIFFUSION OF RADIATION INDUCED DEFECTS IN Fe-Ni ALLOYS** **Professor Anna Serra**[1], Dr Napoleon Anento[1], Dr Yuri Osetsky[2] *[1]Universitat Politecnica De Catalunya, Barcelona, Spain, [2]Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, USA*
16.20	**COMBINED XAS AND XES STUDY OF Mn AND Co VALENCE AND SPIN STATES IN TbMn1-xCoxO3** **Vera Cuartero**[1], Sara Lafuerza[1], Mauro Rovezzi[1], Erika Jiménez[2], Joaquín García[2], Javier Blasco[2], Gloria Subías[2] *[1]ESRF - The European Synchrotron, Grenoble, France, 2Instituto de Ciencia de Materiales de Aragón, Departamento de Física de la Materia Condensada, Zaragoza, Spain, [3] Grenoble Alpes, CEA, INAC-SPINTEC- LETI MINATEC-CAMPUS, CNRS, SPINTEC, Grenoble, France*	**CuPtB ORDERING IN GaInP LAYERS ASSESSMENT THROUGH ABERRATION-CORRECTED TEM HAADF IMAGES AND SIMULATIONS** **Catalina Coll**[1], Lluis López-Conesa[1], Enrique Barrigón[2], Laura Barrutia[2], Ignacio Rey-Stolle[2], Carlos Algora[2], Sònia Estradé[1], Francesca Peiró[1] *[1]Laboratory of Electron Nanoscopies (LENS)-MIND/IN2UB, Dept. d'Enginyeries: Electrònica, Universitat de Barcelona, Barcelona, Spain, [2]2.*	**IDENTIFICATION AND CONTROL OF SOME FACTORS AFFECTING NANOINDENTATION MEASUREMENTS ON ELASTOMERS** **Clémence Fradet**[1], Florian Lacroix[1], Gaëlle Berton[1], Stéphane Méo[1], Eric Le Bourhis[2] *[1]LMR/CERMEL, Tours, France,* *[2]Institut P', Poitiers, France*	**AB-INITIO BASED SEARCH FOR LATE BLOOMING PHASES IN IRON ALLOYS** **Dr. Pavel Korzhavyi**[1,2], Dr. Oleg Gorbatov[2,3], ArashHosseinzadeh Delandar[1], Prof. Yuri Gornostyrev[2,3] *[1]KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden, [2]Institute of Metal Physics, Ural Division RAS, 620107 Ekaterinburg, Russia, 3Institute of Quantum Materials Science, 620041 Ekaterinburg, Russia*
16.40		**SPONSOR PRESENTATION: NANOMEGAS - PRECESSION ELECTRON DIFFRACTION APPLICATIONS IN TEM: FROM CRYSTAL STRUCTURE DETERMINATION TO ORIENTATION IMAGING AND STRAIN MAPPING AT NM SCALE**	**NANOINDENTATION IN YTZ FOR DENTAL APPLICATIONS – PITFALLS AND CONSEQUENCES** **Katharina Werbach**[1], Christian Ebner[1], Stefan Hummel[1], Ulrich Lohbauer[2], Herwig Peterlik[1] *[1]University Of Vienna, Wien, Austria, [2]Friedrich-Alexander Universität , Erlangen-Nürnberg, Germany*	**FORMATION AND STABILITY OF C15 INTERSTITIAL CLUSTERS IN DILUTE FERRITIC ALLOYS** **Dr Luca Messina**[1], Dr Mihai Cosmin Marinica[1], Dr Maylise Nastar[1], Dr Christophe Domain[2], Prof. Charlotte S. Becquart[3], Prof. Kazuto Arakawa[4] *[1]CEA Saclay, Gif-sur-Yvette, France, [2]EDF R&D, Moret-sur-Loing, France, [3]Université de Lille 1, Villeneuve d'Ascq Cedex, France, [4]Shimane University, Shimane, Japan*

Symposium	E1	E2	E3
Room	CR II Hall/M2	CR III Hall/M2	Rehearsal Room 5.17/M1
Session Title	Electrocatalysts	Microbatteries	Thermoelectrics II
Chairperson	Koji Amezawa & Stephen Holdcroft	P. Knauth	Gao Min
15.00	*KEYNOTE/INVITED* **CARBON NANOTUBES BASED HYBRID ELECTROCATALYSTS FOR HYDROGEN EVOLUTION** Mr Olli Sorsa[1], Mr Olli Pakkanen[1], Mr Mohammad Tavakkoli[1], Professor Kari Laasonen[1], Professor Albert Nasibulin[2], **Professor Tanja Kallio**[1]	*KEYNOTE/INVITED* **3D NANOMATERIALS FOR HIGH PERFORMANCE Li-ion MICROBATTERIES** **Professor Thierry Djenizian**[1]	*HIGHLIGHT* **SILICIDE THERMOELECTRICS FOR ENERGY HARVESTING** **Dr. Alexander Burkov**[1] *[1]Ioffe Institute, Saint-Petersburg, Russian Federation*
15.20	*[1]Aalto University, Espoo, Finland,* *[2]Skolkovo Institute of Science and Technology, Moscow, Russia*	[1]Ecole Nationales Supérieure Des Mines de Saint-Etienne, Gardanne, France	**INITIATIVE TO BRING 2nd GENERATION OF THERMO-ELECTRIC GENERATORS INTO INDUSTRIAL REALITY (INTEGRAL)** **Dr.-ing. Jean-yves Escabasse**[1,2], Mr. Luc Aixala[1,2], Dr. Christelle Navonne[1,2], Dr. Krunoslav Romanjek[1,2], Mr. Jean Leforestier[1,2] *[1]Univ. Grenoble Alpes, Grenoble, France,* *[2]CEA Liten, Grenoble, France*
15.40	**ELECTRO-CATALYTIC HOLLOW-FIBER MEMBRANE FOR HYDROGEN EVOLUTION AND FILTRATION OF TREATED WASTEWATER** Dr. Krishna Katuri[1], Dr. Narasimha Bettahalli[1], Professor Suzana Nunes[1], **Associate Professor Pascal Saikaly**1 *[1]King Abdullah University Of Science And Technology, Saudi Arabia*	**AN ALL-SOLID-STATE 3D THIN-FILM Li-ion BATTERY FABRICATED ON A SILICON MICROPILLAR ARRAY** **Maarten Mees**[1], Nouha Labeydh[1,2], Brecht Put[1], Sebastien Moitzheim[1,2], Alfonso Sepulveda[1], Mariadriana Creatore[3], W. M. M. Kessels[3], Philippe Vereecken[1,2] *[1]Imec, Leuven, Belgium, =Department of Microbial and Molecular Systems, Centre for Surface Chemistry and Catalysis, KU Leuven – University of Leuven, Leuven, Belgium, +Department of Applied Physics, Eindhoven University of Technology, Eindhoven, The Netherlands*	*HIGHLIGHT* **PRODUCTION TECHNOLOGY OF THERMOELECTRIC FUNCTIONALIZED SINGLE LEGS ON INDUSTRY-SIZED SCALE FOR WASTE HEAT RECOVERY** **Dr. Christian Stiewe**[1] *[1]DLR, Cologne, Germany*
16.00	**MODELLING LaFeO3 FOR IT-SOFC CATHODE APPLICATIONS** **Miss Felicity Taylor**[1], Dr John Buckeridge[1], Prof. Richard Catlow[1,2] *[1]Department of Chemistry, University College London, London, United Kingdom,* *[2]Department of Chemistry, Cardiff University, Cardiff, United Kingdom*	**NOVEL THIN-FILM SOLID-COMPOSITE ELECTROLYTE FOR 3D LITHIUM-ION MICROBATTERIES BY COMBINING MOLECULAR AND ATOMIC LAYER DEPOSITION** **Knut Bjarne Gandrud**[1,2], Simon Hollevoet[1,2], Kevin Van de Kerckhove[3], Brecht Put[1,4], M. Creatore[4], W.M.M. Kessels[4], Christophe Detavernier[3], Philippe Vereecken[1,2] *[1]imec, Kapeldreef 75, B-3001 Leuven, Belgium, [2]KU Leuven - University of Leuven, Centre for Surface Chemistry and Catalysis, Celestijnenlaan 200F, B-3001 Leuven, Belgium, [3]Department of Solid State Sciences, Ghent University, Krijgslaan 281 S1, 9000 Gent, Belgium, [4]Department of Applied Physics, Eindhoven University of Technology, 5600 MB Eindhoven, The Netherlands*	**DOPING AS A WAY TO CONTROL THE TYPE OF CONDUCTIVITY IN REGULAR AND NANO-GRAINED THERMOELECTRIC MATERIALS: DENSITY FUNCTIONAL THEORY STUDY** **Prof. David Fuks**[1], Gennady Komisarchik[1], Maor Kaller[1], Kiril Kirievsky[1], Prof. Yaniv Gelbstein[1] *[1]Ben Gurion University Of The Negev, Beer Sheva, Israel*
16.20	**ELECTRODEPOSITION OF AMORPHOUS/NANOCRYSTALLINE Ni–Mo ALLOY FOR HYDROGEN EVOLUTION REACTION** Mert Manazoğlu[1], **Dr. Gökce Hapcı Ağaoğlu**[1], Prof. Dr. Gökhan Orhan[1] *[1]Istanbul University*	**LiCuPO4 THIN FILM AS CATHODE IN ALL-SOLID-STATE 3D LI-ION BATTERIES** **Dr Florence Vacandio**[1], Vinsensia ADE SUGIAWATI[1], Pr Philippe KNAUTH[1], Pr Thierry DJENIZIAN[2] *[1]Madirel, ElMa Team, AIX-MARSEILLE UNIVERSITY, Marseille, France, [2]Flexible Electronics Department, Center of Microelectronics in Provence, GARDANNE, France*	*HIGHLIGHT* **ELECTRONIC BAND STRUCTURE FEATURES IMPROVING THERMOELECTRIC CONVERSION** **Prof. Janusz Tobola**[1], Dr Bartłomiej Wiendlocha[1], Dr Kamil Kutorasinski[1], Prof. Stanisław Kaprzyk[1] *[1]AGH University Of Science And Technology, Krakow, POLAND, 30-059 Krakow, Poland*
16.40	*HIGHLIGHT* **ADVANCED MATERIALS FOR WATER SPLITTING IN A PEM ELECTROLYSER** **Stefania Siracusano**[1], Vincenzo Baglio[1], Nicholas Van Dijk[2], Luca Merlo[3], Antonino Salvatore Aricò[1] *[1]CNR-ITAE, Messina, ITALY, [2]ITM power, Sheffield, UK, [3]Solvay Specialty Polymers ,Bollate, ITALY*		

Symposium	F1	H1	H2
Room	3-20/M1	I -16/M1	Conference Room 2/M1
Session Title	Bioactive glasses for bone regeneration and infection	Manufacturing of Funtcional Magnetic Materials	Metals Recovery and Production II
Chairperson	Chiara Vitale-Brovarone	Iver Anderson	D. Panias, Moyer Bruce
15.00	**ZINC-ENRICHED MESOPOROUS GLASSES LOADED WITH PTHrP (107-111) IMPROVE OSTEOBLASTIC GROWTH AND DIFFERENTIATION** Miss Rebeca Perez[1], Dr. Sandra Sanchez-Salcedo[1,2], Dr. Daniel Lozano[1,2], **Dr. Antonio J Salinas**[1,2], Prof. Pedro Esbrit[1], Prof. Maria Vallet-Regi[1,2] *[1]Universidad Complutense de Madrid, Madrid, Spain, [2]CIBER-BBN, MADRID, España*	*HIGHLIGHT* **ENERGY-EFFICIENT REFRIGERATION NEAR ROOM TEMPERATURE WITH TRANSITION METAL BASED MAGNETIC REFRIGERANTS** **Ekkes Bruck**[1], Nguyen Van Thang[1], Maurits Boeije[1], Lian Zhang[1], Xin Min You[1], Michael Maschek, Niels van Dijk *[1]Fundamental aspects of Materials and Energy, Aplied Sciences, TU Delft, Delft, Netherlands*	**RESEARCH PROGRESS IN DIVERSIFYING THE SUPPLY OF CRITICAL MATERIALS FOR CLEAN ENERGY** **Corporate Fellow Bruce Moyer**[1] *[1]Oak Ridge National Laboratory, Oak Ridge, United States*
15.20	**SMART SCAFFOLDS FOR OSTEOPOROTIC FRACTURES** **PhD Chiara Vitale-Brovarone**[1], PhD Giorgia Novajra[1], Eng. Giulia Molino[1], Eng. Giorgia Montalbano[1], PhD Sonia Fiorilli[1], PhD Giovanni Vozzi[2], PhD Monica Mattioli-Belmonte[3], PhD Gabriela Ciapetti[4] *[1]Politecnico di Torino - Department of Applied Science and Technology, Torino, Italy, [2]Dipartimento di Ingegneria dell'Informazione, University of Pisa, Pisa, Italy, [3]DISCLIMO, Università Politecnica delle Marche, Ancona, Italy, +Laboratorio di Fisiopatologia Ortopedica e Medicina Rigenerativa, Istituto Ortopedico Rizzoli, Bologna, Italy*	**ALUMINUM CERIUM ALLOYS: THE NEXT STEP IN ALUMINUM** **Zachary Sims**[1] *[1]Oak Ridge National Laboratory, Oak Ridge, United States*	**BIOMATERIAL NICKEL-TITANIUM SUPER ALLOYS RECYCLING VIA HYDROMETALLURGICAL METHODS** **Mr. Muhammed Ihsan Ozgun**[1], Prof. Dr. Mahmut Ercan Acma[2], MSc. Ahmet Burcin Batıbay[1], Dr. Arslan Terlemez[1], Dr. Yasin Ramazan Eker[1] *[1]Konya Necmettin Erbakan University, Konya, Türkiye, [2]Istanbul Technical University, Istanbul, Türkiye*
15.40	**Li-CONTAINING MESOPOROUS BIOACTIVE GLASS NANOPARTICLES FOR BONE REGENERATION** Dr. Preethi Balasubramanian[1], **Kai Zheng**[1], Georgia Charalambopoulou[2], Theodore Steriotis[2], Prof. Dominique de Ligny[3], Prof. Aldo Boccaccini[1] *[1]Institute of Biomaterials, University Of Erlangen-Nürnberg, Germany, [2]Institute of Nanoscience and Nanotechnology, NCSR Demokritos, Greece, [3]Institute of Glass and ceramics, University of Erlangen-Nürnberg, Germany*	**RARE EARTH ALTERNATIVES: SUBSTITUTION OF CRITICAL MATERIALS AND WASTE REDUCTION BY NET-SHAPE PROCESSING & ADDITIVE MANUFACTURING OF ALNICO PERMANENT MAGNETS** **Dr. Emma White**[1], Mr. Aaron Kassen[1], Mr. Emrah Simsek[1], Mr. Wei Tang[1], Dr. Ryan Ott[1], Dr. Iver Anderson[1] *[1]Ames Laboratory of USDOE, Ames, United States*	**THE DISTRIBUTION OF Pb BETWEEN THE Fe-Si-Cu-O SYSTEM AND COPPER METAL** **Dr.ir. Amy Van den Bulck**[1], Dr. ing. Stuart Turner[2], Dr. ir. Muxing Guo[1], Dr. ir. Annelies Malfliet[1], Prof. dr. ir. Bart Blanpain[1] *[1]Department of Materials Engineering, KU Leuven, Kasteelpark Arenberg 44, bus 2450, Belgium, [2]Aurubis Belgium RDI, Watertorenstraat 25, Belgium*
16.00	**PROCESSING AND ANTIBACTERIAL CHARACTERIZATION OF THERAPEUTIC ION-DOPED MESOPOROUS BIOACTIVE SILICATE GLASSES (MBGS)** **Miss Seray Kaya**[1], Professor Dr. Aldo R Boccaccini[1], Dr. Mark Cresswell[2] *[1]Institute Of Biomaterials, University Of Erlangen-nuremberg, Erlangen, Germany, [2]Lucideon Ltd, Stoke-on-Trent, United Kingdom*	**SPIN AND LATTICE DYNAMICS OF MAGNETOCALORIC COMPOUNDS Mn5-xFexSI3** **MSc Nikolaos Biniskos**[1,2], Dr Karin Schmalzl[1], Dr Stephane Raymond[2], Dr Sylvain Petit[3], Dr Paul Steffens[4], Mr Joerg Persson[5], Prof Thomas Brueckel[6] *[1]JCNS, Forschungszentrum Juelich GmbH, Outstation at ILL, Grenoble, France, 2CEA-Grenoble, INAC MEM, 38054 Grenoble, France, [3]CEA-CNRS UMR 12, IRAMIS LLB, 91190 Gif-sur-Yvette, France,[4]Institute Laue-Langevin, BP 156, 38042 Grenoble, France, [5]JCNS, Forschungszentrum Juelich GmbH, 52425 Juelich, Germany, [6]JCNS and PGI, JARA-FIT, Forschungszentrum Juelich GmbH, 52425 Juelich, Germany*	**CHLORINE ADDITION TO INDUSTRIAL SLAG FUMING PROCESSES: A THERMODYNAMIC STUDY** **Dir. Sabrina Van Winkel**[1], Dr. ir. Lennart Scheunis[2], Dr. ir. Annelies Malfliet[1], Dr. ir. Frederik Verhaeghe[1,2], Prof. Dr. ir. Bart Blanpain[1] *[1]Department of Materials Engineering (MTM), KU Leuven, B-3001 Heverlee, Belgium, [2]Umicore Research, B-2250 Olen, Belgium*
16.20	**DEVELOPMENT AND CHARACTERIZATION OF MESOPOROUS GLASS COATINGS WITH ANTIBACTERIAL ION RELEASE CAPABILITY** **Francesca Elisa Ciraldo**[1], Prof. Dr.-Ing. habil. Aldo R. Boccaccini[1] *[1]Friedrich-Alexander University, Institute of Biomaterials, Erlangen, Germany*	**FIELD-ENHANCED PROCESSING OF MAGNETICALLY RESPONSIVE CERAMIC MATERIALS** **Dr. Raymond Brennan**[1], Dr. Victoria Blair[1], Dr. Michael Kornecki[1], Dr. Selva Raju[1], Dr. Nicholas Ku[1] *[1]US Army Research Laboratory, Aberdeen Proving Ground, United States*	
16.40	**MESOPOROUS BIOACTIVE GLASSES WITH ANTIBACTERIAL ADHESION PROPERTIES OBTAINED BY ZWITTERIONIC SURFACE MODIFICATION** PhD Ana García[1,2], **PhD Sandra Sánchez-Salcedo**[1,2], PhD María Vallet-Regi[1,2] *[1]1.- Department of Inorganic and Bioinorganic Chemistry, Universidad Complutense de Madrid, Hospital 12 de Octubre, Spain, Madrid, Spain, [2]CIBER-BBN, Spain, Madrid, Spain*		

Symposium	A5	A7	B1	B1(PARALLEL SESSION)
Room	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1	Conference Room 1/M1
Session Title	Nanoparticles: Synthesis and Applications IV	Novel dielectrics	Advanced High Strength Steels: III	Advanced Characterisation I
Chairperson	**Miguel Correa-Duarte**	**Kornelius Nielsch**	**Kaneaki Tsuzaki**	**Cem Tasan**
17.30	*HIGHLIGHT* **COLLOIDAL NANOCRYSTALS TO ADVANCE STUDIES IN SOLAR-TO-CHEMICALS CONVERSION** **Raffaella Buonsanti**[1] [1]*EPFL, Sion, Europe*	*HIGHLIGHT* **FERROELECTRIC POLYMER NANOSTRUCTURES INDUCED BY LASER PULSED IRRADIATION** Esther Rebollar[1], Jing Cui[2], Margarita Hernández[1], Álvaro Rodríguez[2], Mari Cruz García Gutiérrez[2], Tiberio A Ezquerra[2], **Aurora Nogales**[2] [1]*Instituto de Química Física Rocasolano, IQFR-CSIC, Madrid, Spain,* [2]*Instituto De Estructura De La Materia, IEM-CSIC, Madrid, Spain*	*HIGHLIGHT* **IN SITU INVESTIGATIONS OF PARTITIONING MECHANISMS IN Q&P STEELS BY SYNCHROTRON DIFFRACTION EXPERIMENTS** **Pr. Sébastien Allain**[1], Dr. Guillaume Geandier[1], Dr. Jean-Christophe Hell[2], Dr. Michel Soler[2], Dr. Frédéric Danoix[3], Samy Aoued[4], Pr. Mohamed Goune[4] [1]*Institut Jean Lamour, Nancy, France,* [2]*Arcelormittal Maizières Research SA, Maizières les Metz, France,* [3]*Groupe de Physique des Matériaux, Rouen, France,* [4]*Institut de Chimie de la Matière Condensée de Bordeaux, Bordeaux, France*	**THE ROLE OF PHASE TRANSFORMATION MECHANISM ON GRAIN BOUNDARY CHARACTER DISTRIBUTION IN HSLA STEELS** **Dr Hossein Beladi**[1] [1]*Deakin University, Geelong/Waurn Ponds, Australia*
17.50	*HIGHLIGHT* **NANOCRYSTAL PHOTODETECTORS** **Prof. Richard J Curry**[1] [1]*University of Manchester, United Kingdom*	**EVIDENCES OF FERROELECTRICITY IN ZnO NANOPARTICLES** **Dr Eleni Pavlopoulou**[1], Dr Jon Maiz[1], Dr Guillaume Fleury[1], Prof. Georges Hadziioannou[1], Prof. Vincent Rodriguez[2], Dr Mario Maglione[3], Dr Pauline Loxq[4], Dr Katia Fajerwerg[4], Dr Pierre Fau[4], Dr Myrtil Kahn[4], Guillaume Guegan[5] *1Laboratoire de Chimie des Polymères Organiques (LCPO – UMR5629), Université de Bordeaux/Bordeaux INP/CNRS, Pessac, France,* [2]*Institut des Sciences Moléculaires (ISM – UMR5255), Université de Bordeaux/CNRS, Talence, France,* [3]*Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB – UPR9048), CNRS, Pessac, France,* [4]*Laboratoire de Chimie de Coordination (LCC – UPR8241), CNRS, Toulouse, France,* [5]*ST Microelectronics, Tours, France*	**IN SITU µ-DIC MEASUREMENTS FOR STRAIN PARTITIONING IN MEDIUM Mn STEEL** **Aniruddha Dutta**[1], Dr. Dirk Ponge[1], Dr.-Ing. Stefanie Sandlöbes[2], Prof. Dr.-Ing. habil. Dierk Raabe[1] [1]*Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany,* [2]*Institute of Physical Metallurgy and Metal Physics, RWTH Aachen, Aachen, Germany*	**COLLOIDAL ANALYSIS OF PARTICLES EXTRACTED FROM MICROALLOYED STEEL** **Andreas Hegetschweiler**[1], Aljosha-Rakim Jochem[1], Anna Zimmermann[1], Dr. Thorsten Staudt[2], Prof. Dr. Tobias Kraus[1] [1]*INM - Leibniz Institute For New Materials, Saarbruecken, Germany,* [2]*AG der Dillinger Huettenwerke, Dillingen, Germany*
18.10	**LOCAL FIELD EFFECTS ON THE RADIATIVE RATE OF Mn2+ EMISSION IN ZnSe:Mn NANOCRYSTALS** **Ms. Elleke van Harten**[1], Ms. Riande Dekker[1], Mr. Tim Prins[1], Prof. dr. Andries Meijerink[1] [1]*Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, Utrecht, Netherlands*	**OPTICAL FILTERS AND ELECTRICAL CAPACITANCES BASED ON NANOCOMPOSITES COMPOSED OF NANOPARTICLES EMBEDDED IN A DIELECTRIC MATRIX** **Phd. Student Vanessa Orozco**[1], Frédéric Dumas-Bouchiat[1], Cédric Jaoul[1], Pascal Tristant[1] [1]*Univ. Limoges, CNRS, SPCTS, UMR 7315, F-87000 Limoges, France, Limoges, France*	**MODELING OF CONTINUOUS TRANSITIONS IN THE PARTITIONING MODE OF ALLOYING ELEMENTS DURING ISOTHERMAL FERRITE AND BAINITE FORMATION** **Mr. Hussein Farahani**[1], Prof. dr. ir. S. Sybrand van der Zwaag[1], Professor Wei Xu[1,2] [1]*Novel Aerospace Materials group, Faculty of Aerospace Engineering, Delft University of Technology, Delft, Netherlands,* [2]*State Key Laboratory of Rolling and Automation, Northeastern University, Shenyang, China*	**TEM OBSERVATION OF MOVING AUSTENITE-FERRITE INTERFACES IN STEELS** **Mr John Nutter**[1], Prof Mark Rainforth[1], Prof Sybrand van der Zwaag[2] [1]*University Of Sheffield, Sheffield, United Kingdom,* [2]*TU Delft, Delft, The Netherlands*
18.30	**FABRICATION AND ELECTRICAL CHARACTERIZATION OF HETEROJUNCTION CdSe/Cu2Se NANOWIRES VIA THE MASKED CATION EXCHANGE** **Dr. Sedat Dogan**[1], Dr. Stefan Kudera[1], Prof.Dr. Liberato Manna[1], Prof.Dr. Roman Krahne[1] [1]*Istituto Italiano Di Tecnologia, Genova, Italy*	**DIELECTRIC AND LIGHT-EMISSION PROPERTIES OF Cr4+ DOPED CaIn2O4-C HYBRID NANOSTRUCTURE** **Ms. Barkha Tiwari**[1], Prof. Shanker Ram[1] [1]*Indian Institute Of Technology, Kharagpur, Kharagpur, India*	**EFFECT OF CHROMIUM AND MANGANESE PARTITIONING IN LOW ALLOYED STEEL AFTER ULTRA – FAST HEAT TREATMENT** **Dipl.-Eng. Marianthi Bouzouni**[1,2], Dr.-Ing. Spyros Papaefthymiou[1] [1]*National Technical University Of Athens, 9, Her. Polytechniou str., Zografos, Greece,* [2]*ELKEME S.A., 56th km Athens – Lamia National Road Oinofyta, Greece*	**THE EFFECT OF MO ON PRECIPITATION KINETICS IN A Ti CONTAINING HSLA STEEL** Dr. Yiqiang Wang[1,2], Mr. Samuel Clark[3], Dr. Vit Janik[3], Dr. Biao Cai[1,2], Dr. Diego Alba Venero[4], Dr. Kun Yan[1], Professor Graham McCartney[5], Professor Sridhar Seetharaman[3], **Professor Peter David Lee**[1,2] [1]*School of Materials, University of Manchester, Manchester, M13 9PL, UK, United Kingdom,* [2]*MXIF, Research Complex at Harwell, Harwell Campus, Oxfordshire, OX11 0FA, United Kingdom,* [3]*WMG, Unveristy of Warwick, United Kingdom,* [4]*ISIS Facility, Rutherford Appleton Laboratory, Didcot, Oxofordshire, OX11 0QX, UK, United Kingdom,* [5]*Advanced Materials Group, Faculty of Engineering, University of Nottingham, Nottingham, NG7 2RD UK, United Kingdom*
18.50	**HIGH TEMPERATURE PRODUCTION OF SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES (SPIONs) IN CONTINUOUS FLOW** **Professor Jesus Santamaria**[1], Dr Laura Uson, Dr Manuel Arruebo, Dr Victor Sebastian [1]*Universidad De Zaragoza, Zaragoza, Spain*		**CHARACTERIZATION OF QUENCHING AND PARTITIONING MICROSTRUCTURES IN MARTENSITIC STAINLESS STEELS** Ir Gorka Martin-Donate[1], Ir. Javier Vivas[1], Ir. Cristian Lopez-de-Felipe[1], Ir. Miguel Benito-Alfonso[1], Dr. Jose Antonio Jimenez[1], Dr. M.X. Huang[2], **Dr. David San-Martin**[1] [1]*Department of Physical Metallurgy, National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain,* [2]*Department of Mechanical Engineering, The University of Hong Kong, Hong Kong, China*	**BORON SEGREGATION AND PRECIPITATION AT AUSTENITE GRAIN BOUNDARIES IN ADVANCED HIGH-STRENGTH STEELS** **Mr. Gregory da Rosa**[1,2], Pr. Philippe Maugis[2], Ms. Josée Drillet[1], Dr. Nathalie Valle[3], Pr. Khalid Hoummada[2] [1]*ArcelorMittal Maizieres Research, Maizières-les-Metz, France,* [2]*Aix Marseille Univ, Marseille, France,* [3]*Luxembourg Institute of Science an Technology, Belvaux, Luxembourg*
19.10			**EFFECT OF THE PRIOR AUSTENITE GRAIN SIZE ON THE STRENGTHENING CONTRIBUTION OF QUENCHING & PARTITIONING MICROCONSTITUENTS** **Dr. Carola Celada-Casero**[1], Prof. Jilt Sietsma[1], Dr. Maria Santofimia[1] [1]Delft University of Technology, Netherlands	**QUANTIFICATION OF THE EFFECT OF HETEROGENEOUS CARBON DISTRIBUTION IN PRIOR AUSTENITE IN A LOW ALLOY DP STEEL** **Hamidreza Farivar**[1], U. Prahl[1], S. Richter[2], M. Hans[3], W. Bleck[1] [1]*Steel Institute (IEHK), RWTH Aachen University, Aachen, Germany,* [2]*Central Facility for Electron Microscopy (GFE), RWTH Aachen University, Aachen, Germany,* [3]*Materials Chemistry (MCh), RWTH Aachen University, Aachen, Germany*
19.30				**THE GOS-METHOD: AN ALTERNATIVE METHOD FOR THE DETERMINATION OF RECRYSTALLIZATION KINETICS OF DEFORMED MICROSTRUCTURES** **M.Sc. Lena Eisenhut**[1], Prof. Dr. mont. Christian Motz[1], M.Sc. Tim Krämer[2], Dr. Eric Detemple[2] [1]*Saarland University, Chair Of Material Science and Methods, Saarbrücken, Germany,* [2]*AG der Dillinger Hüttenwerke, Dillingen Saar, Germany*

Symposium	B2	B3	B6	B10
Room	Aimilios Riadis Hall/M2	CR I Hall/M2	I-11/M1	Maurice Saltiel Hall II/M2
Session Title	Modeling and Simulation in Light Metals	Silicides	Advanced Composites - Nano Carbon Particles	Corrosion and Fatigue II
Chairperson	**Georg Schmitz**	**S. Milenkovic**	**Bodo Fiedler**	**Apostolos Chamos & Angeliki Lekatou**
17.30	*HIGHLIGHT* **THERMODYNAMICS AND PHASE DIAGRAMS FOR TiAl-BASED ALLOYS FROM CALPHAD APPROACH** **Prof. Dr. Hans Juergen Seifert**[1] *[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	*KEYNOTE/INVITED* **Nb SILICIDE BASED ALLOYS WITH A BALANCE OF PROPERTIES: ALLOY DESIGN** **Prof.Panos Tsakiropoulos**[1] *[1]The University Of Sheffield, Department of Materials Science and Engineering, Mappin Street, Sheffield S1 3JD, United Kingdom*	**INVESTIGATION OF THE THERMO-MECHANICAL PROPERTIES, THERMAL DECOMPOSITION AND FLAMMABILITY OF GFRP** **Björn Riecken**[1], Bodo Fiedler[1] *[1]Institute Of Polymer Composites, Hamburg University Of Technology, Hamburg, Germany*	**CORROSION-INDUCED MECHANICAL PROPERTIES DEGRADATION OF Al-Cu-Li 2198 ALUMINUM ALLOY** **Christina Margarita Charalampidou**[1], Professor Stavros Kourkoulis[2], Alexandra Karanika[3], Wolfgang Dietzel[5], Carsten Blawert[4], Volker Heitmann[4], Assistant Professor Nikolaos Alexopoulos[1] *[1]Department of Financial Engineering, University Of Aegean, Chios, Greece, [2]Department of Mechanics, Laboratory of Testing and Materials, National Technical University of Athens ,Athens, Greece, [3]Hellenic Aerospace Industry S.A., Athens, Greece, [4]Institute of Materials Research, Department of Corrosion and Surface Technology, Helmholtz-Zentrum Geesthacht, Germany*
17.50	**A NEW THERMODYNAMIC DATABASE FOR Ti-BASED ALLOYS AND TiAl-BASED MATERIALS** **Dr. Hai-Lin Chen**[1], Dr. Yang Yang[1], Dr. Qing Chen[1], Dr. Anders Engström[1] *[1]Thermo-Calc Software AB, Solna, Sweden*		**MICROSTRUCTURE AND COMPRESSIVE PROPERTIES OF GRAPHENE-REINFORCED Al MATRIX NANOCOMPOSITE PREPARED BY A POWDER METALLURGY ROUTE** **Dr. Hamed Asgharzadeh**[1], Mrs. Maryam Sedigh[1] *[1]University Of Tabriz, Tabriz, Iran*	**FATIGUE CORROSION OF CEMENTED CARBIDES** **Dr. Eng. Silvia Simison**[1], Mr Mauro Arcidiacono[1], Dr Amadeo Sosa[1], Dr. Joan Roa[4], Dr Emilio Jimenez Pique[4], Dr Flavio Soldera[3], Dr Mohammad Zamanzade3, Dr José Garcia[2] *[1]Universidad De Mar Del Plata/CONICET, Mar Del Plata, Argentina, [2]Sandvik Coromant R&D, Stockholm, Sweden, [3]Saarland University, Saabrücken, Germany, [4]Escola Enginyeria de Barcelona Est. Dept. Ciéncia dels Materials e Ing. Metal.lúrgica, Barcelona, Spain*
18.10	**AN INTEGRATED CRYSTAL PLASTICITY AND PHASE FIELD MODEL TO SIMULATE TWINNING BEHAVIOR IN MAGNESIUM** **Chuanlai Liu**[1,2], Martin Diehl[2], Pratheek Shanthraj[2], Franz Roters[2], Dierk Raabe[2], Stefanie Sandlöbes[3], Jie Dong[1] *[1]National Engineering Research Center of Light Alloy Net Forming, Shanghai Jiao Tong University, Shanghai, China, [2]Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany, [3]Institute of Physical Metallurgy and Metal Physics, RWTH Aachen University, Aachen, Germany*	**INTERFACE REACTION BETWEEN Nb-Si MELT AND CERAMIC SHELL/CORE DURING ULTRAHIGH TEMPERATURE CASTING** **Dr. Yongwang Kang**[1], Prof. Chengbo Xiao[1], Mr. Ming Li1, Mr. Fengwei Guo[1], Dr. Meiling Wu[1] *1Beijing Institute of Aeronautical Materials, Beijing, China*	**DAMAGE TOLERANCE OF GRAPHENE NANOCOMPOSITES** **Mrs Christina Kostagiannakopoulou**[1], Dr. George Sotiriadis[1], Dr. Stavros Tsantzalis[1], Prof. Vassilis Kostopoulos[1] *[1]Department of Mechanical Engineering and Aeronautics, University of Patras, University Campus, GR-26504 Rio Patras, Greece, Patras/University Campus, Greece*	**ON THE MECHANICAL STABILITY OF DIFFERENT OXIDES FORMED ON IRON ALUMINIDES AFTER CYCLIC HIGH TEMPERATURE OXIDATION AT 700°C** **Harald Rojacz**[1], Lubomir Krabac[1], Andreas Sikora[2,3], Dr. Markus Varga[1], Dr. Manel Rodriguez Ripoll[1] *[1]AC2T research Gmbh, Wiener Neustadt, Austria, [2]Vienna University of Technology, Vienna, Austria, [3]CEST Competence Centre, Wiener Neustadt, Austria*
18.30	**PHASE-FIELD MODELLING OF THE SOLIDIFICATION OF LIGHT METAL MATRIX COMPOSITES** **Tamás Pusztai**[1], László Rátkai[1], László Gránásy[1] *[1]Wigner Research Centre for Physics, Budapest, Hungary*	**SOLIDIFICATION PROCESSING OF Nb-SILICIDE BASED ALLOYS** **Mr Nicolas Tankov**[1], Dr Panos Tsakiropoulos[1], Dr Claire Utton[1] *[1]University of Sheffield, Sheffield, United Kingdom*	**THE NEW APPROACH TO DESIGN OF DIAMOND CONTAINING COMPOSITE MATERIALS: PHENOMENA OF INTERFACIAL SPONTANEOUS CHEMICAL REACTIONS** **Dr Daria Sidorenko**[1], Dr Evgeny Levashov[1], Dr Pavel Loginov[1], Natalia Shvyndina[1] *[1]National University of Science and Technology MISiS, Moscow, Russian Federation*	**HYDROGEN EMBRITTLEMENT OF LASER BEAM MELTING INCONEL 718 UNDER LOW CYCLE FATIGUE LOADING.** **Phd Student Simon Puydebois**[1,2,3], Materials Engineering PhD Pierre Bernard[1], Materials Science PhD Laurent Briottet[2], Professor Xavier Feaugas[3], Materials Science PhD Abdelali Oudriss[3] *[1]Airbus Safran Launchers (ASL), Forêt de Vernon, F-27200, Vernon, France, [2]Univ Grenoble Alpes, CEA, LITEN, DTBH, F-38000 Grenoble, France, [3] LaSIE, CNRS UMR 7356, Université de La Rochelle, F-17000, La Rochelle, France*
18.50	**SIMULATION OF PHASE TRANSFORMATIONS DURING THE HOMOGENIZATION OF A 6082 EXTRUDABLE Al-ALLOY USING COMPUTATIONAL THERMODYNAMICS AND KINETICS** Professor Greg Haidemenopoulos[1], **Dr Panagiota Sarafoglou**[1] *[1]University Of Thessaly, Volos, Greece*	**MICROSTRUCTURE INVESTIGATION OF NEW Nb-Si ALLOYS** **Mr Virgil MALARD**[1], Mr Stefan Drawin[1], Mrs Anne Denquin[1], Mr Alain Couret[2] *[1]ONERA - The French Aerospace Lab, Châtillon, France, [2]CEMES, Toulouse, France*		**CORROSION BEHAVIOR OF ALUMUNIUM MATRIX SYSTACTIC FOAMS IN SIMULATED SEAWATER** **Mr. Christos Vogiatzis**[1], Professor Stefanos Skolianos[1] *[1]Aristotle University of Thessaloniki, Mechanical Engineering Department, Physical Metallurgy Laboratory, Thessaloniki, Greece*
19.10	**MODELING OF THE β TO α PHASE TRANSFORMATION IN MULTICOMPONENT TITANIUM ALLOYS: INFLUENCE OF THE β/β GRAIN BOUNDARIES ON THE KINETICS AND MICROSTRUCTURES** **Mrs Sarah Tioual-Demange**[1,2], Mr Benoit Appolaire[3], Mrs Elisabeth Aeby-Gautier[2], Mr Immanuel Freiherr von Thüngen[1], Mr Oscar Garcia Beltran[1] [1]Safran Tech ,Paris Saclay, France, [2]Jean Lamour Institute, Nancy, France, [3]LEM Onera/CNRS, Châtillon, France	**PHASE EQUILIBRIA AND THE DEVELOPMENT OF ALLOYS FOR ULTRA-HIGH TEMPERATURE APPLICATIONS** **Prof. Panos Tsakiropoulos**[1], Dr Claire Utton[1] *[1]The University Of Sheffield, Department of Materials Science and Engineering, Mappin Street, Sheffield S1 3JD, United Kingdom*		**CORROSION OF AA7075 BULK AND COLD SPRAYED ALUMINUM ALLOY COATINGS IN SALTWATER** **Sieglind Ngai**[1,2], Prof. Tungwai Ngai[1], Dr. Florian Vogel[2,3], William Story[2], Prof. Gregory B. Thompson[2], Prof. Luke N. Brewer[2] *[1]South China University of Technology, Guangzhou, China, [2]The University of Alabama, Tuscaloosa, United States, [3]Technische Universität Berlin, Berlin, Germany*

Symposium	B11	C1	C7	D1
Room	Maurice Saltiel Hall III/M2	F 319/M1	I-15/M1	Artist Cafe/M1
Session Title	Alloy Development and Advanced Microstructures	Coatings and thin films 6/6 Composite coatings	Steel Production	Catalysis & Nanostructures
Chairperson	**Florian Spieckermann**	**L. Singheiser, A. Cavaleiro**	**Spyros Papaeftymiou**	**Lucia Amidani, Oskar Paris**
17.30	**DESIGN STRATEGIES FOR SELF HEALING OR HEALABLE ALLOYS** **Cem Tasan**[1], Meimei Wang[1], Jiali Zhang[1] *1MIT, Cambridge, USA*	**EVALUATION OF YOUNG'S MODULUS AT ELEVATED TEMPERATURES OF THERMAL BARRIER COATING BY BENDING RESONANCE METHOD** **Satoru Takahashi**[1], Kazuki Ookubo[1], Hiroyuki Waki[2], Masahiko Kato[3], Syusui Ogawa[4], Fumio Ono[1] *[1]Tokyo Metropolitan University, Tokyo, Japan, [2]Iwate University, Iwate, Japan, [3]Hiroshima University, Hiroshima, Japan, [4]Japan Fine Ceramics Center, Nagoya, Japan, [5]Osaka Science & Technology Center, Osaka, Japan*	**THE OPTIMIZATION OF AC EAF PROCESS CHARGING HOT METAL FOR SPECIAL STEEL IN HYUNDAI STEEL** **Mr. JongDeok Kim**[1], Dr. JongOh Jo[1], Mr. DaeHoon Shin[1], Mr. ChangOh Lee[1], Dr. ChangHyun Wee[2], Bachelor Kangll Lee[2], Dr. JaeHwan Ahn1 *[1]Hyundai Steel R&D Center Steelmaking Technology Development Team, 1480 Bukbusaneop-ro, Songak-eup, Dangjin-si, South Korea, [2]Hyundai Steel Special Steel Steelmaking Department, 1480 Bukbusaneop-ro, Songak-eup, Dangjin-si, South Korea*	*HIGHLIGHT* **INTERMEDIATES OF ELECTROCHEMICAL WATER OXIDATION: HOW THEY COME AND HOW THEY GO** **Braun Artur**[1] *[1]Empa. Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland*
17.50	**MICROSTRUCTURE OF INTERMETALLIC PARTICLE STRENGTHENED FULLY FERRITIC AND ADVANCED HIPERFER STEELS** **Jennifer Lopez Barrilao**[1], Dr Bernd Kuhn[1], Dr Egbert Wessel[1], Dr Erik Skiera[1], Dr Michal Talik[1] *[1]Forschungszentrum Jülich GmbH, Jülich, Germany*	**HYBRID NANOCOMPOSITE COATINGS BY AEROSOL-ASSISTED ATMOSPHERIC COLD PLASMA DEPOSITION: PREPARATION, CHARACTERIZATION AND APPLICATIONS** **Dr David Ruch**[1] *[1]Luxembourg Institute of Science and Technology, Esch/alzette, Luxembourg*	**IDENTIFICATION AND MODELING OF CRUCIAL PROCESS PARAMETERS FOR THE CONTINUOUS IMPROVEMENT OF SPECIAL STEELS AT THE STOMANA PLANT** **Dr Panagiotis Sismanis**[1], Mrs Marianthi Bouzouni[2,3], Dr Spyros Papaefthymiou[3] *[1]Sidenor Sa, 33, Amaroussiou-halandriou St, Greece, +ELKEME SA, 56th km Athens-Lamia Nat. Road, Greece, [3]National Technical University of Athens, 9, Her. Polytechniou Str., Greece*	**IN-SITU ULTRA-SMALL-ANGLE X-RAY SCATTERING STUDY ON UNIAXIAL STRETCHING OF PHYSICALLY CROSSLINKED COLLOIDAL CRYSTAL PREPARED BY SILICA NANOPARTICLES GRAFTED BY HYDROGEN-BONDING POLYMER** **Dr Ryohei Ishige**[1], Dr Gregory A Williams[3], Dr Yuji Higaki[2], Dr Noboru Ohta[4], Dr Masugu Sato[4], Professor Atsushi Takahara[2], Professor Zhibin Guan+ *[1]Department of Chemical Science And Engineering, Meguro-ku, Ookayama, E4-5, 2-12-1, Japan, [2]Institute for Materials Chemistry and Engineering (IMCE), Nishi-ku, MotooZZka, 744, Japan, [3]Department of Chemistry, 1102 Natural Sciences 2, University of California, Irvine, CA92697, USA, [4]Japan Synchrotron Radiation Research Institute (JASRI/SPring-8), Sayo-gun, Sayo-cho, 679-5198, Japan*
18.10	**INVESTIGATION OF THE EFFECT OF CHEMICAL COMPOSITION AND STRUCTURE OF THE ANNEALING KINETICS OF COPPER WIRES USED FOR ELECTRICAL PURPOSES** **M.sc. Eng. Małgorzata Zasadzińska**[1], Ph.D., D.Sc. Tadeusz Knych[1], Ph.D., D.Sc. Beata Smyrak[1], M.sc. Eng. Bartosz Jurkiewicz[1], M.sc. Eng. Marek Gniełczyk+ *[1]AGH - University of Science and Technology, Al. Mickiewicza 30, 30-059 Krakow, Poland , Kraków, Poland*	**THE GROWTH OF SILVER NANOPARTICLES ON TITANIUM DIOXIDE COATINGS PARTIALLY COVERED BY GRAPHENE SHEETS** **MSc Kaja Spilarewicz-Stanek**[1], MSc Joanna Ginter[1], Dr Aneta Kisielewska[1], Prof. Ireneusz Piwoński+ *[1]University Of Lodz, Faculty Of Chemistry, Department Of Materials Technology And Chemistry, Lodz, Poland*	**THE TECHNOLOGY OF DIRECT BORON MICROALLOYING FOR LOW CARBON STEEL** **Dr Anatoly Babenko**[1,2], Dr Vladimir Zhuchkov[1,2], Dr Alexander Sychev[1], Dr Alena Upolovnikova[1] *[1]Institute Of Metallurgy Ural Branch Of The Russian Academy Of Sciences, Ekaterinburg, Russian Federation, [2]Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russian Federation*	**THE EFFECT OF THERMAL TREATMENT ON THE STRESS STATE AND EVOLVING MICROSTRUCTURE OF NANO-MULTILAYERS: AN IN-SITU HIGH TEMPERATURE XRD STUDY** **Dr Claudia Cancellieri**[1], Dr Mirco Chiodi[1], Dr Vicente Araullo-Peters[1], Dr Frank Moszner[1], Dr Jolanta Janczak-Rusch[1], Dr Lars P.H. Jeurgens[1] *[1]Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining Technologies and Corrosion, Uberlandstrasse 129, 8600 Dübendorf, Switzerland, Dübendorf, Switzerland*
18.30	**STRAIN RATE EFFECT ON THE MICROSTRUCTURES OF CONVENTIONAL AND HARMONIC β TITANIUM ALLOYS** **David Tingaud**[1], Hervé Couque[2], Daiki Ueda[3], Guy Dirras[1], Key Ameyama[3] *[1]Université Paris 13, Sorbonne Paris Cité, LSPM-CNRS, Villetaneuse, France, [2]Nexter-Munitions, Bourges, France, [3]Dpt of Mechanical Engineering, Ritsumeikan University, Japan*	**WATER BORNE POLYURETHANE COMPOSITE FILMS WITH FEW LAYER GRAPHENE** **Dr Maria Paiva**[1], Dr. Eunice Cunha[1], Professor Maria Fernanda Proença[2] *[1]University of Minho, Institute for Polymers and Composites/i3N, Guimarães, Portugal, [2]University of Minho, Department of Chemistry, Braga, Portugal*	**EFFECT OF SLAG COMPOSITION ON THE FORMATION BEHAVIOUR OF OXIDE-SULFIDE COMPLEX INCLUSIONS IN LADLE METALLURGY** Dr. Jae Hong Shin[1], **Professor Joo Hyun Park**[1] *[1]Department of Materials Engineering, Hanyang University, Ansan, South Korea*	**FAST IN SITU NANOTOMOGRAPHY AT ID16B ESRF BEAMLINE: A NEW TOOL FOR DYNAMIC CHARACTERIZATION** **Dr. Julie Villanova**[1], Ms. Richi Kumar[1,2], Dr. Rémi Daudin[2], Dr. Pierre Lhuissier[2], Dr. Luc Salvo[2], Dr. David Jauffrès[2], Dr. Christophe Martin[2], Dr. Gema Martinez-Criado[3], Dr. Rémi Tucoulou[1] *[1]ESRF- The European Synchrotron, France, 2Univ. Grenoble Alpes-CNRs-SIMaP, France, 33 Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, Spain*
18.50	**SUPERPLASTIC BEHAVIORS OF SEVERELY DEFORMED AND NATURALLY AGED Zn-Al ALLOYS AT ROOM AND ELEVATED TEMPERATURES** Muhammet Demirtaş[1], Megumi Kawasaki[2], Harun Yanar[3], **Gençağa Pürçek**[3,4] *[1]Bayburt University, Turkey, [2]Hanyang University, Seoul, Korea, [3]Karadeniz Technical University, Trabzon, [4]Giresun University, Giresun, Turkey*	**INTRINSIC HYDROPHOBICITY OF THIN FILMS OF CERAMICS BASED ON LOW-ELECTRONEGATIVITY METALS PREPARED BY MAGNETRON SPUTTERING** **Simon Kos**[1], Sergei Zenkin[1], Jindrich Musil[1] *[1]University Of West Bohemia, Plzen, Czech Republic*	**THE OPTIMIZATION OF STEELMAKING CONDITIONS TO REDUCE MACRO INCLUSION FOR SPECIAL STEEL** **Mr. Geunho Park**[1], Mr. Chulho Chang[1], Mr. Haegon Kim[1], Mr Joongbum Lee[1], Dr. Jaehwan Ahn[1] *[1]Hyundai Steel Company, Dangjin-Si, South Korea*	**DIRECT VIEW ON SELF HEALING IN Fe-Au ALLOYS BY SYNCHROTRON X-RAY NANO-TOMOGRAPHY** Mr. Haixing Fang[1], Mr. Casper Versteylen[1], Dr. Shasha Zhang[1], Dr. Yang Yang[2], Dr. Peter Cloetens[2], Dr. Dominique Ngan-Tillard[1], Prof.dr. Ekkes Brück[1], **Prof. dr. Sybrand van der Zwaag**[1], Dr. Niels van Dijk[1] *[1]Delft University Of Technology, Delft, Netherlands,* *[2]European Synchrotron Radiation Facility, Grenoble, France*
19.10		**HIGH-TEMPERATURE Hf–B–Si–C–N FILMS WITH CONTROLLED ELECTRICAL CONDUCTIVITY AND OPTICAL TRANSPARENCY PREPARED BY PULSED MAGNETRON SPUTTERING** **Veronika Šímová**[1], Jaroslav Vlček[1], Šárka Zuzjaková[1], Radomír Čerstvý[1], Jiří Houška+ *[1]Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Plzeň, Czech Republic*	**INFLUENCE OF THERMAL HISTORY ON HOT DUCTILITY OF CONTINUOUSLY CAST LOW ALLOYED Cr-Mo-STEELS** **Dipl.ing. Christian Hoflehner**[1], Dr. Coline Beal[1], Univ.-Prof. Dipl.-Ing. Dr.techn. Christof Sommitsch[1], Dl. Dr. Jakob Six[2], Dl. Dr. Sergiu Ilie[2] *[1]Technical University of Graz , Graz, Austria, [2]voestalpine AG, Linz, Austria*	
19.30		**DROPWISE CONDENSATION ON TEXTURED METALLIC SUBSTRATES THROUGH ROBUST HYDROPHOBIC COATINGS** **Dr. Chander Shekhar Sharma**[1], Dr. Athanasios Milionis[1], Prof. Dimos Poulikakos *[1]ETH Zurich, Zurich, Switzerland*	**AN APPROACH TO SIMULATE TEMPERATURE OSCILLATIONS DURING CONTINUOUS CASTING OF MICRO-ALLOYED STEEL** **Pierre Wiehoff**[1], Harald Radlwimmer[1], Sergiu Ilie[2], Guillermo Requena[3], Ernst Kozeschnik[1] *[1]TU Vienna, Vienna, Austria, [2]voestalpine Stahl GmbH, Linz, Austria, [3]German Aerospace Center (DLR), Cologne, Germany*	

Symposium	D2	D4	D9
Room	Museum Hall /M2	Library Hall/M2	Maurice Saltiel Hall I/M2
Session Title	In situ characterization II	Modelling through the length scales	Nuclear Fuel (I)
Chairperson	**Eva Olsson**	**Alexey Romanov & Christophe Pinna**	**Marjorie Bertolus**
17.30	*KEYNOTE/INVITED* **ATOMIC DEFCTS IN OXIDES STUDIED BY TRANSMISSION ELECTRON MICROSCOPY** **Dr Martin Albrecht**[1], Dr Toni Markurt[1], Robert Schewski[1], Dr Zbigniew Galazka[1] *[1]Leibniz-Institut fuer Kristallzuechtung, Berlin, Germany*	*HIGHLIGHT* **INTERNAL STRESSES AND STRUCTURE EVOLUTION IN SMALL PARTICLES DURING ANNEALING** Dr. Maksim Dorogov[1], Ms. Anastasia Priezzheva[1], Dr. Leonid Dorogin[1,2], Dr., Prof. Anatoly Vikarchuk[1], Dr., Prof. Mikhail Gutkin[1,2,4], Dr., Prof. Anna Kolesnikova[1,2,4], **Dr., Prof. Alexey Romanov**[1,2,5], Dr., Prof. Elias Aifantis[1,2,3] *[1]Togliatti State University, Togliatti, Russian Federation, [2]ITMO University, St. Petersburg, Russian Federation, [3]Aristotle University of Thessaloniki, School of Engineering, Thessaloniki, Greece, [4]Institute of Problems of Mechanical Engineering, St. Petersburg, Russian Federation, [5]Ioffe Physical Technical Institute, Russia Academy of Sciences, St. Petersburg, Russian Federation*	*KEYNOTE/INVITED* **SIMULATION OF NUCLEAR MATERIALS BEHAVIOUR UNDER ACCIDENTAL AND EXTREME CONDITIONS** **Ph.D. Dario Manara**[1] *[1]European Commission, JRC, Karlsruhe, Germany*
17.50		**A NEW INTERFACE PARAMETER FOR CAPTURING GRAIN BOUNDARY STRENGTH** **Dr Katerina Aifantis**[1] *[1]Univ Of Arizona, United States*	
18.10	**THE TEMPERATURE-DEPENDENCY OF THE ZnO BAND GAP STUDIED BY STEM-EELS** **Cecilie Granerød**[1], Lasse Vines[1], Klaus Magnus Johansen[1], Øystein Prytz[1] *[1]University of Oslo, Oslo, Norway*	**COMPUTATIONAL ANALYSIS OF DEFORMATION PROCESSES IN ADDITIVE MANUFACTURED STEEL SPECIMENS** **Dr. Olga Zinovieva**[1], Dr. Aleksandr Zinoviev[1], Prof. Dr.-Ing. Vasily Ploshikhin[1], Prof. Dr. Sci. Ruslan Balokhonov[2,3], Prof. Dr. Sci. Varvara Romanova[2] *[1]Airbus Endowed Chair for Integrative Simulation and Engineering of Materials and Processes (ISEMP), University of Bremen, Bremen, Germany, [2]Institute of Strength Physics and Materials Science, Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia, [3]National Research Tomsk Polytechnic University, Tomsk, Russia*	*KEYNOTE/INVITED* **EXPERIMENTAL NUCLEAR FUEL IRRADIATIONS IN THE HIGH FLUX REACTOR WITHIN THE EERA-JPNM FRAMEWORK** **Mr. Sander Van Til**[1], Mr. Ralph Hania[1], Mr. Raymond Okel[1], Mr. Arjan de Koning[1], Mr. Elio d'Agata[2], Mr. Daniel Freis[3], Mme Marjorie Bertolus[4], Mme Marie-France Barthe[5] *[1]Nuclear Research and consultancy Group (NRG), Petten, Netherlands, [2]European Commission - Joint Research Centre (JRC), Petten, Netherlands, [3]European Commission - Joint Research Centre (JRC), Karlsruhe, Germany, [4]Commissariat à l'Energie Atomique (CEA), Saint-Paul-lez-Durance, France, 5Centre national de la recherche scientifique (CNRS), Orleans, France*
18.30	*HIGHLIGHT* **TEM STUDIES ON NANO-FILAMENT EVOLUTION IN SWITCHING PROCESSES IN HfO2-BASED RESISTIVE RANDOM ACCESS MEMORY** Dr. Chao Li[1], Dr. Bin Gao[2], Dr. Yuan Yao[1], Xiangxiang Guan[1], Dr. Xi Shen[1], Prof. Yanguo Wang[1], Dr. Peng Huang[2], Prof. Lifeng Liu[2], Prof. Xiaoyan Liu[2], Prof. Junjie Li[1], Prof. Changzhi Gu[1], Prof. Jinfeng Kang[2], **Prof. Richeng Yu**[1] *[1]Institute Of Physics, Chinese Academy Of Sciences, Beijing, China, [2]Institute of Microelectronics, Peking University, Beijing, China*	**COMPLEX ESTIMATION OF STRENGTH PROPERTIES OF THE FUNCTIONAL MATERIALS** **Prof Mikhail Gitman**[1], Prof Valeriy Stolbov[1] *[1]Perm National Research Polytechnic University, Perm, Russian Federation*	
18.50	**ELUCIDATION OF CONDUCTING FILAMENT FORMATION IN HfO2 BASED RERAM DEVICES BY IN-SITU TEM** **Gemma Martín**[1], Mireia B. González[2], Francesca Campabadal[2], Sònia Estradé[1], Francesca Peiró[1], Albert Cornet[1] *[1]LENS-MIND-IN2UB, Departament d'Enginyeries: Electrònica, Universitat de Barcelona, Marti i Franquès 1, 08028 Barcelona, Spain, [2]Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Spain*	**PRECURSOR ACTIVITY IN SLIDING INTERFACES** Dr Markos Avlonitis[1], Dr George Efremidis[2], **Dr Avraam Konstantinidis**[3] *[1]Department of Informatics, Ionian University, Corfu, Greece, [2]Department of Civil Engineering, University of Thessaly, Volos, Greece, [3]Department of Civil Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece*	**DAMAGE CHARACTERIZATION OF DISPLACEMENT CASCADES IN (U,Pu)O2 FUELS BY MD SIMULATIONS** **Hector E. Balboa**[1], Laurent Van Brutzel[1] *[1]Den-Service de la Corrosion et du Comportement des Matériaux dans leur Environnement (SCCME), CEA, Université Paris-Saclay, Giff-Sur-Yvette, France*
19.10	**IN SITU OBSERVATION AND 3D ATOMIC-SCALE QUANTIFICATION OF CONDUCTIVE FILAMENT IN A RESISTIVE SWITCHING DEVICE** **Doctor Byeong-Gyu Chae**[1], Professor Jae-Bok Seol[2], Doctor Jeong-Hwan Song[1], Doctor Kyung-Jun Baek[1], Professor Hyunsang Hwang[1], Professor Chan-Gyung Park[1,2] *[1]Postech, Pohang, South Korea, [2]National Institute for Nanomaterials Technology (NINT), Pohang, South Korea*	**VIBRATIONS OF A PIEZOELECTRIC NANOBEAM WITH SURFACE EFFECTS** Professor Kaiyu Xu[1], **PhD Yanmei Yue**[2] *[1]Shanghai University, Shanghai, China, [2]Shijiazhuang Tiedao University, Shijiazhuang, China*	**ATHERMAL LATTICE REPAIR IN ACTINIDE DIOXIDES UNDER INTENSE ALPHA-DECAY-INDUCED DAMAGE** **Professor Yehuda Eyal**[1] *[1]Technion - Israel Institute of Technology, Haifa, Israel*
19.30			**INFLUENCE OF MICROSTRUCTURE ON UO2 CREEP BEHAVIOR: AN EBSD STUDY OF GRAIN FRAGMENTATION** **Mariem Ben Saada**[1,2], Xavière ILTIS[1], Nathalie GEY[2], Audrey MIARD[1], Philip GARCIA[1], Benoit BEAUSIR[2], Nabila MALOUFI[2] *[1]CEA, DEN, DEC, Cadarache, 13108 Saint-Paul-Lez-Durance, France, [2]Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux (LEM3), UMR CNRS 7239, Université de Lorraine, 54045 Metz Cedex 1, France*

Symposium	E1	E2	E3
Room	CR II Hall/M2	CR III Hall/M2	Rehearsal Room 5.17/M1
Session Title	Hydrogen storage and production	Supercapacities / Electron microscopy	Photovoltaics-Silicon
Chairperson	**Maria Luisa Di Vona, Bogdan Kuchta, Ioannis Kallistis, Toshiyuki Mori**	**T. Djenizian**	**Patricia Carvalho**
17.30	**AN INNOVATIVE PLASMA MULTI-LAYERED DEVICE FOR HYDROGEN PRODUCTION** **Phd Student Arnaud Joël KINFACK LEOGA**[1], PhD Student Loraine YOUSSEF[1], DR Stéphanie ROUALDES[1], DR Vincent ROUESSAC[1], PR André AYRAL[1] *[1]Institut Européen des Membranes (IEM, UMR5635) - ENSCM, UM, CNRS, Université de Montpellier, CC047, 2 Place Eugène Bataillon, 34095, Montpellier, France*	**PERFORMANCE OF CARBON-BASED SUPERCAPACITORS WITH INERT AND REDOX ELECTROLYTES** **Pietro Staiti**[1], Alessandra Carbone[1], Irene Gatto[1], Antonino Brigandi[1], Francesco Lufrano[1] *1CNR-ITAE Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano", Messina, Italy*	*HIGHLIGHT* **KYROPOULOS TECHNIQUE, A TOP SEEDING PROCESS TO GROW UNCONFINED CONTROLLED SQUARE INGOTS OF MONOCRYSTALLINE SILICON** Dr Ahmed Nouri[1], Dr Guy Chichignoud[1], Pr Yves Delannoy[1], **Pr Kader Zaidat**[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP*, SIMaP, Grenoble, France*
17.50	**INFLUENCE OF LONG PERIOD STACKING ORDERED (LPSO) PHASE FRACTION ON HYDROGEN STORAGE IN EXTRUDED MAGNESIUM RARE-EARTH ALLOYS** **Kyle Nicholson**[1], Prof. Rimma Lapovok[1], Dr. Chunjie Xu[2], Prof. Eugen Rabkin[3], Prof. Peter Hodgson[4] *[1]Institute for Frontier Materials, Deakin University, Geelong, Australia, [2]School of Materials Science & Engineering, Xi'an University of Technology, Xi'an, China, [3]Department of Materials Science and Engineering, Technion Israel Institute of Technology, Haifa, Israel, [4]Office of DVC (Research), Deakin University, Geelong, Australia*	**GRAPHENE NANOPLATELET BASED ELECTRODE MATERIALS FOR ENERGY STORAGE APPLICATIONS** **Aris Amplianitis**[1], Athanasios Masouras[3], Dr Katerina Kouravelou[2], Zampia Kalogridi[1], Dr. Athanasios Baltopoulos[2], Dr. Antonios Vavouliotis[1,2], Dr Stavros Tsantzalis[3], Prof. Vassilios Kostopoulos[3], Dr. Ugo Lafont[4] *[1]PLEIONE ENERGY S.A, Athens, Greece, [2]ADAMANT COMPOSITES Ltd, Patras, Greece, [3]APPLIED MECHANICS & VIBRATIONS LABORATORY, Dept. Mechanical and Aeronautics Engineering, Polytechnical School, University of Patras, Patras, Greece, [4]EUROPEAN SPACE AGENCY (ESA), Noordwijk, Netherlands*	**3D NANOHOLES IN Si SOLAR CELLS EMITTERS FOR LIGHT HARVESTING** **Dr. Rosaria A. Puglisi**[1], Dr. Antonino La Magna[1] *[1]Consiglio Nazionale Delle Ricerche - IMM, Catania, Italy*
18.10	**A NOVEL STRATEGY BASED ON VERY-HIGH ENERGY PLASMA DEPOSITION FOR FABRICATION OF HIGHLY PEC ACTIVE THIN HEMATITE PHOTOANODES** **Dr. Stepan Kment**[1], Dr. Zdenek Hubicka[2], Dr. Jiri Tucek[1], Prof. Patrik Schmuki[1,3], Prof. Radek Zboril[1] *[1]Regional Centre of Advanced Technologies and Materials, Faculty of Science, Palacky University Olomouc, Olomouc, Czech Republic, [2]Department of Low Temperature Plasma, Institute of Physics of the ASCR, Prague, Czech Republic, [3]Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Erlangen, Germany*	**AN ORIGINAL MATERIAL ENGINEERING STRATEGY FOR THE SYNTHESIS OF SUPERCAPACITIVE MANGANESE COBALT OXIDE MATERIALS WITH ENHANCED PERFORMANCES** **Doctorate Céline Tang**[1,2,3], Dr Domitille Giaume[2,3], Pr Liliane Guerlou-Demourgues[1,3] *[1]ICMCB, Bordeaux, France, [2]IRCP, Paris, France, [3]RS2E, Paris, France*	**Si POWDER BASED STRUCTURES FOR LOW-COST PV: HOT PRESSING SINTERED OR THERMAL SPRAY PROCESSED STRUCTURES RECRYSTALLIZED BY LASER TREATMENTS** Dr. Guobin Jia[1], Dr. Michalis Vardavoulias[2], Dr. Amin Azar[3], Dr. Gaute Stokkan[4], Dr. Wilhelm Dall[4], Dr. Martin Syvertsen[4], Dr. Jonathan Plentz[1], Dr. Gudrun Andra[1], Dr Thomas Kaden[5], **Dr. Alexander Ulyashin**[3] *[1]IPHT, Jena, Germany, [2]Pyrogenesis, Lavrion, Greece, [3]SINTEF, Oslo, Norway, [4]SINTEF, Trondheim, Norway, [5]THM, Freiberg, Germany*
18.30	**MICROSTRUCTURAL AND HYDROGEN STORAGE PROPERTIES IN HEAVILY DEFORMED ZK60 + 2.5 wt.% MM ALLOY PROCESSED BY ACCUMULATIVE ROLL BONDING** Dr. E.P. Silva[1,2], Dr. D.R. Leiva[2], Dr. H. C. Pinto[3], Dr. W.J. Botta[2], **Dr. Ricardo Floriano**[1] *[1]Faculty of Applied Sciences, State University of Campinas, Limeira, Brazil, [2]Department of Materials Engineering, Federal University of São Carlos, São Carlos, Brazil, [3]Department of Materials Engineering, University of São Paulo, São Carlos, Brazil*	**LARGE-AREA, ALL-SOLID AND FLEXIBLE ELECTRIC DOUBLE LAYER CAPACITORS BASED ON CNT FIBER ELECTRODES AND POLYMER ELECTROLYTES.** **Evgeny Senokos**[1], Victor Reguero[1], Laura Cabana[1], Jesus Palma[2], Rebeca Marcilla[2], Juan Jose Vilatela[1] *[1]IMDEA Materials Institute, Getafe, Spain, [2]IMDEA Energy Institute, Móstoles, Spain*	*HIGHLIGHT* **FIXED CHARGE DIELECTRICS FOR SURFACE PASSIVATION OF SOLAR CELLS** **Professor / Center Director Erik Stensrud Marstein**[1], Ms Therese Stokkan[1,2], Ms Heidi Tønnesson[1,3], Dr Halvard Haug[1] *1Institute for Energy Technology (IFE), Kjeller, Norway, 2Justervesenet, Kjeller, Norway, 3NMBU (Norwegian University of Life Sciences), Aas, Norway*
18.50	**ZnO NANOWIRES COVERED WITH 2-D TRANSITION METAL DI-CHALCOGENIDES FOR SOLAR-MEDIATED PHOTOELECTROCHEMICAL WATER SPLITTING** **PhD candidate Aikaterini Govatsi**[1], PhD candidate Aspasia Antonelou[1], Dr Stylianos Neophytides[1], Dr Spyros Yannopoulos[1] *[1]Foundation for Research and Technology Hellas – Institute of Chemical Engineering Sciences (FORTH/ICE-HT), P.O. Box 1414, GR-26504, Rio-Patras, Greece, Patras, Greece*	**BEYOND ELECTROCHEMICAL ANALYSIS: MULTI-SCALE MICROSCOPY OF LIBS IN 2D, 3D, AND 4D** **Jeff Gelb**[1], Stefanie Freitag[2], Dr. Leah Lavery[1], Luke Hunter[1], Dr. Lars-Oliver Kautschor[3], Dr. Arno Merkle[1] *[1]Carl Zeiss Microscopy, Pleasanton, United States, [2]Carl Zeiss Microscopy, Munich, Germany, [3]Carl Zeiss Microscopy, Oberkochen, Germany*	**CVD SILICON FILM GROWTH ON DUST SUBSTRATE: THE IMPACT OF THE SUBSTRATE GRANULOMETRY** Ms. Filipe Serra[1], Dr. José Silva[1], Dr. António Vallêra[2], **Prof. João Serra**[1] *[1]Instituto Dom Luiz - Faculdade De Ciências Universidade Lisboa, Lisboa (lisbon, Portugal), Portugal, [2]SDSIL, Lisboa (Lisbon, Portugal), Portugal*
19.10	**SPUTTER-DEPOSITED NANOSTRUCTURED METAL-OXIDE FILMS FOR HYDROGEN GAS SENSING** **Dr. Stanislav Haviar**[1], Markéta Fialová[1], Šárka Batková[1], Dr. Jiří Čapek[1], Radomír Čerstvý[1], Tomáš Duchoň[2] *[1]University of West Bohemia, Pilsen, Czech Republic , [2]Charles University, Prague, Czech Republic*	**3D MICROSTRUCTURE OF BATTERY ELECTRODES ANALYZED BY 3D IMAGING** **Eric Maire**[1], Victor Vanpeene[1], Aurelien Etiemble[1], Lionel Roue[2], Bernard Lestriez[3], Thierry Douillard[1] *[1]Insa Lyon - Mateis Lab, Villeurbanne, France, [2]INRS , Varennes, Canada, [3]IMN, Nantes, France*	**RECENT ADVANCES ON SOLAR CELL PERFORMANCE FROM STRESS INDUCED EXFOLIATED THIN SILICON FOILS** Dr Pierre Bellanger[2], Dr. Abdelilah Slaoui[2], Dr Albert Minj[2], **Prof JM Serra**[1] *[1]University of Lisbon, Lisbon, Portugal, [2]U. Strasbourg, ICube – Laboratory of Engineering, Computer Science and Imagery, Strasbourg, France*
19.30			**CRYSTALLIZATION OF THIN Si LAYERS DEPOSITED ON LOW-COST Si SUBSTRATES BY E-BEAM** **Dr. Alexander Ulyashin**[1], Dr. Guobin Jia[2], Dr. Amin Azar1, PhD Runar Dahl-Hansen[1], Dr. Marit Stange[1], Dr. Tor Olav Sunde[1], Dr. Jonathan Plentz[2], Dr. Gudrun Andrae[2], Dr. Martin Syvertsen[3], Dr. Fritz Falk2, Dr. Safae Aazou[4], PhD Zakaria Langhfou[4], Prof. Zouheir Sekkat[4] *[1]Sintef, Oslo, Norway, [2]IPHT, Jena, Germany, [3]SINTEF, Trondheim, Norway, [4]Mascir, Rabat, Morocco*

Symposium	E4	F1	H1
Room	Conference Room 2/M1	3-20/M1	I -16/M1
Session Title	Plasma Facing Materials	Ceramics: degradable and inert. Magnesium alloys	Modeling of Next Generation Magnetic Materials
Chairperson	**Thierry Angot**	**Daniel Arcos**	**Scott McCall**
17.30	*HIGHLIGHT* **EVOLUTION OF MICROSTRUCTURE OF TUNGSTEN UNDER IRRADIATION WITH TUNGSTEN IONS** Dr Emmanuel Autissier[1], **Dr M-F Marie-France Barthe**[1], Dr Pierre Desgardin[1], Dr Cécile Genevois-Mazellier[1], Dr Brigitte Decamps[2], Dr Robin Schaublin[3], Yves Serruys[4] *[1]CEMHTI CNRS, Orléans, France, [2]CSNSM, Orsay, France, [3]ETH, Zürich , Switzerland, [4]SRMP/ CEA, Gif/yvette, France*	**MONITORING CALCIUM PHOSPHATES DURING RESORPTION: AN ORIGINAL METHODOLOGY** Marta Gallo[1], Solène Tadier[1], **Sylvain Meille**[1], Jérôme Chevalier[1] *1Université Lyon, INSA Lyon, MATEIS, UMR CNRS 5510, Villeurbanne, France*	*KEYNOTE/INVITED* **BUILDING MATERIALS SCIENCE FOR HIGH-PERFORMANCE PERMANENT MAGNETS ON ELEMENTS STRATEGY** **Dr. Satoshi Hirosawa**[1] *[1]National Institute for Materials Science, Tsukuba, Japan*
17.50	**SPATIAL DISTRIBUTIONS OF DEFECTS IN THE PRIMARY RADIATION DAMAGE IN W** **Andrea Sand**[1,2], Daniel Mason[1], Xiaoou Yi[3], Kai Nordlund[2], Sergei Dudarev[1] [1]CCFE, UK, [2]University of Helsinki, Finland, [3]School of Materials Science and Engineering, University of Science and Technology Beijing, China	**HOLLOW MESOPOROUS BIOACTIVE GLASS NANOPARTICLES FOR DUAL RELEASE OF BIOLOGICALLY ACTIVE IONS AND BIOMOLECULES** **Kai Zheng**[1], Dr Preethi Balasubramanian[1], Francesca Ciraldo[1], Dr Georgia Charalambopoulou[2], Dr Theodore Steriotis2, Dr Aldo Boccaccini[1] *[1]Institute of Biomaterials, University of Erlangen-Nuremberg, Erlangen, Germany, [2]Institute of Nanoscience and Nanotechnology, National Center for Scientific Research "Demokritos", Greece*	
18.10	**TUNGSTEN OXIDE THIN FILMS: STRUCTURAL PROPERTIES AND PLASMA INTERACTION** **Dr Céline Martin**[1], Dr Younes Addab[1], Dr Hussein Hijazi[1], Dr M.E. Bannister[2], Dr Fred Meyer[2], Dr Cédric Pardanaud[1], Dr Martiane Cabié[3], Dr Madaline Rusu[4], Prof. Pascale Roubin[1] *[1]Aix-Marseille Univ. , CNRS, PIIM, Marseille, France, [2]Physics Division, Oak Ridge National Laboratory, Oak Ridge, USA, [3]Aix-Marseille Univ.; CP2M, Marseille, France, [4]National Institute of R&D for Optoelectronics INOE 2000, Iifov, Romania*	**IN-VITRO EVALUATION OF BIOACTIVE AND BIODEGRADATION PROPERTIES OF MESOPOROUS ZnO ARCHITECTURES** **Dr. Marco Laurenti**[1], Prof. Chiara Vitale Brovarone[1], Prof. Valentina Cauda[1] *[1]Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129, Torino, Italy*	*HIGHLIGHT* **CALCULATION OF THE MAGNETIC PROPERTIES OF Fe-BASED ALLOYS** **Dr. Hiroshi Ohtani**[1], Dr. Masanori Enoki[1] *[1]IMRAM, Tohoku University, Sendai, Japan*
18.30	**ADVANCED X-RAY IMAGING METHODS FOR THE CHARACTERIZATION OF THE STRUCTURAL INTEGRITY AND OPERATION OF THE PLASMA FACING COMPONENTS** **PhD Ion Tiseanu**[1], PhD Andrei Galatanu[2], PhD Teddy Craciunescu[1], MSc Cosmin Dobrea[1], MSc Mihail Lungu[1], MSc Adrian Sima[1] *[1]National Institute for Lasers, Plasma and Radiation Physics (INFLPR), Bucharest-Magurele, Romania, [2]National Institute of Materials Physics, Bucharest-Magurele, Romania*	**STRENGTHENING OF ZIRCONIA SCAFFOLDS WITH INFILTRATED 58S BIOACTIVE GLASS** **Dr. Joana Mesquita-guimaraes**[1,2], Lizandra Ramos[2], Dr. Júlio Souza[3,1], Prof Bruno Henriques[2,1], Prof Márcio Fredel[2], Prof Aldo Boccaccini+, Prof Filipe Silva[1] *[1]1Center for Microelectromechanical Systems (CMEMS-UMinho), University of Minho, Guimarães, Portugal, [2]2Department of Mechanical Engineering (EMC), Federal University of Santa Catarina (UFSC), Florianópolis, Brazil, [3]3Center for Research on Dental Implants (CEPID), School of Dentistry (ODT), Federal University of Santa Catarina (UFSC), Florianópolis, Brazil, [4]4Institute of Biomaterials, Department of Materials Science and Engineering, University of Erlangen-Nuremberg, Erlangen, Germany*	*HIGHLIGHT* **SEARCH FOR NEW RARE EARTH-BASED ALLOYS** **Dr. Patrice Turchi**[1], Dr. Aurélien Perron[1], Dr. Per Söderlind[1], Dr. Alexander Landa[1], Dr. Vincenzo Lordi[1] *[1]Lawrence Livermore National Laboratory, Livermore, United States*
18.50	**RETENTION AND RELEASE OF HYDROGEN ISOTOPES IN TUNGSTEN PLASMA FACING COMPONENTS: THE ROLE OF GRAIN BOUNDARIES AND THE NATIVE OXIDE LAYER FROM A JOINT EXPERIMENT-SIMULATION INTEGRATED APPROACH** E.A. Hodille[1], F. Ghiorghiu[2], Y. Addab[2], A. Založnik[3], M. Minissale[2,4], Z. Piazza[2,5], C. Martin2, T. Angot[2], L. Gallais[4], M.-F. Barthe[6], C.S. Becquart[6], S. Markelj[3], J. Mougenot[7], C. Grisolia[1], **R. Bisson**[2] *[1]CEA, IRFM, Saint-Paul-lez-Durance, France, [2]Aix-Marseille Univ, CNRS, PIIM, Marseille, France, [3]Jožef Stefan Institute, Ljubljana, Slovenia, [4]Aix-Marseille Univ, CNRS, Centrale Marseille, Institut Fresnel, Marseille, France, [5]Univ. Lille, CNRS, INRA, ENSCL, UMR 8207, UMET, Unité Matériaux et Transformations, Lille, France, [6]CNRS, CEMHTI UPR 3079, Université d'Orléans, Orléans, France, [7]LSPM, CNRS, Université Paris 13, Sorbonne Paris Cité, Villetaneuse, France*	**EFFECT OF MG ALLOYS ON ATDC5-CELLS CHONDROGENIC DIFFERENTIATION** **Dr Bérengère Luthringer**[1], Adela Helvia Adela Martinez-Sanchez[1], Prof. Regine Willumeit-Römer[1] *[1]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany*	**THERMODYNAMICS OF THE SmCo5 MAGNET DOPED WITH Fe AND Ni: AB INITIO STUDY** **Dr. Alexander Landa**[1], Dr. Per Söderlind[1], Dr. Patrice Turchi[1] *[1]Lawrence Livermore National Laboratory, Livermore, United States*
19.10	**SPATIAL DEPENDENCE OF TRANSMUTATION RATES IN A FUSION ENVIRONMENT: THE ROLE OF WATER-COOLING IN ENHANCED TRANSMUTATION RATES IN TUNGSTEN** **Mark Gilbert**[1], Jean-Christophe Sublet[1], Sergei Dudarev[1] *[1]CCFE, Abingdon, United Kingdom*	**COMPUTATIONAL MODEL FOR THE DESIGN OF ORDERED SCAFFOLDS VARYING STRUCTURAL PARAMETERS** PhD. Student - Mechanical and Mechatronics Engineering Viviana Marcela Posada Perez[1], Mechanical Engineering student Maria Camila Velasquez Orozco[1], Mechanical Engineering student Juan Andres Cardona Usuga[1], Associate Professor Patricia Fernandez-Morales[2], **Associate Professor Juan Fernando Ramirez Patiño**[1] *[1]Universidad Nacional De Colombia, Medellin, Colombia, [2]Universidad Pontificia Bolivariana, Medellin, Colombia*	*HIGHLIGHT* **MAXIMUM LIKELIHOOD REALIZATION FOR THE IMAGE OF MAGNETIC DOMAIN STRUCTURES IN RMC METHOD WITH THE REPLICA EXCHANGE SCHEME** **Dr Chiharu Mitsumata**[1], Dr Maki Tokii[2], Dr Kanta Ono[3] *[1]National Institute For Materials, Tsukuba, Japan, [2]University of Tsukuba, Tsukuba, Japan, [3]High Energy Accelerator Research Organization (KEK), Tsukuba, Japan*
19.30			

Symposium	A5	A7	B1	B2
Room	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1	Aimilios Riadis Hall/M2
Session Title	Bio-nano Interface III	Energy related Materials	Advanced High Strength Steels IV	Magnesium
Chairperson	Aikaterini Dendrinou-Samara	Peter Schaaf	Wieslaw Swiatnicki	Norbert Hort
11.00	*HIGHLIGHT* **MULTIMODAL METAL OXIDE NANOPARTICLES AND THEIR BIO-INTERACTIONS** Magali Lavenas[1], Dr Marina Simon[2], Dr Quentin Le Trequesser[1], Dr Guillaume Devès[2], Dr Philippe Barberet[2], Dr Herve Seznec[2], **Dr Marie-Helene Delville**1 *[1]CNRS, Université de Bordeaux, ICMCB, UPR9048,, Pessac, France, 2CNRS Univ. Bordeaux, CENBG, UMR 5797, Gradignan, France*	*KEYNOTE/INVITED* **SYNTHESIS AND CHARACTERIZATION OF Li2SnO3 ELONGATED MICRO- AND NANOSTRUCTURES** **David Maestre**[1], Miguel García-Tecedor[1], Ana Cremades[1], Javier Piqueras[1] *[1]Dpto. Física de Materiales, Facultad de Cc. Físicas, Universidad Complutense de Madrid, Madrid, Spain*	**INVESTIGATION OF STRETCH-FLANGEABILITY OF Q&P PROCESSED MEDIUM MN STEEL BY HOLE EXPANSION TEST** **Mr. Jihoon Kim**[1], Dr. Eunjung Seo[1], Dr. Singon Kang[1], Dr. Bruno C. De Cooman[1] *[1]Graduate Institute Of Ferrous Technology, Pohang, South Korea*	*KEYNOTE/INVITED* **MICROSTRUCTURE AND TEXTURE DESIGN IN COST-EFFECTIVE MAGNESIUM SHEETS FOR AUTOMOTIVE APPLICATION** **Prof. Dr. Karl Ulrich Kainer**[1], Dr Jan Bohlen[1], Dr. Sangbong Yi[1], Dr. Dietmar Letzig[1] *[1]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany*
11.20	*HIGHLIGHT* **WHEN COLLOIDAL NANOCRYSTAL CLUSTERS ENABLE MULTIMODAL DIAGNOSIS AND THERAPY** **Dr Alexandros Lappas**[1] *[1]Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Vassilika Vouton, 71110 Heraklion, Greece*		**MICROSTRUCTURAL EVOLUTION DURING HIGH-TEMPERATURE PARTITIONING OF A MEDIUM-Mn Q&P STEEL** **S Ayenampudi**[1], C Celada-Casero[1], J Sietsma[1], M Santofimia[1] *[1]Department of Materials Science and Engineering, Delft University of Technology, Mekelweg 2, 2628 CD, Delft, The Netherlands*	
11.40	*HIGHLIGHT* **COLLOIDAL NANOPARTICLES FOR MRI AND HYPERTHERMIA TREATMENT** **Prof Maria Casula**[1], Dr Claudio Sangregorio[2], Prof Alessandro Lascialfari[3], Dr Paolo Arosio[3], Prof. Pasquina Marzola[4], Dr. Giamaica Conti[4] *[1]University Of Cagliari, Cagliari, ITALY, [2]ICCOM CNR, Firenze, ITALY, [3]University of Milano, Milano, ITALY, [4]University of Verona, Verona, ITALY*	**LARGE AREA NANOSTRUCTURED MATERIALS FOR RENEWABLE ENERGY APPLICATIONS** **Panos Datskos**[1], Georgios Polizos[1], Barton Smith[1], Fred List[1] [1]Oak Ridge National Laboratory, Oak Ridge, United States	**EFFECT OF STRESS ON QUENCHED AND PARTITIONING PROCESS EVALUATED BY DEFORMATION DILATOMETER** **Dr. Javier Hidalgo**[1], Dr. Maria Jesus Santofimia[1] *[1]TU Delft, Delft, Netherlands*	*HIGHLIGHT* **THE CONTINUED QUEST FOR LOW-TEMPERATURE FORMABILITY IN Mg ALLOYS: HISTORICAL DEVELOPMENTS AND FUTURE OPPORTUNITIES** **Prof. Suveen Mathaudhu**[1] *[1]University Of California, Riverside, Riverside, United States*
12.00	**MAGNETIC FERRITE NANOPARTICLES AND COLLOIDAL SUPERPARTICLES AS PLATFORMS FOR THERANOSTICS** **Prof Catherine Dendrinou-Samara**[1] *[1]Chemistry Department, Aristotle University Thessaloniki, Thessaloniki, Greece*	**CHARACTERIZATION OF OPV THIN FILMS AT THE NANOSCALE WITH BACKSCATTERED ELECTRON (BSE) IMAGING IN LOW VOLTAGE SCANNING ELECTRON MICROSCOPY (SEM)** **Ms. Aránzazu Garitagoitia Cid**[1,2], Ms. Mona Sedighi[1], Dr. Markus Loeffler[1], Prof. Dr. Ehrenfried Zschech[1,2] *[1]Dresden Center for Nanoanalysis (DCN), Technical University Dresden, Dresden, Germany,* *[2]Fraunhofer Institute for Ceramic Technologies and Systems - Materials Diagnostics (IKTS-MD), Dresden, Germany*	**EFFECT OF CARBIDE SIZE ON PHASE TRANSFORMATIONS IN ULTRA – FAST HEAT TREATMENT OF LOW ALLOYED STEEL** **Dipl.-Eng. Marianthi Bouzouni**[1,2], Dr.- Ing. Spyros Papaefthymiou[1] *[1]National Technical University Of Athens, 9, Her. Polytechniou str., Zografos, Greece, 2ELKEME S.A., 56th km Athens – Lamia National Road Oinofyta, Greece*	**DEVELOPMENT OF TEXTURE CONTROL PROCESS FOR IMPROVING FORMABILITY OF MAGNESIUM ALLOY SHEET** **Dr. Se-jong Kim**[1], Dr. Daeyong Kim[1], Dr. Jinwoo Lee[1], Dr. Young-Seon Lee[1] *[1]Korea Institute Of Materials Science, Changwon, South Korea*
12.20	**SYNTHESIS OF SPHERICAL AND FACETED Γ-Fe2O3 NANOPARTICLES AND THEIR ENCAPSULATION IN MESOPOROUS SiO2 NANO SHELLS** **Mr. Shabin Mohammed**[1], Dr. Georgia Basina*[1], Dr. Balasubramanian Vaithilingam[2], Mr. Samuel Stephen[3], Dr. Yasser Al Wahedi*[1] *[1]Department of Chemical Engineering, The Petroleum Institute, P.O. Box 2533, UAE, Abu Dhabi, United Arab Emirates, [2]Takreer Research Center,Abu Dhabi Oil Refining Company (TAKREER), P.O. Box: 3593, UAE, Abu Dhabi, United Arab Emirates, [3]ADNOC Research & Innovation Center, Petroleum Institute, PO Box 2533, UAE, Abu Dhabi, United Arab Emirates*	*HIGHLIGHT* **GREEN CO2 PROCESSING FOR MANIPULATING STRUCTURES AND ELECTRICAL PROPERTIES OF ORGANIC PHOTOVOLTAIC DEVICES** **Doctor Levent Sendogdular**[1], Doctor Naisheng Jiang[2], Doctor Maya Endoh[2], Professor Tadanori Koga[2], Assistant Professor Bulent Akgun[3], Doctor Sushil Satija[4], Doctor Masafumi Fukuto5, Doctor Chang-Yong Nam[5] *[1]Erciyes University, Kayseri, Turkey, [2]Stony Brook University, Stony Brook, USA, [3]Bogazici University, Istanbul, Turkey, [4]NIST, Gaithersburg, USA, 5BNL, Upton, USA*	**PRECIPITATION HARDENING STEEL FOR ELEVATED TEMPERATURE APPLICATIONS** **Group Technical Expert Jan-Erik Andersson**[1] *[1]Ovako Sweden AB, Hofors, Sweden*	**EFFECT OF PROCESS PARAMETERS ON RECRYSTALLIZATION AND TEXTURE EVOLUTION OF COLD-ROLLED Mg-Al-Zn-Ca-Y ALLOY SHEETS** **Ms. Su Mi Jo**[1], Mr. Yohan Go[1], Mr. Jong Il Kim[2], Mr. Bong Sun You[1,3], Mr. Young Min Kim[1,3] *[1]Korea University of Science and Technology, Daejeon, South Korea, [2]Chungnam National University, Daejeon, South Korea, [3]Korea Institute of Materials Science, Changwon, South Korea*
12.40			**EFFECT OF RUTHENIUM ADDITIONS ON THE CORROSION AND MECHANICAL PROPERTIES OF THE WELD METAL OF 316L STAINLESS STEELS.** **Miss Bridget Zuma**[1,2], Dr J. W. van der Merwe[1,2,3] *[1]University Of The Witwaterand, Johannesburg, South Africa, [2]DST-NRF Centre of Excellence in Strong Materials, Johannesburg, South Africa, [3]African Materials Science and Engineering Network, Johannesburg, South Africa*	**EFFECT OF RECRYSTALLIZATION NUCLEATION SITES ON TEXTURE WEAKENING IN A MAGNESIUM ALLOY** **Dr. Dikai Guan**[1], Prof. Mark Rainforth[1] *[1]University Of Sheffield, Sheffield, United Kingdom*

Symposium	B3	B6	B8	B10
Room	CR I Hall/M2	I-11/M1	Conference Room 1/M1	Maurice Saltiel Hall II/M2
Session Title	Polycrystalline Ni Base Superalloys I	Advanced Composites	Phase Stability	Corrosion & Wear I
Chairperson	G. Eggeler	Aravind Dasari	Uwe Glatzel	Wolfram Fürbeth
11.00	**COMPUTATIONAL DESIGN OF NI-BASED SUPERALLOYS TAKING INTO CONSIDERATION THE MICROSTRUCTURE EVOLUTION** **Mr. Hao Yu**[1], Dr. Wei Xu[2], Dr. Srbrand van der Zwaag[3] *[1]Novel Aerospace Materials group, Faculty of Aerospace Engineering, Delft University Of Technology, Delft, the Netherlands, [2]State Key Laboratory of Rolling and Automation, Northeastern University, Shen Yang, China, [3]Novel Aerospace Materials group, Faculty of Aerospace Engineering, Delft University Of Technology, Delft, the Netherlands*	**A RESEARCH ON ALUMINA-HYDROXYAPATITE-BIOACTIVE GLASS COMPOSITE STRUCTURES** **PhD Candidate Azade Yelten**[1], Dr. Suat Yilmaz[1] *1Istanbul University, Department of Metallurgical and Materials Engineering, 34320 Avcilar, Istanbul, Turkey*	*KEYNOTE/INVITED* **THERMODYNAMIC STABILITY OF THE SOLID SOLUTION IN THE Cr-Mn-Fe-Co-Ni SYSTEM** **Dr Mathilde Laurent-brocq**[1], Guillaume Bracq[1], Dr Loïc Perrière[1], Rémy Pirès[1], Pr Ivan Guillot[1], Dr Jean-Marc Joubert[1]	**IMPACT OF THE ALLOYING ELEMENTS COPPER, MANGANESE, MAGNESIUM, AND SILICON ON THE CORROSION BEHAVIOR OF ALUMINUM MATERIALS IN ETHANOL BLENDED GASOLINE FUELS** **DIPL.-ING. RÜDIGER REITZ**[1], Dr.-Ing. Georg Andersohn[1], Prof. Dr.-Ing. Matthias Oechsner[1] *[1]Technische Universität Darmstadt, Institute for Materials Technology (IfW), Darmstadt, Germany*
11.20	**THE DEVELOPMENT OF NICKEL-BASED SUPER-ALLOYS STRENGTHENED BY GAMMA PRIME AND GAMMA DOUBLE PRIME PRECIPITATES** **Paul Mignanelli**[1], Nicholas Jones[1], Ed Pickering[1,2], Olivier Messé[1], Catherine Rae[1], Mark Hardy[3], Howard Stone[1] *[1]University of Cambridge, Cambridge, UK, [2]University of Manchester, Manchester, UK, 3Rolls-Royce plc, PO BOX 31, Derby, UK*	**NUMERICAL INVESTIGATION OF THE GRAIN GROWTH IN POLYCRYSTALLINE FIBERS AND GRAIN BOUND-ARY DIFFUSION** **Julia Kundin**[1] *[1]Ruhr University Bochum, Germany*	*[1]Institut de Chimie et des Matériaux de Paris Est, UMR 7182, CNRS – Université Paris-Est, Thiais, France*	**CORROSION POTENTIAL CORRELATIONS WITH IRREGULAR PLASTIC DEFORMATION** **Associate Professor Ahmet Yilmaz**[1] *[1]Yalova University, Istanbul, Turkey*
11.40	**STRENGTHENING OF γ´ PRECIPITATES BY γ PRECIPI-TATES IN Ni-Al-Ti SUPERALLOYS** **Markus Kolb**[1], Vivien Gumbert[1], Dr. Steffen Neumeier[1], Prof. Mathias Göken *[1]University Erlangen-Nürnberg, Erlangen, Germany*	**INSTABILITY OF MRE FILM–SUBSTRATE BLOCK UNDER MAGNETOMECHANICAL LOADINGS** **Erato Psarra**[1], Konstantinos Danas[1], Laurence Bodelot[1] *1Ecole Polytechnique, Paris, France*	**A "HIGH ENTROPY" ALLOY DATABASE TCHEA2 AND ITS APPLICATION IN ALLOY DESIGN** **Dr. Hai-Lin Chen**[1] *[1]Thermo-Calc Software AB, Solna, Sweden*	**CHARACTERIZATION OF PLASMA CARBURIZED LAY-ERS FORMED ON AUSTENITIC STAINLESS STEEL** Eng. Ana Gasco[1], Dr. Grégory Marcos[2], Dr. Prof. Euge-nia Dalibon[1], Dr. Aurore Andrieux[2], Dr. Eng. Lisandro Escalada3, Dr. Cedric Noel[2], Dr. Lic. Sonia Brühl[1], **Dr. Eng. Silvia Simison**[3], UL-Prof. Thierry Czerwiec[2] *[1]Universidad Tecnológica Nacional, Concepción del Uruguay, Argentina, [2]Institut Jean Lamour, Nancy, France, [3]Instituto de Investigación en Ciencia y Tecnología de Materiales, Mar del Plata , Argentina*
12.00	**MICROSTRUCTURE – PROPERTY STUDY OF NiCoCrAL-X (X = Hf, Si, Ta, Y) ALLOYS** **Dr Eleftheria Karagianni**[1], Professor Of Metallurgy and Posco Chair Panagiotis (Panos) Tsakiropoulos[1] *1The University Of Sheffield, Department of Materials Science and Engineering, Mappin Street, Sheffield S1 3JD, United Kingdom*	**LUMINESCENT MECHANOCHROMIC AND THERMO-CHROMIC MATERIALS BASED ON COPPER IODIDE COMPOUNDS** **Dr Sandrine PERRUCHAS**[1,2], Brendan HUITOREL[1], Dr Thierry GACOIN[1] *[1]Institut des Matériaux Jean Rouxel (IMN), Université de Nantes - CNRS, Nantes, France, [2]Laboratoire PMC, Ecole Polytechnique-CNRS, Palaiseau, France*	**COMBINING THERMODYNAMIC MODELING AND 3D PRINTING OF ELEMENTAL POWDER BLENDS FOR HIGH-THROUGHPUT INVESTIGATION OF HIGH-ENTROPY ALLOYS – TOWARDS RAPID ALLOY SCREENING AND DESIGN** **Dr. Christian Haase**[1], Florian Tang[2], Markus B. Wilms3, Dr. Andreas Weisheit[3], Dr. Bengt Hallstedt[2] *[1]Department of Ferrous Metallurgy, RWTH Aachen University, Aachen, Germany, [2]Institute for Materials Applications in Mechanical Engineering, RWTH Aachen University, Aachen, Germany, [3]Fraunhofer Institute for Laser Technology ILT, Aachen, Germany*	**EXAMINATION OF THERMO-PHYSICAL PROPERTIES AND STRAIN RATE BEHAVIOUR OF HONEYCOMB ALLOYS TO STUDY THE EFFECT OF RUB IN IN OUTER AIR SEALS** **Sonun Ulan kyzy**[1], Oliver Munz[2], Tim Fischer3, Prof. Dr.-Ing. Uwe Glatzel[1] [1]Metals and Alloys, University of Bayreuth, 95447 Bayreuth, Germany, [2]Institute of Thermal Turboma-chinery, Karlsruhe Institute of Technology, 76131 Karlsruhe, Germany, [3]Institute of Materials Science and Mechanics of Materials, Technical University of Munich, 85748 Garching b. München, Germany
12.20	**MICROSTRUCTURAL CHARACTERIZATION OF PLAS-MA NITRIDED γ´ AND γ´ PHASES IN NICKEL-BASED SUPERALLOYS** **Fadella Larek**[1], Jean-Baptiste Dubois[1], Luc Pichon[1], Sébastien Chollet, Jonathan Cormier[2], Patrick Villechaise[2], Frédéric Danoix[3], Raphaele Danoix[3] *1Institut P' - UPR 3346/ University of Poitiers, France, 2Institut P' - UPR CNRS 3346/ ISAE-ENSMA, France, 3Groupe de Physique des Matériaux - UMR 6634 CNRS/ University of Rouen, France*	**MICROSTRUCTURE AND MECHANICAL PROPERTIES OF INFILTRATED TIB²-STEEL COMPOSITES.** **Miss Helen Dilman**[1], Mr. Or Rahamim[1], Prof. Shmuel Hayun[1], Prof. Naum Frage[1] *1Ben-gurion University of the Negev, Beer-sheva, Israel*	**THE ROLE OF COMPOSITION ON THE CONSTITUENT PHASES OF (AlxTiy)CrFeCONi BASED QUINARY AND SENARY COMPOSITIONALLY COMPLEX ALLOYS** **Dr Nick Jones**[1], Dr Paul Mignanelli[1], Dr Kathy Christo-fidou[1], Mr Antti Reponen[1], Dr Ed Pickering[2], Dr Howard Stone[1] *[1]University of Cambridge, Cambridge, UK, [2]University of Manchester, Manchester, UK*	**CORROSION BEHAVIOR OF Al-Cu (2024) FRICTION STIR WELDED JOINTS** Ms. Theano Examilioti[1], **Mr. Dimitris Karanikolas**[1], Na Li[2], Wenya Li[2], Prof. Stavros Kourkoulis[3], Prof. Nikolaos Alexopoulos[3] *[1]University Of Aegean, Chios, Greece, [2]State Key Laboratory of Solidification Processing, Xi'an, China, [3]National Technical University of Athens, Athens, Greece*
12.40	**PECULIARITIES OF STRUCTURE FORMATION IN NICKEL SUPERALLOYS AT THE RECOVERY POWDER LASER CLADDING** **Ph.D. Olga Klimova-korsmik**[1], D.Sc., Prof. Gleb Turichin[2], PhD. Dtudent Rudolf Korsmik[1], Ph.D. Evgeniy Zemlyakov[1] [1]Peter The Great Saint-petersburg Polytechnic Univer-sity, Saint-petersburg, Russian Federation, [2]Saint-Petersburg State Marine Technical University, Saint-petersburg, Russian Federation		**PHASE COEXISTENCE AND CORROSION RESISTANCE OF Cr_xALFeNiCO HIGH ENTROPY ALLOYS: EXPERI-MENTAL AND THEORETICAL STUDY** **Dr Cieslak Jakub**[1], Pof. Janusz Tobola[1], Dr Katarzyna Berent[2], Dr Monique Calvo-Dahlborg[3], Prof. Ulf Dahlborg[3], Dr J Cornide3, Dr S Mehraban[4] *[1]AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Kraków, al. Mickiewicza 30, Poland, [2]AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Kraków, al. Mickiewicza 30, Poland, [3]GPM-UMR6634-CNRS, University of Rouen Normandie, BP12, 76801 Saint-Etienne-du-Rouvray, France, [4]College of Engineering, Swansea University Bay Campus, Swansea, SA1 8QQ, UK*	**ON THE TRIBOCORROSION RESPONSES OF THREE STAINLESS STEELS** **Ms Fatma Ben Saada**[1], Ms Mariem Ben Saada[2], Prof Pierre Ponthiaux[3], Prof Khaled Elleuch[1] *[1]National Engineering School of Sfax, Sfax, Tunisia,* *[2]CEA, Cadarache, France,* *[3]Ecole Centrale Paris, Paris, France*

Symposium	B11	C1	C4	C10
Room	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1	F 319/M1
Session Title	Hard Metals and Metal Matrix Composites	C1.2: Coatings deposition routes and novel characterization techniques 1/5 Deposition routes I	Additive Manufacturing of metals 1	New SPD methods and new application areas of SPD
Chairperson	C. Tasan	R. Cremer, M. Bender	Livio Battezzati	S. Suwas and T. Grosdidier
11.00	*KEYNOTE/INVITED* **DEFECT DENSITY AND FATIGUE BEHAVIOUR OF WC-Co HARD METALS AS A FUNCTION OF THEIR MICROSTRUCTURE** **Dr Thomas Klünsner**[1], Florian Zielbauer[1], Christian Gettinger[1], Dr Stefan Marsoner[1], Prof Tanja Lube[2], Prof. Reinhard Pippan[3] *[1]Materials Center Leoben Forschung Gmbh (MCL), Leoben, Austria, [2]Montanuniversität Leoben, Institut für Struktur- und Funktionskeramik (ISFK), Leoben, Austria, [3]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria*	*KEYNOTE/INVITED* **ENABLING MOBILITY FOR TOMORROW WITH SURFACE TECHNOLOGY** **Dr.-Ing. Nazlim Bagcivan**[1], Dr. Yashar Musayev[2], Dr. Edgar Schulz *[1]Director Coating Center, Competence Center Surface Technology, Schaeffler Technologies AG & Co. KG, Schaeffler, Germany, [2]Schaeffler Technologies AG & Co. KG, Industriestraße 1-3, Herzogenaurach, Germany*	**FATIGUE BEHAVIOR OF ADDITIVELY MANUFACTURED 316L (1.4404) WITH REGARD TO THE INFLUENCE OF THE BUILDING DIRECTION** **Dipl.-ing. Bastian Blinn**[1], Dr.-Ing. Marcus Klein[1], Prof. Dr.-Ing. Tilmann Beck[1], M.Sc. Mathias Burkhart[2], Prof. Dr.-Ing. Jan C. Aurich[2] *[1]Institute of Materials Science and Engineering, University of Kaiserslautern, Kaiserslautern, Germany, [2]Institute for Manufacturing Technology and Production Systems, University of Kaiserslautern, Kaiserslautern, Germany*	*KEYNOTE/INVITED* **SEVERE PLASTIC DEFORMATION OF OXIDES** **Dr. Kaveh Edalati**[1], Dr. Hadi Razavi-Khosroshahi[2], Prof. Masayoshi Fuji[2], Prof. Zenji Horita[1] *[1]Kyushu University, Fukuoka, Japan, [2]Nagoya Institute of Technology, Nagoya, Japan*
11.20			**DIRECT METAL PRINTING (DMP) OF THE MARTENSITIC PRECIPITATION HARDENED STAINLESS STEEL 17-4 PH** **Ir. Karen Vloebergh**[1] *[1]3d Systems Leuven, Leuven, Belgium*	
11.40	**EFFECT OF TEMPERATURE, LOADING FREQUENCY AND THE MICROSTRUCTURE ON THE VISCOELASTIC BEHAVIOR OF A NOVEL ALUMINUM METAL MATRIX COMPOSITE** **Dr. Jose I. Rojas**[1], Prof. Subbarao Bathula Venkata Siva[2], Prof. Kanai Lal Sahoo[3], Prof. Daniel Crespo[4] *[1]Department of Physics – Division of Aerospace Engineering, Universitat Politècnica de Catalunya, Castelldefels, Spain, [2]Department of Mechanical Engineering, Narasaraopeta Engineering College, Narasaraopet, India, [3]Council of Scientific and Industrial Research (CSIR)-National Metallurgical Laboratory, Jamshedpur, India, [4]Department of Physics, Universitat Politècnica de Catalunya, Castelldefels, Spain*	**CONTROLLED REACTIVE HIPIMS OF THERMOCHROMIC V02 FILMS AT A LOW DEPOSITION TEMPERATURE (300 °C)** **David Kolenatý**[1], Jaroslav Vlček[1], Tomáš Kozák[1], Jiří Houška[1], Radomír Čerstvý[1] *[1]Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Plzeň, Czech Republic*	**STUDY OF THE PORE FORMATION ON STAINLESS STEEL BY SELECTIVE LASER MELTING MANUFACTURING PROCESS** **Valérie Gunenthiram**[1], Patrice Peyre[1], Matthieu Schneider[1], Morgan Dal[1], Frédéric Coste[1], Rémy Fabrro[1] *[1]PIMM Laboratory, UMR 8006 Arts et Métiers-CNRS-CNAM, 151 Bd de l'Hôpital, 75013 Paris, France*	**MICROSTRUCTURE, MECHANICAL PROPERTIES AND ELECTRICAL CONDUCTIVITY OF THE AL ALLOY, SUBJECTED TO THE NOVEL SPD METHOD OF HIGH PRESSURE TORSION EXTRUSION** **Dr. Yulia Ivanisenko**[1], Dr. Roman Kulagin[1], Aleksandr Sirotin[2], Dr. Maxim Murashkin[2,3] *[1]Institute of Nanotechnology, Karlsruhe Institute for Technology, Karlsruhe, Germany, [2]Institute for Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russia, [3]Laboratory for Mechanics of Bulk Nanomaterials, Saint Petersburg State University, Saint Petersburg, Russia*
12.00	**MICROSTRUCTURAL STRENGTHENING OF Al-BASED COMPOSITES BY REACTION BETWEEN MATRIX AND REINFORCEMENT** **Mr. Rub Nawaz Shahid**[1,2], Dr. Fahad Ali[3], Prof. Dr. Jürgen Eckert[4,5], Dr. Sergio Scudino[1] *[1]Institute for Complex Materials, IFW Dresden, Dresden, Germany, [2]Faculty of Mechanical Science and Engineering,TU Dresden, Dresden, Germany, [3]Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan, [4]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, [5]Department Materials Physics, Montanuniversität Leoben, Leoben, Austria*	**PHASE FORMATION AND OXIDATION BEHAVIOUR OF CATHODIC ARC EVAPORATED Al1-x-yCrxFEY AND Al1-x-yCrxFeyO6 THIN FILMS** **Valentin Dalbauer**[1], Alexander Kirnbauer[1], Dr. Jürgen Ramm[2], Dr. Szilard Kolozsvári[3], Dr. Christian-Martin Koller[1,4], Prof. Paul-Heinz Mayrhofer[1,4] *[1]TU Wien CDL-AOS, Institute of Materials Science and Technology, Wien, Austria, [2]Oerlikon Balzers, Oerlikon Surface Solutions AG, Balzers, Liechtenstein, [3]Plansee Composite Materials GmbH, Lechbruck am See, Germany, [4]TU Wien, Institute of Materials Science and Technology, Wien, Austria*	**SPACE FLEXIBLE COMPONENTS: IMPROVEMENT OF FATIGUE PROPERTIES OF SLM AGE HARDENABLE STAINLESS STEEL BY FINE MICROSTRUCTURE CONTROLLING** **Dr Massoud Dadras**[1], Dr Olha Sereda[1], Dr Kaushik Vaideeswaran[1], Mr Herve saudan[1], Mr Lionel Kliener[1] *[1]Csem, Material Science, Neuchatel, Switzerland*	**TWO NEW PROCESSES ON SHEET SPD** **Dr Roxane Massion**[1], Dr Jean Jacques FUNDENBERGER[1], Dr Cai CHEN[1], Dr Yajun ZHAO[1], Viet Q. VU[1], Pr Laszlo TOTH[1], Pr Yan BEYGELZIMER[3], Dr Roman KULAGIN[2] *[1]Lem3 Université De Lorraine, Metz, France, [2]Karlsruhe Institute of Technology, Karlsruhe, Germany, [3]National Academy of Sciences of Ukraine, Kiev, Ukraine*
12.20	**OPTIMIZATION OF THE SPACIAL DISTRIBUTION OF THE CNTs IN A Cu/CNT COMPOSITE PROCESSED BY LIQUID METALLURGY** **Sana Elmaana**[1,2], Xavier Sauvage[1], Nicolas Masquelier[2], Alain Guillet[1] *[1]Normandie Univ., INSA Rouen, UNIROUEN, CNRS, Groupe de Physique des Matériaux (GPM), Rouen, France, [2]NEXANS, Lens, France*	**A COMPARABLE STUDY OF THERMOCHROMIC V02 FILMS GROWN BY SPUTTERING AND HYDROTHERMAL SYNTHESIS TECHNIQUES** **PhD Candidate Emmanouil Gagaoudakis**[1,2], Dr Vasilios Binas[1,2,4], Mrs Leila Zouridi[1,3], Mrs Olga Markaki[1,2], Dr Elias Aperathitis[1], Proffessor George Kiriakidis[1,2,4] *[1]Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, Heraklion/Crete, Greece, [2]University of Crete/Physics Department, Heraklion/Crete, Greece, [3]University of Crete/Chemistry Department, Heraklion/Crete, Greece, [4]Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, Heraklion/Crete, Greece*	**INFLUENCE OF PROCESS PARAMETERS ON FINAL 316L STAINLESS STEEL PROPERTIES MANUFACTURED BY SELECTIVE LASER MELTING (SLM)** **Aziz Chnioueł**[1], Dr Fernando Lomello[1], Dr Pierre-François Giroux[2], Dr Pascal Aubry[1], Dr Hicham Maskrot[1], Dr Fanny Balbaud[1] *[1]Den – Service d'Etudes Analytiques et de Réactivité des Surfaces (SEARS), CEA, Université Paris-Saclay, Gif-sur-yvette, France, [2]Den – Service de Recherches Mérallurgiques Appliquées (SRMA), CEA, Université Paris-Saclay , Gif-sur-Yvette, France*	**INFLUENCE OF HIGH PRESSURE TORSION ON THE GROWTH OF TiO2 NANOTUBES ON PURE TITANIUM** Dr Nan Hu[1], **Dr Nong Gao**[1], Dr Ying Chen[2], Professor Marco Starink[1] *[1]University Of Southampton, Southampton, United Kingdom, [2]Xiamen University of Technology, Xiamen, China*
12.40	**EVALUATION OF TENSILE PROPERTIES OF PM Al COMPOSITES BY SMALL PUNCH TESTING** **Dr. Mario Moreno**[1,2], Dr. Martin Balog[3], Dr. Peter Krizik[3] *[1]Centro Atómico Bariloche, Bariloche, Argentina, [2]CONICET, Bariloche, Argentina, [3]Institute of Materials and Machine Mechanics, Bratislava, Slovakia*	**CATHODIC ARC SPUTTERING OF LOWER TITANIUM OXIDES** **Dr. Petr Shvets**[1], Dr. Alexander Goikhman[1], Mrs. Ksenia Maksimova[1] *[1]Baltic Federal University, Kaliningrad, Russian Federation*	**EFFECT OF ARGON AND NITROGEN ATMOSPHERES ON THE PROPERTIES OF 316L STAINLESS STEEL PARTS BUILT BY LASER SINTERING.** **Camille Pauzon**[1,2], Prof. Eduard Hryha[1], PhD Pierre Forêt[2], Prof. Lars Nyborg[1] *[1]Chalmers University Of Technology, Göteborg, Sweden, [2]Linde Gas AG, Unterschleissheim, Germany*	*HIGHLIGHT* **EFFECT OF NANOSTRUCTURES FORMED IN BIOMEDICAL Ti-Ni AND Ni-FREE TI-BASED SHAPE MEMORYALLOYS BY THERMOMECHANICAL TREATMENT ONTHEIR FUNCTIONAL BEHAVIOR** **Professor Sergey Prokoshkin**[1], Professor Vladimir Brailovski[2], PhD Karine Inaekyan[2], PhD Sergey Dubinskiy[1], PhD Vadim Sheremetyev[1], PhD Anton Konopatsky[1] *[1]National University of Science and Technology MISIS,Moscow, Russian Federation, [2]Ecole de Technologie Superieure, Montreal, Canada*
13.00		**NITROGEN IONIC IMPLANTATION INTO NIOBIUM FOR TECHNOLOGICAL APPLICATIONS** **Dr. Rogerio Oliveira**[1], Dr. Odylio Aguiar[1], Dr. Aline Oliveira[2], MsC Lilian Hoshida[1], Dr. Graziela Savonov[1] [1]INPE, SAO JOSE DOS CAMPOS, Brazil, [2]UNIFESP, SAO JOSE DOS CAMPOS, Brazil		**EQUAL-CHANNEL ANGULAR PRESSING OF Ti-Ni SMA UNDER QUASI-CONTINOUS MODE FOR ULTRAFINE-GRAINED STRUCTURE FORMING AND IMPROVING FUNCTIONAL PROPERTIES** **Irina Khmelevskaya**[1] *[1]National University Of Science And Technology "misis", 4, Leninskiy Pr., Moscow, 119049 Russia, Russian Federation*

Symposium	D1	D2	D3	D4
Room	Artist Café /M1	Museum Hall /M2	I-15/M1	Library Hall/M2
Session Title	Tomography	Advanced modeling by simulation & experiment	Electronic properties and energetic materials	Session 7 - Micro/nano-mechanics of damage I
Chairperson	Peter D. Lee and Ragnvald Mathiesen	Slawomir Kret	Jean-Paul Itié, Ioannis Arvanitidis	Eric Le Bourhis
11.00	*KEYNOTE/INVITED* **DIFFRACTION, PHASE AND ATTENUATION IMAGING FOR DUCTILE DAMAGE** **Eric Maire**[1], Sylvain Dancette[1], Christophe Le Bourlot[1]	*KEYNOTE/INVITED* **PROBING COMPLEX MATERIALS ONE ATOM AT A TIME USING A COMBINATION OF THEORY AND MICROSCOPY** **Professor Sokrates Pantelides**[1]	*KEYNOTE/INVITED* **EVIDENCE OF A NEW ENERGY SCALE FOR SUPERCONDUCTIVITY IN H3S** **Dr Pascale Roy**[1], Dr Francesco Capitani[1], Mr Benjamin Langerome[1], Dr Jean-Blaise Brubach[1], Dr Aleksander Drozdov[2], Pr Mikhail Eremets[2], Pr Elizabeth Nicol[3], Pr Jules Carbotte[4,5], Pr Thomas Timusk[4,5]	**HYDROGEN ENHANCED CRACKING STUDIES ON Fe-3WT.%SI SINGLE AND BI-CRYSTAL MICRO CANTILEVERS** **Tarlan Hajilou**[1], Yun Deng[1], Dr. Nousha Kheradmand[1], Dr. Vigdis Olden[2], Prof. Roy Johnsen[1], Prof. Afrooz Barnoush[1] *[1]Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, Trondheim, Norway, [2]SINTEF Materials and Chemistry, Trondheim, Norway*
11.20	*[1]Insa Lyon - Mateis Lab, Villeurbanne, France*	*[1]Department of Physics and Astronomy, Vanderbilt University, Nashville, United States*	*[1]Synchrotron Soleil, Saint-Aubin, , France, [2]Biogeochemistry Department, Max Planck Institute for Chemistry, Mainz, Germany, [3]Department of Physics, University of Guelph, Guelph, Canada, [4]The Canadian Institute for Advanced Research, Toronto, Canada, [5]Department of Physics and Astronomy, McMaster University, Hamilton, Canada*	**AB INITIO STUDY OF HYDROGEN EMBRITTLEMENT IN Fe: GRAIN BOUNDARY DECOHESION** **Dr. I.J.T. Jensen**[1], T. Hajilo[2], Dr. N. Kheramand[2], Prof. A. Barnoush[2], Prof. Z. Zhang[2], Dr. V. Olden[3], Prof. O.M. Løvvik[1] *[1]SINTEF Materials and Chemistry, Oslo, Norway, [2]Norwegian University of Science and Technology, Trondheim, Norway, [3]SINTEF Materials and Chemistry, Trondheim, Norway*
11.40	**HIGHER-ORDER ITERATIVE RECONSTRUCTION OF IN SITU DENDRITIC GROWTH** **Dr. Daniil Kazantsev**[1], Dr. Enyu Guo[1], Prof. Peter Lee[1] *[1]The University Of Manchester, Research Complex at Harwell, Didcot , United Kingdom*	**COMBINED EELS/DFT CHARACTERIZATION OF THE SURFACE FUNCTIONALIZATION OF Ti_3C_2 2D-SHEETS: FROM LOCAL COORDINATION TO OPTICAL PROPERTIES** Dr Damien Magné[1], **Dr Vincent Mauchamp**[1], Dr Matthieu Bugnet[2,3], Dr Stéphane Célérier4, Dr Patrick Chartier[1], Pr Gianluigi Botton[2], Pr Thierry Cabioc'h[1] *[1]Institut Pprime - UPR3346 - CNRS- Poitiers University - ISAE ENSMA, Futuroscope Chasseneuil, France, [2]Department of Materials Science and Engineering, McMaster University, Hamilton, Canada, [3]Laboratoire MATEIS, UMR 5510 CNRS - Université de Lyon - INSA Lyon, Lyon, France, 4Institut de Chimie des Milieux et Matériaux de Poitiers, UMR 7285, Université de Poitiers, Poitiers, France*	*HIGHLIGHT* **PRESSURE EFFECT ON THE CHARGE DENSITY WAVE INSTABILITY IN THE CUPRATE SUPERCONDUCTORS** **Dr Sofia-Michaela Souliou**[1], Dr Hlynur Gretarsson[2], Dr Gaston Garbarino[1], Hun-ho Kim[2], Juan Porras[2], Dr Alexei Bosak[1], Prof Bernhard Keimer[2], Prof Mathieu Le Tacon[3] *[1]European Synchrotron Radiation Facility, Grenoble, France, [2]Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany, [3]Karlsruhe Institute of Technology, Institut fur Festkorperphysik, Karlsruhe, Germany*	**HYDROGEN EMBRITTLEMENT IN STRUCTURAL STEEL COARSE-GRAINED HEAT AFFECTED ZONE – INFLUENCE OF VARYING THE STRESS CONCENTRATION EXPERIMENTS AND MODELLING** **Dr. Antonio Alvaro**[1], Dr. Vigdis Olden[1], Vidar Osen[1], Bård Nyhus[1] *[1]SINTEF Materials and Chemistry, Trondheim, Norway*
12.00	**SOLIDIFICATION IN 4D: FROM DENDRITES TO EUTECTICS** Professor Ashwin Shahani[2], Dr. Xianghui Xiao[3], **Professor Peter Voorhees**[1] *[1]Northwestern University, Evanston, United States, [2]University of Michigan, Ann Arbor, United States, [3]Argonne National Laboratory, Argonne, United States*	*HIGHLIGHT* **ATOMIC CHARACTERISATION AND MODELLING OF HALFMETAL/SEMICONDUCTOR INTERFACES** **Dr Vlado Lazarov**[1], Dr Demie Kepaptsoglou[2], Mr Zlatko Nedelkoski[1], Dr Balati Kuerbanjiang[1], Dr Quentin Ramasse[2], Mr Arsham Ghasemi[1], Dr Leonardo Lari[3], Prof Kohei Hamaya[4] *[1]University Of York, York, United Kingdom, [2]SuperSTEM Laboratory, Warrington, United Kingdom, [3]York JEOL Nanocentre, York, United Kingdom, [4]Osaka University, Osaka, Japan*	**POLYMERIC NITROGEN-LIKE COMPOUNDS: A PROMISING ROUTE TOWARDS NOVEL HIGH ENERGY DENSITY MATERIALS** **Mr Dominique Laniel**[1], Dr Weck Gunnar[1], Dr Paul Loubeyre[1] *[1]Commissariat à l'énergie atomique, Paris, France*	**CAST IRON AND MICRO CRACKS** **Mr. Mattias Lundberg**[1], Mr. Jonas Saarimäki[1], Ph. D. Mattias Calmunger[1], Professor Johan Moverare[1] *[1]Linköping University, Linköping, Sweden*
12.20	**SYNCHROTRON QUANTIFICATION OF STRAIN DURING SHALE FRACTURE** Dr Anne-Laure Fauchille[1,2], Dr Mike Chandler[3], Dr Lin Ma[3], Dr Patrick Dowey[3], Dr Loic Courtois[1,2,4], Pr Ernest Rutter[3], Dr Julian Mecklenburgh[3], Pr Kevin Taylor[3], **Pr Peter Lee**[1,2] *[1]Manchester X-Ray Imaging Facility, School of Materials, the University of Manchester, Manchester, United Kingdom, [2]Research Complex at Harwell, Rutherford Appleton Laboratory, Didcot, United Kingdom, [3]School of Earth and Environmental Sciences, the University of Manchester, Manchester, United Kingdom, [4]3Dimagination Ltd, Atlas building, Fermi Avenue, Harwell Didcot, United Kingdom*	**COMBINING SPATIALLY-RESOLVED ELECTRON ENERGY LOSS SPECTROSCOPY EXPERIMENTS WITH ATOMISTIC SIMULATIONS TO STUDY THE PROPERTIES OF HELIUM BUBBLES IN COVALENT SYSTEMS AT THE NANOSCALE** **Dr Marie-Laure David**[1], Julien Dérès[1], Dr. Kévin Alix[1], Prof. Cécile Hébert[2], Dr. Duncan T.L. Alexander[2], Dr. Laurent Pizzagalli[1] *[1]Institut Pprime, CNRS-Universté de Poitiers-ISAE-ENSMA, Chasseneuil Futuroscope, France, [2]CIME, EPFL-SB-CIME-GE, Lausanne, Switzerland*	**INVESTIGATION OF A MOLECULAR CRYSTAL PLASTITICY MECHANISMS: A MULTISCALE APPROACH** **Mr Paul Lafourcade**[1], Dr Christophe Denoual[1], Dr Jean-Bernard Maillet[1] *[1]CEA-DAM, DIF, Paris, France*	
12.40	**STUDY OF 3D DAMAGE AND STRAIN EVOLUTION IN THIN-SHEET AL ALLOY MATERIALS BY SYNCHROTRON LAMINOGRAPHY AND DIGITAL VOLUME CORRELATION** **Dr. Lukas Helfen**[1,5], Dr. Thilo F. Morgeneyer[2], Ante Buljac[3], Dr. Heikki Suhonen4, Dr. Yin Cheng[1], Dr. Francois Hild[3], Prof. Dr. Tilo Baumbach[1] *[1]Karlsruher Institute Of Technology, Eggenstein-Leopoldshaden, Germany, [2]Centre des Matériaux - Mines Paristech, Evry cedex, France, [3]Laboratoire de Mécanique et Technologie, ENS Paris-Saclay, Cachan, France, [4]University of Helsinki, Finland, [5]The European Synchrotron (ESRF), Grenoble, France*	**STRAINED $In_xGa_{1-x}N$/GaN SUPERLATTICES EMBEDDED IN GAN NANOWIRES** **Dr Theodoros Pavloudis**[1], Prof Joseph Kioseoglou[1], Prof Thomas Kehagias[1], Dr. Christoher D. Latham[2], Dr Mark J. Rayson[2], Prof Patrick Briddon[3], Prof Martin Eickhoff[4], Prof Theodoros Karakostas[1] Prof Philomela Komninou[1] *[1]Department of Physics, Aristotle University of Thessaloniki, GR-54124Thessaloniki, Greece, [2]Department of Chemistry, University of Surrey, Guildford, Surrey GU2 7XH, United Kingdom, [3]School of Electrical and Electronic Engineering, Newcastle University, Newcastle upon Tyne NE1 7RU, United Kingdom, [4]Institute of Experimental Physics I, Justus-Liebig-University Giessen, D-35392 Giessen, Germany*	**HYDROGEN MEDIATED UNUSUAL PROPERTIES OF COMPLEX HYDRIDES UNDER PRESSURE** **Ewelina Magos-Palasyuk**[1], Dr Taras Palasyuk[1] *[1]Institute Of Physical Chemistry PAS, Warsaw, Poland*	

Symposium	D8	D9	D10	E2
Room	I -16/M1	Maurice Saltiel Hall I/M2	CR II Hall/M2	CR III Hall/M2
Session Title	Phase stability and transformations in iron and steels	Advanced Modelling of Nuclear Structural Materials (II)	Multiscalle modeling and connecting to continuum level descriptions	Electrolytes
Chairperson	Dr. Mihai-Cosmin Marinica	L. Malerba	Harmandaris-Goddin	P. Knauth
11.00	*KEYNOTE/INVITED* **FROM DENSITY FUNCTIONAL THEORY TO MAGNETIC INTERATOMIC POTENTIALS AND THE CALCULATION OF THERMODYNAMIC OBSERVABLES** **Professor Ralf Drautz**[1] *[1]ICAMS / Ruhr-Universität Bochum, Bochum, Germany*	*KEYNOTE/INVITED* **MODELLING OF EMBRITTLING FEATURES IN IRRADIATED F/M STEELS AND ALLOYS** **Dr Cristelle Pareige**[1] *[1]University Of Rouen - CNRS , Rouen, France*	*KEYNOTE/INVITED* **ATOMISTICALLY INFORMED FULL-FIELD SIMULATION OF TEMPERED MARTENSITE: QUENCHING, TEMPERING AND MECHANICAL CHARACTERIZATION** **Prof. Ingo Steinbach**[1] *[1]Ruhr-University Bochum, Bochum, Germany*	**ELECTROCHEMICAL POLYMERIZATION OF SULFONATED AROMATIC PRECURSORS FOR Li ION MICROBATTERIES** **Dr. Michele Braglia**[1,3], Dr. Ivan Vito Ferrari[2,3], Prof. Florence Vacandio[1,3], Prof. Thierry Djenizian[1,3], Prof. Maria Luisa Di Vona[2,3], Prof. Philippe Knauth[1,3] *[1]Aix Marseille University, CNRS, Marseille, France, [2]University of Rome Tor Vergata (URoma2), Roma, Italy, [3]International Associated Laboratory (L.I.A.), Ionomer Materials for Energy (AMU, CNRS, URoma2), ,*
11.20				*HIGHLIGHT* **NOVEL IONIC LIQUIDS AS ELECTROLYTE COMPONENTS FOR Li-ION AND Li-S BATTERIES** **Dr Maria Assunta Navarra**[1], Dr Akiko Tsurumaki[1], Prof Stefania Panero[1] *[1]Sapienza University Of Rome, Rome, Italy*
11.40	**DYNAMIC AB-INITIO BASED SIMULATIONS OF STRUCTURAL PHASE TRANSITIONS IN MAGNETIC IRON AND A NON-COLLINEAR LSDA+U MODEL** Dr. Pui-Wai Ma[1], **Dr. Sergei L. Dudarev**[1] *[1]Culham Centre For Fusion Energy, Abingdon, United Kingdom*	**NANOSTRUCTURE EVOLUTION OF HIGH-CHROMIUM FERRITIC/MARTENSITIC ALLOYS UNDER NEUTRON AND ION IRRADIATION: AN OBJECT KINETIC MONTE CARLO MODEL** Monica Chiapetto[1,2], **Lorenzo Malerba**[1], Nicolas Castin[1], Charlotte Becquart[2] *[1]SCK-CEN, Mol, Belgium, [2]Lille University of Science and Technology, Villeneuve-d'Ascq, France*	*HIGHLIGHT* **BAYESIAN COARSE-GRAINING** Markus Schoeberl[1], Professor Nicholas Zabaras[2], **Professor Phaedon-Stelios Koutsourelakis**[1] *[1]Technical University Of Munich, Garching, Germany, [2]University of Notre Dame, United States of America*	**IONOGELS FOR ENERGY STORAGE: THE DETERMINING EFFECT OF THE INTERFACE** **Professor Jean Le Bideau**[1], Dr Aurélie Guyomard-Lack[1], Dr Bilel Said[2], Dr Nicolas Dupré[1], Prof Bernard Humbert[1], Prof Dominique Guyomard[1], Prof Thierry Brousse[1], Prof Anne Galarneau[2] *[1]Institut Des Matériaux Jean Rouxel (IMN) - Université De Nantes - CNRS, Nantes, France, [2]Institut Charles Gerhardt Montpellier - Université de Montpellier – CNRS, Montpellier, France*
12.00	**THERMODYNAMIC PROPERTIES OF γ-Fe FROM FIRST PRINCIPLES.** **Hossein Ehteshami**[1], Pavel A. Korzhavyi[1,2] *[1]Department of Materials Science and Engineering, KTH Royal Institute of Technology, Stockholm, Sweden, [2]Institute of Metal Physics, Ural Division of the Russian Academy of Sciences, Ekaterinburg, Russia*	**ADVANCED ATOMISTIC AND OBJECT KINETIC MONTE CARLO MODELS DESCRIBING THE DECORATION OF LOOPS BY CR AND THE FORMATION OF Cr-Ni-Si-P CLUSTERS IN Fe-ALLOYS UNDER IRRADIATION** **Dr Nicolas Castin**[1], Dr Monica Chiapetto[1,2], Dr Lorenzo Malerba[1] *[1]SCK•CEN, Belgium, Mol, Belgium, [2]Univ. Lille, CNRS, INRA, ENSCL, UMR 8207,UMET, Unité Matériaux et Transformations, Lille, France*	**FROM ATOMISTIC TO SYSTEMATIC COARSE-GRAINED MODELS FOR MOLECULAR SYSTEMS** **Prof. Vagelis Harmandaris**[1] *[1]University Of Crete, Department of Mathematics and Applied Mathematics, Greece, [2]Institute of Applied and Computational Mathematics FORTH, Heraklion, Greece*	**OXYSULFIDE ELECTROLYTES FOR ALL-SOLID-STATE BATTERY APPLICATIONS** **MSc. Theodosios Famprikis**[1,2,3], Dr. Pieremanuele Canepa[2,3], Dr. James A Dawson[2,3], Dr. Yue Deng[1,2,3], Dr. Jean-Noël Chotard[1,3], Prof. Saiful Islam[1,3], Prof. Christian Masquelier[1,3] *[1]Laboratoire de Réactivité et Chimie des Solides - CNRS, Amiens, France, [2]Department of Chemistry, University of Bath, Bath, United Kingdom, [3]ALISTORE European Research Institute, Amiens, France*
12.20	**PHASE STABILITY, MAGNETIC AND DEFECT PROPERTIES OF Fe-Cr-Ni TERNARY ALLOYS PREDICTED BY AB INITIO CALCULATIONS.** **Jan Wróbel**[1,2], Mikhail Lavrentiev[2], Krzysztof Kurzydłowski[1], Sergei Dudarev[2], Duc Nguyen-Manh[2] *[1]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, [2]CCFE, UK Atomic Energy Authority, Abingdon, United Kingdom*	**SEGREGATION OF Cr TO GRAIN BOUNDARIES IN IRRADIATED FECR ALLOYS WITH CELL-OBJECT KINETIC MONTE CARLO** **Dr Juan Pablo Balbuena**[1], L. Malerba[2], N. Castin[2], G. Bonny[2], Prof. Dr. Maria José Caturla[1] *[1]Dept. Física Aplicada, Facultat de Ciencies, Universitat d'Alacant, Alacant, Spain, [2]SCK-CEN, Belgium*	**INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING (ICME) AND BUSINESS DECISION SUPPORT SYSTEMS (BDSS) IN THE CONTEXT OF OPEN INNOVATION AND INTERDISCIPLINARY COLLABORATION** Dr James Goddin[1], **Dr Donna Dykeman**[1], Mr Najib Baig[1], Dr William Marsden[1], Prof. David Cebon[1] *[1]Granta Design, Cambridge, United Kingdom*	**CONTRIBUTION OF SURFACE SCIENCE (XPS, AES, TOF-SIMS) TO THE KNOWLEDGE OF SOLID ELECTRODE/ELECTROLYTE INTERFACES (SEI) FOR Li ION BATTERIES** **Professor Herve Martinez**[1] *[1]Université de Pau et des Pays de l'Adour Iprem-cnrs Umr 5254, Pau, France*
12.40	**AB INITIO STUDY OF FINITE-TEMPERATURE ELASTIC CONSTANTS OF POLYCRYSTALLINE AND SINGLE-CRYSTALLINE FERROMAGNETIC BCC IRON** Bc. Ondrej Svoboda[1,2], **Dr. Martin Friak**[2,3,4], Priv. Doc. David Holec[5], Associated Professor Vit Jan[6,7,4], Prof. Mojmir Sob[3,2,8] *[1]Institute of Solid Mechanics, Mechatronics and Biomechanics, Faculty of Mechanical Engineering, Brno University of Technology, Brno, Czech Republic , [2]Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic, [3]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic, [4]Central European Institute of Technology, CEITEC BUT, Brno University of Technology, Brno, Czech Republic, [5]Department of Physical Metallurgy and Materials Testing, Montanuniversitaet Leoben, Leoben, Austria, [6]Institute of Materials Engineering, NETME center, Faculty of Mechanical Engineering, Brno University of Technology, Brno, Czech Republic, [7]Department of Structural and Phase Analysis, Faculty of Mechanical Engineering, Brno University of Technology, Brno, Czech Republic, [8]Department of Chemistry, Faculty of Science, Masaryk University, Brno, Czech Republic*	**ATHERMAL FORMATION OF <100> DISLOCATION LOOPS IN Fe FROM OVERLAPPING CASCADES** **Dr Andrea Sand**[1,2], Dr Fredric Granberg[2], Jesper Byggmastar[2], Prof Kai Nordlund *[1]CCFE, UK, [2]University of Helsinki, Finland*		
13.00				

Symposium	E3	E4	F2
Room	Rehearsal Room 5.17/M1	Conference Room 2/M1	3-21/M1
Session Title	Thermoelectrics III	Materials under irradiation	Biomaterials for Therapeutic Delivery I
Chairperson	**Yaniv Gelbstein**	**Régis Bisson**	**Montserrat Colilla**
11.00	*HIGHLIGHT* **NEW POLAR CHALCOGENIDES AND PNICTIDES: CHEMISTRY, BONDING AND TRANSPORT PROPERTIES** **Prof. Franck Gascoin**[1] *[1]Crismat Laboratory - U. Of Normandy, Caen, France*	**IN-SITU TRANSMISSION ELECTRON MICROSCOPY STUDIES OF ION IRRADIATION EFFECTS IN NANOSCALE MATERIALS** **Professor Stephen E Donnelly**[1], Dr Jonathan A Hinks[1], Dr Graeme Greaves[1], Dr Robert W Harrison[1], Dr Anamul H Mir[1] *[1]University of Huddersfield, United Kingdom*	*KEYNOTE/INVITED* **CLINICAL TRANSLATION OF ULTRASOUND-RESPONSIVE NANOMATERIALS FOR ONCOLOGICAL DRUG DELIVERY: FROM THERMOSENSITIVE LIPOSOMES TO POLYMER-STABILIZED NANOBUBBLES** **Prof. Constantin-C. Coussios**[1] *Director, Institute of Biomedical Engineering, University of Oxford, Oxford OX3 7DQ, UK*
11.20	*HIGHLIGHT* **THEORETICAL FEASIBILITY AND ENGINEERING CHALLENGES OF HYBRID PHOTOVOLTAIC-THERMOELECTRIC SYSTEMS** **Professor Min Gao**[1] *[1]Cardiff University, Cardiff, United Kingdom*	**THE EFFECT OF NIOBIUM ON THE IRRADIATION GROWTH PROPERTIES OF Zr-Nb BINARY ALLOYS USED FOR NUCLEAR APPLICATIONS** **Miss Rebecca Jones**[1], Dr Philipp Frankel[1], Professor Tamas Ungar[1], Professor Michael Preuss[1] *[1]University Of Manchester, Manchester, United Kingdom*	**NOVEL (COORDINATION) POLYMER NANOPARTICLES FOR ADVANCED THERANOSTICS** **Professor Daniel Ruiz Molina**[1] *[1]Icn2, Campus UAB, 08193, Bellaterra, Spain*
11.40	**EVALUATION OF MECHANICALLY IMPROVED GeTe BASED TE MATERIALS** **Mr. Gilad Guttmann**[1,2], Prof. Yaniv Gelbstein[1] *[1]Ben-gurion University, Beer-Sheva, Israel, [2]Nuclear Research Center Negev, Beer-Sheva, Israel*	**LOW ACTIVATION Ti-5Al-4V-2Zr ALLOY MICROSTRUCTURE AND ITS RESPONSE TO HEAVY ION IRRADIATION** **Mr. Alexander Nikitin**[1], Dr. Sergey Rogozhkin[1], Mrs. Olesya Korchuganova[1], Dr. Alexander Vasiliev[2], Dr Andrey Orekhov[2], Dr. Valeriy Leonov[3], Dr. Irina Schastlivaya[3], Dr. Martin Heilmaier[4], Mr. Sascha Seils[4] *[1]Institute for Theoretical and Experimental Physics of National Research Centre "Kurchatov Institute", Moscow, Russia, [2]National Research Centre "Kurchatov Institute", Moscow, Russia, [3]Central Research Institute of Structural Materials "Prometey", St.Petersburg, Russia, [4]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**CONTINUOUS FLOW PRODUCTION OF HYBRID NANOMATERIALS FOR APPLICATIONS IN NANOMEDICINE USING MICROFLUIDIC SYSTEMS** Dr Victor Sebastian[1], Ms Ane Larrea, Dr Edurne Luque-Michel, Dr Manuel Arruebo, Dr Maria Blanco-Prieto, **Prof. Jesus Santamaria** *[1]Universidad De Zaragoza, Zaragoza, Spain*
12.00	*HIGHLIGHT* **TRACING LOCAL DOPANT IN-HOMOGENEITIES IN THERMOELECTRIC MATERIALS** **Dr. Euripides Hatzikraniotis**[1] *[1]Aristotle University of Thessaloniki, Thessaloniki, Greece*	**PROPERTIES OF IRRADIATION-INDUCED POINT DEFECTS IN EUROFER-97 STEELS** Dr George Apostolopoulos[1], Mr Andreas Theodorou[1], **Dr Zoi Kotsina**[1], Dr K Mergia[1], Dr S Messoloras[1], Dr A Lagoyannis[1], Dr S Harissopoulos[1] *[1]NCSR-Demokritos, Aghia Paraskevi, Greece*	**EVALUATION OF GOLD NANOPARTICLES IN VIVO USING THE CAENORHABDITIS ELEGANS MODEL ORGANISM** Laura Gonzalez-Moragas[1], Pascal Berto[2], Clara Vilches[2], Romain Quidant[2], Androniki Kolovou[3], Rachel Santarella-Mellwig[3], Yannick Schwab[3], Stephen Stürzenbaum[4], Anna Roig[1], **Anna Laromaine**[1] *[1]Institut de Ciència de Materials de Barcelona, ICMAB-CSIC. , Campus UAB. 08193 Bellaterra, Barcelona - Spain., Spain., [2]ICFO-Institut de Ciències Fotòniques. ,Av. Carl Friedrich Gauss, [3], 08860 Castelldefels, Spain., [3]European Molecular Biology Laboratory, EMBL, Meyerhofstraße, 1, 69117 Heidelberg - Germany, Germany, [4] King's College London. Faculty of Life Sciences & Medicine, Analytical and Environmental Sciences Division, 150 Stamford Street, London SE1 9NH - United Kingdom., United Kingdom.*
12.20	**ELECTRONIC TRANSPORT SIMULATIONS IN NANOSTRUCTURED MATERIALS FOR LARGE THERMOELECTRIC POWER FACTORS** **Dr Neophytos Neophytou**[1], Dr Mischa Thesberg[2] *[1]University of Warwick, United Kingdom, [2]Institute for Microelectronics, Technical University of Vienna, Vienna, Austria*	**CHARACTERIZATIONS OF ZrCxNy CERAMICS AND NEUTRONIC PERFORMANCE FOR NON-OXIDE FUEL FOR GENERATION IV REACTORS** **Dr Osama Farid**[1,2], Dr Nader Mohamed[2] *[1]I.N.S.A Lyon, FRANCE, MATEIS - Equipe CorrIS, 21 Avenue Jean Capelle, France, [2]Atomic Energy Authority, ETRR-[2], P.O. 13759, Abu Zaabal, Egypt*	**INCORPORATION OF MESOPOROUS BIOACTIVE GLASSES INTO THERMOSENSITIVE POLYURETHANE HYDROGELS FOR TISSUE REGENERATION** **Sonia Lucia Fiorilli**[1], Alessandra Bari[1], Monica Boffito[2], Carlotta Pontremoli[1], Chiara Tonda-Turo[2], Alessandro Torchio[2], Gianluca Ciardelli[2], Chiara Vitale-Brovarone[1] *[1]Department of Applied Science and Technology, Politecnico di Torino, Turin, Italy, [2]Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Turin, Italy*
12.40	**EFFECT OF ANNEALING ON THE THERMOELECTRIC PROPERTIES OF Bi0.5Sb1.5Te3 THIN FILMS GROWN ON RIGID AND FLEXIBLE SUBSTRATES** **Dr Elli Symeou**[1], Mrs Christiana Nicolaou[1], Dr. Ioannis Giapintzakis[1] *[1]University Of Cyprus, Nicosia, Cyprus*	**EFFECT OF HEAVY ION IRRADIATION ON THE MICROSTRUCTURE OF OXIDE DISPERSION STRENGTHENED STEELS** **Aleksei Bogachev**[1,2], Doctor of science Sergey Rogozhkin[2,1], Nikolay Orlov[2,1], Olesya Korchuganova[2,1], Aleksandr Nikitin[2,1], Doctor of science, Professor Alexander Zaluzhnyi[2,1], Mihail Kozodaev[2,1], Timur Kulevoy[2], Rostislav Kuibeda[2], Petr Fedin[2], Boris Chalykh[2], Lindau Rainer[3], Doctor of science Jan Hoffmann[3], Doctor of science, Professor Anton Möslang[3], Doctor of science Pavel Vladimirov[3], Doctor of science Michael Klimenkov[3] *[1]National Research Nuclear University "MEPhI", Moscow, Russian Federation, [2]SSC RF ITEP of NRC "Kurchatov Institute", Moscow, Russian Federation, [3]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**BIOCOMPATIBLE HYBRID NANOGELS FOR REMOTELY CONTROLLED DRUG DELIVERY BY MAGNETIC HYPERTHERMIA** **Esther Cazares Cortes**[1], Dr. Ana Espinosa[2], Dr. Nèbèwia Griffette[1], Dr. Claire Wilhelm[2], Pr. Christine Ménager[1] *[1]Laboratory Physicochimie des Electrolytes et des Nanosystèmes Interfaciaux, Paris, France, [2]University Paris Diderot, CNRS, UMR 7057, Laboratory MSC, Bât. Condorcet, 10 rue Alice Domon et Léonie Duquet, Paris, France*
13.00			

Symposium	A2	A5	A7	B1
Room	I-11/M1	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1
Session Title	Applications of Magnetic Materials	Nanoparticles: Synthesis and Applications V	Carbon based Materials I	Bainitic Steels I
Chairperson	P. Poulopoulos	Maria Casula	Frank Mücklich	Ilana Timokhina
15.00	*KEYNOTE/INVITED* **MAGNETIC HEUSLER COMPOUNDS FOR SPINTRONIC APPLICATIONS: A THEORETICAL AB-INITIO STUDY** **Prof. Dr. Iosif Galanakis** *Department of Materials Science University of Patras, Patras, Greece*	*HIGHLIGHT* **COMPOUND COPPER CHALCOGENIDE NANOCRYSTALS: PROGRESS IN MULTI-ELEMENT SYNTHESIS, COMPLEX SHAPE CONTROL, HIERARCHICAL ASSEMBLY AND DEVICE APPLICATION** **Professor Kevin Ryan**[1], Dr Claudia Couglan[1] *[1]University Of Limerick, Limerick, Ireland*	**POLYELECTROLYTE/GO LAYER-BY-LAYER THIN FILMS FOR ADVANCED COATINGS** **Dr Cristina Valles**[1,2], Ms Laura Burk[3,4], Professor Rolf Mülhaupt[3,4], Professor Robert Young[1,2], Professor Ian Kinloch[1,2] *[1]School of Materials, University Of Manchester, Manchester, United Kingdom, [2]National Graphene Institute, Manchester, United Kingdom, [3]Institute for Macromolecular Chemistry, Albert-Ludwigs-University of Freiburg, Freiburg, Germany, [4]Freiburg Materials Research Center FMF, Freiburg, Germany*	**CARBON DISTRIBUTION IN BAINITIC FERRITE AT LOW TEMPERATURE** Rosalia Rementeria[1], Jonathan D. Poplawsky[2], Esteban Urones-Garrote[3], Jose A. Jimenez[1], Carlos Garcia-Mateo[1], **Francisca G. Caballero**[1] *[1]National Center for Metallurgical Research (CENIM-CSIC)) , Madrid, Spain, [2]Oak Ridge National Laboratory, Oak Ridge, USA, [3]3Centro Nacional de Microscopía Electrónica (CNME), Universidad Complutense de Madrid, Madrid, Spain*
15.20		*HIGHLIGHT* **QUANTUM-CONFINED AND ENHANCED OPTICAL ABSORPTION OF COLLOIDAL PBS QUANTUM DOTS AT WAVELENGTHS WITH EXPECTED BULK BEHAVIOR** **Carlo Giansante**[1] *[1]Dipartimento Di Fisica, Università Del Salento, Lecce, Italy, [2]NANOTEC- CNR, Istituto di nanotecnologia, Lecce, Italy*	**HIGH LATERAL RESOLUTION AUGER IMAGING OF DIFFERENT CARBON ALLOTROPES** **Dr. Viliam Vretenár**[1], Dr. Lubomír Vančo[1], Dipl.-Ing. Peter Vogrinčič[1], Dr. Marian Varga[2], Dr. Mário Kotlár[1], Dr. Viera Skákalová[1], Dr. Marian Veselý[1] *[1]STU Centre For Nanodiagnostics, Bratislava, Slovakia, [2]Institute of Physics of the ASCR, v.v.i., Praha, Czech Republic*	**NEW MEDIUM C NANOSTRUCTURED BAINITIC STEEL CONCEPT** **Dr Yahya Palizdar**[1], Mr. F Moradi[1], Prof. F. G. Caballero[2], Dr C. Garcia-Mateo[2], Dr A. Kolahi[1] *[1]Nanotechnology and Advanced Materials, Materials and Energy Research Center (MERC), Tehran, Iran, [2]Spanish National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain*
15.40	*HIGHLIGHT* **SELECTIVE MAGNETIC SEPARATION USING MAGNETIC NANO-POWDERS FOR ENGINEERING APPLICATIONS** Dr Angelo Ferraro, **Mr Evangelos Hristoforou**[1] *[1]National Tu Of Athens, Athens, Greece*	*HIGHLIGHT* **FORMATION MECHANISM AND OSTWALD RIPENING OF SEMICONDUCTOR NANOPLATELETS** **Dr. Andreas Riedinger**[1] *[1]Optical Materials Engineering Laboratory, ETH , Zürich, Switzerland*	**PREPARATION AND THERMAL CONDUCTIVITY OF NANOCELLULOSE-BASED FOAMS** **Ms Varvara Apostolopoulou Kalkavoura**[1], Ms Korneliya Gordeyeva[1], Professor Lennart Bergström[1] *[1]Stockholm University, Dept. of Materials and Environmental Chemistry, Stockholm, Sweden*	**MULTI-SCALE CHARACTERISATION OF A MICRO-ALLOYED "CARBIDE-FREE BAINITE" STEEL** **Zélie Tournoud**[1,2], Patricia Donnadieu[1], Didier Huin[2], Alexis Deschamps[1], Gilles Renou[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, F-38000 Grenoble, France, [2]ArcelorMittal Research Centre, F-57280 Maizières-lès-Metz, France*
16.00	*HIGHLIGHT* **GRAPHENE DERIVED ROOM TEMPERATURE ANTIFERROMAGNETS AND PROMISING SPINTRONIC MATERIALS** **Prof. Jiří Tuček**[1], Dr. Piotr Blonski[1], Prof. Dr. Michal Otyepka[1], Prof. Dr. Radek Zbořil[1] *[1]Regional Centre Of Advanced Technologies And Materials, Faculty Of Science, Palacky University In Olomouc, Olomouc, Czech Republic*	*HIGHLIGHT* **LIGHT EMITTING DIODES, AMPLIFIED SPONTANEOUS EMISSION, AND LASING FROM COLLOIDAL NANO-CRYSTAL FILMS** **Roman Krahne**[1] *[1]Istituto Italiano Di Tecnologia, Genoa, Italy*	*KEYNOTE/INVITED* **NANOCELLULOSE AS FUNCTIONAL MATERIALS FOR ELECTRONIC AND ENERGY APPLICATIONS** **Professor Pooi See Lee**[1] *[1]Nanyang Technological University, School of Materials Science and Engineering, 50 Nanyang Avenue, Blk N4.1, Singapore*	**NANOSTRUCTURED BAINITE THERMAL STABILITY** **Dr. Carlos Garcia-Mateo**[1], Mr Miguel A. Santajuana[1], Dr Jose A. Jimenez[1], Dr Matthias Kuntz[2], Prof Francisca G. Caballero[1] *[1]National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain, [2]Robert-Bosch GmbH, Stuttgart, Germany*
16.20	**MAGNETO-PLASMONIC HYBRID FePt/SiO²/Au NANOPARTICLES AS NOVEL THERANOSTIC TOOLS FOR CANCER TREATMENTS EVALUATED IN-VITRO** **Dr. Kristina Zuzek Rozman**[1,2], Irena Abramovic[1], Dr. Saso Sturm[1,2], Dr. Samo Hudoklin[3], Dr. Mateja Erdani Kreft[3], Dr. Nina Kostevsek[1,2] *[1]Jozef Stefan Institute, Ljubljana, Slovenia, [2]Jozef Stefan International Postgraduation School, Ljubljana, Slovenia, [3]Institute for Cell Biology, Medical Facuty University of Ljubljana, Ljubljana, Slovenia*	**OPTOELECTRONIC PROPERTIES OF A DISPERSION OF CdSe QUANTUM DOTS WITHIN A CDS BARRIER MATERIAL** **Mr Emanuele Alberto Slejko**[1], PhD Vanni Lughi[1] *[1]Department of Engineering and Architecture, Università Degli Studi Di Trieste, Trieste, Italy*		**TOWARDS A MORE SUSTAINABLE MANUFACTURING OF ADVANCED MULTIPHASE STEELS THROUGH THE ACCELERATION OF BAINITE FORMATION** **Mr. Alfonso Navarro-López**[1], Dr. Javier Hidalgo Garcia[1], Prof. dr. ir. Jilt Sietsma[1], Dr. Maria J. Santofimia Navarro[1] *[1]Delft University of Technology, Delft, Netherlands*
16.40	*HIGHLIGHT* **ONE-STEP ROUTE TO IRON OXIDE HOLLOW NANOCUBOIDS BY CLUSTER CONDENSATION FOR THE AS REMOVAL IN DRINKING WATER** **Dr Lluis Balcells**[1], Dr Carlos Martinez-Boubeta[2], Sr José Cisneros-Fernández[1], Ms Aanchal Alagh[1], Mr Jorge Flores[3], Dr. Bernat Bozzo[1], Dr Judit Oro[1], Ms Núria Bagués[1], Dr Konstantinos Simeonidis[4], Prof Jordi Arbiol[5], Dr Carlos Frontera[1], Dr Narcís Mestres[1], Prof Benjamin Martinez[1] *[1]Icmab-csic, Bellaterra, Spain, [2]Freelancer, Santiago de Compostela, Spain, [3]Universidad Técnica Federico Santa María, Valparaiso, Chile., [4]University of Thessaly, Thessaloniki, Greece, [5]Institució Catalana de Recerca i Estudis Avancats, Barcelona, Spain*	**SYNTHESIS AND OPTICAL CHARACTERIZATION OF HIGHLY LUMINESCENT SILICA COATED CdSe/CdS/ZnS CORE/SHELL QUANTUM DOTS** **Ms. Elleke van Harten**[1], Ms. Jantina Fokkema[1,2], Prof. dr. Andries Meijerink[1] *[1]Condensed Matter and Interfaces, Debye Institute for Nanomaterials Science, Utrecht University, Utrecht, Netherlands, [2]Soft Condensed Matter and Biophysics, Debye Institute for Nanomaterials Science, Utrecht University, Utrecht, Netherlands*		**NEW PROCESS OF STEEL HEAT TREATMENT LEADING TO A MULTIPHASE, NANOCRYSTALLINE MICROSTRUCTURE WITH HIGH MECHANICAL PROPERTIES** **Professor Wieslaw Swiatnicki**[1], Piotr Radowski[1], Mariusz Dabrowski[1], Karolina Dudzinska[1], Dr Emilia Skolek[1] *[1]Warsaw University of Technology, Faculty of Materials Science & Technology, Warszawa, Poland*

Symposium	B2	B3	B7	B8
Room	Aimilios Riadis Hall/M2	CR I Hall/M2	CR III Hall/M2	Conference Room 1/M1
Session Title	Titanium	Polycrystalline Ni Base Superalloys II	Design and Synthesis of MOFs and Innovative Hybrids	Physical Properties
Chairperson	Guillermo Renquena	S. Milenkovic	Bartolomeo Civalleri	Nick Jones
15.00	**IMPROVING THE MECHANICAL PROPERTIES OF THE BETA TITANIUM ALLOY Ti 38-644 BY MEANS OF THERMOHYDROGEN PROCESSING** **Prof. Dr. Hans-Juergen Christ**[1], Vitali Macin[1], Peter Schmidt[2] *[1]Universitaet Siegen, Siegen, Germany, [2]SGS Institut Fresenius GmbH, Dortmund, Germany*	**EFFECTS OF STRAIN RATE AND TEMPERATURE VARIATION ON DISLOCATION STRUCTURES AND FAULTS IN A POLYCRYSTALLINE Ni-BASED SUPERALLOY** **Regina Schlütter**[1], Olivier Messé[1], Enrique Galindo-Nava[1], Thomas Jackson[2], Catherine Rae[1] *[1]Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, CB3 0FS, United Kingdom, [2]Rolls-Royce plc, Derby, DE24 8BJ, United Kingdom*	**ONE-POT SYNTHESIS OF NOVEL BASIC BARIUM-PYROGLUTAMATE-BASED MOF** **Dr. Gisela Orcajo**[1], PhD. Pedro Leo[1], Dr. David Briones[1], Dr. Antonio Rodríguez-Diéguez[2], Prof. Guillermo Calleja[1] *[1]Department of Chemical and Energy Technology, Universidad Rey Juan Carlos, Móstoles, España, [2]Inorganic Chemistry Department, University of Granada, Granada, Spain*	**TRACER DIFFUSION IN HIGH ENTROPY ALLOYS** **Dr. Sergiy Divinski**[1] *[1]Institute of Materials Physics, University of Münster, Germany, Münster, Germany*
15.20	**EFFECT OF CONSTITUENT PHASES ON MECHANICAL PROPERTIES OF A BETA TITANIUM ALLOY** **Seung Eon Kim**[1], Ka Ram Lim[1], Young Sang Na[1] *[1]Korea Institute Of Materials Science, Changwon, South Korea*	**THE EFFECTS OF MICROSTRUCTURE AND MICROTEXTURE GENERATED DURING SOLIDIFICATION ON DEFORMATION MICROMECHANISM IN IN713C NICKEL BASED SUPERALLOY** **Mr. Gang Liu**[1], Mr. Sean Winwood[2], Mrs. Kaite Rhodes[2], Dr. Soran Birosca[1] *[1]College of Engineering, Swansea University, Swansea, United Kingdom, [2]Cummins Turbo Technologies, Huddersfield HD1 6RA, United Kingdom*	**MOFs BUILT UP FROM (POLY)PHENOLATE LIGANDS: CHALLENGES AND OPPORTUNITIES** **Thomas Devic**[1,2], Lucy Cooper[2], Georges Mouchaham[2], Hala Assi[2], Tania Hidalgo[2], Martin Gorman[2], Laura Pardo Perez[2], Nathalie Guillou, Charlotte Martineau[2], Christian Serre[2], Patricia Horcajada[2] *[1]CNRS - Institut des Materiaux Jean Rouxel, Nantes, France, [2]CNRS - Institut Lavoisier Versailles, Versailles, France*	**MICROSTRUCTURE AND HIGH TEMPERATURE OXIDATION BEHAVIOR OF REFRACTORY HIGH ENTROPY ALLOYS Nb-Mo-Cr-Ti-Al AND Ta-Mo-Cr-Ti-Al** **Dr.-Ing. Bronislava Gorr**[1], M.Sc. Franz Mueller[1], Prof. Hans-Juergen Christ[1], Dipl.-Ing. Hans Chen[2], Dr.-Ing. Alexander Kauffmann[2], Prof. Martin Heilmaier[2] *[1]University of Siegen, Siegen, Germany, [2]Karlsruhe Institute of Technology, Karlsruhe, Germany*
15.40	**INVESTIGATION OF THE CHEMICAL PARTITIONING DURING THE DECOMPOSITION OF THE BETA PHASE IN Ti-5553 ALLOY** **Mr. Morgan Goetz**[1,4], Mr. Moukrane Dehmas[2], Mrs. Elisabeth Aeby-Gautier[1], Mr. Benoît Appolaire[3], Mrs. Sandra Andrieu[4], Mrs. Marion Descoins[5], Mr. Dominique Mangelinck[5] *[1]Institut Jean Lamour, Metz, France, [2]CIRIMAT - ENCIASET, Toulouse, France, [3]Laboratoire d'Etude des Microstructures - ONERA, Chatillon, France, [4]Safran Landing Systems, Oloron Sainte Marie, France, [5]IM2NP, Faculté des Sciences et Techniques , Marseille, France*	**EFFECTS OF ADDITION OF LANTHANIDE OXIDES ON MICROSTRUCTURE EVOLUTION AND MECHANICAL PROPERTIES OF ALLOY 690 BASED OXIDE DISPERSION STRENGTHENED ALLOYS** **Dr Young-bum Chun**[1], Dr Gyeong Su Shin[1], Mr Chang Hee Han[1], Dr Jinsung Jang[1] *[1]Nuclear Materials Development Division, Korea Atomic Energy Research Institute, Deajeon, South Korea*	*HIGHLIGHT* **SMART supraMOFs: SMART SUPRAMOLECULAR ASSEMBLY WITH IN-SITU GENERATED MOF CONSTITUENTS** **Mr. Abhijeet Chaudhari**[1], Professor Jin-Chong Tan[1] *[1]Department of Engineering Science, University Of Oxford, Oxford, United Kingdom*	**DETERMINATION OF LATTICE DISTORTION AND MECHANICAL PROPERTIES OF SINGLE PHASE HIGH-ENTROPY ALLOYS** **Junhee Han**[1], Pramote Thirathipviwat[1,2], Professor Jens Freudenberger[1,3], Jozef Bednarcik[4], Thomas Gemming[1] *[1]IFW Dresden, Dresden, Germany, [2]TU Dresden, Institute of Materials Science, Dresden, Germany, [3]TU Bergakademie Freiberg, Institute of Materials Science, Freiberg, Germany, [4]DESY Photon Science, Hamburg, Germany*
16.00	**ORIGIN OF {332}<113> TWINNING SYSTEM IN METASTABLE BETA TITANIUM ALLOYS** **Dr. Philippe Castany**[1], Dr. Yang Yang[1], Dr. Emmanuel Bertrand[2], Pr. Thierry Gloriant[1] *[1]INSA Rennes, ISCR-CM, Rennes, France, [2]Institut des Matériaux Jean Rouxel (IMN), Nantes, France*	**THE EFFECTS OF FORGING STRAIN ON GRAIN SIZE EVOLUTION IN RR1000 NICKEL BASE SUPERALLOY DURING SUPER SOLVUS HEAT TREATMENT.** **Mr Benjamin Jeans**[1], Dr Mark Hardy[2], Mr Iain Parr[2], Dr Soran Birosca[1] *[1]Institute of Structural Materials, United Kingdom, [2]Rolls Royce plc, United Kingdom*	**GEL-BASED SHAPING OF ZIRCONIUM METAL-ORGANIC FRAMEWORKS** **Dr. Bart Bueken**[1], Niels Van Velthoven[1], Dr. Tom Willhammar[2], Prof. Rob Ameloot[1], Prof. Sara Bals[2], Prof. Dirk De Vos[1], Dr. Thomas Bennett[3] *[1]Centre for Surface Chemistry and Catalysis, Ku Leuven, Leuven, Belgium, [2]EMAT, University of Antwerp, Antwerp, Belgium, [3]Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, United Kingdom*	**ASSESSING LOCAL LATTICE STRAIN IN AN HEA USING NEUTRON TOTAL SCATTERING** **Mr Lewis R Owen**[1,2], Dr Helen Y Playford[2], Dr Ed J Pickering[3], Dr Howard J Stone[1], Dr Matthew Tucker[4], Dr Nicholas G Jones[1] *[1]Department of Materials Science and Metallurgy, University Of Cambridge, Cambridge, UK, [2]ISIS Neutron and Muon Source, STFC, Didcot, Oxford, UK, [3]School of Materials, University of Manchester, Manchester, UK, [4]Spallation Neutron Source, Oak Ridge National Laboratory, US*
16.20	**MICROSTRUCTURAL OPTIMIZATION AND DEFORMATION MECHANISM STUDY OF A METASTABLE BETA TITANIUM ALLOY** **Dr Junheng Gao**[1], Prof. W.Mark Rainforth[1] *[1]The University Of Sheffield , United Kingdom*	**INFLUENCE OF THE MICROSTRUCTURE AND STRESS ON THE CREEP DEFORMATION MICROMECHANISMS IN THE AD730™ Ni-BASED SUPERALLOY** **Winnie Vultos**[1], Florence Pettinari-Sturmel[1], Muriel Hantcherli[1], Joël Douin[1], Louis Thébaud[2,3], Patrick Villechaise[2], Jonathan Cormier[2], Alexandre Devaux[3] *[1]CEMES-CNRS , BP 94347, 29 rue Jeanne Marvig, 31055 Toulouse cedex [4], France, [2]Institut Pprime, UPR CNRS 3346 Physics and Mechanics of Materials Department, ISAE-ENSMA BP 40109, 86961 Futuroscope - Chasseneuil, France, [3]Aubert & Duval, Site des Ancizes BP1, 63770 Les Ancizes Cedex, France*	**NOVEL FUNCTIONAL 3D POROUS BISMUTH-BASED METAL-ORGANIC FRAMEWORK** **Dr. Sérgio M. F. Vilela**[1], Dr. Thomas Devic[2], Dr. Patricia Horcajada[1] *[1]IMDEA Energy, Móstoles, Spain, [2]Institut de Matériaux de Nantes, Nantes, France*	**PHASE-FIELD SIMULATION OF TRACER DIFFUSION IN HIGH ENTROPY ALLOYS** **Katrin Abrahams**[1], Daniel Gaertner[2], Matthias Stratmann[1], Dr. Oleg Shchyglo[1], PD Dr. S.V. Divinski[2], Prof. Dr. Ingo Steinbach[1] *[1]Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Ruhr-University Bochum, Germany, [2]Institute of Materials Physics, University of Münster, Germany*
16.40	**CHARACTERIZATION OF ENERGY DISSIPATION CAPACITY OF β METASTABLE TITANIUM ALLOYS AS A FUNCTION OF MICROSTRUCTURE** **Dr. Wafa Elmay**[1], Xavier Gabrion[2], Associate Professor Pascal Laheurte[1], Associate Professor Sophie Berveiller[1] *[1]Laboratory LEM3 , UMR CNRS 7239, Metz, France,* *[2]Laboratory FEMTO-ST UMR 6174, 25000 Besançon, France*	**INFLUENCE OF A THERMOMECHANICAL TREATMENT ON γ'PRECIPITATES AND THE CREEP BEHAVIOR OF THE NEW NICKEL BASE SUPERALLOY AD730** **Anne Hesselink**[1], Mikhail Solovev[1], Jan-Marc Tiemann[1], Prof. Dr.-Ing. Ulrich Krupp[1], Prof. Dr.-Ing Bernhard Adams[1] *[1]Hochschule Osnabrueck, Osnabrueck, Germany*		**ELASTIC BEHAVIOR OF SINGLE CRYSTAL HIGH ENTROPY CANTOR-ALLOY** **Dipl.-Ing. Fabian Krieg**[1], M.Sc. Mike Mosbacher[1], Prof. Dr.-Ing. Uwe Glatzel[1] *[1]Metals and Alloys, University Bayreuth, Bayreuth, Germany*

Symposium	B10	B11	C1	C4
Room	Maurice Saltiel Hall II/M2	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1
Session Title	Corrosion & Wear II	Steels	C1.2: Coatings deposition routes and novel characterization techniques 2/5 Deposition routes II	Additive Manufacturing of polymers 1
Chairperson	Ahmet Yilmaz	T. Klüsner	N. Bagcivan, H. Biederman	Ugo Lafont
15.00	**HYDROGEN EMBRITTLEMENT SUSCEPTIBILITY OF NICKEL BASE ALLOYUNS N07718 IN RELATION TO THE MATERIAL MICROSTRUCTURE**	**INFLUENCE OF THE G-PHASE PRECIPITATION ON MECHANICAL PROPERTIES IN AGED DUPLEX STAINLESS STEEL**	*KEYNOTE/INVITED* **AN APPLICATION FOR THE STATIC LARGE AREA PVD TECHNOLOGY WITH A ROTARY CATHODE ARRAY: DEPOSITION OF NEXT GENERATION MOX ACTIVE LAYERS FOR AM-TFT DISPLAY BACKPLANES**	**A STUDY OF ADDITIVELY MANUFACTURED SPACE HARDWARE - TOWARDS AN END-TO-END PROCESS**
	Olesya Gosheva[1], Prof. Matthias Oechsner, Dr. Georg Andersohn, Dr. Jutta Kloewer[2]	**Romain Badyka**[1], Dr Cristelle Pareige[1], Dr Sébastien Saillet[2], Dr Christophe Domain[2]	**Dr. Marcus Bender**[1], Hyun Chan Park[1], Ajay Sampath Bhoolokam[1], Andreas Klöppel[1], Markus Hanika[1]	**Dr. Tommaso Ghidini**[1], Dr. Martina Meisnar[1], Dr. Johannes Gumpinger[1], Dr. Laurent Pambaguian[1], Dr. Ana Brandao[1]
	[1]Institut Für Werkstoffkunde TU-darmstadt, Darmstadt, Germany, [2]VDM Metals International GmbH, Altena, Germany	*[1]Groupe de Physique des Matériaux Normandie Université, UMR 6634 CNRS, Rouen, France, [2]EDF R&D Département Matériaux et Mécanique des Composants, Moret sur Loing, France*	*[1]Applied Materials GmbH & Co. KG, Alzenau, Germany*	*[1]European Space Agency, Noordwijk, The Netherlands*
15.20	**SYSTEMATIC INVESTIGATION OF MICROSTRUCTURAL AND ENVIRONMENTAL EFFECTS ON HYDROGEN EMBRITTLEMENT OF FERRITIC STEELS**	**CHARACTERISATION OF DEFORMATION AND FRACTURE BEHAVIOR OF STAINLESS DUPLEX STEELS AT SUB-ZERO TEMPERATURES BY MEANS OF EBSD-ANALYSIS**		**INFLUENCE OF SPATIAL ORIENTATION ON MECHANICAL AND FUNCTIONAL PROPERTIES OF 3D PRINTED THERMOPLASTIC POLYMER PARTS**
	M.Sc. Waldemar Krieger[1], Dr. Sergiy Merzlikin[1], Dr. Asif Bashir[1], Dr. Hauke Springer[1], Dr. Michael Rohwerder[1]	**Dr.-Ing. Marina Knyazeva**[1,2], Prof. Dr.-Ing. Frank Walther[1], Prof. Dr.-Ing. Michael Pohl[2]		Anna Daurskikh[1], **Antonella Sgambati**[2], David Graça[1], Dr. Marco Berg[2], Aurora Baptista[3], Mario Angelo[3], Dr. Ugo Lafont[4]
	[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany	*[1]TU Dortmund University / Department of Materials Test Engineering (WPT), Dortmund, Germany, [2]Ruhr-University Bochum / Department of Materials Testing (WP), Bochum, Germany*		*[1]Sonaca Space GmbH, Berlin, Germany, [2]OHB System AG, Bremen, Germany, [3]BEEVERYCREATIVE, Aveiro, Portugal, [4]ESA, Noordwijk, Netherlands*
15.40	**COPPER SURFACE CHANGES DURING WET PLATING TESTS IN ANTI-BACTERIAL SURFACE RESEARCH**	**INFLUENCE OF MECHANICAL STRESS ON THE PROPERTIES OF STEELS DESIGNED FOR GENERATION IV. REACTORS FUEL CLADDING**	**THERMAL SPRAY COATINGS DEPOSITION ON BALLISTIC ARAMIDE TEXTILES FOR IMPROVED PERFORMANCE LIGHTWEIGHT PROTECTIVE PANELS**	**A STUDY ON THE INFLUENCE OF FIBRE CONTENT ON THE MECHANICAL BEHAVIOUR OF 3D PRINTED THERMOPLASTIC PARTS**
	Jiaqi Luo[1,2], Dr. Christina Hein[3], Prof. Dr. Marc Solioz[4], Prof. Dr. Jean François Pierson[2], Prof. Dr. Frank Mücklich[1]	**Ing. Zbyněk Špirit**[1,2], Ing. Michal Chocholoušek[1], Marek Šíma[1]	**Mr Ilias Georgiopoulos**[1], Mr Petros Ioannou[1], Ms Zoi Tatoudi[1], Dr. Silvia Pavlidou[1], Dr. Constantina Andreouli[1]	Isaac Ferreira[1,2], **PhD Margarida Machado**[1], André J. Cavaleiro[1], Rui Neto[1,2], Jorge Lino Alves[1,2], Ana Reis[1,2]
	[1]Chair of Functional Materials, Saarland University, Germany, [2]Institut Jean Lamour, Université de Lorraine, France, [3]Inorganic Solid State Chemistry, Saarland University, Germany, [4]Department of Clinical Research, University of Bern, Switzerland	*[1]Research Centre Rez, Pilsen, Czech Republic, [2]University of West Bohemia, Pilsen, Czech Republic*	*[1]Mirtec S.a, 34100 Chalkida, Greece*	*[1]INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto, Portugal, [2]FEUP - Faculty of Engineering of University of Porto, Porto, Portugal*
16.00	**ELECTROCHEMICAL PERFORMANCE OF HARDMETAL ALLOYS IN DIFFERENT CORROSIVE MEDIA**	**QUANTIFICATION OF PEARLITE SPHEROIDISATION IN RAILWAY WHEEL STEEL USING ORIENTATION IMAGING MICROSCOPY AND MICROSTRUCTURAL IMAGE ANALYSIS**	**MICROSTRUCTURAL ANALYSIS OF 200 µm THIN SHEETS COATED BY LASER CLADDING**	**TWO-PHOTON POLYMERIZATION TECHNIQUE FOR POLYMERIC PHOTONIC STRUCTURES**
	Dr. Rúben Santos[1], Fábio Rodrigues[2], Prof. Carlos Fonseca[1], Dr. Eduardo Soares[2], Prof. Manuel Vieira[1], Prof. Luís Malheiros[1]	**Lic. Eng. Dimitrios Nikas**[1], Docent Johan Ahlström[1]	**Tobias Gabriel**[1], Dr.-Ing. Florian Scherm[1], Prof. Dr. Marek Gorywoda[2], Prof. Dr.-Ing. Uwe Glatzel[1]	**Lei Zheng**[1,2], Kestutis Kurselis[1], Prof. Cartsen Reinhardt[1,2,3], Dr. Andrey Evlyukhin[1], Dr. Roman Kiyan[1], Prof. Boris Chichkov[1]
	[1]CEMUC, Department of Metallurgical and Materials Engineering, University of Porto, Porto, Portugal, [2]DURIT, Metalurgia Portuguesa do Tungsténio, Lda, Albergaria-a-Velha, Portugal	*[1]Chalmers University of Technology, Gothenburg, Sweden*	*[1]University Bayreuth, Metals And Alloys, Bayreuth, Germany, [2]University of Applied Sciences Hof, Materials Engineering, Hof, Germany*	*[1]Laser Zentrum Hannover e.v., Hannover, Germany, [2]Laboratory for Nano and Quantum Engineering, Hannover, Germany, [3]Hochshule Bremen, Bremen, Germany*
16.20	**EVALUATION OF ORGANIC COATINGS ON METALLIC SUBSTRATES FOR USE IN FOOD PACKAGING**	**THE RELATION OF GRAIN SIZE DISTRIBUTION AND MECHANICAL PROPERTIES OF INTERSTITIAL FREE STEEL**	**EFFECT OF BATH COMPOSITION FOR Ni-P COATINGS ON CARBON FIBRES**	**4D PRINTING FOR SPACE APPLICATIONS**
	Dr Azarias Mavropoulos[1,2], Dr Oliver Lewis[2]	**Mr. Wei Li**[1], Prof.dr.ir. Jilt Sietsma[1]	Anıl Alten[1], Dr. Gökçe Hapçı Ağaoğlu[1], Dr. Eray Erzi[1], Assoc. Prof. Derya Dışpınar[1], **Prof. Dr. Gökhan Orhan**[1]	**Dr Adam Mitchell**[1], Dr Ugo Lafont[1], Dr Malgorzata Holynska[1], Dr Christopher Semprimoschnig[1]
	[1]Physical Metallurgy Laboratory, Mechanical Engineering Department, Aristotle University of Thessaloniki, THESSALONIKI, Greece, [2]Materials and Engineering Research Institute, Sheffield Hallam University, SHEFFIELD, United Kingdom	*[1]Department of Materials Science and Engineering, Delft University of Technology, Mekelweg 2, 2628 CD Delft, The Netherlands*	*[1]Istanbul University*	*[1]Components and Materials' Physics and Chemistry Evaluation & Standardisation Division (TEC-QEE) European Space Research and Technology Centre (ESTEC), European Space Agency (ESA), Noordwijk, Netherlands*
16.40	**AN X-RAY DI FFRACTION ANALYSIS OF THE SURFACE AND SUB-SURFACE DAMAGE OF 0.2 WT%-C MARTENSITE AFTER THREE-BODY ABRASION**	**CRACK INITIATION IN FERRITIC MARTENSITIC STEEL T91 AND AUSTENITIC 1.4970 IN PbBi**	**ECR PLASMA DEPOSITED a-SiCN: H AS INSULATING LAYER IN PIEZOCERAMIC MODULES**	
	Dr Subhankar Das Bakshi[1], **Ms. Divya Sinha**[1], Dr Sandip Ghosh Chowdhury[2], Mr Vinay Mahashabde[1]	Michal Chocholoušek[1], **Fosca Di Gabriele**[1], Anna Hojná[1], Zbyněk Špirit[1]	**Dr. Siegfried Peter**[1], B. Sc. Yevgen Vasin[1], Dr. Florian Speck[1], M. Sc. Samir Mammadov[1], Prof. Dr. Thomas Seyller[1]	
	[1]Tata Steel Limited, Jamshedpur, India, [2]National Metallurgical Laboratory, CSIR, Jamshedpur, India	*[1]Centrum výzkumu Řež s.r.o., Husinec-Řež, Czech Republic*	*[1]Technische Universität Chemnitz, Institut für Physik, Professur für Technische Physik, D-09107 Chemnitz, Germany*	

Symposium	C10	D1	D2	D3
Room	F 319/M1	Artist Café/M1	Museum Hall /M2	I-15/M1
Session Title	New SPD methods and new application areas of SPD	Tomography & Topography	Nanostructures, nanomaterials & low dimensional systems I	Metals under extreme conditions
Chairperson	Yu. Ivanisenko, T Lowe	Peter Voorhees, Eric Maire	Vincent Mauchamp	Dimitris Christofilos
15.00	*KEYNOTE/INVITED* **THERMOMECHANICAL PROCESSING AND SEVERE PLASTIC DEFORMATION OF HIGH ENTROPY ALLOYS** **Dr. Nikita Stepanov**[1], Dr. Sergey Zherebtsov[1], Dr. Yulia Ivanisenko[2], Professor Gennady Salishchev[1,C] *[1]Belgorod State University, Belgorod, Russian Federation, [2]Karlsruhe Institute of Technology, Institute of Nanotechnology, Karlsruhe, Germany*	**SHEAR DOMINATED DUCTILE DAMAGE AND DEFORMATION: IN SITU LAMINOGRAPHY MEASUREMENTS** **Dr. Thilo Morgeneyer**[1], Dr. Yin Cheng[1,2], Dr. Lukas Helfen[2,3] *[1]Mines Paristech, Centre des Matériaux, Evry (Cedex), France, [2]KIT/Institute of photon science and synchrotron radiation, Karlsruhe, Germany, [3]The European Synchrotron (ESRF), France*	*HIGHLIGHT* **STRUCTURE OF COLLOIDAL MONOLAYER In_2Se_3 NANOSHEETS** Guilherme Almeida[1,5], **Giovanni Bertoni**[2], Cinzia Giannini[3], Roberto Gaspari[1], Sedat Dogan[1], Stefano Perissinotto[4], Sandeep Ghosh[1], Roman Krahne[1], Liberato Manna[1] *[1]Istituto Italiano di Tecnologia (IIT), Genova, Italy, [2]IMEM, Consiglio Nazionale delle Ricerche, Parma, Italy, [3]Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, Bari, Italy, [4]Istituto Italiano di Tecnologia (IIT@ PoliMi), Milano, Italy, [5]Università degli Studi di Genova, Genova, Italy*	*HIGHLIGHT* **EQUATION OF STATE AND SOUND VELOCITY OF CONDENSED LIQUID ALKALINE ELEMENTS BY PICOSECOND ACOUSTICS AT HIGH PRESSURE AND TEMPERATURE** **Professor Frederic Decremps**[1], Assistant Professor Simon Ayrinhac[1], researcher Michel Gauthier[1] *[1]Sorbonne Université, Paris, France*
15.20		**A PROCESS REPLICATOR FOR IN SITU SYNCHROTRON X-RAY CHARACTERISATION OF SEMI-SOLID MATERIALS PROCESSING** **Professor Peter Lee**[1,2], Dr Biao Cai[1,2], Dr Azeem Mohammed[1,2], Dr Peter Rockett[2], Dr Robert Atwood[2,3] *[1]School of Materials, The University Of Manchester, Manchester, United Kingdom, [2]Research Complex at Harwell, Harwell, United Kingdom, [3]Diamond Light Source, Harwell, United Kingdom*	**STRAINED (Zn,Cd,Mg,Mn)Te NANOWIRES STUDIED BY GEOMETRIC PHASE ANALYSIS AND SCANNING ELECTRON DIFFRACTION** **Prof. Slawomir Kret**[1], MSc Anna Kaleta[1], MSc Bogusława Kurowska[1], MSc Marta Bilska[1], dr Piotr Wojnar[1], MSc Jakub Płachta[1] *[1]Institute of Physics Polish Academy of Sciences, al. Lotników 32/46, 02-668 Warsaw, Poland, Warsaw, Poland*	**RUBIDIUM AT EXTREME CONDITIONS** **Dr. Simone De Panfilis**[1], Dr. Federico Gorelli[2], Dr. Mario Santoro[2] *[1]CLNS - Istituto Italiano di Tecnologia, Rome, Italy, [2]Istituto Nazionale di Ottica, CNR-INO, Firenze, Italy*
15.40	*HIGHLIGHT* **MICROSTRUCTURAL EVOLUTION IN A SINGLE PHASE FCC HIGH ENTROPY ALLOY DURING HIGH PRESSURE TORSION** Dr. Amit Sharma[1], Mr. Rajib Kalsar[1], **Prof. Dr. Satyam Suwas**[1] *[1]Indian Institute of Science, Bangalore, Bangalore, India*	**3D IMAGING OF DISLOCATION AT THE ONSET OF PLASTICITY IN A GOLD SUB-MICRON CRYSTAL** **Dr. Dupraz Maxime**[1,5], Dr. Thomas Cornelius[2], Dr. Guillaume Beutier[1], Dr. Gilbert Chahine[3], Pr. Dr. Eugene Rabkin[4], Dr. Marie-Ingrid Richard[2], Dr. Stéphane Labat[2], Dr. Guillaume Parry[1], Dr. Marc Verdier[1], Pr. Dr. Olivier Thomas[2] *[1]SIMaP, Université Grenoble Alpes & CNRS, Grenoble, France, [2]Aix-Marseille Université, CNRS, IM2NP UMR7334, Marseille, France, [3]ESRF, Grenoble, France, [4]Technion , Haifa, Israel, [5]Swiss Light Source Paul Scherrer Institut, Villigen, Switzerland*	**STUDY OF COLLOIDAL QUANTUM DOTS HETEROSTRUCTURES BY ABERRATION-CORRECTED SCANNING TRANSMISSION ELECTRON MICROSCOPY** **Dr Gilles Patriarche**[1], Dr Benoît Dubertret *[1]Centre de Nanosciences et de Nanotechnologies (C2N), Marcoussis, France, [2]Laboratoire de Physique et d'Etude des Matériaux, ESPCI, Paris, France*	**THE HIGH PRESSURE PHASE BEHAVIOR OF 'IDEAL' AMORPHOUS GERMANIUM** **Bianca Haberl**[1], Jamie J. Molaison[2], Marshall T. McDonnell[1], Eero Holmström[3], Jörg C. Neuefeind[1], Chris J. Benmore[4], Luke .L Daemen[1], Reinhard Boehler[1,5], Matthew G. Tucker[1] *[1]Chemical and Engineering Materials Division, Neutron Sciences Directorate, Oak Ridge National Laboratory, Oak Ridge, United States, [2]Instrument and Source Division, Neutron Sciences Directorate, Oak Ridge National Laboratory, Oak Ridge, United States, [3]Department of Applied Physics, COMP Centre of Excellence, Aalto University, Aalto, Finland, [4]X-ray Science Division, Argonne National Laboratory, Argonne, United States, [5]Geophysical Laboratory, Carnegie Institution of Sciences, Washington, United States*
16.00	*HIGHLIGHT* **ATOMIC LEVEL STRUCTURAL MODIFICATIONS INDUCED BY SEVERE PLASTIC SHEAR DEFORMATION IN SEVERAL BULK METALLIC GLASSES** **Prof. Jianzhong Jiang**[1], assoc. prof. qingping cao[1], assoc. prof. xiaodong wang[1], ms. suya liu[1], prof. dongxian zhang[1], dr. yulia Ivanisenko[1] *[1]Zhejiang University, Hangzhou, China*	**THE EFFECT OF STRAIN RATE AND CENOSPHERE VOLUME FRACTION ON THE 3D FAILURE MECHANISM IN EPOXY SYNTACTIC FOAMS** **Dr Peifeng Li**[1], Dr Ruoxuan Huang[2] *[1]University of Glasgow, Glasgow, United Kingdom, [2]Singapore Institute of Manufacturing Technology, Singapore, Singapore*	**COMPOSITION AND STRAIN DETERMINATION IN ULTRA-THIN InN/GaN QUANTUM WELLS FROM ELECTRON MICROSCOPY OBSERVATIONS** **Assoc. Professor Georgios Dimitrakopulos**[1], Dr Calliope Bazioti[1], Isaak Vasileiadis[1], Assist. Professor Julita Smalc-Koziorowska[2], Assoc. Professor Slawomir Kret[3], Dr Emmanouil Dimakis[4], Professor Thomas Kehagias[1], Professor Theodoros Karakostas[1], Professor Theodore Moustakas[4], Professor Philomela Komninou[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]Institute of High Pressure Physics, Polish Academy of Sciences , Warsaw, Poland, [3]Institute of Physics, Polish Academy of Sciences, Warsaw, Poland, [4]Department of Electrical and Computer Engineering, Photonics Center, Boston, USA*	**STRUCTURAL TRANSITION IN TIN AT HIGH PRESSURES** **Dr Anna Ivanova**[1,2], Dr Ivan Trojan[1,2,3], Dr Alexander Gavriliuk[1,2,3] *[1]Shubnikov Institute of Crystallography of FSRC «Crystallography and Photonics» of RAS, Moscow, Russia, [2]Institute for Nuclear Research, Russian Academy of Sciences, Troitsk, Moscow, Russia, [3]REC «Functional Nanomaterials», Immanuel Kant Baltic Federal University, Kaliningrad, Russia*
16.20	*HIGHLIGHT* **EFFECT OF ULTRASONIC TREATMENT ON THE MICROSTRUCTURE OF BULK NANOSTRUCTURED MATERIALS PROCESSED BY SEVERE PLASTIC DEFORMATION** **Dr. Airat Nazarov**[1], Dr. Asiya Samigullina[1], Dr. Ramil' Murzaev[1], Dr. Alexander Zhilyaev[1], Aygul' Mukhametgalina[1,2], Dr. Yury Tsarenko[3], Prof. Vasily Rubanik[3] *[1]Institute for Metals Superplasticity Problems, Russian Academy of Sciences, Ufa, Russian Federation, [2]Bashkir State University, Ufa, Russia, [3]Institute of Technical Acoustics, National Academy of Sciences of Belarus, Vitebsk, Belarus*	**NONDESTRUCTIVE MATERIALS CHARACTERIZATION IN 3D BY LABORATORY DIFFRACTION CONTRAST TOMOGRAPHY** **Dr. Leah Lucas Lavery**[1], Dr Erik Lauridsen[2], Christian Holzner[1], Florian Bachmann[2], Alan Lyckegaard[2], Lars-Oliver Kautschor[1] *[1]Carl Zeiss X-ray Microscopy, Pleasanton, United States, [2]Xnovo Technology ApS, Koge, Denmark*	**3D STRAIN FIELD AND STEM CONTRAST MODELING OF CORE SHELL NANOWIRES CONTAINING MAGNETIC NANOPRECIPITATIONS** **Prof. Paweł Dłużewski**[1], Dr. Rafał Wierzbicki[1], Dr. Piotr Tauzowski[1], Prof. Sławomir Kret[2], MSc Anna Kaleta[2], Prof. Janusz Sadowski[2,3,4] *[1]Institute of Fundamental Technological Research, Polish Academy of Sciences, ul. Pawińskiego 5B, Warszawa, Poland, [2]Institute of Physics, Polish Academy of Sciences, al. Lotników 32/46, Warszawa, Poland, [3]MAX-IV laboratory, Lund University, P.O. Box 118, Lund, Sweden, [4]Department of Physics and Electrical Engineering, Linnaeus University, Kalmar, Sweden*	**SELF-SUSTAINING HIGH PRESSURE PHASE TRANSITION IN IRON** **Dr François Baudelet**[1], Dr Lucie Nataf[1], Dr Sakura Pascarelli[2], Dr Olivier Mathon[2] *[1]Cnrs-synchrotronsoleil, Antony, France, [2]ESRF, Grenoble, France*
16.40	**MICROALLOYED STEEL LAMINATED COMPOSITE PROCESSED BY HIGH-STRAIN RATE COMPRESSION TEST** **M.Eng Marcin Kwiecień**[1], M.Eng Remigiusz Błoniarz[1], M.Eng Szymon Bajda[1], Prof. Janusz Majta[1] *[1]AGH University of Science and Technology, Krakow, Poland*	**IMAGING STRAIN FIELDS BY PTYCHOGRAPHIC TOPOGRAPHY** **Steven Van Petegem**[1], Ana Diaz[1], Ainara Irastorza[1], Maxime Dupraz[1] *[1]Paul Scherrer Institut, CH-5232 Villigen, Switzerland*	**SPONSOR PRESENTATION: JEOL - DEVELOPMENT OF A NEW GENERATION MULTI-PURPOSE TRANSMISSION ELECTRON MICROSCOPE: JEOL F2** **G. Brunetti**	**NON-EQUILIBRIUM AB-INITIO MOLECULAR DYNAMIC SIMULATION OF THERMAL CONDUCTIVITY OF SOLID IRON AT PLANETARY CORE CONDITIONS** **Mr. Sheng-Ying Yue**[1], Prof. Ming Hu[1,2] *[1]Aachen Institute for Advanced Study in Computational Engineering Science (AICES), RWTH Aachen University , 52072, Aachen, Germany, [2]Institute of Mineral Engineering, Division of Materials Science and Engineering, Faculty of Georesources and Materials Engineering, RWTH Aachen University, 52072, Aachen, Germany*

Symposium	D4	D8	D9	D10
Room	Library Hall/M2	I -16/M1	Maurice Saltiel Hall I/M2	CR II Hall/M2
Session Title	Session 8 - Micro/nano-mechanics of damage II	Defects and solutes in iron alloys	Advanced Modelling of Nuclear Structural Materials (III)	Deformation
Chairperson	Cem Tasan, Christophe Pinna	Joerg Neugenbauer	N. Castin	Ebrahimi-Agoras
15.00	*HIGHLIGHT* **'QUASI' IN-SITU INVESTIGATION OF COMPLEX-PATH DEFORMATION MICRO-MECHANISMS IN STEELS** **Cem Tasan**[1], Emeric Plancher[1], Niels Vonk[1] *[1]MIT, Cambridge, USA*	**Fe-N AND Fe-C SYSTEMS: COMBINING INSIGHTS FROM EXPERIMENT AND DFT CALCULATIONS** **Prof. Dr. Andreas Leineweber**[1], Dr. Sascha Maisel[2], Dr. Shun-Li Shang[3], Prof. Dr. Zi-Kui Liu[3] *[1]Institute of Materials Science, TU Bergakademie Freiberg, Freiberg, Germany, [2]Max-Planck Institut für Eisenforschung GmbH, Düsseldorf, Germany, [3]Department of Materials Science and Engineering, The Pennsylvania State University, University Park, USA*	**NANOINDENTATION STRESS-STRAIN CHARACTERISATION OF P91 STEELS AT ELEVATED TEMPERATURES** **Ana Ruiz Moreno**[1], Marcello Conte[2], Vendulka Haiblíkova[2], Nicholas Randall[2], Peter Haehner[1] *[1]European Commission. Joint Research Centre, Petten, The Netherlands, [2]Anton Paar TriTec, Peseux, Switzerland*	*HIGHLIGHT* **MULTISCALE 3D SIMULATIONS OF DEFORMATIONS OF MICRO-SHAFTS USING CONTINUUM DISLOCATION DYNAMICS** **Alireza Ebrahimi**[1,2], Prof. Dr.-Ing. Thomas Hochrainer[1,2] *[1]University of Bremen, Bremen, Germany, [2]MAPEX Center for Materials and Processes, Bremen, Germany*
15.20	**MECHANICAL PROPERTIES CHARACTERIZATION OF IRRADIATED NUCLEAR FUEL MATERIAL MODEL AT A LOCAL SCALE** **Ronan Henry**[1], Isabelle Zacharie-Aubrun[2], Jean-Marie Gatt[2], Cyril Langlois[1], Sylvain Meille[1] *[1]INSA-Lyon, MATEIS CNRS UMR 5510, Villeurbanne, France, [2]CEA, DEN, DEC, Cadarache, Saint-Paul lez Durance, France*	**A DENSITY-FUNCTIONAL THEORY INVESTIGATION OF γ-Fe4N, α''-Fe16N2 AND ε-FE3N1+y PRECIPITATES IN AN Fe-N SOLID SOLUTION** **Sam De Waele**[1,2], Kurt Lejaeghere[1], Lode Duprez[3], Roger Hubert[3], Elke Leunis[3], Stefaan Cottenier[1,2] *[1]Center for Molecular Modeling, Ghent University, 9052 Zwijnaarde, Belgium, [2]Department of Electrical Energy, Metals, Mechanical Construction and Systems, Ghent University, 9052 Zwijnaarde, Belgium, [3]Ocas NV, 9060 Zelzate, Belgium*	**POSITRON PROBING OF RADIATION-INDUCED SWELLING IN NUCLEAR MATERIALS** **Dr. Vladimir Krsjak**[1], Dr. Yong Dai[1], Dr. Jan Kuriplach[2], Prof. Vladimir Slugen[1] *[1]Paul Scherrer Institute, Villigen, Switzerland, [2]Charles University, Prague, Czech Republik, [3]Slovak University of Technology, Bratislava, Slovakia*	**ATOMISTIC SIMULATIONS AT REDUCED STRAIN RATES OF DISLOCATION INTERACTIONS IN NANO-CRYSTALLINE Al** **Dr. Dupraz Maxime**[1], Dr. Zhen Sun[1,2], Dr. Christian Brandl[3], Pr. Dr. Helena Van Swygenhoven[1,2] *[1]Paul Scherrer Institut , Villigen, Switzerland, [2]NXMM laboratory IMX École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland, [3]Institut for Applied Materials, Karlsruhe Institute of Technology, Eggenstein Leopoldshafen, Germany*
15.40	**SETUP OF A MICROSCALE HIGH TEMPERATURE LOADING RIG FOR MICRO-FRACTURE MECHANICS** **Mr. Viswanadh Gowtham Arigela**[1], Dr. Christoph Kirchlechner[1], Prof. Dr. Gerhard Dehm[1] *[1]Max-planck-institut Für Eisenforschung GmbH, Düsseldorf, Germany*	**INTERPLAY BETWEEN MAGNETIC AND ENERGETIC PROPERTIES IN Fe-Co AND Fe-Mn ALLOYS FROM FIRST PRINCIPLES** **Anton Schneider**[1], Dr Chu Chun Fu[1], Dr Frédéric Soisson[1], Dr Cyrille Barreteau[2] *[1]DEN-Service de Recherches de Métallurgie Physique, CEA, Université Paris-Saclay, Gif sur Yvette, France, [2]SPEC, CEA, CNRS, Université Paris-Saclay, Gif sur Yvette, France*	**COMPARISON OF IN-SITU AND BULK ION IRRADIATION INDUCED MICROSTRUCTURE EVOLUTION IN FERRITIC/MARTENSITIC STEEL HT9** **Djamel Kaoumi**[1], Ce Zheng[1] *[1]North Carolina State University, Raleigh, United States*	**CONSTITUTIVE MODELS FOR THE MACROSCOPIC RESPONSE AND FIELD STATISTICS IN ELASTO-VISCOPLASTIC COMPOSITES** **Dr. Michalis Agoras**[1] *[1]University of Thessaly, Volos, Greece*
16.00	**TOUGHNESS OF DISSIMILAR WELD JOINS USING IN SITU MICROCANTILEVER TESTS** Dan Sorensen[1,2], Jesse Pischlar[1], Bernie Li[1], Joseph Stevick[3], Eric Hintsala[4], Daniel Kiener[5], Prof. Antonio Ramirez[2], **Douglas Stauffer**[4] *[1]Medtronic, PLC, Minneapolis, USA, [2]Ohio State University, Columbus , USA, [3]Liquidmetal Technologies, Rancho Santa Margarita, USA, [4]Bruker, Eden Prairie, USA, [5]Montan Universitat - Leoben, Leoben, Austria*	**MULTI-SCALE APPROACH TO DESIGN RADIATION RESISTANT ALLOYS: APPLICATION TO ALPHA-Fe** **Dr. Thomas Schuler**[1],L. Messina, P. Olsson, M. Nastar *[1]École Nationale Supérieure des Mines de Saint-Étienne, 42023 Saint Etienne, France*	*KEYNOTE/INVITED* **EFFECTS OF ION IRRADIATIONS ON THE MICRO-STRUCTURE OF AUSTENITIC STAINLESS STEELS: EXPERIMENTS AND MODELING** Bertrand Michaut[2], **Dr Thomas Jourdan**[1], Dr Joël Malaplate[2], Dr Alexandra Renault[2], Dr Faiza Sefta[3], Dr Brigitte Décamps[4] *[1]DEN-Service de Recherches de Métallurgie Physique, CEA, Université Paris-Saclay, Gif-sur-Yvette, France, [2]DEN-Service de Recherches Métallurgiques Appli-quées, CEA, Université Paris-Saclay, Gif-sur-Yvette, France, [3]EDF R&D, MMC, Moret-sur-Loing, France, [4]CSNSM, CNRS-IN2P3-Univ. Paris-Sud 11, Orsay, France*	**PARAMETRIC EVALUATION OF MECHANICAL, THERMAL AND ELECTRICAL PROPERTIES OF CNT/POLYMER MULTIFUNCTIONAL NANOCOMPOSITES USING NUMERICAL AND ANALYTICAL MODELS** **Prof. Konstantinos Tserpes**[1], Mr. Vasilis Tzatzadakis[1] *[1]University Of Patras, Patras, Greece*
16.20	**NANOFATIGUE INVESTIGATIONS ON HIERARCHICALLY STRUCTURED ZIRCONIA CERAMICS** MSc Cecilia Mueller[1], Dr.-Ing. Anke Maerten[1], Prof. (UH) Dr. rer. nat. Wolf-Dieter Mueller[2], **Prof. Dr.-Ing. Claudia Fleck**[1] *[1]Institute Of Technology Berlin, Berlin, Germany, [2]Charité - Universtitätsmedizin Berlin, Berlin, Germany*			**RECENT ADVANCEMENTS IN CORRELATIVE MICROSCOPY FOR MULTI-SCALE MATERIALS SCIENCE** **Jeff Gelb**[1], Dr. Leah Lavery[1], Luke Hunter[1], Dr. Lars-Oliver Kautschor[2], Dr. Arno Merkle[1] *[1]Carl Zeiss Microscopy, Pleasanton, United States, [2]Carl Zeiss Microscopy, Oberkochen, Germany*
16.40	**WHAT GOVERNS PLASTICITY AND DAMAGE OF LATH MARTENSITE IN STEELS?** **Dr. Francesco Maresca**[1], Dr. Varvara Kouznetsova[2], Prof. Marc Geers[2], Prof. William Curtin[1] *[1]Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, [2]Eindhoven University of Technology (TU/e), Eindhoven, The Netherlands*		**RADIATION INDUCED MICROSTRUCTURAL EVOLUTION IN AUSTENITIC STAINLESS STEELS** **Dr. Xinfu He**[1] *[1]China Institute Of Atomic Energy, Beijing, China*	**MOLECULAR DYNAMICS SIMULATION OF SHEAR DEFORMATION AND PRECIPITATION STRENGTNNING AT BCC-Fe GRAIN BOUNDARIES** **Mr Kaoru Nakamura**[1], Dr Tomohisa Kumagai[1], Dr Toshiharu Ohnuma[1] *[1]Central Research Institute Of Electric Power Industry, Yokosuka, Japan*

Symposium	E3	E4	F2
Room	Rehearsal Room 5.17/M1	Conference Room 2/M1	3-21/M1
Session Title	Photovoltaics-New Materials II	Fuel cladding	Biomaterials for Therapeutic Delivery II
Chairperson	Euripides Hatzikraniotis	Dirk Engelberg	Miguel Manzano
15.00	*HIGHLIGHT* **CUPROUS OXIDE AS ABSORBER LAYER IN HETEROJUNCTION SOLAR CELLS** **Prof B.G. Svensson**[1], Dr K. Bergum[1], MSc H.N. Riise[1], Dr R. Kumar[1], Dr A. Galeckas[1], Dr S. Gorantla[1], Prof A.E. Gunnæs[1], MSc P.F. Lindberg[1], MSc J. Gan[1], MSc M. Nyborg[1], MSc I.M. Bentsen[1], Prof E.V. Monakhov[1], Dr I.J.T. Jensen[2], Dr, Prof O.M. Løvvik[2,1], Dr, Prof S. Diplas[2] *[1]University of Oslo, Physics Department, SMN, Oslo, Norway, [2]SINTEF Materials and Chemistry, Oslo, Norway*	**ULTRAFINE-GRAINED TYPE 316L-BASED OXIDE DISPERSION STRENGTHENED STEEL** **Dr. Jinsung Jang**[1], Dr. Xiaodong Mao[2], Dr. Suk Hoon Kang[1], Dr. Tae Kyu Kim[1] *[1]Korea Atomic Energy Research Institute, Daejeon, South Korea, [2]Institute of Nuclear Energy Safety Technology, CAS, Hefei, China*	**MODULAR ULTRASOUND-RESPONSIVE NANOPARTICLES FOR DRUG DELIVERY** **Juan L. Paris**[1,2], M. Victoria Cabañas[1], Miguel Manzano[1,2], María Vallet-Regí[1,2] *[1]Dpto. Química Inorgánica y Bioinorgánica, Facultad de Farmacia, UCM, Instituto de Investigación Sanitaria Hospital 12 de Octubre i+12., Madrid, Spain, [2]Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Spain*
15.20	**STRUCTURAL CHARACTERISATION OF (Ag1-xCux)2ZnSnSe4 BY NEUTRON DIFFRACTION** **Galina Gurieva**[1], Alexandra Franz[1], Susan Schorr[1,2] *[1]Helmholtz-Zentrum Berlin, Berlin, Germany, [2]Freie Universitat Berlin, Berlin, Germany*	**IRRADIATION BEHAVIOUR OF HIGH-ENTROPY ALLOY THIN FILMS FOR COATING NUCLEAR FUEL CLADDINGS** BSc MSc Matheus A. Tunes[1], **BSc MSc PhD Vladmir Vishnyakov**[1], MPhys PhD Jonathan A. Hinks[1], BSc MSc PhD Stephen E. Donnelly[1] *[1]School of Computing and Engineering, University of Huddersfield, Huddersfield, United Kingdom*	**DESIGN AND MANUFACTURE OF ENGINEERED MULTIFUNCTIONAL STRUCTURES FOR THE BENIGN BIOACTIVATION OF CYTOTOXIC AGENTS FOR HIGHLY LOCALIZED CANCER TREATMENT** **Mr. Mohammad Alqahtani**[1], Dr. Carmen Torres-Sánchez[1], Dr Asier Unciti-Broceta[2], Dr. Ana Perez-López[2] *[1]Loughborough University, Loughborough, United Kingdom, [2]The University of Edinburgh, Edinburgh, United Kingdom*
15.40	**ASSESSMENT OF ELEMENTAL DISTRIBUTIONS AT LINE AND PLANAR DEFECTS IN Cu(In,Ga)Se² THIN FILMS BY ATOM PROBE TOMOGRAPHY** **Dr. Oana Cojocaru Miredin**[1,2], Dr. Torsten Schwarz[2], Dr. Daniel Abou-Ras[3] *[1]Rwth Aachen University, Aachen, Germany, [2]Max-Planck Institut für Eisenforschung GmbH, Düsseldorf, Germany, [3]Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany*	**THE EFFECT OF DIFFERENT THERMO-MECHANICAL STATES ON THE DISSOLUTION BEHAVIOUR OF 15-15Ti FUEL CLADDING TUBES IN CONTACT WITH STATIC LBE** **Evangelia Charalampopoulou**[1,2], Dr. Rémi Delville[1], Dr. Konstantina Lambrinou[1], Niels Cautaerts[1,2], Prof. Dominique Schryvers[2] *[1]SCK-CEN, Mol, Belgium, [2]Antwerpen Universiteit, Antwerp, Belgium*	**SMART MATERIAL BASED ON TRANSPORT NANOPARTICLES WITH TRIGGER EFFECT OF MAGNETIC DECAPSULATION FOR TARGET DRUG DELIVERY** Dr Elena Zemtsova[1], Dr Maxim Shevtsov[2], **PhD student Alexsandra Ponomareva**[1], PhD Andreii Arbenin[1], Prof. Vladimir Smirnov[1] *[1]Saint Petersburg State University, Saint Petersburg, Russia, [2]Institute of Cytology of the Russian Academy of Sciences, Saint Petersburg, Russia*
16.00	**THE EFFECT OF SULFURIZATION ON CO-EVAPORATED Cu2ZnSnSe4 THIN FILM SOLAR CELLS** **Dr Raquel Caballero**[1], Dr Yudania Sánchez[2], Dr Florian Oliva[2], Dr Victor Izquierdo[2], Dr Marcel Placidi[2], Dr José Manuel Merino[1], Prof. Dr. Máximo León[1] *[1]Universidad Autónoma de Madrid, Madrid, Spain, [2]IREC, Catalonia Institute for Energy Research, Barcelona, Spain*	**OXIDE NANOCERAMIC COATINGS FOR LEAD-COOLED FAST REACTORS** Dr. Francisco Garcia Ferre[1], Dr. Alexander Mairov[2], **Mr. Matteo Vanazzi**[1], Mr. Serena Bassini[3], Dr. Mariano Tarantino[3], Dr. Pietro Agostini[3], Dr. Massimo Angiolini[3], Dr. Luca Ceseracciu[4], Dr. Yves Serruys[5], Dr. Frédéric Lepretre[5], Dr. Lucile Beck[5], Dr. Kumar Sridharan[2], Dr. Fabio Di Fonzo[1] *[1]Center for Nano Science and Technology @PoliMi, Istituto Italiano di Tecnologia, Milano, Italy, [2]Department of Engineering Physics, University of Wisconsin-Madison, Madison, USA, [3]ENEA-FSN-ING Division, C.R. Brasimone, Camugnano, Italy, [4]. Smart Materials, Nanophysics, Istituto Italiano di Tecnologia, Genova, Italy, [5]Service de Recherches de Métallurgie Physique, Laboratoire JANNUS, CEA, DEN, F-91191 Gif-Sur-Yvette, France*	**FOREFRONT OF ADVANCED DESIGN OF CARBON NANOCAPSULES FOR CANCER THERAPY AND BIOIMAGING** **Dr Gil Gonçalves**[1], Dr Stefania Sandoval[1], Dr Gerard Tobias[1] *[1]Institut de Ciència de Materials de Barcelona, Barcelona/Bellaterra, Spain*
16.20	**ELECTRICAL CONDUCTIVITY OF Cu2ZnSn(S1-xSex)4 (X = 0.5 – 1.0) SOLID SOLUTIONS: INFLUENCE OF ORDER PARAMETER** **Galina Gurieva**[1], Maxim Guc[2], Elena Hajdeu-Chicarosh[2], Daniel M. Többens[1], Ernest Arushanov[2], Susan Schorr[1,3] *[1]Helmholtz-Zentrum Berlin, Berlin, Germany, [2]Institute of Applied Physics, Academy of Sciences of Moldova, Chisinau, Republic of Moldova, [3]Freie Universitat Berlin, Berlin, Germany*	**RELATIONSHIP BETWEEN MICROSTRUCTURE AND MECHANICAL PROPERTIES OF HEAT TREATED 15-15Ti AUSTENITIC STAINLESS STEEL FOR NUCLEAR FUEL CLADDING APPLICATION** **Niels Cautaerts**[1,2], Dr. Remi Delville[1], Dr. Erich Stergar[1], Prof. Dominique Schryvers[2], Dr. Marc Verwerft[1] *[1]Sck-cen, Mol, Belgium, [2]University of Antwerp, Antwerp, Belgium*	**NANOEMULSION-BASED CHITOSAN NANOCAPSULES AS ANTIBIOTIC DELIVERY SYSTEM** **Inés Serrano-Sevilla**[1], Sonia García-Embid[1], Laura De Matteis[2,3], Ainhoa Lucía[4,5,6], José Antonio Ainsa[4,5,6,7], Jesús M. de la Fuente[1,3] *[1]Instituto de Ciencia de Materiales de Aragón (ICMA), Universidad de Zaragoza-CSIC, Zaragoza, Spain, [2]Instituto de Nanociencia de Aragón (INA), Universidad de Zaragoza, Zaragoza, Spain, Zaragoza, Spain, [3]CIBER in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), [4]CIBER de Enfermedades Respiratorias (CIBERES), Instituto de Salud Carlos III, [5]Departamento de Microbiología, Facultad de Medicina, Universidad de Zaragoza, Zaragoza, Spain, [6]Instituto de Investigación Sanitaria de Aragón (IIS-Aragón), Zaragoza, Spain, [7]Instituto de Biocomputación y Física de Sistemas Complejos, BIFI, Universidad de Zaragoza, Zaragoza, Spain*
16.40	**BORON SOLID SOLUTION IN ³C-SiC FOR INTERMEDIATE-BAND SOLAR CELLS** **Dr. Patricia Carvalho**[1], Dr. Annett Thøgersen[1], Dr. Quanbao Ma[2], Dr. Augustinas Galeckas[2], Dr Alexander Azarov[2], Dr Daniel Wright[1], Dr. Spyros Diplas[1], Dr. Valdas Jokubavicius[3], Dr. Jianwu Sun[3], Dr. Mikael Syväjärvi[3], Dr. Bengt Svensson[2], Dr. Ole Martin Lovikk[1,2] *[1]SINTEF MK, Oslo, Norway, [2]University of Oslo, Department of Physics, Centre for Materials Science and Nanotechnology, Oslo, Norway, [3]Linköping University, Department of Physics, Chemistry and Biology, Linköping, Sweden*		**CHARGE CONVERSION NANOCARRIERS BASED ON AMPHIPHILIC POLYPEPTIDES** Héctor Soria[2], Arantxa Agote[2], Dr Pilar Romero[2], Dr Jesús M. de la Fuente[2,3], **Dr Rafael Martín-Rapún**[1] *[1]Fundación Instituto de Nanociencia de Aragón, Universidad de Zaragoza, Zaragoza, Spain, [2]Instituto de Ciencia de Materiales de Aragón, Universidad de Zaragoza / CSIC, Zaragoza, Spain, [3]Centro de Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Madrid, Spain*

Symposium	A2	A5	A7	B1
Room	I-11/M1	MOYSA Hall/M2	I-08/M1	Conference Room 3/M1
Session Title	Nanomagnetism & Properties	Self-assembly	Carbon based materials II and Catalysis	Bainitic Steels II
Chairperson	I. Galanakis	Kevin Ryan	Ana Cremades	Mark Rainforth
17.30	*HIGHLIGHT* **NANOLAMINATED MAX PHASE MAGNETS** **Dr. Ulf Wiedwald**[1], Dr. Ruslan Salikhov[1], Quanzheng Tao[2], Dr. Arni S. Ingason[2], Dr. Dieter Weller[1], Prof. Johanna Rosén[2], Prof. Michael Farle[2,3] *[1]Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, Duisburg, Germany, [2]Thin Film Physics, Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, Sweden, [3]Center for Functionalized Magnetic Materials (FunMagMa), Immanuel Kant Baltic Federal University (IKBFU), Kaliningrad, Russia*	*HIGHLIGHT* **SELF-ASSEMBLY OF BRANCHED NANOCRYSTALS: A CLOSER VIEW ON THE ROLES OF THEIR GEOMETRY AND OF LIGAND DISTRIBUTION** Andrea Castelli[1], Dr. Joost de Graaf[2], Prof. Liberato Manna[1], **Dr. Milena P. Arciniegas**[1] *[1]Istituto Italiano di Tecnologia, Genoa, Italy, [2]Institute for Computational Physics (ICP), University of Stuttgart, Stuttgart, Germany*	*KEYNOTE/INVITED* **FUNCTIONAL TITANIA FOR IMPROVED AIR AND HEALTH QUALITY** **Dr. Vassilis Binas**[1]	*HIGHLIGHT* **AUSFORMING: CHALLENGES AND DEVELOPMENTS FOR NANOSTRUCTURED BAINITE** **Dr. Carlos Garcia-Mateo**[1], Dr. Mahesh Somani[2], Prof. David A. Porter[2], Dr. Georg Paul[3], Dr. Andreas Latz[2], Ms Adriana Eres-Castellanos[1], Dr. Francisca G. Caballero[1] *[1]CENIM-CSIC, Madrid, Spain, [2]University of Oulu, Oulu, Finland, [3]Thyssenkrupp Steel Europe, Duisburg, Germany, [4]ArcelorMittal Global R&D, Ghent, Belgium*
17.50	*HIGHLIGHT* **OPTIMIZING THE EXCHANGE BIAS PROPERTIES OF Bi-MAGNETIC NANOPARTICLES WITH CORE/SHELL MORPHOLOGY** **Dr Kalliopi Trohidou**[1], Dr Marianna Vasilakaki[1] *[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Athens, Greece*	**FORMATION OF COLLOIDAL COPPER INDIUM SULFIDE NANOSHEETS BY TWO-DIMENSIONAL SELF-ORGANIZATION** **Anne Berends**[1], Hans Meeldijk[1], Celso de Mello Donega[1] *[1]Utrecht University, Utrecht, Netherlands*	*[1]Forth, Heraklion, Crete, Greece*	**CHARACTERISATION OF ISOTHERMALLY FORMED BAINITE MICROSTRUCTURES IN 51CrV4 SPRING STEEL** **Ir. Constantinos Goulas**[1,2], Ir. Ankit Kumar[1,3], Dr. Maria Giuseppina Mecozzi[1], Dr. Michael Herbig[3], Prof.dr.ir. Jilt Sietsma[1] *[1]Delft University of Technology, Delft, Netherlands, [2]Materials innovation institute (M2i), Delft, Netherlands, [3]Max-Planck-Institut für Eisenforschung, Dusseldorf, Germany*
18.10	*HIGHLIGHT* **IMPROVED PERFORMANCE OF ASSEMBLIES OF MAGNETIC NANOCRYSTALS FOR HEAT DELIVERY AND MAGNETIC GUIDANCE APPLICATIONS** **Dr Veronica Salgueiriño**[1] *[1]Departamento de Física Aplicada, Universidade De Vigo, Vigo, Spain*	**SOLVENT POLARITY DRIVEN VARIED INTERACTION BETWEEN LONG CHAIN ALIPHATIC THIOLS AND FLUORESCENT ASSEMBLY** **Ms Jayasmita Jana**[1] *[1]Indian Institute of Technology Kharagpur, Kharagpur, India*	**DIFFERENCES IN THE YIELD OF CARBON NANO-TUBES USING TRANSITION METAL CATALYSTS** **Dr. Rama Balasubramanian**[1], Mr Brian Ruane *[1]Roanoke College, Salem, USA*	**INFLUENCE OF CARBIDE ON THE MICROSTRUCTURE FORMATION AND PHASE TRANSFORMATION OF NANO-BAINTE IN BEARING STEEL** Dr. Zhinan Yang[1], Prof. Fucheng Zhang[1], Dr. Yanhui Wang[1], **Dr. Mingming Wang**[1] *[1]Yanshan University, Qinhuangdao, China*
18.30	*HIGHLIGHT* **MAGNETIC NANOPARTICLES UNDER AC FIELDS - BROWNIAN CONTRIBUTION TO HEAT DISSIPATION** **David Serantes**[1,2], Roy Chantrell[1], Daniel Baldomir[2], Akira Satoh[3] *[1]Department of Physics, University of York, York, United Kingdom, [2]Instituto de Investigacións Tecnolóxicas and Applied Physics Department, Universidade de Santiago de Compostela, Santiago de Compostela, Spain, [3]Faculty of System Science and Technology, Akita Prefecture University, Yuri-honjo, Japan*	**ASSEMBLY OF SULFIDE-BASED NANOPARTICLES INTO GELS AND AEROGELS** **Taisiia Berestok**[1,2], Dr. Pablo Guardia[1,4], Dr. Michaela Meyns[1], Javier Blanko[2], Lluis López-Conesa[2], Dr. Sonia Estrade[2], Prof. Stephanie L. Brock[3], Prof. Francesca Peiro[2], Prof. Andreu Cabot[1,5] *[1]Catalonia Institute For Energy Research, Barcelona, Spain, [2]LENS, MIND-IN[2]UB, Departament d'Electrònica, University of Barcelona, Barcelona, Spain, [3]Department of Chemistry, Wayne State University, Detroit, USA, [4]Centre Tecnològic de la Química de Catalunya, Tarragona, Spain, [5]Institució Catalana de Recerca i Estudis Avançats – ICREA, Barcelona, Spain*	**CONTROL OVER THE CONDUCTIVITY OF TRANSPARENT MXENES** **Dr. Florian M. Römer**[1], Dr. Ulf Wiedwald[1], Tanja Strusch[1], Dr. Joseph Halim[2], Elisa Mayerberger[2], Prof. Dr. Michel Barsoum[2], Prof. Dr. Michael Farle[1] *[1]Experimental Physics, AG Farle, University Duisburg-Essen, Duisburg, Germany, [2]Drexel University, Philadelphia, United States of America*	**INFLUENCE OF TEMPERING CYCLE ON MICROSTRUCTURE EVOLUTION DURING TEMPERING OF HIGH STRENGTH STEELS** **Seyyed Hesamodin Talebi**[1], Hadi Ghasemi Nanesa[1], Professor Mohammad Jahazi[1] *[1]École De Technologie Supériere, Montreal, Canada*
18.50	*HIGHLIGHT* **DECIPHERING THE WORKINGS OF MAGNETIC NANOPARTICLES BY UNRAVELING THEIR INTRICATE LOCAL STRUCTURE** Mr George Antonaropoulos[1,2], Mr Konstantinos Brintakis[1,3], Dr Emil Bozin[4], Dr Milinda Abeykoon[5], Dr Giovanni Ausanio[6], Dr Vincenzo Iannotti[6], Dr Kalliopi Trohidou7, **Dr Alexandros Lappas**[1] *[1]Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas, Heraklion, Greece, [2]Department of Chemistry, University of Crete, Heraklion, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [4]Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, USA, [5]Photon Sciences Division, National Synchrotron Light source II, Brookhaven National Laboratory, Upton, USA, [6]Department of Physics "E. Pancini" & CNR-SPIN, University of Naples "Federico II", Naples, Italy, [7]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Aghia Paraskevi, Greece*	**THREE-DIMENSIONAL METAMATERIALS MADE FROM ENGINEERED OLIGONUCLEOTIDES AND NANOPARTICLES** **Miss AF De Fazio**[1], Dr Afaf H. El-Sagheer[2,3], Prof Tom Brown[2], Prof Otto Muskens[1], Dr Antonios Kanaras[1] *[1]Physics and Astronomy, University Of Southampton, Southampton, United Kingdom, [2]Department of Chemistry, Chemistry Research Laboratory, University of Oxford, Oxford, United Kingdom, [3]Chemistry Branch, Department of Science and Mathematics, Faculty of Petroleum and Mining Engineering, Suez, Egypt*	**THE STRATEGIES OF BNO NANOPARTICLES SYNTHESIS FOR PROMISING CATALYSTS** **Dr. Andrey Kovalskii**[1], Dr. Andrei Matveev[1], Dr. Irina Sukhorukova[1], Mr. Konstantin Firestein[1], Mr. Alexander Steinman[1], Dr. Oleg Lebedev[2], Prof. Dmitry Shtansky[1], Prof. Dmitri Golberg[3] *[1]National University Of Science And Technology "MISiS", Moscow, Russian Federation, [2]CRISMAT, UMR 6508, CNRS-ENSICAEN, Caen, France, [3]National Institute for Materials Science, Tsukuba, Japan*	**EFFECT OF DIFFERENT HEAT TREATMENT PROCEDURES ON TOUGHNESS AND DUCTILITY OF NANOSTRUCTURED BAINITIC STEELS** **Dr. Behzad Avishan**[1], Professor Sasan Yazdani[2], Maryam Kabirmohammadi[2] *[1]Department of Materials Engineering, Azarbaijan Shahid Madani University, Tabriz, Iran ,* *[2]Faculty of Materials Engineering, Sahand University of Technology, Tabriz, Iran*
19.10	**CONTINUOUS MILLIFLUIDIC SYNTHESIS OF MONODISPERSE Fe/FexOy NPs** **Dr Katerina Loizou**[1], Dr Stephanos Mourdikoudis[2], Dr Alec LaGrow[2], Professor Nguyen Thanh[2], Professor Asterios Gavriilidis[1] *[1]Department of Chemical Engineering, University College London, London, United Kingdom, [2]Biophysics Group, Department of Physics and Astronomy and UCL Healthcare and Biomagnetic and Nanomaterials Laboratories, University College London Laboratories, London, United Kingdom*	**FABRICATION OF ISOLATED 3D PLASMONIC MICRO STRUCTURED SUPERCRYSTALS ARRAYS FOR SERS DETECTION** **Dr. Nicolas Pazos Perez**[1], Prof. Ramon Alvarez Puebla[1,2] *[1]Department Of Physical Chemistry And Inorganic, Universitat Rovira I Virgili, Tarragona, Spain, [2]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Sapin*	**SYNTHESIS AND CHARACTERIZATION OF ZnO HIERARCHICAL NANOPARTICLES AND RE DOPED ZnO NANOPARTICLES WITH ENHANCED PHOTOCATALYTIC ACTIVITY (Re: Ce, Ru)** G. Flores-Carrasco[1,2], M. Rodríguez-Peña[3], A. Urbieta[3], Professor Paloma Fernández[3], O. Milosevic[4], **María Eugenia Rabanal**[1] *[1]University Carlos III of Madrid and IAAB, Dept. of Materials Science and Engineering and Chemical Engineering, Avda. Universidad 30, 28911 Leganes, Madrid, Spain, Madrid, Spain, [2]CIDS-ICUAP Benemérita Universidad Autónoma de Puebla, Av. San Claudio y 14 sur, Edif. 103C C.U., Col. San Manuel, Puebla 72570, México, , Mexico, [3]Departamento Física de Materiales, fac. Ciencias Físicas, Universidad Complutense, Ciudad Universitaria, 280540 Madrid, Spain, Madrid, Spain, [4]: Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, Knez Mihailova 35/IV, 11000 Belgrade, Serbia, Belgrade, Serbia*	

Symposium	B2	B3	B7	B8
Room	Aimilios Riadis Hall/M2	CR I Hall/M2	CR III Hall/M2	Conference Room 1/M1
Session Title	Advanced Characerization Methods for Light Metals	Polycrystalline Ni Base Superalloys III	Structures, Processing, and Fabrication of MOF Composites	Phase Stability
Chairperson	**Dymtro Orlov**	**P. Tsakiropoulos**	**Caroline Mellot-Draznieks**	**Sergiy Divinski**
17.30	*HIGHLIGHT* **REVEALING THE MELTING AND SOLIDIFICATION BEHAVIOUR OF LIGHT METALS USING IN SITU SYNCHROTRON X-RAY IMAGING** **Professor Peter Lee**[1,2], Dr Alex Leung[1,2], Dr Biao Cai[1,2], Dr Enyu Guo[1,2], Mr Sebastian Marussi[1,2], Dr Robert Atwood[2,3] *[1]School of Materials, The University Of Manchester, Manchester, United Kingdom, [2]Research Complex at Harwell, Harwell, United Kingdom, [3]Diamond Light Source, Harwell, United Kingdom*	**STRAIN-INDUCED PRECIPITATION ANALYSIS OF DELTA-PROCESSING IN AN INCONEL 718 SUPERALLOY** **Martha P Guerrero Mata**[1], Pedro Paramo Kañetas[2], Jessica Calvo[2], Utkudeniz Ozturk[2], Jose Ma Cabrera[2] *[1]Universidad Autonoma De Nuevo Leon, San Nicolas De Los Garza, Mexico, [2]Universitat Politècnica de Catalunya, Barcelona, Spain*	*HIGHLIGHT* **THE DEVELOPMENT OF A CSD SUBSET: A COLLECTION OF METAL-ORGANIC FRAMEWORKS FOR PAST, PRESENT AND FUTURE** **Dr. Peyman Moghadam**[1], Ms. Aurelia Li[1], Dr. Seth Wiggin[2], Mr Andi Tao[1], Dr. Andrew Maloney[2], Dr. Peter Wood[2], Dr. Suzanna Ward[2], Dr. David Fairen-Jimenez[1] *[1]University of Cambridge, Cambridge, United Kingdom, [2]Cambridge Crystallographic Data Centre (CCDC) , Cambridge, United Kingdom*	**FORMULATING HIGH ENTROPY ALLOYS: CRITERIA AND EXPERIMENTS FOR SELECTED APPLICATIONS** Dr. Marco Gabriele Poletti[1], Dr. Gianluca Fiore[1], **Prof. Livio Battezzati**[1] *[1]Università di Torino, Torino, Italy*
17.50	**NANOPARTICLE RESTRICTED DENDRITIC EVOLUTION IN Mg-Zn-Al ALLOYS REVEALED BY SYNCHROTRON TOMOGRAPHY** **Dr. Enyu Guo**[1,2], Dr. Sansan Shuai[3], Dr. Daniil Kazantsev[1,2], Dr. Biao Cai[1,2], Dr. Andre Phillion[4], Dr. Tao Jing[3], Dr. Peter Lee[1,2] *[1]School of Materials, The University of Manchester, Manchester, United Kingdom, [2]Research Complex at Harwell, RAL, Didcot, United Kingdom, [3]School of Materials Science and Engineering, Tsinghua University, Beijing, China, [4]Department of Materials Science and Engineering, McMaster University, Hamilton, Canada*	**STRESS SERRATIONS DURING TENSILE TESTS OF NICKEL BASED ALLOY X750: EFFECT OF VACUUM** **Djamel Kaoumi**[1], Christopher Marsh[2] *[1]North Carolina State University, Raleigh, United States, [2]University of South Carolina, columbia, United States*	**NOVEL METAL ORGANIC FRAMEWORKS BASED ON TETRATOPIC LINKERS AND Zr(IV)/Hf (IV) METAL CLUSTERS WITH HIGH CONNECTIVITY** **Mrs Giasemi Angeli**[1], Mrs Christina Sartsidou[1], Dr Constantinos Tsangarakis[1], Dr Pantelis Trikalitis[1] *[1]University Of Crete , Heraklion Crete, Greece*	**SHORT-RANGE ORDER IN HIGH-ENTROPY ALLOYS: THEORETICAL FORMULATION AND APPLICATION TO Mo-Nb-Ta-V-W SYSTEM** **Mr Antonio Fernandez-Caballero**[1,2], Dr Duc Nguyen-Manh[2], Dr Jan Wrobel[3], Prof Paul Mummery[1] *[1]University of Manchester, Manchester, UK, [2]Culham Centre For Fusion Energy, Abingdon, UK, [3]Warsaw University of Technology, Warsaw, Poland*
18.10	**IN SITU NANOTOMOGRAPHY INVESTIGATION OF HIGH TEMPERATURE DEFORMATION IN LIGHT ALLOYS** **Ms. Richi Kumar**[1,2], Dr. Julie Villanova[1], Dr. Pierre Lhuissier[2], Prof. Luc Salvo[2] *[1]European Synchrotron Radiation Facility, Grenoble, France, [2]Univ. Grenoble Alpes, CNRS, SIMAP, Grenoble, France*	**MECHANICAL PROPERTIES OF MIX JOINT TIG WELDED HASTELLOY X** **Mr. Jonas Saarimäki**[1], Mr. Mattias Lundberg[1], Mr. Moritz Döllgast[1], Professor Johan Moverare[1], Doctor Håkan Brodin[2] *[1]Linköping University, Linköping, Sweden,[2]Siemens Industrial Turbomachinery AB, Finspång, Sweden*	*HIGHLIGHT* **MOF-BASED BIFUNCTIONAL MATERIALS FOR COMBINED CO_2 CAPTURE AND CONVERSION** Mr Angus Crake[1], Dr Kostas Christoforidis[1], **Dr Camille Petit**[1] *[1]Imperial College London, United Kingdom*	**ON THE COMPOSITIONAL ORIGINS OF SIGMA PHASE PRECIPITATION IN CrMnFeCoNi-TYPE HIGH ENTROPY ALLOYS** **Dr. Katerina Christofidou**[1], Thomas McAuliffe[1], Dr. Paul Mignanelli[1], Pietro Orsatti[1], Dr. Ed Pickering[2], Dr. Howard Stone[1], Dr. Nick Jones[1] *[1]University Of Cambridge, Department of Materials Science and Metallurgy, Cambridge, United Kingdom, [2]The University of Manchester, School of Materials, Manchester, United Kingdom*
18.30	**IN SITU NEUTRON DIFFRACTION OF STRAIN PATH CHANGE EFFECTS IN COLD-ROLLED MgAZ31B SHEET** **Karl Sofinowski**[1,2], Jan Čapek[3], Dr. Tobias Panzner[1], Dr. Steven Van Petegem[1], Prof. Dr. Helena Van Swygenhoven[1,2] *[1]Paul Scherrer Institute, Villigen, Switzerland, [2]École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [3]Charles University in Prague, Prague, Czech Republic*	**SEGREGATION DYNAMICS OF P IN Ni-BASED ALLOY DURING AGING AND COOLING: CRITICAL TIME AND CRITICAL COOLING RATE** **Jinsen Tian**[1], Dr Yu-Lung Chiu[1], Prof. Ian Jones[1] *[1]School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom*	**TOWARDS FUNCTIONAL DEVICES VIA MOF@FIBRE NANOCOMPOSITES** **Mr Kirill Titov**[1], Mr Abhijeet Chaudhari[1], Mr Mahdi Ezwan Mahmoud[1], Dr Chris Kelley[2], Dr Mark Frogley[2], Dr Gianfelice Cinque[2], Dr Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom, [2]Diamond Light Source, Harwell, United Kingdom*	**ACCURATE ON-LATTICE MODEL FOR STABILITY EVALUATION OF HIGH-ENTROPY ALLOYS** **Evgeny Meshkov**[1], Ivan Novoselov[1], Alexander Shapeev[2], Alexey Yanilkin[1] *[1]Dukhov Research Institute of Automatics (VNIIA), Moscow, Russian Federation,* *[2]Skolkovo Institute of Science and Technology, Moscow, Russian Federation*
18.50	**NEUTRON DIFFRACTION STUDY OF Mg-BASED COMPOSITES AT DIFFERENT TEMPERATURES** **MSc. Gergely Farkas**[1], Doc. Kristián Máthis[2], Ph.D. Ján Pilch[1], Ph.D. Peter Minárik[2], CSc. Petr Lukáš[1] *[1]Nuclear Physics Institute, V. V. I., Řež 250 68, Czech Republic, [2]Department of Metal Physics, Charles University, Ke Karlovu 5, Prague 2, 121 16 , Czechia*	**LONG TIME ANNEALING OF THE NICKEL-BASED SUPERALLOY WASPALOY** Konstantin Firlus[1], Dr.-Ing. Svenja Kinzel[1,2], Johannes Gabel[3], **Prof. Dr.-Ing. Uwe Glatzel**[1] *[1]Metals and Alloys, Bayreuth, Germany, [2]H-O-T Härte und Oberflächentechnik, Buttenheim, Germany, [3]MTU Aero Engines AG, Munich, Germany*	**A HOT-PRESSING (HoP) STRATEGY FOR FABRICATION OF METAL-ORGANIC FRAMEWORK BASED DEVICES** **Doctoral student Yifa Chen**[1], Prof Bo Wang[1] *[1]Beijing Institute of Technology, Beijing, China*	**AlXCoCrFeNi HIGH ENTROPY ALLOYS FOR STRUCTURAL APPLICATIONS** **Dr. Eng Mariana Lucaci**[1], Dr. Eng Magdalena Lungu[1], Dr Phys Eugeniu Vasile[2], Dr. Phys Mihai Straticiuc[3], Dr Phys Ion Burcea[3], Dr. Eng Violeta Tsakiris[1], Dr. Eng Dorinel Talpeanu[1], ENG Nicolae Stancu[1], Dr. Eng Alexandru Iorga[1], Dr. Eng Eugen Manta[1], Dr. Eng Diana Cirstea[1] *[1]INCDIE ICPE-CA, Bucharest, Romania, [2]University Politehnica of Bucharest, Bucharest, Romania, [3]IFIN - HH, Bucharest - Magurele, Romania*
19.10				**PHASE COMPOSITION, MICROSTRUCTURE AND THERMAL STABILITY OF THE MULTI-PHASE Ni-V-Sn ALLOYS WITH NI 75-90 at.% CONTENT** **Prof. PAS Tomasz Czeppe**[1], Dr Anna Sypien[1], Dr Anna Wierzbicka-Miernik[1], Dr Grzegorz Garzel[1], Dr Anna Goral[1], Prof Lidia Litynska-Dobrzynska[1], MSc Katarzyna Janik[1], Dr Marek Kopyto[1] *[1]Institute of Metallurgy And Materials Sciences Pas, Krakow, Poland*

Symposium	B10	B11	C1	C4
Room	Maurice Saltiel Hall II/M2	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1
Session Title	Corrosion & Wear III	Heat Treatment, Microstructure and Joining of Fe and Al-Alloys	C1.2: Coatings deposition routes and novel characterization techniques 3/5 Characterization	Testing, characterization and modeling for Additive Manufacturing 1
Chairperson	**Ruben Santos**	**M. Kynazeva**	**R. Cremer, G. Orhan**	**Richard Everett**
17.30	**ELECTROSPUN NANOFIBERS FOR CORROSION PROTECTION OF METALLIC SURFACES**	**EVIDENCE OF GRANULARIZATION OF LATH-LIKE BAINITE DURING ISOTHERMAL HOLDING: HOW CHEMISTRY AND INITIAL MICROSTRUCTURE IMPACT THE GRANULARIZATION KINETICS**	*HIGHLIGHT* **NANOPARTICLE AND NANOCOMPOSITE FILMS WITH PLASMA POLYMERS**	**HIGH RESOLUTION X-RAY MICROSCOPY AND CT FOR ADDITIVE MANUFACTURING**
	Dr. Ioana Carmen Vladu[1], Prof. Christoph Kleber[1]	**Mlle Meriem BEN HAJ SLAMA**[1,2,3], Mme Nathalie GEY[2,3], Mr Lionel GERMAIN[2,3] Mme Kangying ZHU[5], Mr Sébastien ALLAIN[1,3,4]	DrSc Hynek Biederman[1], PhD Ondrej Kylian[1], PhD Andrei Choukourov[1], **Dr. Artem Shelemin**[1]	**Mr. Luke Hunter**[1], Dr. Leah Lucas Lavery[1], Lars-Oliver Kautschor[1]
	[1]Centre of Electrochemical Surface Technology, Wiener Neustadt, Austria	*[1]Institut Jean Lamour UMR CNRS 7198 Université de Lorraine, Nancy, France, [2]Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux (LEM3), UMR CNRS 7239, Université de Lorraine, 57045 Metz, France, [3]Laboratory of Excellence on Design of Alloy Metals for low-mAss Structures (DAMAS), Université de Lorraine, Metz/ Nancy, France, [4]Ecole des Mines de Nancy, Campus Artem - CS 14 234 , 54 042 Nancy Cedex, France, [5]ArcelorMittal Research Center Maizières Research SA, Metz/ Voie Romaine, BP30320, 57283 Maizières-lès-Metz Cedex, France*	*[1]Charles University, Faculty of Mathematics and Physics, Department of Macromolecular Physics, V Holešovičkách [2], Prague, Czech Republic*	*[1]Carl Zeiss Microscopy, Pleasanton, United States*
17.50	**MICROSTRUCTURE EVOLUTION AND GALLING PROPERTIES OF HARD FACING COATINGS DEPOSITED USING LASER DIRECTED ENERGY DEPOSITION**	**MONTE CARLO SIMULATION OF PRIMARY RECRYSTALLIZATION IN AN IF STEEL**	**CORE-SHELL NANOPARTICLES ARISING FROM PLASMA POLYMERIZATION**	**IN OPERANDO X-RAY IMAGING OF LASER-POWDER INTERACTION MECHANISMS DURING ADDITIVE MANUFACTURING**
	Dr Niyanth Sridharan[1], Dr Ryan Dehoff[1], Brian Jordan[1], Prof Sudarsanam Babu[1,2]	**Meriem RAMOUL**[1], Monte Carlo simulation of primary recrystallization in an IF steel Abdelhak AYAD[1,2], Monte Carlo simulation of primary recrystallization in an IF steel Nadjet ROUAG[1], Monte Carlo simulation of primary recrystallization in an IF steel Francis WAGNER[2]	**Stella Mathioudaki**[1], Dr. Bastien Barthélémy[1], Prof. Stéphane Lucas[1]	**Mr Chu Lun Alex Leung**[1,2], Mr Sebastian Marussi[1,2], Dr Robert A Atwood[4], Professor Mike Towrie[2,3], Professor Philip J Withers[1], Professor Peter D Lee[1,2]
	[1]Oak Ridge National Laboratory, Oak Ridge, United States, [2]University of Tennessee , Knoxville, united states	*[1]Laboratoire de microstructures et défauts dans les matériaux, Université Frères Mentouri Constantine1, Alegria., Constantine, Algeria, [2]Département de pharmacie, Faculté de Médecine, Université Constantine 3, Nouvelle ville Ali Mendjeli, BP. 67A Constantine, Algeria., Constantine, Algeria, [3]LEM3, (CNRS-UMR 7239), Université de Lorraine, Ile du Saulcy, 57045 Metz, France. , Metz, France*	*[1]Research Centre for Physics of Matter and Radiation (PMR-LARN), University of Namur, Rue de Bruxelles 61, Belgium*	*[1]The University of Manchester, Manchester, United Kingdom, [2]Research Complex at Harwell, Harwell , United Kingdom, [3]The Central Laser Facility, Harwell, United Kingdom, [4]Diamond Light Source, Harwell, United Kingdom*
18.10	**SLIDING WEAR AND SOLID PARTICLE EROSION RESPONSE OF ALUMINIUM REINFORCED WITH TUNGSTEN CARBIDE NANOPARTICLES AND ALUMINIDE PARTICLES**	**STRAIN RATE SENSITIVITY OF BAINITIC STEELS: CORRELATION BETWEEN MICROSTRUCTURE AND MECHANICAL RESPONSE UNDER DYNAMIC LOADING CONDITIONS**	**PRODUCTION, CHARACTERIZATION, AND RESIDUAL STRAIN ANALYSIS OF THICK PLASMA SPRAYED TUNGSTEN COATINGS FOR NUCLEAR FUSION APPLICATIONS**	**MODELING OF GRAIN STRUCTURE EVOLUTION DURING METAL ADDITIVE MANUFACTURING**
	Dr. Konstantinos Lentzaris[1], Prof. ANGELIKI LEKATOU[1], Prof. Alexandros Karantzalis[1], Ms Ekaterini Hantziara[1], Mr Nicolaos Gkikas[1], Ms Vasiliki Gousia[1]	**MSc Behnam Shakerifard**[1], Dr. Jesus Galan Lopez[2], Prof. Patricia Verleysen[3], Prof. Leo Kestens[4]	**Mr Edward Rowe**[1], Dr David Armstrong[1], Professor Patrick Grant[1], Dr Elizabeth Surrey[2]	**Dr. Aleksandr Zinoviev**[1], Dr. Olga Zinovieva[1], Prof. Dr.-Ing. Vasily Ploshikhin[1]
	[1]University Of Ioannina, Ioannina, Greece	*[1]Delft University of Technology, Delft, Netherlands, [2]Materials Innovation Institute, Delft, Netherlands, [3]Ghent University, Ghent, Belgium, [4]Ghent University, Ghent, Belgium*	*[1]University Of Oxford, Oxford, United Kingdom, [2]UKAEA, Culham Science Centre, Abingdon, United Kingdom*	*[1]Airbus Endowed Chair for Integrative Simulation and Engineering of Materials and Processes (ISEMP), University of Bremen, Bremen, Germany*
18.30	**EFFECT OF MAGNESIUM ON THE MICROSTRUCTURE AND THE FUNDAMENTAL ABRASIVE WEAR BEHAVIOUR OF IRON ALUMINIDES**	**INFLUENCE OF HARMONIC STRUCTURE DESIGN ON BACK STRESS OF SUS304L STAINLESS STEEL UNDER UNLOAD-RELOAD CYCLE TESTS**	**NANO BEAM X-RAY DIFFRACTION ANALYSIS OF STRESS AND STRAIN IN HIGH-TEMPERATURE OXIDATION RESISTANT MO-Si-B/Ti-Al-N MULTILAYER COATINGS**	**EFFECT OF BUILD HEIGHT AND SCANNING STRATEGY ON THE EVOLUTION OF THE RESIDUAL STRESSES IN NICKEL BASED SUPERALLOY INCONEL-738LC PRODUCED BY SELECTIVE LASER MELTING (SLM)**
	Harald Rojacz[1], Dr. Markus Varga[1], Dr. Ulrike Cihak-Bayr[1]	**Yuya Fujiki**[1], Masashi Nakatani[1], Mie Ota[1], Yuntian Zhu[2], Kei Ameyama[1]	**DI Elias Aschauer**[1], Dr. Matthias BArtosik[2], Dr. Peter Polcik[3], Dr. Mirjam Arndt[4], Dr. Helmut Riedl[1,2], Prof. Paul Heinz Mayrhofer[1,2]	**Avinash Hariharan**[1], Jeroen Risse[2], Eric A.Jägle[1], Dierk Raabe[1]
	[1]AC2T research Gmbh, Wiener Neustadt, Austria	*[1]Ritsumeikan University, Kusatsu City, Japan, [2]North Carolina State University, Raleigh, United States*	*[1]TU Wien, CDL-AOS at the Insitute of Materials Science and Technology, Wien, Austria, [2]TU Wien, Institute of Materials Science and Technology, Wien, Austria, [3]Plansee Composite Materials GmbH, Lechbruck am See, Germany, [4]Oerlikon Surface Solutions AG, Oerlikon Balzers, Balzers, Liechtenstein*	*[1]Department of Microstructure Physics and Alloy Design, Max-Planck-Institut für Eisenforschung, Dusseldorf, Germany, [2]Fraunhofer-Institut für Lasertechnik ILT, Aachen, Germany*
18.50	**EVALUATION OF THE TRIBOLOGICAL PERFORMANCE OF MoTaNbZrTi HIGH ENTROPY ALLOY**	**EFFECT OF SIZE, DISTRIBUTION AND NATURE OF NANOSCALE PARTICLES ON SLIP DISPERSION IN ALUMINIUM ALLOYS**	**TRIBIOLOGICAL BEHAVIOR OF TC4 ALLOY MODIFIED BY HIGH-FREQUENCY INDUCTION PASTE ALLOYING TECHNOLOGY**	**MODEL FOR SURFACE FINISHING IN SELECTIVE LASER MELTING**
	Dipl. Eng Anthoula Poulia[1], Dipl. Eng. Emmanuel Georgatis[1], Dipl. Eng. Christina Mathiou[1], Dr. Angela Lekatou[1], Dr. Alexander Karantzalis[1]	**Juliette Chevy**[1], Belen Davo[1], Marc Fivel[2], Elena Jover Carrasco[1]	**Feng Ding**[1], Ping Ze Zhang[1], Dong Bo Wei[1], Xiang Fei Wei[1], Xiao Hu Chen[1]	**Professor Ilaria Cristofolini**[1], Professor Alberto Molinari[1]
	[1]University Of Ioannina, Ioannina, Greece	*[1]Constellium C-tec, Voreppe, France, [2]SIMaP, Grenoble, France*	*[1]Nanjing University Of Aeronautics And Astronautics, Nanjing, China*	*[1]University Of Trento, Trento, Italy*
19.10	**WEAR PERFORMANCE OF EPOXY RESINS: INFLUENCE OF CARBON REINFORCING PHASES**	**MICROSTRUCTURAL INVESTIGATIONS OF VACUUM BRAZED ALUMINUM-STEEL-JOINTS**	**PRODUCTION OF CARBON COATED Al-FOAMS AND EVALUATION OF THEIR MECHANICAL BEHAVIOUR**	**PREDICTION OF MECHANICAL PROPERTIES OF OPEN LATTICE CELLULAR MATERIALS BY SELECTIVE LASER MELTING PROCESS SIMULATION**
	PhD candidate Dimitrios Baltzis[1], Undergraduate student Angelos Daflos[1], Professor Aggeliki Lekatou[2], Professor Alkiviadis Paipetis[1]	Prof. Dr.-Ing. Dipl.Wirt.-Ing. Wolfgang Tillmann[1], **Lukas Wojarski**	**Dr. Fani Stergioudi**[1], Prof Nikolaos Michailidis[1]	**Professor Georgios Lampeas**[1], Dr. Ioannis Diamantakos[1]
	[1]Composite and Smart Materials Laboratory, Department of Materials Engineering, University of Ioannina, Ioannina, Greece, [2]Applied Metallurgy Laboratory, Department of Materials Engineering, University of Ioannina, Ioannina, Greece	*[1]TU Dortmund University - Institute Of Materials Engineering, Dortmund, Germany*	*[1]Physical Metallurgy Laboratory, Department of Mechanical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece*	*[1]University of Patras, Patras, Greece*

Symposium	C10	D1	D2	D3
Room	F 319/M1	Artist Café/M1	Museum Hall /M2	I-15/M1
Session Title	Surface nanocrystallization, graded microstructure, multi-layered and composites by SPD	Spectroscopies-II	Nanostructures, nanomaterials and low dimensional systems II	Structural and mechanical properties I
Chairperson	S. Zherebtzov and H. Miura	Andrea Di Cicco, Eric Collet	Thomas Kehagias	Ilias Zoumboulis
17.30	**STRESS-ASSISTED AND STRAIN-INDUCED MARTENSITES FORMED BY CRYOGENIC ULTRASONIC SHOT PEENING IN AUSTENITIC STAINLESS STEELS AND BETA-METASTABLE TI ALLOYS** **Pr Thierry Grosdidier**[1], Dr Marc Novelli[1], Mr Pierre Maurel[1], Dr Laurent Weiss[1], Pr Philippe Bocher[2] *[1]University Of Lorraine - Labex Damas, Metz, France, [2]Ecole de Technologie Supérieure de Montréal, Montréal, Canada*	*HIGHLIGHT* **SPECTROSCOPIC STUDIES OF ADVANCED MATERIALS WITH NANOBEAMS** **Dr Gema Martinez-criado**[1] *[1]ICMM-CSIC, Cantoblanco, España*	**A NEW TEMPLATE FREE STRATEGY TO FABRICATE NANOREACTORS WITH INTERNAL POROSITY AND ITS IMPACT ON THE MATERIAL PROPERTIES** **Dr Monica Distaso**[1] *[1]Fau Erlangen Nuremberg, Erlangen, Germany*	**RESPONSE OF AM STAINLESS STEEL TO HIGH STRAIN RATE LOADING** **Mr Matthew Cotton**[1], Dr Paul Hooper[2] *[1]Awe, Aldermaston, Reading, UK,* *[2]Department of Mechanical Engineering, Imperial College London, London, UK*
17.50	*HIGHLIGHT* **EFFECT OF WARM MULTIAXIAL FORGING ON STRUCTURE AND PROPERTIES OF Ti/TiB METAL-MATRIX COMPOSITE** **Dr. Sergey Zherebtsov**[1], Maxim Ozerov[1], Dr. Nikita Stepanov[1], Margarita Klimova[1] *[1]Belgorod State University, Belgorod, Russian Federation*	**APPLICATIONS OF SYNCHROTRON RADIATION-BASED XRD AND XAFS IN METALLIC GLASSES** **Prof. Jian-Zhong Jiang**[1], prof. dongxian zhang[1] *[1]Zhejiang University, Hangzhou, China*	**QUANTITATIVE CHARACTERISATION OF NANOSTRUCTURAL COMPOSITES BY TRANSMISSION ELECTRON MICROSCOPY** **Dr. Miroslawa Pawlyta**[1], PhD student Bartlomiej Sobel[1] *[1]Silesian University Of Technology, Gliwice, Poland*	**INTERACTION FORCES' MEASUREMENT FOR VERY SHORT-LIVED CONTACTS AT HIGH VELOCITIES** Engineer Baptiste Martinet[1,2], Engineer Stéphane Skiba[1,2], PhD Mathieu Marquer[1,3], PhD Andrea Cappella[1], PhD Laurent Faure[1], **PhD Sylvain Philippon**[1] *[1]Laboratoire d'Etudes des Microstructures et des Mécaniques des Matériaux (LEM3), Metz, France, [2]Safran Aircraft Engines, Safran Group, Moissy-Cramayel, France, [3]IRT M2P, Metz, France*
18.10	**EFFECT OF HIGH-PRESSURE TORSION ON STRUCTURE AND PROPERTIES OF Ti/TiB METAL-MATRIX COMPOSITE** **Maxim Ozerov**[1] *[1]Belgorod State University, Belgorod, Russian Federation*	**STRUCTURAL PHASES OF NIOBIUM GERMANATE THIN FILMS BY DFT ASSISTED EXAFS ANALYSES** **Prof. Mehmet Sahiner**[1], Christopher Ciccarino[1], Rory Vander Valk[1], R. Morea[2], Jose Gonzalo[2], Joseph Woicik[2] *[1]Seton Hall University, South Orange, United States, [2]CSIC, Madrid, Spain, [3]NIST, Gaithersburg, United States*	**NANOWHISKERS CuO: PREPARATION, STRUCTURE FEATURES, PROPERTIES, AND APPLICATIONS** **Dr. Maksim Dorogov**[1], Dr. Alexander Kalmykov[2], Dr., Prof. Lev Sorokin[2], Mr. Andrey Kozlov[1], Mr. Alexander Myasoedov[2], Ms. Natalia Chirkunova[1], Dr. Katerina Aifantis[1,3,4], Ms. Anastasia Priezzheva[1], Dr., Prof. Anatoly Vikarchuk[1], Dr.,Prof. Alexey Romanov[1,2,4] *[1]Togliatti State University, Togliatti, Russian Federation, [2]Ioffe Physical Technical Institute, Russian Academy of Sciences, St. Petersburg, Russian Federation, [3]University of Arizona, Tucson, United States of America, [4]ITMO University, St. Petersburg, Russian Federation*	**IMPACT BEHAVIOR OF POROUS Al** Dr.-Eng. Nikolaos Michailidis[1], **Mr. Emmanouil Smyrnaios**[1], Dr.-Eng. Georgios Maliaris[2], Dr.-Eng. Fani Stergioudi[1] *[1]Physical metallurgy Laboratory, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Mechatronics & Electromechanical Systems Automation Laboratory, Dept. of Electrical and Computer Engineering, Polytechnics school, Democritus University of Thrace, Xanthi, Greece*
18.30	*HIGHLIGHT* **ALUMINUM- AND COPPER-BASED ULTRAFINE-GRAINED COMPOSITES REINFORCED WITH Al203 NANOPARTICLES FABRICATED BY ACCUMULATIVE ROLL BONDING** **Dr. Konstantin Ivanov**[1] *[1]Institute Of Strength Physics And Materials Science, Siberian Branch Of Russian Academy Of Sciences, Tomsk, Russian Federation*	**LONG-TERM STRUCTURAL STABILITY OF Zn-DOPED AMORPHOUS SnO2 THIN FILMS** Ms Qing Ma[1], **Dr. Qing Ma**[2], Dr. Bruce Buchholz[1], Professor Robert Chang[1], Professor Michael Bedzyk[1] *[1]Department of Materials Science and Engineering, Northwestern University, Evanston, United States, [2]Northwestern Synchrotron Research Center, Northwestern University, Argonne, United States*	**MICROSTRUCTURAL CHARACTERIZATIONS OF CARBON FIBER ON THE NANOMETER SCALE** **Professor Lianlong He**[1], Dr Gengheng Zhou[1], Mr Xinshuang Guo[1], Mr Yongxin Cheng[1] *[1]Institute Of Metal Research, CAS, Shenyang, China*	**THE LONG PERIOD SUPERLATTICE IN Mg ALLOYS SYNTHESIZED UNDER HIGH PRESSURE AND TEMPERATURE** **Professor Masafumi Matsushita**[1], Naoya Fujita[2], Ryota Tsukamoto[1], Ryota Inugai[1], Michiaki Yamasaki[3], Yoshihito Kawamura[3], Tetsuo Irifune[1], Eiji Abe[2] *[1]Ehime University, Matsuyama, Japan, [2]Tokyo University, Bunkyo-ku, Japan, [3]Kumamoto University, Kumamoto, Japan*
18.50	**MICROSTRUCTURE AND MECHANICAL PROPERTIES OF FINE-GRAINED DUAL PHASE 800 STEEL PROCESSED BY FRICTION STIR PROCESSED** **MS Semih Aktarer**[1], PhD Tevfik Kucukomeroglu[2], MS Murat Sekban[2], PhD Gencaga Purcek[2] *[1]Recep Tayyip Erdogan University, Rize, Turkey, [2]Karadeniz Technical University, Trabzon, Turkey*	**EVOLUTION OF THE SOLID ELECTROLYTE INTERPHASE IN Li-ION ELECTRODES PROBED BY X-RAY ABSORPTION AND PHOTOEMISSION SPECTROSCOPY** **Prof. Andrea Di Cicco**[1], Dr. Javad Seyed Rezvani, Dr. Angela Trapananti, Prof. Roberto Gunnella, Dr. Matteo Ciambezi *[1]University Camerino, Italy*	**HELIUM INVESTIGATION IN THE PORE OF IRRADIATED MATERIALS BY EELS TECHNIQUE** **Dr. Kirill Prikhodko**[1,2] , Olga Emelyanova[2] *[1]National Research Centre "Kurchatov Institute", Moscow, Russian Federation, [2]National Research Nuclear University (MEPhI), Moscow, Russian Federation*	**PRESSURE-INDUCED TRANSITIONS OF KESTERITE-TYPE Cu2ZnSnS4** **Dr. Ilias Efthimiopoulos**[1], Ms. Anna Ritscher[2,3], Mr. Marcel Quennet[3,4], Prof. Dr. Martin Lerch2, Prof. Dr. Beate Paulus[4], Dr. Sergio Speziale[1], Dr. Anna Pakhomova[5], Dr. Hanns-Peter Liermann[5], Prof. Dr. Monika Koch-Mueller[1] *[1]Deutsches GeoForschungsZentrum GFZ, Section 4.3, Telegrafenberg, 14473 Potsdam, Germany, [2]Institut fuer Chemie, Technische Universitaet Berlin, Strasse des 17 Juni 135, 10623 Berlin, Germany, [3]Helmholtz-Zentrum Berlin fuer Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany, [4]Institut für Chemie und Biochemie, Freie Universität Berlin, Takustraße 3, 14195 Berlin, Germany, [5]Deutsches Elektronen-Synchrotron DESY, Notkestrasse 85, 22603 Hamburg, Germany*
19.10			**THE EFFECT OF MICROSTRUCTURE ON MAGNETIC COUPLING IN FePt/SPACER/FePt TRILAYERS** **Dr. Andreas Kaidatzis**[1], Dr. George Giannopoulos[1], Dr. Vassilis Psycharis[1], Dr. Dimitrios Niarchos[1], Prof. Gianni Barucca[2], Assoc. Prof. George Dimitrakopulos[3], Emer. Prof. Theodoros Karakostas[3], Prof. Philomela Komninou[3], Dr. José Miguel García-Martín[4], Dr. Gaspare Varvaro[5], Dr. Alberto Maria Testa[5] *[1]NCSR "Demokritos", Aghia Paraskevi, Greece, [2]Università Politecnica delle Marche, Dipartimento SIMAU, Ancona, Italy, [3]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [4]Instituto de Microelectronica de Madrid, Tres Cantos, Madrid, Spain, [5]nM2-Lab, ISM-CNR, Rome, Italy*	**FeS POLYMORPHS: STABILITY AND THERMODYNAMICS FROM AB INITIO MODELLING** **Dr Umberto Terranova**[1], Prof Nora de Leeuw[1] *[1]School of Chemistry, Cardiff University, United Kingdom*

Symposium	D4	D8	D9	D10
Room	Library Hall/M2	I -16/M1	Maurice Saltiel Hall I/M2	CR II Hall/M2
Session Title	Session 9 - Multi-scale modelling of Fracture	Oxides and complex phases	Nuclear Fuel (II)	Plasticity
Chairperson	**Christophe Pinna, Eric Le Bourhis**	**Martin Friak**	**D. Manara**	**Siegfried Schmauder, Michael Agoras**
17.30	*HIGHLIGHT* **GRADELA AND CHEMOFRACTURE** Dr. Ioannis Tsagrakis[1], Dr. Iason Konstantopoulos[1], **Professor Elias C. Aifantis**[1,2,3,4,5] *[1]Aristotle University of Thessaloniki, Thessaloniki, GR-54124, Greece, [2]Michigan Technological University, Houghton, MI 49931, USA, [3]Beijing University of Civil Engineering and Architecture, Beijing, 100044, China, [4]ITMO University, St. Petersburg, 197101, Russia, [5]Togliatti State University, Togliatti, 445020, Russia*	*HIGHLIGHT* **Mg/MgO INTERFACE FORMATION** **Dr Andrew Horsfield**[1], Dr Wenwu Xu[1], Dr David Wearing[1], Prof Peter Lee[2] *[1]Imperial College London, London, United Kingdom, [2]Unversity of Manchester, Manchester, United Kingdom*	*KEYNOTE/INVITED* **THERMODYNAMICS AND KINETICS OF FISSION PRODUCTS AND IMPURITIES IN NITRIDE AND SILICIDE FUELS** **Dr Par Olsson**[1], Dr Antoine Claisse[1], Dr Denise Adorno Lopes[1], Dr Thomas Schuler[2] *[1]KTH Royal Institute Of Technology, Stockholm, Sweden, [2]University of Illinois, Urbana-Champaign, USA*	*HIGHLIGHT* **FULL-FIELD MODELING OF SPHEROIDIZATION PHENOMENON IN A/B TITANIUM ALLOYS DURING HOT-DEFORMATION AND SUBSEQUENT ANNEALING AT A GIVEN TEMPERATURE** **Danai Polychronopoulou**[1], Nathalie Bozzolo[1], Marc Bernacki[1] *[1]MINES ParisTech, PSL Research University, CEMEF - Centre de mise en forme des matériaux, CNRS UMR 7635, CS 10207, rue Claude Daunesse, 06904 Sophia Antipolis Cedex , France*
17.50	**DEFORMATION AND FAILURE IN AMORPHOUS SOLIDS ON MICRO- AND NANO SCALES: COMPUTATIONAL MODELLING** **Michael Zaiser**[1] *[1]FAU University of Erlangen-Nuremberg, Germany*	**ATOMISTIC SIMULATIONS OF OXIDATION MECHANISM OF POLYCRYSTALLINE AND DOPED ALUMINIUM USING REACTIVE FORCE FIELD AND AB INITIO METHODS** **Phd Marcela E. Trybula**[1,2], Dominika Wieczorek[3], PhD P. A. Korzhavyi[1] *[1]KTH Royal Institute Of Technology, Stockholm, Sweden, [2]Institute of Metallurgy and Materials Science PAS, Krakow, Poland, [3]Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Krakow, Poland*		**LIFE PREDICTION APPROACH FOR A SHORT FIBER REINFORCED COMPOSITE MATERIAL SUBMITTED TO TEMPERATURE VARIATION DURING FATIGUE LOADING** **Mohamed Amine Laribi**[1,2], Sahbi Tamboura[2], Joseph Fitoussi[1], Robert Tiebi[3], Hachmi Ben Daly[2], Tcharkhtchi Abbas[1] *[1]Ensam Paristech, 75013 Paris, France, [2]ENISo, 4054 Sousse, Tunisia, [3]Automotive Exteriors Europe, 18 bis rue de Verdun BP 15178, 25402 Audincourt, France, Audincourt, France*
18.10	**FINITE ELEMENT ANALYSIS OF DYNAMIC FRACTURE MODELLED WITH ERINGEN'S THEORY OF GRADIENT ELASTICITY** **Professor Harm Askes**[1], Dr Inna Gitman[1] *[1]University Of Sheffield, Sheffield, United Kingdom*	**FIRST-PRINCIPLES MODEL POTENTIALS FOR CHEMICALLY INHOMOGENEUS OXIDES** **Carlos Escorihuela-Sayalero**[1], Ph. D. Jorge Iñiguez[1,2] *[1]Luxembourg Institute of Science and Technology, Belvaux, Luxembourg, [2]Institut de Ciència de Materials de Barcelona, Cerdanyola del Vallès, Spain*	*KEYNOTE/INVITED* **IDENTIFICATION OF VACANCY-TYPE DEFECTS IN URANIUM DIOXIDE** **Dr Pierre Desgardin**[1], Dr Marie France Barthe[1], Dr Julia Wiktor[2], Dr Marjorie Bertolus[2], Dr Gerald Jomard[2], Dr Gaelle Carlot[2], Dr Philippe Garcia[2], Dr Guillaume Martin[3] *[1]CEMHTI/CNRS, Orléans, France, [2]DEN/DEC/SESC, CEA Cadarache, Saint Paul lez Durance, France, [3]CEA, DEN, SPRC, LECy, Saint Paul lez Durance, France*	**CONSTRUCTION, ASSESSMENT AND TESTING OF BOND-ORDER POTENTIAL FOR Fe-Nb** **Alvin Noe Ladines**[1], Thomas Hammerschmidt, Ralf Drautz *[1]Icams, Ruhr-universitaet Bochum*
18.30	**OPTIMISED POSITION AND SIZE OF SYMMETRIC CRACK FLANK HOLES: NUMERICAL METHODOLOGY AND EXPERIMENTAL VALIDATION** **Dr Inna Gitman**[1], Dr Hassan Ghadbeigi[1], Mr Alwin Babu Kannadikara[1], Mr Ammar Al-Rubaye[1] *[1]The University of Sheffield, Sheffield, United Kingdom*			**BUCKLING OF THIN FILMS ON PLASTICALLY DEFORMED SUBSTRATES** **Dr Julien Durinck**[1], Pr Jérôme Colin[1], Pr Christophe Coupeau[1], Dr Antoine Ruffini[3], Dr Guillaume Parry[2], Dr Sami Hamade[1], Pr Alain Cimetière[1] *[1]Institut P', Chasseneuil-Futuroscope, France, [2]SIMAP, Grenoble, France, 3LEM, Châtillon, France*
18.50	**DOUBLE DIFFUSIVITY IN PRESENCE OF FINITE TIME CORRELATED STOCHASTIC FORCING** **Dr Amit Chattopadhyay**[1], Professor Elias Aifantis[2] *[1]Aston University, Birmingham, United Kingdom, [2]Aristotle University, Thessaloniki, Greece*		**VACANCY DEFECTS AND HELIUM BEHAVIOR IN (U,La)O2-X COMPOUNDS FOR THE STUDY OF TRANSMUTATION FEASIBILITY** **Dr Chenwei He**[1], Dr Marie France Barthe[1,2], Dr Thierry Sauvage[1,2], Dr Pierre Desgardin[1,2], Dr Hélène Lecoq[1,2], Dr Patrick Simon[1,2], Dr Thierry Wiss[3], Dr Daniel Freis[3] *[1]CNRS, UPR3079 CEMHTI, 3A rue de la Férollerie, 45071 Orléans cedex2, France, [2]Université d'Orléans, Avenue du Parc Floral, BP 6749, 45067 Orléans cedex 2, France, [3]European Commission,Joint Research Centre , Institute for Transuranium Elements, P.O. Box 2340, 76125 Karlsruhe, Germany*	**CRYSTAL PLASTICITY MODEL FOR DESCRIBING HARDENING BEHAVIOR OF DUAL PHASE STEEL DURING STRAIN PATH CHANGES** **Hwigeon Kim**[1], Youngung Jeong[2], Frédéric Barlat[1] *[1]Graduate Institute of Ferrous Technology (GIFT), Pohang University of Science and Technology (POS-TECH), Gyeongbuk, Republic of Korea, [2]Department of Materials Science and Engineering, Changwon National University, Gyeongnam, Republic of Korea*
19.10			**BASIC PROPERTIES OF OXIDE NUCLEAR FUELS: ATOMIC SCALE INVESTIGATIONS OF THE TRANSPORT PROPERTIES OF URANIUM DIOXIDE IN SUPPORT OF SEPARATE EFFECT EXPERIMENTS** **Dr. Marjorie Bertolus**[1], Dr. Michel Freyss[1], Dr. Emerson Vathonne[1], Dr. Julia Wiktor[1], Ibrahim Cheik Njifon[1], Dr Gérald Jomard[1] *[1]CEA, DEN, DEC/SESC, Centre de Cadarache, Saint-Paul-lez-Durance, France*	**SPRINGBACK PREDICTION FOR ULTRA-THIN STAINLESS STEEL SHEETS** **JaeHyun Choi**[1], F. Barlat[1], M.G. Lee[2], J.H. Kim[1] *[1]Graduate Institute of Ferrous Technology, Pohang University of Science and Technology, Pohang, Republic of Korea, [2]Korea University, Seoul, Republic of Korea*

Symposium	E3	E4	F3
Room	Rehearsal Room 5.17/M1	Conference Room 2/M1	3-21/M1
Session Title	Materials for Energy Harvesting	Fuel and component ?	Nanobiomaterials and nanotechnology for implants, devices and theranostics I
Chairperson	**Paul R. Ohodnicki**	**Marie-France Barthe**	**Alejandro Baeza**
17.30	**DURABILITY STUDIES OF SOLAR REFLECTORS FOR COOLED SECONDARY CONCENTRATORS USED IN SOLAR APPLICATIONS**	**PREPARING THE FUTURE POST-MORTEM ANALYSIS OF BERYLLIUM-BASED JET AND ITER SAMPLES BY MULTI-WAVELENGTHS RAMAN SPECTROSCOPY**	**COORDINATION POLYMER PARTICLES AS NANOPLATFORMS FOR HIV ANTIRETROVIRAL DRUG RELEASE**
	Phd student Alejandro García-Segura[1], Dr Aránzazu Fernández-García[1], Dr Loreto Valenzuela[1], Dr Florian Sutter[2], Bachelor student Julio Andrés Rabal-Escarbajal[3]	**Cedric Pardanaud**[1], M. I. Rusu[1,2], Y. Ferro[1], G. Giacometti[1], C. Martin[1], Y. Addab[1], P. Roubin[1], M. Minissale[1], L. Ferry[3], F. Virot[3], M. Barrachin[3], C. P. Lungu[4], C. Poroniscu[4], P. Dinca[4], M. Lungu[4], M. Köppen[5], P. Hansen[5], Ch. Linsmeier[5]	**Rubén Solórzano**[1,2], Ramon Alibés[2], Félix Busqué[2], Julia Lorenzo[3], Fernando Novio[1], Daniel Ruiz-Molina[1]
	[1]CIEMAT-PSA, Tabernas, Almería, Spain, [2]DLR, Tabernas, Almería, Spain, [3]UPV, Engineering School of Gipuzkoa, Eibar, Spain	*[1]Aix-marseille Université, Marseille, France, [2]National Institute of R&D for Optoelectronics , Magurele-Bucharest, Romania, [3]Institut de Radioprotection et Sûreté Nucléaire, Saint Paul-lez-Durance , France, [4]National Institute for Laser, Plasma and Radiation Physics, Magurele-Bucharest, Romania, [5]Forschungszentrum Jülich GmbH, IEK4 - Plasmaphysik, Jülich, Germany*	*[1]Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Campus UAB, Bellaterra, Spain, [2]Departament de Química, Universitat Autònoma de Barcelona, Bellaterra, Spain, [3]Institut de Biotecnologia i Biomedicina, Universitat Autònoma de Barcelona, Bellaterra, Spain*
17.50	**BROMINATED FLAME RETARDANTS (BFRs) REDUCTION IN PLASTICS FROM ELECTRONIC AND ELECTRIC EQUIPMENT WASTE (WEEE) FRACTION AS A TREATMENT METHOD PRIOR TO PYROLYSIS**	**CLOSE TO ZERO PERMEATION ALUMINA BASED PROTECTIVE COAT**	**TARGETED-MESOPOROUS SILICA NANOPARTICLES TO TREAT BACTERIA INFECTION**
	Mr Panagiotis Evangelopoulos[1], Miss Samantha Arato[2], Mr Henry Persson[1], Dr Efthymios Kantarelis[1], Dr Weihong Yang[1]	Daniele Iadicicco[1], **Matteo Vanazzi**[2], Francisco Garcia Ferré[1], Marco Utili[3], Serena Bassini[3], Fabio Di Fonzo[1]	Mr. Jaime Diez-Mérida[1], **PhD Isabel Izquierdo-Barba**[1,2], PhD Montserrat Colilla[1,2], Prof. María Vallet-Regi[1,2]
	[1]KTH Royal Institute of Technology, Stockholm, Sweden, Stockholm, Sweden, [2]The City College of New York, New York, United States	*[1]CNST-Istituto Italiano di Tecnologia (IIT), Milano, Italia, [2]Dipartimento di Energia - Politecnico di Milano, Milano, Italia, [3]ENEA - Nuclear Material Characterization Laboratory , Brasimone, Italia*	*[1]Facultad de Farmacia, Universidad Complutense de Madrid. Instituto de Investigación Sanitaria Hospital 12 de Octubre i+12., Madrid, Spain, [2]CIBER de Bioingeniería, Biomateriales y Nanomedicina, CIBER-BBN, Madrid, Spain*
18.10	**CORROSION BEHAVIOUR OF STEELS IN NITRATE MOLTEN SALT AT HIGH TEMPERATURE FOR SOLAR THERMAL POWER PLANTS**	**RADIATION DAMAGE CHARACTERISATION IN TANTALUM-TUNGSTEN ALLOYS AFTER PROTON IRRADIATION**	**ENGINEERING BACTERIAL CELLULOSE NANOCOMPOSITES**
	Dagmar Rückle[1], Dr. Stefanie Kaesche[1], Prof. Dr. Sannakaisa Virtanen[2], Prof. Dr. Burkhard Heine[3], Prof. Dr.-Ing Harald Garrecht[1]	**Ms Iuliia Ipatova**[1], Dr Enrique Jimenez-Melero	Muling Zeng[1], Anna Roig[1], **Anna Laromaine**[1]
	[1]MPA Universität Stuttgart, Stuttgart, Germany, [2]Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany, 3Hochschule Aalen, Aalen, Germany	*[1]The University Of Manchester, Manchester, United Kingdom*	*[1]Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Campus UAB. 08193 Bellaterra, Barcelona - Spain, Spain.*
18.30	**INVESTIGATIONS ON PRIMARY REFLECTORS FOR SOLAR THERMAL APPLICATIONS EXPOSED TO CORROSIVE ATMOSPHERES**	**COMPARISON OF COLD-WORKED AND PROTON IRRADIATION HARDENING AND THE ANNEALING RECOVERY OF ZIRCONIUM LINER AND ZIRCALOY-2**	**ZWITTERIONIC MESOPOROUS SILICA NANOPARTICLES: LOW-FOULING NANOSYSTEMS FOR BIOMEDICAL APPLICATIONS**
	Phd student Alejandro García-Segura[1], Dr Aránzazu Fernández-García[1], Dr María Jesús Ariza[2], Dr Florian Sutter[3], Dr Loreto Valenzuela[1]	**Mr. Petit Wiringgalih**[1], Dr. Matthew Topping[1], Dr. Alistair J. W. Garner[1], Prof. Michael Preuss[1], Dr. Philipp Frankel[1]	Ms. Silvia González-Piñeiro[1], **Dr. Montserrat Colilla**[1,2], Dr. Isabel Izquierdo-Barba[1,2], Prof. Dr. María Vallet-Regi[1,2]
	[1]CIEMAT-PSA, Tabernas, Almería, Spain, [2]Universidad de Almería, Almería, Spain, [3]DLR, Tabernas, Almería, Spain	*[1]School Of Materials, The University Of Manchester, Manchester, United Kingdom*	*[1]Dpto. Química Inorgánica y Bioinorgánica, Facultad de Farmacia. Universidad Complutense de Madrid. Instituto de Investigación Sanitaria Hospital 12 de Octubre i+12, Madrid, Spain, [2]Centro de Investigación Biomédica en Red de Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Madrid, Spain*
18.50	**THEORETICAL AND EXPERIMENTAL ANALYSIS OF OPTICAL PROPERTIES OF $Cu2ZnSn(S,SE)^4$ SOLAR ABSORBERS**	**RESIDUAL STRESS ASSESSMENT OF CONDUCTORS FOR FUSION MAGNET SYSTEMS**	**SILVER NANOPARTICLES SUPPORTED ON MESOPOROUS SILICA NANOPARTICLES FUNCTIONALIZED WITH PROTEINS: HYBRID NANOSYSTEMS AGAINST TUBERCULOSIS**
	Sergiy Zamulko[1], Kristian Berland[1], Shu-yi Li[2], Charlotte Platzer-Björkman[2], Clas Persson[1,3]	**Pilar Fernandez Pison**[1,2], Ignacio Aviles Santillana[1,2], Stefanie Langeslag[1], Stefano Sgobba[1], Oscar Sacristan De Frutos[1], Laura Bianchi[1,3], Michael Guinchard[1]	Miss Sandra Montalvo-Quirós[4], Prof. María Vallet-Regi[1,2], Dr. Rafael Prados-Rosales[3], Dr. Jose Luis Luque-García[4], **Dr. Blanca González**[1,2]
	[1]University Of Oslo, Oslo, Norway, [2]Uppsala University, Uppsala, Sweden, [3]KTH Royal Institute of Technology, Stockholm, Sweden	*[1]CERN, Geneva, Switzerland, [2]University Carlos III of Madrid, Madrid, Spain, [3]University of Pisa, Pisa, Italy*	*[1]Facultad de Farmacia, Universidad Complutense De Madrid, Madrid, Spain, [2]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain, [3]Center for Cooperative Research in Bioscience CICbioGUNE., Bizkaia, Spain, [4]Facultad de Ciencias Químicas, Universidad Complutense de Madrid, Madrid, Spain*
19.10	**STM AND XPS INVESTIGATION OF ZINC(II) TETRAPHENYLPORPHYRIN ADSORPTION ON Au(111) SURFACE: FROM MONOLAYER TO MULTILAYER**	**ACCURATE AND UNIVERSALLY APPLICABLE DFT CALCULATIONS FOR LARGE SYSTEMS**	**HEMOCOMPATIBILITY OF COATINGS DEDICATED FOR NOVEL BLOOD CONTACTING DEVICES**
	Oreste De Luca[1,3], Dr Tommaso Caruso[1,2], Ilenia Grimaldi[1], Dr Marco Papagno[1], Dr Alfonso Policicchio[1,2,3], Dr Daniela Pacilé[1], Prof. Vincenzo Formoso[1,2,3], Prof Raffaele Giuseppe Agostino[1,2,3]	Dr. Stephan Mohr[1], **Marc Eixarch**[1], Prof. Dr. Mervi Mantsinen[1]	**Phd Aldona Mzyk**[1], Prof. Roman Major[1], Prof. Juergen M. Lackner[2], Prof. Marek Sanak[3], Prof. Boguslaw Major[1]
	[1]Dipartimento di Fisica, Università della Calabria, Arcavacata Di Rende (Cs), Italy, [2]Consiglio Nazionale Interuniversitario Scienze Fisiche della Materia (C.N.I.S.M), Roma , Italy, [3]CNR-Nanotec, UOS di Cosenza, Arcavacata Di Rende (Cs), Italy	*[1]Barcelona Supercomputing Center, Barcelona, Spain*	*[1]Institute of Metallurgy and Materials Science PAS, Krakow, Poland, [2]Joanneum Research Forschungsges., Institute for Surface Technologies and Photonics, Functional Surfaces, Niklasdorf, Austria, [3]Department of Medicine, Jagiellonian University Medical College, Krakow, Poland*
19.30			

Symposium	A2	A7	B1	B2
Room	I-11/M1	Rehearsal Room 5.17 /M1	Maurice Saltiel Hall I/M2	Aimilios Riadis Hall/M2
Session Title	Interface and Surface Magnetism	Electrodeposition	Advanced Manufacturing	Magnesium
Chairperson	M. Farle	Poi See Lee	Wolfgang Bleck	Eric Nyberg
11.00	*KEYNOTE/INVITED* **SHELL-FERROMAGNETISM** Dr Asli Cakir[2], Ms Franziska Scheibel[1], **Prof. Dr. Mehmet Acet**[1], Prof. Dr. Michael Farle[1]	**SYNTHESIS OF COPPER AND TIN NANOWIRES BY APPLYINGTEMPLATE-ASSISTED DIRECT AND PULSE ELECTRODEPOSITION** **Phd Eleni Rosolymou**[1], Maria Emmanouela Kassalia[1], Associate Professor Evangelia Pavlatou[1] *[1]School of Chemical Engineering, National Technical University of Athens, Athens, Greece*	*KEYNOTE/INVITED* **ALTERNATIVE PROCESSING OF ADVANCED HIGH-STRENGTH STEELS BY ADDITIVE MANUFACTURING** **Dr. Christian Haase**[1], Jan Bültmann[1], Stephan Ziegler[2], Sebastian Bremen[2], Christian Hinke[2], Alexander Schwedt[3], Dr. Ulrich Prahl[1], Prof. Dr. Wolfgang Bleck[1]	*HIGHLIGHT* **DESIGN, PROPERTY AND CHARACTERISATION OF HIGH-STRENGTH Mg-Gd BASED ALLOYS** **Prof. Liming Peng**[1], Dr. Yu Zhang[1], Mr. Wei Rong[1], Assoc. Prof. Wu-Juan Wu[1], Prof. Jiang-Feng NIe[2] *[1]Shanghai Jiaotong University, Shanghai, China, [2]Monash Univerisity, Melbourne, Australia*
11.20	*[1]Uiniversity Of Duisburg-Essen, Duisurg, Germany, [2]Mugla Sitki Kocman University, Mugla, Turkey*	**ELECTRODEPOSITION OF Bi/GaAS DIODES** **Dr. Alicia Prados**[1], Dr. Rocío Ranchal[1] *[1]Dpto. Física de Materiales, Fac. de CC. Físicas, Universidad Complutense de Madrid, Madrid 28040, Spain*	*[1]Department of Ferrous Metallurgy, RWTH Aachen University, Aachen, Germany, [2]Fraunhofer-Institute for Laser Technology ILT, Aachen, Germany, [3]Central Facility for Electron Microscopy, RWTH Aachen University, Aachen, Germany*	*HIGHLIGHT* **ALLOYING ROLE OF Ag ON MICROSTRUCTURES AND MECHANICAL PROPERTIES OF Mg-Gd(-Zr) AND Mg-Y(-Zr) ALLOYS** **Phd Yu Zhang**[1,2], PhD Wei Rong[1], Research Asisitant Yujuan Wu[1], Prof. Liming Peng[1], Prof. Nick Birbilis[2], Prof. Jian-Feng Nie[2] *[1]Shanghai Jiao Tong University, Shanghai, China, [2]Monash University, Melbourne, Australia*
11.40	*HIGHLIGHT* **MAGNETO-PLASMONIC METASTRUCTURES** Ellen Wiedemann[1], Dr. Spyridon Pappas[1], Sascha Keller[1], Markus Rollinger[1], Dr. Martin Aeschlimann[1], **Dr Evangelos Papaioannou**[1] *[1]Department of Physics and State Research Center OPTIMAS, TU Kaiserslautern, Kaiserslautern, Germany*	**COPPER AND COPPER OXIDE-MODIFIED BORON-DOPED DIAMOND ELECTRODES FOR ELECTROCHEMICAL REDUCTION OF CO_2** **Dr. Tribidasari A. Ivandini**[1], Dr. Yasuaki Einaga[2] *[1]Universitas Indonesia, Jakarta, Indonesia, [2]Keio University, Yokohama, Japan*	**EFFECT OF ALLOYING ELEMENTS ON GRAIN SIZE STABILITY OF 18/8 STAINLESS STEEL** **Hasan Kotan**[1], Ahmet Burcin Batibay *[1]Konya Neu, Konya, Turkey*	**PRECIPITATION STRENGTHENING IN Mg-RE ALLOYS** **Prof. Xiaoqin Zeng** *[1]School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai, China*
12.00	*HIGHLIGHT* **INTERLAYER EXCHANGE COUPLING IN Fe-Pt-MN NANOCOMPOSITE MAGNETIC THIN FILMS** **Dr. Ovidiu Crisan**[1], Dr. Aurel Leca[1], Dr. Alina Daniela Crisan[1], Dr. Gabriel Schinteie[1], Dr. Victor Kuncser[1] *[1]National Institute For Materials Physics, Magurele, Romania, Magurele, Romania*	**ZnO NANORODS GROWN BY A NOVEL ELECTRODEPOSITION METHOD** **Dr Nikos Boukos**[1], Dr Elias Sakellis[1,2], Dr Chryssa Chandrinou[1], Dr Kostas Giannakopoulos[1], Dr Anastasios Travlos[1] *[1]National Centre For Scientific Research "Demokritos", Institute of Nanoscience and Nanotechnology, Agia Paraskevi Attikis, Greece, [2]University of Athens, Physics Department, Section of Solid State Physics, Zografos, Athens, Greece*	**STUDY OF AN ALTERNATIVE MECHANICAL ALLOYING PROCESS FOR OXIDE DISPERSION-STRENGTHENED STEELS MANUFACTURING** **Esther Simondon**[1], Dr. Pierre-François Giroux[1], Dr. Laurent Chaffron[1], Dr. Philippe Castany[2], Dr. Thierry Gloriant[2] *[1]DEN - Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, Gif-sur-Yvette, France, [2]INSA Rennes, Rennes, France*	*HIGHLIGHT* **MARTENSITIC TRANSFORMABLE Mg-Sc BASED ALLOY AND ITS FUNCTIONALITY** **Dr Daisuke Ando**[1], Dr Yukiko Ogawa[2], Mr Yuta Takeuchi[1], Dr Yuji Sutou[1], Dr Junichi Koike[1] *[1]Tohoku University, Sendai, Japan, [2]National Institute for Materials Science, Tsukuba, Japan*
12.20	**SKYRMIONS IN CYLINDRICAL MAGNETIC NANOWIRES** **Dr. Michalis Charilaou**[1], Leonardo Pierobon[1], Prof. Dr. Jörg F. Löffler[1] *[1]Laboratory of Metal Physics and Technology, ETH Zurich, Zurich, Switzerland*	**STUDY OF THE INFLUENCE OF Zr7Ni10 ADDITIVE ON TEMPERATURE - KINETIC CHARACTERISTICS OF ELECTROCHEMICAL PROPERTIES OF MULTI-COMPONENT (TiCr1,8)1-xVx ALLOY** **Anastasiya Mironova**[1], Maksim Erzhenkov[1], Natalia Medvedeva[1], Natalia Skryabina[1], Daniel Fruchart[2] *[1]Perm State University, Perm, Russian Federation, [2]CNRS, Institut Néel, Grenoble, France*	**STUDY OF PRIOR AUSTENITE GRAIN BOUNDARIES IN ZINC COATED PRESS HARDENED STEEL BY ATOM PROBE TOMOGRAPHY** **Dr. Christina Hofer**[1], Dr. Thomas Kurz[2], Prof. Helmut Clemens[1], Prof. Ronald Schnitzer[1] *[1]Department Of Physical Metallurgy And Materials Testing, Montanuniversität Leoben, Leoben, Austria, [2]Voestalpine Stahl GmbH, Linz, Austria*	**THE EFFECTS OF Zn ADDITION ON MECHANICAL PROPERTIES AND MARTENSITIC TRANSFORMATION TEMPERATURE FOR Mg-Sc ALLOY** **Yuta Takeuchi**[1], Dr. Daisuke Ando[1], Dr. Yukiko Ogawa[2], Dr. Yuji Sutou[1], Dr. Junichi Koike[1] *[1]Tohoku University, Sendai, Japan, [2]National Institute for Materials Science, Tsukuba, Japan*
12.40		**MICROSTRUCTURE STUDY OF ANODIC LAYERS FOR BIOMEDICAL APPLICATION** **Studente Djamila Atmani**[1] *[1]Centre Développement Téchnologie Avancées (CDTA)/ Universite Technologique Houaril Boumedienne/ USTHB, Algies, Algeria, [2]Centre Développement Téchnologie Avancées (CDTA), Algies, ALGERIA, [3]Universite Technologique Houaril Boumedienne, Algies, Algeria, [4]Ecole Militaire Polytechnique bordj El Bahri, Algies, Algeria*	**STUDY ON FACTORS AFFECTING TOUGHNESS AND BENDABILITY OF PRESS HARDENING STEEL** **Seongwoo Kim**[1], Jinkeun Oh[1], Yeol-Rae Cho[1], In-Shik Seo[1] *[1]POSCO Technical Research Laboratories, Gwangyang-si, Korea*	

Symposium	B3	B4	B7	B8
Room	CR I Hall/M2	3.20/M1	CR III Hall/M2	Conference Room 1/M1
Session Title	Oxidation	Mechanical properties and annealing behaviour	MOF Mechanics, Mechanical Properties, and Structural Dynamics	Mechanical Properties
Chairperson	Srdjan Milenkovic	Frank Kümmel	Jin-Chong Tan	Joo Hyun Park
11.00	**EFFECT OF PRESSURE ON METAL DUSTING IN CO-RICH SYNGAS OF HIGH TEMPERATURE ALLOYS** **Ms Sonja Madloch**[1], PD Dr.-Ing Mathias C. Galetz[1] *[1]DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany*	*KEYNOTE/INVITED* **ANNEALING STRATEGIES TO IMPROVE THE FORMABILITY OF UFG FERRITE STEELS** **Dr. Enrico Bruder**[1], Jörn Niehuesbernd[1], Prof. Clemens Müller[1] *[1]TU Darmstadt, Darmstadt, Germany*	**IMPACT OF THE MECHANICAL PRESSURE UNDER VARIOUS CONDITIONS ON THE FLEXIBILITY OF VARIOUS METAL ORGANIC FRAMEWORKS** **Dr. Pascal G. Yot**[1], Dr. Padmini Ramaswamy[1], Dr. Jelle Wieme[2], Dr. Louis Vanduyfhuys[2], Dr. Christian Serre[3], Pr. Veronique Van Speybroeck[2], Pr. Guillaume Maurin[1] *[1]University of Montpellier, Montpellier, France, [2]Ghent University, Ghent, Belgium, [3]Ecole Normale Supérieure de Paris, Paris, France*	**HIGH-ENTROPY ALLOYS: MATERIALS DEVELOPMENT AND PLASTICITY** **Dr. Michael Feuerbacher**[1], Carsten Thomas[1] *[1]Juelich Research Centre, Juelich, Germany*
11.20	**FACTORS AFFECTING THE OXIDATION OF PURE CHROMIUM AT HIGH TEMPERATURES** **Ali Soleimani-Dorcheh**[1], Prof. Michael Schütze[1], Dr. Mathias Galetz[1] *[1]DECHEMA-Forschungsinstitut, Frankfurt Am Main, Germany*		*HIGHLIGHT* **GROUP THEORY TO PREDICT MOFs FLEXIBILITY** **Dr Arnaud Marmier**[1] *[1]University of the West of England, Bristol, United Kingdom*	**EFFECTS OF CHEMICAL COMPOSITION OF HEAS FROM CoCrFeMnNi FAMILY ON CRYSTAL DEFECTS AND MECHANICAL PROPERTIES** **Prof. Anna Fraczkiewicz**[1], Michal Mroz[1] *[1]Mines St Etienne, France, St Etienne, France*
11.40	**LONG-TERM OXIDATION BEHAVIOR OF AN ADVANCED Ti-Al-Nb ALLOY IN AIR AT 700 AND 800 °C** **Doctor Mickaël Dadé**[1], Doctor Vladimir Esin[1], Doctor Loeïz Nazé[1], Doctor Pierre Sallot[2] *[1]Mines ParisTech/Centre Des Matériaux P.M. Fourt, Evry, France, [2]Safran Tech, Magny Les Hameaux, France*	**RECRYSTALLIZATION IN NANOGRAINED STAINLESS STEEL 316LVM ANNEALED UNDER HIGH HYDROSTATIC PRESSURE** **Phd Agnieszka Krawczynska**[1], PhD Stanislaw Gierlotka[2], PhD Daria Setman[3], Professor Malgorzata Lewandowska[1], Professor Micheal Zehetbauer[3] *[1]Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland, [2]Institute of High Pressure Physics, Warsaw, Poland, [3]University of Vienna, Faculty of Physics, Vienna, Austria*	**REVEALING THE LINK BETWEEN TERAHERTZ VIBRATIONS AND MECHANICAL PROPERTIES** **Matthew Ryder**[1,2,3], Dr Svemir Rudić[2], Prof Bartolomeo Civalleri[4], Dr Gianfelice Cinque[3], Prof Felix Fernandez-Alonso[2], Prof Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom, [2]ISIS Neutron & Muon Source Facility, Rutherford Appleton Laboratory, United Kingdom, [3]Diamond Light Source, Harwell Campus, United Kingdom, [4]University of Turin, Torino, Italy*	**DEVELOPMENT OF ULTRA-FINE GRAIN MICROSTRUCTURES IN HIGH-ENTROPY ALLOYS VIA PHASE TRANSFORMATION ASSISTED RECRYSTALLIZATION** **Professor Ivan Guillot**[1], Lola Lilensten[1,2], Alexander Edwards[1,2], Clément Keller[3], Julie Bourgon[1], Pirès Rémy[1], Loïc Perrière[1], Philippe Vermaut[2], Jean-Philippe Couzinié[1], Frédéric Prima[2] *[1]Université Paris Est, ICMPE (UMR 7182) CNRS-UPEC, 94320 Thiais, France, [2]PSL Research University, Chimie ParisTech CNRS, Institut de Recherche de Chimie Paris, 75005 Paris, France, [3]GPM, INSA Rouen, Université de Rouen, CNRS UMR 6634, BP 08, 76801 St. Etienne du Rouvray, France*
12.00	**THERMAL CYCLING OXIDATION OF Alx (CoCrFeNi)100-x (x = 0; 3; 6; 9; 12) HIGH ENTROPY ALLOYS IN AIR AT 1273K** **Juliusz Dąbrowa**[1], Grzegorz Cieślak[2], Mirosław Stygar[1], Aleksander Gil[1], Tadeusz Kulik[2], Marek Danielewski[1] *[1]AGH University of Science and Technology, Faculty of Materials Science and Ceramics, Cracow, Poland, [2]Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland*	**PRECIPITATION AND MECHANICAL PROPERTIES OF Cu-2Be ALLOY PROCESSED BY HIGH PRESSURE TORSION.** **PhD Ivan Lomakin**[1], PhD Anton Bondarenko[1], PhD Miguel Castillo Rodríguez[2], PhD Ilchat Sabirov[2] *[1]Saint Petersburg State University, Saint Petersburg, Russian Federation, [2]IMDEA Materials, Madrid, Spain*	**THERMODYNAMIC APPROACH TO ACCURATELY DETERMINE THE FLEXIBILITY AND LOSS OF CRYSTALLINITY IN METAL-ORGANIC FRAMEWORKS** **Sven M.J. Rogge**[1], Jelle Wieme[1], dr. Louis Vanduyfhuys[1], prof. dr. An Ghysels[1], prof. em. dr. Michel Waroquier[1], prof. dr. Toon Verstraelen[1], prof. dr. Guillaume Maurin[2], prof. dr. Veronique Van Speybroeck[1] *[1]Center For Molecular Modeling, Ghent University, Zwijnaarde, Belgium, [2]Institut Charles Gerhardt Montpellier, Université Montpellier 2, Montpellier, France*	**EVOLUTION OF STRUCTURE AND PROPERTIES WITH COMPOSITION OF SINGLE-PHASE Cr-Fe-Mn-Co-Ni MULTI-COMPONENTS ALLOYS** Dr. Mathilde Laurent-Brocq[1], **Dr. Loïc Perriere**[1], Rémy Pirès[1], Dr. Sun Fan[3], Dr. Sergiy Divinski[2], Dr. Jean-Philippe Couzinié[1], Pr Ivan Guillot[1], Pr. Gerhard Wilde[2], Pr. Frédéric Prima[3] *[1]ICMPE UMR7182 - CNRS/UPEC, Thiais, France, [2]University of Münster, Münster, Germany, [3]IRCP UMR8247 CNRS/Chimie ParisTech, Paris, France*
12.20	**INSIGHT INTO THE OXIDATION RESISTANCE OF REFRACTORY HIGH-ENTROPY ALLOYS COMBINED WITH OPTIMAL DUCTILITY** **Mr. Saad Sheikh**[1] *[1]Surface and Microstructure Engineering, Department of Materials and Manufacturing Technology, Chalmers University of Technology, Gothenburg, Sweden, Gothenburg, Sweden*	**ULTRA-FINE GRAINED Ti-15Mo ALLOY – EFFECT OF REFINED MICROSTRUCTURE ON MECHANICAL PROPERTIES AND PHASE TRANSFORMATIONS** **Ph.D. Josef Stráský**[1], Kristína Václavová[1], Anna Terynková[1], Pavel Zháňal[1], Jana Šmilauerová[1], Jozef Veselý[1], Veronika Polyakova[2], Prof. Irina Semenova[2], Prof. Miloš Janeček[1] *[1]Charles University , Prague, Czech Republic, [2]Ufa State University, Ufa, Russian federation*	**ATOMIC FORCE MICROSCOPIC NANOINDENTATION STUDY OF METAL-ORGANIC FRAMEWORK THIN FILM COATINGS AND NANOSHEETS** **Mr Zhixin Zeng**[1], Professor Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom*	**EFFECT OF PROCESSING CONDITIONS ON MICROSTRUCTURE AND MECHANICAL BEHAVIOUR OF SELECTED HEA ALLOYS FROM CoCrFeMnNi FAMILY** **Julia Olszewska**[1], Prof Anna Fraczkiewicz[1], Dr Jean-Denis Mithieux[2] *[1]Ecole Des Mines De St Etienne, Saint Etienne, France, [2]APERAM R&D, Isbergues, France*
12.40	**INFLUENCE OF THE AL CONTENT ON THE CORROSION RESISTANCE OF BINARY Fe-Al ALLOYS IN H_2SO_4** **Dr. Jian Peng**[1], Dirk Vogel[1], Martin Palm[1] *[1]Max-planck-institut Für Eisenforschung Gmbh, Düsseldorf, Germany*	**EFFECT OF ULTRAFINE-GRAINED FORMATION AND SUBSEQUENT AGING ON STRUCTURAL, MECHANICAL AND TRIBOLOGICAL PROPERTIES OF Cu-Cr-Zr ALLOY** **Daria Shangina**[1,2], Dr. Natalia Bochvar[1], Prof. Gencaga Purcek[3], Harun Yanar[3], Prof. Sergey Dobatkin[1,2] *[1]A.A. Baikov Institute Of Metallurgy And Materials Science, Russian Academy Of Sciences, Moscow, Russian Federation, [2]National University of Science and Technology "MISIS", Laboratory of Hybrid Nanostructured Materials, Moscow, Russian Federation, [3]Department of Mechanical Engineering, Karadeniz Technical University, Trabzon, Turkey*	**LARGE ELASTIC RECOVERY OF ZINC DICYANOAURATE** **Ms Chloe Simone Chloe**[1], Mr Matthew R Ryder[2], Dr Joshua Alfred Hill[1], Professor Jin-Chong Tan[2], Professor Andrew Leslie Goodwin[1] *[1]Department of Chemistry, University Of Oxford, Oxford, United Kingdom, [2]Department of Engineering Science, University of Oxford, Oxford, United Kingdom*	**NOVEL Co20Cr15Fe26Mn17Ni22 ULTRA-FINE GRAINED HIGH-ENTROPY ALLOY** **Michal Mroz**[1], Anna Fraczkiewicz[1] *[1]Ecole Des Mines De Saint-etienne, Saint-etienne, France*
13.00		**RADIATION RESISTANCE OF A FeCr MODEL ALLOY NANOSTRUCTURED BY SEVERE PLASTIC DEFORMATION** **Bertrand Radiguet**[1], Xavier Sauvage[1], Auriane Etienne[1], Nariman Enikeev[2], Marina Abramova[2], Yulia Ivanisenko[3] *[1]University Of Rouen, Saint Etienne du Rouvray, France, [2]Ufa State Aviation Technical University, Ufa, Russia, [3]Institute for Nanotechnology, Karlsruhe Institute for Technology, Karlsruhe, Germany*	**A THERMODYNAMIC CHARACTERIZATION OF MECHANICAL, THERMAL AND ADSORPTION PROPERTIES OF FLEXIBLE METAL-ORGANIC FRAMEWORKS** **Dr. Louis Vanduyfhuys**1, Sven M.J. Rogge[1], Jelle Wieme[1], Steven Vandenbrande[1], Prof. Michel Waroquier[1], Prof. Veronique Van Speybroeck[1] *[1]Center For Molecular Modeling, Ghent University, Zwijnaarde, Belgium*	

Symposium	B9	B11	C1	C4
Room	I-08/M1	Maurice Saltiel Hall III/M2	Friends of Music Hall/M1	Conference Room 4/M1
Session Title	Thermodynamics ,MD simulations and Thin Films	Titanium Alloys	Coatings deposition routes and novel characterization techniques 4/5 -Bio-coatings	Additive Manufacturing of metals 2
Chairperson	J. F. Löffler, J. Eckert	Anna Zervaki	R. Cremer, A. R. González-Elipe	Eduard Hryha
11.00	*KEYNOTE/INVITED* **THERMODYNAMICS AND KINETICS OF SOME GLASS FORMING MELTS** **Prof. Livio Battezzati**[1], Dr. Gianluca Fiore[1], Dr. Alberto Castellero[1], Dr. Giulia Dalla Fontana *[1]Università di Torino, Torino, Italy*	**EFFECT OF B2-AUSTENITE GRAIN SIZE AND AGING TIME ON NANO-STRUCTURING OF Ti3Ni4 PRECIPITATES AND TRANSFORMATION BEHAVIOR OF THERMOMECHANICALLY TREATED TITANIUM NICKELIDE** **Dr Elena Ryklina**[1], Ph.D. Student Kristina Polyakova[1], Professor Sergey Prokoshkin[1] *[1]National University Of Science And Technology "misis", Moscow, Russian Federation*	*HIGHLIGHT* **ZINC AND ZINC-IRON NANOPARTICLES AS OXYGEN SCAVENGERS** **Dr. Sebastian Calderon**[1,2], Prof. Dr. Paulo Ferreira[2,3], Prof. Dr. Sandra Carvalho[1] *[1]University of Minho, Department of Physics, Campus of Azurém, 4800-058 Guimarães, Portugal, Guimaraes, Portugal, [2]INL - International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga s/n, 4715-330, Braga, Portugal, [3]Materials Science and Engineering Program, The University of Texas at Austin, Austin, Texas 78712, USA., Austin, USA*	**MICROSTRUCTURAL HETEROGENEITY ALONG THE BUILDING DIRECTION OF INCONEL 718 PRODUCED BY ELECTRON BEAM MELTING (EBM)** **Dunyong Deng**[1], Professor Johan Moverare[1], Professor Ru Lin Peng[1], Doctor Hans Söderberg[2] *[1]Linköping University, Linköping, Sweden, [2]Sandvik Machining Solutions AB, Sandviken, Sweden*
11.20		**CONTINUOUS COOLING TRANSFORMATION BEHAVIOR OF Fe CONTAINING Ti ALLOY** **Ph.D Yong-taek Hyun**[1], Do-Heon Kim[1], Ph.D Jong Woo Won[1], Dae-Won Jeong[2] *[1]Korea Institute of Materials Science, Changwon, South Korea, [2]Dong-A University, Busan, South Korea*	**PLASMA COATING OF BIODEGRADABLE NANOFIBERS TO GENERATE SMART ANTIBACTERIAL SURFACES** **Dr. Anton Manakhov**[1], Dr. Dmitry Shtansky[1], Ms. Elizaveta Permyakova[1], Dr. Irina Sukhorukova[1], Ms. Eva Kedronova[2] *[1]National University of Science and Technology "MISiS", Moscow, Russian Federation, [2]Masaryk University, Brno, Czech Republic*	**PROCESS-INDUCED ALTERATIONS OF HASTELLOY X POWDER SUBJECTED TO SELECTED LASER MELTING (SLM)** **Mr Hans Gruber**[1], Mr Eduard Hryha[1], Mr Lars Nyborg[1] *[1]Chalmers University of Technology, Göteborg, Sweden*
11.40	**COMPETITION BETWEEN METALLIC GLASS AND QUASICRYSTAL FORMATION IN Mg-BASED ALLOYS** **PhD Güven Kurtuldu**[1], PhD Karl Shamlaye[1], Professor Jörg Löffler[1] *[1]Laboratory of Metal Physics and Technology, Department of Materials, ETH Zürich, Zürich, Switzerland*	**STRAIN RATE EFFECT ON THE MICROSTRUCTURES OF CONVENTIONAL AND HARMONIC β TITANIUM ALLOYS** **David Tingaud** *[1]Universite Paris 13, Sorbonne Paris Cite, LSPM-CNRS, Villetaneuse, France,*	**CHARACTERIZATION OF WATERBORNE POLYURETHANE-NANO SILICA COATINGS FOR ICEPHOBIC APPLICATIONS** **M.Sc. Eng. Bartlomiej Przybyszewski**[1,2], PhD. Eng. Rafal Kozera[1,2], DSc. PhD. Eng. Anna Boczkowska[1,2] *[1]Technology Partners Foundation, Warsaw, Poland, [2]Warsaw University of Technology, Warsaw, Poland*	**ADDITIVE MANUFACTURING OF HIGH TEMPERATURE MATERIALS FOR FUSION: A REVIEW OF CURRENT CAPABILITIES AND FUTURE OUTLOOK** **Mr David Hancock**[1,2], Dr Mike Curtis-Rouse[3], Miss Amanda Field[4], Mr David Homfray[1], Dr Heather Lewtas[1], Dr Elizabeth Surrey[1], Prof. Iain Todd[2], Dr Michael Porton[1], Prof. Stewart Williams[5], Prof. Brad Wynne[1,2] *[1]Culham Centre for Fusion Energy, Abingdon, United Kingdom, [2]University of Sheffield Department of Materials Science and Engineering, Sheffield , United Kingdom, [3]Science and Technologies Facilities Council, Rutherford Appleton Laboratory, Harwell, United Kingdom, [4]University of Birmingham School of Metallurgy and Materials, Birmingham, United Kingdom, [5]University of Cranfield School of Aerospace, Transport, and Manufacturing, Cranfield, United Kingdom*
12.00	**MICROSTRUCTURAL ALTERATIONS AT EQUILIBRIUM AND UNDER TENSILE DEFORMATION OF A Cu-Zr MODEL GLASS BY MOLECULAR DYNAMICS SIMULATIONS** **Mr. Pablo A. Palomino Rico**[1], Prof. Dimitris G. Papageorgiou[2], Prof. Giorgos A. Evangelakis[1] *[1]Department of Physics, University of Ioannina, Greece, [2]Department of Materials Science and Engineering, University of Ioannina, Greece*	**ELEVATED TEMPERATURE MICRO-TENSILE CHARACTERIZATION OF TITANIUM ALLOYS** **Dr. Salahudin Nimer**[1,2], Dr. Richard Everett[2], Prof. Marc Zupan[2] *[1]Johns Hopkins University Applied Physics Laboratory, Laurel, United States, [2]University Of Maryland, Baltimore County, Baltimore, United States*	**PLASMA MICRO-NANOTEXTURED 3D SURFACES AND THEIR APPLICATIONS IN WETTING AND LIFE SCIENCES** **Dr. Kosmas Ellinas**[1], Dr. Katerina Tsougeni[1], Mrs Anastasia Kanioura[1], Mrs Dionysia Kefalinou[1], Dr. Kostas Stamatakis[1], Dr. Panagiota Petrou[1], Dr. Angeliki Tserepi[1], Dr. Sotirios Kakabakos[1], Dr. Evangelos Gogolides[1] *[1]NCSR Demokritos, Aghia Paraskevi, Greece*	**PROCESSING AND MATERIAL QUALITY CONSIDERATIONS OF AM PRODUCED STEELS FOR TOOLING APPLICATIONS** **Dr. Christos Oikonomou**[1], Dr. Seshendra Karamchedu[1], Dr. Johnny Sjöström[1] *[1]Uddeholms AB, Hagfors, Sweden*
12.20	**EFFECT OF CHEMICAL BONDING BETWEEN ALLOYING ELEMENTS ON THE SHORT- AND MEDIUM-RANGE ORDER IN METALLIC GLASSES** **Dr Masato Shimono**[1], Dr Hidehiro Onodera[1] *[1]National Institute for Materials Science, Tsukuba, Japan*	**IDENTIFICATION OF RELATIONSHIPS BETWEEN HEAT TREATMENT AND FATIGUE CRACK GROWTH OF AB TITANIUMS ALLOYS** **Vincent Renon**[1,2], Pr Gilbert Henaff[2], Dr Céline Larignon[1], Dr Simon Perusin[1], Pr Patrick Villechaise[2] *[1]Irt Saint Exupery, Toulouse, France, [2]Institut P', Chasseneuil du Poitou, France*	**SUBLIMATING DRY ICE COATINGS AS A MEANS FOR CONTACTLESS MANIPULATION OF LIQUIDS** **Dr Athanasios Milionis**[1], Dr Carlo Antonini[1,2], Dr Stefan Jung[1], Mr Anders Nelson[1], Dr Thomas Schutzius[1], Prof. Dimos Poulikakos[1] *[1]ETH Zurich, Zurich, Switzerland, [2]Empa, Dubendorf, Switzerland*	**INFLUENCE OF HIP ON MICROSTRUCTURE, AND PROPERTIES OF H13 TOOL STEEL MANUFACTURED BY SLM** **Mikael Åsberg**[1], Gunnel Fredriksson[1], PhD Wendy Fredriksson[2], PhD Sepehr Hatami[3], Pavel Krakhmalev[1] *[1]Karlstad University, Karlstad, Sweden, [2]Bodycote Hot Isostatic Pressing AB, Sweden, [3]Swerea IVF AB, Sweden*
12.40	**AMORPHOUS/AMORPHOUS METALLIC MULTILAYERS** **Dr. Florian Spieckermann**[1], Dr. Marlene Mühlbacher[1], Dr. Thomas Schöberl[2], Dr. Christoph Gammer[2], Prof. Dr. Christian Mitterer[3], Prof. Dr. Jürgen Eckert[1,2] *[1]Department of Materials Physics, Montanuniversität Leoben, Leoben, Austria, [2]Erich Schmid Institute for Materials Science, Austrian Academy of Sciences, Leoben, Austria, [3]Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Leoben, Austria*	**THE ASSESSMENT OF THE ROOM TEMPERATURE FORMABILITY LIMITS USING DIC TECHNIQUES** **Dr. Evgenia Yakushina**[1], Dr. Nicola Zuelli[1], Dr. Paul Blackwell[1] *[1]Advanced Forming Research Centre, University Of Strathclyde, Renfrew, United Kingdom*	**ANODICALLY ELECTRODEPOSITED Pb-Co-Sn COATINGS AS ELECTROCATALYST FOR OXYGEN EVOLUTION REACTION** **Dr Claudia Carrasco**[1], Marisol Maril[1], Pablo Tobosque[1], Dr Carlos Camurri[1] *[1]Universidad De Concepcion, Concepcion, Chile*	**INVESTIGATION OF THE IN-SITU ELABORATION OF ALLOYS BY SELECTIVE LASER MELTING OF MIXED ELEMENTAL POWDERS: APPLICATION TO A Ti-26(AT.%)NB ALLOY** **Marie Fischer**[1,3], Laurent Peltier[2,3], Gael Le Coz[1,3], Pascal Laheurte[1,3] *[1]Universite De Lorraine, Metz, France, [2]Arts et Metiers, Metz, France, [3]LEM3, Metz, France*
13.00			**IMPACT OF SOLVENT COMPOSITION ON FORMATION OF PEMFC ELECTRODE LAYERS** **Eva Hoffmann**[1], Daniela Fischer[1], Martin Thoma[1], Dr. Cornelia Damm[1], Prof. Dr. Wolfgang Peukert[1] *[1]University Erlangen Nuremberg, Erlangen, Germany*	

Symposium	C8	C9	C10	C11
Room	Library Hall/M2	Conference Room 3/M1	F 319/M1	MOYSA Hall/M2
Session Title	Ferrous Alloys and Steels	Material removal processes I	Microstructure formation and mechanically driven transformation	Silicon Materials and Devices
Chairperson	Jan Jezierski, Hongwei Zhang	Luca Settineri	B. Straumal, X. Sauvage	Dimitris Tsoukalas
11.00	**PREDICTION OF INFLUENCES OF ALLOY ELEMENTS ON SOLIDIFICATION AND PRECIPITATION BEHAVIOR OF HIGH SPEED STEELS** **Dr Hongwei Zhang**[1,2], Dr Keiji Nakajima[3], Miss Mengmeng Su[1,2], Dr Hiroyuki Shibata[4], Dr Jicheng He[1,2] *[1]Northeastern University, Key Laboratory of Electromagnetic Processing of Materials, Shenyang, China, [2]Northeastern University, School of Metallurgy, Shenyang, China, [3]KTH Royal Institute of Technology, Department of Materials Science and Engineering, Stockholm, Sweden, [4]Tohoku University, Institute of Multidisciplinary Research for Advanced Materials, Sendai, Japan*	*KEYNOTE/INVITED* **EFFECT OF MICRO-BLASTING ON THE WEAR BEHAVIOUR OF ARC-PVD COATED TOOLS** Assist. Prof. Dr.-Eng. Georgios Skordaris[1], **Prof. Dr.-ing. Habil., Dr.-ing. E.h., Dr.h.c. Konstantinos-Dionysios Bouzakis**[1], Dipl.Eng., MSc Paschalis Charalampous[1], Dipl. Eng. Tilemachos Kotsanis[1], Dr.-Ing. Emmanouil Bouzakis[2] *[1]Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]German University of Technology in Oman (GUtech), Department of Engineering, Sultanate of Oman*	*HIGHLIGHT* **HIGH-PRESSURE TORSION INDUCED TRANSFORMATIONS IN Ti-BASED ALLOYS** **Askar Kilmametov**[1], Yulia Ivanisenko[1], Boris Straumal[1,2], Andrey Mazilkin[1,2], Mario Kriegel[3], Olga Fabrichnaya[3], David Rafaja[3], Horst Hahn[1] *[1]Karlsruhe Institute of Technology (KIT), Institute of Nanotechnology, 76344 Eggenstein-Leopoldshafen, Germany, [2]Institute of Solid State Physics, Russian Academy of Sciences, 142432, Chernogolovka, Russia, [3]TU Bergakademie Freiberg, Institute of Materials Science , 09599 Freiberg, Germany*	**THE MOLECULAR MONOLAYER DOPING: A CONFORMAL AND COST-EFFECTIVE APPROACH FOR NANOELECTRONICS** Sebastiano Caccamo[1], Dr. Antonino La Magna[1], **Dr. Rosaria A. Puglisi**[1] *[1]CNR - IMM, Catania, Italy*
11.20	**CHARACTERIZATION OF NON-METALLIC INCLUSIONS OBTAINED IN STEEL PROCESSED WITH DIFFERENT CRUCIBLE MATERIALS** **Johannes Gleinig**[1], Tim Lippmann[1], Anja Weidner[1], Horst Biermann[1] *[1]Institute of Materials Engineering, Technical University of Freiberg, Freiberg, Germany*	*[1]Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]German University of Technology in Oman (GUtech), Department of Engineering, Sultanate of Oman*	*HIGHLIGHT* **FORMATION OF THE Ω PHASE IN Ti–Fe ALLOYS AND ITS STABILITY AFTER HIGH-PRESSURE TORSION** **Dr. M.J. Kriegel**[1], Dr. A.R. Kilmametov[3,4], Dr. V. Klemm[1], A.A. Mazilkin[2,3], Dr. O. Fabrichnaya[1], Prof. B.B. Straumal[2,3], Dr. J. Ivanisenko[3], Prof. H. Hahn[3], Prof. D. Rafaja[1] *[1]TU Bergakademie Freiberg, Institute of Materials Science, Freiberg, Germany, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruhe Institute of Technology, Institute of Nanotechnology, Karlsruhe, Germany, [4]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russia*	*HIGHLIGHT* **SELF-ASSEMBLY OF SINGLE SI QUANTUM DOTS IN SiO2 FOR SINGLE ELECTRON TRANSISTORS** **Dr. Karl-Heinz Heinig**[1], Dr. Karl-Heinz Stegemann[2], Xiaomo Xu[1], Thomas Pruefer[1], Dr. Daniel Wolf[1], Dr. Gregor Hlawacek[1], Prof. Wolfhardt Moeller[1], Dr. Johannes von Borany[1] *[1]Helmholtz-Center Dresden-Rossendorf HZDR, Dresden, Germany, [2]XFAB GmbH, Dresden, Germany*
11.40	**MARTENSITIC STAINLESS STEEL WITH ULTRAFINE MICROSTRUCTURE PRODUZCED BY SELECTIVE LASER MELTING IN DIFFERENT ATMOSPHERES** **Kamran Saeidi**[1], Farnoosh Forouzan[2], Frank Lofaj[3], Zhijian Shen[1] *[1]Department of Materials and Environmental Chemistry, Arrhenius Laboratory, Stockholm University, Stockholm, Sweden, [2]Lulea University of Technology, Department of Engineering sciences and Mathematics, Division of Materials Science, Lulea, Sweden, [3]Institute of Materials Research of the Slovak Academy of Sciences, Košice, Slovakia*	**EFFECT OF CUTTING CONDITIONS ON MACHINABILITY OF AD 730(TM) DURING HIGH SPEED TURNING WITH PCBN TOOLS** **Mr. Zhe Chen**[1], Dr. Ru Peng Lin[1], Dr. Jinming Zhou[2], Dr. Volodymyr Bushlya[2], Dr. Rachid M'Saoubi[3], Dr. Sten Johansson[1], Dr. Johan Moverare[1] *[1]Division of Engineering Materials, Linköping University, Linköping, Sweden, [2]Division of Production and Materials Engineering, Lund University, Lund, Sweden, [3]Seco Tools AB, Fagersta, Sweden*	**MICROSTRUCTURAL EVOLUTION AND DEFORMATION BEHAVIOR OF IMMISCIBLE Fe-Cu-Ag ALLOYS PROCESSED BY HIGH-PRESSURE TORSION** **Andrea Bachmaier**[1], Jörg Schmauch[2], Andreas Verch[3], Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Leoben, Austria, [2]Experimentalphysik, Saarland University, Saarbrücken, Germany, [3]INM-Leibniz Institute for New Materials, Saarbrücken, Germany*	**ELECTRICAL CHARACTERIZATION OF Si NANOCRYSTAL DEVICES SUITABLE FOR RT-SET OPERATION** **Dr. Matteo Belli**[1], Mario Alia[1], Dr. Xiaomo Xu[2], Dr. Cyrille Laviron[3], Dr. Ahmed Gharbi[3], Dr. Mathias Rommel[4], Dr. Florian Stumpf[4], Dr. Thomas Prüfer[2], Dr. Daniel Wolf[2], Dr. Lothar Bischoff[2], Dr. Rene Hübner[2], Dr. Gregor Hlawacek[2], Dr. Stefan Facsko[2], Dr. Karl-Heinz Heinig[2], Dr. Johannes von Borany[2], Prof. Marco Fanciulli[5,1] *[1]CNR-IMM, Sede di Agrate Brianza, Agrate Brianza, Italy, [2]HZDR, Dresden, Germany, [3]CEA-LETI, Grenoble, France, [4]Fraunhofer-IISB, Erlangen, Germany, [5]University of Milano-Bicocca, Department of Materials Science, Milano, Italy*
12.00 - 13.00	**Session Title:** Aluminium Alloys - I **Chairpersons:** Gokhan Orhan, Alexander E. Karantzalis	**DRILLING OF ZINC WROUGHT ALLOYS** Prof. Dr.-Ing. Dr.-Ing. E. h. Dr. h. c. Dr. h. c. Fritz Klocke[1], Dr.-Ing. Dipl.-Wirt.-Ing. Benjamin Döbbeler[1], **Stefan Baier**[1] *[1]WZL of RWTH Aachen University, Aachen, Germany*	**SHEAR INDUCED SOLID STATE JOINING OF DISSIMILAR Ti ALLOYS** **Dr. Anibal Mendes**[1], Dr. Rimma Lapovok[1], Dr. Ilana Timokhina[1], Dr. Andrey Molotnikov[2], Dr. Lee Semiatin[3] *[1]IFM-Deakin University, Melbourne, Australia, [2]Monash University, Melbourne, Australia, [3]Air Force Research Laboratory - Wright-Patterson Air Force Base, Wright-Patterson AFB, USA*	**ON THE USE OF THIN TRAPPING LAYERS TO LOCALIZE HYDROGEN PRECIPITATION AND TO FRACTURE SILICON USING THE SMART CUT PROCESS** **Dr Alain Claverie**[1], Dr Frederic Mazen[2], Dr Aurélie Royal[1,2] *[1]Cemes Cnrs, Toulouse, France, [2]Léti-CEA, Grenoble, France*
12.00	**CORRELATION BETWEEN MELT QUALITY, SOLIDIFICATION RANGE AND HOT TEARING OF Al-Si ALLOYS** **Muhammet Uludag**[1], Remzi Cetin[2], Derya Dispinar[3] *[1]Bursa Technical University, [2]Halic University, [3]Istanbul University*			
12.20	**CHANGE IN POROSITY OF A356 BY INCREASED HOLDING TIME OF THE LIQUID** Muhammet Uludag[1], **Lokman Gemi**[2], Remzi Cetin[3], Derya Dispinar[4] *1Bursa Technical University, 2Necmettin Erbakan University, 3Halic University, 4Istanbul University*	*HIGHLIGHT* **EFFECT OF PVD COATING'S MECHANICAL PROPERTIES AND ADHESION ON THE MILLING PERFORMANCE OF COATED CEMENTED CARBIDE INSERTS** Assist. Prof. Dr.-Eng. Georgios Skordaris[1], **Prof. Dr.-ing. Habil., Dr.-ing. E.h., Dr.h.c. Konstantinos-Dionysios Bouzakis**[1], Dipl.Eng., MSc Paschalis Charalampous[1], Dipl. Eng. Tilemachos Kotsanis[1], Dr. Roland Bejjani[2] *[1]Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Sandvik Coromant, Sweden*	**ROLE OF PHASE AND STRUCTURE TRANSFORMATIONS TO OBTAIN LOW MODULUS TITANIUM ALLOYS** **Mikhail Petrzhik**[1] *[1]National University of Science & Technology, Moscow, Russia*	**LOW-TEMPERATURE MICROWAVE-BASED PLASMA OXIDATION AND NITRIDATION OF GERMANIUM AND SILICON** **Dr. Wilfried Lerch**[1] *[1]Centrotherm Photovoltaics AG, Blaubeuren, Germany*
12.40	**MEASUREMENT OF FLUIDITY OF A356 BY NOVEL OCTOPODS MOULD DESIGN** **Murat Colak**[1], Derya Dispinar[2] *[1]Bayburt University, [2]Istanbul University*			**XPS ANALYSIS OF METAL/OXIDE PILE AND CORRELATION BETWEEN BINDING ENERGY SHIFT AND PHYSICAL-CHEMICAL EFFECTS DUE TO DIFFERENT ANNEALING PROCESSES** **Charly Fontaine**[1,2], Bernard Pelissier[2], Mickaël Gros-Jean[1], Thierry Chevolleau[2] *[1]Stmicroelectronics, Crolles, France, [2]Laboratoire des technologies de la microélectronique (LTM), Grenoble, France*

Symposium	D1	D2	D3	D8
Room	Artist Café/M1	Museum Hall /M2	I-15/M1	I -16/M1
Session Title	Time-Resolved Studies	Advanced Microscopy Methods	Structural and mechanical properties II	Ab initio free energy calculations
Chairperson	**Federico Boscherini, Jozef Keckes**	**Giovanni Bertoni**	**Sotirios Ves**	**Andrew Horsfield**
11.00	*KEYNOTE/INVITED* **REVEALING MULTISCALE PHOTOSWITCHING PROCESSES IN SPIN-CROSSOVER MOLECULAR MATERIALS WITH ULTRAFAST X-RAY SCIENCE** **Prof. Eric Collet**[1] *[1]University Rennes 1/ CNRS, Rennes, France*	*HIGHLIGHT* **IDENTIFICATION OF ORIENTATION RELATIONSHIPS IN STRUCTURAL MATERIALS USING NEO-EULERIAN MAPPING** **Dr Robert Krakow**[1], Dr Robbie J Bennett[1], Mr Duncan N Johnstone[1], Prof Paul AM Midgley[1], Prof Catherine MF Rae[1] *[1]University of Cambridge, Department of Materials, Cambridge, United Kingdom*	*HIGHLIGHT* **STRAIN EFFECTS IN TWO-DIMENSIONAL MoS2 AND WS2 CRYSTALS** Dr Dimitrios Anestopoulos[1], Dr Spyridon Grammatikopoulos[1], Dr George Anagnostopoulos[1], Prof Costas Galiotis[1,2], Dr John Parthenios[1], **Prof Konstantinos Papagelis**[1,3] *[1]Foundation of Research and Technology Hellas, Institute of Chemical Engineering and High Temperature Processes, P.O. Box 1414, GR-26504 , Rio, Greece, [2]Department of Chemical Engineering, University of Patras, 26504, Rio,, Greece, 3Department of Physics, University of Patras, 26504 , Rio, Greece*	*KEYNOTE/INVITED* **FREE ENERGY OF DEFECTS IN BODY CENTERED-CUBIC METALS: THEORY AND EXPERIMENTAL VALIDATION** **Dr. Mihai-Cosmin Marinica**[1] *[1]Cea, Den, Service De Recherches De Métallurgie Physique, F-91191 Gif-sur-Yvette, France*
11.20		**OBSERVATION OF DISLOCATIONS IN SCANNING ELECTRON MICROSCOPE** **Di Wan**[1], Prof. Dr.-Ing. Habil. Afrooz Barnoush[1] *[1]Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology, Trondheim, Norway*	**ANISOTROPY AND POISSON'S RATIO OF MgO AT HIGH TEMPERATURES AND AT HIGH PRESSURES** Professor Thomas Duffy[1], **Professor Ilias Zouboulis**[2] *[1]Princeton University-Department of Geosciences, Princeton, U.S.A., [2]National Technical University of Athens-Department of Physics, Zografou/Athens, Greece*	
11.40	**IN SITU SAXS REGISTRATION WITH NANOSECOND TIME RESOLUTION** **Dr Konstantin Ten**[1,4], Dr Edward Pruuel[1,4], Dr Alexey Kashkarov[1,4], Dr Lev Shechtman[2,4], Dr Vladimir Zhulanov[2,4], Dr Boris Tolochko[3], student Ivan Rubtsov[4] *[1]LIH SB RAS, Novosibirsk, Russian Federation, [2]BINP SB RAS, Novosibirsk, Russian Federation, [3]ISSCM SB RAS, Novosibirsk, Russian Federation, [4]NSU, Novosibirsk, Russian Federation*	**TRANSMISSION ELECTRON BACKSCATTER DIFFRACTION FOR THIN FILM CHARACTERIZATION** Dr. Mikhail Polyakov[1], Dr. Johann Michler[1], **Dr. Xavier Maeder**[1] *[1]Empa, Thun, Switzerland*	**COMBINED X-RAY DIFFRACTION AND MICRO-TOMOGRAPHY UNDER HIGH PRESSURE AND HIGH TEMPERATURE ON THE PSICHÉ BEAMLINE OF SOLEIL** **Dr. Jean-Paul Itie**[1], Dr Nicolas Guignot Guignot[1], Dr Andrew King[1], Dr Eglantine Boulard[1], Dr Yann LeGodec[2], Dr Guillaume Morard[2], Dr Alisha Clark[2],Dr Julien Philippe[2], Dr Jean-Philippe Périllat[3] *[1]Synchrotron Soleil, L'orme Des Merisiers, Bp 48 Gif Sur Yvette, France, [2]IMPMC, Paris, France, [3]Laboratoire de Géologie de Lyon, Lyon, France*	**LATTICE DYNAMICS IN HIGH ENTROPY ALLOYS: UNDERSTANDING THE ROLE OF FLUCTUATIONS** **Dr. Biswanath Dutta**[1], Dr. Raina J. Olsen[2,3], Dr. Sai Mu[2], Dr. Tilmann Hickel[1], Dr. German D. Samolyuk[2], Dr. Eliot D. Specht[2], Dr. Hongbin Bei[2], Dr. Lucas R. Lindsay[2], Prof. Jörg Neugebauer[1], Prof. Malcolm Stocks[2], Prof. Bennett C. Larson[2] *[1]Max-Planck-Institut Für Eisenforschung GmbH, Düsseldorf 40237, Germany, [2]Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, USA, [3]U.S. Army Research Laboratory, Adelphi, MD 20783, USA*
12.00	**IN SITU REAL TIME FAR FIELD IMAGING OF THE (200) X-RAY DIFFRACTION PEAK OF A SINGLE CRYSTAL SUPERALLOY DURING A HIGH TEMPERATURE CREEP TEST** **Thomas Schenk**[1,2,6], Roxane Trehorel[2], Gabor Ribarik[4,6], Alain Jacques[1,2,6], Pierre Bastie[5] *[1]CNRS, Nancy, France, [2]IJL, Nancy, France, [3]Université de Lorraine, Nancy, France, [4] Eötvös Loránd University, Budapest, Hungary, [5]LiPhy, Grenoble, France, [6]Labex DAMAS , Metz, France*	**COMPREHENSIVE CHARACTERIZATION OF STRUCTURAL AND FUNCTIONAL SURFACE PROPERTIES** **Nadja Felde**[1,2], Luisa Coriand[1], Sven Schröder[1], Andreas Tünnermann[1,2] *[1]Fraunhofer Institute for Applied Optics and Precision Engineering, Jena, Germany, [2]Friedrich-Schiller-University, Institute of Applied Physics, Jena, Germany*	**EXPLORING THE MECHANICAL BEHAVIOR OF FLEXIBLE AND RIGID METAL ORGANIC FRAMEWORKS (MOF) MATERIALS USING COUPLED SYNCHROTRON LIGHT AT HIGH PRESSURE AND MOLECULAR SIMULATION** **Dr. Pascal G. Yot**[1], Dr. Christian Serre[2], Dr. Vladimir Dmitriev[3], Dr. Jean-Paul Itié[4], Pr. Guillaume Maurin[1] *[1]University of Montpellier, Montpellier, France, [2]Ecole Nationale Superieur de Paris, Paris, France,[3]European Synchrotron Radiation Facility, Grenoble, France, [4]Synchrotron Soleil, Saint-Aubin, France*	**INCLUSION OF ANHARMONIC THERMAL EFFECTS ON ELASTIC AND THERMODYNAMIC PROPERTIES OF SOLIDS WITH AB INITIO CALCULATIONS** **Ph.D. Alessandro Erba**[1] *[1]Università Degli Studi Di Torino, Torino, Italy*
12.20	**IN-SITU SYNCHROTRON X-RAY DIFFRACTION STUDIES ON SOLID-STATE PHASE TRANSFORMATIONS OF AN ADVANCED HIGH STRENGTH STEEL** **Ms. Parisa Eftekharimilani**[1], Mr. Richard Huizenga[1], Dr. Marcel Hermans[1], Prof. Ian Richardson[1] *[1]Delft University of Technology, Delft, Netherlands*	**CORRECTING SAMPLE DRIFT USING FOURIER HARMONICS** **Mr. G. Bárcena-González**[1], Mrs MP Guerrero-Lebrero[1], Mrs E. Guerrero[1], Mr DF. Reyes[2], Mrs SB. Lagomazzini[1], Mr A. Yañez[1], Mr J. Pizarro[1], Mr D. González[2], Mr PL. Galindo[1] *[1]Department of Computer Science and Engineering, University Of Cádiz, Cádiz, Spain, [2]Department of Material Science and Metallurgy Engineering and Inorganic Chemistry, University of Cádiz, Cádiz, Spain*	**IN-SITU PROBES OF GRANULAR MEDIA VIA X-RAY ANALYSIS TO ADVANCE PREDICTIVE MODELS** **Ryan Crum**[1], Minta Akin[1], Eric Herbold[1], Jon Lind[1], Michael Homel[1], Ryan Hurley[1] *[1]Lawrence Livermore National Laboratory, Livermore, USA*	**THERMODYNAMIC MODELING OF σ-FeCr AND ITS EXTENSION INTO MULTICOMPONENT SYSTEMS ASSISTED BY DFT CALCULATIONS** **Dr. Rer. Nat. Aurélie Jacob**[1], Dr. rer. nat. Erwin Povoden-Karadeniz[1], Prof. Ernst Kozeschnik[1] *[1]TU Wien - Institute for Materials Science and -Technology, Vienna, Austria*
12.40	**TIME RESOLVED X-RAY TOMOGRAPHY AND IMAGING FOR MATERIALS PROCESSING** **Dr Robert C. Atwood**[1,2], Dr. Nicola Wadeson[1], Mr. Chu Lun Alex Leung[2,3], Dr. Mohammed A. Azeem[2,3], Dr. Daniil Kazantsev[2,3], Prof. Peter D. Lee[2,3] *[1]Diamond Light Source, Didcot, United Kingdom, [2]Manchester X-ray Imaging Facility, Research Complex at Harwell, Didcot, United Kingdom, [3]School of Materials, University of Manchester, Manchester, United Kingdom*	**COMPUTATIONAL NANOMETROLOGY FOR THE CHARACTERIZATION OF NANOSTRUCTURE MORPHOLOGIES: ACCURACY AND COMPLEXITY ISSUES** Dr Vassilis Constantoudis[1,3], **Mr. George Papavieros**[1,2,3], Mr. Manolis Chatzigeorgiou[1], Dr. Kosmas Ellinas[1,4], Dr. Katerina Tsougeni[1,4], Dr. Evangelos Gogolides[1,3,4] *[1]N.C.S.R. Demokritos , Athens , Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Nanometrisis P.C., Athens/Aghia Paraskeui, Greece, [4]Nanoplasmas P.C., Athens/Aghia Paraskeui, Greece*		**ATOMIC-SCALE MODELING OF Fe-Al-Mn-C ALLOYS USING PAIR MODELS AND THERMODYNAMIC CALCULATIONS** Dr Alexandre Legris[1], Jérôme Dequeker[1], **Dr Rémy Besson**[1], Dr Ludovic Thuinet[1] *[1]Univ. Lille, CNRS, INRA, ENSCL, UMR 8207 - UMET - Unité Matériaux et Transformations, F-59000 Lille, France, Umet, Cité Scientifique, Avenue Paul Langevin, Bât C6, France*
13.00				**HIGH-TEMPERATURE DFT CALCULATIONS OF SUB-STOCHIOMETRIC ZrC** **Dr Thomas Mellan**[1], Dr Andrew Duff[2], Prof. Mike Finnis[3] *[1]Department of Materials, Thomas Young Centre, Imperial College London, Exhibition Road, London SW7 2AZ, UK, [2]Hartree Centre, STFC Daresbury Laboratory, Scientific Computing Department, Warrington WA44AD, UK, [3]Department of Materials and Department of Physics, Thomas Young Centre, Imperial College London, Exhibition Road, London SW7 2AZ, UK*

Symposium	D10	E4	E6	F3
Room	CR II Hall/M2	Conference Room 2/M1	Maurice Saltiel Hall II/M2	3-21/M1
Session Title	Fluids I	Steels and alloys	Hybrid materials and Fibre reinforced plastics	Nanobiomaterials and nanotechnology for implants, devices and theranostics II
Chairperson	Serafeim Kalliadasis, Fathollah Varnik	Annette Heinzel	Dirk Lehmhus	Isabel Izquierdo Barba
11.00	*KEYNOTE/INVITED* **UPSCALED PHASE-FIELD EQUATIONS FOR INTER-FACIAL DYNAMICS IN STRONGLY HETEROGENEOUS MEDIA** **Dr. Markus Schmuck**[1]	**SINGULARITIES OF TENSILE BEHAVIOR OF ADVANCED AUSTENITIC STEELS OBTAINED BY DIFFERENT COLD PROCESSES** **Dr Patrick OLIER**[1], Dr Laurine COURTIN[1], Emilien CURTET[1], Dr Bouzid KEDJAR[2], Pf Ludovic THILLY[2] *[1]DEN-Service de Recherches Métallurgiques Appliquées, CEA, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France, [2]Institut Pprime, UPR 3346 – CNRS/University of Poitiers/ISAE-ENSMA, 86962, Futuroscope Chasseneuil Cedex., France*	*KEYNOTE/INVITED* **AUTOMATED COMPOSITES MANUFACTURING AND 4D PRINTING OF COMPOSITES** **Prof. Suong Van Hoa**	*KEYNOTE/INVITED* **MULTIFUNCTIONAL MESOPOROUS NANOPARTICLES CONTROLLING CELL BEHAVIOR** **Prof. Thomas Bein**[1]
11.20	*[1]Maxwell Institute for Mathematical Sciences and Heriot-Watt University, Edinburgh, United Kingdom*	**HIGH TEMPERATURE MECHANICAL BEHAVIOR OF WC-Cu THERMAL BARRIERS FOR FUSION APPLICATIONS** **Miss Elena Tejado**[1], M. Dias[2], F. Guerreiro[2], J.B. Correia[3], T. Palacios[1], P.A. Carvalho[2,4], E. Alves[2], J.Y. Pastor[1] *[1]Dpto. Ciencia de Materiales-CIME, Universidad Politécnica de Madrid, Madrid, Spain, [2]Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal, [3]LNEG, Laboratório Nacional de Energia e Geologia, Lisboa, Portugal, [4]CEFEMA, Instituto Superior Técnico, Lisboa, Portugal*	*Concordia University, Montreal, Canada*	*[1]Department of Chemistry, Nanosystems Initiative Munich (NIM) and Center for Nano Science (CeNS), University of Munich (LMU), (LMU), Butenandtstr.11, 81377, Munich, Germany*
11.40	*HIGHLIGHT* **MULTISCALE SIMULATIONS WITH SMOOTHED DISSIPATIVE PARTICLES DYNAMICS** **Gérôme Faure**[1], Jean-Bernard Maillet[1], Gabriel Stoltz[2] *[1]CEA, Paris, France, [2]CERMICS, Paris, France*	**DISSOLUTION CORROSION BEHAVIOR OF 316L AUSTENITIC STAINLESS STEELS IN STATIC LBE: THE IMPORTANCE OF THE STEEL MICROSTRUCTURE AND THERMOMECHANICAL STATE** **Dr Konstantina Lambrinou**[1] *[1]SCK-CEN, Boeretang 200, Belgium*	**THERMAL CYCLING OF HEATED FIBRE METAL LAMINATES** **Dr.ir. Michiel Hagenbeek**[1] *[1]Delft University Of Technology, Delft, Netherlands*	**SELF-IMMOLATIVE POLYMERS: A NEW CONCEPT OF GATEKEEPERS FOR MESOPOROUS SILICA NANOPARTICLES** **Dr Miguel Manzano**[1,2], Mr Miguel Gisbert-Garzarán[1,2], Prof. María Vallet-Regí[1,2] *[1]Dpto. Química Inorgánica y Bioinorgánica, Universidad Complutense de Madrid, Instituto de Investigación Sanitaria Hospital 12 de Octubrei+12, Madrid, Spain, [2]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain*
12.00	**LINKING MD SIMULATIONS TO PHASE-FIELD MODELING TO ANALYZE SOLID-LIQUID INTERFACE EFFECTS ON THE GROWTH KINETICS** **Dr. Mohammed Guerdane**[1] *[1]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**IMPACT OF ULTRA HIGH PRESSURE WATER JETTING ON AUSTENITIC STAINLESS STEEL FOR NUCLEAR DECONTAMINATION** **Mrs Irina Nedyalkova** P.[1], Dr Dirk Engelberg L.[2], Mr Alex Jenkins[3], Dr Gareth Law T.W.[1] *[1]Centre for Radiochemistry Research, School of Chemistry, The University Of Manchester, Oxford Road, M13 9PL, Manchester, United Kingdom, [2]Corrosion and Protection Centre, Scholl of Materials, The University of Manchester, Sackville Street, M13 9PI, Manchester, United Kingdom, [3]Decontamination Centre of Expertise, B582 Ground Floor North, Sellafield Ltd , CA20 1PG, Sellafield, United Kingdom*	**ADVANCED HYBRID ENGINEERING MATERIALS - METHODS FOR ANALYSING COMPLEX FAILURE MECHANISMS** **Dr. Axel von Hehl**[1], Arne Kunze[1], Dr. Jens Schumacher[1] *[1]IWT Stiftung Institut für Werkstofftechnik, Bremen, Germany*	**POLYMERIZATION OF CATECHOLS WITH AMMONIA: A SUCCESFUL APPROACH FOR BIOCOMPATIBLE POLYDOPAMINE-LIKE COATINGS IN HEALTH** **Prof. Daniel Ruiz Molina**[1] *[1]Icn2, Campus UAB, 08193, Bellaterra, Spain*
12.20	**DIFFUSE INTERFACE MODELS OF SOLIDIFICATION IN THE PRESENCE OF HYDRODYNAMIC TRANSPORT: THE THIN INTERFACE ASYMPTOTIC** **Prof. Dr. Fathollah Varnik**[1], M.Sc. Amol Subhedar[1], Prof. Dr. Ingo Steinbach[1] *[1]ICAMS, Ruhr-University Bochum*	**INDUSTRIAL NITRIDE HARDENING OF EUROFER97 FOR IMPROVED FATIGUE LIFETIME** **Dr. Jan Hoffmann**[1], Michael Seitz[1], Dr. Michael Rieth[1], Patrick Margraf[2], Dr. Robin Senn[2], Dr. Michael Klimenkov[1], Rainer Lindau[1], Siegfried Baumgärtner[1], Ute Jäntsch, Dr. Peter Franke[1], Prof. Dr. Anton Möslang[1] *[1]Karlsruhe Institute For Technology (KIT), Eggenstein-Leopoldshafen, Germany, [2]Gerster AG, Egerkingen, Switzerland*	**DEVELOPMENT AND MATURATION OF NEW ENVIRONMENTALLY FRIENDLY AERONAUTICAL PROCESS TECHNOLOGIES WITHIN THE FRAME OF CLEAN SKY1 AND CLEAN SKY2 PROGRAMS** **Dr. Alexandra Karanika**[1], Dr. Dimitrios Grimanelis[1], Dr. Roubini Marini[1], Mr Konstantinos Mousoutzanis[1] *[1]Hellenic Aerospace Industry S.A., GR-32009 Schimatari , Greece*	**HYBRID CORE-SHELL GOLD NANOSHELL/SILICA NANOMATERIALS: SOL-GEL SYNTHESIS AND CHARACTERIZATION OF INTERFACES** **Dr. Joachim Allouche**[1], Dr. Samantha Soulé[1], Dr. Jean-Charles Dupin[1], Dr. Anne-laure Bulteau[1], Dr. Stéphane Faucher[1], Pr. Gaëtane Lespes[1], Jean-Bernard Ledeuil[1], Arnaud Uhart[1], Dr. Carole Aimé[2], Bernard Haye[2], Dr. Thibaud Coradin[2], Pr. Hervé Martinez[1] *[1]Institut des Sciences Analytiques et de Physico-chimie pour l'Environnement et les Matériaux (IPREM) UMR 5254 CNRS/Université de Pau et des Pays de l'Adour (UPPA), Pau, France, [2]Laboratoire de Chimie de la Matière Condensée de Paris (LCMCP), Sorbonne Universités, UPMC Univ Paris 06, CNRS, Paris, France*
12.40	**DISCRETE MULTIPHYSICS: A HYBRID MODELLING TECHNIQUE COMBINING SMOOTH PARTICLE HYDRODYNAMICS, COARSE-GRAINED MOLECULAR DYNAMICS AND THE DISCRETE ELEMENT METHOD** **Dr Alessio Alexiadis**[1] *[1]University of Birmingham, Birmingham, United Kingdom*	**IN-SITU, TIME DEPENDENT STUDY OF URANIUM ENCAPSULATED IN GROUT** **Dr Camilla Stitt**[1], Mr C Paraskevoulakos[1], Dr N J Harker[2], Mr A Banos[1], Dr K R Hallam[1], Dr C P Jones[1], Professor T B Scott[1] *[1]University of Bristol, Bristol, United Kingdom, [2]European Synchrotron Radiation Facility, Grenoble, France*	**WELDABLE METALLIC FORCE TRANSMISSION ELEMENTS IN FIBRE REINFORCED THERMOPLASTICS** **Arne Kunze**[1], Axel von Hehl[1], Hans-Werner Zoch[1] *[1]Stiftung Institut Für Werkstofftechnik IWT, Bremen, Germany*	**MULTIFUNCTIONAL CORE-SHELL NANOPARTICLES FOR TREATMENT OF OVARIAN CANCER** **PhD Sandra Sanchez-Salcedo**[1,2], PhD Maria Vallet-Regí[1,2], PhD Fuyuhiko Tamanoi[3], PhD Carlotta Glackin[4], PhD Jeffrey I. Zink[5] *[1]Department of Inorganic and Bioinorganic Chemistry, Universidad Complutense de Madrid, Hospital 12 de Octubre, Madrid, Spain, [2]CIBER-BBN, Spain, Madrid, Spain, [3]Department of Microbiology Immunology and Molecular Genetics, University of California Los Angeles, Los Angeles, EEUU, [4]Department of Neurosciences, City of Hope, Duarte Beckman Research Institute, Duarte, EEUU, [5]Department of Chemistry and Biochemistry, University of California Los Angeles, Los Angeles, EEUU*
13.00				**MULTIFUNCTIONAL METAL OXIDE NANOPARTICLES FOR TRACKING AND IMAGING WITH POTENTIAL APPLICATIONS IN RADIOTHERAPY** Magali Lavenas[1,3], Dr Marina Simon[2], Dr Herve Seznec[2], Prof Joao Rocha[3], Prof Luis Carlos[3], **Dr Marie Helene Delville**[1] *[1]ICMCB/CNRS, Université de Bordeaux, ICMCB, Pessac, France, [2]CNRS Univ. Bordeaux, CENBG, UMR 5797, Gradignan, France, [3]Universidade de Aveiro, CICECO, Aveiro, Portugal*

Symposium	A2	A7	B1	B2
Room	I-11/M1	Rehearsal Room 5.17 /M1	Maurice Saltiel Hall I/M2	Aimilios Riadis Hall/M2
Session Title	Magnetic Anisotropy	Sensing	Thermomechanical Controlled Processing I	Titanium
Chairperson	**Radek Zboril**	**David Maestre**	**Ronald Schnitzer**	**Hans Seifert**
15.00	*HIGHLIGHT* **ROTATABLE MAGNETIC ANISOTROPY IN THIN FILMS DISPLAYING STRIPE DOMAINS** **Dr. Marco Coïsson**[1], Dr. Gabriele Barrera[1], Dr. Federica Celegato[1], Dr. Paola Tiberto[1] *[1]INRIM, Nanoscience and Materials Division, Torino, Italy*	*HIGHLIGHT* **ZnO NANONETS: FUNCTIONAL NANOMATERIALS DESIGNED FOR ELECTRICAL DETECTION** **Fanny Morisot**[1], Thomas Demes[1], Valérie Stambouli[1], Michel Langlet[1], Mireille Mouis[2], Céline Ternon[1,3] *[1]Univ. Grenoble Alpes, Grenoble-inp, LMGP, France, [2]Univ. Grenoble Alpes, Grenoble-inp, IMEP-LAHC, France, [3]Univ. Grenoble Alpes, Grenoble-INP, LTM, France*	**CHARACTERIZATION OF THE RECRYSTALLIZATION BEHAVIOR OF HOT ROLLED STEELS** **Raphael Esterl**[1], Markus Sonnleitner[2], Helmut Spindler[2], Günter Wölger[1], Ronald Schnitzer[1] *[1]Montanuniversität Leoben, Department of Physical Metallurgy and Materials Testing, Leoben, Austria, [2]voestalpine Stahl GmbH, Linz, Austria*	**THE HIERARCHY OF MICROSTRUCTURE PARAMETERS AFFECTING TENSILE DUCTILITY IN CAST AND FORGED Ti-834 ALLOY DURING HIGH TEMPERATURE EXPOSURE** **Dr Soran Birosca**[1] *[1]Swansea University , Swansea, United Kingdom*
15.20	**LOW–DIMENSIONAL RUDDLESDEN–POPPER NICKELATES La4(NixCo1-x)3O10: EFFECTS OF COBALT DOPING ON PHYSICAL PROPERTIES AND DIMENSIONALITY** **Dr. Susmit Kumar**[1], Mr. Marius Uv Nagell[1,2], Prof. Anja Olafsen Sjåstad[1], Prof. Helmer Fjellvåg[1] *[1]Centre for Materials Science and Nanotechnology (SMN), Department of Chemistry, University of Oslo, P.O. Box 1033, NO-0315, Oslo, Norway, [2]Institute for Energy Technology (IFE), P.O. Box 40, NO-2027, Kjeller, Norway*	**NANOSTRUCTURED INTERFACE OF QCM RESONATORS FOR BIOSENSING APPLICATIONS** **Mr. Juan Antonio Rubio-Lara**[1], Prof. Mark Welland[1] *[1]University of Cambridge, Cambridge, United Kingdom*	**MICRO-ALLOYED HIGH STRENGTH STEELS FOR FORGINGS** **Dr Giuseppe Napoli**[1], Professor Andrea Di Schino[1], Dr Sabrina Mengaroni[2], Dr Stefano Neri[2] *[1]Dipartimento Ingegneria-Università Degli Studi Di Perugia, Terni, Italy, [2]Acciai Speciali Terni, Terni, Italy*	**MICROSTRUCTURAL EVOLUTIONS DURING LONG-TERM AGEING IN TITANIUM ALLOY Ti-17** **Nicolas Maury**[1,2], Dr Jaafar Ghanbaja[1], Sylvie Migot[1], Dr Moukrane Dehmas[3], Dr Elisabeth Aeby-Gautier[1,4], Dr Claude Archambeau-Mirguet[2], Dr Jérôme Delfosse[5] *[1]Institut Jean Lamour - UMR 7198 CNRS-Université de Lorraine, Nancy, France, [2]Airbus Operations S.A.S., Toulouse, France, [3]Cirimat - Université de Toulouse, Toulouse, France, [4]Labex "DAMAS" - Université de Lorraine, Nancy, France, [5]Airbus Group S.A.S. - Airbus Group Innovations, Suresnes, France*
15.40	*HIGHLIGHT* **HYSTERESIS IN MIXED ANISOTROPY Co/Pt BASED MULTILAYERS UNDER OBLIQUE FIELDS** **Prof Ioannis Panagiotopoulos**[1], Mr Anastasios Markou[1,2], Dr Angelos Mourkas[1], Prof Laurentiu Stoleriu[3], Prof Alexanru Stancu[3] *[1]University Of Ioannina, Ioannina, Greece, [2]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, [3]Alexandru Ioan Cuza University, Iasi, Romania*	**HIGH-TEXTURED ZINC OXIDE THIN FILMS DEDICATED TO THE DETECTION OF HYDROGEN SULFIDE** **Prof Didier Fasquelle**[1] *[1]University Of Littoral Cote D'opale, Calais, France*	**ADVANCED THERMO-MECHANICAL PROCESSING OF A MODERN HIGH STRENGTH LOW ALLOY STEEL** **Carina Ledermüller**[1], Huijun Li[2], Sophie Primig[1] *[1]School of Materials Science and Engineering, UNSW Sydney, Sydney, Australia, [2]Faculty of Engineering and Information Science, University of Wollongong, Wollongong, Australia*	**MICROSTRUCTURE AND MECHANICAL PROPERTIES OF β FORGING METASTABLE TITANIUM ALLOY Ti-7333** **Nana Chen**[1], Shubo Liu[1], Hongchao Kou[1], Jinshan Li[1] *[1]State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an 710072, China*
16.00	**GROWTH, MICROSTRUCTURE AND PROPERTIES OF Fe, Ni AND Co NANOWHISKER** **Gunther Richter**[1], Wenting Huang[1] *[1]Max Planck Institute For Intelligent Systems, Stuttgart, Germany*	**NANOPOROUS GOLD OBTAINED FROM A METALLIC GLASS PRECURSOR AS SUBSTRATE FOR SURFACE ENHANCED RAMAN SCATTERING** Dr. Y. Xue[1], Dr. F. Scaglione[1], Dr. E.M. Paschalidou[1], Prof. P. Rizzi[1], **Prof. Livio Battezzati**[1] *[1]Università di Torino, Torino, Italy*	**EFFECT OF TEXTURE, CRYSTAL ANISOTROPY AND MICROSTRUCTURAL HETEROGENEITY ON THE CHARPY IMPACT TOUGHNESS BEHAVIOUR OF LOW CARBON STEELS** Lorena Sanz[1], **Dr Beatriz Pereda**[1], Prof. Beatriz López[1], Prof. Jose Mª Rodriguez-Ibabe[1] *[1]Ceit And Tecnun, Donostia - San Sebastian, Spain*	**CHARACTERIZATION OF PHASE TRANSITIONS IN BETA Ti ALLOY BY DILATOMETRY** **Pavel Zhanal**[1,2], Ph. D. Petr Harcuba[1], Ph. D. Jana Smilauerova[1], Ph. D. Michal Hajek[1], Ph. D. Jozef Vesely[1], Prof., Ph. D. Milos Janecek[1] *[1]Charles University, Department of Physics of Materials, Prague, Czech Republic, [2]Research Centre Rez, Husinec, Czech Republic*
16.20	**MAGNETIC PROPERTIES OF Co-DOPED MnBi** MSc Konstantina Kanari[1], **Dr Charalampos Sarafidis**[1], Dr Margariti Gjoka[2], MSc George Sempros[1], Dr Orestis Kalogirou[1] *[1]Department Of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Athens, Greece, Agia Paraskevi, Greece*	*HIGHLIGHT* **SELF-PROPAGATING SYNTHESIS OF DUCTILE RuAl INTERMETALLIC FROM NANOSCALE REACTIVE MULTILAYERS – FUNDAMENTALS AND PROSPECTIVE APPLICATIONS** **Prof.Dr.-Ing. Frank Mücklich**[1], Dr.-Ing. Karsten Woll[2], M.Sc. Christoph Pauly[1] *[1]Saarland University, Saarbrücken, Germany, [2]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*	**ON THE (Ti, Mo)C CLUSTER AND PRECIPITATE FORMATION IN ADVANCED HIGH STRENGTH STEELS** **Dr. Jiangting Wang**[1], Assoc. Prof. Matthew Weyland[2], Ilias Bikmukhametov[1], Peter Hodgson[1], Ilana Timokhina[1] *[1]Institute for Frontier Materials, Deakin University, Waurn Ponds, Geelong, Australia, [2]Monash Centre for Electron Microscopy & Department of Materials Science and Engineering, Monash University, Clayton, Australia*	**DEFORMATION INDUCED FORMATION OF NANO/ULTRAFINE-TRIMORPHIC STRUCTURE IN Ti-5553 ALLOY** **Dr. Jiangkun Fan**[1] *[1]Northwestern Polytechnical University, Xi'an, China*
16.40	**MAGNETO-CHAINS OF MAGNETIC NANOPARTICLES: FABRICATION AND PROPERTIES** **MSc Student Eirini Myrovali**[1], MSc Student Nikos Maniotis[1], MSc Student Antonis Makridis[1], Doctor Theodoros Samaras[1], Researcher Ulf Wiedwald[2], Doctor Makis Angelakeris[1] *[1]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, 54124, Greece, [2]Fakultät für Physik and Center for Nanointegration Duisburg-Essen (CeNIDE), Duisburg-Essen, 47048, Germany*	**ALUMINIUM NANOPARTICLES EMBEDDED IN MESOPOROUS aSi:H** **M.Sc. Torunn Kjeldstad**[1], Ph.D. Annett Thøgersen[2], Prof. Edouard Monakhov[1], Ph.D. Augustinas Galeckas[1] *[1]University Of Oslo, Department of Physics, Oslo, Norway, [2]SINTEF, Oslo, Norway*	**DEVELOPED ULTRAFINE GRAINED HIGH STRENGTH LOW CARBON STEELS** **Prof. Mamdouh Eissa**[1], Prof. Ahmed Al-Sheikh[2], Prof. Taha Mattar[1], Engineer Hassan Bahaa-Eldin[1] *[1]Steel Technology Department, Central Metallurgical Research And Development Institute "CMRDI", Helwan, Egypt, [2]Mining, Petroleum and Metallurgy Department, Faculty of Engineering, Cairo University, Guiza, Egypt*	**IN SITU PREPARATION OF β-TITANIUM ALLOY MATRIX COMPOSITES REINFORCED WITH B4C PARTICLES** **Dr. Rodrigo Contieri**[1], MEng Student Vitor Rielli[1] *[1]University Of Campinas (unicamp), Campinas, Brazil*

Symposium	B4	B7	B8	B9
Room	3.20/M1	CR III Hall/M2	Conference Room 1/M1	I-08/M1
Session Title	Fatigue and Al-alloys	Theory and Materials Modelling	Microstructure Characterization, Mechanical and Other Properties	BMG alloy development and mechanical properties
Chairperson	Anton Hohenwarter	Arnaud Marmier	Ivan Guillot	Livio Battezzati, Mariana Calin
15.00	**ENHANCED FATIGUE LIVES OF ULTRAFINE-GRAINED LAMINATED METAL COMPOSITES PRODUCED BY ACCUMULATIVE ROLL BONDING** **Frank Kümmel**[1], PD Dr.-Ing. habil. Heinz Werner Höppel[1], Prof. Dr. rer. nat. Mathias Göken[1] *[1]Friedrich-Alexander-Universität Erlangen-Nürnberg; Department of Materials Science and Engineering (WW1), Erlangen, Germany*	*KEYNOTE/INVITED* **TOWARDS A MOLECULAR LEVEL UNDERSTANDING OF METAL-ORGANIC FRAMEWORKS** **Prof. Dr. Ir. Veronique Van Speybroeck**[1]	*HIGHLIGHT* **Hf, Mo AND Zr TRACE ELEMENTS INFLUENCING THE $Al10Co25Cr_8Fe_{15}Ni_{36}Ti_6$ COMPOSITIONALLY COMPLEX ALLOY** **Dr. Anna Manzoni**[1], Mrs. Christiane Förster[1], Mr. Christoph von Schlippenbach[1], Prof. Marwan Mousa[3], Prof. Uwe Glatzel[2], Dr. Nelia Wanderka[1] *[1]Helmholtz-Zentrum Berlin Für Materialien Und Energie GmbH, Berlin, Germany, [2]University Bayreuth, Metals and Alloys, Bayreuth, Germany, [3]Dept. of Physics, Mu'tah University, Al-Karak, Jordan*	*HIGHLIGHT* **ROLE OF MINOR ADDITION OF 'SOFT' METALLIC ELEMENTS IN FORMATION AND PROPERTIES OF Ti-BASED BULK METALLIC GLASSES** **Prof. Mariana Calin**[1], Dr. Supriya Bera[1], Dr. Baran Sarac[2], Parthiban Ramasamy[1], Prof. Mihai Stoica[3], Prof. Jürgen Eckert[2] *[1]Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany, [2]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences , Leoben, Austria, [3]Department of Materials, ETH Zürich, Zürich, Switzerland*
15.20	**NEWH INSIGHTS INTO STRUCTURAL INSTABILITIES INITIATED UNDER CYCLIC LOADING CONDITIONS** **Marlene Kapp**[1], Dr. Oliver Renk[1], Dr. Thomas Leitner[2], Dr. Bo Yang[1], Prof. Dr. Reinhard Pippan[1] *[1]Erich Schmid Institute Of Materials Science, Leoben, Austria, [2]Montanuniversität Leoben, Leoben, Austria*	*[1]Ghent University - Center For Molecular Modeling, Belgium*	**COMPARISON OF MECHANICAL PROPERTIES OF $CrMnFeCoN_2Cu$ AND $Ti_{30}Zr_{25}Hf_{15}Nb_{20}Ta_{10}$ HIGH ENTROPY ALLOYS WITH THE DIFFERENT CRYSTAL LATTICE IN THE TEMPERATURE RANGE OF 4.2 – 293 K.** **Mr Yuriy Shapovalov**[1], PhD Elena Tabachnikova[1], PhD Aleksey Podolskiy[1], Dr Viktor Gorban[2], Dr Sergey Firstov[2] *[1]B. Verkin Institute for Low Temperature Physics and Engineering of the NAS of Ukraine, 47 Nauky Ave., Kharkiv, Ukraine, [2]Frantsevich Institute for Problems of Materials Science of the NAS of Ukraine, [3] Krzhizhanovsky Str., Kyiv-142, Ukraine*	*HIGHLIGHT* **EXCEPTIONALLY BROAD COMPOSITIONAL RANGE FOR BULK METALLIC GLASS FORMATION IN THE Mg–Cu–Yb SYSTEM** **Dr. Karl Shamlaye**[1], Dr Kevin Laws[2], Professor Joerg Loeffler[1] *[1]ETH , Switzerland, [2]The University of New South Wales, Sydney, Australia*
15.40	**ON THE LOW CYCLE FATIGUE BEHAVIOR OF ULTRA-FINE GRAINED COPPER AFTER FRICTION-STIR** **Mr. Salar Salahi**[1], Prof. G. Guven Yapici[1] *[1]Ozyegin University, Istanbul, Turkey*	**COST-EFFECTIVE AB INITIO COMPOSITE METHODS AS APPLIED TO THE STUDY OF METAL-ORGANIC FRAMEWORKS** **Prof. Bartolomeo Civalleri**[1], Mr Lorenzo Donà[1], Dr. Jan Gerit Brandenburg[2] *[1]Department of Chemistry, University of Torino, Torino, Italy, [2]Department of Chemistry, University College London, London, United Kingdom*	**INFLUENCE OF HEAT TREATMENT ON MECHANICAL PROPERTIES OF CoCrNiFeTi BASE HIGH ENTROPY ALLOY** **Msc Igor Moravcik**[1], Phd Jan Cizek[1], Prof. Ivo Dlouhy[1] *[1]Brno University Of Technology, Brno, Czech Republic*	*HIGHLIGHT* **EXPLORING NOVEL FUNCTIONALITIES OF METALLIC GLASSES** **Dr Konstantinos Georgarakis**[1] *[1]Cranfield University, Cranfield, United Kingdom*
16.00	**COMPARISON OF PLASTIC STRAIN DISTRIBUTIONS AND DEFORMATION MECHANISMS IN COARSE AND UFG Al 5083 ALLOY IN TENSION, AT VARIOUS STRAIN RATES, AND DURING CREEP** **Mrs Anchal Goyal**[1,2], Dr Veronique Doquet[1,2] *[1]CNRS, Laboratoire de Mécanique des Solides, Palaiseau, France, [2]Ecole Polytechnique, Université Paris-Saclay, Palaiseau, France*	**EXPLORING THE FLEXIBILITY OF MIL-47(V)-TYPE MATERIALS USING FORCE FIELD MOLECULAR DYNAMICS SIMULATIONS** **Jelle Wieme**[1], Louis Vanduyfhuys[1], Sven M.J. Rogge[1], Michel Waroquier[1], Veronique Van Speybroeck[1] *[1]Center For Molecular Modeling, Ghent University, Zwijnaarde, Belgium*	**CUMULATIVE EFFECT OF DIFFERENT NUMBER OF ATOM TYPES IN FCC-STRUCTURED HEA ON MICRO-STRUCTURE AND MECHANICAL PROPERTIES** **Pramote Thirathipviwat**[1,2], Junhee Han[1], Jens Freudenberger[1], Thomas Gemming[1], Kornelius Nielsch[1,2] *[1]IFW Dresden, Dresden, Germany, [2]TU-Dresden, Dresden, Germany*	*HIGHLIGHT* **TENSILE CREEP AND PHYSICAL MECHANISM IN A Cu46Zr46Al8 METALLIC GLASS** **Prof. Jean-marc Pelletier**[1], Dr J.C. QIAO[2], Prof. Yao YAO[3] *[1]Mateis Insa-lyon, Villeurbanne, France, [2]NWPU, Xi'an, P.R. China, [3]NWPU, Xi'an, P.R. China*
16.20	**THE INFLUENCE OF THE GRAIN SIZE OF SPD-PROCESSED Al-Mg-Mn ALLOY ON DYNAMIC STRENGTH** **Ph. D. Anastasiia Petrova**[1], Professor Irina Brodova[1], Professor Sergey Razorenov[2], Mr Evgeniy Shorokhov[3] *[1]M.N. Miheev Institute Of Metal Physics Of Ural Branch Of Russian Academy Of Sciences, Ekaterinburg, Russian Federation, [2]Institute of problems of chemical physics, Russian academy of sciences, Chernogolovka, Russian Federation, [3]Russian federal nuclear center, Zababakhin all-Russian scientific research institute of technical physics, Snezginsk, Russian Federation*	*HIGHLIGHT* **TUNING METAL-ORGANIC FRAMEWORKS PROPERTIES TOWARDS ENHANCED CATALYTICAL PERFORMANCES: ADVANCES IN COMBINED EXPERIMENTAL-COMPUTATIONAL APPROACHES** **Caroline Mellot-Draznieks**[1] *[1]College De France, CNRS, UPMC Univ Paris 6, Paris, France*	**CHARACTERIZATION OF NON-METALLIC INCLUSIONS IN CoCrFeMnNi HIGH-ENTROPY ALLOY** **Ms. Nuri Choi**[1], Mr. Hyun Seok Oh[2], Professor Eun Soo Park[2], Professor Joo Hyun Park[1] *[1]Hanyang University, Ansan, South Korea, [2]Seoul National University, Seoul, South Korea*	**ABNORMAL INTERNAL FRICTION AND PLASTICITY IN THE IN-SITU Ti60Zr15V10Cu5Be10 METALLIC GLASS MATRIX COMPOSITE** **Dr. Jichao Qiao**[1], Professor Jean-Marc Pelletier[2], Professor Yao Yao[1] *[1]Northwestern Polytechnical University, Xi'an, China, [2]INSA de Lyon, Villeurbanne cedex, France*
16.40			**INFLUENCE OF DEFORMATION ON MICROSTRUCTURAL EVOLUTION AND SUBSEQUENT MECHANICAL PROPERTIES OF SEVERAL HIGH ENTROPY ALLOYS** **Dr. Kwang Seok LEE**[1], Dr. Jong Woo WON, Dr. Ka Ram LIM, Dr. Young Sang NA *[1]Korea Institute Of Materials Science, Changwon, South Korea*	

Symposium	B10	C1	C3	C4
Room	CR I Hall/M2	Friends of Music Hall/M1	Maurice Saltiel Hall III/M2	Conference Room 4/M1
Session Title	Corrosion & Wear IV	Coatings deposition routes and novel characterization techniques 5/5 -Multi-coatings	Synthesis and processing	Additive Manufacturing of polymers 2
Chairperson	Stefanos Skolianos	D.S. Calderon, A. Weisenburger	Lars Nyborg	Sebastian Piegert
15.00	**EFFECT OF Si ADDITION ON THE MICROSTURUCTURE AND WEAR RESISTANCE OF AS-CAST Mg-5Sn ALLOY**	*HIGHLIGHT* **MICROSTRUCTURAL CONTROL OVER POROUS OXIDE MULTILAYERS PREPARED BY MS FOR ENVIRONMENTALLY STABLE 1D PHOTONIC STRUCTURES**	*HIGHLIGHT* **EFFECT OF POST-SYNTHESIS THERMAL TREATMENTS ON SOLUTION COMBUSTION SYNTHESIS OF (Ni,Fe) Cr_2O_4 PIGMENT**	**ADDITIVE MANUFACTURING APPROACHES FOR SPACE EXPLORATION ACTIVITIES**
	Dr. Erdem Karakulak[1], Yusuf Burak Küçüker[1]	Mr. Aurelio García-Valenzuela[1], Dr. Carmen López-Santos[1], Dr. Rafael Alvarez[1], Dr. Victor Rico[1], Dr. Ramon Escobar-Galindo[2], Dr. Mercedes Alcón[2], Dr. Alberto Palmero[1], **Prof. Agustin R. González-Elipe**[1]	**Dr. Sergio Mestre**[1], Dña. Jessica Gilabert[2], Dra. María Dolores Palacios[1], Dr. Vicente Sanz[1]	**Stefan Siarov**[1], Aidan Cowley[1], Miranda Frateri[2], Oriane Garcia[1], Jeremy Reguette[1], Manel Vera Palou[1]
	[1]Kocaeli University, İzmit, Turkey	*[1]Csic-univ. Sevilla, Sevilla, Spain, [2]Abengoa Research, Sevilla, Spain*	*[1]Universitat Jaume I, Castellón, Spain, [2]Asociación de investigación de las Industrias Cerámicas, Castellón, Spain*	*[1]European Astronaut Centre (EAC), European Space Agency (ESA), Koln, Germany, [2]Deutsches Zentrum für Luft- und Raumfahrt (DLR), Koln, Germany*
15.20	**THE EFFECT OF CORROSION ON THE MICROSTRUCTURE OF THE Al-5Cu MATRIX COMPOSITES REINFORCED WITH TiC PARTICLES**	**THE USE OF SYNERGISTIC EFFECT BETWEEN THE OPTICAL AND SEMICONDUCTOR PROPERTIES OF AGNPS/TIO2 PHOTONIC CRYSTALS FOR THE PHOTO-CATALYTIC ACTIVITY ENHANCEMENT**	**IMPLEMENTATION OF AN IN SITU TREATMENT IN THE SPS CYCLE FOR THE OPTIMISATION OF THE MECHANICAL PROPERTIES OF THE AZ91 MAGNESIUM ALLOY**	**ON ADDITIVE MANUFACTURING OF PEEK**
	Burak Dikici[1], Fevzi Bedir[2], Mehmet Gavgali[3]	**M.Sc. Joanna Ginter**[1], M. Sc. Kaja Spilare-wicz-Stanek[1], Dr Aneta Kisielewska[1], Prof. Ireneusz Piwoński[1]	**Ms Nathalie Allain**[1,3], M. Mathieu Mondet[1,2,3], M. Sébastier Lemonnier[2], Ms Elodie Barraud[2], M. Thierry Grosdidier[1,2,3]	Professor Brando Okolo[1], **Dipl.- Ing Uwe Popp**[1], MSc. Julian Scholz[1]
	[1]Ataturk University, Department of Metallurgical and Materials Engineering, Erzurum 25240, Turkey [2]Gebze Technical University, Department of Mechanical Engineering, Kocaeli-Gebze 41400, Turkey [3]Ataturk University, Department of Mechanical Engineering, Erzurum 25240, Turkey	*[1]University of Lodz, Faculty of Chemistry, Department of Materials Technology and Chemistry, Lodz, Poland*	*[1]University of Lorraine, Laboratoire D'etude Des Microstructures Et De Mécanique Des Matériaux, UMR CNRS 7239, Ile du Saulcy , 57045 Metz, France, [2]French-German Research Institute of Saint-Louis (ISL), 5 rue du Général Cassagnou, 68300-Saint-Louis, France, [3]University of Lorraine, LABoratory of EXcellence Design of Alloy Metals for low-mAss Structures (Labex DAMAS), Ile du Saulcy, 57000 - Metz, France*	*[1]Apium Additive Manufacturing Gmbh, Karlsruhe, Germany*
15.40	**CHARACTERIZATION OF THE HIGH TEMPERATURE OXIDATION BEHAVIOR OF SiMo CAST IRON USED AS EXHAUST MANIFOLDS**	**PHOTOLUMINESCENCE PROPERTIES OF POROUS SILICON EMBEDDED WITH II-VI SEMICONDUCTORS**	**CHARACTERIZATION OF A TITANIUMNITRIDE REINFORCED FeCoMo ALLOY**	**3D PRINTED PEEK PROCESSED BY FUSED FILAMENT FABRICATION: PROPERTY AND PROCESS RELATION**
	Gülşah Aktaş Çelik[1], Assist. Prof. Dr. Şaban Hakan Atapek[1], Assoc. Prof. Dr. Şeyda Polat[1], Prof. Dr. Gregory N. Haidemenopoulos[2]	**Dr. Osvaldo de Melo**[1], MSc Claudia de Melo[1,2], Mr. Yoandry Gonzalez[1], Dr. Maria Sánchez[1], Dr. Guillermo Santana[3], Dr. Jaime Santoyo-Salazar[4], Dr Vicente Torres-Costa[5]	**Dr. Christoph Turk**[1], Dipl.-Ing. Ingrid Schemmel[1], Dr. Gert Kellezi[1], Prof. Dr Helmut Clemens[2], Dr. Harald Leitner[1]	**Dr. Ugo Lafont**[1], Derek Aranguren Van Egmond[1], Stefan Siarov[1], Dr. Christopher Semprimoschnig[1]
	[1]Kocaeli Unıversity, Kocaeli, Turkey, [2]University of Thessaly, Volos, Greece	*[1]Physics Faculty, University of Havana, 10400 La Habana, Cuba, [2]Institut Jean Lamour, UMR CNRS 7198, Université de Lorraine, Parc de Saurupt, CS 50840, 54011 Nancy Cedex, France, [3]Instituto de Investigación en Materiales, Universidad Nacional Autónoma de México, Cd. Universitaria, A.P. 70-360, Coyoacán 04510, México D. F., México, [4]Physics Department, Centro de Investigación y Estudios Avanzados del Instituto Politécnico Nacional, CINVESTAV-IPN, A.P. 14-740, México D.F. 07360, México, [5]Applied Physics Department, Faculty of Sciences, Universidad Autónoma de Madrid, Cantoblanco 28049, Madrid, Spain*	*[1]Böhler Edelstahl Gmbh & Co KG, Kapfenberg, Austria, [2]Montanuniversität Leoben, Department of Physical Metallurgy and Materials Testing, Leoben, Austria*	*[1]European Space Agency - ESTEC, Noordwijk, Nederland*
16.00	**EFFECT OF EVA AGING ON SOLAR CELL RELIABILITY FOR PHOTOVOLTAIC APPLICATION**	**HIGH TRANSPARENT AND STABLE SILVER NANOWIRES AS FLEXIBLE TRANSPARENT ELECTRODE USING PLASMA TECHNIQUE**	**SYNTHESIS OF W_2C AND WC POWDERS VIA MECHANICAL ACTIVATION-ASSISTED AUTOCLAVE PROCESSING**	**CONDUCTIVE POLYETHERETHERKETONE NANOCOMPOSITE FILAMENTS FOR ADDITIVE MANUFACTURING**
	Dr. Kamel Agroui[1], Dr. George Collins[2], Dr. Gernot Oreski[3], Dr. Oualid Arfi[4]	**Kim Dogeun**[1], Lee Seunghun[1], Jung Sunghoon[1]	**Nihan Özkan Aytekin**[1,2], Duygu Ağaoğulları[1], M. Lütfi Öveçoğlu[1]	**Prof. Jose Covas**[1,2], Prof Maria Paiva[1,2], Patricia Lima[2], Jordana Goncalves[2], Dr. Ugo Lafont[3]
	[1]Research Centre On Semiconductors, Algeirs, Algeria, [2]New Jersey Institute of Technology (NJIT), New Jersey, USA, [3]Polymer Competence Centre Leoben (PCCL), Leoben, Austria, [4]Research Centre On Semiconductors, Algiers, ALGERIA	*[1]Korea Institute of Materials Science*	*[1]Istanbul Technical University, Metallurgical and Materials Engineering Department,Particulate Materials Laboratories (PML), Istanbul, Turkey, [2]Atasehir Adıgüzel Vocational School, Istanbul, Turkey*	*[1]IPC/I3N University of Minho, Guimaraes, Portugal, [2]PIEP, Guimaraes, Portugal, [3]European Space Agency, Noordwijk, The Netherlands*
16.20		**ATOMIC LAYER DEPOSITION OF COPPER OXIDE AND METALLIC COPPER THIN FILMS**	**PROPERTIES OF SUPERALLOY POWDERS FOR ADVANCED MANUFACTURING: COMPARISON OF THREE INERT GAS ATOMISATION PROCESSES**	**RECYCLABILITY OF ADDITIVE LAYER MANUFACTURED EPDM AND POM PARTS IN VIEW OF SPACE MANUFACTURING: A PRELIMINARY STUDY**
		MSc Claudia de Melo[1,2], Dr. Maud Jullien[1], Prof. Jean François Pierson[1], Prof. Frank Mücklich[2], Dr. David Horwat[1]	**Dr. Stefan Drawin**[1], Dr. Lucas Dembinski[2], Dr. Marc Thomas[1], Dr. Yoann Danlos[2], Olivier Godde[1]	**Prof. Francesca Nanni**[1], Valeria Cherubini[1], Fabio Franceschetti[1], Marianna Rinaldi[1]
		[1]Institut Jean Lamour, UMR CNRS 7198, Université de Lorraine, Parc de Saurupt, CS 50840, Nancy, France, [2]Department of Materials Science and Engineering, Saarland University, Saarbrücken, Germany	*[1]Onera - The French Aerospace Lab, Chatillon, France, [2]UTBM-IRTES-LERMPS, Belfort, France*	*[1]University of Rome Tor Vergata, Rome, Italy*
16.40		**FABRICATION AND PROPERTIES OF ELECTROPLATED Fe–Cu CONTINUOUS FILMS AND POROUS MICROSTRUCTURES DEPOSITED ONTO E-BEAM LITHOGRAPHED PATTERNS**	**POWDER ROUTE PROCESSING OF Nb SILICIDE BASED ALLOYS**	**3D PRINTED PCL SCAFFOLDS FOR BIOMEDICAL APPLICATIONS**
		Evangelia Dislaki[1], Federica Celegato[3], Paola Tiberto[3], Jordi Sort[1,2], Eva Pellicer[1]	**Mr Edward Gallagher**[1], Dr. Claire Utton[1], Prof Panos Tsakiropoulos[1]	Dr.-Eng. Nikolaos Michailidis[1,2], **Mr. Marios Pantazopoulos**[1], Dr.-Eng. Alexander Tsouknidas[2]
		[1]Universitat Autònoma de Barcelona, Physics Department, E-08193 Bellaterra, Spain, [2]Institució Catalana de Recerca i Estudis Avançats (ICREA), [3]INRIM, I-10135 Torino, Italy	*[1]University Of Sheffield, Sheffield, United Kingdom*	*[1]Physical metallurgy Laboratory, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]PLiN-Nanotechnology SA, Spectra Business Center, Thermi-Thessaloniki, Greece*

Symposium	C8	C9	C10	C11
Room	Library Hall/M2	Conference Room 3/M1	F 319/M1	MOYSA Hall/M2
Session Title	Aluminium Alloys - II	Sintering and joining processes	Microstructure formation and mechanically driven transformation	Materials and Processes
Chairperson	Dispinar Derya, Andrew R. Kennedy	Dr. Dionysios Manessis	A. Bachmaier, A. Kilmametov	Alain Claverie
15.00	**CHANGE IN MELT QUALITY OF GRAIN REFINED A356 BY DURATION**	**PCB EMBEDDING AND SINTERING MANUFACTURING PROCESSES FOR THE DEVELOPMENT OF ADVANCED POWER MODULES USED IN ELECTRIC VEHICLE APPLICATIONS**	*HIGHLIGHT* **PHASE TRANSITIONS IN COPPER-BASED ALLOYS UNDER HIGH PRESSURE TORSION**	**DIFFERENTIAL HALL CHARACTERISATION OF SHALLOW STRAINED SIGE LAYERS**
	Ozen Gursoy[1], Dr Eray Erzi[1], Assoc. Prof. Dr. Derya Dispinar[1]	**Dr. Dionysios Manessis**[1,2], Mr Lars Boettcher[2], Dr. Andreas Ostmann[2], Mr. Johannes Blum[3], Mr. Mike Morianz[4], Mr. Johannes Stahr[4], Prof. Johann Nicolics[5], Mr. Michael Unger[5]	**Prof. Boris Straumal**[1,2,3,4], Dr. Olga Kogtenkova[2], Dr. Askar Kilmametov[3], Dr. Andrey Mazilkin[2,3], Dr. Anna Korneva[5], Prof Pawel Zięba[5], Dr Petr Straumal[4,6], Dr. Brigitte Baretzky[3]	**Richard Daubriac**[1], Emmanuel Scheid[1], Filadelfo Cristiano[1], Sylvain Joblot[2], David Barge[2]
	[1]Istanbul University, Istanbul, Turkey	*[1]Technical Universtity Berlin/Fraunhofer IZM, Berlin, Germany, [2]Fraunhofer IZM, Berlin, Germany, [3]ILFA Feinstleitertechnik GmbH, Hannover, Germany, [4]AT&S Austria Technologie & Systemtechnik Aktiengesellschaft, Leoben, Austria, [5]Vienna University of Technology (VUT), Vienna, Austria*	*[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruher Institut für Technologie (KIT), Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany, [4]Laboratory of Hybrid Nanomaterials, National University of Science and Technology «MISIS», Moscow, Russia, [5]Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Cracow, Poland, [6]A.A. Baikov Institute of Metallurgy and Materials Science, RAS, Moscow, Russia*	*[1]LAAS-CNRS, Toulouse, France, [2]STMicroelectronics, Crolles, France*
15.20	**EFFECT OF B ADDITION ON THE MICROSTRUCTURES AND CORROSION BEHAVIOR OF A356 ALUMINUM ALLOYS**	**THE MICROSTRUCTURE-ENHANCEMENT OF NaxCoyOz FUNCTIONAL CERAMIC FILMS**	*HIGHLIGHT* **ON KINETICS OF GRAIN REFINEMENT BY SEVERE PLASTIC DEFORMATION**	**STRAIN AND CRYSTAL QUALITY OF HIGH Ge CONTENT SiGe-On-INSULATOR FILMS FABRICATED BY THE CONDENSATION TECHNIQUE**
	Ismail Öztürk[1], Dr. Gökçe Hapçı Ağaoğlu[1], Associate Prof. Derya Dışpınar[1], Prof. Dr. Gökhan Orhan[1]	**Dr Ewa Jakubczyk**[1], Dr Rebecca Townsend[1], Dr Lynn Boniface[1], Professor Robert Dorey[1]	**Dr Andrey Belyakov**[1], Dr. Marina Tikhonova[1], Mr. Pavel Dolzhenko[1], Dr. Taku Sakai[2], Dr. Rustam Kaibyshev[1]	**Fabien Rozé**[1,2,3], Olivier Gourhant[1], François Bertin[2], Elisabeth Blanquet[3], François Pierre[2], Denis Rouchon[2], Véronique Guyader[1], Laurent Fauquier[1,2,4], Clément Pribat[1], Yves Campidelli[1]
	[1]Istanbul University, Istanbul, Turkey	*[1]University Of Surrey, Guildford, United Kingdom*	*[1]Belgorod State University, Belgorod, Russian Federation, [2]UEC Tokyo (The University of Electro-Communications), Tokyo, Japan*	*[1]STMicroelectronics, Crolles, France, [2]CEA-LETI, Grenoble, France, [3]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, Grenoble, France, [4]CNRS, LTM, Univ. Grenoble Alpes, Grenoble, France*
15.40	**EVALUATION OF Fe-INTERMETALLIC FORMATION IN Al ALLOYS**	**ACHIEVING TITANIUM ARCHITECTURED MICROSTRUCTURES BY COUPLING ELECTRON BEAM MELTING AND SPARK PLASMA SINTERING**	*HIGHLIGHT* **ACCELERATED GRAIN FRAGMENTATION BY MECHANICAL TWINNING IN MDFeD Cu-Al ALLOYS AND BREAK DOWN OF HALL-PETCH RELATION**	**EFFECT OF POST-METALLIZATION ANNEALING ON THE INTERFACIAL PROPERTIES OF METAL/Al_2O_3/Ge GATE STACKS**
	Ertan Musdal[1], Ozen Gursoy, **Eray Erzi**, Derya Dispinar[1]	**Prof. Damien Fabregue**[1], Dr. Guilhem Martin[2], Florian Mercier[1], Prof. Remy Dendievel[2], Prof. Jean-Jacques Blandin[2], Dr. Lorène Héraud[2]	**Dr. Hiromi Miura**[1], Mr. Yu Iwama[1], Dr. Masakazu Kobayashi[1]	Student Stamatios Alafakis[1], **Dr. Vassilios Ioannou-Sougleridis**[2], Prof. Dimitrios Skarlatos[1]
	[1]Istanbul University, Istanbul, Turkey	*[1]Mateis Insa Lyon, Villeurbanne, France, [2]SIMAP, Université Grenoble-Alpes, Saint Martin d'Hères, France*	*[1]Toyohashi University of Technology, Toyohashi, Japan*	*[1]Department Of Physics / University Of Patras, Patras, Greece, [2]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Aghia Paraskevi, Athens, Greece*
16.00	**UNCERTAINTY IN USE OF DENSITY INDEX AS MELT QUALITY ASSESSMENT IN ALUMINIUM CASTINGS**	**MANUFACTURING AND THERMOHYDRAULIC CHARACTERIZATION OF SINTERED CAPILLARY STRUCTURE**	*HIGHLIGHT* **EFFECT OF PLASTIC DEFORMATION ON THE MICROSTRUCTURE, THERMAL RESPONSE AND MECHANICAL BEHAVIOR OF METALLIC PHASE CHANGE MATERIALS BASED ON THE Al-Sn SYSTEM**	**SUBSTRATE DAMAGE IN PHOSPHOROUS-IMPLANTED (100) GERMANIUM AFTER MS FLASH LAMP ANNEALING: ORIGINS AND SUPPRESSION**
	Eray Erzi[1], Ozen Gursoy[1], **Derya Dispinar**[1]	**Rémi Giraudon**[1], Dr Stéphane Lips[1], Dr Laurent Gremillard[2], Dr Damien Fabregue[2], Dr Eric Maire[2], Dr Valérie Sartre[1]	**Prof. Elisabetta Gariboldi**	**Prof. Dimitrios Skarlatos**[1], Prof. Nikolaos Vouroutzis[2], Dr. Vassilios Ioannou-Sougleridis[3], MSc Maria-Christina Skoulikidou[3], Dr. Dimitrios Velessiotis[3], Dr. Spyros Stathopoulos[4], Prof. Emeritus John Stoemenos[2]
	[1]Istanbul University, Istanbul, Turkey	*[1]CETHIL, Villeurbanne, France, [2]MATEIS, Villeurbanne, France*	*[1]Politecnico di Milano, Dipartimento di Meccanica, Milano, Italy*	*[1]Department Of Physics / University Of Patras, Patras, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Institute of Nanoscience and Nanotechnology,NCSR "Demokritos", Aghia Paraskevi, Athens, Greece, [4]Department of Physics, National Technical University of Athens, Zografou, Athens , Greece*
16.20	**FLUIDITY CHARACTERIZATION OF ALUMINUM ALLOY FOR ENGINE BLOCKS**	**PREDICTION OF DEFORMATION AND WELD STRENGTH OF COMPACT DIFFUSION–BONDING HEAT EXCHANGERS WITH FINITE-ELEMENT SIMULATION**	**EFFECTS OF THERMOMECHANICAL TREATMENT ON HARMONIC STRUCTURE DESIGNED PURE Cu**	**UNDERSTANDING THE EFFECTS OF AlN AND SiN LAYERS ON THE NUCLEATION AND GROWTH OF GaN NANOWIRES BY PLASMA ASSISTED MOLECULAR BEAM EPITAXY**
	Eray Erzi[1], **Caglar Yuksel**[2], Ozen Gursoy[1], Derya Dispinar[1]	**PhD Student Matthieu Maunay**[1], Material science PhD Briottet Laurent[1], Material science PhD Moro Isabelle[1], Material science PhD Rigal Emmanuel[1]	**Shuichi Morinaka**[1], Yamato Suto[1], Mie ota[1], Kei Ameyama[1]	**Mr Savvas Eftychis**[1,2], Dr. Jann Kruse[1], Dr. Adam Adikimenakis[1,2], Mrs Katerina Tsagkaraki[2], Mrs Maria Androulidaki[2], Dr. Triantafillia Koukoula[3], Prof. Thomas Kehagias[3], Prof. Filomila Komninou[3], Prof. Alexandros Georgakilas[1,2]
	[1]Istanbul University, Istanbul, Turkey [2]Yildiz Technical University, Turkey	*[1]Univ Grenoble Alpes, CEA, LITEN, DTBH, Grenoble, France*	*[1]Ritsumeikan University, Kusatsu City, Japan*	*[1]Physics Department, University Of Crete, Heraklion / Crete, Greece, [2]Microelectronics Research Group, IESL/FORTH, Heraklion / Crete, Greece, [3]Physics Department, Aristotle University of Thessalloniki, Thessaloniki, Greece*
16.40	**CHARACTERIZATION OF THREE-PHASE EUTECTIC MICROSTRUCTURE IN Al-Cu-Ag SYSTEM**		**MODELLING THE THERMO-MECHANICAL PROCESSING OF MICRO-ALLOYED STEEL**	**PATTERNED SUBSTRATES FOR THE FABRICATION OF SPUTTERED ZnO-BASED TRANSPARENT BIPOLAR DEVICES**
	M.S Candidate Mehmet Emre Cetinkaya[1], Res. Assist. Prof. Melis Serefoglu Kaya[1]		**M.sc. Heinrich Buken**[1], Prof. Dr. Ernst Kozeschnik[1,2]	**Dr Elias Aperathitis**[1], Mr Athanasios Kostopoulos[1], Dr George Konstantinidis[1], Dr Mircea Modreanu[2], Ms Maria Kayambaki[1], Ms Katerina Tsagaraki[1]
	[1]Koc University, Istanbul, Turkey		*[1]Technical University Vienna, Vienna, Austria, [2]MatCalc Engineering GmbH, Vienna, Austria*	*[1]FORTH/IESL, Heraklion, Greece, [2]Tyndall National Institute, Cork, Ireland*

Symposium	D1	D2	D5	D8
Room	Artist Cafe/M1	Museum Hall /M2	I-15/M1	I -16/M1
Session Title	Tomography and Diffraction Tomography	Biomaterials, polymers and low-ordered systems	Strong Coupling of Thermo-chemical and Thermo-mechanical States	Ab initio based thermodynamics
Chairperson	Thilo Morgeneyer, Robert Atwood	Saso Sturm	Ernst Kozeschnik	D. Nguyen Manh
15.00	*HIGHLIGHT* **INTERPLAY BETWEEN BANDING AND THE WORK HARDENING BEHAVIOUR IN A DUAL PHASE STEEL WITH IMPROVED FORMABILITY** **Dr. Bernard L. Ennis**[1,2], Dr. Enrique Jimenez-Melero[2], Dr. Kees Bos[1], Dr. Maxim P. Aarnts[1], Prof. Peter D. Lee[2] *[1]Tata Steel, IJmuiden, Netherlands, [2]University of Manchester, Manchester, United Kingdom*	*HIGHLIGHT* **ATOMIC SCALE COMPOSITIONAL MAPPING REVEALS Mg-RICH AMORPHOUS CALCIUM PHOSPHATE IN HUMAN DENTAL ENAMEL** **Dr. Alex La Fontaine**[1,2], Dr. Alexander Zavgorodniy[3,4], Dr. Howgwei Liu[1], Prof. Michael Swain[3,5], Prof. Julie Cairney[1,2] *[1]Australian Centre for Microscopy and Microanalysis, The University of Sydney, Sydney, Australia, [2]School of Aerospace, Mechanical and Mechatronic Engineering, The University of Sydney, Sydney, Australia, [3]Faculty of Dentistry, The University of Sydney, Sydney, Australia, [4]Institute of dental research, Westmead centre for Oral Health, Sydney, Australia, [5]Faculty of dentistry, Kuwait University, Kuwait*	*KEYNOTE/INVITED* **THE PRIORITY PROGRAM "STRONG COUPLING OF THERMO-CHEMICAL AND THERMO-MECHANICAL STATES IN APPLIED MATERIALS"** **Prof. Ingo Steinbach**[1] *[1]Ruhr-university Bochum, Bochum, Germany*	*KEYNOTE/INVITED* **FINITE TEMPERATURE EFFECTS IN AB INITIO SIMULATIONS OF THERMODYNAMIC AND ELASTIC PROPERTIES OF ALLOYS** **Prof. Dr. Igor A. Abrikosov**[1,2] *[1]Linköping University, Linkoping, Sweden, [2]National University of Science and Technology 'MISIS', Moscow, Russia*
15.20	**CHANGE OF MISORIENTATION OF INDIVIDUAL CRYSTALLOGRAPHIC PLANES IN FATIGUE OF ALLOYS BY DIFFRACTION CONTRAST TOMOGRAPHY USING ULTRABRIGHT SYNCHROTRON RADIATION** **Prof. Yoshikazu Nakai**[1], Prof. Daiki Shiozawa[1], Mr. Naoya Asakawa[1], Mr. Kenji Nonaka[1], Prof. Shoichi Kikuchi[1] *[1]Kobe University, Kobe, Japan*	**3D PRINTED BONE-MIMETIC NANOCOMPOSITES: STRUCTURAL CHARACTERISATION BY ADVANCED TRANSMISSION ELECTRON MICROSCOPY TECHNIQUES** **Dr. Antiope Lotsari**[1,2], Mr. Anand-Kumar Rajasekharan[1], Prof. Mats Halvarsson[2], Prof. Martin Andersson[1] *[1]Department of Chemistry and Chemical Engineering, Chalmers University Of Technology, Gothenburg, Sweden, [2]Department of Physics, Chalmers University of Technology, Gothenburg, Sweden*		
15.40	**STUDY OF NON-BASAL SLIP IN Mg-Y ALLOY BY IN SITU 3D-XRD** **Dr. Leyun Wang**[1,2], Mr. Zhonghe Huang[1], Dr. Sangbong Yi[2], Dr. Jun-Sang Park[3], Dr. Peter Kenesei[3], Dr. Xiaoqin Zeng[1], Dr. Erica Lilleodden[2] *[1]Shanghai Jiao Tong University, Shanghai, China, [2]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany, [3]Argonne National Laboratory, Lemont, USA*	**IN-DEPTH METHODOLOGY ON THE STRUCTURAL CHARACTERIZATION OF EXILVA MICROFIBRILLATED CELLULOSE** **Dr. Anastasia Riazanova**[1,2], Dr. Per A. Larsson[1], Dr. Ramiro Rojas[1,2], Dr. Martha Herrera Rodriguez[1], Prof. Lars Wågberg[1,2], Dr. Hans Henrik Øvrebø[3], Prof. Lars Berglund[1,2] *[1]KTH Royal Institute of Technology, Department of Fibre and Polymer Technology, Stockholm, Sweden, [2]Wallenberg Wood Science Center (WWSC), Stockholm, Sweden, [3]Borregaard, Exilva, R&D Department, Sarpsborg, Norway*	**CROSS-COUPLING BETWEEN DIFFUSION AND MECHANICAL RELAXATION: EFFECTS ON THE PRECIPITATION** **Dr. Reza Darvishi Kamachali**[1], Christian Schwarze[1] *[1]Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Ruhr-university Bochum, Bochum, Germany*	**PECULIARITIES OF STABILITY AND ELASTICITY IN THE MoN-TaN SYSTEM** Nikola Koutná[1,2], **Dr. David Holec**[3], Dr. Martin Friák[4,5,6], Prof. Paul Mayrhofer[1], Prof. Mojmír Šob[5,4,2] *[1]Montanuniversität LeobenInstitute of Materials Science and Technology, TU Wien, Vienna, Austria, [2]Faculty of Science, Masaryk University, Brno, Czech Republic, [3]Department of Physical Metallurgy and Materials Testing, Montanuniversität Leoben, Leoben, Austria, [4]Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic, [5]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic, [6]Central European Institute of Technology, CEITEC BUT, Brno University of Technology, Brno, Czech Republic*
16.00	**APPLICATION OF TOMOGRAPHY TECHNIQUES TO STUDY STRESS CORROSION CRACKING OF Zr ALLOYS IN 3-DIMENSIONS** **Dr Alistair Garner**[1], Dr Timothy Burnett[1], Mr Conor Gillen[1], Dr Philipp Frankel[1] *1University of Manchester, Manchester, United Kingdom*	**APPLICATION OF SCANNING KELVIN PROBE MICROSCOPY (SKPM) TOGETHER WITH INTERMODULATION FORCE MICROSCOPY (Im-AFM) FOR PROBING BOEHMITE (ALOOH) NANOPARTICLES IN POLYMER NANOCOMPOSITES** **Media Ghasem Zadeh Khorasani**[1], Dr. Dorothee Silbernagl[1], Prof. Heinz Sturm[1,2] *[1]Federal Institute for Materials Research and Testing, Berlin, Germany, [2]Technical University of Berlin, Berlin, Germany*	**ICME STUDY OF PARTICLE DAMAGE BEHAVIOUR IN Fe-TiB_2 METAL MATRIX COMPOSITES** **M.Sc. Ding Wang**[1], Dr. Pratheek Shanthraj[1,2], Dr.-Ing. Hauke Springer[1], Prof. Dr.-Ing. habil. Dierk Raabe[1] *[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany, [2]AICES, RWTH Aachen University, Aachen, Germany*	**ADVANCED AB INITIO METHODS FOR ELASTIC PROPERTIES OF ALLOYS: TEMPERATURE DEPENDENCE AND TREATMENT OF DISORDER** Thomas Dengg[1,2], Mohammad Dehghani[1,2], Dr. Rostam Golesorkhtabar[3], Dr. Lorenz Romaner[1], Prof. Dr. Andrei Ruban[1,4], Prof. Peter Puschnig[2], Prof. Dr. Claudia Draxl[3], **Dr. Jürgen Spitaler**[1] *[1]Materials Center Leoben Forschung GmbH, Roseggerstr. 12, 8700 Leoben, Austria, [2]University of Graz, Institute of Physics, NAWI Graz, Universitätsplatz 5, 8010 Graz, Austria, [3]Physics Department and IRIS Adlershof, Humboldt-Universität zu Berlin, Zum Großen Windkanal 6 12489 Berlin, Germany, [4]Department of Materials Science and Engineering, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden*
16.20	**THERMO-MECHANICAL TREATMENTS OF TiAl ALLOYS STUDIED IN SITU BY HIGH-ENERGY X-RAY DIFFRACTION** **Andreas Stark**[1], Marcus Rackel[1], Michael Oehring[1], Lars Lottermoser[1], Norbert Schell[1], Florian Pyczak[1] *[1]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany*	**NOVEL TRANSROTATIONAL SOLID STATE ORDER DISCOVERED BY TEM IN CRYSTALLIZING AMORPHOUS FILMS AND NEW MODEL OF AMORPHOUS STATE** **Prof. Vladimir Kolosov**[1] *[1]Ural Federal University, Ekaterinburg, Russian Federation*	**COMBINED EXPERIMENTAL-AB INITIO STUDY OF MECHANO-CHEMICAL COUPLING DURING PRECIPITATION IN Al-BASED ALLOY** **Dr. Sergiy Divinski**[1], Vladislav Kulitcki[1,2], Bengü Tas Kavakbasi[1], Ankit Gupta[3], Yulia Buranova[1], Dr. Tilmann Hickel[3], Prof Jörg Neugebauer[3], Prof Gerhard Wilde[1] *[1]Institute of Materials Physics, University of Münster, Germany, Münster, Germany, [2]Belgorod State University, Belgorod, Russia, [3]Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany*	**COMBINING GAUSSIAN PROCESSES AND NESTED SAMPLING TO MODEL HYDROGEN DISSOLUTION PROPERTIES IN BCC-Fe** **Dr. Erlend Davidson**[1], Dr. Tom Daff[2], Prof. Gabor Csanyi[2], Prof. Mike Finnis[1] *[1]Imperial College London, London, United Kingdom, [2]University of Cambridge, Cambridge, UK*
16.40	**MagDS FURNACE: AN IN SITU TEMPERATURE GRADIENT STAGE FOR 4D X-RAY IMAGING OF DIRECTIONAL SOLIDIFICATION** **Dr. Biao Cai**[1,2], Prof. Peter Lee[1,2], Dr. Andrew Kao[3], Prof. Andre Phillion[4], Dr. Robert Atwood[5], Dr. Elodie Boller[6], Prof. Koulis Pericleous[3] *[1]School of materials, University Of Manchester, Oxford, United Kingdom, [2]Research Complex at Harwell, Harwell, Oxfordshire, UK, [3]Centre for Numerical Modelling and Process Analysis, University of Greenwich, London, UK, [4]Department of Materials Science and Engineering, McMaster University, Hamilton, Canada, [5]Diamond Light Source Ltd., Harwell Science and Innovation Campus, Didcot, UK, [6]ESRF—The European Synchrotron, Grenoble , France*		**MULTISCALE MODELLING OF THE EFFECT OF SMALL MOLECULES ON MECHANICAL PROPERTIES OF SHAPE MEMORY POLYMERS: THEORY VERSUS EXPERIMENT** **Prof. Dr. Fathollah Varnik**[1], M.Sc. Elias Mahmoudinezhad[1], Dipl.-Ing. Axel Marquardt[2], PD Dr. Klaus Neuking[2], M.Sc. Ehsan Ghobadi[3], Prof. Dr. Holger Steeb[3], Prof. Dr. Günther Eggeler[2] *[1]ICAMS, Ruhr-University Bochum, Bochum, Germany, [2]IFW, Ruhr-University Bochum, Bochum, Germany, [3]University of Stuttgart, Stuttgart, Germany*	**ELASTIC PROPERTIES OF PALLADIUM-HYDRIDE SOLIDS FROM FIRST PRINCIPLES** Beatrix Elsner[1], **Dr. Gregor Feldbauer**[1], Prof. Dr. Stefan Müller[1] *[1]Institute of Advanced Ceramics, Hamburg University of Technology, Hamburg, Germany*

Symposium	D10	E6	F3	F6
Room	CR II Hall/M2	Maurice Saltiel Hall II/M2	3-21/M1	Conference Room 2/M1
Session Title	Fluids II	Hybrid materials and Fibre reinforced plastics II	Nanobiomaterials and nanotechnology for implants, devices and theranostics III	Structural properties of natural materials
Chairperson	Andreas Boudouvis, Theodoros Karakasidis	René Alderliesten	Daniel Ruiz Molina	Sylvain Meille
15.00	*HIGHLIGHT* **UNCERTAINTY AND REPRODUCIBILITY OF WATER FLOW-RATES IN CNTs** **Ermioni Papadopoulou**[1], Dr. Eduardo R. Cruz-Chú[1], Dr. Aleksandar Popadic[3], Prof. Jens H. Walther[1,2], Prof. Matej Praprotnik[3,4], Prof. Petros Koumoutsakos[1] *[1]Computational Science and Engineering Laboratory, ETH Zürich, 8051 Zürich, Switzerland, [2]Department of Mechanical Engineering, Technical University of Denmark., Kongens, Denmark, [3]Department of Molecular Modeling, National Institute of Chemistry, Ljubljana, Slovenia, [4]Department of Physics, Faculty of Mathematics and Physics, University of Ljubljana, Ljubljana, Slovenia*	**DEVELOPMENT OF POLYMER/METAL MULTILAYER COMPOSITES BY "SPARK PLASMA SINTERING"** **Jean-Charles Sébileau**[1,2], Mathias Freslier[1], Dr. Sébastien Lemonnier[1], Dr. Elodie Barraud[1], Dr. Adele Carradò[3], Dr. Marie-France Vallat[2], Dr .Michel Nardin[2] *[1]French-German Research Institute of Saint-louis (ISL), Saint-Louis, France, [2]Institut de Science des Matériaux de Mulhouse UMR 7361 CNRS UHA, Université de Haute-Alsace, Mulhouse, France, [3]Institut de Physique et Chimie des Matériaux de Strasbourg UMR 7504 CNRS UNISTRA, Strasbourg, France*	**DOPAMINE-BASED COORDINATION POLYMER NANOPARTICLES FOR BIOMEDICAL APPLICATIONS** **Javier Garcia-Pardo**[1], Fabiana Nador[1], Julia Lorenzo[2], Fernando Novio[1], Daniel Ruiz-Molina[1] *[1]ICN2-Institut Català de Nanociència i Nanotecnologia, Campus Universitat Autònoma de Barcelona, Cerdanyola Del Vallès, Spain, [2]Institut de Biotecnologia i Biomedicina and Dept. Bioquímica i Biologia Molecular, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Spain*	*HIGHLIGHT* **WATER-MEDIATED NANOCOMPOSITE INTERACTIONS REVEAL FUNCTIONAL DEFORMATION-CHARACTERISTICS OF HUMAN TOOTH DENTIN** Dr. Jean-Baptiste Forien[2], Dr. Ivo Zizak[5], Prof. Claudia Fleck[4], Dr. Ansgar Petersen[1], Prof. Peter Fratzl[3], Prof. Emil Zlotoyabko[6], **Dr. Paul Zaslansky**[1] *[1]Charité - Universitätsmedizin Berlin, Berlin, Germany, [2]Lawrence Livermore National Laboratory - Materials Science Division, 7000 East Avenue, Livermore, USA, [3]Department of Biomaterials Max Planck Institute of Colloids and Interfaces, Golm, Potsdam, Germany, [4]Materials Engineering Department Technische Universität Berlin, Berlin, Germany, [5]Helmholtz-Zentrum Berlin für Materialien und Energie – Speicherring BESSY II, Berlin, Germany, [6]Department of Materials Science and Engineering, Technion Israel Institute of Technology, Haifa, Israel*
15.20	**COMPUTATIONAL STUDY OF THE AGGREGATION OF SPHERICAL NANOPARTICLES IN THE FLOW OF BLOOD UNDER THE INFLUENCE OF MAGNETIC FIELD** Evangelos Karvelas[1], **Dr. Theodoros Karakasidis**[1], Dr Ioannis Sarris[2] *[1]University Of Thessaly, Dept. of Civil Engineering , Pedion Areos, Volos, Greece, [2]Technological Institute of Athens, Dept. of Energy Technology , Athens, Greece*	**FORMABILITY OF LIGHTWEIGHT STEEL-POLYMER SANDWICH SHEETS FOR TRANSPORT APPLICATIONS** **Dr. Josef Domitner**[1], Florian Hönsch[1], Markus Weber[2], Dr. Domenico Foglia[2], Prof. Dr. Christof Sommitsch[1] *[1]Graz University of Technology; Institute of Materials Science, Joining and Forming; Research Group Tools & Forming, Graz, Austria, [2]4a manufacturing GmbH, Traboch, Austria*	**ASYMMETRICALLY FUNCTIONALIZED MESOPOROUS SILICA NANOPARTICLES FOR DUAL TARGETING TO TUMORAL CELL AND MITOCHONDRIA** **Dr. Alejandro Baeza**[1,2], Mrs. Victoria López[1], Mrs. Verónica Rodríguez[1], Mrs. Maria Rocío Villegas[1,2], Dr. Gonzalo Villaverde[1,2], Dr. Daniel Lozano[1], Prof. María Vallet-Regí[1,2] *[1]Universidad Complutense De Madrid, Madrid, Spain, [2]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain*	**SPIDER SILK AND ITS STATISTICAL ANALYSIS** **Phd Student Gabriele Greco**[1], Prof. Nicola Pugno[1,2,3] *[1]Laboratory of Bio-Inspired and Graphene Nanomechanics, Department of Civil, Environmental and Mechanical Engineering, University of Trento, Trento, Italy, [2]School of Engineering and Materials Science, Queen Mary University of London, Mile End Road, E1 4NS London , UK, [3]Italian Space Agency, Via del Politecnico snc, 00133 Rome, Italy*
15.40	**MULTIPHASE FLOWS IN CONFINEMENT WITH COMPLEX GEOMETRIES** **Dr Benjamin Aymard**[1], Mr Urbain Vaes[1], Dr Marc Pradas[2], Professor Serafim Kalliadasis[1] *[1]Imperial College London, London, United Kingdom, [2]The Open University, Milton Keynes, United Kingdom*	**CHEMICAL MODIFICATION OF FIBER-MATRIX INTERFACES FOR ENHANCING THE STRENGTH AND DURABILITY OF LIGHTWEIGHT MATERIALSPART I: ADHESION PROMOTING COATINGS** **Dr. Mara Florea**[1], Zalikha Murni Abdul Hamid[2,3], Dr. Sascha Fliegener[2], PD Dr. Jörg Hohe[2], Prof. Dr. Jürgen Rühe[1] *[1]Department of Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany, [2]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany, [3]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**COMPOSITE SILANIZED-POROUS SILICON-CRYSTALLINE SILICON MICROCANTILEVERS AS BIMODAL MECHANICAL-OPTOPLASMONIC BIOSENSING INTERFACES** **Chloé Rodriguez**[1], Dr Vicente Torres Costa[1], Dra Virginia Cebrian[2], Dra Cristina Gómez Abad[2], Dr Oscar Ahumada[2], Dr Miguel Manso[1] *[1]Universidad Autónoma Of Madrid, Madrid, Spain, [2]Mecwins, Madrid, Spain*	**DEFORMATION MECHANISMS DURING SPLITTING AND FRACTURE OF BAMBOO** Mr Martin Legrand[1], Mr Heyu Wang[1], **Dr Eral Bele**[1] *[1]University College London, Department Of Mechanical Engineering, London, United Kingdom*
16.00	**LARGE SCALE DISSIPATIVE PARTICLE DYNAMICS SIMULATIONS OF BLOOD FLOW** **Ms. Athena Economides**[1], Dr. Sergey Litvinov[1], Mr. Dmitry Alexeev[1], Ms. Lina Kulakova[1], Mr. Lucas Amoudruz[1], Dr. Panagiotis Hadjidoukas[1], Prof. Petros Koumoutsakos[1] *[1]Computational Science and Engineering Laboratory, ETH Zürich, Zürich, Switzerland*	**CHEMICAL MODIFICATION OF FIBRE-MATRIX INTERFACES FOR ENHANCING THE STRENGTH AND DURABILITY OF LIGHTWEIGHT MATERIALSPART II: MECHANICAL CHARACTERIZATION** **Zalikha Murni Abdul Hamid**[1,3], Dr. Sascha Fliegener[1], Dr. Mara Florea[2], Prof. Dr. Jürgen Rühe[2], PD Dr. Jörg Hohe[1] *[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany, [2]Department of Microsystems Engineering – IMTEK, University of Freiburg, Freiburg, Germany, [3]Karlsruhe Institute Of Technology, Karlsruhe, Germany*	**HYBRID PLASMONIC-POLYMER MATERIALS FOR BIOIMAGING** **Dr. Dorleta Jimenez De Aberasturi**[1,2], Malte Strozyk[1,3], Prof. Lus M. Liz Marzán[1,2,4] *[1]CiCbiomaGUNE, San Sebastian-Donostia, 20014, Spain, [2]Biomedical Research Networking Center in Bioengineering Biomaterials and Nanomedicine, Ciber-BBN, San Sebastian-Donostia, 20014, Spain, [3]Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, United Kingdom, [4]Ikerbasque, Basque Foundation for Science, Bilbao, 48013 , Spain*	**STAG BEETLE ELYTRA EXHIBITS NON SYMMETRIC BENDING PROPERTIES USING GRADED MULTI-LAYERS** **Dr. Lakshminath Kundanati**[1], Stefano Signetti[1], Michele Menegon[2], Nicola M. Pugno[1,3,4] *[1]Laboratory of Bio-inspired and Graphene Nanomechanics, Department of Civil, Environmental and Mechanical Engineering, University of Trento , via Mesiano 77, I-38123 , Trento, Italy, [2]MUSE Science Museum, corso del Lavoro e della Scienza 3, I-38122 , Trento, Italy, [3]School of Engineering and Materials Science, Queen Mary University of London, Mile End Road, E1 $NS, London, United Kingdom, [4]Italian Space Agency, Via del Politecnico snc, I-00133 , Rome, Italy*
16.20	**A NOVEL METHOD FOR THE MOLECULAR DYNAMICS SIMULATION OF POLYMERIZATION WITH EMISSION OF A SIDE-PRODUCT** Jakub Krajniak[1], Sudharsan Pandiyan[2], **Zidan Zhang**[2], Eric Nies[2], Giovanni Samaey[1] *[1]Department of Computer Science, KU Leuven, Leuven, Belgium, [2]Department of Chemistry, KU Leuven, Leuven, Belgium*	**EXPERIMENTAL DETERMINATION OF THERMAL RESIDUAL STRESSES IN CFRP-STEEL HYBRID MATERIALS** **M.Eng. Stefan Schmidt**[1], Prof. Dr.-Ing. Joachim Hausmann[1] *[1]Institute for Composite Materials, Kaiserslautern, Germany*	**SURFACE ENHANCED RAMAN SCATTERING FROM GOLD CROWNED HEXAGONAL CLOSE PACKED Si SUBMICROMETER PILLARS** MSc Paola Pellacani[1,2], PhD Carlo Morasso[2], PhD Lucia Fornasari[3], PhD Franco Marabelli[3], **Phd Miguel Manso Silvan**[1] *[1]Universidad Autónoma De Madrid, Madrid, Spain, [2]Fondazione Don Carlo Gnocchi, Milan, Italy, [3]Universita Degli Studi Di Pavia, Pavia, Italy*	**UNRAVELING THE RAPID SELF-ASSEMBLY OF CELLULOSIC FIBERS FROM MISTLETOE VISCIN** **Nils Horbelt**[1], Dr. Michaela Eder[1], Prof. Dr. Peter Fratzl[1], Dr. Matthew J. Harrington[1] *[1]Max Planck Institute Of Colloids And Interfaces, Potsdam, Germany*
16.40	**MULTISCALE ANALYSIS OF REACTIVE TRANSPORT PROCESSES: A TOOL TO MONITOR THE MICRO-STRUCTURE AND THE PROPERTIES OF CHEMICAL VAPOR DEPOSITED FILMS** Dr. Ioannis Aviziotis[1,2], Dr. Thomas Duguet[2], Dr. Constantin Vahlas[2], **Prof. Andreas G. Boudouvis**[1] *[1]School of Chemical Engineering, National Technical University of Athens, Athens, Greece, [2]CIRIMAT, CNRS, Université de Toulouse, Toulouse, France*	**ELECTRICALLY CONDUCTIVE AND DAMAGE TOLERANT FIBRE-HYBRID-COMPOSITE DEVELOPED AS SKIN MATERIAL IN AERONAUTICS** **Prof. Joachim Hausmann**[1], Benedikt Hannemann[1], Dr. Sebastian Schmeer[1], Prof. Ulf P. Breuer[1] *[1]Institute for Composite Materials, Kaiserslautern, Germany*	**RENATURATED COLLAGEN GELS IN PHYSIOLOGICAL SOLUTION CONDITIONS: A QUANTITATIVE DESCRIPTION OF THEIR BIOMECHANICAL PROPERTIES** **Assoc. Prof. Amalia Aggeli**[1], PhD Student Anastasia Papadopoulou[1], Ms ME Naoum[1], PhD Student Eleftherios Rizos[1], Dr. TB Goudoulas[1] *[1]School of Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece*	
17.30			**CHITOSAN-ENGINEERED METAL-ORGANIC FRAMEWORKS AS ORAL DRUG NANOCARRIERS** **Dr Patricia Horcajada**[1], Dr Tania Hidalgo[2], Dr Monica Giménez-Marqués[2], Dr Elena Bellido[2], Dr Jose Avila[3], Dr Maria del Carmen Asensio[3], Dr Fabrice Salles[4], Dr Maria Victoria Lozano[2], Mrs Mazheva Guillevic[2], Dr Rosana Simon-Vazquez[5], Prof Africa Gonzalez-Fernandez[5], Dr Christian Serre[2], Prof Maria Jose Alonso[6] *[1]Imdea Energy, Mostoles, Spain, [2]Institut Lavoisier, CNRS UMR 8180, Université de Versailles Saint-Quentin-en-Yvelines, Versailles, France, [3]Synchrotron SOLEIL & Université Paris-Saclay, Gif-sur-Yvette Cedex, France, [4]3ICGM - UMR5253 Equipe AIME, Université Montpellier II, Montpellier , France, [5]Immunology, Biomedical Research Center (CINBIO) and Institute of Biomedical Research of Vigo (IBIV), Universidad de Vigo, Vigo, Spain, [6]Nanobiofar. Center for Molecular Medicine and Chronic Diseases (CIMUS), Universidad de Santiago de Compostela, Santiago de Compostela, Spain*	

Symposium	A1	A6	A7	A9
Room	3-21/M1	CR I Hall/M2	Rehearsal Room 5.17 /M1	I-11/M1
Session Title	Nanostructures	Re-entry, thermal	Transparent Conductive Oxides	Block Copolymer Membranes
Chairperson	**Alicia De Andrés**	**Barrie Dunn**	**Maria Dinescu**	**Volker Abetz**
17.30	*KEYNOTE/INVITED* **CARBON-BASED HETEROSTRUCTURES FOR SINGLE-MOLECULE INVESTIGATIONS** **Dr Matteo Palma**[1] [1]*Materials Research Institute and School of Biological & Chemical Sciences, Queen Mary University of London, London, United Kingdom*	*KEYNOTE/INVITED* **NASA's ADVANCED TPS MATERIALS AND TECHNOLOGY DEVELOPMENT: MULTI-FUNCTIONAL MATERIALS AND SYSTEMS FOR SPACE EXPLORATION** **Dr. Ethiraj Venkatapathy**[1], Dr Jay Feldman[1], Dr. Donald Ellerby[1], Mr. Paul Wercinski[1], Ms. Robin Beck[1] [1]*NASA Ames Research Center, Moffett Field, United States*	**ELECTRONIC AND STRUCTURAL CHARACTERIZATION OF BARRIER-TYPE AMORPHOUS ALUMINIUM OXIDE** Fabio Evangelisti[1], Michael Stiefel[1], Olga Guseva[1], Rachel Partovi-Nia[1], Roland Hauert[1], Erwin Hack[1], Lars P. H. Jeurgens[1], Patrik Schmutz[1], **Claudia Cancellieri**[1], Francesco Ambrosio[2], Alfredo Pasquarello[2] [1]*Empa, Swiss Federal Laboratories for Materials Science and Technology., Dübendorf, Switzerland,* [2]*Chaire de Simulation à l'Echelle Atomique (CSEA), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland*	*KEYNOTE/INVITED* **DUAL STIMULI-RESPONSIVE MEMBRANOUS SYSTEM WITH MULTIPLE ON–OFF GATES** Ms Bomyi Lee, Prof. **Jin Kon Kim**[1] [1]*Pohang University Of Science And Technology, South Korea*
17.50			**ADDITIVES EFFECTS ON TIN OXIDE MATERIAL DEVELLOPED ON SiO_2 SUBSTRATE** **Dr. Abdallah Ouerdane** [1]*University Djilali Bounaama, Khemis Miliana, Algeria,* [2]*Ecole Nationale Polytecnique Labmat, OranEs Sénia, Algeria*	
18.10	**VISIBLE-NIR DRIVEN PHOTOCATALYSIS ASSISTED BY CARBON NANOSENSITIZERS** Ms. M.C. Ortega-Liebana[1,2], **PhD J.L. Hueso**[1,2], Dr. N. Mas[1], Ms Ane Larrea[1,2], Dr. Victor Sebastian[1,2], Dr. Carlos Bueno-Alejo[1,2], Dr. Reyes Mallada[1,2], Dr. Gema Martinez[1,2], Dr. King Lun Yeung[3], Professor Jesus Santamaria[1,2] [1]*Department of Chemical Engineering. Aragon Institute of Nanoscience (INA), University of Zaragoza, Campus Rio Ebro-Edificio I+D, C/ Poeta Mariano Esquillor S/N, 50018, Zaragoza, Spain,* [2]*Networking Research Center on Bioengineering, Biomaterials and Nanomedicine, CIBER-BBN, 28029, Madrid, Spain,* [3]*Department of Chemical and Biomolecular Engineering, The Hong Kong University of Science and Technology (HKUST), Clear Water Bay, Kowloon, Hong Kong, China*	**DEVELOPMENT OF THE EUROPEAN CONFORMAL ABLATIVE-CHARRING MATERIAL AND PERFORMANCES ASSESSMENT** **Gregory Pinaud**[1], Jerome Bertrand[1], Mathieu Desbordes[1], Jorge Barcena[2], George Vekinis[3] [1]*Airbus Safran Launchers, , France,* [2]*Tecnalia, Mikeletegi Pasealekua 2, E-20009 Donostia-San Sebastián, Spain,* [3]*NCSR Demokritos, Agia Paraskevi Attikis, 15341, Greece*	**AN AEROSOL ROUTE TO PRODUCE NiO/ZnO NANOCOMPOSITE PARTICLES** **Research Asist Duygu Yesiltepe**[1], Serzat Safaltın[1], Sebahattin Gürmen[1] [1]*Istanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, 34469 Istanbul, Turkey*	**ENHANCEMENT OF THE PROPERTIES OF THERMALLY REARRANGED POLYMERS** Alberto Tena, Sofia Rangou, Sergey Shishatskiy, Volkan Filiz, Torsten Brinkmann, **Volker Abetz**[1] [1]*Universität HamburgInstitut für Physikalische Chemie*
18.30	**SIZE DEPENDENCE OF THE CRITICAL PRESSURE OF CARBON NANOTUBES UNDER HYDROSTATIC PRESSURE** **Dr. Markus Hartmann**[1] [1]*Faculty Of Physics, University Of Vienna, Vienna, Austria*	**POROSITY INFLUENCE ON THE THERMAL AND ABLATIVE BEHAVIOUR OF CARBON PHENOLIC ABLATORS UNDER SEVERE AEROTHERMAL FLUX** **Emeline Arnaud**[1,2], Prof. Damien Halm[1], Dr. Denis Bertheau[1], Dr. Julien Beaudet[2] [1]*Institut P' - ISAE/ENSMA, Chasseneuil Du Poitou, France,* [2]*DCNS Research, Bouguenais, France*	*HIGHLIGHT* **PROPERTIES OF ZnO NANORODS GROWN ON PATTERNED SUBSTRATES** **Jan Grym**[1], Roman Jackiv[1], Jan Vaniš[1], Antonín Schenk[1], Šárka Chlupová[1], David Roesel[1] [1]*Institute of Photonics and Electronics of the CAS, Prague, Czech Republic*	**FROM METALLIC GYROID STRUCTURES TO PIEZOELECTRIC NANOPOROUS NETWORKS** **Katja Loos**[1] [1]*University Of Groningen, Groningen, The Netherlands*
18.50	**NEW PROCESSING OPTIONS FOR ULTRA-STRONG CARBON NANOTUBE FIBRES USING CARBON ION IRRADIATION AND DEPOSITION** **Dr. Daniel Mulvihill**[1], Dr. Nathan O'Brien[2], Prof William Curtin[3], Prof Michael McCarthy[2] [1]*School of Engineering, University Of Glasgow, Glasgow, United Kingdom,* [2]*Department of Mechanical, Aeronautical and Biomedical Engineering, University of Limerick, Limerick, Ireland,* [3]*Institute of Mechanical Engineering, EPFL Switzerland, Lausanne, Switzerland*	**CHARACTERISATION OF THE BEHAVIOUR OF TYPICAL SPACECRAFT MATERIALS EXPOSED TO RE-ENTRY ENVIRONMENT CONDITIONS** **Mr Benoit Bonvoisin**[1], Mr Thorn Schleutker[2], Dr. Ali Gülhan[2], Dr Erhard Kaschnitz[3], Mr Tobias Lips[4], Mr Adam Pagan[5], Mr Bartomeu Massuti-Balestter[5], Dr. Georg Herdrich[5], Dr. Jim Merrifield[6], Dr. James Beck[7], Mr Jean Baptiste Gouriet[8], Dr. Olivier Chazot[8], Mr. Tiago Soares[1], Dr. Tommaso Ghidini[1] [1]*ESA-ESTEC, Noordwijk, Netherlands,* [2]*German Aerospace Center (DLR), Cologne, Germany,* [3]*Österreichisches Gießerei Institut (OGI), Leoben, Austria,* [4]*Hyperschall Technology Göttingen (HTG), Katlenburg-Lindau, Germany,* [5]*Universität Stuttgart Institut für Raumfahrt systeme (IRS), Stuttgart, Germany,* [4]*Fluid Gravity Engineering Ltd, Emsworth, England,* [7]*Belstead Research Ltd, Ashford, England,* [8]*Von Karman Institute (VKI), Rhode Saint Genese, Belgium*	**BULK β-Ga_2O_3 SINGLE CRYSTALS WITH LOW DEFECT DENSITY FOR FUTURE HIGH POWER ELECTRONICS** **Vladislav Bugrov**[1], Vladimir Nikolaev[1,2,3], Alexey Pechnikov[1,2], Pavel Shirshnev[1], Alexei Romanov[1,3] [1]*ITMO University, Saint-Petersburg, Russian Federation,* [2]*Perfect crystals LLC, Saint-Petersburg, Russian Federation,* [3]*Ioffe Physical Technical Institute, Saint-Petersburg, Russian Federation*	**NOVEL DIBLOCK COPOLYMERS AS MATERIAL FOR ISOPOROUS ULTRAFILTRATION MEMBRANES** **Janina Gaalken**[1], Mathias Ulbricht[1] [1]*Universität Duisburg-Essen, Lehrstuhl für Technische Chemie II, Essen, Germany*
19.10		**BLACK FUNCTIONALISED SURFACES BY USING LASER TECHNOLOGIES** **Materials And Processes Expert Asensio Zapata**[1], Mechanical Products & Engineering GE Manuela Suess[2], Mechanical Products & Engineering GE Verena Strobel[3] [1]*Airbus Defence&space, Toulouse, France,* [2]*Airbus Defence&space, Friedrichshafen, Germany,* [3]*Airbus Defence&space, Friedrichshafen, Germany*		**NANOPOROUS SEPARATION MEMBRANES FROM MICROPHASE-SEPARATED MULTIBLOCK COPOLYMERS** **Jan Wieczorek**[1], Prof. Dr. Mathias Ulbricht [1]*University of Duisburg-Essen, Essen, Germany*
19.30		**AEROGEL MATERIALS FOR MARS EXPLORATION** **Helena Rocha**[1], Dr. Ugo Lafont[1], Dr. Christopher Semprimoschnig[1] [1]*ESTEC-ESA, Materials' Physics & Chemistry Section, Noordwijk, Netherlands*		

Symposium	B1	B2	B4	B7
Room	Maurice Saltiel Hall I/M2	Aimilios Riadis Hall/M2	3.20/M1	CR III Hall/M2
Session Title	Thermomechanical Processing II	Processing and Manufactuing of Light Metals	Steel and High-Entropy Alloys	Membranes, Adsorption, and Separations Phenomena
Chairperson	**Ernst Gamsjäger**	**Norbert Hort**	**Andrea Bachmaier**	**Camille Petit**
17.30	*HIGHLIGHT* **ADVANCED HIGH STRENGTH STEEL BASED ON VANADIUM CARBIDE PRECIPITATION** **Prof. Mark Rainforth**[1], Dr Alfonce Chamisa[1], Dr Jo Sharp[1], Mr Andrew Patterson[1], Dr Peng Gong[1], Dr Francis Sweeney[1], Dr Arjan Rijkenberg[2] *[1]The University Of Sheffield, Sheffield, United Kingdom, [2]Tata Steel, IJmuiden, The Netherlands*	*HIGHLIGHT* **IMPACT WELDING OF LIGHT METALS: A CIVILIZED BUT EXTREME APPROACH** **Dr. Anupam Vivek**[1], Dr. Ali Nissari[1], Yu Mao[1], Taeson Lee[1], Geoff Taber[1], Prof. Glenn Daehn[1] *[1]Department Of Materials Science And Engineering, The Ohio State University, Columbus, United States*	*HIGHLIGHT* **STRENGTH AND SERVICE PROPERTIES OF NANO-STRUCTURED ASTM F138 STAINLESS STEEL AFTER HIGH PRESSURE TORSION** **Prof. Sergey Dobatkin**[1,2], Dr. Olga Rybalchenko[1,2], Aleksei Tokar[2], Natalia Martynenko[2], Prof. Vladimir Terent'ev[1], Dr. Dmitriy Prosvirnin[1], Dr. Andrea Kliauga[3], Dr. Nariman Enikeev[4,5], Prof. Nick Birbilis[6], Prof. Yuri Estrin[2,6] *[1]A.A. Baikov Institute Of Metallurgy And Materials Science Of Ras, Moscow, Russian Federation, [2]National University of Science and Technology "MISIS", Laboratory of Hybrid Nanostructured Materials, Moscow, Russian Federation, [3]Federal University of San Carlos, San Carlos, Brazil, [4]Ufa State Aviation Technical University, Institute for Physics of Advanced Materials, Ufa, Russian Federation, [5]Saint Petersburg State University, Laboratory for Mechanics of Bulk Nanostructured Materials, Saint-Petersburg, Russian Federation, [6]Department of Materials Science and Engineering, Monash University, Melbourne, Australia*	**ADSORPTION OF RARE EARTH METAL IONS BY POST-SYNTHESIS FUNCTIONALIZED MIL-101 IN WATER** **Prof. Wha-seung Ahn**[1], Ms. Yuri Lee[1] *[1]Inha University, Incheon , South Korea*
17.50	**EFFECT OF STRAIN ON PRECIPITATION CHARACTERISTICS IN Ti-Mo ALLOYED STEEL** **Mr Ilias Bikmukhametov**[1], Dr. Peter Hodgson[1], Dr. Jiangting Wang[1], Dr. Hossein Beladi[1], Dr. Ilana Timokhina[1] *[1]Deakin University, Geelong, Australia*	**EXPERIMENTAL AND NUMERICAL INVESTIGATION OF RAPID SOLIDIFICATION OF Al-ALLOYS** **Dr. Jonas Valloton**[1], Dr. Abdoul-Aziz Bogno[1], Prof. Hani Henein[1], Prof. Dieter Herlach[2], Dr. Charles-André Gandin[3] *[1]University Of Alberta, Edmonton, Canada, [2]Deutsches Zentrum für Luft- und Raumfahrt, Cologne, Germany, [3]MINES ParisTech, Sophia Antipolis, France*	**APPROACHING THE MAXIMUM STRENGTH IN CARBON STEELS USING HIGH PRESSURE TORSION** **Timo Mueller**[1], Dr. Andrea Bachmaier[1], Prof. Dr. Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria*	*HIGHLIGHT* **WATER STABLE METAL-ORGANIC FRAMEWORKS (MOFs) FOR CO_2 CAPTURE** **Dr Dan Zhao**[1] *[1]National University Of Singapore, Singapore*
18.10	**INFLUENCE OF V(C,N) PRECIPITATES ON HOT DUCTILITY OF A V-MICROALLOYED BAINITIC STEEL** **Mr. Mohammad Saadati**[1], Dr. Davood Shahriari[1], Prof. Mohammad Jahazi[1] *[1]Ecole de Technologie Superieure, Montreal, Canada*	**NON-DENDRITIC Al-Si ALLOYS BY SIMPLIFIED RHEOCASTING WITH MECHANICAL STIRRING** **Dr. Jose Federico Chavez**[1], M.Sc. Alfredo Hernandez[2] *[1]Instituto Politécnico Nacional - ESIQIE, Mexico City, Mexico, [2]Tecnológico de Estudios Superiores de Coacalco, Coacalco, Mexico*	**STRENGTH PROPERTIES OF AUSTENITIC STAINLESS STEELS SUBJECTED TO LARGE STRAIN WARM ROLLING** **Miss Zhanna Yanushkevich**[1], Dr Andrey Belyakov[1], Dr Rustam Kaibyshev[1] *[1]Belgorod National Research University, Belgorod, Russian Federation*	**NanoMOFS IN MIXED-MATRIX MEMBRANE FOR CO_2 CAPTURE** **Marvin Benzaqui**[1,2], Prof Nathalie Steunou[1], Dr Christian Serre[2] *[1]Institut Lavoisier de Versailles, Versailles, France, [2]Institut des Matériaux Poreux de Paris, Paris, France*
18.30	**EFFECT OF AUSFORMING TEMPERATURE ON TMT OPTIMIZATION IN G91** Mr Javier Vivas[1], **Dr Carlos Capdevila**[1], Dr Jose Antonio Jimenez[1], Dr David San Martin[1], Dr Marta Serrano[2], Dr Mercedes Hernandez-Mayoral[2] *[1]CENIM-CSIC, Madrid, Spain, [2]CIEMAT, Madrid, Spain*	**NUMERICAL PREDICTIONS OF POTENTIAL PROBLEMS OF CLADDING PROCESSES BY TWIN-ROLL CASTING** **Prof. Jong-jin Park**[1] *[1]Hongik University, Seoul, South Korea*	**CHARACTERIZATION OF A SEVERELY PLASTICALLY DEFORMED FeMnCoCr MEDIUM ENTROPY ALLOY** **Dr. Bernhard Völker**[1], Dr. Anton Hohenwarter[1] *[1]Department Materials Physics, Montanuniversität Leoben, 8700 Leoben, Austria*	**UNDER GAS-PRESSURE: NON-AMBIENT CRYSTALLOGRAPHY ON HIGHLY STABLE PYRAZOLATE-BASED MOFs** **Dr. Valentina Colombo**[1], Prof. Angelo Sironi[1] *[1]Università degli Studi di Milano, Milano, Italy*
18.50	**EFFECT OF BORON ON MICROSTRUCTURE AND PROPERTIES OF THE PIPE STEEL** Dr Anatoly Babenko[1,2], Dr Vladimir Zhuchkov[1,2], Dr Natalia Selmenskikh[1], **Dr Alena Upolovnikova**[1] *[1]Institute Of Metallurgy Ural Branch Of The Ras, Ekaterinburg, Russian Federation, [2]Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russian Federation*	*HIGHLIGHT* **COST-EFFECTIVE FABRICATION OF METAL MATRIX COMPOSITES (MMCs) USING HIGH SHEAR TECHNOLOGY** Dr Xinliang Yang[1], **Mr Eric Nyberg**[1], Prof. Zhongyun Fan[1] *[1]BCAST, Brunel University London, Uxbridge UB8 3PH, UK*	**EFFECT OF CARBON CONTENT AND ANNEALING TREATMENTS ON THE MECHANICAL PROPERTIES AND THE MICROSTRUCTURE IN NANOCRYSTALLINE CrMnFeCoNi ALLOYS DOPED WITH CARBON** **Benjamin Schuh**[1], Dr. Bernhard Völker[1], Dr. Verena Maier-Kiener[2], Dr. Francisca Mendez-Martin[2], Dr. Jiehua Li[3], Dr. Anton Hohenwarter[1] *[1]Department of Materials Physics, University of Leoben and Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria, [2]Department of Physical Metallurgy and Materials Testing, University of Leoben, Leoben, Austria, [3]Institute of Casting Research, University of Leoben, Leoben, Austria*	**MONOLITHIC METAL-ORGANIC FRAMEWORK: TOWARDS BREAKING DOE TARGETS FOR METHANE UPTAKE** **Dr Tian Tian**[1], Mr Zhixin Zeng[2], Miss Diana Vulpe[1], Dr Mirian Casco[3], Professor Joaquin Silvestre-Albero[3], Professor Jin-Chong Tan[2], Dr Peyman Moghadam[1], Dr David Fairen-Jimenez[1] *[1]University of Cambridge, Cambridge, United Kingdom, [2]University of Oxford, Oxford, United Kingdom, [3]Universidad de Alicante, Alicante, Spain*
19.10	**EFFECT OF REHEATING TEMPERATURE AND COOLING TREATMENT ON THE MICROSTRUCTURE, TEXTURE AND IMPACT TRANSITION BEHAVIOUR OF HEAT TREATED NAVAL GRADE HSLA STEEL** **Mr. Md. Basiruddin Sk**[1], Dr. Abhijit Ghosh[1], Mr. Nirmalya Rarhi[2], Dr. R. Balamuralikrishnan[2], Dr. Debalay Chakrabarti[1] *[1]Indian Institute Of Technology Kharagpur, Metallurgical And Materials Engineering Department, Iit Kharagpur, Kharagpur, India, [2]Defence Metallurgical Research Laboratory, Kanchanbagh, P.O. Hyderabad, India*	**HIGH MODULUS ALUMINIUM-BASED NANOCOMPOSITES: NEW REQUIREMENT OF AUTOMOTIVE MARKET** **Dr. Sajjad Amirkhanlou**[1], Dr. Yijie Zhang[1], Dr. Shouxun Ji[1] *[1]BCAST, Brunel University London, London, United Kingdom*	**THERMALLY ACTIVATED PLASTICITY OF COARSE GRAINED AND NANOCRYSTALLINE CoCrFeNiMn HIGH ENTROPY ALLOY AT LOW TEMPERATURES** **Dr. Aleksey Podolskiy**[1], Dr. Elena Tabachnikova[1], Prof. Erhard Schafler[2], Dr. Mikhail Tikhonovsky[3], Prof. Michael Zehetbauer[2] *[1]B. Verkin Institute for Low Temperature Physics & Engineering, 47 Nauky Ave., 61103, Kharkiv, Ukraine, [2]Physics of Nanostructured Materials, Faculty of Physics, University of Vienna, Boltzmanngasse 5, A-1090 , Wien, Austria, [3]National Science Center, Kharkov Institute of Physics and Technology, 1 Akademicheskaya Str, 1108, Kharkiv, Ukraine*	**NOVEL Ni-IRMOF-74 POST-SYNTHETHICALLY FUNCTIONALIZED FOR H_2 STORAGE APPLICATIONS** Dr. Gisela Orcajo[1], PhD. Student Helena Montes-Andrés[1], Dr. Carmen Martos[1], Dr. Juan Angel Botas[1], **Prof. Guillermo Calleja**[1] *[1]Department of Chemical and Energy Technology, Universidad Rey Juan Carlos, Móstoles, España*
19.30				

Symposium	B8	B9	C1	C3
Room	Conference Room 1/M1	I-08/M1	Friends of Music Hall/M1	Maurice Saltiel Hall III/M2
Session Title	Defects and multi-phase alloys	Crystallization and structural inhomgeneities in BMGs	Surface engineering and modifications 1/3 -Corrosion	Densification processes
Chairperson	**Livio Battezzati**	**K. Shamlaye, K. Georgarakis**	**Kim Dogeun, Elias Aperathitis**	**Sergio Mestre**
17.30	**DEFORMATION MECHANISMS OF FeCoCrNi HIGH ENTROPY ALLOY: IN SITU NEUTRON AND SYNCHROTRON INVESTIGATION** **Dr Biao Cai**[1], Dr Bin Liu[2], Dr Yiqiang Wang[1], Dr Saurabh Kabra[3], Dr Kun Yan[1], Prof Peter Lee[1], Prof Yong Liu[2] *[1]University Of Manchester/materials, Oxford, United Kingdom, [2]State Key Laboratory for Powder Metallurgy, Central South University, Changsha, China, [3]ISIS Facility, Rutherford Appleton Laboratory, Didcot, United Kingdom*	*HIGHLIGHT* **STRUCTURAL REORDERING AND CONTROLLED NANOCRYSTALLIZATION IN METALLIC GLASSES** **Dr. Baran Sarac**[1], Dr. Andrea Bernasconi[2], Prof. Mihai Stoica[3], Prof. Jürgen Eckert[4] *[1]Erich Schmid Institute Of Materials Science, Leoben, Austria, [2]University of Pavia, Pavia, Italy, [3]ETH Zurich, Zurich, Switzerland, [4]Montanuniversität Leoben, Leoben, Austria*	*HIGHLIGHT* **INCREASED CORROSION RESISTANCE BY SURFACE MODIFICATION USING INTENSE PULSED ELECTRON BEAMS** **Dr. Alfons Weisenburger**[1], Dr. Adrian Jianu[1], Dr. Annette Heinzel[1], Wladimir An[1], Dr. Renate Fetzer[1], Fabian Lang[1], Frank Zimmermann[1], Prof. Georg Müller[1] *[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen*	*HIGHLIGHT* **LIQUID PHASE SINTERING OF PM STEEL WITH MASTER ALLOY CONTAINING BORON** **Mr Maheswaran Vattur Sundaram**[1], Dr. Yiming Yao[1], Dr. Eduard Hryha[1], Prof. Lars Nyborg[1] *[1]Chalmers University of Technology, Gothenburg, Sweden*
17.50	**PHASE DECOMPOSITION OF A SINGLE-PHASE AlTiVNb HIGH-ENTROPY ALLOY AFTER SEVERE PLASTIC DEFORMATION AND ANNEALING** **Benjamin Schuh**[1], Dr. Bernhard Völker[1], Dr. Jiehua Li[2], Dr. Verena Maier-Kiener[3], Dr. Juraj Todt[4], Dr. Anton Hohenwarter[1] *[1]Department Of Materials Physics ,University Of Leoben, Leoben, Austria, [2]Chair of Casting Research, University of Leoben, Leoben, Austria, [3]Department of Physical Metallurgy and Materials Testing, University of Leoben, Leoben, Austria, [4]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria*	**A SYNCHROTRON RADIATION STUDY OF DEALLOYING AMORPHOUS ALLOYS** **Dr Sara Goberna Ferrón**[1], Dr. Eirini Maria Paschalidou[2], Prof. Livio Battezzati[2], Dr. Gavin Vaughan[1] *[1]European Synchrotron Radiation Facility, Grenoble, France, [2]Dipartimento di Chimica, Universita di Torino, Torino, Italy*	**STATEGIES TO CORRELATE THE MICROSTRUCTURE OF CHROMIUM BASED AND CHROMIUM FREE CONVERSION LAYERS ON ALUMINIUM ALLOY TO THEIR ELECTROCHEMICAL PROPERTIES** **Mr Quentin BOYER**[1], Dr. Sandrine DULUARD[1], Dr. Jean-Pierre BONINO[1], Dr. Benoît FORI[2], Dr. Florence ANSART[1] *[1]CIRIMAT, Université de Toulouse, INPT,UPS,CNRS, Université Toulouse 3 Paul Sabatier, Toulouse, France, [2]Mecaprotec Industries, Muret, France*	**MATERIAL SOLUTIONS AND PROCESS ROUTES FOR HIGH PERFORMANCE PM STEEL COMPONENTS** **Ph.D Dimitris Chasoglou**[1] *[1]Höganäs AB, Höganäs, Sweden*
18.10	**THE SCANDIUM EFFECT IN HIGH-ENTROPY ALLOYS** **Miss Sephira Riva**[1], Prof Stephen G.R. Brown[1], Dr Nicholas P. Lavery[1], Dr Kirill V. Yusenko[1] *[1]College of Engineering, Swansea University, Swansea, United Kingdom*	**PROCESSING AND MICROSTRUCTURE OF Fe-BASED BULK METALLIC GLASSES** **Dr. Marek Smaga**[1], Shayan Deldar[1], Prof. Tilmann Beck[1], Dr. Mariusz Hasiak[2], Prof. Jerzy Kaleta[2] *[1]Institute of Materials Science and Engineering, Kaiserslautern, Germany, [2]Department of Mechanics and Materials Science, Wroclaw, Poland*	**ROLE OF ANODIZATION TREATMENT FOR IN-SITU GROWTH OF LDH-NANOCONTAINERS USED FOR ACTIVE CORROSION PROTECTION OF ALUMINUM ALLOY AA2024** **Dr. Maria Serdechnova**[1], Dr. Marta Mohedano[2], Dr. Sergey Karpushenkov[3], Dr. Carsten Blawert[1], Prof. Dr. Mikhail Zheludkevich[1] *[1]Helmholtz Zentrum Geesthacht, Geesthacht, Germany, [2]Universidad Complutense Madrid, Madrid, Spain, [3]Belarusian State University, Minsk, Belarus*	**CERAMICS BY DETONATION OF HIGHLY ENERGETIC MATERIALS** **Dr. Pierre GIBOT**[1], Dr. Denis SPITZER[1] *[1]Laboratory of Nanomaterials for Systems under Extreme Stresses UMR 3208 CNRS/ISL/UNISTRA, French German Research Institute of Saint-Louis, 5 rue du General Cassagnou BP 70034 – 68301 Saint-Louis, France*
18.30	**AlCrFeNiMn/Gr HIGH ENTROPY COMPOSITE PROCESSED BY MECHANICAL ALLOYING AND SPARK PLASMA SINTERING** **Dr Gabriela Popescu**[1], Dr. Ioana Csaki[1], Dr. Cristian Aurelian Popescu[1], PhD student Lucian Rosu[1], Dr. Dumitru Mitrica[2], Dr. Vasile Soare[2] *[1]University Politehnica Bucharest, Bucharest, Romania, [2]National R&D Institute for Nonferrous and Rare Metals – IMNR, 102 Biruinței Blvd, Pantelimon, Ilfov County, Romania, 077145, Romania*	**YTTRIUM ADDITION IN THE Cu-Zr-Ti TERNARY SYSTEM** **Oriane Baulin**[1], Damien Fabrègue[1], Sébastien Gravier[2], Jean-Marc Pelletier[1] *[1]Mateis Laboratory, Lyon, France, [2]SIMAP, GPM2, Grenoble, France*	**ANODIZING OF MAGNESIUM IN ALKALINE MEDIA: A DESCRIPTION OF THE MECHANISMS LEADING TO THE DIELECTRIC BREAKDOWN** Delphine VEYS-RENAUX[1], **Alexandre ZIMMER**[1], Nicolas STEIN[1], Emmanuel ROCCA[1] *[1]Institut Jean Lamour - Université De Lorraine, France*	**SINTERING OF CuCr COMPOSITES FOR CAPACITIVE SWITCHING** Dr. Anthony Papillon[1], **Dr. Sophie Roure**[1], M.S. Melissa Chosson[1] *[1]Schneider Electric, Grenoble, France*
18.50	**A PROPOSED SOLIDIFICATION SEQUENCE THEORY BASED ON EXPERIMENTAL AND PARAMETRIC MODELING DATA FOR VARIOUS REFRACTORY HIGH ENTROPY ALLOYS** **Dipl. Eng. Emmanuel Georgatis**[1], Dipl. Eng. Anthoula Poulia[1], Dr. Alexander Karantzalis[1] *[1]University Of Ioannina, Ioannina, Greece*	**DISSIMILAR STRUCTURE HETEROGENEITY IN U-BASED AMORPHOUS ALLOYS REVEALED BY NANOINDENTATION CREEP AND XAFS** Assoc. Prof.Hai Bo Ke[1], Assoc. Prof. Huo Gen Huang[1], Hong Yang Xu[1], **Assitant Prof. Pei Zhang**[1], Peng Guo Zhang[1], Prof. Tian Wei Liu[1] *[1]Institute of Materials China Academy of Engineering Physics, Mianyang, China*	**A CHEMICAL VIEW OF CHROMATE CONVERSION COATING ON MAGNESIUM ALLOYS EV31A: AN XPS AND AUGER SPECTROSCOPIES APPROACH** **Dr. Jean-Charles Dupin**[1], Dr. Arnaud Uhart[1], Dr. Jean-Bernard Ledeuil[1], Prof. Hervé Martinez[1], Dr. Jérôme Frayret[1] *[1]Iprem / Cnrs Umr5254, Pau, France*	
19.10	**PRIORITY PROGRAMME "COMPOSITIONALLY COMPLEX ALLOYS - HIGH ENTROPY ALLOYS (CCA - HEA)" FUNDED BY GERMAN RESEARCH FOUNDATION (DFG)** **"COMPOSITIONALLY COMPLEX ALLOYS - HIGH ENTROPY ALLOYS (CCA - HEA)"** **Prof. Dr.-ing. Uwe Glatzel** *University Bayreuth, Bayreuth, Germany*	**URANIUM-INCLUDED BULK METALLIC GLASS MATRIX COMPOSITES** **Assoc. Prof.Huogen Huang**[1], Assoc. Prof. Haibo Ke[1], Dr. Pei Zhang[1] *[1]Institute Of Materials, China Academy Of Engineering Physics, Mianyang, China*	**INFLUENCE OF CYCLIC OXIDATION IN MOIST AIR ON SURFACE OXIDATION-AFFECTED ZONES** **Phd Mattias Calmunger**[1], Phd Robert Eriksson[1], Prof. Guocai Chai[1,2], Prof. Sten Johansson[1], Prof. Johan Moverare[1] *[1]Department of Management and Engineering, Linköping University, Linköping, Sweden, [2]AB Sandvik Materials Technology R&D Center, Sandviken, Sweden*	

Symposium	C4	C5	C8	C9
Room	Conference Room 4/M1	Museum Hall /M2	Library Hall/M2	Conference Room 3/M1
Session Title	Special products and new processes in Additive Manufacturing	Wetting	Non-Ferrous and Special Purpose Alloys	Various materials processing technologies
Chairperson	**Eduard Hryha**	**Simeon Agathopoulos, Enrique Louis**	**Ji Zhang, Sheng Guo**	**Torsten Rabe**
17.30	**MICROSTRUCTURE CHARACTERIZATION OF FUNCTIONALLY GRADED MATERIALS Ti64-Mo BY CLAD PROCESS** **Catherine Schneider-Maunoury**[1,2], Laurent Weiss[2], Philippe Acquier[1], Dider Boisselier[1], Pascal Laheurte[2] *[1]Irepa Laser, Strasbourg, France, [2]LEM3, Metz, France*	**FACTORS AFFECTING WETTING AND REACTIVITY IN Si/CERAMIC SYSTEMS AT ULTRAHIGH TEMPERATURES T>1450°C** **Natalia Sobczak**[1] *[1]Foundry Research Institute, Centre for High Temperature Studies, Krakow, Poland*	**CHARACTERIZATION OF NEW PLATINUM CASTING ALLOYS WITH APPLICATION IN JEWELRY PRODUCTION** **Tanja Trosch**[1] *[1]Metals and Alloys, University Bayreuth, Bayreuth, Germany, [2]Varinor, Delémont, Swiss*	**ULTRASONIC PULTRUSION IN-LINE CURE MONITORING** **Christian Pommer**[1] *[1]Tu-braunschweig, Braunschweig, Germany*
17.50	**LIGHT WEIGHTING IN METAL ADDITIVE MANUFACTURING** **Prof. Dan Thoma**[1], Professor Krishnan Suresh[1], Tej Kumar[1], Buzz Rankouhi[1], Dr. William Aquite[1], Dr. David Gross[1] *[1]University Of Wisconcon, Madison, United States*		**TENSILE DUCTILITY OF CAST TiAl ALLOY INFLUENCED BY THE RESIDUAL STRESS** **Prof. Ji Zhang**[1] *[1]China Iron And Steel Research Institute Group, Beijing, China*	**IMPROVED MICROSTRUCTURE AND STRENGTH OF ADVANCED CERAMICS BY CONTROLLED SLURRY DESTABILIZATION AND ULTRASONIC ATOMIZATION** **Dr. Torsten Rabe**[1], Dr. Patrick Hoehne, Petra Kuchenbecker, Wolfgang Guether *[1]Federal Institute For Materials Research And Testing, Berlin, Germany*
18.10	**ASSESSMENT OF ADDITIVELY MANUFACTURED LATTICE STRUCTURES FOR GAS TURBINE APPLICATIONS** **M.Sc./eq. Dipl.-Ing. Lena Farahbod**[1,2], Prof. Dr.-Ing. habil. Gerd Witt[2], Dr.-Ing. Sebastian Piegert[1], Dr.-Ing. Christoph Haberland[1] *[1]Siemens AG, Power and Gas, Berlin, Germany, 2University of Duisburg-Essen, Duisburg, Germany*	**AT THE TRIPLE LINE AND AT THE INTERFACE OF THE Ir-Si/C SYSTEM** **Dr Donatella Giuranno**[1], Mr Antonio Camarano[2], Dr Rada Novakovic[1], Dr Enrica Ricci[1], Prof Javier Narciso[2] *[1]National Research Council (CNR)–Institute of Condensed Matter Chemistry and Technologies for Energy (ICMATE), Via De Marini 6, 16149, Genoa, Italy, [2]Instituto Universitario de Materiales de Alicante (IUMA), Universidad de Alicante, Apdo. 99, 03080, Alicante, Spain*	**THE APPLICATION OF CENTRIFUGAL ATOMIZATION METHOD FOR PREPARATION OF RAPIDLY SOLIDIFIED Nd–Fe–B FLAKES USED FOR PRODUCTION OF PERMANENT MAGNETS** **Dr. Mihael Brunckо**[1,2], Peter Kirbis[1], Ziga Erman[2], dr. Ivan Anzel[1] *[1]University of Maribor, Faculty of Mechanical Engineering, Maribor, Slovenia, [2]Magneti Ljubljana d.d., Ljubljana, Slovenia*	**FABRICATION OF AA5083 - MULTIWALL CARBON NANOTUBES (MWCNTs) COMPOSITE METAL FOAM BY FRICTION STIR PROCESSING ROUTE (FSP) AND MICROSTRUCTURAL CHARACTERIZATION** **Phd Candidate Ioannis Papantoniou**[1], MSc Helen Kyriakopoulou[1], Prof. Dimitrios Pantelis[1], Prof. Dimitrios Manolakos[1] *[1]NH, Athens, Greece*
18.30	**ADDITIVE MANUFACTURING OF NEW LIGHTWEIGHT ARCHITECTURED MATERIALS WITH OPEN POROSITIES** **PhD Paul Lohmuller**[1,2], PhD Julien Favre[1], PhD Samuel Kenzari[2], PhD Boris Piotrowski[1], PhD Pascal Laheurte[1] *[1]Lem3, Metz, France, [2]Institut Jean Lamour, Nancy, France*	**REACTIVITY BETWEEN SiC SINGLE CRYSTALS AND IR AT HIGH TEMPERATURE** **Prof. Javier Narciso**[1] Doctor Enrica Ricci[2], Doctor Rada Novakovic[2], Doctor Donatella Giuranno[2], Doctor Antonio Camarano[1] *[1]Alicante University, Alicante, Spain, [2]CNR-ICMATE, Genova, Italy*	**ANALYSIS OF MICROSTRUCTURE AND SLIDING WEAR BEHAVIOR OF $Co^{1.5}CrFeNi^{1.5}Ti0.^{5}$ HIGH ENTROPY ALLOY** **Dr. Konstantinos Lentzaris**[1], MSc. Anthoula Poulia[1], Dipl. Eng. Emmanuel Georgatis[1], Prof. Angela Lekatou[1], Ass. Prof. Alexander Karantzalis[1] *[1]University of Ioannina, Ioannina, Greece*	**METAL POWDER COMPOSITE GLUE FOR INDUCTION HEATING IN SHOE MANUFACTURING PROCESS** **Dr. Sung-Hyuk Song**[1], Dr. Byungin Kim[1], Dr. Heechang Park[1], Dr. Sangtaek Oh[2] *[1]Department of Robotics and Mechatronics, Korea Institute of Machinery and Materials, Daejeon, South Korea, [2]Organic Material Research Division, Korea Institute of Footwear and Leather Technology, Busan, South Korea*
18.50	**MORPHOLOGY OF BINDER-JET ADDITIVE MANUFACTURED METAL MATRIX COMPOSITES** **Dr. Cindy Waters**[1], Bernard Amamchukwu Ilogebe[1], Cameron Shackleford[1], Dr. Amelia Elliott[2], Mohammad Khan[1] *[1]North Carolina A&t State University, Greensboro, United States, [2]Oak Ridge National Labs, Oak Ridge, United States*	**IN-SITU APPARATUS TO STUDY GAS-METAL REACTIONS AND WETTABILITY AT HIGH TEMPERATURES** **Dr. Alexey Koltsov**[1], Dr. Marie-José Cornu[1], Julien Scheid[1] *[1]ArcelorMittal Research, Maizières-lès-Metz, France*	**SOLID SOLUTIONING IN CoCrFeNiMx (M=4d TRANSITION METAL) HIGH-ENTROPY ALLOYS** **Dr. Sheng Guo**[1] *[1]Chalmers University Of Technology, Gothenburg, Sweden*	**ELECTRICAL ASSISTED UNIAXIAL TENSILE TEST ON UNS S32205, UNS S32304 AND UNS S32750 DUPLEX STAINLESS STEELS** **Engineer Claudio Gennari**[1], Prof. Michele Forzan[1], Prof. Stefania Bruschi[1], Prof. Irene Calliari[1], Student Wen Shi[2], Prof. Xianghuai Dong[2] *[1]University Of Padua, Padua, Italy, [2]Jiao Tong University, Shanghai, China*
19.10	**SPRAY APPLICATION FOR MECHANICALLY ALLOYED ODS POWDER** **Suk Hoon Kang**[1], Dong-Yong Park[2], Sanghoon Noh[1], Jinsung Jang[1], Tae Kyu Kim[1] *[1]Korea Atomic Energy Research Institute, Daejeon, South Korea, [2]Nara KIC, Gyeongsangbuk-do, South Korea*	**WETTING DYNAMICS OF LIQUID LEAD AND ZINC ON SILICA-PATTERNED IRON** **Moustapha Diallo**[1,2], Prof.Hervé Duval[1], Dr Alexey Koltsov[2], Jean-Michel Mataigne[2], Prof. Marie-Laurence Giorgi[1] *[1]CentraleSupélec, France, [2]ArcelorMittal Global R&D, France*	**COMPOSITE LAYER TiC-Fe FABRICATED IN SITU IN STEEL CASTING** **Msc Łukasz Szymański**[1,2], PhD Ewa Olejnik[1,2], PhD Marta Gajewska[3], PhD Sylwia Żymankowska - Kumon[1], PhD Dariusz Drożyński[1], PhD Tomasz Tokarski[3] *[1]AGH University Of Science And Technology, Faculty of Foundry Engineering, Cracow, Poland, [2]Innerco sp. z o.o., Cracow, Poland, [3]AGH University of Science and Technology,Academic Centre of Materials and Nanotechnology, Cracow, Poland*	
19.30	**MICROSTRUCTURE AND MECHANICAL PROPERTIES OF CuAl8Ni6 PRODUCED BY WIRE ARC ADDITIVE MANUFACTURING FOR MARINE APPLICATIONS** **Dr. ir. Wei Ya**[1,2,5], MSc Constantinos Goulas[1,3,5], MSc Kelvin Hamilton[4], Dr. ir. M.C.M. Hermans[3], Dr. ir. G. R. B. E. Romer[2], Prof. Dr. I.M. Richardson[3] *[1]Rotterdam Additive Manufacture Fieldlab (RAMLAB), Rotterdam, Netherlands, [2]University Of Twente, Enschede, Netherlands, [3]Delft University of Technology, Delft, Netherlands, [4]Autodesk BV, Hoofddorp, Netherlands, [5]Materials innovation institute (M2i), Delft, Netherlands*			

Symposium	C10	C11	D1	D5
Room	F 319/M1	MOYSA Hall/M2	Artist Cafe/M1	I-15/M1
Session Title	Microstructure stability, recrystallization and deformation behaviour	Devices for Memory and Logic	Magnetic and Ferroelectric Materials	Industrial Processes and Valorisation
Chairperson	**A. Belyakov, R. Massion**	**Marco Fanciulli**	**Makis Angelakeris, Maria Katsikini**	**Claas Hüter**
17.30	*HIGHLIGHT* **EXPERIMENTAL INVESTIGATION OF THE INFLUENCE OF NANOSCALED PARTICLES AND GB SEGREGATIONS ON THE THERMAL STABILITY OF UFG Al ALLOYS** **Xavier Sauvage**[1], Amandine Duchaussoy[1], Elena Bobruk[2], Maxim Murashkin[2,3], Nariman Enikeev[2,3], Ruslan Valiev[2,3] *[1]Normandie Université - Groupe De Physique Des Matériaux- CNRS, Saint Etienne Du Rouvray, France, [2]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russia, [3]Research Laboratory for Mechanics of New Nanomaterials, Saint Petersburg State Polytechnical University, Saint Petersburg, Russia*	**A POLY-SILICON-BASED PROJECTED PHASE-CHANGE MEMORY DEVICE** **Iason Giannopoulos**[1,2], Dr. Abu Sebastian[1], Vara Prasad Jonnalagadda[1], Dr. Wabe Koelmans[1], Manuel Le Gallo[1], Dr. Evangelos Eleftheriou[1] *[1]IBM Research, Rüschlikon, Switzerland, [2]Swiss Federal Institute of Technology (ETH Zürich), Zurich, Switzerland*	**SOFT-PHONON-DRIVEN ORBITAL ORDER IN CaMn7O12: AN X-RAY DIFFUSE AND INELASTIC SCATTERING STUDY** **Dr Sofia Michaela Souliou**[1], Dr. Yuan Li[2,3], Dr. X Du[2], Prof Mathieu Le Tacon[4], Dr. Alexei Bosak[1] *[1]European Synchrotron Radiation Facility, Grenoble, France, [2]International Center for Quantum Materials, School of Physics, Peking University, Beijing, China, [3]Collaborative Innovation Center of Quantum Matter, Beijing, China, [4]Karlsruhe Institute of Technology, Institut fur Festkorperphysik, Karlsruhe, Germany*	**INTEGRATED MODELING OF MATERIALS MICRO-STRUCTURE DURING THERMO-MECHANICAL PROCESSING: A Dyna2MICRO MATERIAL MODEL** **Dr.tech. Evgeniya Kabliman**[1], Dipl.-Ing. Dr.mont. Carina Schlögl[1], Dipl.-Ing. Johannes Kronsteiner[1], Univ. Prof. Dipl.-Ing. Dr.tech. Ernst Kozeschnik[2] *[1]LKR Leichtmetallkompetenzzentrum Ranshofen GmbH, Center for Low-Emission Transport, AIT Austrian Institute of Technology GmbH, Vienna, Austria, [2]Institute of Materials Science and Technology, TU Wien, Vienna, Austria*
17.50	**TEMPERATURE EFFECT ON STRAIN LOCALIZATION DURING DPD COMPRESSION TESTS OF AA 2017-T4 ALLOY** **Bermane Beucia**[1], David Tingaud[1], Hervé Couque[2], Thierry Chauveau[1], Ovidiu Brinza[1], Jérôme Mespoulet[1,3], Pierre Hereil[3], Guy Dirras[1] *[1]Université Paris 13, Sorbonne Paris Cité, LSPM-CNRS, Villetaneuse, France, France, [2]Nexter Munition, Bourges, France, 3Thiot Ingenierie, Puybrun, France*	**JUNCTIONLESS Si-NANOWIRE FET SONOS MEMORIES** **Dr Vassilios Ioannou-Sougleridis**[1], Dr. Panagiotis Dimitrakis[1], Dr. Dimitrios Velessiotis[1], Dr. Nikolaos Nikolaou[1], Georgios Papageorgiou[1], Dr. CA Dimitriadis[2], Dr. DH Tassis[2], Dr. A Tsormpatzoglou[2], Dr. Pascal Normand[2] *[1]Institute of Nanoscience and Nanotechnology, NCSR 'Demokritos', 153-41 Aghia Paraskevi , Greece, [2]Department of Physics, AUTh, Thessaloniki, Greece*	**HIGH THROUGHPUT ASSESSMENTS FOR ACCELERATED PERMANENT MAGNET DEVELOPMENT** **Matthew Kramer**[1], R.T. Ott[1], J. Geng[1], Tieren Gao[2], Ichiro Takeuchi[2], Feng Ren[3], Apurva Mehta[3], Chris Tassone[3], Doug Van Campen[3] *[1]Ames Laboratory/ Iowa State University, Ames, United States, [2]Department of Materials Science and Engineering, University of Maryland, College Park, United States, [3]Stanford Synchrotron Radiation Lightsource, SLAC National Accelerator Laboratory, Menlo Park, United States*	**EFFICIENT SEARCH OF MULTI-PHASE, MULTI-COMPONENT THERMODYNAMIC SPACES AS SOLUTION TO A CONSTRAINT SATISFACTION PROBLEM** **Associate Professor Raymundo Arroyave**[1,2], Graduate Research Assistant Tanner Kirk[2], Undergraduate Researcher Assistant Anas Abu-Odeh[1,2], Postdoctoral Scholar Edgar Galvan[2], Associate Professor Richard J. Malak[2] *[1]Department of Materials Science and Engineering, Texas A&m University, College Station, United States, [2]Department of Mechanical Engineering, Texas A&M University, College Station, United States*
18.10	**ENHANCEMENT OF STRENGTH OF EZ33A MAGNESIUM ALLOY BY EQUAL CHANNEL ANGULAR PRESSING (ECAP) PROCESSING** **PhD Eng. Krzysztof Bryla**[1], PhD Maciej Krystian[2], PhD Jelena Horky[2], PhD Berhard Mingler[2], Assoc. Prof. Krzysztof Mroczka[1], PhD Pawel Kurtyka[1], Assoc. Prof. Lidia Litynska-Dobrzynska[3] *[1]Institute of Technology, Pedagogical University, Krakow, Poland, [2]AIT Austrian Institute of Technology, Center for Health & Bioresources, Biomedical Systems, Wiener Neustadt, Austria, [3]Institute of Metallurgy and Material Science of the Polish Academy of Sciences, Krakow, Poland*	**A SPIN QUANTUM-BIT AS A FAST SENSOR OF QUANTUM HALL EFFECT EDGE STATES** **Dr Konstantinos Rogdakis**[1], Mr Vivien Thiney[1,2], Dr. Arne Ludwig[3], Prof. Adreas Wieck[3], Dr. Christopher Bäuerle[1,2], Dr. Tristan Meunier[1,2] *[1]CNRS, Institut NEEL, F- 38042 Grenoble, France ,Grenoble, France, [2]Univ. Grenoble Alpes, Institut NEEL, F-38042 Grenoble, France, Grenoble, France, [3]Lehrstuhl für Angewandte Festkörperphysik, Ruhr - Universität Bochum, Universitätsstraße 150, D - 44780 Bochum, Germany*	**SPATIALLY RESOLVED INVESTIGATION OF ALL OPTICAL MAGNETIZATION SWITCHING IN FeTb ALLOY** **Ashima Arora**[1], Mohamad-Assaad Mawass[1], Florin Radu[1], Ahmet Ünal[1,2], Sergio Valencia[1], Florian Kronast[1] *[1]Helmholtz-zentrum Berlin Für Materialien Und Energie, Berlin, Germany, [2]Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany*	**A THERMODYNAMICALLY CONSISTENT MATERIAL MODEL FOR THE THERMOMECHANICAL PROCESSING OF PRECIPITATION-HARDENED ALLOYS** **M.Sc. Lukas Kertsch**[1], Dr. Dirk Helm[1] *[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg, Germany*
18.30	**INVESTIGATION OF STRENGTHENING MECHANISMS OF ULTRAFINE-GRAINED STRUCTURE IN TITANIUM DURING ECAP-CONFORM** **G.S. Dyakonov**, S.Y. Mironov[2], I.P. Semenova[1], G.I. Raab[1], R.Z. Valiev[1,3] *[1]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russian Federation, [2]Department of Materials Processing, Graduate School of Engineering, Tohoku University, Sendai, Japan, [3]Laboratory for Mechanics of Bulk Nanostructured Materials, Saint Petersburg State University, Peterhof, Saint Petersburg, Russian Federation*	**CHARACTERIZATION OF Sb-BASED MID-INFRARED MATERIALS AND DEVICES MONOLITHICALLY GROWN ON SILICON SUBSTRATE** **E. Delli**[1], P.D. Hodgson[1], E. Repiso[2], A. Craig[2], A. Marshall[2], A. Krier[2] and P.J. Carrington[1] *[1]Department of Engineering, Lancaster University, Bailrigg, Lancaster, LA1 4YW, UK [2]Physics Department, Lancaster University, Bailrigg, Lancaster, LA1 4YW, UK*	**THE WONDERS OF Co FILMS INTERCALATED BELOW GRAPHENE** **Ilaria Carlomagno**[1,2,4], Prof. Carlo Meneghini[1], Dr Jakub Drnec[2], Dr Roberto Felici[3], Andrea Maria Scaparro[1], Sara Cicia[1] *[1]Università Roma Tre, Roma, Italy, [2]ESRF, Grenoble, France, [3]SPIN-CNR, Roma, Italy, [4]Université Grenoble Alpes, Grenoble, France*	**COMPUTATIONAL SIMULATION AND EXPERIMENTAL VERIFICATION OF AlN AND MNS PRECIPITATION BEHAVIOR DURING THE HEAT TREATMENT PROCESS OF FERRITIC STEEL** **Mr Hojun Gwon**[1], Dr. Singon Kang[1], Dr. Bruno C. De Cooman[1] *[1]Graduate Institute Of Ferrous Technology, Postech, Pohang, South Korea*
18.50	*HIGHLIGHT* **ENHANCED SUPERPLASTICITY OF ULTRAFINE-GRAINED Ti-6Al-4V ALLOY FABRICATED WITHOUT IMPOSING SEVERE PLASTIC DEFORMATION** **Daehwan Kim**[1], Gyeonghyun Jang[1], Yongmoon Lee[1], Chong Soo Lee[1] *[1]Gradate Institute of Ferrous Technology, Pohang University Of Science And Technology, Pohang, Republic of Korea*	**INN FIELD-EFFECT TRANSISTORS WITH IN-SITU SiNx GATE DIELECTRIC** **Christos Zervos**[1,2], Adam Adikimenakis[1], Petros Beleniotis[2], Athanasios Kostopoulos[1], Maria Kayambaki[1], Katerina Tsagaraki[1], George Konstantinidis[1], Alexandros Georgakilas[1,2] *[1]Microelectronics Research Group (MRG), Institute Of Electronic Structure and Laser (IESL), Foundation For Research and Technology-hellas (FORTH), Heraklion, Greece, [2]University of Crete, Physics Department, Heraklion, Greece*		**ON THE ROLE OF FERRITE IN SUPPRESSING THE QUENCHING-INDUCED DISTORTION OF CARBURIZED STEEL COMPONENTS** **Hamidreza Farivar**[1], M. Hans[2], U. Prahl[1] *[1]Steel Institute (IEHK), RWTH Aachen University, Aachen, Germany, [2]Materials Chemistry (MCh), RWTH Aachen University, Aachen, Germany*
19.10	**ELEVATED TEMPERATURE MECHANICAL RESPONSE OF TITANIUM AFTER SEVERE PLASTIC DEFORMATION** **Prof. G. Guven Yapici**[1], Mr. Seyedvahid Sajadifar[1] *[1]Ozyegin University, Istanbul, Turkey*	**EVALUATION AND UNDERSTANDING OF SIZE EFFECTS ON THE CONDUCTIVITY OF SPONTANEOUSLY GROWN GaN NANOWIRES** **George Doundoulakis**[1,2], Antonis Stavrinidis[1], Savvas Eftychis[1,2], Maria Androulidaki[1], Katerina Tsagaraki[1], Maria Kayambaki[1], George Konstantinidis[1], Alexandros Georgakilas[1,2] *[1]Microelectronics Research Group, Institute of Electronic Structure and Laser (IESL), FORTH, P.O. Box 1385, 71110, Heraklion-Crete, Greece, [2]Department of Physics, University of Crete, P.O. Box 2208, 70013 , Heraklion-Crete, Greece*		**INFLUENCE OF SEGREGATION, PRIMARY PRECIPITATION AND PROCESS CHAIN ON GRAIN SIZE STABILITY IN CASE HARDENING STEELS** **Dipl.-Ing. Viktor Kripak**[1], Dr.-Ing. Ulrich Prahl[1], Univ.-Prof. Dr.-Ing. Wolfgang Bleck[1] *[1]Rwth Aachen, Aachen, Germany*

Symposium	D8	D10	E6	F6
Room	I -16/M1	CR II Hall/M2	Maurice Saltiel Hall II/M2	Conference Room 2/M1
Session Title	Precipitation and decomposition in alloys	Polymeric systems and nanocomposites	Materials for cryogenic hydrogen fuel tanks	Functional properties of natural materials
Chairperson	**Ralf Drautz**	**Peggy Havet, Konstantinos Tserpes**	**Jörg Hohe**	**Anna Tampieri**
17.30	**AB-INITIO MODELING OF ANOMALOUS PRECIPITATION IN DILUTE NEUTRON-IRRADIATED W ALLOYS** **Dr. D. Nguyen-Manh**[1], Dr. J.S. Wrobel[2], Dr. M. Klimenkov[3], Dr. S.L. Dudarev[1] *[1]CCFE, United Kingdom Atomic Energy Authority, Abingdon, United Kingdom, [2]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, [3]Karlsruhe Institute of Technology, Karlsruhe, Germany*	*HIGHLIGHT* **MULTISCALE MODELING OF POLYMER SYSTEMS WITH INTERFACES** **Aris Sgouros**[1], DR Grigoris Megariotis[1], Apostolis Lakkas[1], Professor Doros Theodorou[1] *[1]School of Chemical Engineering, NTUA, Athens, Greece, Koropi, Greece*	**SIMULATION STRATEGIES FOR THERMOMECHANICAL DESIGN AND LIFETIME PREDICTION OF CRYOGENIC AUTOMOTIVE HYDROGEN PRESSURE VESSELS** Werner Lechner[1], Timo Christ[1], Caroline Wolff[2], Markus Neumeister[3], Peter Bernst[4], Martin Mahl[5], **Jörg Hohe**[6] *[1]BMW AG, München, Germany, [2]DLR, Braunschweig, Germany, [3]IABG, Taufkirchen, Germany, [4]P+Z Engineering GmbH, München, Germany, [5]Technische Universität München, Garching, Germany, [6]Fraunhofer IWM, Freiburg, Germany*	*HIGHLIGHT* **WATER DROPLET BOUNCING, SPLASHING AND SPREADING ON BIOLOGICAL AND BIOMIMETIC SURFACES** **Prof. Kerstin Koch**[1] *[1]Rhine-Waal University of Applied Sciences, Kleve, Germany*
17.50	**ORDERING PHENOMENA IN InGaN ALLOYS: AN AB-INITIO THERMODYNAMICS STUDY** **Dr. Liverios Lymperakis**[1], Prof. Jörg Neugebauer[1] *[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany*	**FOCUS ON POLYMERS MATERIAL CHARACTERIZATION FOR SIMULATION OF AUTOMOTIVE PRODUCTS AT VALEO THERMAL SYSTEMS** **Dr Peggy Havet**[1], Rodrigo Benevides[1] *[1]Valeo Thermal Systems, Le Mesnil Saint Denis, France*	**ON THE THERMO-MECHANICAL BEHAVIOR OF POLYETHYLENE IN A HYDROGEN PRESSURE VESSEL USING A TEMPERATURE-DEPENDENT NON-ISOSENSITIVE MATERIAL MODEL** **Martin Mahl**[1], Christopher Jelich[1], Horst Baier[1] *[1]Technische Universität München, Garching bei München, Germany*	**THE PECULIAR PROTEIN PACKING STRUCTURE OF BYSSUS FIBERS FROM THE FAN MUSSEL, PINNA NOBILIS** **Delphine Pasche**[1], Dr Matt Harrington[1] *[1]Max Planck Istitute For Colloid And Interfaces, Potsdam-Golm, Germany*
18.10	**EARLY STAGES OF PRECIPITATION IN ALUMINUM ALLOYS: AB-INITIO BASED ATOMISTIC MODELING** **Dr. Oleg Gorbatov**[1], Dr. Andrey Stroev[1,2], Dr. Yuri Gornostyrev[1,2], Dr. Pavel Korzhavyi[2,3] *[1]Institute of Quantum Materials Science, Ekaterinburg, Russia, [2]Institute of Metal Physics, Ekaterinburg, Russia, [3]KTH Royal Institute of Technology, Stockholm, Sweden*	**FRACTIONAL CALCULUS TO MODEL THE FUNCTIONAL PROPERTIES OF SHAPE-MEMORY-POLYMERS AT LARGE STRAINS** **Dr. Ehsan Ghobadi**[1,2], Axel Marquardt[3], Elias Mahmoudinezhad[4], Pd. Dr. Fathollah Varnik[4], Dr. Klaus Neuking[3], Prof. Dr. Gunther Eggeler[3], Prof. Dr. Hoger Steeb[1,2] *[1]University of Stuttgart, 70569 Stuttgart, Germany, [2]SimTech, 70569 Stuttgart, Germany, [3]Institute for Materials, Ruhr-Universität Bochum , 44780 Bochum, Germany, [4]ICAMS, Ruhr-Universität Bochum, 44780 Bochum, Germany*	**A THERMOMECHANICAL FATIGUE LIFE MODEL FOR METALLIC COMPONENTS OF CRYOGENIC HYDROGEN PRESSURE TANKS** **Philipp von Hartrott**[1], Stefan Vorndran[1], Caroline Wolff[2] *[1]Fraunhofer IWM, Freiburg, Germany, [2]German Aerospace Center (DLR), Braunschweig, Germany*	**CHARACTERIZATION OF THE MULTI-FUNCTIONALITY OF THE CANALICULAR NETWORK IN HUMAN BONE** Alexander van Tol[1], Andreas Roschger[1,2], Junning Chen[1], Felix Repp[1], Wolfgang Wagermaier[1], Philip Kollmannsberger[3], Paul Roschger[2], Peter Fratzl[1], **Richard Weinkamer**[1] *[1]Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Potsdam, Germany, [2]Ludwig Boltzmann Institute of Osteology at the Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Medical Department, Hanusch Hospital, Vienna, Austria, [3]Center for Computational and Theoretical Biology, Universität Würzburg, Campus Hubland Nord 32, Würzburg, Germany*
18.30	**AB INITIO STUDY OF THERMODYNAMIC AND MECHANICAL PROPERTIES OF Nb5Si3 ALLOYED WITH Ti** **Dr Ioannis Papadimitriou**[1], Dr Claire Utton[1], Prof. of Metallurgy and Posco Chair Prof. Panagiotis Tsakiropoulos[1] *[1]The University Of Sheffield, Department of Materials Science and Engineering, Mappin Street, Sheffield S1 3JD, United Kingdom*	**TWO-SCALE NUMERICAL MODELING OF CRACK SENSING IN POLYMERS USING CONDUCTIVE CNT NETWORKS** **Prof. Konstantinos Tserpes**[1], Mr. Christos Kora[1] *[1]University of Patras, Patras, Greece*	**FATIGUE ANALYSIS OF A COOLING WATER HEAT EXCHANGER – FROM THE LOAD DATA GENERATION TO THE LIFE EXPECTANCY EVALUATION** **Mr Peter Bernst**[1], Ms Monika Steinhauser[1], Dr Jan Reger[1] *[1]ARRK, Munich, Germany*	**SELF-ASSEMBLY OF COMPLEX HIERARCHICAL STRUCTURES IN TOUGH AND ADHESIVE MUSSEL BYSSAL THREADS** **Tobias Priemel**[1] *[1]Max Planck Institute of Colloids and Interfaces, Potsdam, Germany*
18.50	**COHERENT HCP/BCC INTERFACES IN ZrNb ALLOYS** **Dr Maeva Cottura**[1,2], Dr Emmanuel Clouet[1] *[1]SRMP, CEA Saclay, Gif-sur-Yvette, France, [2]Materials Science and Engineering, UC Berkeley, Berkeley, USA*	**SELF-CONSISTENT FIELD MODEL OF INHOMOGENEOUS POLYMER SYSTEMS: SOLUTION BY THE FINITE ELEMENT METHOD** **Mr Apostolos Lakkas**[1], Mr Aris Sgouros[1], Dr Grigorios Megariotis[1], Prof Doros Theodorou[1] *[1]School of Chemical Engineering NTUA, Athens, Greece*	**A CFRP MATERIAL MODEL ACCOUNTING FOR FATIGUE DAMAGE AND DEGRADATION** **PD Dr.-Ing. Jörg Hohe**[1], Dr.-Ing. Monika Gall[1], Dr.-Ing. Sascha Fliegener[1], MSc Zalikha Murni binti Abdul Hamid[1,2] *[1]Fraunhofer IWM, Freiburg, Germany, [2]Karlsruhe Institute of Technology, Karlsruhe, Germany*	**TREATMENT AND RECOVERY OF COCCOLITH PARTICLES FROM BIOGENIC SYSTEMS** **Makrina Artemis Chairopoulou**[1], Dr.-Ing. Ulrich Teipel[1] *[1]TH Nürnberg Georg Simon Ohm, Nuremberg, Germany*
19.10			**LIFETIME PREDICTION OF CRYO-COMPRESSED HYDROGEN (CcH2) STORAGE TANKS** **Caroline Wolff**[1], Dr.-Ing. Janko Kreikemeier[1] *[1]German Aerospace Center (DLR), Braunschweig, Germany*	**SITE-SPECIFIC DIFFERENCES IN THE MINERALIZATION PROCESS IN HUMAN BONE** **Dr. Andreas Roschger**[1,2], Dr. Wolfgang Wagermaier[1], Dr. Sonja Gamsjaeger[2], Dr. Norbert Hassler[2], Dr. Ingo Schmidt[1], Dr. Stéphane Blouin[2], Dr. Richard Weinkamer[1], Dr. Paul Roschger[2], Dr. Eleftherios Paschalis[2], Prof. Klaus Klaushofer[2], Prof. Peter Fratzl[1] *[1]Max Planck Institute of Colloids and Interfaces, Department of Biomaterials, Potsdam, Germany, [2]Ludwig Boltzmann Institute of Osteology at Hanusch Hospital of WGKK and AUVA Trauma Centre Meidling, 1st Med. Dept. Hanusch Hospital, Vienna, Austria*

Symposium	A1	A6	A7	A9
Room	3-21/M1	CR I Hall/M2	Rehearsal Room 5.17 /M1	I-11/M1
Session Title	Physical properties of nanocomposites	Space requirements, joining, additive	Deposition and nanostructuring assisted by ion and laser irradiation	Membranes for Ultra - and Nanofiltration
Chairperson	Michal Otyepka	George Vekinis	Vassilis Binas	Katja Loos
11.00	*HIGHLIGHT* **A COMPARATIVE STUDY ON THE ELECTRICAL PROPERTIES OF DIFFERENT FORMS OF CARBON ALLOTROPES/EPOXY NANOCOMPOSITES** **Mr. Sotirios Stavropoulos**[1], Mrs Aikaterini Sanida[1], Prof. Georgios Psarras[1] *[1]Smart Materials and Nanodielectrics Laboratory, Department of Materials Science, School of Natural Sciences, University Of Patras, Patras, Greece*	**AN OVERVIEW OF ENVIRONMENTAL EFFECTS ON SPACE MATERIALS – CHALLENGES AND OPPORTUNITIES** **Dr Christopher Semprimoschnig** *ESA (European Space Agency), Noordwijk, Netherlands*	*KEYNOTE/INVITED* **Bi-BASED NANOSTRUCTURES PRODUCED BY LASER ABLATION AND THEIR FUNCTIONAL PROPERTIES TAILORED BY COMPLEX ENSEMBLES OF NANOSCALE PHASE/NANODOMAIN FLUCTUATIONS** **Prof. Maria Dinescu**[1], Dr. Nicu Doinel Scarisoreanu[1]	**FORMATION OF ISOPOROUS MEMBRANES FROM BLOCK COPOLYMERS IN FLAT SHEET AND HOLLOW FIBRE GEOMETRIES** **Prof. Dr. Volker Abetz**[1], Dr. Maryam Radjabian[1], Nazia Noor[1], Kirti Sankhala[1], Clarissa Abetz[1], Sofia Dami[1], Dr. Birgit Fischer[2], Dr. Andreas Meyer[2] *[1]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany, [2]Universität Hamburg, Hamburg, Germany*
11.20	**MECHANICAL PROPERTIES OF ELASTOMERIC POLYMER/CARBON BLACK NANOCOMPOSITES: EXPERIMENTAL STUDY AND MODELING** **Dr Ahmed Mdarhri**[1], Fatiha ELHAOUZI[1,2], Ilham EL ABOUDI[1], Mustapha Zaghrioui[3], A Nourdine[4,5] *[1]Laboratoire de la Matière Condensée et des Nanostructures (LMCN), FSTG Université Cadi Ayyad Av. A. Khattabi, B.P. 549, Marrakech, Morocco, [2]Laboratoire de Chimie Bio-organique et Macromoléculaire, FSTG Université Cadi Ayyad Marrakech, Maroc, Marrakech, Morocco, [3]Laboratoire GREMAN CNRS-UMR 7347, Université François Rabelais, Tours, France, 4LEPMI, University of Savoie Mont Blanc, Chambéry F-73000, ,Chambery, France, 5LEPMI, CNRS, Grenoble F-38000, France*	**JOINING OF CFRP AND LOW-CTE GLASS-CERAMICS FOR AEROSPACE APPLICATIONS** **Stefano De La Pierre**[1], Muhammad Kashif Bangash[1], Monica Ferraris[1] *[1]Politecnico Di Torino, DISAT, Torino, Italy*	*[1]National Institute for Lasers, Plasma and Radiation Physics , Bucharest , Romania*	*HIGHLIGHT* **STIMULI-RESPONSIVE POLYMER-BASED ULTRAFILTRATION MEMBRANES** **Prof. Dr. Mathias Ulbricht**[1] *[1]Lehrstuhl Für Technische Chemie II, Universität Duisburg-Essen, Essen, Germany*
11.40	**MECHANICAL AND TRIBOLOGICAL PROPERTIES OF CARBON NANOTUBE-YTTRIA-STABILIZED ZrO2 NANO-COMPOSITES PREPARED BY SPARK PLASMA SINTERING** **Dr Alicia Weibel**[1], Dr Anne Kasperski[1], Dr Dalya Alkattan[1], Dr Claude Estournès[1], Pr Christophe Laurent[1], Pr Alain Peigney[1] *[1]Université de Toulouse, CIRIMAT, CNRS INPT UPS, Université Paul-Sabatier, 118 route de Narbonne, 31062 Toulouse cedex 9, France*	**ADHESIVE BONDING FOR SPACE APPLICATIONS** **MSc. Phd. Premysl Janik**[1], MSc. Phd. Malgorzata Holynska[1], MSc. Phd. Christopher Semprimoschnig[1] *[1]European Space Agency, Noordwijk, Netherlands*	**ION-INDUCED BENDING OF GERMANIUM AND SILICON NANOWIRES AT HIGH TEMPERATURE** **O Camara**[1], Dr G Greaves[1], Dr R.W Harrison[1], M.A Tunes[1], Dr J.A. Hinks[1], I Hanif[1], Pr S.E Donnelly[1] *[1]School of Computing and Engineering, University of Huddersfield, Huddersfield, United Kingdom*	**POLYARYLSULFONE-BASED ULTRAFILTRATION MEMBRANES WITH IMPROVED ANTI-FOULING AND SEPARATION PERFORMANCE BY TAILORED COPOLYMER ADDITIVES** **Inga Stratmann**[1], Linda Lempke[1], Mathias Ulbricht *[1]Lehrstuhl für Technische Chemie II, Universität Duisburg-Essen, Essen, Germany*
12.00	**RESEARCH ON MECHANICAL AND ELECTRICAL PROPERTIES OF WIRES MADE FROM ALUMINIUM-GRAPHENE AND COPPER-GRAPHENE COMPOSITES** **MSc Marek Gniełczyk**[1], Prof. Tadeusz Knych[1], Prof. Beata Smyrak[1], MSc Bartosz Jurkiewicz[1], MSc Małgorzata Zasadzińska[1] *[1]AGH-University Of Science and Technology, Kraków, Poland*	**SANDWICH MATERIALS AND STRUCTURE: BREAKTHROUGH INNOVATION IN LIGHT AN STABLE SPACE STRUCTURES** **Materials & Processes Manager OLIVIER DAMIANO**[1], Materials and Processes specialist LAURENCE CORNILLON *[1]Thales Alenia Space, Cannes, France*	**OPTICAL SPECTROSCOPY STUDY OF NANO - AND MICROSTRUCTURES STRUCTURES INDUCED BY FEMTOSECOND LASER PULSES ON ZNO BASED SYSTEMS** Esther de Prado[1,3], Dr Belén Sotillo[1,4], Dr Camilo Florian[2], Professor Javier Solis[2], **Professor Paloma Fernández**[1], Dr Jan Siegel[2] *[1]Dept. Fisica de Materiales, University Complutense, Madrid, Spain, [2]Instituto de óptica "Daza de Valdés", C.S.I.C., Madrid, Spain, [3]Dept. Fisica Aplicada y Electromagnetismo, University of Valencia, 46100 Burjasot, Spain, [4]IFN - CNR and Dipartimento di Fisica, Politecnico di Milano, Milano, Italy*	*HIGHLIGHT* **OLIVE WASTE USED AS PORE GENERATOR IN ECOLOGICAL CERAMIC MEMBRANES** **Prof. Enrique Sánchez**[1], Ms. M-Magdalena Lorente-Ayza[1], Dr. M-Carmen Bordes[1], Dr. Sergio Mestre[1], Ms. Elena Zuriaga[2], Mr. Ignacio Pastor[2], Ms. Beatriz Hernández[2] *[1]Chemical Engineering Dep., Instituto Universitario Tecnologia Cerámica, University Jaume I, Castellón, Spain, [2]FACSA (Sociedad de Fomento Agrícola Castellonense), Castellón, Spain*
12.20	**PROPERTIES OF THE AL AND CU-GRAPHENE COMPOSITES PRODUCED BY HIGH PRESSURE TORSION** **Prof. Pas Tomasz Czeppe**[1], Prof Galia Korznikova[2], Prof Piotr Ozga[1], Dr Robert Socha[3] *[1]Institute of Metallurgy And Materials Sciences Pas, Krakow, Poland, [2]Institute for the Metals Superplasticity Problems, Russian Academy of Sciences, Ufa, Russia, [3]Intitute of the Catalysis and Physical Properties of the Surfaces, Polish Academy of Sciences, Krakow, Poland*	**DEVELOPMENT OF LOW COST TITANIUM SPACECRAFT PROPELLANT TANKS** **Dr Steve Dodds**[1], Dr Andrew Norman[2], Renato Bellarosa[3] *[1]TWI Ltd, Cambridge, United Kingdom, [2]Esa - ESTEC , Amsterdam, Netherlands, [3]Airbus Group, Stevenage, United Kingdom*	**MULTI STEP GROWTH PROCESS OF MULTILAYERS BY GLANCING ANGLE DEPOSITION FOR ULTRA-HIGH PERFORMANCES ANTI-REFLECTIVE COATINGS** **Master Degree Florian Maudet**[1], PhD Fabien Paumier[1], Professor Thierry Girardeau[1] *[1]Institut Pprime, Chassneuil-du-Poitou, France*	**MESOPOROUS SILICA NANOPARTICLES AS TAILORED FILLERS FOR POLYAMIDE THIN-FILM COMPOSITE MEMBRANES** **Ahmed Abdelsamad**[1], Mathias Ulbricht[1] *[1]Lehrstuhl für Technische Chemie II, Universität Duisburg-Essen, Essen, Germany*
12.40	**EFFECT OF CARBON NANOTUBES ON THE THERMAL STABILITY OF NANOCOMPOSITES** **Sónia Simões**[1], Paulo J. Ferreira[2,3], Filomena Viana[1], Marcos A. L. Reis[4], Manuel F. Vieira[1] *[1]CEMMPRE, Department Of Materials And Metallurgical Engineering, University Of Porto, Portugal, Porto, Portugal, [2]Materials Science and Engineering Program, University of Texas at Austin, Austin, TX, 78712, USA, Austin, EUA, [3]International Iberian Nanotechnology Laboratory, Avenida Mestre José Veiga, 4715-330 Braga, Portugal, Braga, Portugal, [4]Faculdade de Ciências Exatas e Tecnologia, Universidade Federal do Pará, Abaetetuba, PA 68440-000 Brazil, Brazil*		**LARGE AREA ITO NANO-STRUCTURING VIA SELF-ORGANIZATION BY FEMTOSECOND-LASER IRRADIATION** Dr. Daniel Puerto[1], Dr Maria del Carmen Lopez-Santos[2], Dr. Camilo Florian[1], Dr. Jan Siegel[1], Dr. Jorge Gil-Rostra[2], Prof. Agustin R. Gonzalez-Elipe[2], **Dr. Javier Solis**[1] *[1]Laser Processing Group, Instituto de Optica-CSIC, Madrid, Spain, [2]Nanotechnology of Surfaces Group, Instituto de Ciencia de Materiales-CSIC, Seville, Spain*	*HIGHLIGHT* **POLYELECTROLYTE MULTILAYERS FOR MULTIFUNCTIONAL NANOFILTRATION MEMBRANES** **Dr. Wiebe Matthijs De Vos**[1] *[1]University Of Twente, Enschede, Netherlands*

Symposium	B1	B2	B4	B7
Room	Maurice Saltiel Hall I/M2	Aimilios Riadis Hall/M2	3.20/M1	CR III Hall/M2
Session Title	Modelling Tools for Steel Design I	Magnesium: Corrosion and Oxidization	Multilayer and sheet materials	Defects Engineering, Catalytic and Separation Studies
Chairperson	Ilana Timokhina, Mark Rainforth	Xiaoqin Zheng	Enrico Bruder	Veronique Van Speybroeck
11.00	**APPLICATION OF THE THERMODYNAMIC EXTREMAL PRINCIPLE IN DIFFUSION-CONTROLLED PHASE TRANSFORMATIONS** **Wangwang Kuang**[1], Haifeng Wang[1] *[1]State Key Laboratory of Solidification Processing, Northwestern Polytechnical University, Xi'an, Shaanxi, China*	*HIGHLIGHT* **ACTIVE PROTECTION OF MG BY COATINGS WITH NOVEL CORROSION INHIBITORS** **Prof. Mikhail Zheludkevich**[1], Dr. Sviatlana Lamaka[1], Dr. Daniel Hoeche[1], Dr. Carsten Blawert[1], Ms Yan Chen[1] *[1]Helmholtz-zentrum Geesthacht, Geesthacht, Germany*	*KEYNOTE/INVITED* **ANISOTROPY OF MECHANICAL AND FUNCTIONAL PROPERTIES IN SPD PROCESSED METALLIC MATERIALS** **Ilchat Sabirov**[1]	*HIGHLIGHT* **MISSING LINKERS: AN ALTERNATIVE PATHWAY TO UIO-66 ELECTRONIC STRUCTURE ENGINEERING** **Arthur De Vos**[1], Kevin Hendrickx[1,2], Prof. Dr. Pascal Van Der Voort[2], Prof. Dr. Veronique Van Speybroeck[1], Dr. Kurt Lejaeghere[1] *[1]Center for Molecular Modeling, Ghent University, Technologiepark 903, BE-9052 Zwijnaarde, Belgium, 2Department of Inorganic and Physical Chemistry, Center for Ordered Materials, Organometallics and Catalysis, Ghent University, Krijgslaan 281-S3, BE-9000 Ghent, Belgium*
11.20	**AB-INITIO INVESTIGATION OF THE ROLE OF K CARBIDE IN UPGRADING Fe-Mn-Al-C ALLOY TO THE CLASS OF ADVANCED HIGH-STRENGTH STEELS** **Dr. Poulumi Dey**[1], Ms. Mengji Yao[1], Dr. Martin Friák[2,3], Dr. Tilmann Hickel[1], Prof. Dierk Raabe[1], Prof. Jörg Neugebauer[1] *[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany, [2]Institute of Physics of Materials, v.v.i., Academy of Sciences of the Czech Republic, Brno, Czech Republic, [3]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic*	*HIGHLIGHT* **INITIATION OF MAGNESIUM OXIDATION: A STUDY BY HIGH-RESOLUTION PHOTOEMISSION** Dr Sandra Gardonio[1], Dr Mattia Fanetti[1], Prof. Matjaz Valant[1], **Prof. Dmytro Orlov**[2,1] *[1]University of Nova Gorica, Nova Gorica, Slovenia, [2]Lund University, Lund, Sweden*	*[1]IMDEA Materials Institute, Madrid, Spain*	**EFFECT OF BENZOIC ACID AS MODULATOR IN UIO-66 STRUCTURE: AN EXPERIMENTAL AND COMPUTATIONAL STUDY** **Mr. Cesare Atzori**[1], Dr. Greig C. Shearer[2], Dr. Lorenzo Maschio[1], Prof. Bartolomeo Civalleri[1], Dr. Francesca Bonino[1], Prof. Carlo Lamberti[1,3], Prof. Stian Svelle[2], Prof. Karl Petter Lillerud[2], Prof. Silvia Bordiga[1,2] *[1]Department of Chemistry, NIS and INSTM Reference Centre, University of Turin, Turin, Italy, [2]Department of Chemistry, University of Oslo, Oslo, Norway, [3]IRC "Smart Materials", Southern Federal University, Rostov-on-Don, Russia*
11.40	**RELATIONS BETWEEN MICROSTRUCTURE AND STRENGTH FOR QUENCHED AND TEMPERED STEEL** **Dr Marius Gintalas**[1], Dr Pedro Eduardo Jose Rivera-Díaz-del-Castillo[1], Dr Carlos Garcia-Mateo[2], Mr Miguel Angel Santajuana Aldea[2] *[1]The University Of Cambridge, Cambridge, United Kingdom, [2]Spanish National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain*	**THE EFFECT OF ALLOYING ELEMENTS ON MICROSTRUCTURE AND CORROSION BEHAVIOR OF WROUGHT Mg-Al ALLOYS** **Polina Metalnikov**[1,2], Guy Ben-Hamu[2] *[1]Department of Material Engineering, Ben-Gurion University of the Negev, Be'er-sheva 84105, Israel, [2]Department of Mechanical Engineering, Sami Shamoon College of Engineering, Ashdod 77245, Israel*	*HIGHLIGHT* **HIGH STRENGTH MULTILAYERED METALLIC COMPOSITES** **Prof. Dr. Werner Skrotzki**[1], Juliane Scharnweber[1], Dr. Paul Chekhonin[1], Dr. Carl-Georg Oertel[1], Dr. Jan Romberg[2], Prof. Dr. Jens Freudenberger[2] *[1]TU Dresden, Dresden, Germany, [2]Leibniz-Institute for Solid State and Materials Research , Dresden, Germany*	**UNRAVELING THE BEHAVIOR OF UIO-66 DURING THE DEHYDRATION PROCESS AT ELEVATED TEMPERATURE** **Julianna Hajek**[1], Kristof De Wispelaere[1], Ruben Demuynck[1], Michel Waroquier[1], Veronique Van Speybroeck[1] *[1]Center for Molecular Modeling, Ghent University, Zwijnaarde, Belgium*
12.00	**EFFECTS OF ALUMINUM ON HYDROGEN SOLUBILITY AND DIFFUSION IN DEFORMED Fe-Mn ALLOYS** **Claas Hüter**[1,2], Siaufung Dang[1], Xie Zhang[2], Albert Glensk[2], Robert Spatschek[1,2] *[1]Forschungszentrum Jülich, Jülich, Germany, [2]Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany*	**EFFECT OF COMBINED ADDITION OF Ca AND Y ON THE CORROSION BEHAVIORS OF DIE-CAST AZ91 MAGNESIUM ALLOY** **Sang Kyu Woo**[1], Carsten Blawert[3], Sang Bong Yi[3], Chang Dong Yim[1,2], Young Min Kim[1,2], Bong Sun You[1,2], Nico Scharnagl[3], Kiryl Yasakau[4] *[1]Korea University of Science and Technology, Daejeon, South Korea, [2]Korea Institute of Materials Science, Changwon, South Korea, [3]Helmholtz-Zentrum Geesthacht, Geesthacht, Germany, [4]University of Aveiro, Aveiro, Portugal*	**SHEAR INDUCED INTERFACE FORMATION OF Al-STEEL AND Cu-STEEL MULTILAYERED COMPOSITE SHEETS** **Dr. Anibal Mendes**[1], Dr. Rimma Lapovok[1], Dr. Ilana Timokhina[1], Dr. Andrey Molotnikov[2], Dr. Peter Hodgson[1] *[1]IFM-Deakin University, Melbourne, Australia, [2]Monash University, Melbourne, Australia*	**A NEW Ti(IV)-BASED METAL-ORGANIC FRAMEWORK WITH Ti-O CHAINS AS CATALYST FOR DIBENZOTHIOPHENE OXIDATION** **Simon Smolders**[1], Dr. Bart Bueken[1], Prof. Dr. Maarten Roeffaers[1], Prof. Dr. Dirk De Vos[1] *[1]Centre for Surface Chemistry and Catalysis, KU Leuven, Belgium*
12.20	**MODELING THE MECHANICAL BEHAVIOR OF TEMPERED MARTENSITE** **Dr. Artem Arlazarov**[1], Lívia Raquel C. Malheiros[1], Dr. Edgar Alejandro Pachon Rodriguez[1] *[1]ArcelorMittal Maizières Research SA, Maizières-lès-Metz Cedex, France*	**IMPROVEMENT OF CORROSION RESISTANCE IN Mg-Al ALLOYS BY Ca AND Y ADDITION** **Bong Sun You**[1], Young Min Kim[1] *[1]Korea Institute Of Materials Science, Changwon, South Korea*	**DUCTILISATION OF TUNGSTEN (W) THROUGH COLD-ROLLING:CORRELATION OF MICROSTRUCTURE AND MECHANICAL PROPERTIES IN UFG-W SHEETS** **Simon Bonk**[1], Dr. Andreas Hoffmann[2], Dr. Jan Hoffmann[1], Ute Jäntsch[1], Dr. Michael Klimenkov[1], Dr. Michael Rieth[1], Dr. Jens Reiser[1] *[1]Karlsruhe Institute of Technology (KIT), Institute for Applied Materials – Applied Materials Physics, 76344 Eggenstein-Leopoldshafen, Germany, [2]PLANSEE SE, 6600 Reutte, Austria*	**COMPUTATIONAL MODELING OF MOF ADSORBENTS AND MEMBRANES FOR NOBLE GAS SEPARATIONS** **Assoc. Prof. Seda Keskin**[1], Ms. Zeynep Sumer[1] *[1]Koc University, Istanbul, Turkey*
12.40	**ORDERING OF CARBON IN HIGHLY SATURATED ALPHA-Fe** **Osamu Waseda**[1], Julien Morthomas[1], Patrice Chantrenne[1], Chadwick Sinclair[3], Fabienne Ribeiro[2], Michel Perez[1] *[1]Université de Lyon, INSA de Lyon, France, [2]Institut de radioprotection et de sûreté nucléaire, France, [3]University of British Columbia, Canada*		**MECHANICAL PROPERTIES OF PARTICLE REINFORCED ULTRAFINE GRAINED TITANIUM SHEETS PRODUCED BY ACCUMULATIVE ROLL BONDING** **Christopher Schunk**[1], PD Dr.-Ing. habil. Heinz Werner Höppel, Prof. Dr.-Ing. Wolfgang Peukert, Prof. Dr. rer. nat. Mathias Göken *[1]Friedrich-Alexander-University, Erlangen, Germany*	**THE EFFECT OF THE ACTIVATION CONDITIONS FOR TUNING THE PT ACTIVE SITES IN FUNCTIONALIZED UIO-67 MOF** **Luca Braglia**[1,2], Elisa Borfecchia[1], Kirill A. Lomachenko[2,3], Alexander V. Soldatov[2], Bjørn-Tore Lønstad-Bleken[4], Sigurd Øien-Ødegaard[4], Unni Olsbye[4], Karl Petter Lillerud[4], Silvia Bordiga[1,4], Giovanni Agostini[3,5], Maela Manzoli[6], Carlo Lamberti[2,7] *[1]Department of Chemistry, NIS and INSTM Reference Centers, University of Turin, Turin, Italy, [2]IRC "Smart Materials", Southern Federal University, Rostov on Don, Russia, [3]European Synchrotron Radiation Facility , Grenoble, France, [4] inGAP Centre for Research Based Innovation, Oslo, Norway, [5]Leibniz Institute for Catalysis, University of Rostock (LIKAT), Rostock, Germany, [6]Department of Drug Science and Technology, NIS Interdepartmental Centre, University of Turin, Turin, Italy, [7]Department of Chemistry, CrisDi Interdepartmental Centre and INSRM reference University of Turin, Turin, Italy*
13.00				**POSTER TALKS (4X posters at 5 min each)**

Symposium	C1	C3	C4	C5
Room	Friends of Music Hall/M1	Maurice Saltiel Hall III/M2	Conference Room 4/M1	Museum Hall /M2
Session Title	C1.3: Surface engineering and modifications 2/3 - Functionality I	SPS	Additive Manufacturing of metals 3	Infiltration
Chairperson	E. Aperathitis, R. Peng	Christophe Martin	Alberto Molinari	Natalia Sobczak, Vladimir Traskine
11.00	**EFFECT OF MICROSTRUCTURE FEATURES ON DLC DELAMINATION AND BLISTERING** **Mr Antonios Choleridis**[1], Dr. Christophe Héau[3], Dr. Marie-Alix Leroy[3], Dr. Vincent Barnier[1], Dr. Sergio Sao-Joao[1], Prof. Christophe Donnet[2], Prof. Helmut Klocker[1] *[1]Univ Lyon, Mines Saint Etienne,Centre SMS/LGF UMR 5307, Saint Etienne, France, [2]Univ Lyon, Université Jean Monnet, Laboratoire Hubert Curien UMR 5516, Saint Etienne, France, [3]Institut de Recherche en Ingénierie des Surfaces, Groupe HEF, France, Saint Etienne, France*	*KEYNOTE/INVITED* **COOL-SPS: SINTERING OF FRAGILE FERROIC MATERIALS AND BEYOND** **Dr Michael Josse**[1], Mr Thomas Hérisson de Beauvoir[1], Miss Anna Sangregorio[1], Mr Inaki Cornu[1], Mr Vincent Villemot[1], Dr Cathy Elissalde[1], Dr Dominique Michau[1], Dr U-Chan Chung-Seu[1] *[1]University of Bordeaux, CNRS, ICMCB, Pessac, France*	**ALLOY DESIGN FOR ADDITIVE MANUFACTURING: RAPID SOLIDIFICATION STUDIES ON CuSn AND CuSnTi ALLOYS** **Xiaoshuang Li**[1,2], Adriaan B. Spierings[3], Prof. Dr Konrad Wegener[2], Dr. Christian Leinenbach[1] *[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland, [2]ETH Zurich, Institute of Machine Tools and Manufacturing, Zurich, Switzerland, [3]Inspire AG, Innovation Center for Additive Manufacturing Switzerland, St. Gallen, Switzerland*	*KEYNOTE/INVITED* **REACTIVE INFILTRATION: IDENTIFYING THE ROLE OF CHEMICAL REACTIONS, CAPILLARITY, VISCOSITY AND GRAVITY** **Phd Enrique Louis**[1], PhD Juan Antonio Miralles[1], PhD José Miguel Molina[1] *[1]Universidad De Alicante, Alicante, Spain*
11.20	**THERMOCHEMICAL HEAT STORAGE SYSTEMS WITH HONEYCOMB FILTER TYPE HEAT EXCHANGER SYSTEMS** **Bengisu Yılmaz**[1], Behiye Yüksel[2], Zafer Utlu[2], Prof. Dr. Gökhan Orhan[1], Saffa Riffat3, Hasila Jarimi[3] *[1]Istanbul University, [2]Istanbul Aydın University, [3]Nottingham University*		**MACRO MICRO AND NANO HARDNESS AND MACRO AND NANO WEAR BEHAVIOR OF ALUMINUM ALLOYS BY LASER POWDER BED FUSION** **PhD Massimo Lorusso**[1], M.Sc. Francesco Trevisan[1], M.Sc. Alberta Aversa[2], PhD Flaviana Calignano[1], PhD Elisa Ambrosio[1], Professor Matteo Pavese[2], Professor Mariangela Lombardo[2], Professor Paolo Fino[1,2], PhD Diego Manfredi[1] *[1]Istituto Italiano Di Tecnologia, Torino, Italy, [2]Politecnico di Torino, Torino, Italy*	
11.40	**ANTIFOULING PROPERTIES OF PLASMA ELECTROLYTIC OXIDATION (PEO) COATED ALUMINUM ALLOYS TESTED IN SEAWATER** **Ing. Pietrogiovanni Cerchier**[1], PhD Luca Pezzato[1], Ing. Claudio Gennari[1], Emanuela Moschin[1], prof. Isabella Moro[1], prof. Manuele Dabalà[1], prof. Maurizio Magrini[1] *[1]University Of Padova, Padova, Italy*	**DENSE MOLYBDENUM PARTS WITH A CONTROLLED MICROSTRUCTURE PREPARED BY SPS** **Sylvain Lorand**[1], Foad NAIMI[1], Frédéric DEMOISSON[1], Hervé COUQUE[2], Frédéric BERNARD[1] *[1]Laboratoire Interdiciplinaire Carnot de Bourgogne, UMR6303 CNRS-Université de Bourgogne-Franche-Comté, Dijon, France, [2]Nexter Munition*	**IN-PROCESS PRECIPITATION STRENGTHENING DURING LASER METAL DEPOSITION OF ALUMINUM ALLOYS BY Al3(Sc,Zr) NANO-PRECIPITATES** **Philipp Kürnsteiner**[1], Markus Benjamin Wilms[2], Andreas Weisheit[2], Eric Aimé Jägle[1], Dierk Raabe[1] *[1]Max-Planck-Institut für Eisenforschung, 40237 Düsseldorf, Germany, [2]Fraunhofer-Institut für Lasertechnik, 52074 Aachen, Germany*	**CAPILLARITY IN PRESSURE INFILTRATION: INFLUENCE OF PERCOLATION AND WETTING ANGLE AT HIGH TEMPERATURE** **Mr Gionata Schneider**[1], Dr. Ludger Weber[1], Prof. Andreas Mortensen[1] *[1]EPFL-STI-IMX-LMM, Lausanne, Switzerland*
12.00	**STUDY OF THE TRIBOCORROSION PROPERTIES OF PEO COATINGS PRODUCED ON AZ91 MAGNESIUM ALLOY** **Ing. Luca Pezzato**[1], Dragos Vranescu[1], Ing. Marco Sinico[2], Ing. Pietro Pranovi[2], Ing. Katya Brunelli[1], Prof. Manuele Dabalà[1] *[1]Università Di Padova, Padova, Italy, [2]Ecor Research S.p.a., Schio (VI), Italy*	**MICROSTRUCTURAL CHARACTERIZATION AND MODELLING OF THE DENSIFICATION MECHANISMS OF METALLIC SYSTEMS BY SPARK PLASMA SINTERING** **Jean-Philippe Monchoux**[1], Zofia Trzaska[1], Christophe Collard[1], Lise Durand[1], Alain Couret[1], Guillaume Bonnefont[2], Gilbert Fantozzi[2], Jean-Marc Chaix[3] *[1]CEMES-CNRS UPR 8011, Toulouse, France, [2]MATEIS-INSA, Lyon, France, [3]SIMAP, Grenoble, France*	**ADDITIVE MANUFACTURING (AM) AS A RAPID SOLIDIFICATION PROCESS: A STUDY ON Al-Si ALLOYS** Ms. Silvia Marola[1], Dr. Diego Manfredi[2], Dr. Gianluca Fiore[1], Dr. Marco Gabriele Poletti[1], Prof. Mariangela Lombardi[3], Prof. Paolo Fino[3], **Prof. Livio Battezzati**[1] *[1]Università di Torino, Torino, Italy, [2]Istituto Italiano di Tecnologia, Torino, Italy, [3]Politecnico di Torino, Torino, Italy*	**EFFECT OF SOLUBILITY AND CAPILLARITY DRIVEN KINETICS ON SINTERED MICROSTRUCTURE OF WC-Co ALLOYS** **M.Sc. Raphael Schiedung**[1], Marvin Tegeler[1], Fathollah Varnik[1] *[1]Ruhr University Bochum, Bochum, Germany*
12.20	**A POSSIBLE EXPLANATION FOR THE DELAY IN MICRO-DISCHARGES APPEARANCE DURING PEO OF Al** **Julien Martin**[1,2], Alexandre Nominé[3], Vitalios Ntomprougkidis[1], Cédric Noël[1], Thierry Czerwiec[1,2], Thierry Belmonte[1], Gérard Henrion[1,2] *[1]Institut Jean Lamour - UMR 7198 CNRS - Université de Lorraine, Nancy, France, [2]LABoratory of EXcellence Design of Alloy Metals for low-mAss Structures LABEX DAMAS - Université de Lorraine, Metz, France, [3]Department of physical sciences - The Open University, Milton Keynes, United Kingdom*	**SPARK PLASMA SINTERING AND STRUCTURAL STUDY OF GRAPHENE NANOPLATELET REINFORCED CERAMIC COMPOSITES** **Phd Lili Nadaraia**[1] *[1]Georgian Technical University, Tbilisi, Georgia*	**IMPACT OF RESIDUAL OXYGEN IN ARGON ATMOSPHERE DURING LASER BEAM MELTING (LBM) ON THE MECHANICAL PROPERTIES OF AlSi(Mg) AND Ti-6Al-4V** **Kai Dietrich**[1,2], Pierre Forêt[1], Dominik Bauer[1], Prof. Dr.-Ing. habil. Gerd Witt[2] *[1]Linde AG, Munich, Germany, [2]University Duisburg - Essen, Duisburg, Germany*	**WETTING AND JOINING OF SIC CERAMICS BY Al-Ti ALLOYS** **Dr Fabrizio Valenza**[1], Dr Valentina Casalegno[2], M.Sc Sofia Gambaro[1], M.Sc Maria Luigia Muolo[1], Dr Alberto Passerone[1], Prof Milena Salvo[2] *[1]National Research Council – Institute of Condensed Matter Chemistry and Technologies for Energy (CNR-ICMATE), Genoa, Italy, [2]Politecnico di Torino, Department of Applied Science and Technology, Turin, Italy*
12.40	**HYBRID COATINGS WITH Cu-BASED NANOPARTICLES ON POLYMER AND STEEL SURFACES FOR BIO-FOULING CONTROL** **Stavros Arvanitis**[1], Theodora Karamanidou[2], Nikolaos Michailidis[1], Alexandros Tsouknidas[2], Dimitrios Tsipas[2] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]PLiN Nanotechnology SA, Thermi, Greece*	**SPARK PLASMA SINTERING (SPS): EVALUATION OF THE REPEATABILITY OF THE PROCESS TO ELABORATE Ti-6Al-4V NEAR NET SHAPE (NNS) SPECIMENS** Dr Ugras KUS[1], Dr Julitte HUEZ[1], Dr Denis DELAGNES[2], Master Geoffroy CHEVALLIER[1], **Dr Claude ESTOURNES**[1] *[1]CIRIMAT, Toulouse, France, [2]ICA Mines Albi, Albi, France*		**INTERFACIAL REACTIVITY IN THE Al3Ti-SIC SYSTEM** **Sofia Gambaro**[1], G. Cacciamani[1,2], F. Valenza[1], A. Passerone[1], M.L. Muolo[1], O. Dezellus[3] *[1]Institute of Condensed Matter Chemistry and Technologies for Energy- National Research Council (ICMATE-CNR), Genova, Italy, [2]Department of Chemistry and Industrial Chemistry, University of Genova, Genova, Italy, [3]3LMI, Université Lyon 1, CNR, Villeurbanne Cedex, France*
13.00	**TOWARDS THE PLASMONIC OPTICAL NANOPORE ON PYRAMID** **Professor Seong Soo Choi**[1], Professor Myoung Jin Park[2], Professor Doo Jae Park[3], Professor Yong-Sang Kim[4], Professor Chul Hee Han[1], Professor Seh-Joong Oh[1], Professor Soo Bong Choi[5], Professor Namkyou Park[6] *[1]Research Center For Nanobio Science, Sunmoon Univ., Chun An, South Korea, [2]Korea Military Academy, Seoul, Soutj Korea, [3]Hallym University, Chuncheon, South Korea, [4]Sungkyunkwan University, Suwon, South Korea, [5]Inchon National University, Inchon, South Korea, [6]Seoul National University, Seoul, South Korea*			

Symposium	C8	C9	C10	C11
Room	Library Hall/M2	Conference Room 3/M1	F 319/M1	MOYSA Hall/M2
Session Title	General Interest	Material removal processes II	Microstructure stability, recrystallization and deformation behaviour	2D and organic materials and devices
Chairperson	Koulis Pericleous	Prof. Konstantinos-Dionyssios Bouzakis	M. Vedani and E. Gariboldi	Alain Claverie
11.00	**DISPERSION OF OXIDE NANO-PARTICLES IN LIQUID METAL MELTS USING CONTACTLESS ULTRASONIC CAVITATION AND ELECTROMAGNETIC STIRRING** **Professor Koulis Pericleous**[1], Professor Valdis Bojarevics[1], Dr Bruno Lebon[1], Dr Anton Manoylov[1] *[1]University of Greenwich, London, United Kingdom*	*KEYNOTE/INVITED* **CHALLENGES AND OPPORTUNITIES IN MACHINING DIFFICULT-TO-CUT ALLOYS UNDER SUSTAINABLE LUBRICATION AND COOLING CONDITIONS** Paolo C. Priarone[1], Matteo Robiglio[1], **Luca Settineri**[1] *[1]Politecnico Di Torino, Department of Management and Production Engineering, Torino, Italy*	*HIGHLIGHT* **GRAIN BOUNDARY SEGREGATION IMPACTS STRENGTH AND ANNEALING BEHAVIOUR OF AN ULTRAFINE-GRAINED 316 STEEL** **Dr Nariman Enikeev**[1,2], Marina Abramova[1], Prof Ruslan Valiev[1,2], Dr Xavier Sauvage[3] *[1]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russian Federation, [2]Research Laboratory for Mechanics of Bulk Nanomaterials, Saint Petersburg State University, Saint Petersburg, Russian Federation, [3]Normandie Univ, UNIROUEN, INSA Rouen, CNRS, Groupe de Physique des Matériaux, Rouen, France*	*KEYNOTE/INVITED* **MOLECULAR BEAM EPITAXY OF TWO DIMENSIONAL MATERIALS FOR NANOELECTRONICS** **Dr Ahanasios Dimoulas**[1,2], Dr. Polixronis Tsipas[1], Dr. Dimitra Tsoutsou[1], Mr. Sigiava Giamini[1], Dr. Jose Marquez-Velasco[1], Dr. Carlos Alvarez[3], Dr. Hanako Okuno[3], Dr. Gilles Renaud[4] *[1]NCSR Demokritos, Athens, Greece, [2]LANEF Chair of Excellence, Univ. Grenoble Alpes and CEA, Grenoble, France, [3]CEA | Minatec, Grenoble, France, [4]Univ. Grenoble Alpes and CEA, Grenoble, France*
11.20	**MULTISCALE MODELLING OF DENDRITIC GROWTH BY A COMBINATION OF THREE METHODS** **Romain Fleurisson**[1], Gildas Guillemot[1], Charles-André Gandin[1] *[1]MINES ParisTech, PSL - Research University, CEMEF - Centre for material forming, CNRS UMR 7635, Sophia Antipolis, France*		**DYNAMIC TRANSFORMATION DURING THE SIMULATED PLATE ROLLING OF AN X70 PIPELINE STEEL** **Mr. Samuel Rodrigues**[1,2], Mr. Clodualdo Aranas Jr.[1], Mr. John Jonas[1], Mr. Fulvio Siciliano[3] *[1]McGill University, Montreal, Canada, [2]Federal Institute of Science, Education and Technology of Maranhão, São Luís, Brazil, [3]Dynamic Systems Inc., Poestenkill , United States of America*	
11.40	**THE OPTIMIZATION OF GATING SYSTEM FOR CAST STEEL CASTINGS** **Dsc., PhD, University Professor Jan Jezierski**[1], MSc., Eng. Rafał Dojka[1], Professor John Campbell[2] *[1]Silesian University of Technology, Faculty of Mechanical Engineering, Department of Foundry Engineering, 44-100 Gliwice, Towarowa 7, Poland, [2]Department of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom*	**STUDY OF RESIDUAL STRESS DISTRIBUTION NEAR THE HOLE EDGE IN AERONAUTICAL STRUCTURES AFTER DRILLING** **Yann Landon**[1], Manuel Paredes[1], Clément Chirol[2] *[1]Université de Toulouse - Institut Clément Ader (ICA), Toulouse, France, [2]Airbus Operations S.A.S, Toulouse, France*	**RECRYSTALLIZATION PHENOMENA IN COLUMNAR AND EQUIAXED ZONE OF FERRITIC STAINLESS STEEL AND ITS EFFECT ON RIDGING PROPERTY** **Pranabananda Modak**[1], Sudipta Patra[1], Debalay Chakrabarti[1] *[1]IIT Kharagpur, Kharagpur, India*	**A LIFT-OFF METHOD FOR WAFER SCALE HETERO-STRUCTURING OF 2D MATERIALS** Mr. Nikos Aspiotis[1], **Mr. Omar Abbas**[1], Dr. Ioannis Zeimpekis[1], Dr. Sakellaris Mailis[1], Dr. Pier Sazio[1], Dr. Chung-Che Huang[1], Prof. Daniel Hewak[1] *[1]Optoelectronics Research Centre , University of Southampton, Southampton, United Kingdom*
12.00	**PRODUCTION OF CARBON FIBERS REINFORCED Al-ALLOY MATRIX COMPOSITES** **Anıl Alten**[1], Dr. Gökçe Hapçı Ağaoğlu[1], Dr. Eray Erzi[1], Assoc. Prof. Derya Dışpınar[1], Prof. Dr. Gökhan Orhan[1] *[1]Istanbul University*	**PROPOSAL OF 'PEEL CUTTING' FOR METALS WITH HARD OXIDE LAYER** **Dr. Eng. Eiji Shamoto**[1], Ikuya Onozato[1], Dr. Eng. Koichi Akazawa[2] *[1]Nagoya University, Nagoya, Japan, [2]Kobe Steel, Ltd., Kobe, Japan*	**MICROSTRUCTURE AND PROPERTIES OF ULTRAFINE-GRAINED OR NANOCRYSTALLINE AUSTENITIC AND FERRITIC-MARTENSTIC STEELS PROCESSED BY ECAP OR HPT** **Research Assistant Professor Haiming Wen**[1,2] *[1]Idaho State University, Idaho Falls, United States, [2]Idaho National Laboratory, Idaho Falls, United States*	**AB-INITIO STUDY OF THE STABILITY AND GEOMETRY OF SMALL FRAGMENTS OF 2D GeSe AND THEIR EXCITATION ENERGIES** **Prof. Hariton Polatoglou**[1], M.Sc. Giorgos Kymionakis[1] *[1]Aristotle Univ. Of Thessaloniki, Thessaloniki, Greece*
12.20	**IN SITU CYCLING STABILITY EVALUATION IN AN ENCAPSULATED HIGH-TEMPERATURE PHASE CHANGE MATERIAL SYSTEM** **Phd Candidate Selmar Binder**[1], Professor Sophia Haussener[1] *[1]Laboratory for Renewable Energy Science and Engineering, École Polytechnique Fédéral de Lausanne, Lausanne, Switzerland*	**A MULTI-PARAMETER EXPERIMENTAL AND STATISTICAL ANALYSIS OF SURFACE ROUGHNESS IN TURNING OF HIGH DENSITY POLYETHYLENE MATRIX METAL PARTICULATE COMPOSITE** **Professor Nikolaos Vaxevanidis**[1], Ing. (MSc) Nikolaos Fountas[1], Dipl-Ing. (MSc) George Seretis[2], Professor Christoforos Provatidis[2], Professor Dimitrios Manolakos[3] *[1]Laboratory of Manufacturing Processes and Machine Tools (LMProMaT), Department of Mechanical Engineering Educators, School Of Pedagogical and Technological Education (ASPETE), Greece, [2]Section of Mechanical Design & Automatic Control, School of Mechanical Engineering, National Technical University of Athens (NTUA), Greece, [3]Section of Manufacturing Technology, School of Mechanical Engineering, National Technical University of Athens (NTUA), Greece*	**MECHANICAL AND METALLOGRAPHIC OBSERVATION OF STEEL SPALL FRACTURE** Doctor Sergey Plotnikov[1], Vladimir Oleshko[2], **Amanzhol Turlybekuly**[1] *[1]D. Serikbayev East Kazakhstan State Technical University, Ust-kamenogorsk, Kazakhstan, [2]Tomsk Politechnic University, Tomsk, Russia*	**LARGE AREA GRAPHENE FIELD-EFFECT TRANSISTORS WITH OPTIMIZED TRANSFER METHOD** Mr Panagiotis Karakolis[1], Mr Dimitrios Patros[1], Mr Markos Kokavesis[1], Mr Stavros Katsiaounis[2], Dr John Parthenios[2], **Dr Konstantinos Papagelis**[2], Dr Vassilios Ioannou-Sougleridis[1], Dr Pascal Normand[1,1] Panagiotis Dimitrakis[1] *[1]Institute Of Nanoscience And Nanotechnology-NCSR "Demokritos", Aghia Paraskevi, Greece, [2]Institute of Chemical Engineering Sciences, Foundation for Research and Technology Hellas, Patras, Greece*
12.40		**CREATING AND DEVELOPMENT AIRFLOW TEST CRITERIA FOR GAS TURBINE NOZZLES AND BLADES** **Senior Expert Hazhir Shahabbaspour**[1], expert pouria Raissi *[1]Mapna Group, Tehran, Iran*	**OBSERVATION OF OXIDATION AND DECOMPOSITION PROCESSES IN NANOCRYSTALLINE ALLOYS** **Mr Jinming Guo**[1], Dr Julian Rosalie[1], Professor Reinhard Pippan[1], Dr Zaoli Zhang[1] *[1]Erich Schmid Institute of Materials Science, Austrian Academy of Sciences, Leoben, Austria*	**ENVIRONMENTAL ASSESSMENT OF BHJ ORGANIC PV TECHNOLOGY AS APPLIED TO A PORTABLE SOLAR CHARGER IN DIFFERENT EUROPEAN CONTEXTS** **Edis Glogic**[1,2], Steffi Weyand[3], Dr Michael Tsang[2], Dr Guido Sonnemann[2], Dr Steven Young[1], Dr Liselotte Schebek[3] *[1]University Of Waterloo, Waterloo, Canada, [2]University of Bordeaux, Bordeaux, France, [3]Technische Universität Darmstadt, Darmstadt, Germany*
13.00				

Symposium	D1	D5	D6	D8
Room	Artist Cafe/M1	I-15/M1	I-08/M1	I -16/M1
Session Title	SPECTROMICROSCOPY & IMAGING	Precipitates and Alloy Design	"Multi-Length-Scale Innovations in Damage Evolution in Materials: Characterization, Modeling, and Validation"	Fundamental advances in ab initio methodology and applications
Chairperson	Andreas Stark and Gema Martinez Criado	Ingo Steinbach	Saryu Fensin	Liverios Lymperakis
11.00	*HIGHLIGHT* **TOWARDS AMBIENT PRESSURE IN THE CHARACTERIZATION OF MATERIALS AT THE MICRO- AND NANO-SCALE BY SCANNING PHOTOEMISSION IMAGING AND SPECTROMICROSCOPY** **Matteo Amati**[1], Hikmet Sezen[1], Luca Gregoratti[1] *[1]Elettra-Sincrotrone Trieste, Strada Statale 14 - km 163,5 in AREA Science Park 34149, Trieste, Italy*	**PRECIPITATE NUCLEATION IN HIGHLY SUPERSATURATED SOLID SOLUTIONS** **Prof. Ernst Kozeschnik**[1], Prof. Bernhard Sonderegger[2] *[1]TU Wien, Institute of Materials Science and Technology, Wien, Austria, [2]TU Graz, Institute of Materials Science, Joining and Forming, Graz, Austria*	*KEYNOTE/INVITED* **RECENT ADVANCES IN QUANTIFYING INTERGRANULAR CORROSION DAMAGE ON Al ALLOYS** Bonzom Rémy[1], **Dr Roland Oltra**[1], Delfosse Jérome[2]	*KEYNOTE/INVITED* **MODELLING STRUCTURAL MATERIALS IN REALISTIC ENVIRONMENTS BY AB INITIO THERMODYNAMICS** **Prof. Joerg Neugebauer**[1], Dr. Tilmann Hickel[1], Dr. Blazej Grabowski[1]
11.20	**ULTRA-HIGH SPEED HARD X-RAY IMAGING AT ESRF: APPLICATIONS TO ENGINEERING MATERIALS** **Dr. Margie Olbinado**[1], Mr. Xavier Just[2], Dr. Jean-Louis Gelet[3], Dr. Mario Scheel[4], Dr. John Morse[1], Dr. Alexander Rack[1] *[1]European Synchrotron Radiation Facility (ESRF), 38000 Grenoble, France, [2]Université Grenoble Alpes - CNRS - SIMAP, 38000 Grenoble, France, [3]MERSEN France SB, 69720 Saint Bonnet de Mure, France, [4]Synchrotron SOLEIL, 91192 Gif-sur-Yvette, France*	*HIGHLIGHT* **PHASE FIELD MODELING OF DIFFUSION-LIMITED PRECIPITATION IN MULTI-COMPONENT NI-BASED SUPERALLOYS** **Dr. Michael Fleck**[1], Dr. Leslie T. Mushongera[2], M.Sc. Frank Querfurth[3], M.Sc. Markus Thäter[4], M.Sc. Philipp Amendt[5], Dr. Julia Kundin[1], Prof. Dr. Heike Emmerich[1], Prof. Dr. Uwe Glatzel[1] *[1]University Of Bayreuth, Bayreuth, Germany, [2]Karlsruher Intitute for Technology (KIT), Karlsruhe, Germany, [3]Teconsult preccion robotics GmbH, Bayreuth, Germany, [4]Rehau, Bayreuth, Germany, [5]AX-Lightness, Creußen, Germany*	*[1]CNRS -Univ. Bourgogne, Dijon, France, [2]AIRBUS Group Innovations, Suresnes, France*	*[1]Max-Planck-Institut fuer Eisenforschung, Duesseldorf, Germany*
11.40	**TOMOGRAPHIC COHERENT DIFFRACTION IMAGING AT THE ESRF BEAMLINE ID10** **Dr Federico Zontone**[1], Dr Yuriy Chushkin[1] *[1]ESRF - The European Synchrotron, Grenoble, France*	*HIGHLIGHT* **NEW EXTENSIONS FOR THE EFFICIENT DEVELOPMENT OF CALPHAD-BASED ICME-TOOLS: DEVELOPMENT OF PROPERTY MODELS FOR MARTENSITIC STEELS** **Dr.-Ing. Ralf Rettig**[1], Arun Kumar[1], Ph. D. Johan Jeppsson[1], Ph. D. Qing Chen[1], Ph. D. Johan Bratberg[1], Ph. D. Anders Engström[1] *[1]ThermoCalc Software AB, Solna, Sweden*	**GRAIN BOUNDARY DIFFUSION OF IONS AND ELECTRONS IN A HEXAGONAL CELL MODEL** **Markus Tautschnig**[1], Prof Nicholas Harrison[1], Prof Michael Finnis[1] *[1]Imperial College London, London, United Kingdom*	**PHASE COMPOSITION AND THERMODYNAMIC PROPERTIES OF HIGH-ENTROPY ALLOYS FROM FIRST-PRINCIPLES MODELLING** **Jan Wrobel**[1,2], Duc Nguyen-Manh[2], Sergei Dudarev[2], Isaac Toda-Caraballo[3,6], Pedro Rivera-Diaz-del-Castillo[3], Zhao Leong[4], Russell Goodall[4], Iain Todd[4], Antonio Fernandez-Caballero[2,5], Krzysztof Kurzydlowski[1] *[1]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, [2]CCFE, UK Atomic Energy Authority, Abingdon, UK, [3]Department of Materials Science and Metallurgy, University of Cambridge, Cambridge, UK, [4]Department of Materials Science and Engineering, University of Sheffield, Sheffield, UK, [5]School of Mechanical, Aerospace and Civil Engineering, University of Manchester, Manchester, UK, [6]Materalia Research Group, Department of Physical Metallurgy, Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Spain*
12.00	**MEASUREMENT OF STRESS FIELD IN DEFORMED MATERIAL AT THE MICRON SCALE: COMBINING LAUE MICRODIFFRACTION WITH DIGITAL IMAGE CORRELATION, AND RELATED ACCURACY** **Dr Olivier Castelnau**[1], Dr Fengguo Zhang[1], Dr Johann Petit[2], Dr Michel Bornert[3], Dr Odile Robach[4], Dr Jean-Sebastien Micha[4] *[1]Laboratory PIMM (Arts & Metiers ParisTech / CNRS), Paris, France, [2]LEME, Univ. Paris Ouest, Ville d'Avray, France, [3]Laboratoire Navier (ENPC/IFSTTAR/CNRS), Marne la Vallee, France, [4]CEA and CRG-IF BM32 at ESRF, Grenoble, France*	**SIMULATION OF THE BAINITE TRANSFORMATION IN ADVANCED HIGH-STRENGTH STEELS UNDER PARAEQUILIBRIUM DRIVING FORCES** **Dr Helen Kamoutsi**[1], Konstantinos Psyridis[1], Dr Gregory Haidemenopoulos[1] *[1]Uth, Volos, Greece*	**THE AFFECT OF GRAIN SIZE ON DAMAGE AND FAILURE IN TWO-PHASE MATERIALS** **Dr. Saryu Fensin**[1], Dr. David Jones[1], Dr. Ellen Cerreta[1], Daniel Martinez[1], Carl Trujillo[1], Dr. George Gray III[1] *[1]Los Alamos National Laboratory, Los Alamos, United States*	**Ni13Co3Mn13Sn3 HEUSLER ALLOY: INVESTIGATION FROM FIRST PRINCIPLES** **Professor Vasily Buchelnikov**[1], Vladimir Sokolovskiy[1], Mikhail Zagrebin[1] *[1]Chelyabinsk State University, Chelyabinsk, Russian Federation*
12.20	**MICROSTRUCTURE EVOLUTION DURING FAST COOLING STUDIED BY IN SITU X-RAY TECHNIQUES** **Helena Van Swygenhoven**[1], Steven Van Petegem[1] *[1]Paul Scherrer Institut, Switzerland*	**ALLOY DESIGN OF MEDIUM-MN STEELS BASED ON COMPUTATIONAL THERMODYNAMICS AND MULTI-OBJECTIVE OPTIMIZATION** **Mr. John Aristeidakis**[1], Professor Greg Haidemenopoulos[1] *[1]University Of Thessaly, Volos, Greece*	**MULTI-WAVELENGTH RAMAN MICROSCOPY: A SUITABLE TOOL FOR CHARACTERIZING SURFACES IN INTERACTION WITH PLASMAS IN THE FIELD OF NUCLEAR FUSION** **Cedric Pardanaud**[1], C. Martin[1], P. Roubin[1] *[1]Aix-marseille Université, Marseille, France*	**TENSORIAL ELASTIC PROPERTIES AND STABILITY OF INTERFACE STATES ASSOCIATED WITH Σ5(210) GRAIN BOUNDARIES IN NI3(AL,SI)** **Dr. Martin Friak**[1,2], Dr. Monika Vsianska[2,1], Associated Professor David Holec[3], Professor Mojmir Sob[2,1,4] *[1]Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic , [2]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic, [3]Department of Physical Metallurgy and Materials Testing, Montanuniversitaet Leoben, Leoben, Austria, [4]Department of Chemistry, Faculty of Science, Masaryk University, Brno, Czech Republic*
12.40		**A MULTI-SCALE FE-FFT APPROACH TO STUDY MICROSTRUCTURAL EVOLUTION DURING BIAXIAL STRAIN PATH CHANGES OF SHEET METALS AND ALLOYS** **Dr. Manas V Upadhyay**[1], Dr. Steven Van Petegem[1], Dr. Tobias Panzner[2], Dr. Anirban Patra[3], Dr. Wei Wen[3], Dr. Ricardo A Lebensohn[3], Dr. Carlos Tome[3], Prof. Dr. Helena Van Swygenhoven[1,4] *[1]Swiss Light Source, Paul Scherrer Institute, Villigen PSI, Switzerland, [2]Laboratory for neutron scattering, Paul Scherrer Institute, Villigen PSI, Switzerland, [3]MST-8, Los Alamos National Laboratory, Los Alamos, USA, [4]Neutrons and X-rays for Mechanics of Materials, IMX, Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland*	**STRUCTURE / PROPERTY (CONSTITUTIVE AND DYNAMIC STRENGTH / DAMAGE) CHARACTERIZATION OF ADDITIVELY MANUFACTURED (AM) TANTALUM** **Dr. George Gray**[1], Ms. Veronica Livescu[1], Mr. Cameron Knapp[1], Mr. Carl Trujillo[1], Mr. Daniel Martinez[1], Ms. Roberta Beal[1], Dr. David Jones[1] *[1]Los Alamos National Laboratory, Los Alamos, United States*	**PLANAR DEFECTS IN Ni AND Co BASED SUPERALLOYS** **Aparna Subramanyam**[1], Dr. Thomas Hammerschmidt[1], Prof. Dr. Ralf Drautz[1] *[1]ICAMS, Ruhr-University Bochum, Bochum, Germany*
13.00				**ELECTRONIC ORIGIN AND STRUCTURAL INSTABILITIES OF Ti-BASED ALLOYS FOR ORTHOPAEDIC IMPLANTS** **Accos Prof Christina Lekka**[1], Dr J.J. Gutierrez-Moreno[2], Prof Mariana Calin[3] *[1]University Of Ioannina, Ioannina, Greece, [2]Tyndall National Institute, Cork, Ireland, [3]IFW Dresden, Dresden, Germany*

Symposium	D10	E6	F5	F6
Room	CR II Hall/M2	Maurice Saltiel Hall II/M2	Conference Room 1/M1	Conference Room 2/M1
Session Title	Segregation	Modeling, Simulation and Optimization	"Translation of biomaterials research towards innovation and product development: from concepts to clinic"	Structural properties of bio-inspired materials
Chairperson	Schuler-Luca Messina	Kayvantash	Jérôme CHEVALIER	Richard Weinkamer
11.00	*HIGHLIGHT* **MOLECULAR DYNAMICS AND MONTE CARLO COUPLING FRAMEWORK FOR SOLUTE SEGREGATION MODELING USING DIFFERENT PARALLELIZATION APPROACHES** **M.Sc Hariprasath Ganesan**[1], Dr. Carlos Teijeiro[1], Prof. Dr. Godehard Sutmann[1,2] *[1]Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Ruhr-University Bochum, Bochum, Germany, [2]Jülich Supercomputing Centre (JSC), Institute for Advanced Simulation (IAS), Forschungszentrum Jülich, Jülich, Germany*	**EUROPEAN MATERIALS MODELLING COUNCIL** **Dr. Nadja Adamovic**[1] *[1]Vienna University of Technology, Institute of Sensor and Actuator systems*	*HIGHLIGHT* **HYBRID COLLAGEN/APATITE SCAFFOLDS OBTAINED BY BIO-INSPIRED MINERALIZATION PROCESS RE-GENERATING BONE AND OSTEOCHONDRAL TISSUES** **Phd Anna Tampieri**[1], PhD Monica Sandri[1], PhD Simone Sprio[1], M.Sc. Elisabetta Campodoni[1] *[1]Institute Of Science And Technology For Ceramics, National Research Council, Faenza, Italy*	*HIGHLIGHT* **FIELD ASSISTED SINTERING AND MECHANICAL PROPERTIES OF BIOINSPIRED CERAMIC/METAL LAMINATED COMPOSITES** Malgorzata Marcinkowska[1,2], **Sylvain Meille**[1], Eric Maire[1], Jérôme Chevalier[1], Sylvain Deville[2] *[1]Université de Lyon, INSA Lyon, MATEIS UMR CNRS 5510, Villeurbanne, France, [2]LSFC, UMR3080 CNRS/ Saint-Gobain, Cavaillon, France*
11.20	**MONTE CARLO STUDY OF INTERSTITIAL DIFFUSION IN THE PRESENCE OF SOLUTE ATOM TRAPS** **Yao V Shan**[1], Ernst Kozeschnik[1] *[1]Institute of Materials Science and Technology, TU Wien, Vienna, Austria*	**THE CHALLENGE OF REVERSING THEORIES TO HYBRIDIZE STRUCTURES WITH FIBRE METAL LAMINATES** **Dr.ir. René Alderliesten**[1] *[1]Delft University Of Technology, Delft, Netherlands*	**ANTIMICROBIAL COPPER-BASED ALLOYS TOUCH SURFACES – CURRENT ACHIEVEMENTS AND CHALLENGES** PhD Monika Walkowicz[1], **PhD Piotr Osuch**[1], Prof. Beata Smyrak[1], Prof. Andrzej Mamala[1], Prof. Tadeusz Knych[1], PhD Anna Rozanska[2], PhD Agnieszka Chmielarczyk[2], MSc Dorota Romaniszyn[2], Prof. Malgorzata Bulanda[2] *[1]AGH University of Science and Technology, Faculty of Non-Ferrous Metals, Department of Metal Working and Physical Metallurgy of Non-Ferrous Metals, Krakow, Poland, [2]Jagiellonian University Medical College, Faculty of Medicine, Department of Microbiology, Krakow*	**HOW DOES THE COORDINATION OF CROSS-LINKS INFLUENCE THE MECHANICAL BEHAVIOR OF A LINEAR POLYMER CHAIN?** M.sc Huzaifa Shabbir[1], **Habil Markus Hartmann**[1] *[1]University Of Vienna, Vienna, Austria*
11.40	**MODELING AND EXPERIMENTAL INVESTIGATION OF COPPER PRECIPITATION IN CAST IRON FOR NUCLEAR SPENT-FUEL CANISTERS** **Dr Luca Messina**[1], Prof. Pär Olsson[2], Dr Zhongwen Chang[2], Dr Nils Sandberg[2], M.S. Elin Toijer[2], Amine Yousfi[3], Mattias Thuvander[3], Bruno Boizot[4], Gauthier Brysbaert[4], Vincent Metayer[4], Dominique Gorse-Pomonti[4] *[1]CEA Saclay, Gif-sur-Yvette, France, [2]KTH Royal Institute of Technology, Stockholm, Sweden, [3]Chalmers University of Technology, Göteborg, Sweden, [4]CNRS-LSI École Polytechnique, Palaiseau, France*	**A MULTI-AGENT SYSTEM BASED APPROACH FOR ADAPTIVE PROPERTY CONTROL IN SMART LOAD-BEARING STRUCTURES** Dr.-Ing. Dirk Lehmhus[1], Dr. Stefan Bosse[1], **Atra Gemilang**[1], Prof. Dr.-Ing. Matthias Busse[2] *[1]University Of Bremen, Bremen, Germany, [2]Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM), Bremen, Germany*	**WEAR STUDY OF TOTAL ANKLE REPLACEMENT EXPLANTS BY MICROSTRUCTURAL ANALYSIS** **Prof. Damien Fabregue**[1], Sandrine Cottrino[1], Arthur Per Cowie[1], Jean-Luc BESSE[2], Daniel Hartmann[1], Solène Tadier[1], Laurent Gremillard[1] *[1]Mateis Insa Lyon, Villeurbanne, France, [2]Hospices Civils de Lyon, Lyon, France*	**MULTIRESPONSIVE AND MULTISTRUCTURED BACTERIAL CELLULOSE NANOCOMPOSITES** Muling Zeng[1], Anna Roig[1], Irene Anton[1], Maria Milla[1], Deyaa Youseff[1], Jordi Floriach-Clark[1], Anna May[1], Anna Roig[1], **Anna Laromaine**[1] *[1]Institut de Ciència de Materials de Barcelona, ICMAB-CSIC, Campus UAB. 08193 Bellaterra, Barcelona - Spain, Spain*
12.00	**CLUSTER EXPANSION OF THE ONSAGER MATRIX FOR DILUTE SOLID SOLUTIONS: APPLICATION TO DIFFUSION IN Fe-(C, N, O) SOLID SOLUTIONS** **Dr. Thomas Schuler**[1,2], Dr. Maylise Nastar[2], Dr. Luca Messina[2] *[1]École Nationale Supérieure des Mines de Saint-Étienne, 42023 Saint Etienne, France, [2]DEN-Service de Recherches de Métallurgie Physique, CEA, Université Paris-Saclay, F-91191 Gif-sur-Yvette, France*	**WOVEN LATTICE MATERIAL (WLM) WITH INCREASING DAMPING AT HIGH FREQUENCIES** Dr Ladan Salari[2], Dr Stephen Ryan[3], Manuel Pelacci[1], Prof Lorenzo Valdevit[2], **Dr Stefan Szyniszewski**[1] *[1]University Of Surrey, Guildford, United Kingdom, [2]University of California, Irvine, United States, [3]Johns Hopkins University, Baltimore, United States*	*HIGHLIGHT* **FABRICATION OF HYDROXYAPATITE CRANIAL IMPLANTS BY STEREOLITHOGRAPHY, CLINICAL STUDY OF 19 PATIENTS OVER 12 YEARS.** **Mr Christophe Chaput**[1], Pr Thierry Chartier[2], Pr Joel Brie[3], Dr Julie Usseglio[3] *[1]3dceram, Limoges, France, [2]SPCTS - CNRS, Limoges, France, [3]Limoges hospital (CHRU), Limoges, France*	**NATURE INSPIRES INNOVATIVE PROCESSES FOR SMART BIOMIMETIC DEVICES** Phd Anna Tampieri[1], **PhD Simone Sprio**[1], PhD Monica Sandri[1], PhD Silvia Panseri[1], PhD Monica Montesi[1], PhD Michele Iafisco[1], PhD Alessio Adamiano[1] *[1]Institute Of Science And Technology For Ceramics, National Research Council, Faenza, Italy*
12.20		**FLEXURAL AND SHEAR PROPERTIES OF REDUCED GRAPHENE OXIDE/EPOXY REINFORCED CARBON FIBRE HYBRID COMPOSITES** Paddy Jenkins[1], Stuart Ingram[1], Samrin Khan[2], Kristof Starost[1], Pravin Bari[2], Satyendra Mishra[2], **James Njuguna**[1] *[1]Centre for Advanced Engineering Materials, School of Engineering, Robert Gordon University, Aberdeen, AB10 7GJ, UK, [2]University Institute of Chemical Technology, North Maharashtra University, Jalgaon-425001 Maharashtra, India*	**CHALLENGES IN SCALING UP ZIRCONIA BASED–COMPOSITES PROCESSING: FROM THE DEVELOPMENT OF A MICROSTRUCTURE AT THE LABORATORY SCALE TO AN EFFECTIVE INDUSTRIAL PRODUCTION** **Dr Helen Reveron**[1], Dr Fei Zhang[1], Dr Marta Fornabaio[2], Dr Paola Palmero[2], Dr Laura Montanaro[2], Dr Tobias Fürderer[3], Dr Nicolas Courtois[4], Dr Jérôme Chevalier[1] *[1]Université de Lyon-INSA de Lyon, MATEIS CNRS UMR 5510, 20 Avenue Albert Einstein, F-69621 Villeurbanne Cedex, France, [2]Department of Applied Science and Technology, INSTM R.U. PoliTO, LINCE Lab., Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129 Torino, Italy, [3]DOCERAM, MOESCHTER GROUP Holding GmbH & Co. KG, Hesslingsweg 65 - 67, 44309 Dortmund, Germany, [4]Anthogyr SAS, 2237 avenue A. Lasquin, F-74700 Sallanches, France*	**MIMICKING HELICOIDAL BIOLOGICAL MATERIALS TO IMPROVE STRENGTH OF SYNTHETIC COMPOSITES** **MSc Laura Zorzetto**[1], Dr. Jean-Michel Thomassin[2], Dr. Christine Jérôme[2], Dr. Davide Ruffoni[1] *[1]Department of Aerospace and Mechanical Engineering, Mechanics of Biological and Bio-inspired Materials Research Unit, University of Liege, Liege, Belgium, [2]Department of Chemistry, Center for Education and Research on Macromolecules, University of Liege, Liege, Belgium*
12.40			**MECHANICAL ASSESMENT OF A NEW LONG LASTING ZIRCONIA BASED–COMPOSITE: FROM SIMPLE LABSCALE SAMPLES TO REAL DENTAL IMPLANTS CHARACTERIZATION** **Alethea Liens**[1], PhD Helen Reveron[1], PhD Pascal Reynaud[1], PhD Tobias Fuerderer[2], PhD Nicolas Courtois[3], Professor Jérôme Chevalier[1] *[1]Mateis Laboratory Insa Lyon, Lyon, France, [2]DOCERAM MOESCHTER GROUP Holding GmbH & Co KG, Dortmund, Germany, [3]Anthogyr SAS, Sallanches, France*	**GROWTH AND SELF-HEALING OF BIOINSPIRED MATERIALS SIMULATED THROUGH A HIERARCHICAL LATTICE SPRING MODEL** **Federico Bosia**[1], Lucas Brely[1], Nicola Pugno[2,3,4] *[1]University of Torino, Torino, Italy, [2]University of Trento, Trento, Italy, [3]Queen Mary University, London, London, United Kingdom, [4]Italian Space Agency, Roma, Italy*
13.00				**A COMPARISON OF NETTLE FIBERS WITH FLAX IN A FLOREON MODIFIED PLA MATRIX** **Miss Stella Manoli**[1] *[1]University Of Sheffield, Sheffield, United Kingdom*

Symposium	A1	A1 (parallel session)	A6	A9
Room	3-21/M1	Rehearsal Room 5.17 /M1	CR I Hall/M2	I-11/M1
Session Title	Thin layers-Inks-Intercalation	Functionnalization and gas sensing	Structure, mechanical, propulsion, pyrotechnics	Membranes for Gas Separation
Chairperson	Matteo Palma	Sotirios Stavropoulos	Ethiraj Venkatapathy	Volker Abetz
15.00	*HIGHLIGHT* **THE ROLE OF GRAPHENE IN COPPER OXIDATION: PROTECTING OR ENHANCING AGENT?** **Prof. Alicia De Andrés**[1], Leo Álvarez-Fraga[1], Dr Juan Rubio-Zuazo[2], Dr Felix Jiménez-Villacorta[1], Dr Esteban Climent-Pascual[1], Dr Javier Bartolomé-Vilchez[1], Dr Rafael Ramírez-Jiménez[3,1], Prof. Carlos Prieto[1] *[1]Consejo Superior De Investigaciones Científicas, Instituto de Ciencia de Materiales de Madrid, Cantoblanco 28049, Madrid, Spain, [2]BM25-SpLine ESRF, 38043, Grenoble, France, [3]Departamento de Física, Escuela Politécnica Superior, Universidad Carlos III de Madrid, Avenida Universidad 30, 28911, Leganés, Spain*	*HIGHLIGHT* **COVALENT FUNCTIONALIZATION OF GRAPHENE ACHIEVED VIA CHEMISTRY OF FLUOROGRAPHENE** **Prof. Michal Otyepka**[1], Dr. Aristides Bakandritsos[1], Dr. Piotr Blonski[1], Dr. Demetrios Chronopoulos[1], Dr. Petr Lazar[1], Dr. Radek Zbořil[1] *[1]Palacký University Olomouc, Olomouc, Czech Republic*	**THE DELETERIOUS EFFECTS OF TIN WHISKER GROWTHS ON SPACECRAFT ELECTRONICS AND MITIGATION PROCESSES THAT INCLUDE ADVANCED MATERIALS** **Professor Barrie Dunn**[1] *[1]University of Portsmouth, Portsmouth, United Kingdom*	**BIOMASS DERIVED FEEDSTOCK FOR POROUS CARBONACEOUS FRAMEWORKS** **Pierluigi Tosi**[1], Dr Ed de Jong[2], Associate Professor Alice Mija[1] *[1]University of Nice Sophia Antipolis, ICN, Nice, France, [2]Avantium Chemicals B.V, Avantium, The Netherlands*
15.20	**GRAPHENE NANOPLATELET BASED ADHESIVES FOR SECONDARY STRUCTURAL APPLICATIONS** **Dr. Stavros Tsantzalis**[1], Dr. Christina Kostagiannakopoulou[1], Dr. Katerina Kouravelou[2], Dr. Antonios Vavouliotis[2,4], Dr. Athanasios Baltopoulos[2], Prof. Vassilis Kostopoulos[1], Dr. Ugo Lafont[3] *[1]University of Patras, Rio, Patras, Greece, [2]Adamant Composites, Platani Patras, Greece, [3]ESA - TEC - QEE, Noordwijk, The Nederlands, [4]Pleione Energy, Ag.Paraskevi, Attica, Greece*	**CYANOGRAPHENE AND GRAPHENE-ACID: TWO HIGHLY FUNCTIONALIZED AND CONDUCTIVE GRAPHENE DERIVATIVES FROM FLUOROGRAPHITE** **PhD Aristeidis Bakandritsos**[1], PhD Martin Pykal[1], PhD Piotr Blonski[1], PhD Petr Jakubec[1], PhD Demetrios Chronopoulos[1], PhD Vasileios Georgakilas[2], PhD Kateřina Poláková[1], PhD Athanasios Bourlinos[1,3], PhD Václav Ranc[1], PhD Klára Čepe[1], PhD Radek Zbořil[1], PhD Michal Otyepka[1] *[1]Regional Centre for Advanced Technologies and Materials, Department of Physical Chemistry, Faculty of Science, Palacky University in Olomouc, 17.listopadu, Olomouc, Czech Republic, [2]Department of Materials Science, University of Patras, Patras, Greece, [3]Physics Department, University of Ioannina, Ioannina, Greece*	**MULTI-LAYERED CERAMIC COMPOSITES FOR A SMALL ROCKET COMBUSTION CHAMBER** Dr Amalia Marinou[1], **Dr George Vekinis**[1] *[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi Attikis, Greece*	**ADVANCED COMPOSITE MEMBRANES WITH LAYERED FILLERS FOR GAS SEPARATION** **Dr Dan Zhao**[1] *[1]National University Of Singapore, Singapore*
15.40	**PREPARATION OF FEW LAYERS GRAPHENE DISPERSIONS AS PIGMENTS FOR CONDUCTIVE PAINTS** **Dr KATERINA KAMPIOTI**[1], Fernando Torres-Canas[1], Wilfrid Neri[1], Alain Penicaud[1], Philippe Poulin[1] *[1]Centre de Recherche Paul Pascal/CNRS, Université de Bordeaux, Pessac, France*	**GAS SENSING PROPERTIES OF FLUORINATED CARBON NANOTUBES** **Ms. Claudia Struzzi**[1], Dr. Mattia Scardamaglia[1], Mr. Juan Casanova Chafer[2], Dr. Nikolay Britun[1], Dr. Jean-François Colomer[3], Prof. Rony Snyders[1], Prof. Eduard Llobet[2], Dr. Carla Bittencourt[1] *[1]Université de Mons, Mons, Belgium, [2]Universitat Rovira i Virgili, Tarragona, Spain, [3]Université de Namur, Namur, Belgium*	**STRESS CORROSION CRACKING BEHAVIOUR AND MICROSTRUCTURAL CHARACTERISTICS OF Al-STEEL WELDS FOR SPACE PROPULSION SYSTEMS** **Dipl.Ing. Grazyna Mozdzen**[1], Dr. Michael Scheerer[1], Dr. Andreas Tesch[2], Dr. Martin Stubenrauch[3], Dr. Jan Persson[2] *[1]AAC GmbH, Wiener Neustadt, Austria, [2]ESA (ESTEC), Noordwijk, The Netherlands, [3]Magna-Steyer Engineering AG & Co KG, Graz, Austria*	**INCREASING THE SELECTIVITY OF POLYMERS OF INTRINSIC MICROPOROSITY BY COMPETITIVE SORPTION** Dr. Alessio Fuoco[1], Dr Bekir Satilmis[2,3], Ms Carmen Rizzuto[1], Dr Marcello Monteleone[1], Dr Elisa Esposito[1], Dr Elena Tocci[1], Dr Lidietta Giorno[1], Prof Peter M. Budd[2], **Dr Johannes C. Jansen**[1] *[1]Institute on Membrane Technology (ITM -CNR), Rende, Italy, [2]School of Chemistry, University of Manchester, Manchester, United Kingdom, [3]Department of Chemistry, Faculty of Science and Arts, Ahi Evran University, Kirsehir, Turkey*
16.00	**HIGH PERMITTIVITY STRUCTURES PREPARED BY INKJET PRINTING FOR ENERGY STORAGE AND HARVESTING PRESENTING AUTHOR** **Fernando TORRES-CANAS**[1], Jinkai Yuan[1], Wilfrid Neri[1], Annie Colin[1], Philippe Poulin[1] *[1]Centre de Recherche Paul Pascal/CNRS, Université de Bordeaux, Pessac, France*	**EFFECT OF STABILIZATION TEMPERATURE ON MICROPOROSITY AND CO_2 ADSORPTION IN CARBON FIBERS** **PhD Student Reyna Ojeda López**[1], PhD J. Marcos Esparza-Schulz[1], PhD Guadalupe Ramos-Sánchez[1], PhD student Isaac J. Pérez-Hermosillo[1], PhD Armando Domínguez-Ortiz[1] *[1]Departamento de Química, Fisicoquímica de Superficies Universidad Autónoma Metropolitana–Iztapalapa, Iztapalapa, México*	**ADVANCED ALUMINIUM ALLOYS FOR CRYO-RESERVOIR APPLICATIONS** **Dr Andy Norman**[1], Dr G Mozdzen[2], Dr V Liedtke[2] *[1]European Space Agency, Noordwijk, Netherlands, [2]Aerospace & Advanced Composites GmbH, Wiener Neustadt, Austria*	**THE COUPLING TECHNOLOGY OF CO_2 UTILIZATION AND METHANE CONVERSION USING DUAL-PHASE OXYGEN TRANSPORT MEMBRANE** Joo Jong Hoon[1], **Park Jeong Hwan**[1], Kwon Young-il[1], Sin Myung Kang[1], Young-jin Ryu[1] *[1]Chungbuk National University, Cheongju, South Korea*
16.20	**RAMAN SIGNATURES OF SINGLE LAYER GRAPHENE DISPERSED IN DEGASSED WATER WITHOUT ADDITIVES** Dr George Bepete[2], Dr Carlos Drummond[2], Dr Alain Pénicaud[2], **Pr Eric Anglaret**[1] *[1]Laboratoire Charles Coulomb, Université Montpellier-CNRS, Montpellier, France, [2]Centre de Recherche Paul Pascal, UPR CNRS 5521, Pessac, France*	**SPECTROSCOPIC OBSERVATION OF OXYGEN DISSOCIATION ON NITROGEN-DOPED GRAPHENE** **Dr Mattia Scardamaglia**[1], Dr Toma Susi[2], Claudia Struzzi[1], Prof Rony Snyders[1], Dr Giovanni Di Santo[3], Dr Luca Petaccia[3], Dr Carla Bittencourt[1] *[1]University Of Mons, Mons, Belgium, [2]University of Vienna, Faculty of Physics, Vienna, Austria, [3]Elettra Sincrotrone, Trieste, Italy*	**DIRECT METAL PRINTING OF METEORITE METAL** **Dr. Bram Neirinck**[1], ir. Karel Lietaert[1,2], Dr. Lore Thijs[1], ir. Thomas Lapauw[2], dr. Jonas Van Vaerenbergh[1] *[1]3DSystems, Leuven, Belgium, [2]Department of Materials Engineering, KU Leuven, Leuven, Belgium*	**OXYGEN SEMI PERMEABILITY OF CATI0.9FE0.103-Δ** **Mrs Corinne Salles**[1], Dr Marlu César Steil[2,3], Pr Jacques Fouletier[2,3], Dr Daniel Marinha[1] *[1]Saint-Gobain LSFC, Cavaillon, France, [2]Université Grenoble Alpes LEPMI, Grenoble, France, [3]CNRS LEPMI, Grenoble, France*
16.40	**HIGH YIELD PRODUCTION OF GRAPHENE-Fe203 NANO-COMPOSITES VIA ELECTROCHEMICAL INTERCALATION OF NITROMETHANE AND IRON CHLORIDE** **Dr Zhenyuan Xia**[1], Prof Catia Arbizzani[2], Dr Luca Ortolani[3], Dr Vittorio Morandi[3], Prof Vincenzo Palermo[1] *[1]Istituto per la Sintesi Organica e la Fotoreattività - Consiglio Nazionale delle Ricerche, Bologna, Italy, [2]Dipartimento di Chimica, University of Bologna, Bologna, Italy, [3]Istituto per la Microelettronica e Microsistemi - Consiglio Nazionale delle Ricerche, Bologna, Italy*			*HIGHLIGHT* **HIGH-TEMPERATURE 57Fe MÖSSBAUER STUDIES OF OXIDE MEMBRANE MATERIALS** **Prof. Dr. Klaus-Dieter Becker**[1], Dr. Piotr Gaczynski[1], Dr. Anja Harpf[2], Dr. Juergen Boer[2], Dr. Tobias Klande[3], Dr. Armin Feldhoff[3], Dr. Robert Kircheisen[2], Dr. Ralf Kriegel[2] *[1]Technische Universität Braunschweig, Institute of Physical and Theoretical Chemistry, Braunschweig, Germany, [2]Fraunhofer IKTS, Hermsdorf, Germany, [3]Leibniz Universität Hannover, Institute of Physical Chemistry and Electrochemistry, Hannover, Germany*

Symposium	B1	B4	B7	C1
Room	Maurice Saltiel Hall I/M2	3.20/M1	CR III Hall/M2	Friends of Music Hall/M1
Session Title	Advanced Characterisation II	Composites and other properties	Hybrid and Perovskite Materials, Physical Properties and Devices	C1.3: Surface engineering and modifications 3/3 -Fatigue & Wear
Chairperson	Ernst Gamsjäger, Wieslaw Swiatnicki	Ilchat Sabirov	Dan Zhao	E. Aperathitis, R. Cremer
15.00	*KEYNOTE/INVITED* **BONE-LIKE EXTRAORDINARY CRACK RESISTANCE IN HIERARCHICAL METASTABLE NANO-LAMINATE STEELS** **Cem Tasan**[1], Motomichi Koyama[2], Zhang Zhao[2], Meimei Wang[1], Dirk Ponge[3], Dierk Raabe[3], Kaneaki Tsuzaki[2], Hiroshi Noguchi[2] *[1]MIT, [2]Kyushu University, [3]Max-Planck Institute fur Eisenforschung*	*HIGHLIGHT* **INTERNAL LENGTHS IN SPD MATERIALS** **Professor Elias Aifantis**[1] *[1]Aristotle University, Thessaloniki, Greece*	*KEYNOTE/INVITED* **HYBRID NANOCARBON-BASED AND BIO-RELATED MATERIALS FOR OPTOELECTRONIC DEVICES** **Dr. Ruben Costa**[1] *[1]University Erlangen-Nürnberg, Erlangen, Germany*	**PULSED PLASMA SURFACE FUNCTIONALIZED NANOSILVER FOR GENE DELIVERY** **Mr. Ajinkya Trimukhe**[1], Mr. Prasad Pofali[2], Mr. Amogh Vaidya[4], Dr. Prajakta Dandekar[3], Dr. Ratnesh Jain[2], Dr. Rajendrasing Deshmukh[1] *[1]Department of Physics, Institute Of Chemical Technology, Mumbai, India, [2]Department of Chemical Engineering, Institute Of Chemical Technology, Mumbai, India, [3]Department of Pharmaceutical Sciences and Technology, Institute Of Chemical Technology, Mumbai, India, [4]Institute of Bioinformatics and Biotechnology, Savitribai Phule Pune University, Pune, India*
15.20		**MECHANICAL PROPERTIES OF BULK METALLIC GLASS COMPOSITES GENERATED BY SEVERE PLASTIC DEFORMATION** Lisa Krämer[1], Verena Maier-Kiener[2], Karoline Kormout[1], Yannick Champion[3], **Oliver Renk**[1], Reinhard Pippan[1] *[1]Erich Schmid Institute of material sciences, Austrian Academy of Science, Leoben, Austria, [2]Department Physical Metallurgy and Materials Testing, Montanuniversät of Leoben, Leoben, Austria, [3]CNRS Centre National de la Recherche Scientifique, Paris, France*		**MICROSTRUCTURAL STUDY OF SHOT PEENED NICKEL-BASED SUPERALLOY (U720Li) UNDER ISOTHERMAL EXPOSURE** **Mr. Dharmesh Kumar**[1,2], Dr. Sridhar Idapalapati[1], Dr. Wang Wei[2], Dr. Daniel Child[3], Dr. Thomas Haubold[4], Dr. Wong Chow Cher[2] *[1]School of Mechanical and Aerospace Engineering, Nanyang Technological University , 50 Nanyang Ave, Singapore, [2]Advanced Remanufacturing and Technology Centre, Agency for Science, Technology and Research (A*STAR), #01/01, 3 CleanTech Loop, CleanTech Two, Singapore, [3]Rolls-Royce Plc, PO Box 31, Derby DE24 8BJ, United Kingdom, [4]Rolls-Royce Deutschland Ltd & Co KG, Hohemarkstraße 60-70, 61440 Oberursel, Germany*
15.40	**VC-PRECIPITATION KINETICS AND ITS INTERACTION WITH PHASE TRANSFORMATION IN NANO-STEELS** **Miss Chrysoula Ioannidou**[1], Miss Zaloa Arechabaleta Guenechea[1], Mr Arjan Rijkenberg[3], Mr Ad van Well[2], Mr Erik Offerman[1] *[1]Department of Materials Science and Engineering, Delft University of Technology, Mekelweg 2, 2628CD Delft, The Netherlands, [2]Department of Radiation Science and Technology, Delft University of Technology, Mekelweg 15, 2629JB Delft, The Netherlands, [3]TATA Steel, 1970CA IJmuiden, The Netherlands*	**LIMITING PROCESSES OF SUPERSATURATION** **Dr. Karoline Kormout**[1], Dr. Pradipta Ghosh[1], Prof. Reinhard Pippan[1] *[1]Erich Schmid Institute Of Materials Science, Leoben, Austria*	**NEW PHOTOACTIVE HYBRID MATERIALS WITH LARGE STOKES SHIFT** **Claudia Barolo**[1], Eleonora Conterosito[2], Valentina Toson[2], Giorgio Volpi[1], Nadia Barbero[1], Valentina Gianotti[2], Alberto Menozzi[3], Guido Viscardi[1], Marco Milanesio[2] *[1]Department of Chemistry and NIS and INSTM Reference Centre Università degli Studi di Torino, Torino, Italy, [2]Dipartimento di Scienze e Innovazione Tecnologica, Università del Piemonte Orientale, Alessandria, Italy, [3]Special Engines Srl, Torino, Italy*	**FATIGUE OF DENGELING TREATED AI-ALLOYS** **Associate Professor Ru Lin Peng**[1], Dr Mattias Jonsson[2], Dr Linnéa Selegård[2], Dr Markus Ess[3], Dr Gert Petersén[2] *[1]Linköping University, Linköping, Sweden, [2]Saab, Linköping, Sweden, [3]Starrag AG, Rorschacherberg, Switzerland*
16.00	**MICROSTRUCTURAL CHANGES DURING THERMAL PROCESSING OF STEELS – EVALUATION TECHNIQUES FOR IN-SITU X-RAY DIFFRACTION DATA** **Assoz. Prof. Ernst Gamsjäger**[1], Dr. Manfred Wiessner[2], Dr. Paul Angerer[3] *[1]Institute of Mechanics, Montanuniversitaet Leoben, Leoben, Austria, [2]Anton Paar GmbH, Graz, Austria, [3]Materials Center Leoben Forschung GmbH, Leoben, Austria*	**INFLUENCE OF PROCESSING PARAMETERS ON THE SATURATION MICROSTRUCTURE AND MECHANICAL PROPERTIES OF HPT-DEFORMED NICKEL/CARBON NANOTUBE COMPOSITES** **Andreas Katzensteiner**[1], Timo Müller[1], Prof. Reinhard Pippan[1], Dr. Andrea Bachmaier[1] *[1]Erich Schmid Institute, Leoben, Austria*	**MECHANICAL PROPERTIES AND PHASE TRANSITION MECHANISMS OF HYBRID ORGANIC-INORGANIC PEROVSKITES** **Prof. Wei Li**[1] *[1]Huazhong University Of Science And Technology, Wuhan, China*	**SURFACE MODIFICATION OF GEOMATERIALS USING HIGH-POWER NANOSECOND PULSES** **Doctor Of Engineering Science (Dr. habil) Igor Bunin**[1], Doctor Of Engineering Science (Dr. habil) Valentine Chanturiya[1], Doctor of Engineering Science (Candidate of Sciences) Mariya Ryazantseva[1], Doctor of Engineering Science (Candidate of Sciences) Irina Khabarova[1], Graduate Student Nataliya Anashkina[1], Doctor of Engineering Science (Candidate of Sciences) Elizaveta Koporulina[1] *[1]Institute of Comprehensive Exploitation of Mineral Resources Russian Academy of Science, Moscow, Russian Federation*
16.20	**CYCLIC AUSTENITE-FERRITE TRANSFORMATIONS IN STEELS STUDIED BY IN-SITU 3D NEUTRON DEPOLARISATION** Mr. Haixing Fang[1], Dr. Niels van Dijk[1], Prof.dr. Ekkes Brück[1], **Prof.dr. Sybrand van der Zwaag**[1] *[1]Delft University Of Technology, Delft, Netherlands*		**PEROVSKITES FOR PRINTABLE THERMOELECTRIC DEVICES** **Prof. Andrea Reale**[1], Dr. Lucio Cinà[2], Dr. Alessandro Lorenzo Palma[1], Dr. Fabio Matteocci[1], Prof. Aldo Di Carlo[1] *[1]CHOSE and Dept. Electronic Engineering - Univ. Rome Tor Vergata, Rome, Italy, [2]Cicci Research, Italy*	**INVESTIGATION OF AN ADVANCED HEAT TREATMENT OF ZrNb7 FOR IMPROVED WEAR RESISTANCE IN TRIBOLOGICAL APPLICATIONS** **M.Sc. Mike Mosbacher**[1], Dr.-Ing. Michael Reif[2], Dr.-Ing. Mathias Galetz[3], Prof. Dr.-Ing. Uwe Glatzel[1] *[1]University Bayreuth, Bayreuth, Germany, [2]OECHSLER AG, Ansbach, Germany, [3]DECHEMA-Forschungsinstitut, Frankfurt am Main, Germany*
16.40	**THE GOS-METHOD: AN ALTERNATIVE METHOD FOR THE DETERMINATION OF RECRYSTALLIZATION KINETICS OF DEFORMED MICROSTRUCTURES** **M.Sc. Lena Eisenhut**[1], Prof. Dr. mont. Christian Motz[1], M.Sc. Tim Krämer[2], Dr. Eric Detemple[2] *[1]Saarland University, Chair Of Material Science and Methods, Saarbrücken, Germany, [2]AG der Dillinger Hüttenwerke, Dillingen Saar, Germany*		**NANOFLUIDIC ENERGY CONVERSION USING METAL-ORGANIC-FRAMEWORKS** **Dr. Yueting Sun**[1,2], Prof. Yibing Li[2], Prof. Jin Chong Tan[1] *[1]Department of Engineering Science, University of Oxford, Oxford, United Kingdom, [2]State Key Laboratory of Automotive Safety and Energy, Tsinghua University, Beijing, P. R. China*	

Symposium	C3	C4	C5	C5(PARALLEL SESSION)
Room	Maurice Saltiel Hall III/M2	Conference Room 4/M1	Museum Hall /M2	Aimilios Riadis Hall/M2
Session Title	SPS and tailored microstructures	Testing, characterization and modeling for Additive Manufacturing 2	Grain boundaries	Interfaces
Chairperson	Michael Josse	Ilaria Cristofolini	George Kaptay, Javier Narciso	Boris Straumal, Fabrizio Valenza
15.00	*HIGHLIGHT* **A NEW MANUFACTURING PROCESS OF POROUS MATERIALS WITH HIGHLY DIRECTIONAL MICROPORES. APPLICATION TO THE MANUFACTURING OF HYBRID LATTICE STRUCTURES/MICROPOROUS PARTS FOR MECHANICAL STRENGTHENING** **Oceane Lambert**[1], Laura Delcuse, Cecile Davoine *[1]Onera - The French Aerospace Lab, Chatillon, France*	**SURFACE CHEMISTRY OF POWDER FOR ADDITIVE MANUFACTURING AND ITS CHANGES DURING AM PROCESSING** **PhD Eduard Hryha**[1], MSc Hans Gruber[1], MSc Alexander Leicht[1], Dr Ruslan Shvab[1], Professor Lars Nyborg[1] *[1]Chalmers University Of Technology, Gothenburg, Sweden*	*KEYNOTE/INVITED* **GRAIN BOUNDARY WETTING BY A SECOND SOLID PHASE** **Prof Boris Straumal**[1,2,3,4], Dr. Alena Gornakova[1], Dr. Andrey Mazilkin[2,3]	*KEYNOTE/INVITED* **MODELLING PHASE EQUILIBRIA IN NANO-SYSTEMS** **Professor George Kaptay**[1]
15.20	**CHARACTERIZATION OF OXIDE DISPERSION STRENGTHENED FUNCTIONALLY GRADED FE-BASED MATERIALS ELABORATED BY POWDER METALLURGY FOR RAILWAY APPLICATIONS** **PhD Student Kaoutar Naji**[1,2], Associate Professor Marie-Noëlle Avettand-Fènoël[1], Senior executive Philippe Pouligny[2] *[1]Unité Matériaux Et Transformations (UMET), UMR CNRS 8207, University Lille 1, Villeneuve d'Ascq, France, [2]SNCF Réseau, Direction Ingénierie et Projets, La Plaine Saint Denis, France*	**METAL POWDERS FOR ADDITIVE MANUFACTURING: ASSESSMENT OF PROCESSING CHARACTERISTICS** **Dr.-Ing. Dirk Lehmhus**[1], Claus Aumund-Kopp[2], Markus Uhlirsch[2], Lena Sentker[2], Sandra Wieland[2], Dr.-Ing. Frank Petzoldt[2], Prof. Dr.-Ing. Matthias Busse[2] *[1]University Of Bremen, Bremen, Germany, [2]Fraunhofer IFAM, Bremen, Germany*	*[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruher Institut für Technologie (KIT), Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany, [4]National University of Science and Technology «MISIS», Moscow, Russia*	*[1]University Of Miskolc, Miskolc, Hungary*
15.40	**SINTERING AND ELECTRICAL CHARACTERIZATION OF 8YSZ/GRAPHENE COMPOSITES** **Daniel Marinha**[1], Manuel Belmonte[2] *[1]Saint-gobain CREE, Cavaillon, France, [2]Institute of Ceramics and Glass, (ICV-CSIC), Madrid, Spain*	**DEGRADATION OF STAINLESS STEEL 316L POWDER ASSOCIATED WITH ADDITIVE MANUFACTURING BY EBM AND DMLS** **Mr. Alexander Leicht**[1], Prof. Eduard Hryha[1], Prof. Lars Nyborg[1] *[1]Chalmers University of Technology, Sweden*	**GRAIN BOUNDARY WETTING IN NaCl BY MOLTEN SODIUM** **Dr Vladimir Traskine**[1], Professor Zoya Skvortsova[1], Dilara Farkhutdinova[1] *[1]Department of Chemistry, Lomonosov University, Moscow, Russian Federation*	**ENCAPSULATION STRATEGY FOR STABLE METAL PHASE CHANGE MATERIALS USED FOR HIGH-TEMPERATURE HEAT STORAGE APPLICATIONS** **Phd Candidate Selmar Binder**[1], Professor Sophia Haussener[1] *[1]Laboratory for Renewable Energy Science and Engineering, École Polytechnique Fédéral de Lausanne, Lausanne, Switzerland*
16.00	**EXPERIMENTAL OBSERVATION AND NUMERICAL SIMULATION ON THE ANISOTROPIC SINTERING BEHAVIOR OF FREEZE-CAST CERAMICS** Dr Aaron Lichtner[2], Dr Denis Roussel[1], Dr Julie Villanova[3], Dr David Jauffres[1], Pr Rajendra K Bordia[4], **Dr Christophe L Martin**[1] *[1]Univ. Grenoble Alpes, CNRS, SIMaP, Grenoble, France, [2] Dept. of Mat. Sci. and Eng., University of Washington, Seattle, USA, [3]ESRF, The European Synchrotron , Grenoble, France, [4]Dept. of Mat. Sci. and Eng., Clemson University, Clemson, USA*	**EFFECT OF THE PROCESSING PARAMETERS ON POROSITY FEATURES OF Ti6Al4V ALLOY MANUFACTURED BY SLM** Massimiliano Tomaselli[1], **Professor Alberto Molinari**[1], Emanuele Magalini[2], Valerio Luchin[2], Gianluca Zappini[2] *[1]University Of Trento, Trento, Italy, [2]Eurocoating SpA, Pergine Valsugana, Italy*	**RARE-EARTH DOPING AND CRYSTALLIZATION BEHAVIOUR OF Bi4Si3O12 SCINTILLATOR** **Professor Jiayue Xu**[1], student Yunfang Pan[1], student Haiwei Feng[1], Associate Professor Yaoqing Chu[1], Associate Professor Yan Zhang[1], Engineer Tian Tian[1], Associate Professor Hui Shen[1] *[1]School Of Materials Science And Engineering, Shanghai Institute Of Technology, Shanghai, China*	**STRAIN SENSING ABILITY AND STRESS TRANSFER PROFILES OF HIERARCHICAL CARBON FIBERS PRODUCED VIA DIFFERENT METHODS** **Material Science Engineer Kyriaki Tsirka**[1], Material Science Engineer Giorgos Karalis[1], Professor Alkiviadis Paipetis[1] *[1]University Of Ioannina, Ioannina, Greece*
16.20	**MECHANISMS OF REFRACTORY METAL BORIDES AND CARBIDES FORMATION DURING MECHANICAL ALLOYING** **Dr Mariia Saviak**, Prof. Irina Uvarova *[1]Frantsevich Institute for Problems of Materials Science of National Academy of Sciences of Ukraine , Kyiv, Ukraine*	**MICRO-TENSILE TESTING AM MATERIALS FOR LOCATION SPECIFIC PROPERTIES** **Mr. Michael Duffy**[1], Dr. Steven Storck[2], Dr. Richard Everett[1], Prof. Marc Zupan[1] *[1]University Of Maryland, Baltimore County, Baltimore, United States, [2]Johns Hopkins University Applied Physics Laboratory, Laurel, United States*	**SOME CHARACTERISTIC FEATURES OF Ni-Re-P COATINGS ELECTROLESS DEPOSITED ON COPPER** **Prof. Joanna Wojewoda-Budka**[1], Dr. Anna Wierzbicka-Miernik[1], Dr. Honorata Kazimierczak[1], Izabella Kwiecien[1], Lidia Litynska-Dobrzynska[1], Maciej Szczerba, Pawel Czaja[1], Jerzy Morgiel[1], Fabrizio Valenza[2] *[1]Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Krakow, Poland, [2]Institute of Condensed Matter Chemistry and Technologies for Energy, National Research Council of Italy, ICMATE-CNR, Genoa, Italy*	**EFFECT OF METAL COATINGS ON THE INTERFACIAL BONDING STRENGTH OF CERAMICS TO COPPER IN SINTERED Cu-SiC COMPOSITES** **PhD Dariusz Jarząbek**[1], Msc Cezary Dziekoński[1], PhD Marcin Chmielewski[2] *[1]Institute Of Fundamental Technological Research, Warsaw, Poland, [2]Institute of Electronic Materials Technology, Warsaw, Poland*
16.40		**TESTING AND QUALIFICATION IN METAL ADDITIVE MANUFACTURING** **Technical Director, Metals Technology Prabir CHAUDHURY**[1] *[1]Exova, Santa Fe Springs, United States*		**EXPERIMENTAL INVESTIGATION OF THE SYSTEM NON-METALLIC INCLUSION-MOLTEN STEEL-REFRACTORY AT HIGH TEMPERATURES** **Ing. Quim. Uxia Dieguez Salgado**[1], Dipl.-Ing. Philipp Dorrer[1], Dipl.-Ing. Dr. mont. Susanne Michelic[1], Ao. Univ.-Prof. Dipl.-Ing. Dr. mont. Christian Bernhard[1] *[1]Chair of Ferrous Metallurgy, Montanuniversitaet Leoben, Leoben, Austria*

Symposium	C8	C9	C10	C11
Room	Library Hall/M2	Conference Room 3/M1	F 319/M1	MOYSA Hall/M2
Session Title	Solidification	Plastic deformation processes	SPD for specific applications (Bio-materials, H-storage, shape memory alloys …)	Nanostructures
Chairperson	Hisao Esaka, Kader Zaidat	Prof. Alain Daidié	K. Edalati and N. Stepanov	Dimitis Tsoukalas
15.00	**UNDERSTANDING HOMOGENOUS NUCLEATION MECHANISMS IN SOLIDIFICATION OF METALS** **Dr. Mohsen Asle Zaeem**[1], Mr. Avik Mahata[1], Dr. Michael Baskes[2] *[1]Missouri University of Science and Technology, Rolla, United States, [2]University of California-San Diego, La Jolla, United States*	**CO-ROLLING OF TUNGSTEN WIRE AT AMBIENT TEMPERATURE** **Dr. Rudy Michel**[1], Pr. Yves Bienvenu[1], Dr. Alain Thorel[1] *[1]MINES ParisTech, PSL Research University, MAT - Centre des matériaux, CNRS UMR 7633, BP 87 91003 Evry, France*	*KEYNOTE/INVITED* **TUNING PROPERTIES OF Mg ALLOYS BY A COMBINATION OF SPD AND EXTRUSION FOR APPLICATIONS IN BIODEGRADABLE DEVICES** **Prof Maurizio Vedani**[1], Dr Ehsan Mostaed[1] *[1]Politecnico Di Milano, Dept. Of Mechanical Engineering, Veduggio Con Colzano, Italy*	**A METHOD FOR THE DETERMINATION OF THE DENSITY OF GAS STORED WITHIN BLISTERS** **Dr. Nikolay Cherkashin**[1], Dr. Nabil Daghbouj[1], Dr. Alain Claverie[1] *[1]CEMES-CNRS, Toulouse, France*
15.20	**MOVEMENT OF SOLID-LIQUID PHASES IN HORIZONTAL CENTRIFUGAL CASTING PROCESS** **Dr. Hisao Esaka**[1], Mr. Takahiro Yamada[1], Dr. Kei Shinozuka[1] *[1]National Defense Academy, Yokosuka, Japan*	**NUMERICAL SIMULATION OF THE OUT-OF-PLANE DISPLACEMENT DURING COLD-EXPANSION OF TITANIUM PLATE** **Post-doc Julien Cochet**[1], Professor Alain Daidié[1], Engineer Clément Chirol[2] *[1]Université de Toulouse - Institut Clément Ader (ICA), Toulouse, France, [2]Airbus Operations S.A.S, Toulouse, France*		**GEOMETRICAL DEFECTS IN LITHOGRAPHIC STRUCTURES OF NANOELECTRONIC DEVICES: METROLOGY AND CHARACTERIZATION** **Mr. George Papavieros**[1,2,3], Dr. Vassilis Constantoudis[1,3], Dr. Evangelos Gogolides[1,3] *[1]N.C.S.R. Demokritos , Athens / Aghia Paraskeui, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Nanometrisis P.C., Athens/ Aghia Paraskeui, Greece*
15.40	**IN-SITU INVESTIGATIONS OF PRIMARY PHASE NUCLEATION DURING RAPID SOLIDIFICATION USING XAS IN IRON AND IRON ALLOYS** **Mr. Samuel Clark**[1], Miss. Kateryna Hechu[1], Mr. Adam Clark[2], Prof. Seetharaman Sridhar[1] *[1]University of Warwick, Coventry, United Kingdom, [2]University College London, London, United Kingdom*	**CATEGORIZATION OF THE DEFECT, TINY IN NATURE ORIGINATING FROM THE HOT ROLLING MILL/COLD ROLLING MILL** **Mr Pankaj Choubey**[1] *[1]Tata Steel Ltd, Jamshedpur, India, [2]JCAPCPL, Jamshedpur, India*	*HIGHLIGHT* **EFFECT OF COLD ROLLING ON THE HYDROGEN SORPTION PROPERTIES OF TITANIUM** **Jacques Huot**[1], Thierry Grosdidier[2], Stéphanie Curcio[2], Nathalie Alain[2] *[1]Université du Québec à Trois-Rivières, Trois-rivieres, Canada, 2Université de Lorraine, Metz, France*	**LIGHT EMITTING PROPERTIES AND RECOMBINATION DYNAMICS OF $CuInS^2$/ZnS CORE SHELL QUANTUM DOTS** **Prof. Dr. Spiros Gardelis**[1,3], Prof. Dr. M Fakis[2], Mr. N Droseros[2], Dr. D Georgiadou[1], Dr. A Travlos[1], Dr. A Nassiopoulou[1] *[1]NCSR Demokritos INN, Terma Patriarchou Grigoriou, Aghia Paraskevi, 15310, Athens, Greece, [2]Department of Physics, University of Patras, 26500, Patras, Greece, [3]Solid State Physics Section, Physics Department, National and Kapodistrian University of Athens, Panepistimioupolis, Zografos, 15784, Athens, Greece*
16.00	**STATISTICAL ANALYSIS ON THE CET MECHANISM OF THE TIN-LEAD ALLOY SOLIDIFICATION** Dr Lakhdar Hachani[2], **Pr Kader Zaidat**[1], Pr Yves Fautrelle[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, F-38000 , Grenoble, France, [2]Laboratoire de physique des matériaux, Université Amar Telidji de Laghouat, Laghouat, Algérie*	**NUMERICAL SIMULATION OF JCO-E PIPE FORMING PROCESS AND ITS EFFECT ON THE EXTERNAL PRESSURE CAPACITY OF THE PIPE** **Ph.D. Student Giannoula Chatzopoulou**[1], Ph.D. Student Konstantinos Antoniou[1], Professor Spyros Karamanos[1] *[1]University Of Thessaly, Volos, Greece*		**ZnO MICRO- AND NANOSTRUCTURES OBTAINED BY THE PRODUCTS OF THE SELECTIVE AMMONIACAL LEACHING PROCESS OF SPENT ALKALINE BATTERIES** **Dr Teresa Cebriano**[1], Dra Irene García Díaz[1], PhD Ana López Fernández[1], PhD Laura Fernández Rodríguez[1], Dr Félix Antonio López[1], Prof. Dr Paloma Fernández[2] *[1]CSIC-CENIM, Madrid, Spain, [2]Universidad Complutense (UCM), Madrid, Spain*
16.20	**MICROSTRUCTURE SELECTION IN In-Bi-Sn TERNARY EUTECTIC SYSTEM DURING DIRECTIONAL SOLIDIFICATION** **Ms. Samira Mohagheghi**[1], Mrs. Melis Serefoglu[1] *[1]Koc University, Istanbul, Turkey*	**CHARACTERIZATION AND ANALYSIS OF TINY DEFECT IN AUTOMOTIVE GRADE STEEL** Mrs Dipti Saha[1], **Mr Pankaj Choubey**[2] *[1]Jamshedpur Continuous Annealing & Processing Company Pvt Ltd, Jamshedpur, India, [2]Tata Steel Ltd, Jamshedpur, India*		**INVESTIGATION OF STRUCTURE FORMATION IN Li-ION BATTERY ANODE FILMS DURING DRYING** **Prof. Dr. Wilhelm Schabel**[1], Dr. P. Scharfer[1], S. Jaiser[1], M. Baunach[1], J. Kumberg[1], R. Diehm[1] *[1]Karlsruhe Institute of Technology - Thin Film Technology, Karlsruhe, Germany*
16.40	**SOLIDIFICATION BEHAVIOUR OF MoTaNbVTi HIGH ENTROPY ALLOYS WITH DIFFERENT MO CONTENT** **Dipl. Eng. Anthoula Poulia**[1], Dipl. Eng. Emmanuel Georgatis[1], Dr. Alexander Karantzalis[1] *[1]University Of Ioannina, Ioannina, Greece*	**OPTIMIZATION OF INJECTION STRETCH BLOW MOLDING (ISBM) PROCESS FOR THE PRODUCTION OF LIGHTWEIGHT AND WITH GOOD MECHANICAL PROPERTIES PET CONTAINERS** **Assistant Professor Antonios Lontos**[1], PhD student Andreas Gregoirou[2] *[1]Frederick University Cyprus, Nicosia, Cyprus, [2]Frederick University Cyprus, Nicosia, Cyprus*		

Symposium	D1	D5	D6
Room	Artist Cafe/M1	I-15/M1	Maurice Saltiel Hall II/M2
Session Title	INSTRUMENTATION	Methods and Special Applications	Multi-Length-Scale Innovations in Damage Evolution in Materials: Characterization, Modeling, and Validation
Chairperson	Federico Zontone and Evangelia Moshopoulou	Fathollah Varnik	Saryu Fensin
15.00	**PULSE PICKER FOR X-RAY RADIATION DRIVEN BY SURFACE ACOUSTIC WAVE**	**PHASE-FIELD SIMULATION OF THE MICROSTRUCTURE EVOLUTION OF AUSTENITE DURING MULTIPASS HOT ROLLING OF HSLA STEELS**	**COMPUTATIONAL MODELLING OF AQUEOUS CORROSION: REACTIVE TRANSPORT MODELLING OF STABILITY OF CORROSION PRODUCTS**
	Mr. Simone Vadilonga[1], Dr Ivo Zizak[1], Mr. Andrei Petsiuk[1], Dr. Dmitry Roshchupkin[2], Dr. Kawal Sawhney[3], Dr. Igor Dolbnya[3], Prof. Dr. Alexei Erko[1]	**Mrs Maria-Ioanna Tzini**[1], Professor Greg Haidemenopoulos[1]	PhD Maalek Mohamed-Said[1], **Professor Bruno Vuillemin**[1], Dr Roland Oltra[1], Laurent Trenty[2], Didier Crusset[2]
	[1]Helmholtz Zentrum Berlin, Berlin, Germany, [2]Institute of Microelectronics Technology and High Purity Materials, Chernogolvka, Russia, [3]Diamond Light Source, Didcot, United Kingdom	*[1]University Of Thessaly, Volos, Greece*	*[1]CNRS - Univ. Bourgogne France Comté, Dijon, France, [2]ANDRA, Direction de la Recherche et Développement, Châtenay-Malabry, France.*
15.20	**COMBINING A NINE-CRYSTAL MULTIANALYZER STAGE WITH A PILATUS3 X CDTE DETECTOR FOR HIGH RESOLUTION X-RAY POWDER DIFFRACTION AT ESRF-ID22**	**COMPUTATIONALLY EFFICIENT PHASE-FIELD STUDIES BY SIMULATION SAMPLING AND STATISTICAL ANALYSIS**	**MODELLING CRACK NUCLEATION AND GROWTH UNDER ROLLING CONTACT FATIGUE**
	Dr. Catherine Dejoie[1], Dr. Mauro Coduri[1], Dr. Carlotta Giacobbe[1], Olivier Grimaldi[1], Sebastien Petitdemange[1], Dr. Dubravka Sisak-Jung[2], Dr. Andrew Fitch[1]	Mr. Christian Schwarze[1], **Dr. Reza Darvishi Kamachali**[1], Mr. Markus Kühbach[2], Mr. Luis Barrales Mora[2], Mr. Christian Mießen[2], Mr. Marvin Tegeler[1], Prof. Ingo Steinbach[1], Prof. Günter Gottstein[2]	**Dr. Isaac Toda-caraballo**[1,2], Dr. Jakub Jelita Rydel[1], Dr. Gael Guetard[1,3], Dr. Pedro Rivera-Díaz-del-Castillo[1]
	[1]ESRF - The European Synchrotron, Grenoble, France, [2]Dectris, Baden, Switzerland	*[1]Interdisciplinary Centre for Advanced Materials Simulation, Ruhr-university Bochum, Bochum, Germany, [2]Institute of Physical Metallurgy and Metal Physics, RWTH Aachen University, Aachen, Germany*	*[1]The University Of Cambridge, Cambridge, UK, [2]Materalia Research Group, Department of Physical Metallurgy, Centro Nacional de Investigaciones Metalúrgicas (CENIM-CSIC), Madrid, Spain, [3]Erasteel, Paris, France*
15.40	**SUB-50NM CROSS-SECTIONAL X-RAY NANODIFFRACTION ANALYSIS OF MICROSTRUCTURE AND STRAIN IN THIN FILMS**	**DESIGN AND ELECTROCHEMICAL MODELING OF FeNiCoCu HIGH ENTROPY ALLOY PARTICLES AS NEW ELECTRODE CATALYST MATERIAL FOR FUEL CELL APPLICATION**	**ATOMISTIC SIMULATION OF MECHANICAL BEHAVIOR OF INTERFACES IN ULTRA HIGH TEMPERATURE CERAMIC MATRIX COMPOSITES**
	Assoc.-Prof. Dr. Jozef Keckes[1]	**Res. Assist. Serzat Safaltin**[1], Res. Assist. Burak Kücükelyas[1,2], Prof. Dr. Sebahattin Gurmen[1]	**Dr Yanhui Zhang**[1], Prof Stefano Sanvito[1]
	[1]Montanuniversität Leoben, Leoben, Austria	*[1]Istanbul Technical University, Department of Metallurgical and Materials Engineering, Istanbul/Sariyer, Turkey, [2]Bursa Technical University, Department of Metallurgical and Materials Engineering, Bursa/Osmangazi, Turkey*	*[1]Trinity College Dublin, Dublin, Ireland*
16.00	**MATERIAL CHARACTERIZATION ON VESPERS BEAMLINE AT CLS**	**DEVELOPMENT OF A VIRTUAL DIRECT-CHILL CASTING SIMULATOR FOR DESIGNING AA7050 HARD ALLOY CASTING PRACTICE**	**DUCTILITY PREDICTION FOR MAGNESIUM CASTING USING HIERARCHICAL MICROSTRUCTURE-BASED FINITE ELEMENT METHOD**
	Dr Renfei Feng[1]	**Professor Junsheng Wang**[1], Dr. Peipei Yang[1]	**Dr. Xin Sun**[1]
	[1]Canadian Light Source, Saskatoon, Canada	*[1]Beijing Institute Of Technology, Beijing, China*	*[1]Pacific Northwest National Laboratory, Richland, USA*
16.20	**MOBILE PULSED LASER DEPOSITION EQUIPMENT FOR IN SITU INVESTIGATION AT SYNCHROTRON RADIATION FACILITIES**	**NONLINEAR ELASTIC EFFECTS IN PHASE FIELD CRYSTAL AND AMPLITUDE EQUATIONS:COMPARISON TO AB INITIO SIMULATIONS OF BCC METALS**	**A STUDY OF THE MULTI-AXIAL FATIGUE DAMAGE MECHANISMS FOR A GLASS FIBRE REINFORCED THERMOPLASTICS (PA66)**
	Dr. Ksenia Maksimova[1,2], Dr. Dmitri Novikov[2], Dr. Alexander Goikhman[1]	**Claas Hüter**[1,2], Martin Friak[3,4], Nigel Goldenfeld[5], Marc Weikamp[1], Jörg Neugebauer[2], Robert Spatschek[1]	**Fang Lu**[1,2,3], Sabine Cantournet[1], Noëlle Billon[2], Jean-Luc Bouvard[2], Marc Bernacki[2], Victor Fabre[3]
	[1]Immanuel Kant Baltic Federal University, Kaliningrad, Russian Federation, [2]Deutsches Elektronen-Synchrotron , Hamburg, Germany	*[1]Forschungszentrum Jülich, Jülich, Germany, [2]Max-Planck-Institut für Eisenforschung, Düsseldorf, Germany, [3]Institute of Physics of Materials, Academy of Sciences of the Czech Republic, Brno, Czech Republic, [4]Central European Institute of Technology, CEITEC MU, Masaryk University, Brno, Czech Republic, [5]Department of Physics, Loomis Laboratory of Physics, University of Illinois at Urbana-Champaign, Urbana, USA*	*[1]Mines Paristech, PSL Research University, Centre des matériaux, Evry, France, [2]Mines Paristech, PSL Research University, Centre de Mise en Forme des matériaux, Sophia Antipolis, France, [3]Hutchinson SA, Research and Innovation Centre, Chalette-sur-Loing, France*
16.40		**HIERARCHICAL BUCKLING INSTABILITIES AS A ROUTE TOWARDS SURFACE PATTERNING**	**EXAMINING STRUCTURE-PROPERTY RELATIONSHIPS IN ATHLETIC COMPOSITES USING CORRELATIVE MICROSCOPY**
		Dr. Gabriella Tarantino[1], Dr. Kostas Danas[1]	**Jeff Gelb**[1], Dr. Leah Lavery[1], Luke Hunter[1], Dr. Lars-Oliver Kautschor[2], Dr. Arno Merkle[1]
		[1]Ecole Polytechnique, Palaiseau, France	*[1]Carl Zeiss Microscopy, Pleasanton, United States, [2]Carl Zeiss Microscopy, Oberkochen, Germany*

Symposium	D10	E6	F6
Room	CR II Hall/M2	Maurice Saltiel Hall II/M2	Conference Room 2/M1
Session Title	Advanced Materials	Metals and Additive Manufacturing of Metals	Functional properties of bio-inspired materials
Chairperson	**Ghysels-Zólyomi**	**Von Hehl**	**Kerstin Koch**
15.00	*HIGHLIGHT* **IONIC DIFFUSION FROM NON-EQUILIBRIUM AB INITIO MOLECULAR DYNAMICS: THE METHOD AND ITS APPLICATION TO DOPED CERIA** **Mr Johan Klarbring**[1], Dr Olga Vekilova[2,3], Dr Johan Nilsson[2], Professor Natalia V. Skorodumova[2,3], Professor Sergei I. Simak[1] *[1]Department of Physics, Chemistry and Biology (IFM), Linköping University, Linköping, Sweden, [2]Materials Science and Engineering, KTH - Royal Institute of Technology, Stockholm, Sweden, [3]Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden*	**DEFORMATION BEHAVIOR OF Ti-6Al-4V ALLOY UNDER EQUI-BIAXIAL TENSION** **Srinivasan Nedunchezhian**[1], Prof. R Velmurugan[1], Dr. Ravi Kumar[1], Mr. Satish Kumar Singh[2], Bhanu Pant[2] *[1]Indian Institute of Technology Madras, Chennai, India, [2]Vikram Sarabhai Space Centre, Trivandrum, India*	*HIGHLIGHT* **BIOINSPIRED SELF-HEALING COMPOSITES WITH STRUCTURAL CAPABILITIES** **Dr Eleonora D'Elia**[1], Miss May Hsim Lay[1], Dr Claudio Ferraro[1], Mr Ezra Feilden[1], Prof Eduardo Saiz[1] *[1]Imperial College London, London, United Kingdom*
15.20	**MODELING DIFFUSION OF ADSORBATES IN NANOPOROUS MATERIALS** **Prof. An Ghysels**[1] *[1]Center For Molecular Modeling, Ghent University, Gent, Belgium*	**LOW TEMPERATURE SUPERPLASTICITY OF NEAR β TITANIUM ALLOY WITH ULTRAFINE GRAINED STRUCTURE** **Evgeny Naydenkin**[1], Il'ya Ratochka[1], Ivan Mishin[1], Olga Lykova[1] *[1]Institute of Strength Physics & Materials Science SB RAS, Tomsk, Russian Federation*	**SELF-ASSEMBLED PEPTIDES AND PROTEINS AS SCAFFOLDS FOR CELL ATTACHMENT AND PROLIFERATION** **Prof. Anna Mitraki**[1,2], Mr. Graziano Deidda[1,2], Ms. Ariadne Prigipaki[1,2], Mr. Sai Vamshi Jonnalagadda[3], Mr. Jacob Spies[3], Dr. Anthi Ranella[1,2], Dr. Alexandros Selimis[1,2], Prof. Phanourios Tamamis[3] *[1]University of Crete, Heraklion, Greece, [2]IESL/FORTH, Heraklion, Greece, [3]Texas A&M University, College Station, U.S.A.*
15.40	**MODELING THE LONG-TERM BEHAVIOR OF VACANCY COMPLEXES IN GRAPHENE** **Enrique Martinez Saez**[1], Christian Negre[1], Danny Perez[1], Marc Cawkwell[1], Arthur Voter[1], Anders Niklasson[1] *[1]Los Alamos National Laboratory, Los Alamos, United States*	**DEVELOPMENT OF NEW PARTICULATE REINFORCED LIGHT METALS AND CAST PROCESSES FOR THE PRODUCTION OF COST EFFECTIVE STRUCTURAL COMPONENTS** Dr. Pedro Egizabal[1], Dr. Maider García de Cortázar[1], Dr. Iban Vicario[1], **Mr. Mikel Merchán**[1] *[1]Tecnalia Research & Innovation, Donostia- San Sebastian, Spain*	**NEWLY DEVELOPED UV-CURABLE OPTICAL ADHESIVES BASED ON VEGETABLE OIL EPOXIES** **Prof. Seiko Mitachi**[1], Mr. Shunichiro Akimoto[1], Mr. Norio Murata[1], Dr. Alice Mija[2] *[1]Tokyo Universty Of Technology, 1404-1 Katakura, Hachioji, Tokyo, Japan, [2]Universite Nice Sophia Antipolis, CNRS, ICN-UMR 7272, Parc Valrose, France*
16.00	**MICROSCOPIC PHASE-FIELD MODELING OF HCP|FCC INTERFACES** Marc-Antoine Louchez[1], **Dr Ludovic Thuinet**[1], Dr Rémy Besson[1], Professor Alexandre Legris[1] *[1]Université de Lille, Lille, France*	**MANUFACTURING OF MICROPOROUS AND HYBRID MICROPOROUS/ DENSE WALLS BY ELECTRON BEAM MELTING FOR SURFACE COOLING OF COMBUSTION CHAMBERS. EFFICIENCY ASSESSMENT THROUGH AEROTHERMAL BENCH TESTING** **Oceane Lambert**[1], Cecile Davoine[1], Remy Dendievel[2], Philippe Reulet[3], Olivier Leon[3] *[1]Onera - The French Aerospace Lab, Chatillon, France, [2]Grenoble University & CNRS, SIMaP/GPM2, Saint-Martin-d'Hères, France, [3]Onera - The French Aerospace Lab, Toulouse, France*	**BIOMIMETIC STRUCTURES VIA SELF-ORGANIZATION IN MULTIPLE-SCAN, FEMTOSECOND-LASER IRRADIATED SURFACES** Dr. Camilo Florian[1], Dr. Daniel Puerto[1], Mr. Yasser Fuentes-Edfuf[1], Mr. Evangelos Skoulas[2], Dr. Emmanuel Stratakis[2], **Prof. Javier Solis**[1], Dr. Jan Siegel[1] *[1]Laser Processing Group, Instituto de Óptica-CSIC, Madrid, Spain, [2]Institute of Electronic Structure and Laser (IESL-FORTH), Vassilika Vouton, Heraklion, Greece*
16.20	**ANOMALOUS OPTICAL RESPONSE IN ATOMICALLY THIN INSE** **Dr Viktor Zólyomi**[1] *[1]University Of Manchester, United Kingdom*	**SURFACE POST-TREATMENT OF ADDITIVE MANUFACTURED STRUCTURAL PARTS FOR AREROSPACE APPLICATION** **Dr.-ing. Hubertus Lohner**[1], Dr.-Ing. Tobias Mertens[1] *[1]Airbus, Bremen, Germany*	**PROCESSING OF BIO-INSPIRED NANOCOMPOSITES BY COLLOIDAL SELF-ASSEMBLY OF CHITIN NANOPARTICLES AND INORGANIC SPECIES** **Dr Bruno Alonso**[1], Dr Laura Cardoso[1], Dr Krassimir Kostov[2], Dr Alexander Sachse[1], Pr Emmanuel Belamie[1,3] *[1]ICGM - MACS, Montpellier, France, [2]Institute of General and Inorganic Chemistry - Bulgarian Academy of Sciences, Sofia, Bulgaria, [3]EPHE - PSL Research University, Paris, France*
16.40		**MATERIAL BEHAVIOR AND PROPERTIES OF THE SHAPED SHEET PARTS OF TITANIUM ALLOYS DURING HOT CREEP FORMING** Tarik Nawaya[1], Dr. Axel Von Hehl[2], Prof. Hans-Werner Zoch[3] *[1]IWT-Bremen, Bremen, Germany, [2]IWT-Bremen, Bremen, Germany, [3]IWT-Bremen, Bremen, Germany*	**HIERARCHICAL VASCULAR NETWORKS FOR ADDITIVE MANUFACTURING** **Dulce M. Aguilar-Garza**[1], Alex W. Justin[1], Dr Athina E. Markaki[1] *[1]University of Cambridge, Cambridge, United Kingdom*

Poster Sessions

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium A.3: Functional Polymers and Related (Nano)Composites

A3-P-TUE-P1-1	**EFFECT OF UV AGING ON THE MECHANICAL, THERMAL AND MORPHOLOGICAL PROPERTIES OF POLYPROPYLENE (PP) /GLASS SPHERES/MA-g-PP POLYMER COMPOSITES** **Prof.dr. Munir Tasdemir**[1], Aslihan Aydin[1] *[1]Marmara University, Istanbul, Turkey*
A3-P-TUE-P1-2	**PDMAEMA-b-PLMA-b-POEGMA TRIBLOCK TERPOLYMERS: SYNTHESIS, QUATERNIZATION AND COMPLEXATION WITH DNA** **MSc. Athanasios Skandalis**[1], Dr. Stergios Pispas[1] *[1]National Hellenic Research Foundation, Athens, Greece*
A3-P-TUE-P1-3	**NEW APPLICATION OF ALICYCLIC POLYIMIDE FILMS IN ELECTRONICS** **Prof. Natalia Korobova**[1], Prof. Valentina Kravtsova[2], Prof. Sergey Timoshenkov[1], Prof. Mayra Umersakova[2] *[1]National Reseaech University of Electronic Technology MIET, Zelenograd, Moscow, Russian Federation, [2]A.B. Bekturov Institute of Chemical Science, Almaty, Kazakhstan*
A3-P-TUE-P1-4	**INVESTIGATION OF NOVEL POLY(ETHYLENE FURANOATE)-CO-POLY(ETHYLENE ADIPATE) RANDOM COPOLYESTERS** **Mrs Maria Nerantzaki**[1], Mr Lazaros Papadopoulos[1], Mr Andreas Magaziotis[1], Mr Dimitrios Bikiaris[1] *[1]Laboratory of Organic Chemical Technology, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece*
A3-P-TUE-P1-5	**MELT FUNCTIONALISATION OF POLYPROPYLENE AS AN INNOVATIVE UP-CYCLING PROCESS** **Prof. Vasiliki-Maria Archodoulaki**[1], Florian Kamleitner[1], Dr. Bernadette Duscher[1], Dr. Thomas Koch[1], Prof. Simone Knaus[1] *[1]TU Wien, Vienna, Austria*
A3-P-TUE-P1-6	**THE THERMAL AND ELECTRICAL PROPERTIES OF A POLYMER NANOCOMPOSITE INCORPORATING AN ORGANICALLY-MODIFIED MMT CLAY** **Mrs Allison Shaw**[1], Dr. Suvi Virtanen[1], Prof. Alun Vaughan[1], Dr. Thomas Andritsch[1] *[1]University Of Southampton, Southampton, United Kingdom*
A3-P-TUE-P1-7	**POLYETHYLENE MMM CONTAINING ZEOLITES FOR GAS SEPARATION TECHNOLOGIES** **Ms. Maria Helena da Silva Reis**[1], Dr. Nara Regina S. Basso[1], Dr. Marçal J. Rodrigues Pires[1], Dr. Denis Rodrigue[2] *[1]Pontifícia Universidade Católica Do Rio Grande Do Sul, Porto Alegre, Brasil, [2]Université Laval, Quebec, Canada*
A3-P-TUE-P1-8	**EFFECT OF MOISTURE AND FILLER CONTENT ON THE DIELECTRIC RESPONSE OF PA6/BOEHMITE ALUMINA NANOCOMPOSITES** **Georgia Tomara**[1], Dr. Panagiota Karahaliou[1], Prof. Georgios C. Psarras[2], Prof. Stavroula Georga[1], Prof. Christofors Krontiras[1], Laszlo Lendvai[3], Prof. Dr. h.c. Jozsef Karger-Kocsis[3,4] *[1]Department of Physics, University of Patras,26504, PATRAS, Greece, [2]Department of Materials Science, University of Patras, 26504, PATRAS, Greece, [3]Department of Polymer Engineering, Faculty of Mechanical Engineering, Budapest University of Technology and Economics, Műegyetem rkp. 3, H-1111, Budapest, Hungary, [4]MTA-BME Research Group for Composite Science and Technology, Műegyetem rkp. 3, H-1111, Budapest, Hungary*
A3-P-TUE-P1-9	**SYNTHESIS, CHARACTERIZATION AND THERMAL ANALYSIS OF HIGH DENSITY POLYETHYLENE/GRAPHENE NANOCOMPOSITES** **Evangelia Tarani**[1], Zoe Terzopoulou[2], Andreas Wurm[3], Christoph Schick[3], Dimitrios N. Bikiaris[2], Konstantinos Chrissafis[1], George Vourlias[1] *[1]Physics Department, Aristotle University of Thessaloniki, GR 54124, Greece, [2]Department of Chemistry, Laboratory of Polymer Chemistry and Technology, Aristotle University of Thessaloniki, GR 54124, Greece, [3]University of Rostock, Institute of Physics, Albert Einstein Str. 23-24, 18059 Rostock, Germany*

TIME: 13:00-15:00 | ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium A.3: Functional Polymers and Related (Nano)Composites

A3-P-TUE-P1-10

THE EFFECT OF BLOCK COPOLYMER ON DISPERSION AND FRACTURE TOUGHNESS OF CARBON NANOTUBES EPOXY NANOCOMPOSITES

Mrs. Marcia Schuster[1], Mr. Luiz Coelho[2]

[1]Center of Technological Science, Santa Catarina State University, Joinville, Brasil,
[2]Center of Technological Science, Santa Catarina State University, Joinville, Brasil

A3-P-TUE-P1-11

DEVELOPMENT OF SILICA-BASED FILLERS AND NANOCOMPOSITES FOR POWDER COATINGS APPLICATIONS

Dr. Apostolos Enotiadis[1], PhD student Lamprini Boutsika[1], PhD student Christos Tampaxis[1], MSc Kalliopi Krassa[2], Dr. Charalambos Varelas[2], MSc Elisa Maisano[3], Dr. Theodore Steriotis[1], Dr. Georgia Charalambopoulou[1]

[1]National Center For Scientific Research "DEMOKRITOS", Athens, Greece, [2]Megara Resins S.A., Megara, Greece, [3]SBS Steel Belt Systems S.r.l. - Powder Coating Division, Villafranca Tirrena, ITALY

A3-P-TUE-P1-12

EFFECT OF ELECTRON IRRADIATION ON THE PROPERTIES OF COMPOSITE AND SILVER METALIZED POLYIMIDE FILMS

Professor Natalia Korobova[1], Ph.D Abyl Muradov[2], Ph.D. student Assem Kyrykbayeva[2], Professor Gulmira Yar-Mukhamedova[2], Professor Kanat Mukashev[2]

[1]National Reseaech University of Electronic Technology MIET, Zelenograd, Moscow,
[2]Al-Farabi Kazakh National University, Almaty, Kazakhstan

A3-P-TUE-P1-13

INVESTIGATION AND COMPARISON OF HOT STAMPING PROCESS PARAMETERS IN UP&DOWN MACHINING ON ABS MATERIALS UNDER EFFECTS OF DIFFERENT WEATHER CONDITIONS

Prof.dr. Munir Tasdemir[1], M. Alper Agca

[1]Marmara University, Istanbul, Turkey

A3-P-TUE-P1-14

POLYPROPYLENE/WASTE UREA FORMALDEHYDE POLYMER BLENDS: EFFECTS OF POWDER CONTENT ON FRICTION, WEAR AND MORPHOLOGICAL BEHAVIORS

Prof.dr. Munir Tasdemir[1], Ridvan Karakus

[1]Marmara University, Istanbul, Turkey

A3-P-TUE-P1-15

SELF-POLYMERISABLE PLA-BASED COMPOSITES

Dr Sofia Karamanou[1], Dr George Vekinis[1]

[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi Attikis, Greece

A3-P-TUE-P1-16

PLA-BASED BIODEGRADABLE HYBRID COMPOSITES WITH CERAMIC AND NATURAL FIBRE REINFORCEMENTS

Dr Panayiotis Georgiopoulos[1], Dr George Vekinis[1]

[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi Attikis, Greece

A3-P-TUE-P1-17

AGING IN WATER AND IN AN ALKALINE MEDIUM OF (EPOXY/ PHENOLIC) BLEND REINFORCED WITH CARBON FIBRE AND O-MWCNTs NANOCOMPOSITES: EXPERIMENTAL STUDY AND MODELLING

PhD. Juan Pablo Morales Arias[1], **PhD. Eliana Agaliotis**[1], PhD. Mariano Martin Escobar[2], PhD. Analia Vazquez[1]

[1]Instituto de tecnologia en polimeros y nanotecnologia (ITPN), (UBA-CONICET), Buenos Aires, Argentina,
[2]Instituto Nacional de Tecnología Industrial (INTI), Buenos Aires, Argentina

A3-P-TUE-P1-18

STUDY OF THE DIELECTRIC RELAXATION SPECTRUM OF POLYOXYMETHYLENE/POLYURETHANE/LAYERED SILICATES (POM/PU/LS) NANOCOMPOSITES

Georgia Tomara[1], Dr Panagiota Karahaliou[1], Prof Georgios C. Psarras[2], Prof Stavroula Georga[1], Prof Christofors Krontiras[1], Prof. Dr.-Ing. habil. Suchart Siengchin[3], Prof. Dr. h.c. Jozsef Karger-Kocsis[4,5]

[1]Department of Physics, University of Patras, 26504, PATRAS, Greece, [2]Department of Materials Science, University of Patras, 26504, PATRAS, Greece, [3]King Mongkut's University of Technology North Bangkok, Krung Thep, Bangkok, Thailand, [4]Department of Polymer Engineering, Faculty of Mechanical Engineering, Budapest University of Technology and Economics, Műegyetem rkp. 3, H-1111, Budapest, Hungary, [5]MTA-BME Research Group for Composite Science and Technology, Műegyetem rkp. 3, H-1111, Budapest, Hungary

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.3: Functional Polymers and Related (Nano)Composites

A3-P-TUE-P1-19	**THE EFFECT OF CLAY INCORPORATION ON THE SURFACE CHARGE TRANSPORT OF CORONA-CHARGED EPOXY/CNTs NANOCOMPOSITES** **Mr Adam Stimoniaris**[1], Mr Constandinos Delides[1] *[1]Department of Environmental Engineering, Western Macedonia University of Applied Sciences, Kozani, Greece*
A3-P-TUE-P1-20	**EXPERIMENTAL VERIFICATION OF FRACTIONAL MODELLING OF THE VISCOELASTIC RESPONSE IN POLYMER BIOMATERIALS** **Dr. Anastasios Lazopoulos**[1], Dr. Dionysios Mouzakis[1] *[1]Evelpidon Hellenic Army Academy, Kallitehnoupolis, Greece*
A3-P-TUE-P1-21	**EFFECT OF WATER CONTENT ON THE MECHANICAL PROPERTIES OF POLYAMIDE-6** **Eszter Kókai**[1] *[1]Pallasz Athéné University, Kecskemét, Hungary*
A3-P-TUE-P1-22	**EPOXY RESIN/TIC NANOCOMPOSITES: MECHANICAL AND ELECTRICAL CHARACTERISATION** **Georgia Tomara**[1], Konstantia Papalexopoulou[1], Vasiliki Alexiou[1], Glykeria A. Visvini[1], Constantinos Fiotakis[2], Theodoros G. Velmachos[2], Sotiris . G. Stavropoulos[2] *[1]Department of Physics, University of Patras,26504, PATRAS, Greece,* *[2]Department of Materials Science, University of Patras, 26504, PATRAS, Greece*
A3-P-TUE-P1-23	**POLYMERIC MICROSPHERES CONTAINING MESOPOROUS CELLULAR FOAM FOR LONG ACTING INJECTABLE RELEASE FORMULATIONS OF PALIPERIDONE ANTIPSYCHOTIC DRUG** Dr. Stavroula Nanaki[1], Professor Dimitris Bikiaris[1], Theodoros Tsiaprantas Valmas[2], **Assoc. Professor Eleni Pavlidou**[3] *[1]Lab. of Polymer Chemistry & Technology, Chemistry Dept, Aristotel University Of Thessaloniki, Thessaloniki, Greece, [2]Physical Education & Sports Science Faculty, Dimocritus University of Thrace, Komotini, Greece, [3]Lab. of Scanning Electron Microscopy, Aristotel University of Thessaloniki, Thessaloniki, Greece*
A3-P-TUE-P1-24	**THERMAL CHARACTERIZATION OF POLYURETHANE UREA NANOCOMPOSITES** **Eng Alneira Cuellar Burgos**[1], Eng Fabio Augusto Mesa Rueda[1] *[1]Laboratorio de Polimeros y Materiales Compuestos, Universidad Nacional De Colombia, Manizales, Colombia*
A3-P-TUE-P1-25	**BIOMASS DERIVED FEEDSTOCK FOR POROUS CARBONACEOUS FRAMEWORKS** **Pierluigi Tosi**[1,2], Prof. Dr. Alice Mija[1], Prof. Dr. Luc Vincent[1], Dr. Ed de Jong[2] *[1]University Of Nice, Nice, France, 2Avantium, Amsterdam, The Netherlands*
A3-P-TUE-P1-26	**FROM SENSING TO DOSIMETRY: IMMOBILIZED SINGLE-STRANDED DNA ON SURFACES AS VERSATILE SENSOR FOR PROTEIN ACTIVITY AND IRRADIATION** **Marc Benjamin Hahn**[1] *[1]Bundesanstalt für Materialforschung, Berlin, Germany*
A3-P-TUE-P1-27	**PLATFORM MOLECULES FOR EPOXY SYNTHESIS** **Angela Marotta**[1,2], Veronica Ambrogi[1], Alice Mija[2] *[1]Università degli Studi di Napoli Federico II, Naples, Italy, [2]Université Nice Sophia Antipolis, Nice, France*
A3-P-TUE-P1-28	**THIOPHENE BASED THREE-DIMENSIONAL POROUS ORGANIC POLYMER FOR THE DETECTION OF PEROXIDE EXPLOSIVES** Mr. Shuai Li[1], **Dr. Pengfei Li**[1,2], Dr. Bo Wang[1] *[1]Beijing Institute Of Technology, School of Chemistry and Chemical Engineering, Beijing, China,* *[2]Beijing Institute Of Technology, Advanced Research Institute for Multidisciplinary Science, Beijing, China*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium A.5: Colloidal Nanoparticles: Synthesis, functionalization and applications

A5-P-TUE-P1-1	**CATIONIC SUBSTITUTION IN COLLOIDAL CsPbX NANOCRYSTALS** **Mr Peter Shaw**[1], Dr Michaela Meyns[2], Professor Martin Charlton[1], Professor Pavlos Lagoudakis[1], Dr Andreu Cabot[2,3], Dr Antonios Kanaras[1] *[1]University Of Southampton, Southampton, United Kingdom, [2]Catalonia Institute for Energy Research (IREC), Barcelona, Spain, [3]ICREA, Pg. Lluis Companys 23, Barcelona, Spain*
A5-P-TUE-P1-2	**THE POSSIBILITY OF OBTAINING CORE/SHELL STRUCTURE IN SYSTEM NiFe2O4/ZnFe2O4** **Phd Marija Milanovic**[1], Phd Ivan Stijepovic[1], Phd Vladimir Srdic[1] *[1]University Of Novi Sad, Faculty Of Technology, Department Of Materials Engineering, Novi Sad, Serbia*
A5-P-TUE-P1-3	**CONTROL OF NANOPARTICLE CHARGING MECHANISM IN NONPOLAR SOLVENTS TO DEPOSIT METAL NANOPARTICLE MONOLAYERS BY ELECTROPHORESIS** Ondřej Černohorský[1], **Jan Grym**[1], Roman Yatskiv[1], Viet Hung Pham[2], James H Dickerson[2] *[1]Institute of Photonics and Electronics of the CAS, Prague, Czech Republic, [2]Center for Functional Nanomaterials, Brookhaven National Laboratory, USA*
A5-P-TUE-P1-4	**SYNTHESIS AND FEATURES OF COBALT-BASED MAGNETIC NANOPARTICLES FOCUSING ON BIOMEDICAL APPLICATIONS** **MSc Anastasios Kotoulas**[1], Dr. Catherine Dendrinou-Samara[2], Dr. Mavroeidis Angelakeris[1] Dr. Orestis Kalogirou[1], T. Kehagias[1], G. Vourlias[1], J. Arvanitidis[1], C. Sarafidis[1] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124, Greece, Thessaloninki, Greece, [2]Department of Chemistry, Aristotle University of Thessaloniki, 54124, Greece, Thessaloniki, Greece*
A5-P-TUE-P1-5	**CYANOVINYL CARBAZOLE AS A REVERSIBLE CROSS-LINKER FOR DNA-AuNP ASSEMBLIES** Dr. Pascal Harimech[1], Dr. Afaf El-Sagheer[2], Prof. Tom Brown[2], **Assoc. Prof. Antonios Kanaras**[1] *[1]Physics and Astronomy, University of Southampton, Southampton, UK, [2]Department of Chemistry, University of Oxford, Oxford, UK*
A5-P-TUE-P1-6	**SYNTHESIS OF METALLIC NANOPARTICLES BY ELECTRICAL DISCHARGE IN THE LIQUID MEDIUM** **Ing. Jakub Horak**[1], Anton Nikiforov[2], Christophe Leys[2], Ke Vin Chan[2], Frantisek Krcma[1] *[1]Brno University Of Technology, Faculty of Chemistry, Institute of Physical and Applied Chemistry, Purkynova 464/118, 612 00, Brno, Czech Republic, [2]Ghent University, Faculty of Engineering and Architecture, Department of Applied Physics, Sint-Pietersnieuwstraat 41, Gent 9000, Gent, Belgium*
A5-P-TUE-P1-7	**TARGETED DETECTION OF MRNA BIOMARKERS USING GRAPHENE OXIDE AND UPCONVERSION NANOPARTICLES** Mr Patrick Vilela[1], Dr Afaf El-Sagheer[3], Prof. Tom Brown[3], Dr Timothy Millar[2], Prof. Otto Muskens[1], **Assoc. Prof. Antonios Kanaras**[1] *[1]Institute for Life Sciences, Physics and Astronomy, University of Southampton, Southampton, UK, [2]Faculty of Medicine, University of SOuthampton, Southampton, UK, 3Department of Chemistry, University of Oxford, Southampton, UK*
A5-P-TUE-P1-8	**NANO JANUS HETERODIMERS VIA LASER-INDUCED PHOTOCHEMICAL DEPOSITION IN A LAB ON A CHIP CONFIGURATION** **Qingguo BAI**[1,2], Dr. Ivan Shupik[1,2], Dr. Jean Pierre Delville[2], Dr. Marie Helene Delville[1] *[1]ICMCB, CNRS UPR 9048, Universite of Bordeaux, Pessac, France, [2]LOMA, UMR 5798, Université de Bordeaux/CNRS, Talence, France*
A5-P-TUE-P1-9	**PEGYLATED CuFe NPs AS ANTIMICROBIAL AGENTS** **MSc Orestis Antonoglou**[1], PhD Kleoniki Giannousi[1], Assoc. Prof. Anastasia Pantazaki[2], Assoc. Prof. Ioannis Arvanitidis[3], PhD Stefanos Mourdikoudis[4], Prof. Catherine Dendrinou-Samara[1] *[1]Lab of Inorganic Chemistry, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Lab of Biochemistry, Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [4]Department of Physics and Astronomy, University College London, London, U.K*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium A.5: Colloidal Nanoparticles: Synthesis, functionalization and applications

A5-P-TUE-P1-10	**COATED Cu-BASED NANOPARTICLES AS PLANT ANTIMICROBIAL AGENTS** **Ph.D candidate Christina Gkanatsiou**[1], Assis. Prof. Katerina Karamanoli[2], Prof. Urania Menkissoglu-Spiroudi[3], Prof.Catherine Dendrinou-Samara[1] *[1]Inorganic Chemistry Lab, Chemistry Department, Aristotle University of Thessaloniki, Greece, 54124 Thessaloniki, Greece, Thessaloniki, Greece, [2]Agricultural Chemistry Laboratory, Faculty of Agriculture, School of Agriculture, Forestry and Environment, Aristotle University of Thessaloniki, 54124,Thessaloniki, Thessaloniki, Greece, [3]Pesticide Science Laboratory, Faculty of Agriculture, School of Agriculture, Forestry and Environment, Aristotle University of Thessaloniki, 54124,Thessaloniki, Thessaloniki, Greece*
A5-P-TUE-P1-11	**Cu_2O & $CuFeO_2$ NANOPARTICLES: SYNTHETIC ASPECTS AND ANTIMICROBIAL PROPERTIES** **A.G. Ampatzidis**[1], O. Antonoglou[1], J. Arvanitidis[2], S. Mourdikoudis[3,4], A. Pantazaki[1], C. Dendrinou-Samara[1] *[1]Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]UCL Healthcare Biomagnetic and Nanomaterials Laboratories, London, United Kingdom, [4]Biophysics Group, Department of Physics and Astronomy, University College London (UCL), London, United Kingdom*
A5-P-TUE-P1-12	**SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL ACTIVITY OF PEGYLATED CuZn/C NANOPARTICLES** **A. Theodoropoulou**[1], O. Antonoglou[1], E. Pavlidou[2], G. Vourlias[2], A. Pantazaki[1], C. Dendrinou-Samara[1] *[1]Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece*
A5-P-TUE-P1-13	**HIGHLY STABLE HYDROPHILIC Zn-DOPED FERRITE NANOPARTICLES AS MRI AGENTS** **T. Karamova**[1], V. Georgiadou[1], A. Makridis[2], C. Dendrinou-Samara[1] *[1]Department of Chemistry, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece*
A5-P-TUE-P1-14	**A GREEN ONE-STEP FABRICATION OF FLUORESCENT NANOPARTICLES FOR BIOIMAGING APPLICATION BY PHOTOINITIATED AQUEOUS FATTY ACID DIMERIZATION-INDUCED SELF-ASSEMBLY** Ms. Qin Dai[1], **Dr. He Zhao**[1], Prof. Hongbin Cao[1] *[1]Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China*
A5-P-TUE-P1-15	**LOW-TEMPERATURE BENCHTOP-SYNTHESIS OF ALL-INORGANIC PEROVSKITE NANOWIRES** **Athanassia Kostopoulou**[1], M. Sygletou[1], Konstantinos Brintakis[1,2], Alexandros Lappas[1], Emmanuel Stratakis[1,3] *[1]Institute of Electronic Structure and Laser, Foundation for Research and Technology , Vassilika Vouton, Heraklion, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Department of Materials Science and Technology, University of Crete, Vassilika Vouton, Heraklion, Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium A.6-I: Advanced Materials for Space Exploration/Part 1

A6-I-P-TUE-P1-1	**IDENTIFICATION OF PARAMETERS INFLUENCING THE GLAZE LAYER EVOLUTION AT HIGH TEMPERATURE FOR A WASPALOY/RENÉ125 CONTACT UNDER FRETTING WEAR SOLICITATIONS** **Dr. Fathia Alkelae**[1] *[1]Ecole Centrale de Lyon, Lyon, France*
A6-I-P-TUE-P1-2	**ACCELERATED AGING AND DEGRADATION ANALYSIS OF THPP, BKNO3, AND ZPP** **Dr. Jong Gyu Paik**[1], Dr. Byunzg Tae Ryu[1], Senior Researcher Zaeill Kim[1] *[1]Agency For Defense Development, Daejeon, South Korea*
A6-I-P-TUE-P1-3	**CHARACTERIZATION OF THE LONG TERM SERVED BORON-POTASSIUM NITRATE IGNITER MATERIAL** **Dr. Byung Tae Ryu**[1], Dr. Jong Gyu Paik[1], Dr. Zaill Kim[1] *[1]Agency Defense Development, Daejeon, South Korea*
A6-I-P-TUE-P1-4	**SELECTION OF MATERIALS AND PANELS FOR INTEGRATED THERMAL PROTECTION SYSTEMS BY THERMOMECHANICAL ANALYSIS** **Dr. Oleg Udovyk**[1], Prof. Genadiy Frolov[1] *[1]Institute for Problems of Material Science of NASU, Kiyv, Ukraine*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.7-I: Functional Nanomaterials for Novel Applications/Part 1

A7-I-TUE-P1-1

SURFACTANT EFFECT ON THE MORPHOLOGY OF A NANOCRYSTALLINE HYDROXYAPATITE PREPARED BY HYDROTHERMAL SYNTHESIS FROM INDUSTRIAL WASTE PHOSPHOGYPSUM. ITS APPLICATION IN WASTEWATER TREATMENT

Miss Hiba Bensalah[1,2], Dr Maged Bekheet[1], Pr. Dr. Saad Alami Younssi[2], Pr.Dr. Mohamed Ouammou[2], Pr.Dr. Aleksander Gurlo[1]

[1]Technical University Of Berlin, Berlin, Germany, [2]University Hassan II of Casablanca, Casablanca, Morocco

A7-I-TUE-P1-2

DIRECTIONAL FREEZING AND PARTICLE ALIGNMENT OF NANOCELLULOSE-BASED SUPER-INSULATING FOAMS

Pierre Munier[1], Korneliya Gordeyeva[1], Dr. Andreas Fall[1,2], Yingxin Liu[1], Prof. Lennart Bergström[1]

[1]Stockholm University, Stockholm, Sweden, [2]Innventia AB, Stockholm, Sweden

A7-I-TUE-P1-3

PERESPECTIVE METHOD FOR RECEIVING OF NANOSTRUCTURED Zn-Al ALLOYS

Dr. Grygoriy Dmytriv[1], Prof. Volodymyr Pavlyuk[1], Prof. Helmut Ehrenberg[2]

[1]Ivan Franko National University of Lviv, Lviv, Ukraine,
[2]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen , Germany

A7-I-TUE-P1-4

SYNTHESIS BY ION BEAM SPUTTERING AND CHARACTERIZATION OF Cr2AlC THIN FILMS

Dr. Ovidiu Crisan[1], Dr. Alina Daniela Crisan[1]

[1]National Institute For Materials Physics, Magurele, Romania, Magurele, Romania

A7-I-TUE-P1-5

NIR OPTICAL AND X-RAY EXCITATION OF LUMINESCENCE IN Er DOPED OXIDE NANOPARTICLES FOR SPECTRAL CONVERTERS AND THERANOSTICS

Mr Daniel Avram[1,2], Dr. Bogdan Cojocaru[3], Dr. Mihaela Florea[4], Dr. Ion Tiseanu[1], **Dr. Carmen Tiseanu**[1]

[1]National Institute for Laser, Plasma & Radiation Physics (INFLPR), Magurele, Romania, [2]University of Bucharest, Faculty of Physics, Bucharest, Romania, [3]University of Bucharest, Department of Chemical Technology and Catalysis, Bucharest, Romania, [4]National Institute of Materials Physics, Bucharest, Romania

A7-I-TUE-P1-6

DEVELOPMENT OF LAYERED DOUBLE HYDROXIDES FOR HEAVY METAL REMOVAL

Aikaterini Kamou[1], Konstantinos Simeonidis[1], Dimitrios Karfaridis[1], Eleni Pavlidou[1], Manassis Mitrakas[2], Georgios Vourlias[1]

[1]Department of Physics, Aristotle University Of Thessaloniki, 54124 Thessaloniki, Greece, [2]Analytical Chemistry Laboratory, Department of Chemical Engineering, Aristotle University of Thessaloniki , 54124 Thessaloniki , Greece

A7-I-TUE-P1-7

AG ULTRAFINE NANOPARTICLE-GRAPHENE SUBSTRATES FOR RAMAN AMPLIFICATION: SIZE AND STABILITY ISSUES

Licenciada Montserrat Xochitl Aguilar-Pujol[1], Dr. Félix Jimenez-Villacorta[1], Dr. Esteban Climent-Pascual[1], Rafael Ramírez-Jiménez[1,2], Dr Javier Bartolomé-Vilchez[1], Dr. Rafael Jiménez-Riobóo[1], Licenciado Leo Alvarez-Fraga[1], Dr Carlos Prieto[1], Dr Alicia de Andrés[1]

[1]Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain,
[2]Departamento de Física, Universidad Carlos III de Madrid, Madrid, Spain

A7-I-TUE-P1-8

METAL-ORGANIC GELS: SOFT MATERIALS FOR A HARD WORLD

Daniel Vallejo Sánchez[1], Jonathan Albo[2], Garikoitz Beobide[1], Pedro Castaño[1], Oscar Castillo[1], Antonio Luque[1], Sonia Pérez-Yáñez[1]

[1]Basque Country University, UPV-EHU, Leioa, Spain, [2]Cantabria University, UC, Santander, Spain

A7-I-TUE-P1-9

BAND GAP AND ELECTRONIC STRUCTURE OF THE GROUP II-IV NITRIDE MgSiN2

Mr James Quirk[1], Dr Mikael Råsander[1], Miss Shiny Mathew[2], Mr Jonathan Rackham[1], Dr Robert Palgrave[2], Dr Michelle Moram[1]

[1]Department of Materials, Imperial College London, London, United Kingdom, [2]Department of Chemistry, University College London, London, United Kingdom

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.7-I: Functional Nanomaterials for Novel Applications/Part 1

A7-I-TUE-P1-10

SOLID-STATE DEWETTING OF Au-Ni BI-LAYER THIN FILMS DEPENDING ON INDIVIDUAL LAYER THICKNESS AND STACKING SEQUENCE

Felix Theska[1,2], Dr. Andreas Herz[1], Dr. Dong Wang[1], **Prof. Dr. Dr. Peter Schaaf**[1]

[1]TU Ilmenau, Ilmenau, Germany, [2]UNSW, Sydney, Australia

A7-I-TUE-P1-11

KEKI - MODEL SWITCH FOR IN-SITU CHARACTERIZATION OF THE CONTACT RESISTANCE OF ELECTRICAL CONTACT MATERIALS

Dipl.-Ing. Marcus Hopfeld[1,2], Dr.-Ing. Diego Gonzales[1,2], Prof. Dr.-Ing. Frank Berger[1,2], **Prof. Dr. Dr. Peter Schaaf**[1,2]

[1]TU Ilmenau, Ilmenau, Germany, [2]KEKI - Competence Center for Electrical Contacts Ilmenau, Ilmenau, Germany

A7-I-TUE-P1-12

GLYCINE-ORGANIC MATRIX COMBUSTION SYNTHESIS (GLYCINE-OMCS): AN ALTERNATIVE METHOD FOR SYNTHESISING NANOSTRUCTURED NICKEL CATALYSTS FOR LIQUID PHASE HYDROGENATION

Ms Olga Thoda[1,3], Dr. Galina Xanthopoulou[1], **Dr.George Vekinis**[1], Dr. Alexander Chroneos[2]

[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi Attikis,, Greece, [2]Centre for Manufacturing and Materials Engineering, University of Coventry, Coventry,, United Kingdom, [3]Faculty of Engineering, Environment and Computing, University of Coventry, Coventry,, United Kingdom

A7-I-TUE-P1-13

FLAME-SPRAYED NANO-STRUCTURED COATINGS USING POWDERS PRODUCED BY SOLUTION COMBUSTION SYNTHESIS

Mr Kosmas Papadopoulos[1,2], Dr. Amalia Marinou[1], Dr. Galina Xanthopoulou[1], **Dr. George Vekinis**[1]

[1]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Agia Paraskevi Attikis,, Greece, [2]Department of Materials Science and Engineering, University of Ioannina, Ioannina,, Greece

A7-I-TUE-P1-14

DIFFERENT ROUTES TO SYNTHESIZE Fe-Ga-O THIN FILMS

Dr. Alicia Prados[1], Dr. Álvaro Muñoz-Noval[2], Dr. Rocío Ranchal[1]

[1]Dpto. Física de Materiales, Fac. CC. Físicas, Universidad Complutense de Madrid, Madrid 28040, Spain, [2]Department of Applied Chemistry, Hiroshima University, Higashi-hiroshima, Japan

A7-I-TUE-P1-15

MICROWAVE ABSORPTION PROPERTIES OF 1-ETHYL-3-METHYLIMADAZOLIUM THIOCYANATE AND 1-METHYL-3-PROPYLIMADAZOLIUM BIS TRIFLUOROMETHYLSULFONYL IMIDE IONIC LIQUIDS

Mr Kwabena Offeh Gyimah[1], Dr Sergio Sanchez Sedago[1], Prof. Animesh Jha[1], Dr Muhammad Sandhu[2], Prof. Ian Hunter[2]

[1]Institute of Materials Research, University Of Leeds, Leeds, United Kingdom, [2]Institute of Microwaves & Photonics, University of Leeds, Leeds, United Kingdom

A7-I-TUE-P1-16

SYNTHESIS, CHARACTERIZATION AND METAL SUBSTITUTION IN ALUMINOPHOSPHATE MATERIALS

Miss Dana AlShami[1], Dr. Georgia Basina*[1], Mr. Fadi Dawaymeh[1], Dr. Balasubramanian Vaithilingam2, Ms. Abeer AlYafeai[3], Ms. Anjana Tharakshmy[3], Dr. Georgios Karanikolos N[1], Dr. Yasser Al Wahedi*[1]

[1]Department of Chemical Engineering, The Petroleum Institute, P.O. Box 2533, UAE, Abu Dhabi, United Arab Emirates, [2]Takreer Research Center, Abu Dhabi Oil Refining Company (TAKREER), P.O. Box: 3593, UAE, Abu Dhabi, United Arab Emirates, [3]ADNOC Research & Innovation Center, Petroleum Institute, P.O. Box 2533, UAE, Abu Dhabi, United Arab Emirates

A7-I-TUE-P1-17

FAST ELECTROSTATIC-BASED PROTEIN DETECTION USING OPTICAL FIBER SENSORS FUNCTIONALIZED WITH AMPHIPHILIC BLOCK-COPOLYMERS

Ms Afroditi Petropoulou[1,3], Mr Tomas Gibson[2], Dr. Efrosyni Themistou[2], Dr. Stergios Pispas[1], **Dr. Christos Riziotis**[1]

[1]National Hellenic Research Foundation, Athens, Greece, [2]School of Chemistry and Chemical Engineering, Queen's University Belfast, Belfast, United Kingdom, [3]Department of Informatics and Telecommunications, University of Peloponnese, Tripolis, Greece

A7-I-TUE-P1-18

HYDROGEN DETECTION PROPERTIES OF NANOPOROUS PALLADIUM SENSOR

Mr. Hee-Jun Noh[1,2], Dr. Hyun-Jong Kim[1], Prof. Jin-Seong Park[2], Dr. Ho-Nyun Lee[1]

[1]Korea Institute Of Industrial Technology, Yeonsu-gu, South Korea, [2] Hanyang University, Seongdong-gu, South Korea

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.7-I: Functional Nanomaterials for Novel Applications/Part 1

A7-I-TUE-P1-19	**OPTICAL PROPERTIES OF Y2O3 AND ER-DOPED Y2O3 THIN FILMS** **Research Asst Fatma UNAL**[1], Sebahattin Gurmen[1], Kursat Kazmanli[1], Mustafa Urgen[1] *[1]Istanbul Technical University, Department of Metallurgical and Materials Engineering, Istanbul, Turkey*
A7-I-TUE-P1-20	**ELABORATION OF AN ELECTRODE MATERIAL BASED ON CARBON PASTE MODIFIED BY COBALT NANOPARTICLES. APPLICATION TO THE DETECTION OF URIC ACID** **Dr Dehbia Oukil**[1,2], Ms Meriouma Araoun[2], Ms Nawel Chouchou[2], Prof Razika Aitout[2], Prof Laid Makhloufi[2] *[1]Département de T.C.S.N, Faculté des Sciences de la Nature et de la Vie. Université A/Mira , Route Targa Ouzemour, 06000 Bejaia (Algérie), Algeria, [2]Laboratoire d'Electrochimie, de Corrosion et de Valorisation Energétique. Université A/Mira , Route Targa Ouzemour, 06000 Bejaia (Algérie), Algeria*
A7-I-TUE-P1-21	**ACTUATION OF DEALLOYED, NANOPOROUS PALLADIUM UPON ELECTROCHEMICAL HYDROGENATION: EFFECTS OF STRAIN RATE AND TYPE OF ELECTROLYTE** **Dipl.-Ing. Markus Gößler**[1], Dr. Eva-Maria Steyskal[1], Prof. Dr. Roland Würschum[1] *[1]Institute of Materials Physics, Graz University of Technology, Austria*
A7-I-TUE-P1-22	**NANOMATERIALS-BASED FORCE SENSOR APPLICATION IN HAND-HELD SURGICAL TOOL** **Dr. Phillip Lee**[1] *[1]Korea Institute of Science and Technology, Seoul, South Korea*
A7-I-TUE-P1-23	**THE QUEST FOR NANO INSULATION MATERIALS APPLYING HOLLOW SILICA NANOSPHZ ERES AND NANOFIBERS** **Mathieu Grandcolas**[1], Bjørn Petter Jelle[2,3], Tao Gao[2], Ole Martin Løvvik[1,4], Rolf André Bohne[2], Sohrab Alex Mofid[2], Serina Ng[3], Espen Sagvolden[1] *[1]Sintef Materials And Chemistry, Oslo, Norway, [2]Norwegian University of Science and Technology (NTNU), Trondheim, Norway, [3]SINTEF Building and Infrastructure, Trondheim, Norway, [4]University of Oslo (UiO), Oslo, Norway*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.8: Materials by Design

A8-P-TUE-P1-1	**ELECTRICAL CONDUCTIVITY, SPECIFIC HEAT, AND MAGNETIC ORDERING IN LaMn1-xCrxO3 PEROVSKITE COMPOUNDS** **Kostas Georgalas**[1], Assis. Prof. Emmanuel Syskakis[1], Alexandros Samartzis[1], Nikolaos Biniskos[2] *[1]Section of Solid State Physics, Department of Physics, National and Kapodistrian University of Athens, Panepistimiopolis Gr-15784 Zografos, Athens, Greece, [2] Julich Centre for Neutron Science, JCNS, and Peter Gruenberg Institut PGI, JARA-FIT, Forschungszentrum Julich Gmb, D-52425 Juelich, Germany*
A8-P-TUE-P1-2	**ELECTRICAL PROPERTIES OF VO_2 LAYERS ON Y-ZrO_2 SUBSTRATES** **Mr Andreas Theodorou**[1], Mr Emmanuel Syskakis *[1]Section of Solid State Physics, Department of Physics, National And Kapodistrian University Of Athens, Athens, Greece*
A8-P-TUE-P1-3	**SYNTHESIS, THERMAL STABILITY, AND ELECTRICAL CONDUCTIVITY OF Sr2PdO3** **Dr. Emmanuel Syskakis**[1], Dimitra Bourazani[1], Dr. Dimitrios Bessas[2] *[1]Section of Solid State Physics, Department of Physics, National and Kapodistrian University of Athens, Athens, Greece, [2] Delft University of Technology, Mekelweg 15, 2629 JB Delft, the Netherlands*
A8-P-TUE-P1-4	**STACKING OF CHELATE RINGS** **Snezana Zaric**[1,2], Dusan Malenov[2] *[1]Texas A&m University At Qatar, Doha, Qatar, [2]University of Belgrade, Belgrade, Serbia*

TIME: 13:00–15:00 ROOM: FOYER, E1/M1

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Symposium B.2: Light Weight Metals

B2-P-TUE-P1-1	**MECHANICAL BEHAVIOR OF THREE-DIMENSIONAL PYRAMIDAL ALUMINUM LATTICE MATERIAL** **Professor Fusheng Han**[1], Dr. Yingjie Huang[1], Dr. Yingying Xue[1] *[1]Institute Of Solid State Physics, Chinese Academy Of Sciences, Hefei, China*
B2-P-TUE-P1-2	**MICROSTRUCTURES IN COMMERCIALLY PURE TITANIUM OBTAINED BY INCOMPLETE PHASE TRANSFORMATION** **Karel Tesař**[1], Viera Gärtnerová[2], Kamil Daněk[2], Aleš Jäger[2] *[1]Czech Technical University In Prague, Faculty of Nuclear Sciences and Physical Engineering, Prague, Czech Republic, [2]Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic*
B2-P-TUE-P1-3	**EFFECT OF CROSS SECTIONAL SHAPE OF STRUTS ON THE MECHANICAL PROPERTIES OF ALUMINUM BASED PYRAMIDAL LATTICE STRUCTURES** **Prof. Fusheng Han**[1], Dr. Yingjie Huang[1], Dr. Yingying Xue[1], Dr. Xinfu Wnag[1] *[1]Institute Of Solid State Physics, Chinese Academy Of Sciences, Hefei, China*
B2-P-TUE-P1-4	**CORRELATIVE CHARACTERIZATION OF LONG PERIOD STACKING ORDERED (LPSO) PHASE FRACTION IN EXTRUDED MAGNESIUM RARE EARTH ALLOYS** **Mr. Kyle Nicholson**[1], Prof. Rimma Lapovok[1], Dr. Chunjie Xu[2], Prof. Eugen Rabkin[3], Prof. Peter Hodgson[4] *[1]Institute for Frontier Materials, Deakin University, Geelong, Australia, [2]School of Materials Science & Engineering, Xi'an University of Technology, Xi'an, China, [3]Department of Materials Science and Engineering, Technion Israel Institute of Technology, Haifa, Israel, [4]Office of DVC (Research), Deakin University, Geelong, Australia*
B2-P-TUE-P1-5	**EFFECT OF TEST CONDITIONS ON NANOINDENTAION DEFORMATION BEHAVIOR OF GUM METAL** **Yuki Shibayama**[1], Kohei Onose[1], Shigeru Kuramoto[1], Takuya Suzuki[2], Eri Nakagawa[2], Takahito Ohmura[3] *[1]Ibaraki University, Hitachi, Japan, [2]National Institute for Materials Science, Tsukuba, Japan, [3]National Institute for Materials Science & Kyushu University, Tsukuba & Fukuoka, Japan*
B2-P-TUE-P1-6	**DEFORMATION MECHANISM ANALYSIS OF SOLUTION TREATED GUM METAL BY IN-SITU TEM COMPRESSION TEST** **Kohei Onose**[1], Yuki Shibayama[1], Shigeru Kuramoto[1], Takahito Ohmura[2,3], Takuya Suzuki[2], Eri Nakagawa[2] *[1]Ibaraki University, Hitachi, Japan, [2]National Institute for Materials Science, Tsukuba, Japan, [3]Kyushu University, Fukuoka, Japan*
B2-P-TUE-P1-7	**INFLUENCE OF GRAIN SIZE AND AMOUNT OF ALUMINUM ON MECHANICAL PROPERTIES IN Mg-Al-Zn BASE ALLOY** **Yuya Sakaoka**[1], Takeshi Sudou[1], Shigeru Kuramoto[1], Akira Kurumada[1] *[1]Ibaraki University, Hitachi, Japan*
B2-P-TUE-P1-9	**EFFECT OF THERMO-MECHANICAL PROCESSING ON MICROSTRUCTURE, MICROHARDNESS AND TENSILE PROPERTIES OF Ti-Nb-Zr-Ta-O ALLOY** **Bc. Dalibor Preisler**[1], RNDr., Ph.D. Josef Stráský[1], Dr.techn. Fernando Warchomicka[2], Prof. RNDr., CSc. Miloš Janeček[1] *[1]Charles University In Prague, Department Of Physics Of Materials, Prague, Czech Republic, [2]Graz University of Technology, Institute of Materials Science and Welding , Graz, Austria*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium B.2: Light Weight Metals

B2-P-TUE-P1-10	**THE EVALUATION OF MICROSTRUCTURE AND MECHANICAL PROPERTIES AFTER DIFFERENT DEGREES OF PLASTIC DEFORMATION IN 2014 ALLOY** **MSc Eng Milena Koralnik**[1], PhD Eng Boguslawa Adamczyk-Cieslak[1], Prof. PhD Eng Jaroslaw Mizera[1] *[1]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland*
B2-P-TUE-P1-11	**LIQUID METAL ENGINEERING AT THE BRUNEL CENTRE FOR ADVANCED SOLIDIFICATION TECHNOLOGY (BCAST)** **Mr. Eric Nyberg**[1], Dr. Chamini Mendis[1], Dr. Xinliang Yang[1], Dr. Shouxun Ji[1], Dr. Zhongyun Fan[1] *[1]Brunel University London - BCAST, Uxbridge, United Kingdom*
B2-P-TUE-P1-12	**TENSILE PROPERTIES AND FRACTURE BEHAVIOR OF FRICTION STIR WELDING 2198 Al-Li ALLOY** **Prof. Yue Ma**[1], Mengmeng Li[1], Dr. Chong Gao[2], Prof. Xiaolan Zeng[1] *[1]Beihang University, Beijing, China, [2]Chinalco Research Institute of Science and Technology, Beijing, China*
B2-P-TUE-P1-13	**EFFECT OF Mg ADDITION ON THE MICROSTRUCTURAL CHARACTERISTICS OF Al-Si EUTECTIC ALLOYS** **Biljana Zlatičanin** *[1]University of Montenegro, Faculty of metallurgy and technology, Podgorica, Montenegro*
B2-P-TUE-P1-14	**CASTING, ROLLING AND FRICTION STIR WELDING IN MAGNESIUM ALLOYS WITH MISCHMETAL ADDITION** **Dr. Erenilton Pereira Da Silva**[1], Dr. Ulises Alfaro[2], Engineering Victor Pereira Ferinho[4], Dr. Gullermo Carlos Requena[2], Dr. Haroldo Cavalcante Pinto[3] *[1]State University Of Campinas(UNICAMP), São Carlos, Brazil, [2]German Aerospace Center (DLR) Institute of Materials Research , Cologne, Germany, [3]Engineering School of São Carlos, University of São Paulo, Department of Materials Engineering, São Carlos, Brazil, [4]Brazilian Nanotechnology National Laboratory, Campinas-SP, Brazil , São Carlos, Brazil*
B2-P-TUE-P1-15	**EFFECT OF ZIRCONIUM ADDITION ON INTERGRANULAR CORROSION OF SEVERELY DEFORMED ALUMINUM ALLOY** **Dr. Stanislav Krymski**y[1], Rafis Ilyasov[1], Aydar Akhiyarov[1], Dr. Elena Avtokratova[1], Dr. Oleg Sitdikov[1], Dr. Michael Markushev[1] *[1]Institute For Metals Superplasticity Problems Ras, Ufa, Russian Federation*
B2-P-TUE-P1-16	**MICROSTRUCTURE EVOLUTION AND MECHANICAL PROPERTIES OF WARM-ROLLED Ti-Al-Fe ALLOY** **Yongmoon Lee**[1], Jong Woo Won[2], Chong Soo Lee[1] *[1]Graduate Institute of Ferrous Technology (GIFT), Pohang University of Science and Technology (POSTECH), Pohang, Republic of Korea, [2]Titanium department, Korea Institute of Materials Science(KIMS), Changwon, Republic of Korea*
B2-P-TUE-P1-17	**HIGH MODULUS ALUMINIUM-BASED NANOCOMPOSITES: NEW REQUIREMENT OF AUTOMOTIVE MARKET** **Dr. Sajjad Amirkhanlou**[1], Dr. Yijie Zhang[1], Dr. Shouxun Ji[1] *[1]BCAST, Brunel University London, London, United Kingdom*
B2-P-TUE-P1-18	**EFFECT OF THE Sc AND Zr RICH DISPERSOIDS ON THE PRECIPITATION SEQUENCE IN Al-Cu ALLOYS** **Doctor Baptiste Rouxel**[1], Doctor Thomas Dorin[1] *[1]Institute Of Frontier Materials, Deakin University, Geelong, Australia*
B2-P-TUE-P1-19	**INFLUENCE OF CORROSION ON MECHANICAL PROPERTIES AND MICROSTRUCTURE OF 3XXX, 5XXX AND 6XXX SERIES ALUMINIUM ALLOYS** **Marcel Wiewióra**[1], Beata Leszczyńska-Madej[1], Łukasz Wzorek[1], Wojciech Sajdak[1], Maria Richert[2], Grzogorz Ziobro[3] *[1]University of Science And Technology, Faculty of non-Ferrous Metals, Krakow, Poland, [2]University of Science and Technology, Faculty of Management, Krakow, Poland, [3]Boryszew S.A, oddział Maflow , Tychy, Poland*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium B.3: High-temperature alloys

B3-P-TUE-P1-1	**EFFECT OF MECHANICAL PROCESSING IN THE CORROSION RESISTANCE OF X-750 SUPERALLOY** **Dra Sinara Borborema**[1,2,3], Mr E.S.R. Gouvêa[3], Dr L.S. Araujo2, MSc G.R.X. de Souza[2], Dr Jean Dille[2], Dra M.O.T. da Conceição[3], Dr. L H. de Almeida[2] *[1]UERJ, Resende, Brazil, [2]UFRJ, Rio de Janeiro, Brasil, [3]UniFOA, Volta Redonda, Brasil*
B3-P-TUE-P1-2	**INFLUENCE OF AGING ON THE MICROSTRUCTURE OF A Fe-Ni SUPERALLOY** **PhD Pilar Valles**[1], PhD Ana Pastor[1], PhD María García[1], Graduated Beatriz González[1] *[1]Inta, Torrejón De Ardoz, Spain*
B3-P-TUE-P1-3	**COMPARISON OF CORROSION RESISTANCE OF AUSTENITIC STEEL 309 AND INCONEL 625 IN RENEWABLE FUEL ASH ENVIRONMENTS** **Mgr Aleksandra Dębowska**[1], Dr. Hab. Inż Agnieszka Kopia[1], Dr. Hab. Aneta Magdziarz[1], Dr. Inż. Izabela Kalemba - Rec[1] *[1]Agh University Of Science And Technology, Cracow, Poland*
B3-P-TUE-P1-4	**HIGH-RESOLUTION CHARACTERIZATION OF HIGH-TEMPERATURE STRUCTURAL MATERIALS** **Felix Theska**[1], Aleksandar Stanojevic[2], Dr. Bernd Oberwinkler[2], Dr. Sophie Primig[1] *[1]UNSW Sydney, Australia, [2]Böhler Schmiedetechnik GmbH & Co KG, Kapfenberg, Austria*
B3-P-TUE-P1-5	**FAULT DIAGNOSIS IN WELDED JOINTS THROUGH THE APPLICATION OF STANDARD TEST TECHNIQUES** **Doctora En Ingeniería Ana María Furlani**[1] *[1]Facultad De Ingeniería-UNCuyo, Godoy Cruz*
B3-P-TUE-P1-6	**CHEMICAL AND MICROSTRUCTURAL MODIFICATIONS OF Ni-BASED SUPERALLOY HAYNES®230 INDUCED BY PLASMA IMMERSION NITRIDING** **Jean-baptiste Dubois**[1], Luc Pichon[1], Fadella Larek[1], Michel Drouet[1] *[1]Institut Pprime - UPR 3346 CNRS, University of Poitiers, ISAE-ENSMA, France*
B3-P-TUE-P1-7	**X RAY DIFFRACTION LINE PROFILE ANALYSIS OF TA6V TIG WELDS** **Master Lyacine Rabahi**[1,2], Doctor Brahim Mehdi[1,2], Master Nabil Kherrouba[2], Doctor Riad Badji[2] *[1]Research Center In Industrial Technologies Crti, Algiers, Algeria, [2]University of Science and Technology Houari Boumediene (USTHB), Algiers, Algeria*
B3-P-TUE-P1-8	**ATOM PROBE TOMOGRAPHY OF HIERARCHICAL MICROSTRUCTURES IN A Fe-Si-V ALLOY** **Dr. Florian Vogel**[1,2,3], Xuyang Zhou[3], Sieglind Ngai[3,4], Konrad Fricke[2], Dr. Nelia Wanderka[2], Prof. Dr. John Banhart[1,2], Prof. Dr. Gregory B. Thompson[3] *[1]Technische Universität Berlin, Berlin, Germany, [2]Helmholtz Zentrum Berlin, Berlin, Germany, [3]University of Alabama Tuscaloosa, Tuscaloosa, United States, [4]South China University of Technology, Guangzhou, Peoples Republic of China*
B3-P-TUE-P1-9	**STRESS RELAXATION AND THERMOMECHANICAL PROCESSING OF NICKEL-BASED SUPERALLOY SPRINGS FOR HIGH TEMPERATURE APPLICATIONS** **Mr. Marc-Antony Coster**[1], Dr. Simon Gill[1], Mr. Gordon McColvin[2] *[1]Leicester University, Leicester, United Kingdom, [2]GE Power (formerly ALSTOM), Rugby, United Kingdom*
B3-P-TUE-P1-11	**HIGH TEMPERATURE PROPERTIES OF FECRAL COATING WITH THE Al RICH BUFFER ZONES ON P92 SUBSTRATE** **Dr. Olga Tsurtsumia**[1], Prof. Elguja Kutelia[1], Prof. Mikheil Okrosashvili[1], Mr. Tengiz Kukava[1] *[1]Georgian Technical University, Tbilisi, Georgia*

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Symposium B.5: Advanced Ceramics

B5-P-TUE-P1-2	**CRYSTALLIZATION BEHAVIOR OF AMORPHOUS Si-B-C-N CERAMIC SINTERED AT HIGH PRESSURE AND HIGH TEMPERATURE** **Dr. Zhihua Yang**, Dr. Bin Liang, Prof. Dechang Jia, Prof. Yu Zhou *[1]Harbin Institute Of Technology, Harbin, P.R.China*
B5-P-TUE-P1-3	**SOME PROBLEMS TO GET ADVANCED PZT COATINGS FOR MEMS** **Professor Natalia Korobova**[1], Professor Sergey Timoshenkov[1], Professor Gulmira Yar-Mukhamedova[2] *[1]National Reseaech University of Electronic Technology MIET, Zelenograd, Moscow, Russian Federation, [2]Al-Farabi Kazakh National University, Almaty, Kazakhstan*
B5-P-TUE-P1-4	**SPARK PLASMA SINTERING OF MULLITE-3Y-TZP NANOPOWDERS PREPARED BY THERMAL PLASMA AND SOL-GEL SYNTHESIS METHODS** **Dr. Janis Grabis**[1], Mrs. Dzidra Jankoviča[1], Mr. Ints Šteins[1], Mrs. Inta Sīpola[1], Mrs. Māra Lubane[1] *[1]Riga Technical University Institute of Inorganic Chemistry, Riga, Latvia*
B5-P-TUE-P1-5	**RAPID PROTOTYPING CERAMIC FILTER APPLICATION IN INVESTMENT CASTING PROCESS** **Msc Eng Mateusz Konrad Koralnik**[1], PhD Rafał Cygan[2], Prof. PhD. Eng. Jarosław Mizera[1] *[1]Faculty of Materials Science and Engineering, Warsaw University Of Technology, Warsaw, Poland, [2]Faculty of Mechanical Engineering and Aeronautics, Rzeszow University of Technology, Rzeszów, Poland*
B5-P-TUE-P1-6	**MORPHOLOGY AND MECHANICAL PROPERTIES OF CERAMIC SHELL MOLDS NEW GENERATION** **Phd Rafal Cygan**[1], Mateusz Konrad Koralnik[2], Jarosław Mizera[2] *1Faculty of Mechanical Engineering and Aeronautics, , Rzeszow University of Technology, al. Powstancow Warszawy 8, Rzeszow 35-959,Poland, 2Faculty of Materials Science and Engineering, Warsaw University of Technology, Woloska 141, 02-507 Warsaw, Poland*
B5-P-TUE-P1-7	**THE ELECTRIC PROPERTIES OF STRONTIUM DOPED LaCoO3 THIN FILMS DEPOSITED BY PLD PROCESS** **MSc. Anna Cyza**1, PhD Wojciech Maziarz[1], PhD. Łukasz Cieniek[1], Prof. Agnieszka Kopia[1] *[1]AGH- University of Science and Technology, Cracow, Poland*
B5-P-TUE-P1-8	**PROPERTIES AND STRUCTURE OF BINARY AND TERNARY TELLURITE GLASSES** **Mrs. NagiaS. Tagiara**[1], Mrs. Elham Moayedi[2], Prof. Apostolos Kyritsis[3], Prof. Lothar Wondraczek2, Dr. Efstratiosl. Kamitsos1 *[1]Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Athens, Greece, [2]Otto Schott Institute of Materials Research, University of Jena, Jena, Germany, [3]National Technical University of Athens, Zografou Campus, Athens, Greece*
B5-P-TUE-P1-9	**ANALYSIS OF THE ELECTRONIC CONDUCTIVITY OF THICK-FILM Gd-DOPED CERIA BY HEBB-WAGNER POLARIZATION METHOD** **Jong Hoon Joo**[1], Gyeong Duk Nam[1], Young-jin Ryu[1], Jeong Hwan Park[1], Sin Myung Kang[1] *[1]Chungbuk National University, Cheongju, South Korea*
B5-P-TUE-P1-10	**SOLID SOLUTIONS OF MAX PHASES OBTAINED BY SHS SYNTHESIS** **M.Sc. Paulina Borowiak**[1], M.Sc. Katarzyna Chabior, D.Sc. Leszek Chlubny, D.Sc. Dariusz Zientara, Prof. Jerzy Lis, Prof. Mirosław Bućko *[1]University of Science and Technology, Kraków, Poland*
B5-P-TUE-P1-11	**TAPE CASTING FABRICATION OF METAL SILICIDES REINFORCED WITH GRAPHENE** **Dr. Dreidy Mercedes Vasquez Sandoval**[1], Undergraduate Jahaziel Toro Carrasco[1], Dr. Ramalinga Mangalaraja[2], Dr. Jaime Morales[1] *[1]Escuela de Ingeniería Química, Pontificia Universidad Católica de Valparaíso, Av. Brasil 2950, Valparaíso, Chile, Valparaiso, Chile, [2]Escuela de Ingeniería Química, Pontificia Universidad Católica de Valparaíso, Av. Brasil 2950, Valparaíso, Chile, Valparaiso, Chile, [3]Advanced Ceramics and Nanotechnology Laboratory, Department of Materials Engineering, Faculty of Engineering, University of Concepcion, Concepcion 407-0409, Chile, Concepción, Chile, [4]Escuela de Ingeniería Química, Pontificia Universidad Católica de Valparaíso, Av. Brasil 2950, Valparaíso, Chile, Valparaiso, Chile*

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Symposium B.5: Advanced Ceramics

B5-P-TUE-P1-12	**PHOTOCATALYTIC ACTIVITY OF CLAY CERAMIC COATED WITH TITANIA AND ZnO NANOPARTICLES** **Dr.hab.sc.ing. Visvaldis Svinka**[1], Dr.sc.ing. Ruta Svinka[1], Mg.sc. Oskars Lescinskis[1] *[1]Riga Technical University Institute Of Silicate Naterials, Riga, Latvia*
B5-P-TUE-P1-13	**TOUGHENING OF Nb2O5 DOPED ZIRCONIA BIOMATERIAL FABRICATED BY MICROWAVE SINTERING TECHNOLOGY** Dr Amparo Borrell[1], Dr Maria Dolores Salvador[1], PhD Lorena Gil[1], Dr Felipe L. Peñaranda2, **PhD Eugeni Cañas**[4], Dr Carlos F. Gutierrez[3] *[1]Institute of Materials Technology, Universitat Politècnica De València, Valencia, Spain, [2]Instituto de Aplicaciones de las Tecnologías de la Información y de las Comunicaciones Avanzadas (ITACA), Universitat Politècnica de València, Valencia, Spain, [3]Centro de Investigación en Nanomateriales y Nanotecnología (CINN) [Consejo Superior de Investigaciones Científicas (CSIC), Universidad de Oviedo, Principado de Asturias]. , El Entrego, Spain, 4Instituto de Tecnología Cerámica (ITC), Universitat Jaume I, Castellón, Spain*
B5-P-TUE-P1-14	**DEVELOPMENT AND PROPERTIES OF NANOCOMPOSITE Al2O3-NiAl2O4 BY REACTIVE SINTERING** **Phd student Fotini Petrakli**[1], Prof Athena Tsetsekou[1] *[1]School of Mining and Metallurgical Engineering, National Technical University of Athens, Athens, Greece*
B5-P-TUE-P1-15	**MAGNETORESISTANCE OF THE HIGH-PRESSURE PEROVSKITE-LIKE PHASES Gd0.7Cu3V4O12 AND Er0,73Cu3V4O12 AT PRESSURES UP TO 50 GPa** **Irina Ustinova**[1], Nina Melnikova[1], Nadezhda Kadyrova[2], Alexander Tebenkov[1], Alexey Babushkin[1] *[1]Ural Federal University, Ekaterinburg, Russian Federation, [2]ISSC UB RAS, Ekaterinburg, Russian Federation*
B5-P-TUE-P1-16	**THERMAL BEHAVIOR OF LOCAL STRUCTURE IN LITHIUM PEROXIDE Li2O2** **Dr. Yoshitaka Matsushita**[1], Dr. Motoharu Imai[1], Dr. Masashi Miyakawa[1], Dr. Satoshi Kawada[1] *[1]NIMS, Tsukuba, Japan*
B5-P-TUE-P1-17	**INFLUENCE OF THE ZrSiO4 AND ZnO ON THE WHITENESS AND PHYSICAL-MECHANICAL PROPERTIES OF INDUSTRIAL CERAMIC SANITARY-WARE** **Boudeghdegh Kamel**[1] *[1]LEAM, Faculty of Sciences and Technology, University Mohammed Seddik ben Yahia- JijelUniversity of Jijel, Jijel, Algeria*
B5-P-TUE-P1-18	**DESIGN OF NOVEL MATERIALS BASED ON ORTHOPHOSPHATES WITH CONTROLLABLE THERMAL EXPANSION** **Dr., Ass. Professor Vladimir Pet'kov**[1], Dr., Ass. Professor Elena Asabina, postgraduate Alexander Shipilov, postgraduate Anton Dmitrienko, postgraduate Artemy Alekseev, postgraduate Dmitriy Lavrenov, Dr. Igor Schelokov *[1]Lobachevsky State University of Nizhni Novgorod, Nizhni Novgorod, Russian Federation*
B5-P-TUE-P1-19	**MICROSTRUCTURE OF EUROPIUM NIOBATE AND TANTALATE THIN FILMS PREPARED BY SOL-GEL METHOD** **PhD. Helena Brunckova**[1], PhD. Lubomir Medvecky[1], PhD. Erika Mudra[1], PhD. Alexandra Kovalcikova[1], PhD. Juraj Durisin[1], PhD. Martin Sebek[1] *[1]Institute of Materials Research Slovak Academy of Sciences, Kosice, Slovakia*
B5-P-TUE-P1-20	**TWO STEP SINTERING ROUTE FOR ALUMINA-BASED CERAMICS** **Maksim Boldin**[1], Aleksander Popov[1], Eugene Lantsev[1], Aleksey Nokhrin[1], Vladimir Chuvil'deev[1] *[1]Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, Russian Federation*
B5-P-TUE-P1-22	**INFLUENCE OF THE REDUCED GRAPHENE OXIDE (rGO) ON THE MICROSTRUCTURE AND PROPERTIES OF THE CERAMICS ZrO2-Y2O3** postgraduate Artyom Glukharev[1], Sc.D. Vladimir Konakov[1], **Ph.D. Olga Kurapova**[1], student Valeria Lebedeva[1], postgraduate Evgeny Boltynyuk[1] *[1]Saint-Petersburg State University, Saint-Petersburg, Russian Federation*

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Symposium B.5: Advanced Ceramics

B5-P-TUE-P1-23	**DIELECTRIC PROPERTIES OF HYDROXYAPATITE OBTAINED BY BOVINE BONE AT HIGH TEMPERATURES** **Laura Daniela Valencia Molina**[1], Jose Humberto Castillo Chamorro[1], Cristian Felipe Ramirez Gutierrez[2], Sandra Milena Londoño Restrepo[2], Mario Enrique Rodriguez Garcia[2] *[1]Universidad Del Quindío, Armenia, Colombia, [2]Universidad Nacional Autónoma de México , Santiago de Queretaro, Mexico*
B5-P-TUE-P1-24	**MICROMECHANICAL MAPPING OF CEMENTITIOUS MATERIALS** **Dr. Ude Dirk Hangen**[1], Dr. Jaroslav Lukes[1], Dr. Douglas Stauffer[1] *[1]Bruker Nanosurfaces / Hysitron, Minneapolis, USA*
B5-P-TUE-P1-25	**THE EFFECT OF RESIDUAL STRESS ON WHISKER REINFORCEMENTS IN SiCw-Al2O3 COMPOSITES DURING COOLING** **Weiwei Wu**[1,2], Jingya Gui[2], Tianbin Zhu[2], Zhipeng Xie[2] *[1]Utrecht University, Utrecht, Netherlands, [2]Tsinghua University, Beijing, China*

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Symposium B.6: Advanced Composites

B6-P-TUE-P1-1	**A NUMERICAL STUDY FOR EXAMINING THE WIDTH OF THE FLUCTUATIONS IN THE ELECTRICAL PERCOLATION THRESHOLD WITH THE THICKNESS OF A METAL-DIELECTRIC COMPOSITE** **Dr. Mohamed Mokhtari**[1,2], Pr. Lotfi Zekri[2], Pr. Noureddine Zekri[2] *[1]University Center Of Tissemsilt, Tiaret, Algeria, [2]USTO, Département de Physique, LEPM, BP 1505 El M'Naouar, Oran, Algérie, Oran, Algeria*
B6-P-TUE-P1-2	**INFLUENCE OF DEBINDING AND SINTERING ON MICROSTRUCTURAL EVOLUTION OF MICRO HOT-EMBOSSED AISI 316L REINFORCED WITH CARBON NANOTUBES** Mr Omid Emadinia[1], **Dr Sonia Simões**[1], Prof. Teresa Vieira[2], Assoc. Prof.Manuel Vieira[1] *[1]CEMUC, Department of Materials and Metallurgical Engineering, University of Porto, Portugal, Porto, Portugal, [2]CEMUC, Department of Mechanical Engineering, University of Coimbra, Portugal, Coimbra, Portugal*
B6-P-TUE-P1-3	**THE EFFECT OF NICKEL COATING ON THE PROPERTIES OF Cu-SIC COMPOSITES** **Phd Marcin Chmielewski**[1], Prof. Katarzyna Pietrzak[1], PhD Agata Strojny-Nędza[1], MSc Kamil Kaszyca[1], PhD Szymon Nosewicz[2], PhD Dariusz Jarząbek[2] *[1]Institute of Electronic Materials Technology, Warsaw, Poland, [2]Institute of Fundamental Technological Research Polish Academy of Sciences, Warsaw, Poland*
B6-P-TUE-P1-4	**INFLUENCE OF THE TYPE OF REINFORCEMENTS ON THE THERMAL PROPERTIES OF COPPER-BASED COMPOSITES** **Ph.D Agata Strojny-Nędza**[1], Prof. Katarzyna Pietrzak[1], MSc Anna Bańkowska[1], PhD Marcin Chmielewski[1] *[1]Institute of Electronic Materials Technology, Warsaw, Poland*
B6-P-TUE-P1-5	**THE INFLUENCE OF THE THERMAL RESIDUAL STRESSES ON THE THERMAL PROPERTIES OF MULTILAYERED Cu/SiC/Cu SYSTEMS** **Prof. Katarzyna Pietrzak**[1], PhD Agata Strojny-Nędza[1], PhD Witold Węglewski[2], Prof. Michał Basista[2] *[1]Institute of Electronic Materials Technology, Warsaw, Poland, [2]Institute of Fundamental Technological Research Polish Academy of Sciences, Warsaw, Poland*
B6-P-TUE-P1-6	**MECHANICAL CHARACTERISTICS OF RADIATION CROSS-LINKED HYDRO POLYMERIC COMPOSITES AND ANISOTROPY AUTOMATED SYSTEM "KERN-DP"** **Ph.D., Sen. Sci. Res. Anatoliy Petrovich Onanko**[1], Prof., Dr. Sci. Sergey Vyzhva[1], Ph.D. Yuriy Onanko[1] *[1]National University of Kyiv, Kyiv, Ukraine*
B6-P-TUE-P1-7	**INFLUENCE OF SURFACE FINISH AND DIMENSIONS OF BFRP BARS ON THEIR PULLOUT STRENGTH** **Montse Haro Rodríguez**[1], Victor Calvet Rodríguez[1], Manuel Valcuende Payá[1], Vicente Amigó Borrás[1] *[1]Universidad Politecnica De Valencia, Valencia, Spain*

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Symposium B.6: Advanced Composites

B6-P-TUE-P1-8	**CHARACTERISATION BY INDENTATION OF GLASS / POLYESTER COMPOSITES: EFFECT OF THE RESIN POLYMERISATION PROCESS** **Dr Sylvain Giljean**[1], Dr Marie-José Pac[1], Dr Cyril Marsiquet[1], Miss Basma Hasiaoui[1], PhD Ahmad Ibrahim[2], PhD Gildas L'Hostis[1] *[1]Université de Haute-Alsace, Laboratoire de Physique et Mécanique Textiles, Mulhouse, France, [2]Université de Haute-Alsace, Laboratoire de Photochimie et d'Ingénierie Macromoléculaires, Mulhouse, France*
B6-P-TUE-P1-9	**INFLUENCE OF PROCESSING PARAMETERS ON THE MECHANICAL PROPERTIES OF THREE DIFFERENT LONG CARBON/GLASS FIBRE REINFORCED THERMOPLASTICS** **M.sc. Jan-Marc Tiemann**[1], Prof. Dr.-Ing. habil. Ulrich Krupp[1], Prof. Dr.-Ing. Rainer Bourdon[1] *[1]Hochschule Osnabrück, Osnabrück, Germany*
B6-P-TUE-P1-10	**STUDY OF THE USE OF SANDWICHES PANELS IN BAJA VEHICLE FLOORS** **Undergraduate Francisco Sousa**[1], Undergraduate Carlos Araujo[1], Undergraduate Marcus Rodrigues[1], Undergraduate Alaí S. Machado[1], Undergraduate Gean M. Mota[1] *[1]Instituto Federal de Educação, Ciência e Tecnologia do Piauí, Teresina, Brazil*
B6-P-TUE-P1-11	**PROPERTIES OF MICRO/NANOSCALE CERAMICS-LIKE "CELLULOSE + OXIDE" COMPOSITE** **Prof. Serhii Nedilko**[1], Ph.D. Olexander Alekseev[1], Ph.D. Vitalii Chornii[1], Prof. Sergiy Revo[1], Mr. Maksym Nedielko[2] *[1]Taras Shevchenko National University of Kyiv, Kyiv, Ukraine, 2O. Paton Electric Welding Institute of NASU, Kyiv, Ukraine*
B6-P-TUE-P1-12	**SYNTHESIS OF SiC-MSi2 (M=MO, V) COMPOSITE MATERIALS BY REACTIVE INFILTRATION** **Professor Javier Narciso**[1], Doctor Mario Caccia[1], Master Adrian Ortega[1] *[1]Alicante University, Alicante, Spain*
B6-P-TUE-P1-13	**ANALYSIS OF MECHANICAL BEHAVIOUR IN SANDWICH COMPOSITE BENDING WITH CORE MATERIAL TYPE HONEYCOMB** **Pedro Sousa**[1] *[1]Instituto Federal de Educação, Ciência e Tecnologia do Piauí, Teresina, Brasil*
B6-P-TUE-P1-14	**INVESTIGATION OF THE ATOMIC STRUCTURE OF VITREOUS MATERIALS FROM THE SYSTEM Ag-Ge-As-S CONTAINING CARBON NANOTUBES USING FRAGMENTARY MODEL** **Mr. Kirill Kurochka**[1], Dr. Nina Melnikova[1], Ms. Vasilisa Zaikova[1], Dr. Olga Kheifets[1] *[1]Ural Federal University, Ekaterinburg, Russian Federation*
B6-P-TUE-P1-15	**NOVEL ALUMINIUM/BASALT METAL MATRIX COMPOSITES FOR OFFSHORE RENEWABLE ENERGY APPLICATIONS** Dr. Nilam Barekar[1], **Mr Onuh Adole**[1], Dr. Lorna Anguilano[1], Dr .Aleksander Novitskyi[2], Dr. Thimoty Minton[1], Dr. Brian McKay[1] *Dr Nilam Barekar[1], Mr Onuh Adole[1], Dr Lorna Anguilano[1], Dr Aleksander Novitskyi[2], Dr Thimoty Minton[1], Dr Brian McKay[1]*
B6-P-TUE-P1-16	**THE MODIFICATION OF ELECTRICAL AND ELECTROCHEMICAL PROPERTIES OF ALUMINIUM–CARBON FIBRE REINFORCED COMPOSITE LAMINATES BY THE INSULATING INTERLAYERS** **Professor Barbara Surowska**[1], Doctor Monika Ostapiuk[2] *[1]Lublin University of Technology, Faculty of Mechanical Engineering, Lublin, Poland, [2]Lublin University of Technology, Faculty of Mechanical Engineering, Lublin, Poland*
B6-P-TUE-P1-17	**DEFORMATION TEXTURES OF ALUMINUM IN MULTILAYERED AL/BRASS COMPOSITE SEVERELY DEFORMED BY ACCUMULATIVE ROLL BONDING** Mr Majid Naseri[1], Dr Mohsen Reihanian[1], **Dr Ehsan Borhani**[2] *[1]Department of Materials Science and Engineering, Faculty of Engineering, Shahid Chamran University of Ahvaz, Ahvaz, Iran , [2]Department of Nano Technology, Nano Materials Group, Semnan University, Semnan, Iran*
B6-P-TUE-P1-18	**SYNTHESIS AND CHARACTERIZATION OF CeO2/SnO2 THIN FILMS COMPOSITES FOR APPLICATION** **Assoc. Prof. Gehan El Komy Abd El Galeel**[1], Prof. Zainab El Mandouh[1], Prof. Massarat Seddik[1] *[1]National Research Centre Cairo-dokki, Cairo, Egypt, [2]National research center, Cairo, Egypt, [3]University Collage of Women for Arts, Science and Education Ain Shams University, Cairo, Egypt*
B6-P-TUE-P1-19	**DEVELOPMENT AND CHARACTERISATION OF HYBRID EPOXY/PU DYNAMIC THERMOSET COMPOSITES WITH ENHANCED IMPACT RESISTANCE** **Mr. Muhammad Kashif Bangash**[1], Dr. Alaitz Ruiz de Luzuriaga[2], Dr. Ibon Odriozola[2], Dr. Jon Aurrekoetxea[3], Dr. Nerea Markaide[2], Professor Monica Ferraris[1] *[1]Politecnico di Torino, Turin, Italy, [2]IK4-CIDETEC, San Sebastian, Spain, [3]Mondragon University, Arrasate - Mondragon, Spain*

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Symposium B.6: Advanced Composites

B6-P-TUE-P1-20	**MICROSTRUCTURE AND MECHANICAL CHARACTERIZATION OF Al/HEAp COMPOSITES** **eng. PhD univ. prof. Ioan Carcea**[1], eng. PhD univ. assit. Raluca Maria Florea[1], PhD student Laura Asavei[1], Scientific Research Vasile Soare[2], eng. PhD univ. prof. Romeu Chelariu[1] *[1]'Gheorghe Ascahi' Technical University of Iasi, Department of Materials Science and Engineering, Iasi, Romania, [2]Research and Development National Institute for Nonferrous and Rare Materials, Ilfov, Romania*
B6-P-TUE-P1-21	**THERMAL FATIGUE BEHAVIOUR OF COPPER BASED COMPOSITE FOR POWER ELECTRONICS** **Hiba Fekiri**[1], Vladimir A. Esin[1], Vincent Maurel[1], Alain Köster[1], Yves Bienvenu[1] *[1]MINES Paristech, PSL Research University, France*
B6-P-TUE-P1-22	**MICROWAVE DIELECTRIC PROPERTIES OF POLYIMIDE COMPOSITE FILMS CONTAINING TiO2 NANOTUBES** **Dr. Marius Andrei Olariu**[1], Dr. Corneliu Hamciuc[2], Dr. Elena Hamciuc[2] *[1]Technical University of Iasi, Iasi, Romania, [2]"Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania*
B6-P-TUE-P1-23	**INVESTIGATION OF ELECTROCHEMICAL BEHAVIOUR OF GRAPHENE NANO PLATELET (GNP) REINFORCED ALUMINUM MATRIX COMPOSITES** **Res. Assist. Burak Küçükelyas**[1,2], Res. Assist. Cantekin Kaykılarlı[1,3], Asst. Prof. Dr. Nazlı Akçamlı[1,2], Prof. Dr. Deniz Uzunsoy[1] *[1]Bursa Technical University, Faculty of Natural Sciences, Architecture and Engineering, Department of Metallurgical and Materials Engineering, Bursa, Turkey, [2]İstanbul Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, İstanbul, Turkey, [3]Yıldız Technical University, Faculty of Chemical and Metallurgical Engineering, Department of Metallurgical and Materials Engineering, İstanbul, Turkey*
B6-P-TUE-P1-24	**ESTIMATION OF THE DAMAGE LEVEL OF A COMPOSITE BY THERMAL CHARACTERIZATION AND SOURCE ESTIMATION** **Mr Anthony Castillo**[1], Mr Jean-Laurent Gardarein[1], Mr Fabrice Rigollet[1], Mr Christophe Le Niliot[1] *[1]Iusti Lab / Aix-marseille University, Marseille, France*
B6-P-TUE-P1-25	**SOFT MAGNETIC COMPOSITE BASED ON FeSi POWDER INSULATED BY MODIFIED PHENOLIC RESIN** Phd Magdalena Streckova[1], Maria Faberova[1], Dr. Radovan Bures[1], Dr. Jan Fuzer[2], Pavol Kurek[1], Dr. Erika Mudra[1] *[1]Institute of Materials Research, Slovak Academy of Sciences, Watsonova 47, 04 0 01 Kosice, Slovak Republic , Kosice, Slovakia, [2]Institute of Physics, Faculty of Science P. J. Šafárik University, Park Angelinum 9, 040 01 Košice, Slovak Republic, Kosice, Slovakia*
B6-P-TUE-P1-26	**BIOSORPTION OF LOPERAMIDE FROM WATER BY LAGENARIA VULGARIS SHELL CHEMICALLY MODIFIED WITH Al2O3: KINETIC AND ISOTHERMS STUDIES** **Nena Velinov**[1], Slobodan Najdanović[1], Miljana Radović[1], Jelena Mitrović[1], Miloš Kostić[1], Danijela Bojić[1], Aleksandar Bojić[1] *[1]Department of Chemistry, Faculty of Sciences and Mathematics, University of Niš, Niš, Serbia, Serbia*
B6-P-TUE-P1-27	**SPARK PLASMA SINTERING OF BETA-SiAlON–BN COMPOSITES** Ms. Evgeny Nefedova[1], Dr. Vladimir Goltsev[1], **Prof. Evgeny Grigoryev**[1], Dr. Konstantin Smirnov[2] *[1]NRNU MEPhI, Moscow, Russian Federation, [2]Institute of Structural Macrokinetics and Materials Science, Russian Academy of Sciences, Chernogolovka city, Moscow region, Russia*
B6-P-TUE-P1-28	**MULTI-OBJECTIVE OPTIMIZATION IN DRILLING OF COMPOSITES USING TAGUCHI-BASED GREY RELATIONAL ANALYSIS** **Navid Zarif Karimi**[1], Giangiacomo Minak[1] *[1]University of Bologna, Department of Industrial Engineering DIN, Forli, 47121, Italy, Forli, 47121, Italy*
B6-P-TUE-P1-29	**FABRICATION AND PERFORMANCE EVALUATION OF SELF-HEALING SYSTEM DEDICATED FOR GLASS FIBRE REINFORCED COMPOSITES** **PhD Eng Paulina Chabera**[1], PhD Eng Rafał Kozera[1], PhD Eng Patryk Bolimowski[1], Prof Anna Boczkowska[1] *[1]Faculty Of Materials Science And Engineering, Warsaw University of Technology, Warsaw, Poland*
B6-P-TUE-P1-30	**ADVANCE IN SINTERING THROUGH A COMBINATION OF NEW APPROACHES** Maksim Boldin[2], Aleksandr Popov[2], Evgeny Lantsev[2], Aleksey Nokhrin[2], Vladimir Chuvil'deev[2], **Ekaterina Potanina**[1] *[1]Nizhny Novgorod State University, Nizhny Novgorog, Russian Federation, [2]Lobachevsky State University of Nizhny Novgorod (National Research University), Research and Development Institute of Physics and Technology, Nizhny Novgorog, Russian Federation*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium B.6: Advanced Composites

B6-P-TUE-P1-31	**PREPARATION AND CHARACTERIZATION OF CARBON/EPOXY COMPOSITES WITH NEEDLE PUNCHED CARBON FIBERS PREFORM** **SongHee Kang**[1], ChunSoo Kim[1], WonGi Jo[1], KyoungSik Kim[2], SeungGoo Lee[1] *[1]Chungnam National University, Daejeon, South Korea, 2Nexcoms co., Daejeon, South Korea*
B6-P-TUE-P1-32	**INFLUENCE OF PHOSPHORIC ACID ON FLAME RETARDANCY AND INTERFACIAL ADHESION OF POLYKETONE/EPOXY COMPOSITES** **Hani Jo**[1], Jee-Woo Yang[1], Hyeon Soo Lim[1], Woojin Oh[1], Seung Goo Lee[1] *[1]Chungnam zNational University, Daejeon, South Korea*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium B.10: Fatigue, Wear and Corrosion of Materials and Structures

B10-P-TUE-P1-1	**EXPERIMENTAL AND COMPUTATIONAL STUDIES ON THE CORROSION INHIBITION EFFICIENCIES OF HISTAMINE AND ITS NEW DERIVATIVE OF HsmD1 FOR MILD STEEL IN ACIDIC MEDIUM** **Researcher Lasnouni Touafri**[1], Doctor Abdelkader Hellal[1], Prof. Salah Chafaa[2], Prof. Abdelaziz Kadri[3] *[1]University of Khemis Miliana, Algeria, [2]University of Setif, Algeria, [3]University of Tizi Ouzou, Algeria*
B10-P-TUE-P1-2	**ANALYTICAL MODELING OF THE RESPONSE OF CIRCULAR SIMPLY SUPPORTED GLARE FIBER-METAL LAMINATES UNDER FRICTIONLESS OBLIQUE INDENTATION** Dr. George Bikakis[1], **Prof. Dr.-Ing Alexander Savaidis**[1] *[1]Department Of Mechanical Engineering Educators, Athens, Greece*
B10-P-TUE-P1-3	**IMPACT OF PLATE RADIUS AND DIFFERENT BOUNDARY CONDITIONS ON THE RESPONSE OF CIRCULAR GLARE FIBER-METAL LAMINATES UNDER FRICTIONLESS OBLIQUE INDENTATION** Dr. George Bikakis[1], **Prof. Dr.-Ing Alexander Savaidis**[1] *[1]Department Of Mechanical Engineering Educators, Athens, Greece*
B10-P-TUE-P1-4	**CHARACTERIZATION OF MICROSTRUCTURE, MECHANICAL PROPERTIES AND CORROSION RESISTANCE OF LEAN DUPLEX STAINLESS STEEL WELDED JOINTS** **Naima Ouali**[1], Dr. Khadidja Khenfer[2], Brahim Belkessa[1] *[1]Research Center In Industrial Technologies, Algeria, [2]LGSM, USTHB, University of Algiers, Algeria*
B10-P-TUE-P1-5	**FATIGUE BEHAVIOUR OF INDUSTRIAL RUBBER BLENDS AND RUBBER–TEXTILE COMPOSITES** Sandra Seichter[1], **Prof. Vasiliki-Maria Archodoulaki**[1], Dr. Thomas Koch[1], Dr. Armin Holzner[2], Alfred Wondracek[2] *[1]TU Wien, Vienna, Austria, [2]Semperit Technische Produkte Gesellschaft m.b.H., Wimpassing, Austria*
B10-P-TUE-P1-6	**THE EFFECT OF MN ADDITIONS ON MICROSTRUCTURE AND CORROSION BEHAVIOR OF NEW WROUGHT Mg-5Al-xMn ALLOYS** **Polina Metalnikov**[1,2], Guy Ben-Hamu[2] *[1]Department of Material Engineering, Ben-Gurion University of the Negev, Be'er-sheva 84105, Israel, [2]Department of Mechanical Engineering, Sami Shamoon College of Engineering, Ashdod 77245, Israel*

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P1 Tuesday, September 19, 2017

Symposium B.10: Fatigue, Wear and Corrosion of Materials and Structures

B10-P-TUE-P1-7	**IMPROVED CONCEPTS FOR THE PREDICTION OF FATIGUE LIFETIME UNDER VARIABLE AMPLITUDE THERMOMECHANICAL LOADING OF WELDED JOINTS OF X6CrNiNb18-10** **Sophie Schackert**[1], Dr. Christoph Schweizer[1], Dr. Gerhard Maier[1] *[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg im Breisgau, Germany*
B10-P-TUE-P1-8	**HIGH-TEMPERATURE CORROSION OF REFRACTORY SYSTEMS USED IN FUEL CATALYTIC CONVERTER UNITS IN OIZL REFINERIES** **Prof. Greg Haidemenopoulos**[1], Dr Anna Zervaki[2], Mr Ioannis Altanis[3], Mr Panagiotis Dimitriadis[3] *[1]Department of Mechanical Engineering, Khalifa University, UAE, [2]University Of Thessaly, Volos, Greece, [3]Motor Oil Hellas, Corinth Refineries, Corinth, Greece*
B10-P-TUE-P1-9	**DISCUSSION ON THE EFFICIENCY OF DIFFERENT CERAMIC REINFORCEMENTS ON THE WEAR RESISTANCE IMPROVEMENT OF DIFFERENT METALLIC AND INTERMETALLIC MATRICES** **Dr. Konstantinos Lentzaris**[1], Dipl.Eng. Kyriaki Tsirka[1], Dipl. Eng. Penelope Triantafyllou[1], Dipl. Eng. Eleni Karapanou[1], Dipl. Eng. Alexander Evangelou[1], Dr. Angela Lekatou[1], Dipl. Eng Emmanuel Georgatis[1], Dr. Alexander Karantzalis[1] *[1]University Of Ioannina, Ioannina, Greece*
B10-P-TUE-P1-10	**COMPARISON OF ENGINE OIL TYPES ON THE PISTON-CYLINDER WEAR** **Mr. Hakan Yilmaz**[1,2], Dr. Arzu Sencan Sahin[2] *[1]Istanbul University, Vocational School of Technical Sciences, Dept. of Mechanical and Metal Technologies, Istanbul, Turkey, [2]Suleyman Demirel University, Faculty of Technology, Dept. of Energy Systems Engineering, Isparta, Turkey*
B10-P-TUE-P1-11	**HYDROGEN EFFECTS ON FATIGUE BEHAVIOR OF 18%Cr FERRITIC STAINLESS STEEL** **Evgenii Malitckii**[1], Yuriy Yagodzinskyy[1], Heikki Remes[1], Hannu Hänninen *[1]Aalto University, Espoo, Finland*
B10-P-TUE-P1-12	**CORROSION FATIGUE OF DUPLEX STAINLESS STEEL X2CrNiMoN22-5-3 EXPOSED TO THE GEOTHERMAL ENVIRONMENT OF THE NORTHERN GERMAN BASIN UNDER DIFFERENT APPLIED POTENTIALS UND DIFFERENT SURFACE FINISH** **M.sc. Marcus Wolf**[1], B.Sc. Roman Afanasiev[1], Prof. Dr. Thomas Boellinghaus[1], Prof. Dr. Anja Pfennig[2] *[1]Bam - Federal Institute For Materials Research And Testing, Berlin, Germany, [2]HTW University of Applied Sciences, Berlin, Germany*
B10-P-TUE-P1-13	**CRITICAL VALUE OF FORGEABILITY ESTIMATION IN HOT FORGING CONDITIONS WITH AID OF STRAIN CONCENTRATION ANALYSIS BY DIC SYSTEM** **MSc., Eng. Łukasz Lisiecki**[1], PhD. Piotr Skubisz[1], MSc. Eng. Paulina Lisiecka-Graca[1] *[1]AGH University of Science and Technology, Kraków, Poland*
B10-P-TUE-P1-14	**EFFECTS OF MICROWAVE TREATMENT ON THE PROPERTIES OF NBR AND EPDM RUBBER** **Seobin Eom**[1], Sun Young Lee[1], Sun Woong Koo, Chun Soo Kim[1], Seung Gu Lee[1] *[1]Chungnam National University, Dajeon, South Korea*
B10-P-TUE-P1-15	**SINGLE CRYSTALLINE Si WAFERS SLICED BY ELECTRICAL DISCHARGE ON MULTI-WIRES FOR PHOTOVOLTAIC APPLICATIONS** **Dr Boyun Jang**[1] *[1]Korea Institute Of Energy Research, Daejeon, South Korea*
B10-P-TUE-P1-16	**EQUIVALENT CONSTRAINTS TO THERMOMECHANICAL FATIGUE OCCURRING ON DIESEL ENGINES** **E.A. Lopez-Covaleda**[1], S. Ghodrat[2], L.A.I. Kestens[3] *[1]Ph.D student. Department of Materials Science and Engineering, Ghent University, Technologiepark 903, B-9052 Zwijnaarde, Ghent, Belgium, [2]Ph.D. Researcher Department of Materials Science and Engineering, Delft University of Technology, Mekelweg 2, 2628 CD, Delft, The Netherlands, [3]Full Professor. Department of Materials Science and Engineering, Ghent University, Technologiepark 903, B-9052 Zwijnaarde, Ghent, Belgium*

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Symposium B.11: Mechanical Properties and Microstructure

B11-P-TUE-P1-1	**PRECIPITATION CORRELATION BETWEEN MC CARBIDE AND Nb-RICH M2P PHOSPHIDE IN A TP347H AUSTENITIC STAINLESS STEEL** **Chang Wan Hong**[1] *[1]Gift, Postech, 77 Cheongam-Ro, Nam-Gu, Pohang, Republic of Korea*
B11-P-TUE-P1-2	**MICROSTUCTURAL ANALYSIS OF CAST PARTS MANUFACTURATED WITH X38CrMOV5 STEEL: PHASES AND DEFECTS ASSESSMENT ACCORDING TO GRIFFITH CLEAVAGE STRESS** PhD Ana Pastor[1], **PhD Pilar Valles**[1], PhD Sebastián F. Medina[2] *[1]INTA, Torrejón de Ardoz, Spain, [2]CENIM-CSIC, Madrid, Spain*
B11-P-TUE-P1-3	**EFFECT OF SILICON ON THE HALL-PETCH RELATION IN FERRITIC IRON** **Kentaro Hirata**[1], Fulin Jiang[2], Setsuo Takaki[2,3], Daichi Akama[2,3], Toshihiro Tsuchiyama[2,3] *[1]Nisshin Steel Corporation Ltd., [2]Department of Materials Science and Engineering,Kyushu University, [3]International Institute for Carbon Neutral Energy Research (WPI-I2CNER),Kyushu University*
B11-P-TUE-P1-4	**NANOINDENTATION AND DILATOMETRIC TESTING OF SYNTHETICALLY PREPARED CaCO3** **Dr. Radek Ševčík**[1], Dr. Petr Šašek[1], Dr. Alberto Viani[1] *[1]Institute of Theoretical And Applied Mechanics As Cr, v. v. i., Centre of Excellence Telč, Telč*
B11-P-TUE-P1-5	**ELASTIC MODULUS DEGRADATION TECHNIQUE FOR DAMAGE MEASUREMENT IN A DUAL PHASE STEEL** MSc. Mechanical Engineering Diego Fernando Avendaño Rodríguez[1], **PhD Rodolfo Rodríguez Baracaldo**[1], PhD Lais Mujica Roncery[2] *[1]Universidad Nacional de Colombia, Bogotá, Colombia, [2]Universidad Pedagógica y Tecnológica de Colombia, Tunja, Colombia*
B11-P-TUE-P1-6	**EFFECT OF FILLER WIRE AND ARTIFICIAL AGEING CONDITIONS ON THE TENSILE MECHANICAL PERFORMANCE OF (Al-Cu-Li) 2198 ALUMINUM ALLOY** **Mr. Dimitris Karanikolas**[1], Dr. Nikolai Kashaev[2], Mr. Stefan Riekehr[2], Ms. Josephin Enz[2], Prof. Nikolaos Alexopoulos[1] *[1]University of the Aegean, Department of Financial and Management Engineering, Chios, Greece, [2]Helmholtz-Zentrum Geesthacht, Institute of Materials Research, Geesthacht, Germany*
B11-P-TUE-P1-7	**ON THE CYCLIC BEHAVIOR OF A SMART JOINT** **Mr. Gorkem Simsek**[1], Mr. Ali Vahidyeganeh[1], Prof. G. Guven Yapici[1] *[1]Ozyegin University, Istanbul, Turkey*
B11-P-TUE-P1-8	**COMPARATIVE ANALYSIS OF THE MECHANICAL PROPERTIES OF THE MIG / MAG TUBULAR WELDING PROCESS (GMAW) IN STEEL 1020 FOR BAJA VEHICLE STRUCTURE** Undergraduating Alaí S. Machado[1], **Undergraduating Gean Carlos M. Mota**[1], Undergraduating Marcus Rodrigues[1], Undergraduating Francisco Sousa[1], Undergraduating Carlos Araújo[1] *[1]Instituto Federal De Educação, Ciência E Tecnologia Do Piauí, Teresina, Brazil, [2]Instituto Federal De Educação, Ciência E Tecnologia Do Piauí, Teresina, Brazil*
B11-P-TUE-P1-9	**EXPERIMENTAL EVALUATION OF THE EFFECTS OF FREE THERMAL FATIGUE ON THE MICROSTRUCTURE AND CRACK PROPAGATION OF AN AISI 1045 STEEL** **Doctor Ayrton de Sá Brandim**[1], Doctor Mário Alberto Simonato Altoé[2], Andréia De Araujo Fortes Cavalcante[1], Rafaela Patrícia Mendes de Araújo[1], Sérgio Alves da Silva[1] *[1]Instituto Federal Do Piauí, Teresina, Brazil, [2]Universidade Federal do Espirito Santo, Alegre, Brazil*
B11-P-TUE-P1-10	**DEVELOPMENT OF BETA-PHASE BRASS FOR MECHANICAL PROPERTIES** **Dr. Hyo-Soo Lee**[1], Mr. Jae-Ha Kim[1] *[1]Kitech, Incheon, South Korea*

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Tuesday, September 19, 2017

Symposium B.11: Mechanical Properties and Microstructure

B11-P-TUE-P1-11	**HIERARCHICAL MODELLING & SIZE EFFECTS FOR COMPOSITES DESIGN & MANUFACTURING** Dr. Alexios Papacharalampopoulos[1], **Mr. Panagis Foteinopoulos**1, Dr. Konstantinos Anyfantis[1], Dr. Panagiotis Stavropoulos[1], Dr. George Chryssolouris[1] *[1]Laboratory For Manufacturing Systems & Automation, Greece*
B11-P-TUE-P1-12	**MICROSTRUCTURAL CHANGES OF FATIGUE DAMAGE IN AUSTENITIC STAINLESS STEEL** **Dr. Yoshihisa Harada**[1,2], Dr. Takashi Nagoshi[1], Mr. Yosuke Inoue[2], Mr. Tomoya Senda[2], Dr. Brian O'Rourke[1], Dr. Nagayasu Oshima+ *[1]National Institute Of Advanced Industrial Science And Technology (aist), Tsukuba, Japan, [2]University of Tsukuba, Tsukuba, Japan*
B11-P-TUE-P1-14	**CHARACTERIZATION OF FeCOV ALLOY PROCESSED BY PIM (MIM) ROUTE** Borivoje Nedeljkovic[1], Nebojsa Mitrovic[1], **Jelena Orelj**[1], Nina Obradovic[2] *[1]Faculty of Technical Sciences Cacak, Svetog Save 65, Serbia, [2]Institute of Technical Sciences of SASA, Knez Mihailova 35, Serbia*
B11-P-TUE-P1-15	**EFFECT OF THERMO-MECHANICAL TREATMENT OF EXTRUDED Z1 Mg ALLOY ON RESULTING MECHANICAL PROPERTIES** **Štefan Csáki**[1], Daria Drozdenko[1], Jan Bohlen[2], Sangbong Yi[2], Patrik Dobroň[1] *[1]Charles University, Department of Physics of Materials, Prague, Czech Republic, [2]Helmholtz-Zentrum Geesthacht, Zentrum für Material- und Küstenforschung GmbH, Geesthacht, Germany*
B11-P-TUE-P1-16	**MECHANICAL PROPERTIES OF THERMOSETTING MATERIAL MIXED WITH A VINYL POLYMER** **Eng Fabio Augusto Mesa Rueda**[1], Eng Alneira Cuellar Burgos[1] *[1]Laboratorio de Polimeros y Materiales Compuestos, Universidad Nacional De Colombia, Manizales, Colombia*
B11-P-TUE-P1-17	**IN OPERANDO NANOMECHANICAL TESTING** **Senior Staff Scientist Douglas Stauffer**[1], Sanjit Bhowmick[1], Eric Hintsala[1], S.A. Syed Asif1, Oden Warren[1] *[1]Bruker, Eden Prairie, United States*
B11-P-TUE-P1-18	**STUDY OF CREEP AND RELAXATION BY INDENTATION OF CHROMIUM-BASED STEELS** **Philemon Nogning Kamta**[1], Didier Chicot[1], Francine Roudet[1], Matthieu Touzin[2], Ghislain Louis[3] *[1]University of Lille 1, FRE 3723-LML-Laboratoire de Mécanique de Lille, Villeneuve D'ascq, France, [2]University of Lille 1, CNRS, INRA, ENSCL, UMR 8207 - UMET - Unité Matériaux et Transformations, F-59000, Lille, France, [3]Mines Douai, LGCgE, Douai, France*
B11-P-TUE-P1-19	**INFLUENCE OF HARMONIC STRUCTURE DESIGN ON DEFORMATION BEHAVIOUR IN A Ti-25Nb-25Zr ALLOY** **Daiki Nanya**[1], Daiki Ueda[1], Sanjay Kumar Vajpai[2], Mie Kawabata Ota[3], Guy Dirras[4], Kei Ameyama[3] *[1]Graduate school of Science and Engineering, Department of Mechanical Engineering, Ritsumeikan University, 1-1-1 Noji-Higashi, Kusatsu city, Japan, [2]Department of Material Science and Metallurgical Engineering, Maulana Azad National Institute of Technology, India, Link Road Number 3, Near Kali Mata Mandir, Bhopal, India, [3]Collage of Science and Engineering, Department of Mechanical Engineering, Ritsumeikan University, 1-1-1 Noji-Higashi, Kusatsu city, Japan, [4]Université Paris 13, Sorbonne Paris Cité, LSPM-CNRS, 99 Avenue Jean Baptiste Clément, 93430, France*
B11-P-TUE-P1-20	**ANOMALOUS STRAIN HARDENING BEHAVIOR OF HARMONIC STRUCTURE DESIGNED Ni** **Mr Masaya Nagata**[1], Mr Naoki Horikawa[1], Mr Masashi Nakatani[1], Dr. Mie Ota[1], Prof. Kei Ameyama[1] *[1]Ritsumeikan University, 1-1-1 Noji-Higashi, Kusatsu, Japan*

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Tuesday, September 19, 2017

Symposium C.1-I: Coatings and Surface Modification Techniques /Part I

C1-I-P-TUE-P1-1	**ROLE OF POLYDOPAMINE AS A PRIMER FOR CATALYST COATING ON POLYURETHANE FOAMS** Louis Lefebvre[2], Tatevik Chilingaryan[1], Pr. Pascal Fongarland[1], **Dr. Valérie Meille**[1], Dr. David Edouard[2] *[1]LGPC-CNRS University of Lyon, Villeurbanne, France, [2]LAGEP University of Lyon, Villeurbanne, France*
C1-I-P-TUE-P1-2	**COATED FOAM DEEP CHARACTERIZATION USING X-RAY TOMOGRAPHY** **Stephanie Pallier**[1], Marie Line Zanota[1], Joel Lachambre[2], Valérie Meille[1] *1LGPC-CNRS University of Lyon, Villeurbanne, France,* *[2]MATEIS-INSA University of Lyon, Villeurbanne, France*
C1-I-P-TUE-P1-3	**NEW OPTICAL ADHESIVE RELIABILITY EVALUATION FOR SILICON PHOTONICS** **Prof. Seiko Mitachi**[1], Mr. Yutaro Togashi[1], Mr. Yuuichi Kageyama[2], Mr. Kazushi Kimura[2] *[1]Tokyo Universty of Technology, 1404-1 Katakura, Hachioji, Tokyo, Japan,* *[2]The Yokohama Rubber Co. Ltd., 2-1 Oiwake, Hiratshuka, Kanagawa, Japan*
C1-I-P-TUE-P1-4	**MULTISCALE CHARACTERIZATION OF THE BIO-TRIBOLOGICAL AMORPHOUS CARBON COATINGS (a-C:H) IMPLANTED BY METALLIC NANO-PARTICLES** **M. Sc. Eng. Marta Janusz**[1], Proffesor Jurgen. M. Lackner[2], Proffesor Marcin Kot[3], Proffesor Łukasz Major[1] *[1]Institute of Metallurgy and Materials Science; PAS, Cracow, Poland, [2]Joanneum Research-Materials-Institute for Surface Technologies and Photonics, Niklasdorf, Austria, [3]AGH University of Science and Technology, Cracow, Poland*
C1-I-P-TUE-P1-5	**BIO-COMPATIBILE, WEAR RESISTANT, DECORATIVE COATINGS FOR BIOLOGICAL, CORROSIVE FLUIDS INTERACTION** **Aleksandra Kupczyk**[1], Prof. Juergen M. Lackner[2], Prof. Marcin Kot[3], Prof. Lukasz Major[1] *[1]Institute Of Metallurgy and Materials Science PAS, Krakow, Poland, [2]JOANNEUM RESEARCH –Materials, Institute for Surface Technologies and Photonics, Niklasdorf, Austria, [3]Laboratory of Surface Engineering and Tribology, Faculty of Mechanical Engineering and Robotics, AGH University of Science and Technology, Krakow, Poland*
C1-I-P-TUE-P1-6	**THE MICROSTRUCTURE OF WELD OVERLAY Ni-BASE ALLOY DEPOSITED ON CARBON STEEL BY LASER QS-Nd:YAG** **Msc. Eng. Damian Koclęga**[1], PhD Eng. Agnieszka Radziszewska[1], Prof. Axel Kranzmann[2], Prof. Stanisław Dymek[1], PhD Eng. Sławomir Kąc[1] *[1]Agh University Of Science And Technology, Cracow, Poland,* *[2]Federal Institute for Materials Research and Testing, BAM, Berlin, Germany*
C1-I-P-TUE-P1-7	**CHARACTERISTIC OF LaCoO3 THIN LAYERS MADE BY PLD FOR APPLICATION TO NOx GAS SENSOR** **Msc. Eng. Mateusz Jędrusik**[1], PhD. Eng Łukasz Cienień, PhD Eng. Agnieszka Kopia[1], PhD Eng. Christian Turquat[2], Prof. Chritine Leroux[2] *[1]AGH - UST, WIMIIP, Kraków, Poland, [2]2Université de Toulon, CNRS, IM2NP UMR , La Garde, France*
C1-I-P-TUE-P1-8	**BORONIZING OF Ti-Al ALLOYS USING THE PASTE METHOD WITH AN OPTIMIZED SLURRY OF AMORPHOUS BORON NANOPARTICLES** Mr Zagkliveris Dimitrios[1], Dr. Dimitrios Tsipas[1], **Dr. Georgios Triantafyllidis**[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece*
C1-I-P-TUE-P1-9	**GASEOUS NITRIDING OF IRON WHISKERS** **Helge Schumann**[1], Dr. Gunther Richter[2], Prof. Dr. rer. nat. habil. Andreas Leineweber[1] *[1]Technische Universität Bergakademie Freiberg, Institute of Materials Science, 09599 Freiberg, Germany,* *[2]Max Planck Institute for Intelligent Systems, 70569 Stuttgart, Germany*
C1-I-P-TUE-P1-10	**ASSESSMENT OF THE POSSIBILITY TO IMPROVE WORKING LIFE OF THE SHAPING TOOLS IN THE CONFORM EXTRUSION PROCESS** **Dr Eng. Barbara Juszczyk**[1], Dr Eng. Joanna Kulasa[1], Dr hab. Eng. Krzysztof Lukaszkowicz[2], Agnieszka Paradecka[2], MSc Eng. Witold Malec[1], MSc Eng. Łukasz Wierzbicki[1], MSc Eng. Beata Cwolek[1], Dr Eng. Szymon Malara[1], MSc Eng. Jerzy Ilasz[3] *[1]Institute of Non-Ferrous Metals, The Department of Processing of Metals and Alloys, Gliwice, Poland, [2]Silesian University of Technology, Institute of Engineering Materials and Biomaterials, Gliwice, Poland, [3]Power Cable Company JSC, Będzin, Poland*

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Symposium C.1-I: Coatings and Surface Modification Techniques /Part I

C1-I-P-TUE-P1-11	**WEAR RESISTANT AND ELECTRICALLY CONDUCTIVE COMPOSITE COATINGS ON NON-FERROUS METAL SUBSTRATES** **Dr Eng. Joanna Kulasa**[1], Dr Eng. Barbara Juszczyk[1], Dr Eng. Jaroslav Kováčik[2], Assoc. Prof., Dr. Stefan Emmer[2], Dr Eng. Szymon Malara[1], MSc Eng. Witold Malec[1], MSc Eng. Marcin Lis[3] *[1]Institute of Non-Ferrous Metals, The Department of Processing of Metals and Alloys, Gliwice, Poland, [2]Integrovaný výskum materiálov a ich aplikácií STU s.r.o, Bratislava, Slovakia, 3Institute of Non-Ferrous Metals, The Department of Powder and Composite Materials, Gliwice, Poland*
C1-I-P-TUE-P1-12	**MECHANICAL PROPERTIES AND THERMAL BEHAVIOR OF Zr(–Hf)–Cu THIN-FILM METALLIC GLASSES** Michal Zitek[1], Petr Zeman[1], Sarka Zuzjakova[1], Radomir Cerstvy[1], **Stanislav Haviar**[1], Michaela Kotrlova[1] *[1]Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Plzen, Czech Republic*
C1-I-P-TUE-P1-13	**SELECTIVE ELECTRON-BEAM ALLOYING OF ALUMINIUM WITH VANADIUM** **MSc degree Stefan Valkov**[1], DSc Peter Petrov[1], Dr Ruslan Bezdushnyi[2], Dr Rumiana Lazarova[3] *[1]Institute Of Electronics "akad. E. Djakov" - Bulgarian Academy Of Sciences, 1784 Sofia, Bulgaria, [2]Faculty of Physics, Sofia University 'St Kliment Ohridski", 1164 Sofia, Bulgaria, 3Institute of Metal Science, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria*
C1-I-P-TUE-P1-14	**THERMAL STABILITY AND MECHANICAL PROPERTIES OF TiAlN/VN NANO-MULTILAYER FILMS** **Ph.D. Jianling Yue**[1] *[1]Central South University, Changsha, China*
C1-I-P-TUE-P1-15	**FORMATION AND STRUCTURE OF TiN/ZrN MULTILAYER COATINGS DEPOSITED ON TOOL STEEL** **Stefan Valkov**[1], Dimitar Dechev[1], Nikolay Ivanov[1], Maria Ormanova[1], Ruslan Bezdushnyi[2], Peter Petrov[1] *[1]Institute Of Electronics "akad. E. Djakov" - Bulgarian Academy Of Sciences, Sofia, Bulgaria, [2]Faculty of Physics, Sofia University 'St Kliment Ohridski", 1164 Sofia, Bulgaria*
C1-I-P-TUE-P1-16	**ATOMIC LAYER DEPOSITION OF TIN OXIDE THIN FILMS USING TETRAETHYLTIN TO PRODUCE HIGH-CAPACITY Li-ION BATTERIES** **Denis Nazarov**[1,2], Maxim Maximov[2], Pavel Novikov[2], Anatoly Popovich[2], Aleksandr Rumyantsev[3], Vladimir Smirnov[1] *[1]Saint Petersburg State University, Saint-Petersburg, Russian Federation, [2]Peter the Great Saint Petersburg Polytechnic University, Saint-Petersburg, Russian Federation, 3Ioffe Institute, Saint-Petersburg, Russian Federation*
C1-I-P-TUE-P1-17	**STRUCTURE AND PROPERTIES OF TiO2/TiN COATED EBM MODIFIED Ti ALLOY FOR BIOMEDICAL APPLICATION** Ch. Assistant, PhD Maria Nikolova[2], Prof., Dr. Sc. Peter Petrov[1], **PhD student Stefan Valkov**[1], Ch. Assistant, PhD Emil Yankov[2], PhD student Maria Ormanova[1], Prof. Milko Yordanov[3], Ch. Assistant, PhD Vania Zaharieva[2], PhD student Desislava Tsanova-Tosheva[4] *[1]Institute Of Electronics "akad. E. Djakov" - Bulgarian Academy Of Sciences, Sofia, Bulgaria, [2]Faculty of Mechanical and Manufacturing Engineering University of Ruse "Angel Kanchev", Ruse, Bulgaria, [3]Faculty of Engineering and Pedagogy of Sliven, Technical University of Sofia, Sliven, Bulgaria, [4] Faculty of Dental Medicine, Medical University of Sofia, Sofia, Bulgaria*
C1-I-P-TUE-P1-18	**A TUBE (INTERCONNECTION UNDER UHV OF CHAMBERS FOR ELABORATION, AND CHARACTERIZATION FOR NOVEL MATERIALS) FOR MULTI-MATERIAL GROWTH AND MULTI-TECHNIC CHARACTERIZATION UNDER ULTRA HIGH VACUUM** **Maud Jullien**[1], Stéphane Mangin, Danielle Pierre *[1]Institut Jean Lamour, Nancy, France*
C1-I-P-TUE-P1-19	**ANALISIS OF PLASMA NITRIDING PARAMETERS APPLIED IN HIGH SPEED STEEL CUTTING TOOLS** **Undergraduating Marcus Rodrigues**[1], Undergraduating Iverton Farias[1], Master Degree Armystron Araújo[1,2] *[1]Instituto Federal de Educação, Ciência e Tecnologia Do Piauí, Teresina, Brazil, [2]Universidade Federal do Piauí, Teresina, Brazil*
C1-I-P-TUE-P1-20	**DEPOSITION AND INVESTIGATION OF RESISTANT AL/NI COATINGS DEPOSITED BY PACK CEMENTATION** **MSc Dimitra Kourtidou**[1], Dr. Dimitrios Chaliampalias[1], PhD Dimitrios Karfaridis[1], PhD Christos Vogiatzis[1], Dr. Eleni Pavlidou[1], Dr. Stefanos Skolianos[1], Dr. Konstantinos Chrissafis[1], Dr. George Vourlias[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium C.2: Laser-based processing and manufacturing

C2-P-TUE-P1-1	**LASER PROCESSING OF THIN-FILM A-SI AS AN ABSORBER MATERIAL FOR ALTERNATIVE LOW-COST SILICON PHOTOVOLTAIC TECHNOLOGY** **Sr Elías Saugar Gotor**[1], Dr Susana María Fernández[1], Dr David Canteli[2], Sr Fernando García-Pérez[3], Dr Belén Gómez-Mancebo[3], Dr Julio Cárabe[1], Dr Jose Javier Gandía[1], Dr Miguel Morales[2], Dr Carlos Molpeceres[2] *[1]Energy Department, CIEMAT, Madrid, Spain, [2]Centro Láser, Universidad Politécnica de Madrid, Madrid, Spain, [3]Chemistry Division, CIEMAT, Madrid, Spain*
C2-P-TUE-P1-2	**DEVELOPMENT OF AN Yb-BASED THIN DISK LASER SYSTEM USING AN INNOVATIVE PUMPING SCHEME** **Dr. Paulo J. Morais**[1], Dr. Rui Pereira[1], Dr. Helena Gouveia[1], Margarida Pinto[1] *[1]ISQ - Instituto de Soldadura e Qualidade, Av. Prof. Dr. Cavaco Silva 33, 2740-120 Porto Salvo, Portugal*
C2-P-TUE-P1-3	**FABRICATING MUSHROOM-LIKE MICRO-PATTERNS IN MULTILAYERED RESISTS USING LASER INTERFERENCE LITHOGRAPHY** **Dipl.-Ing. Florian Rößler**[1], Dipl.-Ing. Valentin Lang[1,2], Dr.-Ing. Denise Günther[1,2], Prof. Dr.-Ing. Andrés Fabián Lasagni[1,2] *[1]TU Dresden, Dresden, Germany, [2]Fraunhofer IWS, Dresden, Germany*
C2-P-TUE-P1-4	**EFFECTS OF LASER IRRADIATION ON THE COLD SPRAY DEPOSITION PROCESS** **Dr. Gemma Vara Salazar**[1], Dr. Patricia López-Ruiz[1], Dr. MArio Diaz[1], Mr Rubén Creo[1], Dr. MArio Guagliano[2], Dr. Sarah Bagherifard[2] *[1]IK4 CIDETEC, Surface Engineering Area, San Sebastián, Spain, [2]Politecnico di Milano, Department of Mechanical Engineering, Milán, Italy*
C2-P-TUE-P1-5	**INFLUENCE OF AN EXTERNAL ELECTRIC FIELD ON THE MORPHOLOGY OF NOBLE METAL NANOSTRUCTURES FABRICATED BY NANOSECOND LASER ABLATION IN WATER** **Dr. Anastas Nikolov**[1], Dr. Ivajlo Balchev[1], Dr. Daniela Karashanova[2], Dsc Nikolay Nedyalkov[1], PhD student Stefan Valkov[1], Dsc Petar Petrov[1] *[1]Institute of Electronics, Bulgarian Academy Of Sciences, Sofia, Bulgaria, [2]Institute of Optical Materials and Technologies, Bulgarian Academy of Sciences, Sofia, Bulgaria*
C2-P-TUE-P1-6	**ANALYTICAL APPROACH AND EXPERIMENTAL VALIDATION OF CEMENTED TUNGSTEN CARBIDE ULTRA-SHORT PULSE LASER ABLATION** **M.Sc. Juan Pablo Calderon Urbina**[1], Prof. Dr.-Ing. Claus Emmelmann[1] *[1]Institute of Laser and System Technologies (iLAS) - Hamburg University of Technology (TUHH), Hamburg, Germany*
C2-P-TUE-P1-7	**COMBINATION EFFECTS OF WATER AND EXCIMER LASER IRRADIATION ON A SET OF POLYMERS** **Dr. Ilham El Aboudi**[1], A. Mdarhri[1], S. Lazare[2], L. Servant[2], M. Castillejo[3] *[1]Laboratoire de la Matière Condensée et des Nanostructures, Faculté des Sciences et Techniques de Marrakech, Université Cadi Ayyad, BP ,Avenue Abdelkrim Elkettabi, 40000 Marrakech ,Maroc, Marrakech, Morocco, [2]Institut des Sciences Moléculaires (ISM) UMR 5255, Université Bordeaux 1, 351 cours de la Libération, 33405 Talence, France,Talence, France, [3]Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain, Madrid, Spain*
C2-P-TUE-P1-8	**DIRECT LASER TRANSFER AND LASER REDUCTION OF GRAPHENE OXIDE FOR CHEMICAL SENSORS AND ORGANIC ELECTRONICS APPLICATIONS** Mr Simos Papazoglou[2], **Dr Konstantinos Petridis**[1], Dr Maria Fillipidou[3], Dr Stavros Chtzantroulis[3], Dr Emannuel Kymakis[4], Dr Ioanna Zergioti[2] *[1]Technological Educational Institute Of Crete ,Chania, Greece, [2]School of Applied Mathematical and Physical Sciences, National Technical University of Athens, ,Athens, Greece, Heroon Polytechneiou 9, 157 80, Zografou/Athens ,Greece ,[3]Institute of Nanoscience and Nanotechnology, E.K.E.F.E. Demokritos, Agia Paraskevi, 153 10/ Athens ,Greece ,[4]Center of Materials Technology & Photonics, Department of Electrical Engineering, Technological Educational Institute of Crete, Estavromenos, Heraklion, Crete, Greece, Estavromenos / Heraklion, Greece*
C2-P-TUE-P1-9	**SHELLAC THIN FILMS PATTERNS PREPARED BY LIFT FOR ORGANIC TRANSISTOR TECHNOLOGIES** **PhD Andreea Matei**[1], PhD Alexandra Palla Papavlu[1], PhD Mihaela Filipescu[1], PhD Student Valentina Marascu[1], PhD Maria Dinescu[1] *[1]National Institute For Lasers, Plasma And Radiation Physics, Romania*
C2-P-TUE-P1-10	**LASER PROCESSING OF C-PPS AND C-PEEK CARBON FIBRE REINFORCED PLASTICS** **Petr Hauschwitz**[1,2], Dr. Danijela Rostohar[1], Petr Gavrilov[2], Dr Tomas Mocek[1] *[1]Hilase, Dolni Brezani, Czech Republic, [2]Faculty of Nuclear Science and Physical Engineering Czech Technical University, Prague, Czech Republic*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium C.2: Laser-based processing and manufacturing

C2-P-TUE-P1-11	**FEMTOSECOND LASER-INDUCED PLASMA DYNAMICS SIMULATIONS IN FUSED SILICA AND WATER** **Javier Hernandez Rueda**[1], Jasper Clarijs[1], Denise M. Krol[2], Dries van Oosten[1] *[1]Universiteit Utrecht, Utrecht, Netherlands, [2]University of California Davis, Davis, USA*
C2-P-TUE-P1-12	**SCATTERING PROPERTIES OF GOLD NANOPARTICLES INSIDE A QUADRUPOLE ION TRAP DURING FS-LASER IRRADIATION** **Javier Hernandez Rueda**[1], Anne de Beurs[1], Dries van Oosten[1] *[1]Universiteit Utrecht, Utrecht, Netherlands*
C2-P-TUE-P1-13	**STUDY AND SIMULATION OF LASER INDUCED FORWARD TRANSFER OF AG INKS** **A. Kalaitzis**[1], I. Theodorakos[1], M. Makrygianni[1], A. Hatziapostolou[1,2], I. Zergioti[1] *[1]National Technical University of Athens, Physics Department, Iroon Polytehneiou 9, 15780, Zografou, Athens, Greece, [2]Technological Educational Institute of Athens, Department of Energy Technology Engineering, Ag. Spyridinos 28, 12243, Aigaleo, Athens, Greece*

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P1 Tuesday, September 19, 2017

Symposium C.6: Joining

C6-P-TUE-P1-1	**EFFECT OF BRAZING PROCESS PARAMETERS AND THE CONTENT OF PD ON THE GROWTH OF INTERMETALLIC PHASES IN THE JOINT TiAlV / TICUZRPD / TIALV** **Ph.D. Anna Sypien**[1], M.Sc. Kamil Badura[1], M.Sc Bogusz Kania[1] *[1]Institute of Metallurgy and Materials Science, PAS, Krakow, Poland*
C6-P-TUE-P1-2	**EFFECT OF WELDING PROCESS ON MICROSTRUCTURE AND MICRO HARDNESS OF ALUMINIUM JOINTS** **Researcher Hakem Maamar**[1] *[1]Research Center in Industrial Technoligies CRTI (Ex CSC), Cheraga. Algiers, Algeria*
C6-P-TUE-P1-3	**MICROSTRUCTURAL AND CORROSION BEHAVIOUR OF SHIELDED METAL ARC WELDED DISSIMILAR WELDMENTS BETWEEN DUPLEX AND LOW ALLOY STEELS** **Brahim Belkessa**[1], Pr. Djamel Miroud[2], Naima Ouali[1] *[1]Research Center In Industrial Technologies, CRTI, Algeria, [2]LGSM, USTHB, University of Algiers, Algeria*
C6-P-TUE-P1-4	**COMPARISON OF THE PERFORMANCE OF AIRCRAFT REPAIR PATCHES CONSISTING OF RIVETED LAP JOINTS ON ALUMINIUM AND COMPOSITE SUBSTRATES** Mr. Siddharth Pitta[1], **Dr.-Eng. Jose I. Rojas**[1], Prof. Daniel Crespo[2] *[1]Department of Physics – Division of Aerospace Engineering, Universitat Politècnica de Catalunya, Castelldefels, Spain, [2]Department of Physics, Universitat Politècnica de Catalunya, Castelldefels, Spain*
C6-P-TUE-P1-5	**A METHODOLOGY TO CALCULATE DIFFUSION OF CARBON ACROSS THE BIMETALLIC BASE-CLAD INTERFACE OF WELDED OFFSHORE CLAD PIPES** **Senior Research Scientist Dag Lindholm**[1] *[1]Institute For Energy Technology, Kjeller, Norway*
C6-P-TUE-P1-6	**CORRELATION OF MICROSTRUCTURE AND MECHANICAL PROPERTIES IN WELDED JOINTS OF 12MnNiVR PRESSURE VESSEL STEEL SUBJECTED TO HIGH HEAT INPUT ELECTROGAS WELDING** **Yang Shen**[1], Cong Wang[1] *[1]School of Metallurgy, Northeastern University, Shenyang, China*
C6-P-TUE-P1-7	**EFFECTS TiO2 CONTENT ON INCLUSION AND MICROSTRUCTURE EVOLUTION OF WELDED EH36 SHIPBUILDING STEEL** Ju Leng[1], Cong Wang[1] *1School of Metallurgy, Northeastern University, Shenyang, China*
C6-P-TUE-P1-8	**JOINING OF TiB2 CERAMIC WITH NiB ALLOY** Lixia Xi[1], Ivan Kaban, Peng He[2], Natalia Sobczak[3], Jürgen Eckert[4] *[1]IFW Dresden, Dresden, Germany, [2]Harbin Institute of Technology, Harbin, China, [3]Foundry Research Institute Cracow, Cracow, Poland, [4]Erich Schmid Institute of Materials Science, Leoben, Austria*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium C.6: Joining

C6-P-TUE-P1-9	**SUGGESTION OF AN INDICATOR TO EVALUATE MATERIAL DEPOSITION IN RESISTANCE SPOT WELDING: WELD SURFACE INTERACTION INDEX** **Melih Kinagu**[1], Dr. Cemil Günhan Erhuy[2], Mehmet Gökçe[1], Dr. Mustafa Mutlu[1], Fatih Ateş[1], Prof.Dr. Deniz Uzunsoy[3] *[1]Ermetal Automotive, Bursa, Turkey, [2]Barida Macine Industry, Bursa, Turkey, [3]Bursa Technical University, Bursa, Turkey*
C6-P-TUE-P1-10	**CHARACTERIZATION OF FIBER LASER WELDED TC4/SS 304 JOINTS USING Cu INTERLAYER** **Seyed Reza Elmi Hosseini**[1], Zhuguo Li, Yuan Chen, Da Shu *[1]Shanghai Jiaotong University, Shanghai, China*
C6-P-TUE-P1-11	**CA6NM STAINLESS STEEL SUBMITTED TO DIFFERENT THERMAL CYCLES IN THE GLEEBLE WELD SIMULATOR** **Phd Maria Ismenia Sodero Faria**[1], Ms Bruna Giacchero Lima[1], Mrs Julio César Lourenço[1] *[1]University of São Paulo, Lorena, Brazil*
C6-P-TUE-P1-12	**THE EFFECT OF ADDING THERMAL SPRAYED INTERLAYER IN BRAZING CERMET TO CARBON STEEL** **Mr Youcef Yahmi**[1], Pr Djamel Miroud[2], Dr Bouzid Maamache[1], Mr Bellel Cheniti[1] *[1]Research Center In Industrial Technologies Crti (ex Csc) Bp 64, Cheraga, Algeria, [2]Faculty of Mechanical Engineering and Engineering Processes, University of Science and Technology Houari Boumediene, Bp 32 El Alia 16111 , Bab Ezzouar, Algeria*
C6-P-TUE-P1-13	**INFLUENCE OF WELDING TECHNIQUES ON MICROSTRUCTURE AND HARDNESS OF STEEL JOINTS USED IN AUTOMOTIVE AIR CONDITIONERS** **Piotr Noga**[1], Łukasz Wzorek[1], Maria Richert[2], Marek Węglowski[3], Patrycja Zimerska-Nowak[4] *[1]AGH University of Science and Technology Faculty of Non-Ferrous Metals Krakow, Krakow, Poland, [2]AGH University of Science and Technology Faculty of Management Krakow, Krakow, [3]Welding Institute , Gliwice, Poland, [4]Boryszew S.A, odział MAFLOW, Tychy, Polska*

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Tuesday, September 19, 2017

Symposium D.1: Materials Science with Synchrotron Radiation X-rays

D1-P-TUE-P1-1	**ON THE MECHANISM OF THE GaN NANOCRYSTAL FORMATION IN SiO2 BY ION IMPLANTATION** **Dr. Maria Katsikini**[1], Dr. Kyriakos Filintoglou[1], Dr. Fani Pinakidou[1], Paul Kutza[2], Philip Lorenz[2], Prof. Dr. Elke Wendler[2], Dr. Katharina Lorenz[3], Prof. Dr. Eleni C. Paloura[1] *[1]Aristotle University of Thessaloniki, School of Physics, Thessaloniki, Greece, [2]Friedrich Schiller Universität Jena, Institut für Festkörperphysik, Jena, Germany, [3]Instituto Superior Técnino, Bobadela , Portugal*
D1-P-TUE-P1-2	**DARK FIELD X-RAY MICROSCOPY OF HEAT TREATMENT OF VARIOUS STEEL GRADES** **Can Yildirim**[1], Melanie Gauvin[2], Phil Cook[1], Henning F. Poulsen[3], Roger Hubert[2], Carsten Detlefs[1] *[1]European Synchrotron Radiation Facility, 71 Avenue des Martyrs, CS40220, 38043, Grenoble, France, [2]Onderzoeks Centrum voor de Aanwending van Staal, Pres.J.F. Kennedylaan 3, BE-9060, Zelzate, Belgium, [3]Department of Physics, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark*
D1-P-TUE-P1-3	**MORPHOLOGY CHARACTERIZATION AND GROWTH MECHANISM OF PRIMARY SILICON PARTICLES IN THE HYPEREUTECTIC Al-Si ALLOYS VIA SYNCHROTRON X-RAY TOMOGRAPHY** **Mr. Jun Wang**[1], Dr. Zhipeng Guo[1,2], Professor Shoumei Xiong[1,2] *[1]School of Materials Science and Engineering, Tsinghua University, Beijing, China, [2]Key Laboratory for Advanced Materials Processing Technology, Ministry of Education, Beijing, China*
D1-P-TUE-P1-4	**TOTAL SCATTERING AND REVERSE MONTE-CARLO TECHNIQUES FOR THE ANALYSIS OF METALLIC SYSTEMS** **Mr Lewis R Owen**[1,2], Dr Helen Y Playford[2], Dr Howard J Stone[1], Dr Matt Tucker[3] *[1]Department of Materials Science and Metallurgy, University Of Cambridge, Cambridge, UK, [2]ISIS Neutron and Muon Source, STFC, Didcot, Oxford, UK, [3]Spallation Neuton Source, Oak Ridge National Laboratory, USA*
D1-P-TUE-P1-5	**SYNCHROTRON QUANTIFICATION OF 4D FRACTURING DURING DOUBLE TORSION EXPERIMENTS** Dr Anne-Laure Fauchille[1,2], Dr Mike Chandler[3], Dr Sara Nonni[1,2], Mr Sebastian Marussi[1,2], Mr Hokyeom Kim[4], Dr Mahmoud Mostafavi[4], Dr Stephen Hedan[5], Dr Julian Mecklenburgh[3], **Pr Peter Lee**[1,2] *[1]School of Materials, University of Manchester, M13 9PJ, Manchester, United Kingdom, [2]Research Complex at Harwell, Harwell Campus, OX11 0FA, Didcot, United Kingdom, [3]School of Earth, Atmospheric, and Environmental Sciences, University of Manchester, M13 9WJ, Manchester, United Kingdom, [4]Department of Mechanical Engineering, University of Bristol, Queen's Building, BS8 1TR, Bristol, United Kingdom, [5]Institut de Chimie des Milieux et Materiaux de Poitiers, ENSIP, UMR 7285 HydrASA, Poitiers, France*
D1-P-TUE-P1-6	**SYNCHROTRON XRD ANALYSIS DURING THE SYNTHESIS AND CO2 CAPTURE OF Li8SiO6** Dr Federico Cova[1], Eng Guillermina Amica[2], **Dr Maria Blanco**[3] *[1]Neel Institute , Grenoble, France, [2]Bariloche Atomic Center, San Carlos de Bariloche, Argentine, [3]European Synchrotron Radiation Facility , Grenoble, France*
D1-P-TUE-P1-7	**DEVELOPMENT OF A RIG FOR THE IN SITU SYNCHROTRON X-RAY IMAGING OF THE NUCLEATION AND GROWTH OF BUBBLES AND CRYSTALS IN BASALTIC MAGMAS** **Nolwenn Le Gall**[1,2], Biao Cai[1,2], Fabio Arzilli[3], Robert Atwood[2,4], Sara Nonni[1,2], Peter Rockett[1,2], Richard Brooker[5], Peter Lee[1,2] *[1]School of Materials, University of Manchester, Manchester, UK, [2]Research Complex at Harwell, Rutherford Appleton Laboratories, Didcot, UK, [3]School of Earth and Environmental Sciences, University of Manchester, Manchester, UK, [4]Diamond Light Source Ltd, Harwell Science and Innovation Campus, Didcot, UK, [5]School of Earth Sciences, University of Bristol, Bristol, UK*
D1-P-TUE-P1-8	**CRYSTALLIZATION KINETICS OF METALLIC GLASSES VIA FEMTOSECOND LASER HEATING** **Dr. Jerzy Antonowicz**[1], Dr. Ryszard Sobierajski[3], Dr. Peter Zalden[2], Dr. Klaus Sokolowski-Tinten[5], Dr. Anna Pietnoczka[1], Prof. Dr. Olaf Magnussen[6], Dr. Christoph Lemke[6], Dr. Konstantinos Georgarakis[7], Prof. Dr. Alan Lindsay Greer[8], Dr. Uta Ruett[9], Dr. Karthick Perumal[9], Mr. Jonas Warias[6], Dr. Bridget Murphy[6] *[1]Warsaw University Of Technology, Warsaw, Poland, [2]Universitaet Hamburg, , Germany, [3]Institute of Physics Polish Academy of Sciences, , Poland, [4]Universitaet Duisburg-Essen, Germany, [5]Universitaet Duisburg-Essen, Germany, [6]Christian-Albrechts-Universitaet Kiel, Germany, [7]Cranfield University, United Kingdom, 8University of Cambridge, United Kingdom, 9DESY, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.1: Materials Science with Synchrotron Radiation X-rays

D1-P-TUE-P1-9	**VANADIUM LOCAL STRUCTURE AND PHOTOINDUCED CHARGE TRANSFER IN NANOSTRUCTURED VANADIUM-DOPED TITANIA BY X-RAY ABSORPTION SPECTROSCOPY** Dr. Luca Pasquini[1], Giacomo Rossi[1], Dr. Lucia Amidani[2], **Dr. Federico Boscherini**[1] *[1]University of Bologna, Bologna, Italy, [2]European Synchrotron Radiation Facility, Grenoble, France*
D1-P-TUE-P1-10	**DETERMINATION OF DAMAGE MECHANISMS AND DAMAGE EVOLUTION DURING THERMOMECHANICAL FATIGUE OF CAST NEAR EUTECTIC Al-Si PISTON ALLOYS** **Katrin Bugelnig**[1], Holger Germann[2], Thomas Steffens[2], Fabian Wilde[3], Guillermo Requena[4] *[1]TU Vienna/E308, Vienna, Austria, [2]KS Kolbenschmidt GmbH, Neckarsulm, Germany, [3]Helmholtz-Zentrum Geesthacht, Zentrum für Material- und Küstenforschung GmbH, Geesthacht, Germany, [4]German Aerospace Centre, Cologne, Germany*
D1-P-TUE-P1-11	**LITHIUM ORTHOSILICATE: SYNTHESIS AND CO2 CAPTURE STUDIES BY IN-SITU SYNCHROTRON RADIATION POWDER X-RAY DIFFRACTION** Eng Maria Laura Grasso[1,2], **Dr Maria Blanco**[3], Dr Federico Cova[4], Dr Pierre Larochette[1,2], Dr Fabiana Gennari[1,2,5] *[1]Balseiro Institute, San Carlos de Bariloche, Argentina, [2]National Council for Scientific and Technical Research, CONICET, Argentina, [3]European Synchrotron Radiation Facility , Grenoble, France, [4]Neel Institute, Grenoble, France, [5]Bariloche Atomic Center, San Carlos de Bariloche, Argentina*
D1-P-TUE-P1-12	**MOLECULAR CONFORMATION (DFT) AND INFLUENCE OF METHYL CH^3 RADICAL ON THE CRYSTAL STRUCTURE OF 3,5-DIBROMO-4-METHYLPYRIDINE** **Meriem Medjani**[1], Ouarda Brihi[1], Samir Meskaldji[2], Ali Boudjada[1], Jean Meinnel[3] *[1]Laboratory of crystallography, Department of Physics, Algeria, [2]École Normal Supérieur d'Enseignement Technologique , Skikda, Algeria, [3]University of Rennes [1], CNRS (UM R 6626), France*
D1-P-TUE-P1-13	**A NOVEL OPERANDO HERFD-XANES CELL FOR STUDYING PHOTOELECTROCHEMICAL WATER-SPLITTING** **Philipp Jäker**[1], Till Kyburz[1], Dr Dorota Koziej[1,2] *[1]ETH Zurich, Department of Materials, 8093 Zurich, Switzerland, [2]University of Hamburg, Institutes of Nanostructures and Solid State Physics, Center for Hybrid Nanostructures, 20251 Hamburg, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium D.1: Materials Science with Synchrotron Radiation X-rays

D1-P-TUE-P1-14

X-RAY SCATTERING STUDY ON THE INFLUENCE OF ADDITIVES IN SPIN-CAST BULK HETEROJUNCTION SOLAR CELLS

Kang Wei Chou[1], Cheng Wang[2], Detlef Smilgies[3], Aram Amassian[4]

[1]Henkel Ibérica S.A., Bellaterra, Spain, [2]Advanced Light Source, Berkeley, USA, [3]Cornell High Energy Synchrotron Source, Ithaca, USA, [4]King Abdullah University of Science and Technology, Thuwal, Saudi Arabia

D1-P-TUE-P1-15

MICRO AND CONVENTIONAL XAFS STUDY OF INCINERATED Cr-RICH TANNERY SLUDGE

Dr. Fani Pinakidou[1], **Dr. Maria Katsikini**[1], Dr. Savas Varitis[1], Prof. Dr. Eleni C. Paloura[1]

[1]Aristotle University of Thessaloniki, School of Physics, Section of Solid State Physics, Greece

D1-P-TUE-P1-16

STRUCTURAL CHARACTERIZATION OF THE Ni55Fe19Ga26 SHAPE MEMORY ALLOY THIN FILM BY X-RAY ABSORPTION SPECTROSCOPY

Mr. N. Patra[1], Dr. A. Biswas[1], Dr. C.L. Prajapat[1], Dr. P.U. Sastry[1], Dr. S. Tripathi[2], Dr. S.N. Jha[1], Dr. D. Bhattacharyya[1]

[1]Bhabha Atomic Research Centre, Mumbai, India, [2]Bhabha Atomic Research Centre, Visakhapatnam, India

D1-P-TUE-P1-17

REDUCTION PROCESSES IN CERIUM OXIDE NANOSTRUCTURES STUDIED BY X-RAY ABSORPTION SPECTROSCOPIES

Dr. Paola Luches[1], Mr. Gabriele Gasperi[1,2], **Mr. Francesco Benedetti**[1,2], Mr. Jacopo Stefano Pelli Cresi[1,2], Dr. Maria Chiara Spadaro[1,2], Prof. Sergio D'Addato[1,2], Prof. Sergio Valeri[1,2], Dr. Lucia Amidani[3], Dr. Pieter Glatzel[3], Prof. Federico Boscherini[4,5]

[1]Istituto Nanoscienze, Consiglio Nazionale delle Ricerche, Modena, Italy, [2]Dipartimento di Scienze Fisiche Informatiche e Matematiche, Univ. di Modena e Reggio Emilia, Modena, Italy, [3]ESRF, Grenoble, France, [4]Dipartimento di Fisica e Astronomia, Università di Bologna, Bologna, Italy, [5]Istituto Officina dei Materiali, Consiglio Nazionale delle Ricerche, Trieste, Italy

D1-P-TUE-P1-18

LOCAL ATOMIC STRUCTURE OF THIN FILM Ti-Cu METALLIC GLASSES - AN EXAFS STUDY

Dr. Anna Pietnoczka[1], **Dr. Jerzy Antonowicz**[1], Dr. Nikolaos T. Panagiotopoulos[2], Prof. Georgios A. Evangelakis[2], Prof. Alberto Moreira Jorge Jr.[3], Dr. Aras Kartouzian[4], Dr. Sakura Pascarelli[5], Dr. Olivier Mathon[5], Dr. Vera Cuartero[5]

[1]Warsaw University Of Technology, [2]University of Ioannina, [3]Universidade Federal de Sao Carlos, [4]Technische Universität München, [5]European Synchrotron Radiation Facility

D1-P-TUE-P1-19

EVALUATION OF MOLECULAR ORIENTATION IN PHOTOREACTIVE LIQUID CRYSTALLINE POLYMER FILMS BY THREE KINDS OF NEXAFS MEASUREMENTS

Yuichi Haruyama, M Okada, E Nishioka, M Kondo, N Kawatsuki, S Matsui

[1]University of Hyogo, Kamigori, Ako, Japan

D1-P-TUE-P1-20

X-RAY EMISSION SPECTROSCOPY WITHIN THE AXSIS PROJECT: ELECTRONIC DYNAMICS AND UNDAMAGED ELECTRONIC STRUCTURE STUDY OF PHOTOSYSTEM II

Dr. Victoria Mazalova[1], Dr. Romain Letrun[1], Dr. Iosifina Sarrou[1], Prof. Petra Fromme[2]

[1]Center for Free Electron Laser Science, DESY, Hamburg , Germany, [2]Department of Chemistry and Biochemistry, Arizona State University, Tempe, USA

D1-P-TUE-P1-21

IN-SITU X-RAY DIFFRACTION TENSILE TESTING OF AN AUSTENITIC CREEP-ENHANCED STAINLESS STEEL

Ryan Smith[1], Mahmut Cinbiz[3], Jun-Sung Park[2], Jonathan Almer[2], **Djamel Kaoumi**[1]

[1]North Carolina State University, Raleigh, United States, [2]Argonne National Laboratory, Argonne, united states, [3]Oak Ridge National Laboratory, Oak Ridge, united states

D1-P-TUE-P1-22

SYNCHROTRON X-RAY STUDIES AT HIGH PRESSURE, HIGH TEMPERATURES IN A LARGE VOLUME PRESS

Dr. Christian Lathe[1], Dr. Joern Lauterjung[1]

[1]GFZ German Research Centre For Geosciences, Potsdam, Germany

D1-P-TUE-P1-23

SPACE AND TIME RESOLVED INVESTIGATION OF CHEMICAL REACTIONS ALONG REACTOR BED BY OPERANDO X-RAY ABSORPTION SPECTROSCOPY

Dr. Diego Gianolio[1], Dr Stephen Parry[1], Dr Giannantonio Cibin[1], Dr John D. Holbrey[2], Prof Mark A. Newton[3], Dr King Kuok (Mimi) Hii[4], Prof Klaus Hellgardt[5]

[1]Diamond Light Source, Harwell Science & Innovation Campus, Didcot, OX11 0DE, United Kingdom, [2]QUILL, School of Chemistry and Chemical Engineering, The Queen's University of Belfast, Belfast, BT9 5AG, United Kingdom, [3]Department of Physics, University of Warwick, Gibbet Hill Road, Coventry, CV4 7AL, United Kingdom, [4]Department of Chemistry, Imperial College London, South Kensington, London, SW7 2AZ, United Kingdom, [5]Department of Chemical Engineering, Imperial College London, South Kensington, London SW7 2AZ, UK, United Kingdom

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.1: Materials Science with Synchrotron Radiation X-rays

D1-P-TUE-P1-24	**PRELIMINARY RESULTS ON Ti-ZEOLITES TO TEST THE NEW NEXAFS CATALYTIC SET-UP AT APE BEAMLINE** **Luca Braglia**[1,2], Matteo Signorile[1], Ilya Pankin[1,2], Elena Groppo[1], Alessandro Damin[1], Silvia Bordiga[1,3], Piero Torelli[4], Carlo Lamberti[2,5] *[1]Department of Chemistry, NIS and INSTM Reference Centers, University of Turin, Turin, Italy, [2]IRC "Smart Materials", Southern Federal University, Rostov on Don, Russia, [3]inGAP Centre for Research Based Innovation, Dept. of Chemistry, University of Oslo, Oslo, Norway, [4]Elettra–Sincrotrone Trieste S.C.p.A., Trieste, Italy, [5]Department of Chemistry, CrisDi Interdepartmental Centre and INSRM reference University of Turin, Turin, Italy*
D1-P-TUE-P1-25	**ALIOVALENT DOPING IN COLLOIDAL QUANTUM DOTS: XAFS** **Prof. Federico Boscherini**[1], Dr Alexandros Stavrinadis[2], Dr. Jacopo Pelli Cresi[3], Dr. Francesco d'Acapito[4], Dr César Magén[5], Dr Gerasimos Konstantatos[2] *[1]University of Bologna, Bologna, Italy, [2]ICFO, Barcelona, Spain, [3]University of Modena and Reggio Emilia, Modena, Italy, [4]CNR-IOM, c/o ESRF, Grenoble, France, [5]INA-ARAID, University of Zaragoza, Zaragoza, Spain*
D1-P-TUE-P1-26	**DEVELOPMENT AND APPLICATION OF LABORATORY-BASED IN SITU X-RAY MICROSCOPY** **Leah Lucas Lavery**[1], Hrishikesh Bale[1], Jeff Gelb[1], Luke Hunter[1], Lars-Oliver Kautschor[1] *[1]Carl Zeiss X-ray Microscopy, Pleasanton, United States*
D1-P-TUE-P1-27	**IN-SITU NANO X-RAY MICROSCOPY: VISUALIZING THE GROWTH OF POLYCRYSTALLINE THIN FILM SOLAR ABSORBERS** B. West[1], M. Stuckelberger[1], R. J. Lovelett[2], S. Soltanmohammad[2], B. Lai[3], J. M. Maser[3], W.N. Shafarman[2], **Mariana Bertoni**[1] *[1]Defect Lab, School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, United States, [2]Institute of Energy Conversion, Department of Chemical and Biomolecular Engineering, Newark, United States, [3]Advanced Photon Source, Argonne National Laboratory, Argonne, United States*
D1-P-TUE-P1-28	**BEAM-INDUCED DYNAMICS IN GLASSES** **Mr. Christoph Tietz**[1], Ms. Katharina Holzweber[1], Mr. Michael Legenstein[1], Dr. Markus Stana[1], Dr. Manuel Ross[1], Prof. Bogdan Sepiol[1] *[1]University Of Vienna, Vienna, Austria*
D1-P-TUE-P1-29	**SYNCHROTRON QUANTIFICATION OF SHALE FRACTURE DURING INDENTATION** Dr Anne-Laure Fauchille[1,2], Dr Mike Chandler[3], Dr Lin Ma[3], Dr Patrick Dowey[3], Pr Ernest Rutter[3], Dr Julian Mecklenburgh[3], M Sebastian Marussi[1,2], Dr Francesco Iacoviello[4], Pr Kevin Taylor[3], **Pr Peter Lee**[1,2] *[1]Manchester X-Ray Imaging Facility, School of Materials, the University of Manchester, UK, Didcot, United Kingdom, [2]Research Complex at Harwell, Rutherford Appleton Laboratory, Didcot, United Kingdom, [3]School of Earth and Environmental Sciences, the University of Manchester, Manchester, United Kingdom, [4]University College London, Department of Chemical Engineering, London, United Kingdom*
D1-P-TUE-P1-30	**REAL-TIME CHEMICAL IMAGING OF FUNCTIONAL MATERIALS UNDER OPERATING CONDITIONS** **Mr Antonios Vamvakeros**[1,2,3], Professor Andrew M. Beale[1,2], Dr. Simon D. M. Jacques[2], Dr. Vesna Middelkoop[4], Dr. Marco Di Michiel[3] *[1]University College London, London, United Kingdom, [2]Finden Ltd., Abingdon, United Kingdom, [3]ESRF, Grenoble, France, [4]Flemish Institute for Technological Research (VITO), Mol, Belgium*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.2: Nanoscale Materials Characterization and Modeling by Advanced Microscopy Methods

D2-P-TUE-P1-1	**SYNTHESIS OF NANO IRON COPPER CORE SHELL BY USING K-M REACTOR** **Dr Mohamed Hammad**[1] *[1]Cmrdi, Giza, Egypt*
D2-P-TUE-P1-2	**SHOCKLEY PARTIAL DISLOCATIONS IN GALLIUM NITRIDE** Doctor Imad Belabbas[1], **Doctor George Dimitrakopulos**[2], Doctor Joseph Kioseoglou[2], Doctor Julita Smalc-Koziorowska[3], Doctor Jun Chen[4] *[1]Laboratoire de Physico-Chimie des Matériaux et Catalyse. Faculté des Sciences Exactes, Université de Bejaia 06000, Algeria, Bejaia, Algeria, [2]Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece, Thessaloniki, Greece, [3]Institute of High Pressure Physics, Polish Academy of Sciences, Sokolowska 29/37, 01-142 Warsaw, Poland., Warsaw, Poland, [4]CIMAP-Alençon, UMR6252, CNRS-CEA-ENSICAEN, Université de Caen Basse-Normandie, 14032, France, Alençon, France*
D2-P-TUE-P1-3	**NANOSCALE CHARACTERIZATION OF THE SURFACE STRUCTURE OF 1T-TaS2** **Elpida Zormpa**[1], Zbigniew Klusek[2], Ioannis Arvanitidis[1] *[1]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Department of Solid State Physics, University of Lodz, Lodz, Poland*
D2-P-TUE-P1-4	**INVESTIGATION OF THE STRANSKI-KRASTANOW GROWTH OF SiGe/Si AND Ge/Si BY A COMPARISON OF ANALYTICAL TRANSMISSION ELECTRON MICROSCOPY WITH SEGREGATION MODELLING** Dr David J Norris[1], **Dr Thomas Walther**[1] *[1]University Of Sheffield, Sheffield, United Kingdom*
D2-P-TUE-P1-5	**NANOSCALE CHARACTERISTICS OF SOLUTION-GROWN In2O3/ZnO HETEROJUNCTIONS** **Dr. Thomas Kehagias**[1], Dr. George P. Dimitrakopulos[1], Mr. Isaak G. Vasileiadis[1], Dr. Hendrik Faber[2], Dr. Ivan Isakov[2], Dr. Panos P. Patsalas[1], Dr. Thomas D. Anthopoulos[2,3] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]Department of Physics and Centre for Plastic Electronics, Blackett Laboratory, Imperial College London, London SW7 2AZ, United Kingdom, [3]Materials Science and Engineering Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal 23955-6900, Saudi Arabia*
D2-P-TUE-P1-6	**MICROSTRUCTURAL EVOLUTION IN InGaN EPITAXIAL FILMS ON AlN AND GaN TEMPLATES** **Dr Calliope Bazioti**[1], Elena Papadomanolaki[2,3], Assist. Professor Julita Smalc-Koziorowska[4], Professor Thomas Kehagias[1], Assist. Professor Eleftherios Iliopoulos[2,3], Associate Professor Georgios Dimitrakopulos[1] *[1]Physics Department, Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]Microelectronics Research Group (MRG), IESL, FORTH, Heraklion Crete, Greece, [3]Physics Department, University of Crete, Heraklion Crete, Greece, [4]Institute of High Pressure Physics, Polish Academy of Sciences, Warsaw, Poland*
D2-P-TUE-P1-7	**TEM STUDY OF THE STRUCTURAL DEFECTS FORMATION IN ELECTRON IRRADIATED CADMIUM TELLURIDE** **Yuri Loginov**[1], Paul Brown[2], Igor Kovalev[1], Pavel Zelenkov[1] *[1]Siberian State Aerospace University, Krasnoyarsk, Russian Federation, [2]University of Nottingham, Nottingham, UK*
D2-P-TUE-P1-8	**NANOSCALE EVALUATION OF INTERFACES IN Fe/Pt BILAYERS FOR SPIN-PUMPING** **Dr. Thomas Kehagias**[1], Dr. George P. Dimitrakopulos[1], Dr. Sascha Keller[2], Mr. Dimitrios Karfaridis[1], Dr. George Vourlias[1], Dr. Evangelos Papaioannou[2] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]Fachbereich Physik and Landesforschungszentrum OPTIMAS, Technische Universität Kaiserslautern, 67663 Kaiserslautern, Germany*
D2-P-TUE-P1-9	**DETERMINATION OF BI AND AL DISTRIBUTION IN (Ga,In)AS CORE NANOWIRES WITH (Ga,Al)As AND Ga(Bi,As) SHELLS BY FIB, STEM AND EDX** **Msc. Anna Kaleta**[1], Profesor Sławomir Kret[1], MSc. Bogusawa Kurowska[1], MSc. Marta Bilska[1], Dr. Ana Sanchez[2], Profesor Janusz Sadowski[1,3,4] *[1]Institute of Physics of Polish Academy of Sciences, al. Lotników 32/46, 02-668 Warsaw , Warsaw, Poland, [2]Department of Physics, University of Warwick, Coventry CV4 7AL, Coventry, United Kingdom, [3]MAX-IV laboratory, Lund University, P.O. Box 118, 221 00 Lund, Lund, Sweden, [4]Department of Physics and Electrical Engineering, Linnaeus University, 391 82 Kalmar, Kalmar, Sweden*
D2-P-TUE-P1-10	**Fe-X (X=Mn, Co, Cu) NANOCLUSTERS BY DENSITY FUNCTIONAL THEORY CALCULATIONS** **Carla Cutrano**[1], Konstantina Botsiou[1], Christina Lekka[1] *[1]University Of Ioannina, Ioannina, Greece*
D2-P-TUE-P1-11	**IMAGING AFM-METHODS YIELDING YOUNG'S MODULUS MAPS OF AN EPOXY/BOEHMITE NANOCOMPOSITE WITH HIGH SPATIAL RESOLUTION** **Dr. Dorothee Silbernagl**[1], M.Sc. Media Ghasem Zadeh Khorasani[1], Prof. Heinz Sturm[1,2] *[1]Bundesanstalt für Materialforschung und -prüfung , Berlin, Germany, [2]Technische Universität Berlin, IWF, Berlin, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium D.2: Nanoscale Materials Characterization and Modeling by Advanced Microscopy Methods

D2-P-TUE-P1-12

A COMPARATIVE APPROACH TO DETERMINING THE MECHANICAL PROPERTIES OF ULTRA-THIN COATINGS

Dr. Zhi Li[1], Dr. Uwe Brand

[1]Physikalisch-technische Bundesanstalt, Braunschweig, Germany

D2-P-TUE-P1-13

THE IMPACT OF STRAIN ON THE ELASTIC CONSTANTS OF GAN AND INN

Mrs Maria Soumelidou[1], Prof. Imad Belabbas[2], Prof. Joseph Kioseoglou[1], Prof. Philomela Komninou[1], Prof. Jun Chen[3], Prof. Theodoros Karakostas[1]

[1]Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece, Thessaloniki, Greece, [2]Groupe de Cristallographie et de Simulation des Matériaux, Laboratoire de Physico-Chimie des Matériaux et Catalyse, Faculté des Sciences Exactes, Université de Bejaia, Bejaia 06000, Algérie, Bejaia, Algérie, [3]CIMAP-Alençon, UMR6252 CNRS-CEA-ENSICAEN, Université de Caen Basse-Normandie, 14032 Caen cedex, France, Caen, France

D2-P-TUE-P1-14

OPTIMIZATION OF SPECIMEN PREPARATION METHOD AND WORKING CONDITIONS FOR TRANSMISSION ELECTRON MICROSCOPY STUDY OF ORGANIC-INORGANIC PEROVSKITE CH3NH3PbI3

Natalia Fernández Delgado[1], Miriam Herrera Collado[1], Francisco Javier Delgado[1], Emilio Juárez Pérez[2], Ivan Mora Sero[2], Sergio Ignacio Molina[1]

[1]Department of Material Science, Metallurgical Engineering and Inorganic Chemistry, IMEYMAT, University of Cádiz, 11510, Puerto Real, Cádiz, Spain, [2]INAM, Institute of Advanced Materials, Universitat Jaume I, 12006 Castelló, Spain

D2-P-TUE-P1-16

POLY-Si FILMS CONSISTING OF Si WHISKERS CRYSTALLIZED BY Ni METAL INDUCE LATERAL CRYSTALLIZATION AT TEMPERATURES AS LOW AS 413oC

Dr. Assist. Prof. Nikolaos Vouroutzis[1], Professor John Stoemenos[1], Professor Nikolaos Frangis[1], Dr G. Z. Radnóczi[2], Dr E. Dodony[2,3], Dr Béla Pécz[2]

[1]Aristotle University of Thessaloniki, School of Physics, Thessaloniki, Greece, [2]Hungarian Academy of Sciences, Institute for Technical Physics and Materials Sci., Budapest, Hungary, [3]Eötvös Loránd University, Doctoral School of Physics , Budapest, Hungary

D2-P-TUE-P1-17

SIMULATIONS REVEAL THE ROLE OF COMPOSITION INTO THE ATOMIC-LEVEL FLEXIBILITY OF BIOACTIVE GLASS CEMENTS

Dr Devis Di Tommaso[1], Dr Gregory Chass[1], Dr Kun Viviana Tian[2]

[1]Queen Mary University College London, London, United Kingdom, [2]University of Rome Tor Vergata, Rome, Italy

D2-P-TUE-P1-18

TRANSMISSION ELECTRON MICROSCOPY STUDY OF Co DOPED ZnO NANORODS

Dr Nikos Boukos[1], Dr Elias Sakellis[1,2], Dr Marius Grundmann[3], Dr Michael Lorenz[3], Dr Chryssa Chandrinou[1], Dr Kostas Giannakopoulos[1], Dr Anastasios Travlos[1]

[1]National Centre For Scientific Research "Demokritos", Institute of Nanoscience and Nanotechnology, Agia Paraskevi Attikis, Greece, [2]University of Athens, Physics Department, Section of Solid State Physics, Zografos, Athens, Greece, [3]Institut für Experimentelle Physik II, Universität Leipzig, Leipzig, Germany

D2-P-TUE-P1-19

APT AND t-EBSD OF SELF-FACETING GRAIN BOUNDARIES IN A Ni-BASED ALLOY

Dr. Jae-Bok Seol[1], Dr. J.-W. Lee[2], Dr. S.-H. Na[3], Dr. J.-H. Jang[4], Dr. H.-U. Hong[1]

[1]National Institute for Nanomaterials Technology, POSTECH, POHANG, South Korea, [2]Department of Materials Science and Engineering, Changwon Natl. University, Changwon, South Korea, [3]Department of Materials Science and Engineering, POSTECH, POHANG, South Korea, [4]Ferrous Alloy Department, Korea Institute of Materials Science, Changwon, South Korea

D2-P-TUE-P1-20

INDENTATION-INDUCED PLASTIC DEFORMATION AND FRACTURE IN (0001) AND (10-10) GaN SINGLE CRYSTALS AT THE MICROSCALE AND NANOSCALE

Dr. Panagiotis Kavouras[1,2], Dr. Ingmar Ratschinski[3,4], George P. Dimitrakopulos[2], Dr. Hartmut Leipner[4], Dr. Philomela Komninou[2], Dr. Gunnar Leibiger[5], Dr. Frank Habel[5]

[1]Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, http://nanolab.chemeng.ntua.gr/, Attica, Athens, Greece, [2]Department of Physics, Aristotle University of Thessaloniki, 54 124, Thessaloniki, Greece, [3]Institut für Nichtmetallische Werkstoffe, Technische Universität Clausthal, 38678, Clausthal-Zellerfeld, Germany, [4]Interdisziplinäres Zentrum für Materialwissenschaften, Martin-Luther-Universität Halle-Wittenberg, 06099, Halle, Germany, [5]Freiberger Compound Materials GmbH, 09599, Freiberg, Germany

D2-P-TUE-P1-21

NUMERICAL AND EXPERIMENTAL ELASTIC STRAIN PROFILING IN III-V SEMICONDUCTOR NANOSTRUCTURES

Ms Nikoletta Florini[1], Dr. George P. Dimitrakopulos[1], Dr. Joseph Kioseoglou[1], Dr. Nikolaos T. Pelekanos[2,3], Dr. Thomas Kehagias[1]

[1]Physics Department, Aristotle University Of Thessaloniki, GR-54124, Thessaloniki, Greece, [2]Department of Materials Science and Technology, University of Crete, P.O. Box 2208, 70013 Heraklion, Greece, [3]Microelectronics Research Group, IESL-FORTH, P.O. Box 1385, 70013 Heraklion, Greece

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.2: Nanoscale Materials Characterization and Modeling by Advanced Microscopy Methods

D2-P-TUE-P1-22	**QUANTITATIVE ANALYSIS OF THE STEPPED-STRAINED 6H-SIC/ALN INTERFACE IN HEMT STRUCTURES** **Mrs. Alexandra Gkanatsiou**[1], Mr. Christos Lioutas[1] *[1] Solid State Physics Section, Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece*
D2-P-TUE-P1-23	**LATERAL FORCE CALIBRATION IN ATOMIC FORCE MICROSCOPE USING MEMS MICROFORCE SENSOR.** **Msc Wojciech Dera**[1], Msc Cezary Dziekoński[1], Phd Dariusz Jarząbek[1] *[1]Institute Of Fundamental Technological Research, Warsaw, Poland*
D2-P-TUE-P1-24	**ELECTRON MICROSCOPY OF BILAYER Cu-Sb FILM** **Aleksandra Bokuniaeva**[1], Vladimir Kolosov, Lev Veretennikov, Anton Yushkov *[1]Ural Federal University, Ekaterinburg, Russian Federation*
D2-P-TUE-P1-25	**OBSERVATION OF A NOVEL Al3Zr-n´ CORE-SHELL PARTICLE IN Al-Zn-Mg-Cu ALLOY** **Doc. Fei Liu**[1], Doc. Pucun Bai[1], Doc. Xiaohu Hou[1], Mr. Naiqiang Tong[1], Doc. Xiaoming Cui[1] *[1]College Of Materials Science And Engineering, Inner Mongolia University Of Technology, Hohhot, China*
D2-P-TUE-P1-26	**THREE-DIMENSIONAL STRUCTURE CHARACTERIZATION OF NANOTUBULAR METAL OXIDE FILMS** **Dr Mariusz Andrzejczuk**[1], Dr Agata Roguska[2], Dr Marcin Pisarek[2], Prof. Małgorzata Lewandowska[1] *[1]Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland, [2]Polish Academy of Sciences, Institute of Physical Chemistry, Warsaw, Poland*
D2-P-TUE-P1-27	**X-RAY PEAK BROADENING ANALYSIS AND CHARACTERIZATION OF SUB-MICRON Y2O3 PARTICLES SYNTHESIZED BY ULTRASONIC SPRAY PYROLYSIS METHOD** **Elif Emil**[1,2], Sebahattin Gurmen[1] *[1]Istanbul Technical University, Department of Metallurgical & Materials Eng., Istanbul, Turkey, [2]Turkish - German University, Department of Materials Science & Tech., Istanbul, Turkey*
D2-P-TUE-P1-28	**IN-SITU ENVIRONMENTAL TRANSMISSION ELECTRON MICROSCOPY CHARACTERIZATION OF CATALYST MATERIALS** **Phd Annett Thogersen**[1], PhD Patricia Carvalho[1], PhD Mehdi Pishahang[1], Martin Sunding[1], PhD Anna Lind[1], PhD Yngve Larring[1], PhD Spyros Diplas[1] *[1]SINTEF Materials and Chemistry, Oslo, Norway*
D2-P-TUE-P1-29	**STRUCTURAL CHARACTERIZATION AND NANOSCALE BANDGAP MEASUREMENTS OF (ZnO)1-x (GaN)x THIN FILMS** **C. Bazioti**[1], C. S. Granerød[1], Olsen V. S.[1], Vines L.[1], B. G. Svensson[1], Prytz Ø[1] *[1]Department of Physics, Center for Materials and Nanotechnology, University of Oslo, P.O. Box 1048 Blindern, N-0316, Oslo, Norway*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday September 19, 2017

Symposium D.4: Small scale mechanics, fracture, interface, experiments and modeling

D4-P-TUE-P1-1	**EVALUATING THE ADHESION BETWEEN INP AND SI: A COMPARATIVE STUDY BETWEEN THE TRADITIONAL DCB EXPERIMENT AND ITS NANO-SCALE ANALOGUE** **Dr Konstantinos Pantzas**[1], Dr Frank Fournel[2], Dr Gilles Patriarche[1], Dr Jean Decobert[4], Dr Anne Talneau[1], Prof Eric Le Bourhis[3] *[1]Cnrs Center for Nanoscience and Nanotechnology, Marcoussis, France, [2]CEA Leti, Grenoble, France, [3]Institut P', Chasseneuil, France, 43-5 Labs, Palaiseau, France*
D4-P-TUE-P1-2	**EUROPEAN MATERIALS CHARACTERISATION COUNCIL (EMCC)** Dr. Costas Charitidis[1,2], **Dr Panagiotis Kavouras**[1], Dr. Elias Koumoulos[1,2] *[1]Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, http://nanolab.chemeng.ntua.gr/ , Athens, Greece, [2] European Materials Characterisation Council (EMCC), http://www.characterisation.eu/*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday September 19, 2017

Symposium D.4: Small scale mechanics, fracture, interface, experiments and modeling

D4-P-TUE-P1-3	**INDENTATION CREEP TESTING OF SUPERALLOYS WITH FLAT PUNCH INDENTER UP TO 800°C** **Markus Kolb**[1], Dr. Dorothea Matschkal[1], Dr. Steffen Neumeier[1], Prof. Mathias Göken[1] *[1]University Erlangen-Nürnberg, Erlangen, Germany*
D4-P-TUE-P1-4	**MECHANICAL CHARACTERIZATION OF HETEROGENEOUS MATERIALS BY MULTISCALE INSTRUMENTED INDENTATION** **Stephania Kossman**[1,2], Didier Chicot[1], Alain Iost[2], Philippe Dufrenoy[1,3,4], Anne-Lise Cristol[1,3,4], Vincent Magnier[1,4] *[1]Universite de Lille, FRE 3723 - LML - Laboratoire de Mécanique de Lille, Villeneuve d'Ascq F-59650, France, [2]Arts et Métiers ParisTech, MSMP, Lille 59800, France, [3]Ecole Centrale de Lille, LML, Villeneuve d'Ascq F-59650, France , [4]CNRS, UMR 8107, Villeneuve d'Ascq F-59650, France*
D4-P-TUE-P1-5	**MICROMECHANICS OF FATIGUE CRACK INITIATION AND SMALL CRACK GROWTH IN AN ALUMINIUM ALLOY** Dr Panos Efthymiadis[2], **Senior Lecturer Christophe Pinna**, Professor John R Yates[3] *[1]The University of Sheffield, Department of Mechanical Engineering, Solly Street, S1 4DE Sheffield, UK, Sheffield, United Kingdom, [2]Warwick Manufacturing Group, International Manufacturing Centre, University of Warwick, Coventry CV4 7AL, UK, previously in the Department of Mechanical Engineering, the University of Sheffield, Mappin Street, Sheffield S1 3JD, UK, Coventry, UK, [3]Simuline Ltd., Derbyshire S18 1QD, UK, Derby, UK*
D4-P-TUE-P1-6	**THE GRADELA MODEL AND TUNNEL ZONAL ROCK DISINTEGRATION** PhD student Anastasios Vafeidis[1], PhD student Cheng Chu[2], Postdoc student Ioannis Tsagrakis[1], **Professor Chengzhi Qi**[6], Professor Elias Aifantis[1,3,4,5,6] *[1]Aristotle University, Thessaloniki, Greece, [2]Nanjing University of Science and Technology, Nanjing, China, [3]Michigan Technological University, Houghton, USA, [4]ITMO University, St. Petersburg, Russia, [5]Togliatti State University, Togliatti, Russia, [6]Beijing University of Civil Engineering and Architecture, Beijing, China*
D4-P-TUE-P1-7	**CHARACTERIZATION OF MULTILAYERS POROUS SILICON SYSTEMS BY MEANS OF NANOINDENTATION** Souheyla Fakiri[1,2], Dr. Alex Montagne[3], Dr. Khadija Rahmoun[1], **Pr. Alain Iost**[3], Dr. Katir Ziouche[2] *[1]URMER, Université Abou Bekr Belkaid, 13000 Tlemcen, Algeria, [2]IEMN, UMR CNRS 8520 IEMN-DHS, 59652 Villeneuve d'Ascq , France, [3]MSMP, Arts et Métiers ParisTech, 59046 Lille, France*
D4-P-THU-P2-8	**TELEPHONE CORD BUCKLING METHODOLOGY FOR WAFER LEVEL NON-INVASIVE PROCESS TO STUDY MICROELECTRONIC INTERFACES ADHESION** **Anne Ponard**[1], Gregory Imbert[1], Frederic Battegay[1], Faouzi Walid Saadoune[1], Guillaume Parry[2], Rafael Estevez[2] *[1]STMicroelectronics, Crolles, France, [2]Université Grenoble Alpes, Grenoble, France*
D4-P-TUE-P1-9	**EXTENDED MODELS OF PLATES BASED ON STRAIN GRADIENT ELASTICITY** Prof Elias Aifantis, **Prof Victor Eremeyev**[1] *[1]Rzeszow University of Technology, Rzeszow, Poland*
D4-P-TUE-P1-10	**EXPERIMENTAL STUDY ON THE MECHANICAL PROPERTIES OF SUTURES USED IN VASCULAR SURGERY** **Mr Charis Tsivlitidis**[1], Dr Anna D. Zervaki[1], Prof. Antonios Giannakopoulos[2] *[1]Laboratory of Materials, Dept. of Mechanical Engineering, Pedion Areos, 38334 Volos, Greece, Volos, Greece, [2]University Of Thessaly, Dept of Civil Engineering, Volos, Greece*
D4-P-TUE-P1-11	**RECOGNITION OF A MATERIAL MICROSTRUCTURE BASED ON NEURAL NETWORK TECHNOLOGIES** **Professor Valeriy Stolbov**[1], student Grigoriy Aristov[1], seniur lectures Andrey Klyuev[1] *[1]Perm National Research Polytechnic University, Perm, Russian Federation*
D4-P-TUE-P1-12	**EFFECTIVE BEHAVIOR AND INVERSE MATERIAL CHARACTERIZATION OF SCAFFOLDS MADE OF POLYCAPROLACTONE** **Marios Pantazopoulos**[1,2], George Chatzigeorgiou[3], Nikolaos Michailidis[1,2], Fodil Meraghni[3], Nicolas Charalambakis[2] *[1]Physical metallurgy Laboratory, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]2 Center for Research & Development of Advanced Materials, KEDEK - AUTh Balkan Center, Building B', 10th km Thessaloniki-Thermi road, 57001, Thessaloniki, Greece, [3]LEM3-UMR 7239 CNRS, Arts et Metiers ParisTech Metz-Lorraine, Metz, France*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.9: Qualification and modelling of structural and fuel materials for sustainable nuclear reactors

D9-P-TUE-P1-1	**MICROSTRUCTURAL AND MECHANICAL CHARACTERIZATION OF THE MICROSTRUCTURES DEVELOPED IN A 14Cr ODS ALLOY BEFORE AND AFTER ION IRRADIATION BY MEANS OF NANOINDENTATION AND TRANSMISSION ELECTRON MICROSCOPY** **Elvira Oñorbe**[1], Miguel Monclús[2], Cornelia Heintze[3], Mercedes Hernandez Mayoral[1] *[1]Ciemat, Madrid, Spain, [2]IMDEA, Getafe, Spain, [3]HZDR, Dresden, Germany*
D9-P-TUE-P1-2	**SOLUTE EFFECTS ON DISLOCATION PINNING IN Fe-BCC ALLOYS** Dr Maria Ines Pascuet[1,2], Dr Enrique Martinez[3], Dr Ghiat Monnet[4], **Dr Nicolas Castin**[1], Dr Lorenzo Malerba[1] *[1]SCK•CEN, Boeretang 200, Belgium, [2]CONICET, (C1425FQB) CABA, Argentine, [3]Los Alamos National Laboratory, Los Alamos, USA, [4]EDF-R&D, Av des Renardières, France*
D9-P-TUE-P1-4	**FORMATION AND RE-ORIENTATION OF MULTI-PHASE HYDRIDES IN ZIRCONIUM: A MULTIPHASE FIELD MODELING STUDY** **Dr. Mohsen Asle Zaeem**[1], Dr. Jacob Bair[1] *[1]Missouri University of Science and Technology, Rolla, United States*
D9-P-TUE-P1-5	**CORROSION BEHAVIOUR OF HIGH ENTROPY ALLOYS EXPOSED TO OXYGEN-CONTAINING MOLTEN LEAD** **Dr. Adrian Jianu**[1], Dr. Alfons Weisenburger[1], Hao Shi[1], Dr. Annette Heinzel[1], Dr. Renate Fetzer[1], Prof. Ionelia Voiculescu[2], Prof. Victor Geanta[2], Prof. Georg Mueller[1] *[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany, [2]University Politehnica of Bucharest, Bucharest, Romania*
D9-P-TUE-P1-6	**ALUMINA DETONATION SPRAY COATINGS FOR LEAD COOLED NUCLEAR REACTORS** Dr Claudio Mingazzini[1], Dr. Eng. Marco Utili[1], Mr. Alessandro Ventura[1], **Dr. Massimo Angiolini**[1], Mr. Angelo Tati[1], Dr. Fabio De Pascalis[1], Dr Michele Nacucchi[1], Dr. Eng. Pietro Agostini[1] *[1]Enea, www.enea.it, (Faenza, Brasimone, Brindisi and Casaccia Research Centers) Italy*
D9-P-TUE-P1-7	**A MULTIOBJECTIVE SEARCH FOR ALTERNATIVE TUNGSTEN ALLOYS IN NUCLEAR FUSION** **Kurt Lejaeghere**[1], Stefaan Cottenier[1,2], Veronique Van Speybroeck[1] *[1]Center for Molecular Modeling, Ghent University, Zwijnaarde, Belgium, [2]Department of Electrical Energy, Metals, Mechanical Constructions and Systems, Ghent University, Zwijnaarde, Belgium*
D9-P-TUE-P1-8	**ION-IRRADIATION-INDUCED HARDENING OF FeCr-NiSiP ALLOYS** **Dr. Cornelia Heintze**[1], Dr. Frank Bergner[1], Dr. Shavkat Akhmadaliev[1] *[1]Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany*
D9-P-TUE-P1-9	**MODELING THE INTERNAL FRICTION IN TERNARY BCC ALLOYS AT THE ATOMIC SCALE** **Rafael Herschberg Basualdo**[1], Dr. Frédéric Soisson[1], Dr. Chu Chun Fu[1], Dr. Maylise Nastar[1] *[1]DEN-Service de Recherches de Métallurgie Physique, CEA, Université Paris-Saclay, Gif-sur-Yvette, France*
D9-P-TUE-P1-10	**MECHANICAL BEHAVIOUR OF COATED T91 STEEL IN PBBI EUTECTIC** Fosca Di Gabriele[1], **Michal Chocholousek**[1], Zbynek Spirit[1], Silvia Maria Deambrosis[2], Enrico Miorin[2], Francesco Montagner[2], Enrica Ricci[2], Espedito Vassallo[3] *[1]CVR, Rez, Czech Republic , [2]IENI-CNR, Italy, [3]IFP-CNR, Italy*
D9-P-TUE-P1-11	**ASSESSMENT OF 15-15 Ti STABILIZED STAINLESS STEEL FAST REACTOR CLADDING MATERIAL PROPERTIES BY RING COMPRESSION TESTING** **Ing Hygreeva Kiran Namburi**[1], D.Sc. (Tech) Stefan Holmström[2], Dr. Carlo Cristalli[3], Dr. Rosario Giammusso[3], Dr. Rémi Delville[4], Ing. Michal Chocholousek[1] *[1]Centrum Výzkumu Řež S. R. O., Husinec-rez, Czech Republic ,[2]European Commission, Joint Research Centre (JRC), Petten, Netherlands, [3]ENEA, Brasimone (BO), Italy, [4]SCK.CEN, Mol (BE), Belgium*
D9-P-TUE-P1-12	**CHARACTERIZATION OF THE INDUCED MICROSTRUCTURE IN NEUTRON-IRRADIATED Fe-Cr-BASED MODEL ALLOYS** **Andreas Ulbricht**[1], Frank Bergner[1], Andre Heinemann[2] *[1]Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany, [2]Heinz-Maier-Leibnitz Zentrum Garching and Helmholtz-Zentrum Geesthacht, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium D.9: Qualification and modelling of structural and fuel materials for sustainable nuclear reactors

D9-P-TUE-P1-13	**AB INITIO STUDY OF OXIDE LAYERS FORMED DURING STEEL CORROSION IN LEAD-COOLED FAST REACTORS** **Stefano Matteo Cervino**[1], Elena Macerata[1], Massimo Angiolini[2], Pietro Agostini[2], Mario Mariani[1] *[1]Nuclear Engineering Division, Department of Energy, Politecnico di Milano, Milano, [2]ENEA, Fusion and Technology for Nuclear Safety and Security Department, Brasimone Research Centre, Camugnano*
D9-P-TUE-P1-14	**COMPUTATIONAL STUDY OF DIFFUSION COEFFICIENTS IN Fe-Cr SPINEL WITHIN CORROSION PHENOMENA IN LEAD-COOLED FAST REACTORS** **Stefano Matteo Cervino**[1], Elena Macerata[1], Massimo Angiolini[2], Pietro Agostini[2], Mario Mariani[1] *[1]Nuclear Engineering Division, Department of Energy, Politecnico di Milano, Milano, , [2]ENEA, Fusion and Technology for Nuclear Safety and Security Department, Brasimone Research Centre, Camugnano*
D9-P-TUE-P1-15	**ALLOYING EFFECTS ON THE GROWTH MECHANISMS OF ZIRCONIUM ALLOYS UNDER IRRADIATION** Benjamin Christiaen[1,2,3], Dr Alexandre Legris[2,3], Christophe Domain[1,2], **Ludovic Thuinet**[2,3], Antoine Ambard[1,2] *[1]EDF-R&D, Département Matériaux et Mécanique des Composants (MMC), Les Renardières, F-77818 Moret sur Loing Cedex, France, [2]Laboratoire commun EDF-CNRS Etude et Modélisation des Microstructures pour le Vieillissement des Matériaux (EM²VM), France, [3]Unité Matériaux Et Transformations, UMET, UMR 8207, ENSCL, Université Lille [1], 59655 Villeneuve d'Ascq, France*
D9-P-TUE-P1-16	**ADAPTIVE KINETIC MONTE CARLO SIMULATION OF SIMULATED DEFECT MIGRATION IN MOX FUEL** **Dr Mark Bankhead**[1], Miss Lucy Platts[1], Dr John Purton[2], Dr David Gunn[2] *[1]National Nuclear Laboratory, Birchwood Park, Warrington, United Kingdom, [2]STFC Daresbury Laboratory, Sci-Tech Daresbury, Warrington, United Kingdom*
D9-P-TUE-P1-18	**STABILITY OF VACANCY LOOPS CLOSE TO SURFACES IN α-Fe FROM MOLECULAR DYNAMICS SIMULATIONS** **Emma Del Rio**[1], Rosario Menendez-Alfonso[1], M.J. Aliaga[2,3], Manuel Perlado[1], M.J. Caturla[2] *[1]Instituto de Fusion Nuclear - UPM, Spain, [2]Departamento de Física Aplicada, Universidad de Alicante, Alicante, España, [3]Departamento de Química Física, Universidad de Valencia, Valencia, Spain*
D9-P-TUE-P1-19	**STRUCTURAL MATERIALS CROSS-CUTTING ISSUES BETWEEN GenIV AND GenII/III FISSION REACTORS AND FUSION ENERGY SYSTEMS** **Jana Kalivodova**[1], Karl-Fredrik Nilsson[2], Marta Serrano[3], Massimo Angiolini[4], Cristelle Pareige[5], Lorenzo Malerba6 *[1]Centrum výzkumu Řež s.r.o., Prague, Czech Republic , [2]European Commission Joint Research Centre (JRC), Westerduinweg 3, 1755ZG Petten, The Netherlands, [3]Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), Departamento de Tecnología, División de Materiales de Interés Energético, Avda. Complutense 22, 28040 Madrid, Spain, [4]ENEA Department for Fusion and Technologies for Nuclear Safety and Security, Rome, Italy, [5]Groupe de Physique des Matériaux, Université et INSA de Rouen, UMR 6634 CNRS Avenue de l'Université, BP 12, 76801 Saint Etienne du Rouvray, France, [6]Studiecentrum for Kernenergie • Centre d'études de l'énergie nucléaire (SCK•CEN), Boeretang 200, 2400 Mol, Belgium*
D9-P-TUE-P1-20	**NEUTRON IRRADIATION INDUCED MICROSTRUCTURES IN FERRITIC/MARTENSITIC STEEL HT9** Ce Zheng[1], Elaina Anderson[2], Emmanuelle Marquis[2], **Djamel Kaoumi**[1] *[1]North Carolina State University, Raleigh, United States, [2]University of Michigan, Ann Arbor, United States*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium D.10: Multiscale Modeling of Materials

D10-I-P-TUE-P1-1	**ATOMISTIC APPROACH OF INTERFACIAL POLYATOMIC SEGREGATION IN FCC METALLIC ALLOYS** **Balahouane Lezzar**[1], Olivier Hardouin Duparc, Paidar Vaclav, Omar Khalfallah *[1]Constantine University , Constantine, Algeria, [2]LSI, École Polytechnique,91128 Palaiseau Cedex, France, Paris, [3]Institute of Physics ASCR, v.v.i., Prague, Czech Republic, Prague, [4]University 1 (UC1), 25000 Constantine, Algeria, Constantine*
D10-I-P-TUE-P1-2	**A ROUTE TO PERMANENT VALLEY POLARIZATION IN MONOLAYER MoS2** **Dr. Nirpendra Singh**[1], Dr Udo Schwingenschlogl *[1]King Abdullah University Of Science And Technology, Thuwal, Saudi Arabia*
D10-I-P-TUE-P1-3	**EXTENDED MOMENT FORMATION IN MONOLAYER WS2 DOPED WITH 3D TRANSITION METALS** **Dr. Nirpendra Singh**[1], Dr Udo Schwingenschlogl *[1]King Abdullah University Of Science And Technology, Thuwal, Saudi Arabia*
D10-I-P-TUE-P1-4	**A NEW APPROACH TO MODELING BINDING ENERGY OF TRANSITION METAL NANOAGGREGATES (Nin, Fen, Con) FOR TECHNOLOGICAL APPLICATIONS** **Miss Linda Achou**[1] *[1]Badji-mokhtar University, Annaba, Algeria*
D10-I-P-TUE-P1-5	**MODELING ANISOTROPIC GRAIN GROWTH IN NICKEL SUPERALLOYS** **Mr. Julien Fausty**[1], Pr. Nathalie Bozzolo[1], Dr. Yuan Jin[2], Pr. Marc Bernacki[1] *[1]Mines Paristech, Sophia Antipolis, France, 2Cenaero, Charleroi, Belgium*
D10-I-P-TUE-P1-6	**MULTISCALE MODELING OF PRESSURE-ASSISTED SINTERING PROCESS** **Ph.D. Szymon Nosewicz**[1], Prof. Jerzy Rojek[1], Ph.D. Marcin Maździarz[1], Prof. Piotr Kowalczyk[1], M.Sc. Krzysztof Wawrzyk[1], Ph.D. Marcin Chmielewski[2], Prof. Katarzyna Pietrzak[2] *[1]Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland, 2Institute of Electronic Materials Technology, Poland*
D10-I-P-TUE-P1-7	**STRUCTURE, DYNAMICS AND THERMODYNAMICS OF LIGAND-SOLVENT SYSTEM OF IMPORTANCE IN NUCLEAR FUEL CYCLE: INSIGHT FROM MD SIMULATION USING DFT DERIVED PARTIAL ATOMIC CHARGES** **Mr Arya Das**[1], Mr Musharaf Ali[2] *[1]Nuclear Recycle Board, Bhabha Atomic Research Centre, HBNI, Mumbai, India, 22Chemical Engineering Division, Bhabha Atomic Research Centre, HBNI, Mumbai, India*
D10-I-P-TUE-P1-8	**DEVELOPMENT OF A NEW INTERATOMIC POTENTIAL FOR Si-U** Dr Julian Fernandez[1,2,3], Dr Maria Ines Pascuet[2], **Dr Nicolas Castin**[4] *[1]Comision Nacional de Energia Atomica, Buenos Aires, Argentina, [2]CONICET, Buenos Aires, Argentina, [3]UNSAM, Buenos Aires, Argentina, [4]Belgian Nuclear Research Centre, SCK•CEN, Mol, Belgium*
D10-I-P-TUE-P1-9	**MULTISCALE SIMULATION FOR HYPERBRANCHED POLYMERIZATION** **Dr. Zidan Zhang**[1], Jakub Krajniak[2], Prof. Dr. Erik Nies[1] *[1]Comision Nacional de Energia Atomica, Buenos Aires, Argentina, [2]CONICET, Buenos Aires, Argentina, [3]UNSAM, Buenos Aires, Argentina, [4]Belgian Nuclear Research Centre, SCK•CEN, Mol, Belgium*
D10-I-P-TUE-P1-10	**SURFACE PROPERTIES OF BaFeO3 PEROVSKITE FROM FIRST PRINCIPLE CALCULATIONS** **Nadia Iles**[1], Prof. Ulrich Aschauer[2], Prof. Paul Bowen[1] *[1]Laboratory Of Thin Films Physics And Materials For Electronics, Oran [1]University, Oran, Algeria, Oran, Algeria*
D10-I-P-TUE-P1-11	**FREE ENERGY CALCULATIONS OF ADSORPTION OF SIMULATED BODY FLUID IONS ON THE RUTILE (110) SURFACE** **Ms. Azade Yazdan Yar**[1], Prof. Ulrich Aschauer[2], Prof. Paul Bowen[1] *[1]Laboratory of Powder Technology (LTP), Department of Materials Science and Engineering, EPFL, Lausanne, Switzerland, [2]Department of Chemistry and Biochemistry, University of Bern, Bern, Switzerland*
D10-I-P-TUE-P1-12	**MONTE CARLO SIMULATION OF GRAIN GROWTH IN COMMERCIALLY PURE TITANIUM** **Dr Abdelhak Ayad**[1,2], Doctorante Yousra Bassot[2], Pr Nadjet Rouag[2], Pr Francis Wagner[3] *[1]Département De Pharmacie, Faculté de Médecine, Université de Constantine 3, Nouvelle Vile Ali Mendjeli, Bp 67a, Algeria, [2]Laboratoire des microstructures et défauts dans les matériaux, Université Frères Mentouri Constantine 1, Constantine, Algeria, [3]LEM3, (CNRS-UMR 7239),Université de Lorraine, Ile du Saulcy, 57045 Metz, France*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium E.1: Hydrogen production, conversion, and storage

E1-P-TUE-P1-1	**SYNTHESIS AND CHARACTERISATION OF B-SUBSTITUTED NANOPOROUS CARBONS WITH HIGH ENERGY OF HYDROGEN ADSORPTION** **Katarzyna Walczak[1]**, dr Vanessa Coulet[2], dr Thomas Neisius[3], prof Catherine Journet-Gautier[4], dr Christophe Goze-Bac[1], dr Philip Llewellyn[2], Andrew Gillespie[5], prof Peter Pfeifer[5], prof Bogdan Kuchta[2], prof Lucyna Firlej[1] *1Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-Université de Montpellier, Montpellier, France, [2]Laboratoire MADIREL, UMR 7246 CNRS-Aix-Marseille Université, Marseille, France, [3]IM2NP, UMR 7334, CNRS-Aix-Marseille Université, Marseille, France, [4]LMI, UMR 5615, Université Claude Bernard, Lyon, France, [5]Department of Physics and Astronomy, University of Missouri, Columbia, USA*
E1-P-TUE-P1-2	**ANION AND CATION EXCHANGE MEMBRANES FOR ENERGY CONVERSION: A COMPARISON** **Professor Maria-Luisa Di Vona[1]**, Dr Riccardo Narducci[1,2,3], Mr Ivan Vito Ferrari[1,2,3], Dr Emanuela Sgreccia[1,3], Professor Philippe Knauth[2,3] *[1]University of Rome Tor Vergata, Roma, Italy, [2]Aix Marseille University, Marseille, France, [3]International Associated Laboratory (L.I.A.), Ionomer Materials for Energy , Italy/France*
E1-P-TUE-P1-3	**CARBONIZED POLYPYRROLE WITH DIFFERENT MORPHOLOGY AS ANODE MODIFIER IN MICROBIAL FUEL CELL** **Dr Anca Dumitru[1]**, Dr Silviu Vulpe[1], Dr Adrian Radu[1], Dr Corina Bradu[2], Dr. Sorin Avramescu[3], Dr. Carmen Mariana Chifiriuc[2], Dr. Alina Olaru[2] *[1]University of Bucharest, Faculty of Physics, Magurele, Romania, [2]University of Bucharest, Faculty of Biology, Bucharest, Romania, [3]University of Bucharest, Faculty of Chemistry, Romania*
E1-P-TUE-P1-4	**OXIDATION AND HALIDE DOPING IN g-C3N4 AS VIABLE ROUTES TO IMPROVE THE PHOTOCATALYTIC PERFORMANCE** **Ambra Pisanu[1]**, Dr Andrea Bernasconi[1], Dr Chiara Milanese[1], Dr Antonella Profumo[1], Dr Andrea Speltini[1], Dr Michela Sturini[1], Dr Lorenzo Malavasi[1] *[1]Università Di Pavia, Pavia, Italy*
E1-P-TUE-P1-5	**HIGH-TEMPERATURE ELECTROLYSIS IN CO-GENERATION - PRELIMINARY EXPERIMENTAL RESULTS** **Dr.-Ing. Karin Stehlík[1]**, ing. Martin Tkáč[1,2] *[1]Research Center Rez, Husinec-Rez, Czech Republic , [2]University of Chemistry and Technology, Prague, Czech Republic*
E1-P-TUE-P1-6	**DESIGN AND CHARACTERIZATION OF NOVEL GLASS-CERAMIC SEALANTS FOR SOLID OXIDE ELECTROLYSIS CELLS TECHNOLOGY** **Mr. Hassan Javed[1]**, Mr Kai Herbrig[2], Mr Christian Walter[2], Mr Antonio Gianfranco Sabato[1], Prof. Milena Salvo[1], Mr. Federico Smeacetto[1] *[1]Politecnico Di Torino, Turin, Italy, [2]Sunfire, GmbH, Dresden, Germany*
E1-P-TUE-P1-7	**MODELLING THE EFFECT OF ADSORPTION AND ABSORPTION ON SURFACE SEGREGATION FOR BINARY ALLOYS IN HYDROGEN AND OTHER GAS ENVIRONMENTS** **Dr. Amarante Bottger[1]**, Dr. Meng Zhao[1] *[1]Delft University of Technology, Netherlands*
E1-P-TUE-P1-8	**SYNTHESIS OF MAGNESIUM HYDRIDE NANOPARTICLES ON CARBON MATERIALS FOR HYDROGEN STORAGE** **Dr Wei Liu[1]**, Dr Eki Setijadi Setijadi[1], Dr Ruben Bartali[1], Dr Nadhira Laidani[1], Dr Luigi Crema[1], Prof. Kondo-Francois Aguey-Zonsou[2], Dr Giorgio Speranza[1,3,4] *[1]Centre for Materials and Microsystems, Fondazione Bruno Kessler, Via Sommarive 18, 38123 Povo (TN), Italy, [2]MERLin group, School of Chemical Engineering, The University of New South Wales, Sydney, NSW 2052, Australia, [3]Istituto Fotonica e Nanotecnologie – CNR, Via alla cascata 56, 38123 Trento, Italy, [4]Dep. Material Engineering, University of Trento, Via Mesiano 77, 38123 Trento, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium E.2: Batteries and Supercapacitors

E2-P-TUE-P1-1	**NANOCOMPOSITE ELECTROLYTE MEMBRANE BASED ON SULFONATED GRAPHENE OXIDE FOR LITHIUM SULFUR CELLS** **Dr. Isabella Nicotera[1]**, Dr. Cataldo Simari[1], Prof. Cesare Oliviero Rossi[1], Dr. Apostolos Enotiadis[2], Dr. Sergio Brutti[3] *[1]University of Calabria, Rende (CS), Italy, [2]National Center for Scientific Research "Demokritos", Athens, Greece , [3]University of Basilicata, Potenza, Italy*
E2-P-TUE-P1-2	**SYNTHESIS, STRUCTURAL CHARACTERIZATION AND COMPLEX CONDUCTIVITY STUDY OF LiVO3** MSc Gregory Alexandridis[1], **Dr Charalampos Sarafidis[1]**, Dr Aristotelis Kazakopoulos[2], Dr Orestis Kalogirou[1] *[1]Department Of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]Department of Electronic Engineering, Alexander Technological Educational Institute of Thessaloniki, Sindos, Greece, Sindos, Greece*
E2-P-TUE-P1-3	**X-RAY ABSORPTION STUDIES OF ENERGY MATERIALS** **Professor Alan Chadwick[1]** *[1]University Of Kent, Canterbury, United Kingdom*
E2-P-TUE-P1-4	**INSIGHTS ABOUT THE SIDE REACTIVITY UPON CYCLING OF A LTO-LFP Li-ION BATTERY** **Dr. Sergio Brutti[1]**, Dr. Jessica Manzi[1], Dr. Jiabril Gigli[2], Dr. Stefano Zilio[2], Dr. Alessandra Fernicola[2] *[1]University Of Basilicata, Potenza, Italy, [2]SAES Getters Spa, Lainate, Italia*
E2-P-TUE-P1-5	**A CARBON-COATED MIXED OLIVINE Li(Co1/3Fe1/3Mn1/3)PO4 MATERIAL AS POSITIVE ELECTRODE IN LITHIUM CELLS** **Dr. Sergio Brutti[1]**, Dr. Jessica Manzi[1], Dr. Isaac Capone[1] *[1]University Of Basilicata, Potenza, Italy*
E2-P-TUE-P1-6	**DEFECT CHEMISTRY AND MIGRATION PROCESSES IN DISORDERED OXIDES** MSc Apostolos Kordatos[1], **Dr. Nikolaos Kelaidis[1]**, Dr. Stavros-Richard G. Christopoulos[1], Dr. David C. Parfitt[1], Dr. Alexander Chroneos[1,2] *[1]Faculty of Engineering, Environment and Computing, Coventry University, Coventry CV1 5FB, United Kingdom, [2]Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom*
E2-P-TUE-P1-7	**COBALT HEXACYANOFERRATE AS CATHODE FOR SODIUM ION BATTERIES** **Francesco Mazzali[1]**, Prof Serena Margadonna[1] *[1]Materials Research Centre, Swansea University, Swansea, United Kingdom*
E2-P-TUE-P1-8	**CARBON HETEROSTRUCTURES BASED ON GRAPHENE OXIDE FOR LITHIUM-SULFUR BATTERY APPLICATIONS** **Dr. Apostolos Enotiadis[1]**, PhD student Lamprini Boutsika[1], Dr. Isabela Nicotera[2], PhD student Cataldo Simari[2], Dr. Sergio Brutti[3], Dr. Kostantinos Spyrou[4], PhD student Eleni Thomou[4], Dr. Georgia Charalambopoulou[1], Dr. Theodore Steriotis[1] *1National Center for Scientific Research "Demokritos", Athens, Greece, [2]Department of Chemistry and Chemical Tech., University of Calabria, Rende, Italy , [3]Department of Science,University of Basilicata, Potenza , ITALY, [4]Department of Materials Science & Engineering, University of Ioannina, Ioannina, Greece*
E2-P-TUE-P1-9	**MOROCCAN DATE PITS DERIVED ACTIVATED CARBON AND THEIR PERFORMANCE EVALUATION AS ANODE MATERIAL FOR SODIUM-ION BATTERIES** **Dr Ilham El Aboudi[1]**, Ilyasse Izanzar[2], Ismail Saadoune[2], David Talaga[3], Odile Babot[3], Laurent Servant[3] *[1]University Cadi Ayyad, Laboratory of Condensed Matter and Nanostructures (LCMN), Faculty of Sciences and Technology Guèliz, BP 549, Av Abdelkarim Elkhattabi, Marrakech, Morocco, [2]University Cadi Ayyad, Laboratory of Chemistry and Environment (LCME), Faculty of Sciences and Technology, Guèliz, BP 549, Av Abdelkarim Elkhattabi, Marrakech, Morocco, [3]University of Bordeaux, Institute of Molecular Sciences, Group of Molecular Spectroscopy, UMR5255, BP 351,Cours de la Libération, Talence, France*
E2-P-TUE-P1-10	**HYBRID ULTRACAPACITOR-BATTERY ENERGY STORAGE SYSTEM WITH GRAPHENE/CLAY COMPOSITE** **Wisly Truong[1]** *[1]Labex-sigmalim / Spcts Cec, Limoges, FRANCE*
E2-P-TUE-P1-11	**NEW AROMATIC POLYMER ELECTROLYTES FOR APPLICATION IN LITHIUM METAL BATTERIES** Michele Braglia[1,2], Dr. Vincent Morizur[3], Dr. Sandra Olivero[3], Dr. Jean-Roger Desmurs[4], **Dr. Philippe Knauth[1,2]**, Dr. Elisabet Dunach[3] *[1]Aix Marseille Univ, CNRS, Madirel, Marseille, France, [2]International Associated Laboratory LIME, Marseille and Rome, France and Italy, [3]Institut de Chimie de Nice, Univ Nice Sophia Antipolis, CNRS, Nice, France, 4CDP Innovation, Lyon, France*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Tuesday, September 19, 2017

Symposium E.2: Batteries and Supercapacitors

E2-P-TUE-P1-12	**THERMODYNAMICS OF LIQUID LI-SB ALLOYS, EXPERIMENT VS MODELING** Sylwia Terlicka[1], Marcela E. Trybula[1,2], **Przemyslaw Fima[1]** *[1]Institute of Metallurgy and Materials Science, Polish Academy of Sciences, Krakow, Poland, 2Department of Materials Science and Engineering, KTH Royal Institute of Technology, Stockholm, Sweden*
E2-P-TUE-P1-13	**ELECTROCHEMICAL IMPEDANCE STUDY ON ESTIMATING THE CAPACITY OF THE ELECTRIC DOUBLE LAYER SUPERCAPACITORS** **Dr. Evgeny Kharanzhevskiy[1]**, Tatiana Pisareva[1], Francisco Carrasco-Marín[2] *[1]Udmurt State University, , Russian Federation, 22University of Granada 18071 Spain Granada Fuente Nueva*
E2-P-TUE-P1-14	**ELECTROMOTIVE FORCE MEASUREMENTS IN THE Ag-Li-Sb SYSTEM** **Msc Monika Bugajska[1]**, PhD Przemysław Fima[1] *[1]Institute Of Metallurgy and Materials Science. Polish Academy of Sciences, Cracow, Poland*
E2-P-TUE-P1-15	**NEW INTERMETALLIC ANODE MATERIALS FOR LITHIUM ION BATTERIES: EXPERIMENTAL INVESTIGATION OF THE Li-Sb-Sn SYSTEM** **Msc Patric Berger[1]**, Univ.Prof. Dr. Hans Flandorfer[1] *[1]University of Vienna, Department of Inorganic Chemistry - Functional Materials, Vienna, Austria*
E2-P-TUE-P1-16	**IMPROVED TRANSPARENT CONDUCTORS BY SPUTTERING OF ITO ON POLYMERIC SUBSTRATES FOR ELETTRO-OPTICAL DEVICE** **Ph.dr Marco Castriota[1]**, Dr.Ssa Alessia Marino[2], Ph.Dr. Angela Fasanella[1], Ph.Dr. Emanuela Bruno[2], Ph.Dr. Maria P. De Santo[1], Prof. Carlo Versace[1], Ph.Dr. Giovanni De Filpo[3], Prof. Enzo Cazzanelli[1] *[1]Physics Department-University of Calabria , Via P. Bucci Cubo 31C Rende, Italy, [2]Notredame s.r.l., c/o Dipartimento di Fisica, Università della Calabria, RENDE 87036, ITALY, [3]Dipartimento di Chimica e Tecnologie Chimiche, Università della Calabria, Ponte P. Bucci, RENDE 87036, ITALY*
E2-P-TUE-P1-17	**INTERDIGITATED FLEXIBLE LI-ION BATTERY BY AEROSOL JET PRINTING** **Dr Yohann Thomas[1]**, Sébastien Solan[1] *[1]Cea, Grenoble, France*
E2-P-TUE-P1-18	**AMORPHOUS LiCuPO4 THIN FILMS AS A CATHODE MATERIAL FOR Li-Ion BATTERIES** Visensia Ade Sugiawati[1], Florence Vacandio[1], Philippe Knauth1, **Thierry Djenizian[2]** *[1]Aix-Marseille University, Marseille, France, [2]Ecole Nationale Supérieure Des Mines de Saint-Etienne, Gardanne, France*
E2-P-TUE-P1-19	**ON THE EFFECT OF THE CARBON CONTENT IN THE DISCHARGE CAPACITY OF IRON ELECTRODES FOR IRON-AIR BATTERIES** Dr. Cinthia Alegre[1], Horacio A. Figueredo-Rodriguez[2], Dr Rachel D. McKerracher[2], Dr Carlos Ponce de León[2], Dr Antonino S. Aricò[1], **Dr Vincenzo Baglio[1]** *[1]Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano" (CNR-ITAE), 98126 Messina (Italy)* *[2]Electrochemical Engineering Laboratory, Engineering Sciences, University of Southampton, Highfield, Southampton, SO17 1BJ, UK*
E2-P-TUE-P1-20	**PFG-NMR STUDY OF ION TRANSPORT PROPERTIES IN SINGLE LITHIUM-ION CONDUCTING SOLID POLYMER ELECTROLYTES BASED ON NAFION** **Isabella Nicotera[1]**, Cataldo Simari[1], Cesare Oliviero Rossi[1], Luigi Coppola[1], Giuseppe Antonio Ranieri[1] *[1]University Of Calabria, Rende (CS), Italy*
E2-P-TUE-P1-21	**SULFIDE-BASED SOLID ELECTROLYTES FOR ADVANCED ALL-SOLID-STATE LITHIUM CELL CONFIGURATIONS** Giovanna Maresca[1], Dr Akiko Tsurumaki[1], Dr Seitaro Ito[2], Professor Stefania Panero[1], Dr Yuichi Aihara[2], **Dr Maria Assunta Navarra[1]** *[1]Sapienza University Of Rome, Rome, Italy, 2Samsung R&D Institute Japan, Osaka, Japan*
E2-P-TUE-P1-22	**EFFECT OF THE INTERSLAB DISTANCE ON THE PERFORMANCE OF Ni-Co LAYERED DOUBLE HYDROXIDES AS ENERGY STORAGE ELECTRODE MATERIALS** **Mr. Alberto Adán-Más[1,2]**, Ms. Celine Tang[1], Prof. Fátima Montemor[2], Prof. Liliane Guerlou-Demourgues[1] *[1]ICMCB, Université De Bordeaux, Bordeaux INP, Bordeaux, France, 2Centro Química Estrutural, DEQ, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal*
E2-P-TUE-P1-23	**EFFECTS OF TITANIUM DIOXIDE THIN FILMS IN ASYMMETRICAL ELECTROCHROMIC DEVICES** **Ph.dr Marco Castriota[1]**, Ph.Dr. Maria P. De Santo[1], Ph.Dr. Angela Fasanella[1], Prof. Enzo Cazzanelli[1,2], Prof. Riccarco C. Barberi[1] *[1]Physics Department-University of Calabria , Via P. Bucci Cubo 31C Rende, Italy, 2Notredame Srl, C/O Dipartimento di Fisica -Università della Calabria via P. Bucci Cubo 33B Rende, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium E.2: Batteries and Supercapacitors

E2-P-TUE-P1-24	**ULTRAFAST IONIC LIQUID-ASSISTED MICROWAVE SYNTHESIS OF SnO MICROFLOWERS AND THEIR SUPERIOR SODIUM STORAGE PERFORMANCE** **Bingsheng Qin**[1,2], Doctor Alberto Varzi[1,2], Huang Zhang[1,2], Doctor Thomas Diemant[3], Doctor Dorin Geiger[3], Rinaldo Raccichini[1], Professor Jürgen Behm[3], Professor Ute Kaiser[3], Professor Stefano Passerini[1,2] *[1]Helmholtz Institute Ulm, Ulm, Germany, [2]Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, [3]University of Ulm, Ulm, Germany*
E2-P-TUE-P1-25	**MgCo2O4 SYNTHESIZED VIA ELECTRODEPOSITION METHOD AND ITS SUPERCAPACITOR PERFORMANCE** **Mr Abdulhamit Aydin**[1], Prof Dr. Rudolf Holze *[1]AG Elektrochemnie, Institute of Chemistry, Chemnitz University of Technology, Chemnitz, Germany*
E2-P-TUE-P1-26	**POROUS MnCo2O4 AS SUPERIOR ANODE MATERIAL THAN NANOPARTICLES MnCo2O4 FOR RECHARGEABLE LITHIUM ION BATTERIES** **Dr. Alok Kumar Rai**[1] *[1]Amity University, Noida, New Delhi, India, Noida, India*
E2-P-TUE-P1-27	**MICRON-SIZED Bi-Sb-TE TERNARY ALLOY AS HIGH CAPACITY ANODE MATERIAL FOR SODIUM-ION BATTERIES** **Marcin Orzech**[1], Professor Serena Margadonna[1] *[1]College of Engineering, Swansea University, Swansea, United Kingdom*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium E.3: Materials for Energy harvesting

E3-P-TUE-P1-1	**SPECTRO-ELLIPSOMETRIC STUDY OF NON-HYDROGENATED AMORPHOUS SILICON THIN FILMS FOR LOW-COST PHOTOVOLTAIC APPLICATIONS** **Sr Elías Saugar**[1], Dr Susana María Fernández[1], Dr José Javier Gandía[1], Dr Emilio Márquez[2], Dr Eduardo Blanco[2] *[1]Energy Department, CIEMAT, Madrid, Spain, 2Condensed Matter Physic Department, Universidad de Cádiz, Cádiz,, Spain*
E3-P-TUE-P1-2	**ELECTRONIC AND GAP PROPERTIES OF LEAD-FREE PERFECT AND MIXED HYBRID HALIDE PEROVSKITES: AN AB-INITIO STUDY** Athanasios Koliogiorgos[1], Prof. Dr Sotirios Baskoutas[1], **Prof. Dr. Iosif Galanakis**[1] *[1]Department of Materials Science, University Of Patras, Patras, Greece*
E3-P-TUE-P1-3	**ELECTRICAL AND OPTICAL PROPERTIES OF Cu(In,Ga)Se2 THIN FILMS GROWN BY PULSED LASER DEPOSITION** **Mrs. Christiana Nicolaou**[1], Mrs. A. Zacharia[2], Dr. G. Itskos[2], Dr. J. Giapintzakis[1] *[1]University Of Cyprus, Department Of Mechanical And Manufacturing Engineering, Nicosia, Cyprus, [2]Experimental Condensed Matter Physics Lab, Department of Physics, University of Cyprus, Nicosia, Cyprus*
E3-P-TUE-P1-4	**ZT ENCHANTMENT IN HOT-DEFORMED P-TYPE BI0.5SB1.5TE3 BULK ALLOYS** **Dr Elli Symeou**[1], Ms Ioanna Ioannou[1], Mrs Christiana Nicolaou[1], Dr Theodora Kyratsi[1], Dr Ioannis Giapintzakis[1] *[1]University Of Cyprus, Nicosia, Cyprus*
E3-P-TUE-P1-5	**Sn,Zn OXIDE BASED THIN FILMS DEPOSITED BY MOCVD USING AN HETERONUCLEAR PRECURSOR FOR PHYSICAL APPLICATIONS** **Dr. Nathalie Prud'homme**[1], Dr. Corinne Legros[1], Patrick Ribot[1], Dr. Diana Dragoe[1], Dr. David Berardan[1], Dr. Michel Andrieux[1], Dr. Hiroaki Uchiyama[2], Dr. Vadim G. Kessler[2], Dr. Gulaim A. Seisenbaeva[2] *[1]Université Paris Sud 11 (ICMMO/SP2M) UMR 8182, 91405 Orsay Cedx, France, [2]Department of Chemistry, SLU, Box 7015, 75007 Uppsala, Sweden*
E3-P-TUE-P1-6	**STRUCTURAL TRENDS IN CHALCOPYRITE BASED INTERMEDIATE BAND ABSORBER MATERIALS** **Julien Marquardt**[1,2], Prof. Dr. Christiane Stephan[2,3], Prof. Dr. Susan Schorr[1,2] *[1]Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany, [2]Freie Universität Berlin, Berlin, Germany, [3]Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany*

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Symposium E.3: Batteries and Supercapacitors

E3-P-TUE-P1-7	**SOLID-STATE PHOTOELECTROCHEMICAL CELL WITH TANTALUM NITRIDE/OXYNITRIDE NANOTUBES AS THE PHOTOANODE** **Mr. Kaiqi Xu**[1], Dr. Athanasios Chatzitakis[1], Dr. Tor Bjørheim[1], Dr. Truls Norby[1], Dr. Juan Yang[2], Dr. Sen Mei[2], Dr. Mathieu Grandcolas[2], Dr. Christian Simon[2] *[1]University of Oslo, Centre for Materials Science and Nanotechnology, Oslo, Norway, [2]SINTEF Materials and Chemistry, Department of Materials and Nanotechnology, Oslo, Norway*
E3-P-TUE-P1-8	**STABILITY OF SILICON SOLAR CELLS: A COMPARISON BETWEEN MONOCRYSTALLINE AND AMORPHOUS SILICON UNDER HIGH AND LOW IRRADIATION** Dr. Ana Milena Cruz Rodríguez[1], MSc Pau Boch-Jiménez[1], **Dr. Mónica Bratriz Della Pirriera**[1], Dr. Carolina Carbó[1], Rubén Roldán[2] *[1]Leitat Technological Center, Terrassa, Spain, 2EMPA Materials Science and Technology, Dübendorf, Switzerland*
E3-P-TUE-P1-9	**STRUCTURAL ANALYSIS OF HYBRID PEROVSKITE CH3NH3PbI3-xBrx SOLID SOLUTION** **Frederike Lehmann**[1], Dr. Alexandra Franz[1], Dr. Daniel M. Többens[1], Prof. Dr. Susan Schorr[1,3] *[1]Helmholtz-Zentrum Berlin für Materialien und Energie, Berlin, Germany, [2]Universität Potsdam, Potsdam, Germany, [3]Freie Universität Berlin, Berlin, Germany*
E3-P-TUE-P1-10	**OPTICAL AND COMPOSITIONAL INVESTIGATIONS OF IN-SITU SPUTTER DEPOSITED INDIUM SULPHIDE BUFFER LAYERS ON Cu(IN,GA)Se2 SOLAR CELLS** **Dr. Oana Cojocaru-Miredin**[1], M. Sc. Purvesh Soni[1], Dr. Birger Birghoff[2], Prof. Joachim Knoch[2] *[1]Rwth Aachen University, Aachen, Germany, [2]Institut für Halbleitertechnik, rwth Aachen University, Aachen, Germany*
E3-P-TUE-P1-11	**SYNTHESIS, CHARACTERISATION AND OPTOELECTRONIC PROPERTIES OF THE HYBRID $(CH_3)_3SSnI_3$ PEROVSKITE** **Dr. Andreas Kaltzoglou**[1], Dr. Georgios Manolis[1], Dr. Kyriakos Papadopoulos[1], Dr. Athanassios Kontos[1], Dr. Polycarpos Falaras[1] *[1]National Center for Scientific Research "DEMOKRITOS", Athens, Greece*
E3-P-TUE-P1-12	**RAMAN SPECTROSCOPY AND ELECTRICAL PROPERTIES OF EARTH-ABUNDANT Zn3As2 FOR OPTOELECTRONIC DEVICES** **Mrs Andreana Daniil**[1], Mr Martin Friedl[1], Mr Tim Burgess[2], Professor H. Hoe Tan[2], Professor Chennupati Jagadish[2], Dr Philippe Caroff[2], Professor Anna Fontcuberta i Morral[1] *[1]École Polytechnique Féderale de Lausanne, Lausanne, Switzerland, [2]The Australian National University , Canberra, Australia*
E3-P-TUE-P1-13	**BINARY AND TERNARY TRANSITION METAL SILICIDES FOR HIGH-TEMPERATURE THERMOELECTRIC APPLICATIONS** **Mr Dimitrios Stathokostopoulos**[1], Mrs Evangelia Tarani[1], Mrs Aikaterini Teknetzi[1], Dr Dimitrios Chaliampalias[1], Dr Sofia-Alexandra Tsipas[2], Prof Efstathios Polychroniadis[1], Associate Professor Eleni Pavlidou[1], Prof. Konstantinos Chrissafis[1], Assoc. Prof. Euripides Hatzikraniotis[1], Prof. Konstantinos Paraskevopoulos[1], Assoc. Prof. George Vourlias[1] *[1]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Departamento de Ciencia e Ingeniería de Materiales e Ingeniería Química, IAAB, Universidad Carlos III de Madrid, Madrid, Spain*
E3-P-TUE-P1-14	**LOW TEMPERATURE SYNTHESIS AS A ROUTE FOR HIGHLY THERMOELECTRIC EFFICIENT Na-DOPED PbTe** **Dr Crysi Papageorgiou**[1], Dr Andreas Delimitis[2], Dr. Ioannis Giapintzakis, Dr Elli Symeou[1], Dr Theodora Kyratsi[1] *[1]Department of Mechanical and Manufacturing Engineering, University of Cyprus, 1678 , Nicosia, Cyprus, [2]Chemical Process & Energy Resources Institute (CPERI), Centre for Research and Technology Hellas (CERTH), 57001 Thermi, Thessaloniki, Greece*
E3-P-TUE-P1-15	**EFFECT OF SINTERING CONDITIONS ON Mg2Si-BASED THERMOELECTRIC MATERIALS** **Mr George Mesaritis**[1,2,3] *[1]Dr.Elli Symeou, Nicosia, Cyprus, [2]Dr.Nicolaos Vlachos, Nicosia, Cyprus, [3]Dr.Theodora Kyratsi, Nicosia, Cyprus*
E3-P-TUE-P1-16	**REFLECTION SPECTRA OF THE Bi1-xGdxFeO3, Bi1-xNdxFeO3 AND Bi1-x-yGdxLayFeO3 SUBSTITUTED PEROVSKITES** **Prof. Dr. Susan Schorr**[1,2], Dr. Barys Korzun[3,4], Dr. V. Sobol[4], Dr. O. Mazurenko[5], Dr. T. Bizhigitov[6], Dr. S. Tomaev[6] *[1]Helmholtz-Zentrum Berlin For Materials And Energy, Berlin, Germany, [2]Freie Universitaet Berlin, Berlin, Germany, [3]The City University of New York, New York, US, [4]Belarus State Pedagogical University, Minsk, Belarus, [5]Belarusian Republican Foundation for Fundamental Research, Minsk, Belarus, [6]Taraz State Pedagogical Institute, Taraz, Kazakhstan*

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Symposium E.3: Batteries and Supercapacitors

E3-P-TUE-P1-17	**SYNTHETIC MANIPULATION OF HYBRID N-TYPE THERMOELECTRIC MATERIALS** **Dr. Katherine Ann Mazzio**[1,2], Marc Lindorf[3], Prof. Dr. Manfred Albrecht[3], Prof. Dr. Simone Raoux[1,2,4] *[1]Institut für Nanospektroskopie, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany, [2]Energy Materials In-Situ Laboratory, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany, [3]Institut für Physik, Universität Augsburg, Augsburg, Germany, [4]Institut für Physik, Humboldt Universität zu Berlin, Berlin, Germany*
E3-P-TUE-P1-18	**MICROSTRUCTURE STUDY ON LEAD CHALCOGENIDES THERMOELECTRIC MATERIALS** **E.C Stefanaki**[1], E. Hatzikraniotis[1], M.G Kanatzidis[2], Th. Kyratsi[3], P.M Nikolic[4], K.M Paraskevopoulos[1] *[1]Solid State Physics Section, Physics Department, Aristotle University of Thessaloniki, , Greece, [2]Department of Chemistry, Northwestern University, Evaston,IL, United States, [3]Department of Mechanical & Manufacturing Engineering, University of Cyprus, 1678 Nicosia, Cyprus, [4]Institute of Technical Sciences of SASA, Knez Mihailova 35, 11000 Beograd, Serbia*
E3-P-TUE-P1-19	**STRUCTURAL CHARACTERIZATION OF NANOCRYSTALLINE Si THIN FILMS, FOR SOLAR CELL APPLICATIONS, BY ELECTRON MICROSCOPY TECHNIQUES** **Mr Stavros Kozakos**[1], Mr Nikolaos Vouroutzis[1], Mr Christos Lioutas[1], Mrs Violetta Gianneta[2], Mrs Androula Nassiopoulou[2] *[1]Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece, [2]NCSR Demokritos/INN, Terma Patriarchou Grigoriou, Aghia Paraskevi, 15310 Athens, Greece*
E3-P-TUE-P1-20	**A HIGH RESOLUTION ELECTRON MICROSCOPY AND SPECTROSCOPY STUDY OF INTERFACES IN Si-BASED SOLAR CELL HETEROJUNCTIONS** Dr Despoina Maria Kepaptsoglou[1,4], **Dr Spyros Diplas**[2,3], Professor Quentin Ramasse[4,5], Associate Professor Anette Eleonora Gunnæs[1], Dr Alexander Ulyashin[2] *[1]Physics Department/Center for Materials Science and Nanotechnology, University of Oslo, OSLO, Norway, [2]SINTEF Materials and Chemistry, OSLO, Norway, [3]Department of Chemistry/Centre for Materials Science and Nanotechnology, University of Oslo, OSLO, Norway, [4]SuperSTEM, Daresbury, United Kingdom, [5]National Centre for Electron Microscopy, Lawrence Berkeley National Laboratory, Berkeley, United States of America*
E3-P-TUE-P1-21	**A TEM AND XPS STUDY OF EPITAXIALLY GROWN AMORPHOUS HYDROGENATED SILICON IN SOLAR CELL STRUCTURES** **Dr Spyros Diplas**[1,3], Associate Professor Anette Eleonora Gunnæs[2], Dr Alexander Ulyashin[1] *[1]SINTEF MK, OSLO, Norway, [2]Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, OSLO, Norway, [3]Department of Chemistry/Centre for Materials Science and Nanotechnology, University of Oslo, OSLO, Norway*
E3-P-TUE-P1-22	**ON THE EVOLUTION OF PROPERTIES OF ITO LAYERS DEPOSITED ON CRYSTALLINE AND AMORPHOUS Si UPON HEAT TREATMENT** Dr Despoina Maria Kepaptsoglou[1,4], Dr Spyros Diplas[2,3], Associate Professor Anette Eleonora Gunnæs[1], **Dr Alexander Ulyashin**[2] *[1]Department of Physics/Centre for Materials Science and Nanotechnology, University of Oslo, Oslo, Norway, [2]SINTEF Materials and Chemistry, Oslo, Norway, [3]Department of Chemistry/Centre for Materials Science and Nanotechnology, University of Oslo, Oslo, Norway, [4]SuperSTEM, Daresbury, United Kingdom*
E3-P-TUE-P1-23	**3D COUNTER ELECTRODES FOR DYE SENSITIZED SOLAR CELLS WITH IMPROVED PERFORMANCE** **Post-doc Researcher George Syrrokostas**[1], Phd candidate Aikaterini Govatsi[1], Associate Professor George Leftheriotis[2], Dr. Spyros Yannopoulos[1] *[1]FORTH/ICEHT, Patra, Greece, 2Physics Department, University of Patras, Patra, Greece*
E3-P-TUE-P1-24	**EFFECTS OF Sr/La AND Ta/La co-DOPING ON THE DIELECTRIC PROPERTIES OF CaCu3Ti4O12** **Dr. Eng. Rodrigo Espinoza**[1], Sorach Vidal[1] *[1]Materials Science Department, FCFM, Universidad De Chile, Santiago, Chile*
E3-P-TUE-P1-25	**CORROSION IN SOLAR THERMAL SYSTEMS: MATERIAL SELECTION AND PROTECTION** **Dr. Ali Soleimani-Dorcheh**[1], Dr. Mathias Galetz[1] *[1]DECHEMA-Forschungsinstitut, Frankfurt Am Main, Germany*
E3-P-TUE-P1-26	**POROUS, REDOX OXIDE-BASED, CERAMIC STRUCTURES FOR EFFICIENT SOLAR ENERGY HARVESTING, TRANSFORMATION AND STORAGE** **Christos Agrafiotis**[1], Martin Roeb[1], Christian Sattler[1] *[1]Deutsches Zentrum für Luft- und Raumfahrt/German Aerospace Center - DLR, Linder Höhe, 51147 , Köln, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium F.1: Biomaterials for Tissue Engineering

F1-P-TUE-P1-1	**TOUGHENING OF POROUS CALCIUM PHOSPHATE SCAFFOLDS BY POLY(ε-CAPROLACTONE) COATINGS** **Dr. Sergey Dorozhkin**[1] *[1]N/A, Moscow, Russia*
F1-P-TUE-P1-2	**MECHANICAL PROPERTIES OF DENTAL COMPOSITES MODIFIED HYDROXYAPATITE** **Zofia Kula**[1], Hieronim Szymanowski[2] *[1]Institute of Materials Science and Engineering, Łódź of University of Technology, ul. Stefanowskiego 1/15, 90-924 Łódź, Poland, Łódź, Poland, [2]Institute of Materials Science and Engineering, Łódź of University of Technology, ul. Stefanowskiego 1/15, 90-924 Łódź, Poland, Łódź, Poland*
F1-P-TUE-P1-3	**ANIONIC SURFACTANT TEMPLATING SYNTHESIS OF MESOSTRUCTURED HYBRID HYDROXYAPATITE** José Miguel Blanco-Becares[1], Dr. Antonio J. Salinas[1,2], Laura Casarrubios[3], Daniel Fernández-Villa[3], Dr. María José Feito[3], Prof. María Teresa Portolés[3], **Dr. Blanca González**[1,2], Prof. María Vallet-Regí[1,2] *[1]Facultad de Farmacia, Universidad Complutense De Madrid, Madrid, Spain, [2]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain, [3]Facultad de Ciencias Químicas, Universidad Complutense de Madrid, Madrid, Spain*
F1-P-TUE-P1-4	**EFFECT OF HALLOYSITE NANOTUBE FUNCTIONALIZATION ON THERMAL AND MECHANICAL PROPERTIES OF POLY(ε-CAPROLACTONE)** **Ms Zoi Terzopoulou**[1], Dr Dimitrios Bikiaris[1] *[1]Laboratory of Polymer Chemistry and Technology, Department of Chemistry, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece*
F1-P-TUE-P1-5	**MESOPOROUS HYDROXYAPATITE AND MESOPOROUS BIOACTIVE GLASSES, A NEW STRATEGY TO MIMIC THE INORGANIC COMPONENT OF BONE** **Giulia Molino**[1], Sonia Fiorilli[1], Chiara Vitale-Brovarone[1] *[1]Politecnico di Torino - Department of Applied Science and Technology, Turin, Italy*
F1-P-TUE-P1-6	**TINB ALLOYS COVERED WITH BaTiO3 LAYER ENHANCED CELL PROLIFERATION AND IMPROVED THE VINCULIN AND ß1-INTEGRIN PRODUCTION** **M.Sc., Ph.D. Martin Plencner**[1], M.Sc., Ph.D. Marta Vandrovcova[1], M.Sc., Ph.D. Premysl Vanek[2], M.Sc. Zdenek Tolde[3], Assoc. Prof. Vladimir Stary[3], Assoc. Prof. Lucie Bacakova[1] *[1]Institue Of Physiology, The Czech Academy Of Sciences, Prague, Czech Republic, [2]Institute of Physics of the Czech Academy of Sciences, Prague, Czech Republic, [3]Institute of Materials Engineering, Faculty of Mechanical Engineering, Prague, Czech Republic*
F1-P-TUE-P1-7	**DESIGN AND CHARACTERISATION OF BIOMIMETIC SMART SCAFFOLDS FOR BONE APPLICATIONS** **Ms Giorgia Montalbano**[1], Ms Giulia Molino[1], Ms Giorgia Novajra[1], Sonia Fiorilli[1], Giovanni Vozzi[2,3], Carmelo De Maria[2,3], Daniele Pasciuto[1], Gabriela Ciapetti[4], Chiara Vitale-Brovarone[1] *[1]Politecnico Di Torino - Department of Applied Science and Technology, Turin, Italy, [2]University of Pisa - Dipartimento di Ingegneria dell'Informazione, Pisa, Italy, [3]Research Center "E. Piaggio" - University of Pisa, Pisa, Italy, 4Istituto Ortopedico Rizzoli - Laboratorio di Fisiopatologia Ortopedica e Medicina Rigenerativa, Bologna, Italy*
F1-P-TUE-P1-8	**MODIFICATION OF THE ULTRA-FINE GRAINED TITANIUM SURFACE BY CHEMICAL ETCHING AND ATOMIC LAYER DEPOSITION (ALD) TO PRODUCE BIOACTIVE COATING** **Denis Nazarov**[1], Elena Zemtsova[1], Alexandr Solokhin[1], Vladimir Smirnov[1], Ruslan Valiev[1] *[1]Saint Petersburg State University, Saint-Petersburg, Russian Federation*
F1-P-TUE-P1-9	**CONTROLLING THE DEGRADATION RATE OF MAGNESIUM FOAMS OBTAINED BY POWDER METALLURGY METHODS** Dr. Sandra C. Cifuentes[1], Mr. Luis Arias[1,2], Dr. Elena Gordo[1], **Dr. Sophia A. Tsipas**[1] *[1]Universidad Carlos III de Madrid, IAAB, Escuela Politécnica Superior, Leganes 28911, Spain, 2Tecnológico de Coasta Rica, Escuela de Ciencia e Ingeniería en Materiales, Cartago, Costa Rica*
F1-P-TUE-P1-10	**NANOCOMPOSITE BIOACTIVE SCAFFOLDS WITH MULTIPLE DELIVERY CAPABILITIES FOR BONE TISSUE REGENERATION** Gregorio Guerrero[1], Dr Juan Pablo Cattalini[1], Kai Zheng[2], Prof. **Aldo R. Boccaccini**[2], Prof. Dr. Viviana Mouriño[1,3] *[1]Universidad de Buenos Aires, Argentina, 2University of Erlangen-Nuremberg, , Germany, 3CONICET, , Argentina*
F1-P-TUE-P1-11	**GLASSES IN THE Na2O (K2O)-CaO-MgO-SiO2-P2O5-CaF2 SYSTEM AND THEIR DEVITRIFICATION BEHAVIOR** PhD Student Konstantinos Dimitriadis[1], Professor Michael Karakassides[1], Professor Dilshat Tulyaganov[2], **Associate Professor Simeon Agathopoulos**[1] *[1]Materials Science and Engineering Department, University of Ioannina, Greece, [2]Turin Polytechnic University of Tashkent, Uzbekistan*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium F.1: Biomaterials for Tissue Engineering

F1-P-TUE-P1-12

DUAL SYRINGE ELECTROSPINNING-ELECTROSPRAYING SYSTEM FOR CARDIOVASCULAR STENTS

Ms Veroniki Bakola[1], Ms. Varvara Karagkiozaki[1,2], Ms. Fotini Pappa[1,2], Ms. Aikaterini-Rafailia Tsiapla[1], Ms. Eleni Pavlidou[3], Ms. Theodora Choli-Papadopoulou[4], Mr. Ioannis Moutsios[1], Mr. Stergios Logothetidis[1]

[1]Nanomedicine Group, Lab for "Thin Films- Nanomaterials, Nanosystems & Nanometrology", Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]BL Nanobiomed P.C. Thessaloniki, Greece, Thessaloniki, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [4]Department of Chemistry, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece

F1-P-TUE-P1-13

FABRICATION OF THREE-DIMENSIONAL BIODEGRADABLE CELLULOSE ACETATE SCAFFOLDS LOADED WITH DEXAMETHASONE DRUG FOR BONE IMPLANTS

Mrs. Aikaterini-Rafailia Tsiapla[1], Mrs. Varvara Karagkiozaki[1,2], Mrs. Fotini Pappa[1,2], Mrs. Veroniki Bakola[1], Mrs. Eleni Pavlidou[3], Mrs. Theodora Choli-Papadopoulou[4], Mrs. Panagiwta Gkertsiou[1], Mr. Stergios Logothetidis[1]

[1]Lab for "Thin Films- Nanosystems & Nanometrology", Nanomedicine Group, Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]BL Nanobiomed P.C. Thessaloniki, Greece, Thessaloniki, Greece, [3]Department of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [4]Department of Chemistry, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece

F1-P-TUE-P1-14

EFFECT OF BITING PATTERNS ON STEM CELL DIFFERENTIATION AND PROLIFERATION IN THE CERVICAL LOOP OF THE INCISOR IN MICE

Alexander Tsouknidas[1], Lucia Jimenez-Rojo[2], Nikolaos Michailidis[1], Thimios Mitsiadis[2]

[1]Physical Metallurgy Laboratory, Department of Mechanical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Institute of Oral Biology, University of Zurich, Plattenstrasse 11, CH-8032, , Switzerland

F1-P-TUE-P1-15

EXTRACTION OF KERATIN FROM SUSTAINABLE CHICKEN FEATHER COMPONENTS

Phd Candidate Firoozeh Pourjavaheri[1], Associate Professor Oliver A.H. Jones[1], Adjunct Associate Professor Frank Sherkat[1], Associate Professor Arun Gupta[2], Prof. Emeritus Dr Robert A. Shanks[1]

[1]Rmit University, Melbourne, Australia, [2]Universiti Malaysia Pahang, Kuantan, Malaysia

F1-P-TUE-P1-16

DEALLOYING-BASED NANOCOMPOSITES: TOWARDS A NEW GENERATION OF IMPLANT BIOMATERIALS

Dr. Ilya Okulov[1,2], Mr. Artem Okulov[1,3], Assoc. Prof. Takeshi Wada[2], Prof. Hidemi Kato[2], Prof. Jörg Weissmüller[1,4], Dr. Jürgen Markmann[1,4]

[1]Institute of Materials Research, Materials Mechanics, Helmholtz-Zentrum Geesthacht, Geesthacht, Germany, [2]Institute for Materials Research, Tohoku University, Katahira 2-1-1, Sendai 980-8577, Japan, [3]Institute of Metal Physics, Ural Division of the Russian Academy of Sciences, Ekaterinburg, Russian Federation, [4]Institute of Materials Physics and Technology, Hamburg University of Technology, Hamburg, Germany

F1-P-TUE-P1-17

CARDIAC PROGENITOR CELLS RESPONSE TO BLOW-SPUN SCAFFOLD MODIFIED BY POLYELECTROLYTE MULTILAYER FILMS

Phd Aldona Mzyk[1], MSc Michał Wojasiński[2], PhD Piotr Natkański[3]

[1]Institute of Metallurgy And Materials Science Pas, Krakow, Poland, [2]of Biotechnology and Bioprocess Engineering, Faculty of Chemical and Process Engineering, Warsaw University of Technology, Warsaw, Poland, [3]Faculty of Chemistry, Jagiellonian University, Krakow, Poland

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium F.4: The Next Generation of Implants with Multi-functional Properties: Advanced Synthesis, Processing and Surface Modification Methods for Biomaterials

F4-P-TUE-P1-1

NEAR-SURFACE MICROSTRUCTURAL AND MICRO-MECHANICAL PROPERTIES CHANGES OCCURRED IN A BIOCOMPATIBLE Ti-Nb-Zr-Fe-O GUM-TYPE ALLOY BY SMAT (SURFACE MECHANICAL ATTRITION TREATMENT) PROCESSING

Dr. Doina Raducanu[1], Dr. Vasile Danut Cojocaru[1], Dr. Anna Nocivin[2], Dr. Mariana Lucia Angelescu[1], Eng. Ioan Dan[3], Eng. Elisabeta Mirela Cojocaru[1], Dr. Ion Cinca[1]

[1]University Politehnica of Bucharest, Bucharest, Romania, [2]OVIDIUS University of Constanta, Constanta, Romania, [3]SC R&D Cosnultanta si Servicii SRL, Bucharest, Romania

F4-P-TUE-P1-2

MEDICAL IMPLANTS FROM NANOSTRUCTURED Ti WITH ENHANCED BIOACTIVE PROPERTIES

Dr Elena Zemtsova[1], PhD Denis Nazarov[1], Prof. Ruslan Valiev[1], Prof. Vladimir Smirnov[1]

[1]Saint Petersburg State University, Saint Petersburg, Russia

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium F.4: The Next Generation of Implants with Multi-functional Properties: Advanced Synthesis, Processing and Surface Modification Methods for Biomaterials

F4-P-TUE-P1-3	**INFLUENCE OF AGING TIME IN THE SYNTHESIS OF HYDROXYAPATITE BY THE SOL-GEL METHOD USING CHICKEN EGGS SHELLS AS CALCIUM PRECURSOR** **Dr Jose Brant de Campos**[1], Dr Marilza Sampaio Aguilar[2], Dr Bruno Cavalcante di Lello[2], Dr Francisco José Moura[3], Miss Nathaly Cristiane de Campos[3] *[1]Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil, [2]Universidade Estácio de Sá, Rio de Janeiro, Brazil, [3]PUC-Rio, Rio de Janeiro, Brazil*
F4-P-TUE-P1-4	**CALCIUM-PHOSPHATE COATINGS BY ELECTROSTATIC SPRAY DEPOSITION** **Dr Laurent Gremillard**[1], Dr Solène Tadier[1], Pr. Elisabeth Djurado[2,3], Dr. Rakesh Sharma[2,3] *[1]Insa-lyon, Cnrs, Villeurbanne, France, [2]Univ. Grenoble Alpes, LEPMI, Grenoble, France, [3]CNRS, LEPMI, Grenoble, France*
F4-P-TUE-P1-5	**EVALUATION OF STRUCTURAL MODIFICATION OF CONVENTIONAL AND CROSSLINKED PE-UHMW ACETABULAR LINERS AFTER IN VIVO USE** **Prof. Vasiliki-Maria Archodoulaki**[1], Anna LASKA[2], Aysenur ORS UNSAL[1], Dr. Bernadette DUSCHER[1] *[1]TU Wien (Vienna University of Technology), Vienna, Austria, [2]Lodz University of Technology, Lodz, Poland*
F4-P-TUE-P1-6	**MAGNETIC POLYMER MICROSPHERES OF PHBV WITH SURFACE MODIFIED SPIONS FOR BIOMEDICAL APPLICATION** Dr. Maizlinda Izwana Idris[1,2], Dr. rer. nat. Jan Zaloga[3], Professor Dr. med. Christoph Alexiou[3], **Professor Dr.-Ing. habil. Aldo Roberto Boccaccini**[1] *[1]TU Wien (Vienna University of Technology), Vienna, Austria, [2]Lodz University of Technology, Lodz, Poland*
F4-P-TUE-P1-7	**ON THE DESIGN OF LOW RIGIDITY BIOCOMPATIBLE TI-XNB (0 < X< 35) ALLOYS BY DENSITY FUNCTIONAL THEORY CALCULATIONS** **Dr Julio Gutierrez Moreno**[1,2], Dr Dimitris G. Papageorgiou[1], Dr Christina Lekka[1], Prof Georgios A. Evangelakis[3] *[1]Department of Materials Science and Engineering. University of Ioannina, Ioannina, Greece, [2]Tyndall National Institute. University College Cork, Cork, Ireland, [3]Department of Physics. University of Ioannina, Ioannina, Greece*
F4-P-TUE-P1-8	**MICROSTRUCTURE CHARACTERIZATION AND MECHANICAL PROPERTIES OF HOMOGENIZED Ti-Nb-Mo-Zr ALLOYS FOR BIOMEDICAL APPLICATION** **Aline Raquel Vieira Nunes**[1], Gabriel Sinara Borborema[1], Luiz Henrique de Almeida[1] *[1]Universidade Federal do Rio de Janeiro, Rio de Janeiro – RJ, 21.941-972, Brazil*
F4-P-TUE-P1-9	**DESING OF NEW BIOCOMPATIBLE TI-BASED AMORPHOUS METALLIC COATINGS WITH LOW YOUNG'S MODULUS FOR DENTAL IMPLANTS** **Doctor Emilio Frutos Torres**[1], Doctor Tomas Polcar[2] *[1]Department of Control Engineering, Faculty of Electrical Engineering, Czech Technical University in Prague, Prague, Czech Republic, [2]Engineering Materials, University of Southampton, Southampton, United Kingdom*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium G.1: Competences and basic knowledge in the ICTER

G1-P-TUE-P1	**A SERVICE-LEARNING EXPERIENCE IN MATERIALS SCIENCE CORE COURSES FOR ENGINEERS: THE PROJECT AND THE PERCEPTION OF THE STUDENTS** **Dr. Teresa Guraya**[1], Dr. Luis Cabedo[2], Dr. María Lidón Moliner[2], Mrs. Marta Royo[2], Dr. Igor Puerto[1], Dr. Esperanza Diaz-Tajada[1] *[1]University Of The Basque Country, Bilbao, Spain, [2]University Jaume I, Castellón, Spain*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium G.2: Key material fields for modern curricula

G2-P-TUE-P1	**A SUSTAINABLE EUROPEAN CENTRE FOR RISK MANAGEMENT AND SAFE INNOVATION IN NANOMATERIALS AND NANOTECHNOLOGIES (EC4SafeNano) – DEVELOPING THE GREEK HUB** **Dr Effie Marcoulaki**[1], Dr Myrto Konstantinidou[1], Dr Panagiotis Neofytou, Dr Konstantinos Eleftheriadis, Dr Olga Aneziris, Dr Marika Pilou, Dr Maria Gini, Dr Ioannis Papazoglou *[1]National Centre for Scientific Research "Demokritos", Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium H.1: Critical Materials: Impact on Near-term Advanced Energy Technologies

H1-P-TUE-P1-1	**TUNING OF MAGNETIC PROPERTIES OF HEUSLER-TYPE GLASS-COATED MICROWIRES** Dr. Valentina Zhukova[1], Dr. Mihail Ipatov[1], Mr. Sergey Shevyrtalov[2], Dr. Valeria Rodionova[2], **Dr. Prof. Arcady Zhukov**[3] *[1]Dept. Phys. Mater. and Dept. Appl. Phys. Univ. Basque Country , San Sebastian, Spain, [2]Immanuel Kant Baltic Federal University , Kaliningrad , Russia, [3]Dept. Phys. Mater. Univ. Basque Country and Ikerbasque, Basque Found. Science, Spain*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium H.2: Sustainable Production of (Critical) Materials

H2-P-TUE-P1-1	**CERAMIC SHELL: AN ALTERNATIVE RAW MATERIAL FOR PRODUCTION OF RADIANT POROUS BURNERS** **Dr.ing. Antonio Pedro Novaes de Oliveira**[1], MSc. Naiane Paiva Stochero[1], Dr.Ing. Elisângela Guzi de Moraes[1] *[1]Federal University of Santa Catatina (UFSC), Graduate Program in Materials Science and Engineering (PGMAT), Laboratory of Glass-Ceramic Materials (VITROCER), Campus Universitário, Trindade - PO Box 476, 80040-900 Florianópolis., Brazil*
H2-P-TUE-P1-2	**PHASE VARIATION AND METAL ELEMENT MIGRATION IN CARBOTHERMIC REDUCTION PROCESS OF (V, Cr)-BEARING TITANOMAGNETITE RESIDUE** **Ph.D. Bo Zhang**[1,2], Mr. Sen Gao[1,2], Mr. Weibin Chen[1,2], Miss Yun Ye[1,2], Ph.D. Chengjun Liu[1,2] *[1]Scool of Metallurgy, Northeastern University, Shenyang, China, [2]Key Laboratory for Ecological Metallurgy of Multimetallic Ores (Ministry of Education), Northeastern University, Shenyang, China*
H2-P-TUE-P1-3	**DEVELOPMENT OF $NdFe_{12}$-BASED MAGNETIC FILMS BY ELECTRODEPOSITION FROM AQUEOUS-AND IONIC LIQUID-BASED ELECTROLYTES AS AN ALTERNATIVE REPROCESSING ROUTE FOR RECYCLED Nd-Fe-B PERMANENT MAGNETS** Xuan Xu[1,2], Spela Trafela[1,2], Awais Ikram[1,2], Farhan Mehmood[1,2], Saso Sturm[1,2], **Dr. Kristina Zuzek Rozman**[1] *[1]Jozef Stefan Institute, Ljubljana, Slovenia, [2]Jozef Stefan International Postgraduation School, Ljubljana, Slovenia*
H2-P-TUE-P1-4	**LITHIUM CARBONATE RECYCLING FROM CATHODE SCRAP OF SPENT LITHIUM-ION BATTERY** **Zhi Sun**[1], Xiao Lin[1], Hongbin Cao[1], Yi Zhang[1] *[1]Institute Of Process Engineering, Chinese Academy Of Sciences, Beijing, China*
H2-P-TUE-P1-5	**INTEGRATED METHOD FOR NONFERROUS METALS RECOVERY FROM WASTE ELECTRIC AND ELECTRONIC EQUIPMENT (WEEE) USING MICROWAVE ENERGY** **Doctor Engineer Vasile Soare**[1], Engineer Marian Burada[1], Doctor engineer Daniela Dumitrescu[1], Engineer Ionut Constantin[1], Doctor Engineer Dumitru Mitrica[1], Engineer Mihai Olaru[1], Engineer Victoria Soare[1], Doctor Engineer Mihai Ghita[1], Doctor Engineer Ana Maria Julieta Popescu[2], Professor Doctor Engineer Mihai Buzatu[3] *[1]National R&d Institute For Nonferrous And Rare Metals-imnr, Pantelimon, Romania, [2]Ilie Murgulescu Institute of Physical Chemistry of the Romanian Academy, Bucharest, Romania, [3]University Politehnica of Bucharest, Faculty of Material Science and Engineering, Bucharest, Romania*
H2-P-TUE-P1-6	**TOWARDS HIGHLY ADVANCED, NON-BRITTLE Fe-Al BASED INTERMETALLICS** Dr. Wolfgang Kochanek[2], Dr. Srdjan Milenkovic[3], Dr. Santhanu Jana[4], Dr. Pavel Hanus[4], **Dr. Panagiotis Kavouras**[1], Dr. Costas Charitidis[1] *[1]Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, http://nanolab.chemeng.ntua.gr/ , Athens, Greece, [2]Dr. Kochanek Entwicklungsgesellschaft, Freiheitstr. 57, 67434 , Germany, [3]IMDEA Materials Institute, Getafe, Spain, [4]Access e.V., Materials + Processes , Intzestr. 5, 52072, RWTH-Aachen, Germany, [5]Technical University of Liberec, Studentská 1402/2, 461 17, Czechia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium H.2: Sustainable Production of (Critical) Materials

H2-P-TUE-P1-7	**RECOVERY OF CHROMIUM FROM CHROMITE ORE PROCESSING RESIDUE BY CARBOTHERMIC REDUCTION IN THE PRESENCE OF ALKALI** **Miss Lidia Escudero Castejon**[1], Dr Sergio Sanchez-Segado[1], Prof Animesh Jha[1] *[1]University Of Leeds, Leeds, United Kingdom*
H2-P-TUE-P1-8	**RECOVERING OF GOLD DEPOSITED ON GERMAN SILVER SUPPORT** Ceylan Karabudak[1], Muhammed İhsan Özgün[1], **Dr Yasin Ramazan Eker**[1] *[1]Konya Necmettin Erbakan University, Konya, Turkey*
H2-P-TUE-P1-9	**LEACHING OF METALS IN RED MUD WITH ACIDIC SOLUTIONS** **Tugba Selcen Atalay**[1], Hakan Burak Karadag[1], Mehmet Muzaffer Karadag[2], Yasin Ramazan Eker[1] *[1]Necmettin Erbakan University, Department of Metallurgical and Materials Engineering, Konya, Turkey, [2]Selcuk University, Department of Geological Engineering, Konya, Turkey*
H2-P-TUE-P1-10	**ENERGY EFFICIENT RECOVERY OF LEAD FROM SPENT LEAD ACID BATTERIES USING DEEP EUTECTIC SOLVENTS** **Dr Andrew Ballantyne**[1], Prof Geoff Kelsall[2], Prof Jason Riley[1], Prof Nilay Shah[2], Dr Jason Hallett[2], Dr David Payne[1] *[1]Department of Materials, Imperial College London, London, United Kingdom, 2Department of Chemical Engineering, Imperial College London, London, United Kingdom*
H2-P-TUE-P1-11	**COMPARISON BETWEEN TWO PARTIAL LEAST SQUARES REGRESSION APPROACHES FOR THE CHEMICAL QUANTIFICATION OF MOLTEN NON-FERROUS SLAG** **Elise François**[1], Odhisea Gazeli[2,3], Dr. Annelies Malfliet[1], Prof. George Angelopolous[4], Prof. Stelios Couris[2,3], Prof. Bart Blanpain[1] *[1]Department of Materials Engineering, KU Leuven, 3001 Heverlee , Belgium, [2]Department of Physics, Univeristy of Patras, 26505 Patras, Greece, [3]Institute of Chemical Engineering Sciences, Foundation for Research and Technology, Hellas, 26505 Patras, Greece, [4]Department of Chemical Engineering , 26505 Patras, Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P1 Tuesday, September 19, 2017

Symposium H.3: Materials Life Cycle Approach and Flow Analysis

H3-P-TUE-P1-1	**SUSTAINABILITY ANALYSIS OF AN EUROPEAN UNDERGROUND RESEARCH INFRASTRUCTURE RELATED TO ADVANCED ADIABATIC COMPRESSED AIR ENERGY STORAGE (AA-CAES): RICAS2020 PROJECT** Degree in Environmental Science Ariadna Claret[1], Degree in Environmental Science Maria Rosa Riera[1], Degree in Environmental Science Gertri Ferrer[1], Degree in Environmental Science Marta Escamilla[1], **Dr. Mónica Beatriz Della Pirriera**[1] *[1]Leitat, Terrassa, Spain*
H3-P-TUE-P1-2	**MICROSTRUCTURE AND THERMAL CHARACTERIZATION OF THE PET-G FOIL BEFORE AND AFTER RECYCLING** **Ph.D. Eng. Rafal Kozera**[1], M.Sc. Eng. Kamil Dydek[1], M.Sc. Eng. Paulina Latko-Durałek[1], P.hD. Eng. Paulina Kozera[1], Prof. Anna Boczkowska[1] *[1]Warsaw University Of Technology, Faculty Of Materials Science And Engineering, Ul. Woloska 141, Poland*
H3-P-TUE-P1-3	**THERMAL AND MECHANICAL PROPERTIES OF PETG/rPETG BLENDS** **Phd Student Kamil Dydek**[1], PhD Student Paulina Latko-Duralek[1], Student Kajetan Chodorowski[1], PhD. Eng. Rafał Kozera[1], PhD. Eng. Paulina Chabera[1], Prof. Anna Boczkowska[1] *[1]Warsaw University Of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.1: Carbon-based nanomaterials

A1-P-THU-P2-1	**INFLUENCE OF THE Co: Ni RATIO ON THE PROPERTIES OF Co-Ni NANOPARTICLES AND THEIR CARBON-CONTAINING NANOCOMPOSITES** **Professor, PhDoctor Ivania Markova**[1], PhD student Ivan Zahariev[1], Master student Emre Karaduman[2], Associate professor, PhDoctor Mehmet Piskin[2], Associate professor Ludmil Fachikov[1], Associate professor, PhDoctor Rositca Gavrilova[1], Associate professor Boyan Yordanov[1], Assistant professor Dimka Ivanova[1] *[1]University of Chemical Technology and Metallurgy, Sofia, Bulgaria, 2Yildiz Technical University, Istanbul, Turkey*
A1-P-THU-P2-2	**HIGH-CURRENT FIELD-EMISSION CARBON STRUCTURES FOR MICROWAVE ELECTRONICS** **Doctor Of Science Valeri Timoshenkov**[1], Doctor Of Science Ravil Yafarov2[2] *[1]National Research University Of Electronic Technology, Moscow, Russian Federation, [2]Kotelnikov Institute of Radioengineering and Electronics, Saratov Branch, Russian Academy of Sciences, Saratov, Russian Federation*
A1-P-THU-P2-3	**INFLUENCE OF DISPERSION OF GRAPHENE OXIDE AND REDUCED GRAPHENE OXIDE ON POLYURETHANE IN GAS PERMEATION AND FRICTION BEHAVIOR ON STAINLESS STEEL** **Dr Jose Brant de Campos**[1], Mr Alessandro E. L. Silva1, Dr Stefania Nardecchia[2], Dr Cecilia Vilani[2], Dr Eric C. Romani[2], Dr Juan Lucas Nachez[4], Dr Suzana Bottega Peripolli[1], Dr Fernando Lázaro Freire Junior[2], Dr Lincoln Silva Gomes[3] *[1]Universidade do Estado do Rio de Janeiro, Rio de Janeiro, Brazil, [2]Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro, Brazil, [3]Instituto SENAI de Tecnologia Solda, Rio de Janeiro, Brazil, [4]Universidade Federal Fluminense, Rio de Janeiro, Brazil*
A1-P-THU-P2-4	**COATING OF CARBON-NANOTUBES ON CERAMIC AND METALLIC MATERIALS** **Dr Jose Brant de Campos**[1], Mr Alessandro E. L. Silva1, Dr Stefania Nardecchia[2], Dr Florica Simescu-Lazar[1], Dr Tesnim Chaieb[1], **Stephanie Pallier**[1], Dr Laurent Veyre[2], Dr Régis Philippe[1], Dr Valérie Meille[1] *[1]LGPC-CNRS University of Lyon, Villeurbanne, France, [2]LC2P2-CNRS University of Lyon, Villeurbanne, France*
A1-P-THU-P2-5	**CARBOXYL FUNCTIONALIZATION OF CVD GRAPHENE FOR BIO-MOLECULES DETECTION** **Sandra Cortijo**[1], Leo Álvarez-Fraga[1], Dr Gil Gonçalves[2], Dr Mercedes Vila[2], Miguel Aroso[3], Dr Patricia Alvarez[4], Prof. Rosa Menéndez[4], Dr Javier Palomares[1], Prof. Alicia De Andrés[1], Prof Carlos Prieto[1] *[1]Consejo Superior De Investigaciones Científicas, Madrid, Spain, [2]Department of Mechanical Engineering, University of Aveiro,, Aveiro, Portugal., [3]Department of Biology, University of Aveiro, , Aveiro, Portugal, 4Instituto Nacional del Carbón, CSIC, 33011, Oviedo, Spain*
A1-P-THU-P2-6	**USE OF GRAPHENE OXIDE FOR THE REMOVAL OF ARSENIC IN WATER** Mrs Gabriela Navarro[1], Mrs Ana Cecilia Reynosa[1], **Dr Eddie Lopez-Honorato**[1] *[1]Cinvestav, Mexico*
A1-P-THU-P2-7	**GRAPHENE-BASED PHASE CHANGING NANO-MATERIALS FOR THERMAL STORAGE APPLICATIONS** **Graduate Student Antonia Zisopoulou**[1] *[1]University of Ioannina, Ioannina, Greece*
A1-P-THU-P2-8	**SYNTHESIS OF SANDWICH MICROSTRUCTURED EXPANDED GRAPHITE/BARIUM FERRITE CONNECTED WITH CARBON NANOTUBE COMPOSITE AND ITS ELECTROMAGNETIC WAVE ABSORBING PROPERTIES** **Dr. Tingkai Zhao**[1], Wenbo Jin1, Xianglin Ji[1], Wenbo Yang[1], Jingtian Hu[1], Tiehu Li[1] *[1]State Key Laboratory of Solidification Processing, Shaanxi Engineering Laboratory for Graphene New Carbon Materials and Applications, School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an, China*
A1-P-THU-P2-9	**MAGNETIC AND ELECTRICAL CHARACTERIZATION OF Pd1-XNIX DECORATED REDUCED GRAPHENE OXIDE NANOCOMPOSITES** **Ms. Vineeta Shukla**[1], Dr. Suneel Kumar Srivastava[1], Dr. Sanjeev Kumar Srivastava[1] *[1]IIT Kharagpur, KHARAGPUR, India*
A1-P-THU-P2-10	**PREPARATION AND CHARACTERIZATION OF CARBON/ METAL AND METAL PHOSPHIDES FIBERS AS NOVEL LOW-COST PERSPECTIVE ELECTROCATALYTIC MATERIALS FOR HYDROGEN EVOLUTION** **Dr. Erika Mudra**[1], Dr. Magdalena Streckova[1], Dr. Renata Orinakova[2], Dr. Zuzana Dankova[3], Prof. Jan Dusza[1] *[1]1Institute of Materials Research, Slovak Academy of Sciences, Watsonova 47, Kosice 04001, Slovak Republic, [2]Department of Physical Chemistry, Faculty of Science, P.J. Safarik University, Moyzesova 11, 040 01 Kosice, Slovak Republic, [3]Institute of Geotechnics, Slovak Academy of Sciences, Watsonova 45, 040 01 Kosice, Slovak Republic*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.1: Carbon-based nanomaterials

A1-P-THU-P2-11	**ASSESSMENT OF ACTIVATED KEVLAR FIBERS AS CARBON-BASED NANOSTRUCTURED MATERIAL FOR GAS ADSORPTION** **Ing. Giuseppe Conte**[1], Victor Lazzaroli[1], Dr. Sara Stelitano[1], Dr. Alfonso Policicchio[1,2,3], Dr. Francesco Demetrio Minuto[1], Dr. Valentino Pingitore[2], Oreste De Luca[1,3], Prof. Raffaele Giuseppe Agostino[1,2,3] *[1]Università Della Calabria, Arcavacata di Rende (CS), Italy, 2Consorzio Nazionale Interuniversitario per le Scienze Fisiche della Materia , Roma, Italy, 3CNR - Nanotec, c/o Università della Calabria, Italy*
A1-P-THU-P2-12	**NONLINEAR RESPONSE AND TUNABLE EXCITONIC ABSORPTION IN GAPPED MONOLAYER AND BILAYER GRAPHENE** **Konstantinos Moulopoulos**[1], Artak A. Avetisyan[2], Anahit P. Djotyan[2] *[1]Department of Physics, University of Cyprus, Nicosia, Cyprus, [2]Yerevan State University, Department of Physics, Yerevan, Armenia*
A1-P-THU-P2-13	**APPLICATION OF CHEMICAL MODIFIED CARBON NANOTUBES WITH DIAZONIUM SALTS AS ANODE FOR MICROBIAL FUEL CELLS** **Dr. Silviu Vulpe1**[1], Dr. Adrian Radu[1], Dr. Mihaela Temelie[1], Dr. Anca Dumitru[1] *[1]University of Bucharest - Faculty of Physics, Bucharest, Romania*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.2: Innovations in Functional Nanomagnets

A2-P-THU-P2-1	**MEASUREMENT UNCERTAINTY SOURCES IN THE CHARACTERIZATION OF MAGNETIC NANOPARTICLES FOR HYPERTHERMIA** **Phd Candidate Nikos Maniotis**[1], Professor Theodoros Samaras[1] *[1]Aristotle University of Thessaloniki , Thessaloniki, Greece*
A2 -P-THU-P2-2	**A NOVEL DEVICE FOR GENERATION OF UNIQUE MAGNETIC FIELD CONFIGURATIONS TO PROMOTE MAGNETO-MECHANICAL EFFECTS ON CELLULAR ENVIRONMENTS** **M.Sc. Antonios Makridis**[1], M.Sc. Katerina Spyridopoulou[2], M.Sc. Nikos Maniotis[1], M.Sc. Eirini Myrovali[1], Dr Theodoros Samaras[1], Dr Makis Angelakeris[1], Dr Katerina Chlichlia[2], Dr Orestis Kalogirou[1] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece, [2]Department of Molecular Biology and Genetics, Democritus University of Thrace, Alexandroupolis, Greece*
A2-P-THU-P2-3	**PHYSICAL PROPERTY EVALUATION OF A POLYDISPERSE FERROFLUID VIA A MONTE CARLO SIMULATION** **Andreas Nazlidis**[1] Nikos Maniotis[1], Kioseoglou Joseph[1], Theodoros Samaras[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece*
A2-P-THU-P2-4	**NATURAL MAGNETIC MULTILAYERS: GROWTH AND MAGNETISM** **Dr Panagiotis Poulopoulos**[1], Mr D.I. Anyfantis[1], Mr D. Ntemogiannis[1], Mr A. Stamatelatos[1], Dr A. Delimitis[2], Dr S.D. Pappas[3], Dr V. Kapaklis[3] *[1]University Of Patras, Materials Science Department, 26504, Patras, Greece, [2]Chemical Process & Energy Resources Institute (CPERI) Centre for Research & Technology Hellas (CERTH), 57001 Thermi, Thessaloniki, Greece, [3]Department of Physics and Astronomy, Uppsala University, Box 516, SE-75120, Uppsala, Sweden*
A2-P-THU-P2-5	**EX VIVO STUDIES OF MAGNETIC NANOPARTICLE HEATING IN AN AC MAGNETIC FIELD** **BSc Student Zoi Kalpaxidou**[1], Student Chara Iliaskou[1], MSc Student Eirini Myrovali[1], MSc Student Nikos Maniotis[1], Doctor Theodoros Samaras[1], Doctor Makis Angelakeris[1] *[1]Auth, Thessaloniki, Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.2: Innovations in Functional Nanomagnets

A2-P-THU-P2-6	**MAGNETIC NANOPARTICLE INCORPORATION IN MAGNETIC STIMULATION PROTOCOLS** **Bachelor Tamara Nastasia Titilola Ais Odutola**[1], MSc Student Eirini Myrovali[1], MSc Student Antonis Makridis[1], MSc Student Nikos Maniotis[1], Doctor Vasilios Kimiskidis[2], Doctor Theodoros Samaras[1], Doctor Makis Angelakeris[1] *[1]Physics Department, Aristotle University of Thessaloniki, Thessaloniki, 54124, Greece, 2Laboratory of Clinical Neurophysiology, Aristotle University of Thessaloniki, Thessaloniki, 54124, Greece*
A2-P-THU-P2-7	**STRUCTURAL AND MAGNETIC PROPERTIES OF Mn-BASED RIBBONS CONTAINING Al** Dr Charalampos Sarafidis[1], **Dr Margariti Gjoka**[2] *[1]Department Of Physics, Aristotle University of Thessaloniki, Greece, Thessaloniki, Greece, [2]Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", Athens, Greece, Agia Paraskevi, Greece*
A2-P-THU-P2-8	**CONTROLLING NUCLEATION RATES WITH PATTERNS OF IMPURITIES** **M.Sc. Egon Tschurtschenthaler**[1] *[1]University Of Vienna - Faculty of Physics, Vienna, Austria*
A2-P-THU-P2-9	**INVESTIGATING MAGNONICS THROUGH STRUCTURAL EFFECTS IN EPITAXIAL THIN Fe/Pt FILMS** **Dimitrios Karfaridis**[1], Dr. Konstantinos Simeonidis[1], Sascha Keller[2], Dr. Ulf Wiedwald[3], Dr. George P. Dimitrakopulos[1], Dr. Thomas Kehagias[1], Dr. Makis Angelakeris[1], Dr. Evangelos Th. Papaioannou[2], Dr. George Vourlias[1] *[1]Department of Physics, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]Department of Physics and National Research Center OPTIMAS, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany, [3]Faculty of Physics and Center for Nanointegration (CENIDE), University of Duisburg-Essen, 47057 Duisburg, Germany*
A2-P-THU-P2-10	**MAGNETIC HARDENING OF FeCo NANOWIRE ARRAYS BY SANDWICHING WITH ANTIFERROMAGNETS** Fangzhou Wang[1], Dr. Ruslan Salikhov[1], Dr. Marina Spasova[1], Dr. Sara Liébana-Viñas[1], Dr. Christina Bran[2], Yu-Shen Chen[2,3], Prof. Manuel Vázquez[2], Prof. Michael Farle[1,4], **Dr. Ulf Wiedwald**[1] *[1]Faculty of Physics and Center for Nanointegration Duisburg-Essen, University of Duisburg-Essen, Duisburg, Germany, [2]Institute of Materials Science of Madrid, CSIC, Madrid, Spain, [3]Department of Chemical Engineering and Materials Science, Yuan-Ze University, Chung-Li, Taiwan, [4]Center for Functionalized Magnetic Materials (Fun- MagMa), Immanuel Kant Baltic Federal University, Kaliningrad , Russia*
A2-P-THU-P2-11	**DETERMINATION OF THE SPIN PUMPING CONTRIBUTION TO THE MAGNETIC DAMPING OF THIN Fe/GaAS FILMS BY IN SITU MULTIFREQUENCY FERROMAGNETIC RESONANCE** **Dr. Florian M. Römer**[1], Paul Wendtland[1], Prof. Dr. Michael Farle[1] *[1]Experimental Physics, AG Farle, University Duisburg-Essen, Duisburg, Germany*
A2-P-THU-P2-12	**MAGNETIZATION REVERSAL IN IN FERROMAGNETIC COAXIAL NANORODS** **Irene Iglesias**[1], Thomas Feggeler[1], Prof.Dr. Michael Farle[1,2] *[1]Faculty of Physics and Center for Nanointegration (CENIDE), University Duisburg-Essen, 47057 Duisburg, Germany, 2Center for Functionalized Magnetic Materials (FunMagMa), IKBFU, Kaliningrad, Russia*
A2-P-THU-P2-13	**DEPOSITION AND CHARACTERIZATION OF HEXAGONAL NON-COLLINEAR ANTIFERROMAGNETIC Mn3SN FILMS** **Dr. Anastasios Markou**[1], Adel Kalache[1], Dr. Peter Werner[2], Prof. Dr. Claudia Felser[1] *[1]Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, 2Max Planck Institute of Microstructure Physics, Halle, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.6-II: Advanced Materials for Space Exploration / Part 2

A6-II-P-THU-P2-1	**ADDITIVE MANUFACTURING FOR SPACE INSTRUMENTATION AND SUBSYSTEMS** **Mr Geoffrey Oger**[1], Mr Grégory Nolens[2], Mr Johannes Gumpinger[3], Mr Pierre Rochus[1] *[1]Centre Spatial De Liège (CSL), Liège, Belgium, [2]CERHUM, Liège, Belgium, [3]European Space Agency, Noordwijk, The Netherlands*
A6-II-P-THU-P2 -2	**SIMULATION OF SPACE AND GROUND-BASED TESTS OF MATERIALS** **Prof Genadij Frolov**[1], Dr. Oleg Udovyk[1] *[1]Institute For Problems Of Material Science Of National Academy of Sciences, Kiyv, Ukraine*
A6-II-P-THU-P2-3	**STUDY ON THE FACTORS AFFECTING THE MECHANICAL BEHAVIOR OF ELECTRON BEAM MELTED Ti6Al4V** **Dr Carmine Pirozzi**[1], Dr Rosario Borrelli[1], Dr Stefania Franchitti[1], Professor Fabrizia Caiazzo[2], Dr Vittorio Alfieri[2], Dr Paolo Argenio[2] *[1]Italian Aerospace Research Center, Capua, Italy, [2]Dipartimento di Ingegneria Industriale, Università degli Studi di Salerno, Fisciano, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium A.7-II: Functional Nanomaterials for Novel Applications/ Part 2

A7-II-P-THU-P2-1	**NANOSTRUCTURES OF LUMINESCENT IZO (INDIUM-ZINC-OXIDE) DOPED WITH Ga AND Fe** Javier García-Fernández[2], Almudena Torres-Pardo[2], Julio Ramírez-Castellanos[2], **Ana Cremades**[1], Javier Piqueras[1], José María González-Calbet[2] *[1]Dept. Física de Materiales, Facultad de Físicas, Universidad Complutense De Madrid, Madrid, Spain, [2]Dept. Química Inorgánica, Facultad de Químicas, Universidad Complutense de Madrid, Madrid, Spain*
A7-II-P-THU-P2-2	**RELATIONSHIP BETWEEN MICROSTRUCTURE AND RHEOLOGY IN NEWLY DEVELOPED NANO-BASED DRILLING FLUIDS** **Mr Zisis Vryzas**[1,2], Mrs Anastasia Terzidou[1], Prof. Vassilis Zaspalis[1,3], Dr Lori Nalbandian[3], Prof. Vassilios C. Kelessidis[4] *[1]Chemical Engineering Department, Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]Department of Petroleum Engineering, Texas A&M University at Qatar, Doha, Qatar, [3]Chemical Process and Energy Resources Institute, The Centre for Research and Technology Hellas, Thessaloniki, Greece, [4]Department of Petroleum Engineering, The Petroleum Institute, Abu Dhabi, UAE*
A7-II-P-THU-P2-3	**PLD CDSE-DOPED Li2O-Al2O3-BaO-La2O3-ZnO-P2O5 THIN FILMS FOR SENSING APPLICATIONS** **PhD Constantina-Raluca Iordanescu**[1], PhD Mihail Elisa[1], PhD Ileana Cristina Vasiliu[1], PhD Madalin Ion Rusu[1], PhD Laurentiu Octavian Scoicaru[1], PhD Gabriel Socol[2], PhD Bogdan Alexandru Sava[2], PhD Lucica Boroica[2], PhD Mihaela Filipescu[2] *[1]National Institute of R & D for Optoelectronics INOE 2000, Magurele , Romania, [2]National Institute for Laser, Plasma and Radiation Physics, Magurele, Romania*
A7-II-P-THU-P2-4	**SYNTHESIS AND CHARACTERIZATION OF Al DOPED TiO2 MICRO AND NANOSTRUCTURES GROWN BY A VAPOR-SOLID PROCESS** María Taeño[1], David Maestre[1], **Ana Cremades**[1], Julio Ramírez-Castellanos[1], Javier Piqueras[1] *[1]Universidad Complutense De Madrid, Madrid, Spain*
A7-II-P-THU-P2-5	**DETECTION OF PSYCHOACTIVE DRUGS BY SURFACE ENHANCED RAMAN SPECTROSCOPY** Alexandre Merlen[1], **Cedric Pardanaud**[2], David Bergé-Lefranc[2], Trang Phan[2], Nicolas Simon[2], Audrey Boulaméry[2], Virginie Hornebecq[2] *[1]University of Toulon, Aix Marseille University, Toulon, France, 2Aix-marseille Université , Marseille, France*
A7-II-P-THU-P2-6	**STUDY OF SnO2, TiO2 AND THEIR COMPOSITES WITH GRAPHENE OXIDE FOR APPLICATIONS IN Li-ION BATTERIES** **Felix Del Prado**[1] *[1]Universidad Complutense De Madrid, Madrid, Spain*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.7-II: Functional Nanomaterials for Novel Applications/ Part 2

A7-II-P-THU-P2-7	**ON THE GROWTH AND POST-TREATMENT OF NANOSTRUCTURED VANADIUM DIOXIDE (VO2) PHASES USING HYDROTHERMAL SYNTHESIS** **Doctor Corinne Legros**[1], Doctor Olga Ishchenko[2], Ana Sardinha Figueiredo[2], Patrick Ribot[1], Doctor Céline Byl[1], Doctor Emilie Amzallag[1], Doctor Nathalie Prud'homme[1], Doctor Bernard Servet[3], Doctor Guy Garry[2], Doctor Michel Andrieux[1] *[1]Univ. Paris Sud - Univ. Paris Saclay, SP2M-ICMMO, CNRS UMR 8182, Bât 410, 91405 Orsay Cedex, France, [2]TE-OX, 2 rue Jean Rostand, 91786 Orsay, France, [3]Thales Research & Technology France, Campus Polytechnique, 1 Avenue Auguste Fresnel, 91767 Palaiseau Cedex, France*
A7-II-P-THU-P2-8	**EFFECT OF TRANSFORMATION TEMPERATURE ON NANO PARTICULATE SIZE** **Dr Rama Balasubramanian**[1], Mr William Lamber[1] *[1]URoanoke College, , Salem,, USA*
A7-II-P-THU-P2-9	**OPTIMIZED HETEROSTRUCTURES FOR MOLECULE DETECTION AND OPTICAL MICROSCOPY: COMBINING INTERFERENCE AND PLASMON RESONANCE RAMAN AMPLIFICATIONS** **Leopoldo Alvarez Fraga**[1], Esteban Climent-Pascual[1], Monserrat Aguilar-Pujol[1], Rafael Ramírez-Jiménez[2], Félix Jiménez-Villacorta[1], Carlos Prieto[1], Alicia de Andrés[1] *[1]Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas. Cantoblanco 28049, Madrid, Spain, [2]Departamento de Física, Escuela Politécnica Superior, Universidad Carlos III de Madrid, Avenida Universidad 30, 28911, Leganés,, Spain*
A7-II-P-THU-P2-10	**SiO2@TiO2 CORE-SHELL NANOCATALYST PREPARATION, CHARACTERIZATION AND THEIR PHOTOCATALYTIC ACTIVITY** **Ioanna Kitsou**[1], Athena Tsetsekou[1], Panagiotis Panagopoulos[2], Thomas Maggos[2] *[1]National Technical University Of Athens, Athens, Greece, [2]NCSR "Demokritos", Athens, Greece*
A7-II-P-THU-P2-11	**USING MECHANICAL ALLOYING FOR PHASE Cr2AlC FORMATION AS PRECURSORS OF GRAPHENE-LIKE CARBIDES OF MXene TYPES** **Dr Mariia Saviak**[1], Volodymyr Ivchenko, Marina Vasil'kivskaya, Switlana Dubchak, Prof. Irina Uvarova *[1]Frantsevich Institute for Problems of Materials Science of National Academy of Sciences of Ukraine , Kyiv, Ukraine*
A7-II-P-THU-P2-12	**DOPING AND CHARACTERIZATION OF ZnO ELONGATED NANOSTRUCTURES GROWN BY RESISTIVE HEATING OF Zn WIRES** **Dr. Ana Urbieta**[1], Prof. Paloma Fernández[1], Prof. Javier Piqueras[1] *[1]Departamento de Física de Materiales, Facultad de C.C. Físicas, Universidad Complutense De Madrid, Madrid, Spain*
A7-II-P-THU-P2-13	**SYNTHESIS, CHARACTERIZATION AND SWELLING BEHAVIOR OF SUPERABSORBENT POLYMER COMPOSITES** **Irene Kanellopoulou**[1], Dr. Ioannis Kartsonakis[1], Dr. Elias Koumoulos[1], Danalia Karaxi[1], Dr. Costas Charitidis[1] *[1]Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, http://nanolab.chemeng.ntua.gr/ , Athens, Greece*
A7-II-P-THU-P2-14	**STUDY OF Mg INCORPORATION ON ZnO BY DIFFERENT GROWTH PROCEDURES** Esther de Prado[1,2], Dr M. Carmen Martínez-Tomás[2], Professor Vicente Muñoz-Sanjosé[2], **Professor Paloma Fernández**[1] *[1]Dept. Física de Materiales,University Complutense, 28040 Madrid, Spain, [2]Dept. Fisica Aplicada y Electromagnetismo, U. Valencia, 46100 Burjassot, Spain*
A7-II-P-THU-P2-15	**WATER STRUCTURES IN CARBON NANOTUBES WITH ELECTRIC FIELDS FOR SEPARATION OF WATER-ALCOHOL SOLUTIONS** **Ph.D. Winarto Winarto**[1]Ph.D Daisuke Takaiwa[2], Ph.D Eiji Yamamoto[3], Profesor, Dr. Kenji Yasuoka[2] *[1]Department of Mechanical Engineering, Faculty of Engineering, Brawijaya University, Jl. MT Haryono 167, Malang 65145, Indonesia, [2]Department of Mechanical Engineering, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama 223-8522, Japan, [3]Graduate School of Science and Technology, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama 223-8522, Japan*
A7-II-P-THU-P2-16	**JUDD-OFELT ANALYSIS AND TRANSITION PROBABILITIES OF Er3+ DOPED Mg3Al2Si3O12 AND Ca3Al2Si3O12 GLASSES** **Dr. Daniel Sola**[1], Dr. J. Martinez de Mendivil[2], Dr. N. Dong[3], Dr. L. Ortega SanMartin[4], Dr. E. Cantelar[5], Dr. G. Lifante[5], Dr. J.I. Peña[6] *[1]Laboratorio de Optica. Centro de Investigacion en Optica y Nanofisica. Universidad De Murcia, Murcia, Spain, [2]Departamento de Tratamiento de la Señal y Comunicaciones. Universidad de Mondragón, Arrasate-Mondragon, Spain, [3]School of Physics, State Key Laboratory of Crystal Materials.Shandong University, Jinan, China, [4]Departamento de Ciencias, Seccion Quimica Pontificia Universidad. Catolica del Peru, San Miguel, Lima, Peru, [5]Departamento de Fisica de Materiales, Facultad de Ciencias. Universidad Autonoma de Madrid, Madrid, Spain, [6]Departamento de Ciencia y Tecnología de Materiales y Fluidos. Instituto de Ciencia de Materiales de Aragon, Universidad de Zaragoza-CSIC, Zaragoza, Spain*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.7-II: Functional Nanomaterials for Novel Applications/ Part 2

A7-II-P-THU-P2-17	**SOLUTION-BASED SYNTHESIS OF AMORPHOUS GERMANIUM NANOPARTICLES FROM ORGANOGERMANIUM HALIDE PRECURSORS** **Bruno Pescara**[1,2,3], Dr. Katherine ann Mazzio[2,3], Dr. Giorgia Greco[2,3], Dr. Armin Hoell[2,3], Prof. dr. Klaus Lips[2,3,4], Prof. dr. Simone Raoux[2,3,5] *[1]Institute of Chemistry and Biochemistry, Faculty of Mathematics and Natural Science, Freie Universität Berlin, Berlin, Germany, [2]Energy Materials In-Situ Laboratory, Helmholtz-Zentrum Berlin für Materialien und Energie, GmbH, , Berlin, Germany, [3]Institut für Nanospektroskopie, Helmholtz-Zentrum Berlin für Materialien und Energie, GmbH, Berlin, Germany, [4]Department of Physics, Faculty of Mathematics and Natural Science, Freie Universität Berlin, Berlin, germany, [5]Department of Physics, Faculty of Mathematics and Natural sciences, Humboldt-Universität zu Berlin, Berlin, Germany*
A7-II-P-THU-P2-18	**SYNTHESIS OF NI2P NANOPARTICLES SUPPORTED r-GO COMPOSITES FOR HYDRODESULPHURIZATION APPLICATIONS** **Dr Vasileios Tzitzios**[1], Dr Marios Kartsiotis[2], Mr Vishnu Pillai[1], Mr Thomas Karagiannis[1], Ms Anjana Tharalekshmy[1], Mr Samuel Stephen[1], Dr Dimitrios Gournis[3], Dr Saeed Alhassan[1] *[1]Petroleum Institute University, Abu Dhabi, United Arab Emirates, [2]TITAN CEMENT S.A., Athens, Greece, [3]University of Ioannina, Ioannina, Greece*
A7-II-P-THU-P2-19	**OPTIMAL SURFACE FUNCTIONALIZATION OF THERMO-ALKALINE TREATED NANOSTRUCTURED SILICA ADSORBENTS FOR CO2 ADSORPTION** **Phd Student Obdulia Medina Juárez**[1], PhD Miguel Ángel García-Sánchez[1], PhD Fernando Rojas-González[1] *[1]Universidad Autónoma Metropolitana, México, Mexico*
A7-II-P-THU-P2-20	**CONDENSATION OF SILVER NANOPARTICLE COLLOIDAL SOLUTION FOR USE AS SILVER INKS** **Dr Eleftheria Lili**[1], Assoc. Prof. Dr.-Eng. Nikolaos Michailidis[2] *[1]Physical Metallurgy Laboratory, School of Engineering, Mechanical Engineering Department, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]PLiN-Nanotechnology SA, Spectra Business Center, Thermi, Thessaloniki, Greece*
A7-II-P-THU-P2-21	**ELECTRONIC STRUCTURE AND OPTICAL PROPERTIES OF STANENE IN THE ABSENCE AND PRESENCE OF EXTERNAL ELECTRIC FIELD** **Mojde Fadaie**[1], Proffesor Özgür Müstecaplıoğlu[1] *[1]Koc University, Physics Department, Istanbul, Turkey*
A7-II-P-THU-P2-22	**PRODUCTION AND STRUCTURAL CHARACTERIZATION OF NANOCRYSTALLINE TERNARY AgCuNi NANOPARTICLES BY ULTRASONIC SPRAY PYROLYSIS TECHNIQUE (USP)** Sebahattin Gürmen[1], **Şerzat Safaltın**[1] *[1]Koc University, Physics Department, Istanbul, Turkey*
A7-II-P-THU-P2-23	**ENVIRONMENTALLY FRIENDLY CROSS-LINKING OF HYDROLYSED POLYACRYLAMIDE GELS FOR ENHANCED OIL RECOVERY** **Juan Yang**[1], Huaitian Bu[1], Britt Sommer[1], Kjell Olafsen[1], Fuad Karimov[1], Nicolas Rival[1], Christian Simon[1] *[1]Materials and Chemistry, SINTEF, Forskningsveien 1, NO-0314, Oslo, Norway*
A7-II-P-THU-P2-24	**BIOSOURCED AND LIGNOCELLULOSIC MATERIALS FOR ELECTROCHEMICAL ENERGY STORAGE AND CONVERSION** Federico Bella[1], Simone Galliano[2], Francesca Colò[1], Marisa Falco[1], Guido Viscardi[2], **Claudia Barolo**[2], Claudio Gerbaldi[1] *[1]Department of Chemistry, NIS Interdepartmental Centre and INSTM Reference Centre, Università degli Studi di Torino, Torino, Italy, [2]GAME Lab, Department of Applied Science and Technology (DISAT), Politecnico di Torino, Torino, Italy*
A7-II-P-THU-P2-25	**FUNCTIONAL DYES IN NANOSTRUCTURED MATERIALS: SYNTHESIS AND CHARACTERIZATION** **Claudia Barolo**[1,2], Nadia Barbero[1], Simone Galliano[1], Claudio Magistris[1], Roberto Buscaino[1], Pierluigi Quagliotto[1], Guido Viscardi[1] *[1]Department of Chemistry, NIS Interdepartmental Centre and INSTM Reference Centre, Università degli Studi di Torino, Torino, Italy, [2]ICxT Interdepartmental Centre, Università di torino, Torino, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium A.9: Functional Membranes

A9-P-THU-P2-1	**ELECTRON BEAM MODIFIED CELLULOSE ACETATE ELECTROSPUN MATS FOR FILTRATION OF PHARMACEUTICALS** **Msc. Engineering Natalia Cano-Murillo**[1,2], Dr. Anna Maria Elert[1], Dr.rer.nat Ulrike Braun[1], Pr. Dr. rer.nat Heinz Sturm[1,2] *[1]Federal Institute for Materials Research and Testing BAM, Berlin, Germany, [2]Technical University Berlin, Berlin, Germany*
A9-P-THU-P2-2	**GAS DIFFUSION IN POLYMER OF INTRINSIC MICROPOROSITY: AN EXPERIMENTAL AND COMPUTATIONAL APPROACH** Dr. Alessio Fuoco[1], Ms Carmen Rizzuto[1], Dr Elena Tocci[1], Dr Mariolino Carta[2], Prof Neil B McKeown[2], **Dr Johannes C. Jansen**[1] *[1]Institute on Membrane Technology (ITM -CNR), Rende, Italy, [2]School of Chemistry, University of Edinburgh, Edinburgh, United Kingdom*
A9-P-THU-P2-3	**PREPARATION OF Ba0.5Sr0.5Co0.8Fe0.2O3-X SUPPORTS THOUGH FREEZE-CASTING METHOD** **MSc. Douglas Fernandes Souza**[1], PhD. Eduardo Henrique Martins Nunes[1], PhD. Wander Luiz Vasconcelos[1] *[1]Federal University of Minas Gerais, Belo Horizonte, Brasil*
A9-P-THU-P2-4	**AN EASY AND SCALABLE PROCESS FOR ANTIFOULING NANOCELLULOSE-BASED MEMBRANES** **Luis Valencia Lopez**[1], Dr Aji Mathew[1] *[1]Federa Stockholm University, Stockholm, Sweden*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Symposium B.1: Advanced High Strength Steels

B1-P-THU-P2-1	**BALANCING THE COBALT/TUNGSTEN AND THE COBALT/NIOBIUM RATIO IN NOVEL MARTENSITIC CREEP STEELS** **Mr. Hao Yu**[1], Dr. Wei Xu[2], Dr. Sybrand van der Zwaag[3] *[1]Novel Aerospace Materials group, Faculty of Aerospace Engineering, Delft University Of Technology, Delft, the Netherlands, [2]State Key Laboratory of Rolling and Automation, Northeastern University, Shen Yang, China, [3]Novel Aerospace Materials group, Faculty of Aerospace Engineering, Delft University Of Technology, Delft, the Netherlands*
B1-P-THU-P2-2	**ENHANCING STRAIN HARDENING IN ULTRA-FINE AND NANOSTRUCTURED BAINITIC STEELS** Miguel Benito-Alfonso[1], Shao-Pu Tsai[2], Jer-Ren Yang[2], Rosalia Rementeria[1], Lucia Morales-Rivas[3], Carlos García-Mateo[1], **Francisca G. Caballero**[1] *[1]National Center for Metallurgical Research (CENIM-CSIC)) , Madrid, Spain, [2]National Taiwan University, Taipei , Taiwan, [3]Universidad de Kaiserslautern, Kaiserslautern, Germany*
B1-P-THU-P2-3	**THE EFFECTS OF UNDERCOOLING AND TRANSFORMATION TIME ON MICROSTRUCTURE AND PROPERTIES IN A HIGH STRENGTH SUPERBAINITE STEEL** Ph.D. Student Jun-yu Tian[1], **Professor Guang Xu**[1], Ph.D. Student Hai-jiang Hu[1], Ph.D. Student Ming-xing Zhou[1] *[1]The State Key Laboratory of Refractories and Metallurgy, Wuhan University Of Science And Technology, Wuhan, China*
B1-P-THU-P2-4	**MAGNETIC BEHAVIOUR OF NANOSTRUCTURED BAINITE AT CRYOGENIC TEMPERATURES** Dr. Arancha Argüelles[1], Dr. Maria F. Barbes[1], Dr. Jose I. Espeso[2], **Dr. Carlos Garcia-Mateo**[3] *[1]Universidad de Oviedo, Oviedo, Spain, [2]Universidad de Cantabria, Santander, Spain, 3CENIM-CSIC, Madrid, Spain*
B1-P-THU-P2-5	**ISOTHERMAL TRANSFORMATION OF NANOSTRUCTURED BAINITE: EFFECT PRIOR MARTENSITE FORMATION** Mr Miguel A. Santajuana[1], Dr Christophe Mesplont[2], Dr Thomas Sourmail[3], Dr David San Martin[1], Dr Matthias Kuntz[4], Prof Francisca G. Caballero[1], **Dr. Carlos Garcia-Mateo**[1] *[1]CENIM-CSIC, Madrid, Spain, [2]Bekaert, Zwevegem, Belgium, [3]Asco Industries-CREAS (Research Centre), Hagondange , France, [4]Robert Bosch GmbH, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.1: Advanced High Strength Steels

B1-P-THU-P2-6	**ROLE OF MICROSTRUCTURE IN HYDROGEN EMBRITTLEMENT OF ADVANCED HIGH-STRENGTH STEELS** **Dr. Yuriy Yagodzinskyy**[1], Dr. Suvi Papula[1], Dr. Olga Todoshchenko[1], Dr. Klemens Mraczek[2], Prof. Hannu Hanninen[1] *[1]Aalto University School of Engineering, Espoo, Finland, 2voestalpine Stahl GmbH, Linz, Austria*
B1-P-THU-P2-7	**STUDY OF DUCTILE DAMAGE EVOLUTION UNDER LOAD-UNLOAD CYCLIC TEST IN A DUAL PHASE STEEL** **MSc. Juan Manuel Anduquia Restrepo**[1], MSc. Carlos Alberto Narváez Tovar[1], PhD. Rodolfo Rodríguez Baracaldo[1], PhD. Henry Octavio Cortés Ramos[1] *[1]Universidad Nacional de Colombia, Bogotá, Colombia*
B1-P-THU-P2-8	**FRACTURE TOUGHNESS AND CRACK GROWTH EVALUATION FOR DUAL PHASE STEEL** **Mechanical Engineer Cristian Camilo Pérez Velásquez**[1], PhD Rodolfo Rodriguez Baracaldo[1], Msc Carlos Alberto Narvaez Tovar[1] *[1]Universidad Nacional De Colombia, Bogotá, Colombia*
B1-P-THU-P2-9	**MICROSTRUCTURE EVALUATION OF AISi 347 STEEL SAMPLES WELDED BY LASER BEAM WELDING PROCESS** **Juliana Ribeiro Peçanha**[1,2], Suzana Bottega Peripolli[2,3], José Brant de Campos[3], Hector Reynaldo Meneses Costa[1], Bianca Ferreira Gomes[2], Leandro Guimarães de Oliveira[2] *[1]Centro Federal de Educação Tecnológica Celso Suckow da Fonseca (CEFET/RJ)., Av. Maracanã, 229 - Maracanã, Rio de Janeiro - RJ, 20271-110, Brazil, [2]IST Solda, Rua São Francisco Xavier,601, Maracanã,Rio de Janeiro, Brazil, [3]Universidade do Estado do Rio de Janeiro, Rua Fonseca Telles 121, São Cristóvão, Rio de Janeiro, RJ, Brasil, CEP: 20940-240., Brazil*
B1-P-THU-P2-10	**RELATIONSHIPS BETWEEN PHASE MORPHOLOGY EVOLUTION AND ANNEALING VARIABLES IN SUPERDUPLEX STAINLESS STEEL UNS S32750 AND RELATED MODEL ALLOYS** **Damien Tresallet**[1], Dr. Hugo Van Landeghem[1], Dr. Florent Krajcarz[2], Dr. Catherine Tassin[1], Dr. Yves Du Terrail[1], Dr. Jean-Denis Mithieux[2], Pr. Muriel Veron[1] *[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, F-38000 Grenoble, France, [2]Aperam Stainless Steel Research Center, Isbergues, France*
B1-P-THU-P2-11	**THE INFLUENCE OF La AND Ce ADDITION ON INCLUSION MODIFICATION IN As-CAST NIOBIUM MICROALLOYED STEELS** Ir H. Torkamani[2], Dr. Shahram Raygan[2], Dr. Carlos Garcia-Mateo[1], Dr. Jafar Rassizadehghani[2], Ir. Javier Vivas[1], Dr. Yahya Palizdar[3], **Dr. David San-Martin**[1] *[1]Department of Physical Metallurgy, National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain, [2]School of Metallurgy and Materials Engineering, College of Engineering, University of Tehran, Tehran, Iran, [3]Materials and Energy Research Center, Karaj, Spain*
B1-P-THU-P2-12	**VISUALIZATION OF HYDROGEN DISTRIBUTION IN STEELS BY UTILIZING IN-SITU SILVER DECORATION TECHNIQUE** **Daisuke Yamasaki**[1], Motomichi Koyama[1], Kaneaki Tsuzaki[1] *[1]Kyushu University, Fukuoka city, Japan*
B1-P-THU-P2-13	**EFFECTS OF FERRITE/MARTENSITE MORPHOLOGY IN DAMAGE EVOLUTION BEHAVIOR OF DUAL-PHASE STEELS** **Arata Shojima**[1], Motomichi Koyama[1], Shusaku Takagi[2], Kaneaki Tsuzaki[1] *[1]Kyushu University, Fukuoka City, Japan, [2]JFE Steel Corporation, Steel Research Laboratory, , Japan*
B1-P-THU-P2-14	**EFFECTS OF SOLUTE HYDROGEN ON DEFORMATION-INDUCED HCP MARTENSITE IN AN AUSTENITIC STEEL** **Natsuki Terao**[1] *[1]Kyushu University, Fukuoka City, Japan*
B1-P-THU-P2-15	**EFFECT OF Mo-ALLOYING ON HYDROGEN SOLUBILITY AND TRAPPING IN METASTABLE AUSTENITIC STAINLESS STEELS** **Arnaud Macadre**[1], Yuriy Yagodzinskyy[2], Evgenii Malitckii[2], Hannu Hanninen[2], Setsuo Takaki[1,3] *[1]International Institute For Carbon-neutral Energy Research, Fukuoka, Japan, [2]Aalto University, Dept. of Mechanical Engineering, Aalto, Finland, [3]Kyushu University, Fukuoka, Japan*
B1-P-THU-P2-16	**STRUCTURE AND PHYSICAL-MECHANICAL PROPERTIES OF HIGH-STRENGTH CLAD CONSTRUCTIONAL STEELS** **Mrs Evgeniia Putilova**[1], Mr Sergey Zadvorkin1, Mr Edward Gorkunov[1] *[1]The Institute Of Engineering Science, Ras (ural Branch), Ekaterinburg, Russian Federation*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.1: Advanced High Strength Steels

B1-P-THU-P2-17	**ENHANCEMENT OF TENSILE ELONGATION IN Al-Zr ADDED HIGH-Cr ODS STEELS BY MICROSTRUCTURE CONTROL** **Dr. Noriyuki Iwata**[1], Dr. Sang-hoon Noh[3], Dr. Yoo-sung Ha[4], Dr. Akihiko Kimura[5] *[1]Department of Materials System Engineering, National Institute of Technology, Kurume College, , Japan, [2]Department of Materials Science and Engineering, National Institute of Technology, Kurume College, , Japan, [3]Nuclear Materials Development Division, Korea Atomic Energy Research Institute, Daejeon, South Korea, [4]Nuclear Safety Research Center, Japan Atomic Energy Agency, Japan, 5Institute of Advanced Energy, Kyoto University, Japan*
B1-P-THU-P2-18	**PROCESSING AND EVALUATION OF FERRITIC-BAINITIC MULTI-PHASE STEEL** **Mr. Mohamed Safa**[1], Professor Dr. Samir Ibrahim[2], Professor Dr. Rashad Ramadan[2], Dr. Sabbah Ataya[2] *[1]EZDK, Alexandria, Egypt, 2Department of Metallurgy and Materials Engineering, Faculty of Petroleum and Mining Engineering, Suez University, Suez, Egypt*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.4: Advanced properties of SPD-processed metallic materials

B4-P-THU-P2-1	**FORMATION OF ULTRAFINE GRAINED STRUCTURE IN A Mg-Al-Zn-Mn ALLOY PROCESSED BY ROTARY SWAGING** **Natalia Martynenko**[1,2], Elena Lukyanova[1,2], Vladimir Serebryany[2], Mikhail Gorshenkov[3], Mikhail Morozov[2], Vladimir Yusupov[2], Sergey Dobatkin[1,2], Yuri Estrin[1,4] *[1]Laboratory of Hybrid Nanostructured Materials, National University of Science and Technology "MISIS", Moscow, Russian Federation, [2]A.A. Baikov Institute of Metallurgy and Materials Science of Russian Academy of Sciences, Moscow, Russian Federation, [3]National University of Science and Technology "MISIS", Moscow, Russian Federation, [4]Department of Materials Science and Engineering, Monash University, Melbourne, Australia*
B4-P-THU-P2-2	**EFFECT OF ECAP ON THE PRECIPITATION EVOLUTION AND MECHANICAL PROPERTIES OF A NEWLY DEVELOPED ALUMINUM ALLOY** **Jahanzaib Malik**[1], Dr. Bilal Mansoor[2], Wahaz Nasim[1], Dr Ibrahim Karaman[1], Dr Dinc Erdeniz[3], Dr David Dunand[3] *[1]Texas A&M University, College Station, USA, [2]Texas A&M University at Qatar, Doha, Qatar, [3]Northwestern University, Evanston, USA*
B4-P-THU-P2-3	**THERMAL STABILITY OF ULTRA-FINE GRAINED LOW ALLOYED Cu-Cr-Zr ALLOY** **Anna Morozova**[1], Andrey Belyakov[1], Rustam Kaibyshev[1] *[1]Belgorod State University, Belgorod, Russian Federation*
B4-P-THU-P2-4	**MICROSTRUCTURE STABILITY OF ULTRAFINE-GRAINED MAGNESIUM ALLOY WE43 AT ELEVATED TEMPERATURE** **Ph.D. Jitka Stráská**[1], Ph.D. Peter Minárik[1], Ph.D. Josef Stráský[1], Prof. Miloš Janeček[1] *[1]Charles University, Prague, Czech Republic*
B4-P-THU-P2-5	**EFFECT OF DECOMPOSITION ON THE MECHANICAL PROPERTIES OF NANOCRYSTALLINE SUPERSATURATED Cu-Co ALLOYS PROCESSED BY HIGH-PRESSURE TORSION** **Andrea Bachmaier**[1], Georg Rathmayr[2], Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Leoben, Austria, [2]microsample, Scharnstein, Austria*
B4-P-THU-P2-6	**ULTRAFINE-GRAINED LAMINATED METALLIC COMPOSITES PRODUCED BY ARB** **Dr. Heinz-Werner Höppel**[1], Frank Kümmel[1], Prof. Mathias Göken[1] *[1]Dept. Materials Science And Engineering, Friedrich-Alexander-Universität Erlangen-nürnberg, Erlangen, Germany*
B4-P-THU-P2-7	**MECHANICAL PROPERTIES AND MICROSTRUCTURE IN A TWIP STEEL SUBJECTED TO HIGH PRESSURE TORSION** **Ms Marina Abramova**[1], Mr Nariman Enikeev[1], Mr Jung Gi Kim[2], Mr J.B. Seol[3], Ms Marina Karavaeve[1], Mr Ruslan Valiev[1], Mr Hyoung Seop Kim[2] *[1]Ufa State Aviation Technical University, Ufa, Russian Federation, [2]Department of national science and engineering, pohang university of science and technology, Pohang, Republic of Korea, [3]National Institute of Nanotechnology(NINT), Pohang, Republic of Korea*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.4: Advanced properties of SPD-processed metallic materials

B4-P-THU-P2-8	**DAMAGE TOLERANCE OF A SEVERLY PLASTICALLY DEFORMED SUPERELASTIC NiTi SHAPE MEMORY ALLOY** **Anton Hohenwarter**[1], Thomas Leitner[1] *[1]Department of Materials Physics, Montanuniversitaet Leoben, Austria, Leoben, Austria*
B4-P-THU-P2-9	**HIGH STRENGTH ULTRA-FINE GRAINED Al-Mg ALLOYS VIA PHYSICAL SIMULATION** **Ilchat Sabirov**[1], Prof. Ruslan Valiev[2], Dr. Nariman Enikeev[2], Dr. Maxim Murashkin[2] *[1]IMDEA Materials Institute, Madrid, Spain, 2Ufa State Aviation Technical University, Ufa, Russia*
B4-P-THU-P2-10	**PROCESS WINDOW FOR SEVERE PLASTIC DEFORMATION OF A FERRITIC-AUSTENITIC STEEL** **Katharina Schwarz**[1], Timo Müller[1], Anton Hohenwarter[2], Reinhard Pippan[1] *[1]Erich Schmid Institute of Materials Science, Austrian Academy of Science, Leoben, Austria, [2]Department of Materials Physics, University of Leoben, Leoben, Austria*
B4-P-THU-P2-11	**MICROSTRUCTURAL FEATURES, MECHANICAL AND ELECTRICAL PROPERTIES OF Al-Mg-Zr ALLOY PROCESSED BY ECAP-C AND COLD DRAWING** **Phd Ivan Lomakin**[1], Dr. Maxim Murashkin[1,2], Dr. Andrey Medvedev[2], Dr. Vil Kazykhanov[2], Professor Ruslan Valiev[1,2] *[1]Saint Petersburg State University, Saint Petersburg, Russian Federation, [2]Ufa State Aviation Technical University, Ufa, Russia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.7: Hybrid and Metal Organic Framework (MOF) Materials

B7-P-THU-P2-1	**INVESTIGATION OF PROMISING MOF MEMBRANES FOR C2H6 SEPARATIONS** **Assoc. Prof. Seda Keskin**[1], Cigdem Altintas[1] *[1]Koc University, Istanbul, Turkey*
B7-P-THU-P2-2	**TERAHERTZ MOLECULAR ROTORS AND STRUCTURAL DYNAMICS IN A ZIRCONIUM-BASED METAL-ORGANIC FRAMEWORK** **Matthew Ryder**[1,2,3], Dr Ben Van de Voorde[5], Prof. Bartolomeo Civalleri[4], Dr Thomas Bennett[6], Dr Sanghamitra Mukhopadhyay[2], Dr Gianfelice Cinque[3], Prof. Felix Fernandez-Alonso[2], Prof. Dirk De Vos[5], Dr Svemir Rudić[2], Prof. Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom, [2]ISIS Neutron & Muon Source Facility, Rutherford Appleton Laboratory, United Kingdom, [3]Diamond Light Source, Harwell Campus, United Kingdom, [4]University of Turin, Torino, Italy, 5KU Leuven, Leuven, Belgium, [6]University of Cambridge, Cambridge, United Kingdom*
B7-P-THU-P2-3	**REVISITING THE MICROPOROUS AL-MOF (MIL-96): FROM THE STRUCTURE DETERMINATION, SYNTHESIS OF NANOPARTICLES TO THE PROCESSING OF MIXED MATRIX MEMBRANES FOR CO2 CAPTURE** **Marvin Benzaqui**[1,2], Dr Renjith Pillai[3], Virginie Benoit[4], Dr Antoine Tissot[2], Dr Mihail Mihaylov[5], Prof Philip Llewellyn[4], Prof Konstantin Hadjiivanov[5], Prof Guillaume Maurin[3], Prof Nathalie Steunou[1], Dr Christian Serre[2] *[1]Institut Lavoisier de Versailles, Versailles, France, [2]Institut des Matériaux Poreux de Paris, Paris, France, [3]Institut Charles Gerhardt Montpellier, Montpellier, France, [4]Madirel, Aix Marseille University, Marseille, France, [5]Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria*
B7-P-THU-P2-4	**COMPARATIVE STUDY OF TWO NEW ONE-DIMENSIONAL COORDINATION POLYMERS, AIMIII(C2O4)2(H2O)4, WITH DIFFERENT TOPOLOGY** **Professor Malika Hamadène**[1], PHD student Mohamed Al Amine Benhacine[1], PHD Hamza Kherfi[1], Professor Sofiane Bouacida[2] *[1]Usthb, Algiers, Algeria, [2]UMC, Constantine, Algeria*
B7-P-THU-P2-5	**SUPRA-MOLECULAR ASSEMBLY IN THREE MIXED-LIGANDS COBALT(II) COMPLEXES** **Professor Balegroune Fadila**[1] *[1]Laboratoire Cri-Ther, Faculté de Chimie, USTHB, , Algiers, Algeria*
B7-P-THU-P2-6	**OPTOCHEMICALLY RESPONSIVE 2D NANOSHEETS OF A 3D METAL-ORGANIC FRAMEWORK (ADVANCED MATERIALS, 2017, DOI: 10.1002/ADMA.201701463)** **Mr. Abhijeet Chaudhari**[1], Prof. Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.7: Hybrid and Metal Organic Framework (MOF) Materials

B7-P-THU-P2-7	**MODELING DISPERSION INTERACTIONS IN FLEXIBLE METAL-ORGANIC FRAMEWORKS: CRITICAL INFLUENCE ON PHASE STABILITY** **Jelle Wieme**[1], Kurt Lejaeghere[1], Veronique Van Speybroeck[1] *[1]Center For Molecular Modeling, Ghent University, Zwijnaarde, Belgium*
B7-P-THU-P2-8	**ATOMIC FORCE MICROSCOPIC NANOINDENTATION STUDY OF METAL-ORGANIC FRAMEWORK CRYSTALS AND NANOSHEETS** **Mr Zhixin Zeng**[1], Mr Jin-Chong Tan[1] *[1]University of Oxford, Oxford, United Kingdom*
B7-P-THU-P2-9	**PALLADIUM-BASED CATALYTIC DEVICES VIA MOFS AND ELECTROSPINNING** **Mr Kirill Titov**[1], Mr Dmitry Eremin[2], Mr Abhijeet Chaudhari[1], Prof Valentine Ananikov[2], Prof Jin-Chong Tan[1] *[1]University Of Oxford, Oxford, United Kingdom, 2Zelinsky Institute for Organic Chemistry, Moscow, Russia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.8: High Entropy Alloys and Compositionally Complex Alloys

B8-P-THU-P2-1	**EVALUATION OF AN ORIGINAL GRADE OF HEA ALLOY FROM ALCRFEMNNI FAMILY** **Julia Olszewska**[1], Michal Mroz[1], Guanzhong He[1], Marilyne Mondon[1], Prof Anna Fraczkiewicz[1] *[1]Ecole Des Mines De St Etienne, Saint Etienne, France*
B8-P-THU-P2-2	**EXPERIMENTAL DETERMINATION OF THE ENTROPY OF SINGLE-PHASE HIGH ENTROPY ALLOYS USING DIFFERENTIAL SCANNING CALORIMETRY AT LOW TO HIGH TEMPERATURES** **Sebastian Haas**[1], M. Sc. Mike Mosbacher[1], Dr.-Ing. Rainer Völkl[1], Prof. Dr.-Ing. Uwe Glatzel[1] *[1]University Bayreuth, Bayreuth, Germany*
B8-P-THU-P2-3	**PHASE STABILITY AND HIGH TEMPERATURE FRAGILITY OF NOVEL EQUIATOMIC CoCuFeMnNi HIGH-ENTROPY ALLOY** **Michal Mroz**[1], Anna Fraczkiewicz[1] *[1]Ecole Des Mines De St Etienne, Saint Etienne, France*
B8-P-THU-P2-4	**NEW HIGH ENTROPY ALLOYS WITH SUPERIOR CHARACTERISTICS FOR MEDICAL APPLICATIONS** **Doctor Dumitru Mitrica**[1], Doctor Vasile Soare[1], Doctor Daniela Dumitrescu[1], Engineer Victoria Soare[1], Professor Gabriela Popescu[2], Master of Science Ionut Constantin[1], Master of Science Mihai Olaru[1], Doctor Mihai Ghita[1], Doctor Brandusa Ghiban[2], Doctor Eugeniu Vasile[2] *[1]National R&d Institute For Nonferrous And Rare Metals-imnr, Pantelimon, Romania, [2]University POLITEHNICA Bucharest, Bucharest, Romania*
B8-P-THU-P2-5	**HEAT TREATMENT AND DEFORMABILITY OF Al-Cr-Fe-Mn-Ni-Zr HIGH ENTROPY ALLOYS** **Master of Science Mihai Olaru**[1], Doctor Vasile Soare[1], Doctor Dumitru Mitrica[1], Doctor Valentin Dragut[1], Doctor Florentin Stoiciu[1], Professor Gabriela Popescu[2], Professor Ioan Carcea[3] *[1]National R&d Institute For Nonferrous And Rare Metals-imnr, Pantelimon, Romania, [2]University POLITEHNICA Bucharest, Bucharest, Romania, 3Gheorghe Asachi Technical University of Iasi, Iasi, Romania*
B8-P-THU-P2-6	**EFFECTS OF SOLIDIFICATION CONDITIONS ON MICROSTRUCTURE AND PROPERTIES OF HIGH ENTROPY ALLOYS (HEA) OF CoCrFeMnNi FAMILY** **Tomasz Stasiak**[1], Dr Jerzy Latuch[2], Prof. Dariusz Oleszak[2], Prof. Anna Fraczkiewicz[1] *[1]Mines St Etienne, France, St Etienne, France, [2]Faculty of Materials Science and Engineering / WUT, Warsaw, Poland*
B8-P-THU-P2-7	**EXPERIMENTAL AND THEORETICAL STUDY ON MULTICOMPONENT Al_xCu_yFeNiCrCo HIGH ENTROPY ALLOYS** **Dr Katarzyna Matusiak**[1], Dr Jakub Cieslak[1], Dr Katarzyna Berent[2], Dr Marianna Marciszko[2] *[1]AGH University of Science and Technology, Faculty of Physics and Applied Computer Science, Al. Mickiewicza 30 , 30-059 Krakow, Poland, [2]AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Al. Mickiewicza 30 , 30-059 Krakow, Poland*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.8: High Entropy Alloys and Compositionally Complex Alloys

B8-P-THU-P2-8	**MICROSTRUCTURE AND MECHANICAL PROPERTIES OF Fe-Cr-V-Mn BASED REDUCED-ACTIVATION HIGH ENTROPY ALLOYS FOR FUSION REACTOR APPLICATIONS** **Dr Young-bum Chun**[1], Dr Gyeong Su Shin[1], Dr Yi-Hyun Park[2] *[1]Nuclear Materials Development Divsion, Korea Atomic Energy Research Institute, Deajeon, South Korea, [2]National Fusion Research Institute, Daejeon, South Korea*
B8-P-THU-P2-9	**PHASE STABILITY OF THE Fe-Cr-Mn-Ni ALLOYS FROM FIRST PRINCIPLES** Mark Fedorov[1], **Dr. Jan Wróbel**[1], Prof. Duc Nguyen-Manh[2], Prof. Krzysztof Kurzydłowski[1] *[1]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, [2]Culham Centre for Fusion Energy, Abingdon, United Kingdom*
B8-P-THU-P2-10	**A NOVEL PRODUCTION APPROACH FOR FeNiCoCu HIGH ENTROPY ALLOYS** **Research Assistant Burak Kucukelyas**[1,2], Research Assistant Serzat Safaltin[1], Assist. Prof. Dr. Ebru Devrim Sam Parmak[2], Prof. Dr. Sebahattin Gurmen[1] *[1]Istanbul Technical University, Department of Metallurgical and Materials Engineering, İstanbul, Turkey, [2]Bursa Technical University, Department of Metallurgical and Materials Engineering, Bursa, Turkey*
B8-P-THU-P2-11	**MICROSTRUCTURE AND TEXTURE EVOLUTION DURING SEVERE PLASTIC DEFORMATION OF CrMnFeCoNi HIGH-ENTROPY ALLOY** **Prof. Dr. Werner Skrotzki**[1], Aurimas Pukenas[1], Bertalan Joni[2], Eva Odor[2], Prof. Dr. Tamas Ungar[2,3], Dr. Anton Hohenwarter[4], Prof. Dr. Reinhard Pippan[4], Prof. Dr. Easo George[5,6] *[1]TU Dresden, Dresden, Germany, [2]Eötvös University Budapest, Budapest, Hungary, [3]University of Manchester, Manchester, UK, [4]Montanuniversität Leoben, Leoben, Austria, [5]Oak Ridge National Laboratory, Oak Ridge, USA, [6]University of Tennessee, Knoxville, USA*
B8-P-THU-P2-12	**PRECIPITATION BEHAVIOUR OF CrMnFeNi HIGH-ENTROPY ALLOY UNDER NICKEL ION IRRADIATION** **Mr Antonio Fernandez-Caballero**[1], Dr Edward Pickering[1], Prof Grace Burke[1], Dr Michael Gorley[2], Dr Duc Nguyen-Manh[2], Prof Paul Mummery[1] *[1]The University of Manchester, Manchester, United Kingdom, [2]CCFE, United Kingdom Atomic Energy Authority, Abingdon, United Kingdom*
B8-P-THU-P2-13	**COMPARISON OF MECHANICAL PROPERTIES OF $CrMnFeCoN_2Cu$ AND $Ti_{30}Zr_{23}HF_{15}NB_{20}Ta_{10}$ HIGH ENTROPY ALLOYS WITH THE DIFFERENT CRYSTAL LATTICE IN THE TEMPERATURE RANGE OF 4.2 – 293 K.** **Mr Yuriy Shapovalov**[1], PhD Elena Tabachnikova[1], PhD Aleksey Podolskiy[1], Dr Viktor Gorban[2], Dr Sergey Firstov[2] *[1]B. Verkin Institute for Low Temperature Physics and Engineering of the NAS of Ukraine, 47 Nauky Ave., Kharkiv, Ukraine, [2]Frantsevich Institute for Problems of Materials Science of the NAS of Ukraine, [3]Krzhizha-novsky Str., Kyiv-142, Ukraine*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium B.9: Bulk Metallic Glasses

B9-P-THU-P2-1	**CALIBRATION OF GLASS PAD VISCOSITY IN HOT EXTRUSION** **Dr Jonghun Yoon**[1], Youngnam Song[1], Dr Sung Hoon Kang[2], Dr Howon Lee[2] *[1]Hanyang University Erica, Ansan, Republic of Korea, [2]Korea Insttute of Materials Science, Changwon, Republic of Korea*
B9-P-THU-P2-2	**A STRATEGY FOR DESIGNING BULK METALLIC GLASS COMPOSITES WITH EXCELLENT WORK-HARDENING AND LARGE TENSILE DUCTILITY** **Haifeng Wang**[1] *[1]State Key Laboratory Of Solidification Processing, Northwestern Polytechnical University, Xi'an, China*
B9-P-THU-P2-3	**MAGNETIC PROPERTIES OF U-BASED AMORPHOUS ALLOYS** **Pei Zhang**[1], Huogen Huang[1], Haibo Ke[1] *[1]China Academy Of Engineering Physics, , China*
B9-P-THU-P2-4	**Fe-BASED GLASSY COMPOSITE PRODUCTION BY ARC MELTING** Hamdi Ekici[1], Ozen Gursoy[1], Eray Erzi[1], **Derya Dispinar**[1] *[1]Istanbul University*
B9-P-THU-P2-5	**IMPROVEMENT OF THE MECHANICAL PROPERTIES OF Cu50Zr45Al5 BULK METALLIC GLASSES BY ADDITION OF CRYSTALLINE PARTICLES** **Doctor Engineer Sandrine Cardinal**[1], Professor Jean-Marc Pelletier[1], Mr Florian Mercier[1], Dr Jichao Qiao[2], Dr Guong Xie[3], Dr Florent Delmas[1] *[1]Insa Lyon, Villeurbanne, France, 2School of mechanics, Xi'an, China, 3IMR, Sendai, Japan*
B9-P-THU-P2-6	**MOLECULAR DYNAMICS SIMULATIONS ON THE BAUSCHINGER EFFECT IN Cu60Zr40 COMPUTER METALLIC GLASS** **PhD Student Pablo Palomino Rico**[1] *[1]University of Ioannina, Ioannina, Greece*

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Thursday September 21, 2017

Symposium C.1-II: Coatings and Surface Modification Techniques / Part 2

C1-II-P-THU-P2-1	**RESEARCH ON SURFACE WETTABILITY OF COPPER AND COPPER-BASED ALLOYS FOR ANTIMICROBIAL SURFACES** **PhD Monika Walkowicz[1]**, PhD Piotr Osuch[1], Prof. Beata Smyrak[1], Prof. Andrzej Mamala[1], Prof. Tadeusz Knych[1] *[1]AGH University of Science and Technology, Faculty of Non-Ferrous Metals, Department of Metal Working and Physical Metallurgy of Non-Ferrous Metals, Krakow, Poland*
C1-II-P-THU-P2-2	**Zn-ZnO CORE-SHELL NANOPARTICLES DEPOSITED ONTO TANTALUM NANOSTRUCTURES** Joana Oliveira[1], **Dr. Sebastian Calderon[1,3]**, C.F Almeida Alves[1], Prof. Dr. P. J. Ferreira[2,3], Prof. Dr. S. Carvalho[1] *[1]University of Minho, Department of Physics, Campus of Azurém, 4800-058, Guimaraes, Portugal, [2]Materials Science and Engineering Program, The University of Texas at Austin, Austin, Texas 78712, USA., , USA, [3]INL - International Iberian Nanotechnology Laboratory, Av. Mestre José Veiga s/n, 4715-330, Braga, Portugal*
C1-II-P-THU-P2-3	**MAG-CW WELDING PROCESS WITH ADDITION OF POWDER OBTAINED FROM COATED ELECTRODE OK 8358** **Undergraduate João Lucas Jacob Araujo[1]**, Undergraduate Rafael Barradas do Nascimento[1], Master Mário Viana Medeiros Filho[1], Doctor José Francisco Reis Sobrinho[1] *[1]Instituto Federal de Ciência e Tecnologia do Piauí, Teresina, Brazil*
C1-II-P-THU-P2-4	**STUDY ON THE ELECTROCHEMICAL CHARACTERIZATION OF DIMENSIONALLY STABLE ANODE FOR ELECTROPLATING APPLICATIONS** **Ph. D. Seong Ho Son[1]**, Sung Cheol Park[1], Jin Yeon Lee[1], Ph. D. Yong Hwan Kim[1] *[1]Korea Institute of Industrial Technology, , Republic of Korea*
C1-II-P-THU-P2-5	**SURFACE PATTERNING TO IMPROVE JOINT STRENGTH OF SiC AND SiC/SiC** **Dr Valentina Casalegno[1]**, Prof Monica Ferraris[1], Prof Milena Salvo[1], Dr Espedito Vassallo[2], Matteo Pedroni[2], Christian Wilhelmi[3], Matthias Funke[3], Manuela Suess[3] *[1]Politecnico Di Torino-disat, Torino, Italy, [2]CNR, Istituto di Fisica del Plasma "P.Caldirola", Milan, Italy, [3]Airbus DS GmbH, Space Systems, Mechanical Products and Engineering GE, D-88039 Friedrichshafen, Germany*
C1-II-P-THU-P2-6	**REMOVABLE PARYLENE BASED BILAYER FOR BARRIER CORROSION PROTECTION OF METALLIC ARCHAEOLOGICAL ARTEFACTS** **Lucie Blahova[1]**, Jakub Horak[1], Radek Prikryl[2], Frantisek Krcma[1] *[1]Brno University of Technology, Faculty of Chemistry, Institute of Physical and Applied Chemistry, Purkynova 118, 61200, Brno, Czech Republic , [2]Brno University of Technology, Faculty of Chemistry, Materials Research Centre, Purkynova 118, 61200, Brno, Czech Republic*
C1-II-P-THU-P2-7	**ZnO AS ANTIREFLECTIVE COATING FOR THERMOCHROMIC V02 FILMS** Mr E. Gagaoudakis[1,2], Dr V. Binas[1,2,3], Mr G. Michail[1], Mrs D. Katerinopoulou[1,2], **Dr E. Aperathitis[1]**, Prof. G. Kiriakidis[1,2,3] *[1]IESL / FORTH, Heraklion/Crete, Greece, [2]Univerity of Crete/Physics Dpt, Heraklion/Crete, Greece, [3]Crete Center for Quantum Complexity and Nanotechnology, Department of Physics, University of Crete, Heraklion/Crete, Greece*
C1-II-P-THU-P2-8	**THE EFFECT OF IRIDIUM ON THE PROPERTIES OF ZINC OXIDE FILMS** **Ms Maria Papadaki[1,2]**, Mr Athanasios Kostopoulos[1], Ms Maria Androulidaki[1], Ms Katerina Tsagaraki[1], Dr Mircea Modreanu[3], Professor George Kiriakidis[1,2], Dr Elias Aperathitis[1] *[1]FORTH/IESL, Heraklion, Greece, 2Physics Dept., Crete University, Heraklion, Greece, 3Tyndall National Institute, Cork, Ireland*
C1-II-P-THU-P2-9	**INFLUENCE OF MODE OF ELECTRODEPOSITION, GRAIN SIZE ON MECHANICAL PROPERTICE OF ELECTRODEPOSITED NANOCRYSTALINE NICKEL COATINGS** **Eng. Cezary Dziekoński[1]**, Phd Dariusz Jarząbek[1], Msc Wojciech Dera[1] *[1]Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland*
C1-II-P-THU-P2-10	**STRUCTURE AND PROPERTIES OF THE SOFT MAGNETIC Fe-Zr-N NANOFILMS WITH ENHANCED MECHANICAL CHARACTERISTICS** Prof. Elena Sheftel[1], **Dr. Philipp Kiryukhantsev-Korneev[2]**, Valentin Tedzhetov[1], Dr. Evgeny Harin[1], Prof. Evgeny Levashov[2], Galina Usmanova[1], Prof. Olga Zhigalina[3] *[1]Institute of Metallurgy and Material Science, RAS, Moscow, Russian Federation, 2National University Of Science And Technology Misis, Moscow, Russian Federation, 3Shubnikov Institute of Crystallography, RAS, Moscow, Russian Federation*
C1-II-P-THU-P2-11	**EMPLOYMENT OF THE OPERATIONAL CENTRIFUGAL FORCES OF THE TURBINE TO RESIST THE CALCIUM-MAGNESIUM-ALUMNINOSILICATES INFILTRATION IN A EB-PVD THERMAL BARRIER COATING: A NUMERICAL SIMULATION** **student Vasileios Katranidis[1]**, Professor of Coatings Technology John Nicholls[2], Dr Christine Chalk[2] *[1]University Of Surrey, Chemical and process Engineering, Guildford, United Kingdom, [2]University of Cranfield, Surface Engineering & Nanotechnology Institute , Cranfield, United Kingdom*

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Symposium C.1-II: Coatings and Surface Modification Techniques / Part 2

C1-II-P-THU-P2-12	**SILICIDE COATING ON Ti-46AL-8TA (AT.%) – ASSESSMENT OF GROWTH MECHANISM THROUGH DIFFUSION-COUPLE EXPERIMENTS** **Katarzyna Rubacha**[1], Elzbieta Godlewska[1], Krzysztof Mars[1], Marzena Mitoraj-Krolikowska[1] *[1]AGH University Of Science And Technology, Krakow, Poland*
C1-II-P-THU-P2-13	**THE INFLUENCE OF THE PHOSPHOROUS CONTENT AND HEAT TREATMENT ON THE NANO-MICRO-STRUCTURE, THICKNESS AND MICRO-HARDNESS OF ELECTROLESS Ni-P COATINGS ON STEEL** **Professor George Kaptay**[1], Mr Máté Czagány[1], Dr Peter Baumli[1] *[1]University Of Miskolc, Miskolc, Hungary*
C1-II-P-THU-P2-14	**CHARACTERIZATION OF YB3+ DOPED Y2O3 THIN FILMS PREPARED BY ELECTRON BEAM EVAPORATION METHOD** **Msc Fatma Ünal**[1], Msc Elif Emil[1], Prof.Dr Sebahattin Gürmen[1], Prof.Dr Kürşat Kazmanli[1], Prof.Dr Mustafa Ürgen[1] *[1]Istanbul Technical University, Istanbul, Turkey*
C1-II-P-THU-P2-15	**ENHANCED PHOTOCATALYTIC ACTIVITY OF TITANIUM DIOXIDE PHOTONIC CRYSTALS MODIFIED WITH PHOTODEPOSITED PLATINUM NANOPARTICLES** **M.Sc. Joanna Ginter**[1], M.Sc. Kaja Spilarewicz-Stanek[1], Dr Aneta Kisielewska[1], Prof. Ireneusz Piwoński[1] *[1]University of Lodz, Faculty of Chemistry, Department of Materials Technology and Chemistry, Lodz, Poland*
C1-II-P-THU-P2-16	**TUNABLE WETTABILITY OF THIN POLYMER FILMS ON MICROSTRUCTURED SILICON SURFACES** **Maria Kanidi**[1], Aris Papagiannopoulos[1], Athanasios Skandalis[1], Stergios Pispas[1], Maria Kandyla[1] *[1]National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, Athens, Greece*
C1-II-P-THU-P2-17	**THE ROLE OF OSTWALD RIPENING AND COALESCENCE IN PHOTOCATALYTIC GROWTH OF SILVER NANOPARTICLES ON TITANIUM DIOXIDE COATINGS** **MSc Kaja Spilarewicz-Stanek**[1], PhD Aneta Kisielewska[1], Sc. D. Ireneusz Piwoński[1] *[1]University Of Lodz, Faculty Of Chemistry, Department Of Materials Technology And Chemistry, Łódź, Poland*
C1-II-P-THU-P2-18	**EFFECT OF THE PREFERRED ORIENTATION ON THE ELECTROCHROMIC PROPERTIES OF TUNGSTEN OXIDE COATINGS GROWN BY A LPCVD SYSTEM** **Dr Dimitrios Louloudakis**[1,2], Dr Dimitra Vernardou[1,3], Dr Giorgos Papadimitropoulos[4], Dr Dimitris Davazoglou[4], Prof Emmanouel Koudoumas[1,3] *[1]Center of Materials Technology and Photonics, School of Applied Technology, Technological Educational Institute of Crete, 710 04, Heraklion, Greece, [2]Department of Physics, University of Crete 711 00, Heraklion, Greece, [3]Department of Electrical Engineering, School of Applied Technology, Technological Educational Institute of Crete, 710 04, Heraklion, Greece, [4]NCSR "Demokritos", Institute of Nanoscience and Nanotechnology, P.O. Box 60228, 15310, Agia Paraskevi, Athens, Greece*
C1-II-P-THU-P2-19	**DYNAMIC WETTABILITY CONTROL THROUGH STRETCHING OF BILAYER POLYMER FILMS** Catalin Mihai Balan[1,2], Vincent Senez[1], **Alexis Vlandas**[1] *[1]BioMEMS, Univ. Lille, CNRS, ISEN, UMR 8520 - IEMN, Lille, France, [2]University of Southampton Waterfront Campus , Southampton, United Kingdom*
C1-II-P-THU-P2-20	**SILVER/HYDROXYAPATITE HYBRID COATINGS ON Ti-6Al-4V SURFACES BY SOL-GEL METHOD** **Burak Dikici**[1], Serap Gungor Koc[2], Mehmet Topuz[2], Mitsuo Niinomi[3], Masaaki Nakai[4] *[1]Ataturk University, Department of Metallurgical and Materials Engineering, Erzurum 25240, Turkey, [2]Yuzuncu Yil University, Department of Mechanical Engineering, Van 65080, Turkey, [3]Tohoku University, Institute for Materials Research, Sendai, Miyagi 980-8577, Japan, 4Kindai University, Department of Mechanical Engineering, Higashiosaka, Osaka 577-8502, Japan*

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Symposium C.3: Powder routes: from synthesis to processing

C3-P-THU-P2-1	**PROCESSING AND VIBRATIONAL PROPERTIES OF LANTHANIDE GERMANATES** **Dr Anderson Dias**[1], Pamela Coelho[1], Roberto Moreira[2] *[1]Federal University Of Ouro Preto, Ouro Preto, Brazil, [2]Federal University of Minas Gerais, Belo Horizonte, Brazil*
C3-P-THU-P2-2	**FABRICATION OF POROUS TITANIUM BY METAL INJECTION MOLDING USING POLYSTYRENE** **Dr. Wonsik Lee**[1], Graduate Student Kyungwook Kim[1,2], Dr. Kyou-Hyun Kim[1], Mr. Jin Man Jang[1], Dr. Yong-Dae Kim[1] *[1]Korea Institute of Industrial Technology, Incheon, South Korea, [2]Korea University, Seoul, South Korea*
C3-P-THU-P2-3	**NANOCRYSTALLINE NIAL INTERMETALLIC ALLOY PRODUCED BY MECHANICAL ALLOYING AND HOT-PRESSING CONSOLIDATION** **Dr Marek Krasnowski**[1], Dr Stanislaw Gierlotka[2], Prof Tadeusz Kulik[1] *[1]Faculty of Materials Science and Engineering, Warsaw University of Technology, Warsaw, Poland, [2]Institute of High Pressure Physics, Polish Academy of Sciences, Warsaw, Poland*
C3-P-THU-P2-4	**MORPHOLOGY CONTROL OF AG PARTICLES ELECTROCHEMICALLY RECOVERED FROM C-SI PV CELL BY CHANGING CURRENT DENSITY** **Dr. Jin-seok Lee**[1], Dr. Young-Soo Ahn[1], Dr. Gi-Hwan Kang[1] *[1]Korea Institute Of Energy Research, Daejeon, Republic of Korea*
C3-P-THU-P2-5	**FABRICATION TECHNOLOGIES OF OPEN CELLED POROUS TITANIUM USING POWDER INJECTION MOLDING** **Mr Jin Man Jang**[1], Mr Kyoung-Wook Kim[1], Doctor Kyou-Hyum Kim[1], Doctor Yong-Dae Kim[1], Doctor Wonsik Lee[1], Mr. Yong-In Kim[1] *[1]Korea Institute Of Industrial Technology, Incheon, Korea*
C3-P-THU-P2-6	**HIGH-VOLTAGE CONSOLIDATION OF TUNGSTEN HEAVY ALLOYS POWDERS** **Prof. Evgeny Grigoryev**[1], Ms. Natalia Ermakova[1], Mr. Sergey Bashlykov[1], Prof. Vladimir Golstev[1] *[1]NRNU MEPhI, Moscow, Russian Federation*
C3-P-THU-P2-7	**MICROSTRUCTURAL INVESTIGATIONS OF NITI MATERIALS OBTAINED BY MECHANICAL ALLOYING AND SPARK PLASMA SINTERING** **Dr. Eng. Diana Cirstea**[1,2], Dr. Eng. Magdalena Lungu[1], Dr. Felicia Tolea[3], Dr. Gabriela Sbarcea[1], Dr Anatoly, M Balagurov[4], Eng. Vasile Cirstea[2] *[1]National Institute for Research and Development in Electrical Engineering, Bucharest, Romania, [2]Research and Development Center for design and optimization of technological processes, Bucharest, Romania, [3]National Institute for Materials Physics, Magurele, Romania, [4]Joint Institute for Nuclear Research Frank Laboratory of Neutron Physics, Dubna, Russia*
C3-P-THU-P2-8	**GRADIENT STRUCTURES IN MATERIALS AS A RESULT HIGH-VOLTAGE CONSOLIDATION POWDER** **Prof. Evgeny Grigoryev**[1], Mr. Artem Yudin[1], Mr. Sergey Bashlyikov[1] *[1]NRNU MEPhI, Moscow, Russian Federation*
C3-P-THU-P2-9	**SPARK PLASMA SINTERING OF A TIAL ALLOY: FROM THE DEVELOPMENT OF A NUMERICAL TOOL TO THE FABRICATION OF COMPLEX SHAPES** M. David Martins[1], Miss Fanny Grumbach[1], Dr Charles Maniere[1], Dr Pierre Sallot[2], Prof Katia Mocellin[3], Prof Michel Bellet[3], **Dr Claude Estournes**[1] *[1]CIRIMAT, Toulouse, France, [2]SAFRAN CRT, Magny-les-Hameaux, France, [3]CEMEF Mines ParisTech, Sophia-Antipolis , France*
C3-P-THU-P2-10	**LASER POWER INFLUENCE ON RAMAN SPECTRA OF ZnO(CO) NANOPARTICLES** **PhD Branka Hadžić**[1], PhD Nebojša Romčević[1], PhD Maja Romčević[1], PhD Martina Gilić[1], PhD Jelena Trajić[1], PhD Dušanka Stojanović[1] *[1]Institute Of Physics, University of Belgrade, Belgrade, Serbia*
C3-P-THU-P2-11	**MECHANICAL PROPERTIES OF CRYOMILLED AND SPARK PLASMA SINTERED TITANIUM** **Jiří Kozlík**[1], Hanka Becker[2], Max Hoppe[2], Josef Stráský[1], Ilya Ibragimov[1], Miloš Janeček[1] *[1]Charles University, Department of Physics of Materials, Prague, Czech Republic , [2]TU Bergakademie Freiberg, Institute of Materials Science, Freiberg, Germany*
C3-P-THU-P2-12	**MECHANICAL ACTIVATION OF THE NiO/Al ALUMINOTHERMIC SYSTEM BY HIGH-ENERGY BALL MILLING AND ITS EFFECT ON COMPOSITES SYNTHESIS BY SHS** **Ms Hafida Boutefnouchet**1, Dr Caroline Curfs[2], Dr Dominique Vrel[3] *[1]University Of Annaba - LMGM, Annaba, Algeria, [2]ESRF, Grenoble, France, [3]CNRS, LSPM , Paris, France*

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Symposium C.3: Powder routes: from synthesis to processing

C3-P-THU-P2-13	**TUNING THE MAGNETIC BEHAVIOR OF ULTRALIGHT Fe-OXIDE FOAMS BY Mn ADDITION** **Dr Pau Solsona**[1], PhD Yuping Feng[1], Dr Jordina Fornell[1], Professor Maria Dolors Baró[1], Professor Santiago Suriñach[1], Dr Eva Pellicer[1], Professor Jordi Sort[2] *[1]Universitat Autònoma de Barcelona, Departament de física, E-08193 Bellaterra, Cerdanyola del Vallès, Spain, [2]ICREA, Pg. Lluís Companys 23, E-08010 Barcelona, Spain*
C3-P-THU-P2-14	**Cr ADDITION EFFECT ON QUASICRYSTALLINE PHASE FORMATION IN Al-Cu-Fe MECHANICALLY ALLOYED POWDER** **Mikolaj Mitka**[1], Anna Góral[1], Lidia Lityńska-Dobrzyńska[1] *[1]Institute of Metallurgy and Materials Science Polish Academy of Sciences, Cracow, Poland*

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Symposium C.4: Additive Manufacturing

C4-P-THU-P2-1	**THICKNESS DEPENDENT FATIGUE PROPERTIES OF ADDITIVE MANUFACTURED Ti6Al4V WITH AS-BUILT SURFACE** **M.Sc. Magnus Kahlin**[1,2], Dr Torsten Sjögren[4], Dr Hans Ansell[1,3], Dr Johan Moverare[2] *[1]Saab AB, Aeronautics, Linköping, Sweden, [2]Division of Engineering Materials, Linköping University, Linköping, Sweden, [3]Division of Solid Mechanics, Linköping University, Linköping, Sweden, [4]RISE, Research Institute of Sweden, Borås, Sweden*
C4-P-THU-P2-2	**H13/TiB2 COMPOSITE PROCESSED BY SELECTIVE LASER MELTING TECHNOLOGY** **Dr Dariusz Grzesiak**[1], Dr Marta Krawczyk[1], Dr Bandar AlMangour[2] *[1]West Pomeranian University of Technology Szczecin, Szczecin, Poland, [2]Harvard University, Cambridge, USA*
C4-P-THU-P2-3	**THE EFFECT OF PROCESS PARAMETERS ON MICROSTRUCTURE, POROSITY AND DEFECTS DURING SELECTIVE LASER MELTING OF INCONEL 718 MATERIAL** **Mr. Konstantinos Georgilas**[1,2], Mr Utkarsha Ankalkhope[3], Dr Mehmet E. Kartal[2], Dr Raja Khan[3] *[1]National Structural Integrity Research Centre, Cambridge, United Kingdom, [2]School of Engineering, University of Aberdeen, Aberdeen, United Kingdom, [3]TWI Ltd., Cambridge, United Kingdom*
C4-P-THU-P2-4	**FRACTURE MECHANISMS OF AlSi10Mg PARTS PRODUCED BY SELECTIVE LASER MELTING: INFLUENCE OF Si PRECIPITATES AND AL CELL SIZE** **Engineer Jocelyn Delahaye**[1], Doctor Engineer Anne Mertens[1], Engineer Olivier Dedry[1], Engineer Olivier Rigo[2], Professor Doctor Bénédicte Vertruyen[3], Professor Doctor Engineer Jacqueline Lecomte-Beckers[1] *[1]University of Liège, A&M Department, Metallic Materials Science Unit, Liège, Belgium, [2]Sirris Research Center, Liège, Belgium, [3]University of Liège, LCIS-GreenMat, Department of Chemistry, Liège, Belgium*
C4-P-THU-P2-5	**INVESTIGATION INTO THE PARAMETERS AFFECTING FILTER CAKES PRODUCED DURING FILTRATION PROCESS** **Ms Bornia Benouis**[1], Mr Abdallah Hafsaoui[1] *[1]LVRM, Department of Mining. University Of Badji Mokhtar- Annaba, Annaba, Algeria*
C4-P-THU-P2-6	**ULTRA-HIGH RESOLUTION ELECTROHYDRODYNAMIC AM TECHNIQUE WITH SUPERIOR PRINTING SPEED** **MSc Ievgenii Liashenko**[1,2], Dr. Andreu Cabot[1,3], Dr. Joan Rosell Llompart[2,3] *[1]Institut de Recerca en Energia de Catalunya, Barcelona, Spain, [2]Universitat Rovira i Virgili, Tarragona, Spain, [3]ICREA - the Catalan Institution for Research and Advanced Studies, Barcelona, Spain*
C4-P-THU-P2-7	**INFLUENCE OF THE PARTICLE SIZE DISTRIBUTION ON SURFACE QUALITY AND MECHANICAL PROPERTIES OF SLM PROCESSED Co-Cr PARTS** **Marta Krawczyk**[1], Darek Grzesiak[1] *[1]West Pomeranian University Of Technology, Szczecin, Szczecin, Poland*
C4-P-THU-P2-8	**INTERFACE QUALITY INFLUENCE IN METAL-POLYMER PARTS PRODUCED BY ADDITIVE MANUFACTURING** Dr. André Cavaleiro[1], Diogo Fula[1], **Dr. Margarida Machado**[1], Prof. Rui Neto[1,2], Prof. Ana Reis[1,2] *[1]INEGI, Instituto de Ciência e Inovação em Eng. Mecânica e Eng. Industrial, Porto, Portugal, [2]FEUP, Faculdade de Engenharia da Universidade do Porto, Porto, Portugal*

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Symposium C.4: Additive Manufacturing

C4-P-THU-P2-9	**AN EXPERIMENTAL APPROACH FOR ADDITIVE MANUFACTURING OF GYPSUM PLASTER PASTES** Rui Soares[1], **Margarida Machado**[1], André J. Cavaleiro[1], Rui Neto[1,2], Abílio Jesus[1,2], Ana Reis[1,2] *[1]INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto, Portugal, [2]FEUP - Faculty of Engineering of University of Porto, Porto, Portugal*
C4-P-THU-P2-10	**INFLUENCE OF PROCESS PARAMETERS ON PROPERTIES AND MICROSTRUCTURE OF Cu-ALLOY PARTS FABRICATED BY LASER SINTERING** **Eric Bojestig**[1], Prof. Lars Nyborg[1], Prof. Eduard Hryha[1] *[1]Chalmers University of Technology, Gothenborg (Göteborg), Sweden*
C4-P-THU-P2-11	**CORROSION BEHAVIOR OF ALLOY 718 MANUFACTURED BY DIFFERENT PROCESSES** **Dr. Teresa Guraya**[1], Dr. Pello Jimbert[1], Dr. Roberto Fernandez-Martinez[1], Dr. Aitzol Lamikiz[2], Dr. Alberto Etxebarria[3] *[1]University Of The Basque Country, Bilbao, Spain, [2]University Of The Basque Country, Bilbao, Spain, [3]Lortek S. Coop., Orditzia, Soain*
C4-P-THU-P2-12	**DESIGN AND FABRICATION OF 3D PRINTED DRUG DELIVERY SYSTEMS** **Tiffany Tang**[1,2], Dr. Tara Schiller[1], Professor Tony McNally[1], Professor George Simon[2] *[1]Warwick Manufacturing Group, University Of Warwick, Coventry, United Kingdom, [2]Monash University, Clayton, Australia*
C4-P-THU-P2-13	**DESIGNING A NOVEL Fe-Ni-Al MARAGING STEEL FOR LASER METAL DEPOSITION EXPLOITING INTRINSIC HEAT TREATMENT** **Philipp Kürnsteiner**[1], Markus Benjamin Wilms[2], Andreas Weisheit[2], Pere Barriobero-Vila[3], Eric Aimé Jägle[1], Dierk Raabe[1] *[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf, Germany, [2]Fraunhofer-Institut für Lasertechnik, Aachen, Germany, [3]Vienna University of Technology, Vienna, Austria*
C4-P-THU-P2-14	**CORROSION BEHAVIOR OF ALLOY 718 MANUFACTURED BY AM PROCESSES** **Dr. Teresa Guraya**[1], Dr. Peio Jimbert[1], Dr. Roberto Fernandez-Martinez[1], Dr Aitzol Lamikiz[1], Dr. Alberto Echeberria[2], Dr. Joseph Buhagiar[3] *[1]University Of The Basque Country, Bilbao, Spain, [2]Lortek S.Coop., Orditzia, Spain, [3]University of Malta, Msida, Malta*
C4-P-THU-P2-15	**MICROSTRUCTURE STABILITY OF ß-SOLIDIFYING TiAl ALLOYS PRODUCED BY SELECTIVE LASER MELTING** Dr. Joachim Gussone[1], Dr. Jan Haubrich[1], Dr. Gerardo Garces[2], Dr. Andreas Stark[3], Dr. Yves-Christian Hagedorn[4], Dr. Norbert Schell[3], **Prof. Guillermo Requena**[1] *[1]German Aerospace Center (DLR), Cologne, Germany, [2]National Center for Metallurgical Research (CENIM-CSIC), Madrid, Spain, [3]Helmholtz-Zentrum Geesthacht (HZG), Geesthacht, Germany, [4]Fraunhofer Institute for Laser Technology (ILT), Aachen, Germany*
C4-P-THU-P2-16	**SELECTIVE LASER MELTING OF CuCr1Zr** Katia Artzt[1], Dr. Jan Haubrich[1], **Prof. Dr. Guillermo Requena**[1] *[1]German Aerospace Center (DLR), Germany*
C4-P-THU-P2-17	**FABRICATION OF MOUTH GUARDS WITH ANTIMICROBIAL PROPERTY USING MATERIAL EXTRUSION 3D PRINTING** **Mr Ehsan Jazaeri**[1], Ms Tiffany Tang[2] *[1]Monash University, Clayton, Australia, [2]University of Warwick , coverntry, UK*
C4-P-THU-P2-18	**FORGING OF ADDITIVE LAYER MANUFACTURED PREFORMS** **Dr Timur Khismatullin**[1], Dr Malgorzata Rosochowska[1] *[1]Advanced Forming Research Centre, University of Strathclyde, Inchinnan, Renfrew, United Kingdom*
C4-P-THU-P2-19	**WIRE ARC ADDITIVE MANUFACTURING OF FUNCTIONALLY GRADED DEPOSITS** **Milan Agnani**[1], Constantinos Goulas[1,2], Wei Ya[2,3], Marcel Joseph Marie Hermans[1] *[1] Delft University of Technology,Department of Materials Science and Engineering, Mekelweg 2, 2628 CD Delft, The Netherlands, [2]Rotterdam Additive Manufacture Fieldlab (RAMLAB), Scheepsbouwweg 8 - K03, 3089 JW, Rotterdam, The Netherlands, [3]University of Twente, Chair of Applied Laser Technology, MS3 Department, Engineering Technology , P.O. Box 217, 7500 AE Enschede, The Netherlands*
C4-P-THU-P2-20	**3D PRINTED STRUCTURES FOR CHEMISTRY AND ENERGY APPLICATIONS** **Vesna Middelkoop**[1] *[1]VITO (Flemish Institute for Technological Research), Sustainable Materials Management, Belgium*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday September 21, 2017

Symposium C.5: Interface Design and Modelling, Wetting and High-Temperature Capillarity

C5-P-THU-P2-1	**RESEARCH ON OPTICAL ADHESIVES FOR TERABIT NETWORK** **Prof. Seiko Mitachi**[1], Mr. Daigo Kikuchi[1], Mr. Yuuichi Kageyama[2], Mr. Kazushi Kimura[2] *[1]Tokyo Universty of Technology, 1404-1 Katakura, Hachioji, Tokyo, Japan, [2]The Yokohama Rubber Co. Ltd., 2-1 Oiwake, Hiratshuka, Kanagawa, Japan*
C5-P-THU-P2-2	**CHEMICAL REACTION OF Ga BASED ALLOYS ON Cu SUBSTRATE** **Dr Tomasz Gancarz**[1], Dr Katarzyna Berent[2] *[1]Institute of Metallurgy And Materials Science Pas, Krakow, Poland, [2]AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Krakow, Poland*
C5-P-THU-P2-3	**SURFACE ENGINEERING TO IMPROVE CMC JOINTS: MECHANICAL CHARACTERIZATION** **Dr Valentina Casalegno**[1], Fabrizio Valenza[2], Maria Luigia Muolo[2], Milena Salvo[1], Monica Ferraris[1] *[1]Politecnico Di Torino- Department of Applied Science and Technology (DISAT), Torino, Italy, [2]National Research Council – Institute of Condensed Matter Chemistry and Technologies for Energy (CNR-ICMATE), Genoa, Italy*
C5-P-THU-P2-4	**WETTING AND INTERFACIAL REACTIVITY OF Zn-COATED STEEL PRODUCTS WITH Cu-Si, Cu-SK AND Al-Si FILLER METALS FOR LASER BRAZING APPLICATION** Dr. Alexey Koltsov[1], Dr. Laurent Cretteur[2] *[1]ArcelorMittal Research, Maizières-lès-metz, France, [2]ArcelorMittal Research, Montataire, France*
C5-P-THU-P2-5	**GRAIN BOUNDARY WETTING AND SPD-INDUCED PHASE TRANSFORMATIONS IN THE Ti-4 WT.% V AND Ti-4 WT.% V-6 WT.% Al ALLOYS** Dr. Alena Gornakova[2], **Prof Boris Straumal**[1,2,3,4], Dr. Natalia Afonikova[2] *[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruher Institut für Technologie (KIT), Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany, [4]National University of Science and Technology «MISIS», Moscow, Russia*
C5-P-THU-P2-6	**GRAIN BOUNDARY WETTING IN W–Ni ALLOYS** Dr. Andrey Mazilkin[2,3], **Prof Boris Straumal**[1,2,3], Dr. Svetlana Protasova[2], Dr. Brigitte Baretzky[3] *[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruher Institut für Technologie (KIT), Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany*
C5-P-THU-P2-7	**PSEUDOPARTIAL WETTING OF GRAIN BOUNDARIES** M.sc. Alexander Straumal[2], Dr. Andrey Mazilkin[2,3], Dr. Brigitte Baretzky[3], **Prof Boris Straumal**[1] *[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [3]Karlsruher Institut für Technologie, Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany*
C5-P-THU-P2-8	**EFFECT OF THE SOLDERING ATMOSPHERE ON THE WETTABILITY OF A LEAD-FREE SOLDER PASTE** **Dr. Delfim Soares**[1], Eng. Helena Leitão[2], Dr. José Teixeira[1], Eng. Luís Ribas[2], Dr. Senhorinha Teixeira[1], Dr. Maria Cerqueira[1], Dr. Francisco Macedo[1], Eng Ricardo Alves[2] *[1]Univ. Of Minho, Guimarães, Portugal, [2]Bosch Car Multimedia, Braga, portugal*
C5-P-THU-P2-9	**NOVEL α-Si3N4 PLANAR SUPERHYDROPHOBIC NANOWIRE MEMBRANE THROUGH TAPE CASTING AND IN-SITU NITRIDATION OF SILICON** Prof. Xin Xu[1], Mr. Lin Li[1], Dr. JunWei Wang[1], Prof. ChuSheng Chen[1], **Prof. Simeon Agathopoulos**[2] *[1]University Of Science And Technology Of China, Hefei, China, [2]University of Ioannina, GR-451 10 Ioannina, Greece*
C5-P-THU-P2-10	**LIQUID Bi PENETRATION INTO ULTRAFINE-GRAINED Cu POLYCRYSTAL** Dr. Anna Kosinova[2], Prof. Eugen Rabkin[2], Dr. Askar Kilmametov[3], **Prof Boris Straumal**[1,3,4] *[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Department of Materials Science and Engineering, Technion – Israel Institute of Technology, Haifa, Israel, [3]Karlsruhe Institute of Technology, Institute of Nanotechnology, Eggenstein-Leopoldshafen, Germany, [4]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday September 21, 2017

Symposium C.5: Interface Design and Modelling, Wetting and High-Temperature Capillarity

C5-P-THU-P2-11	**CONTACT ANGLES OF WC/WC GRAIN BOUNDARIES WITH BINDER IN CEMENTED CARBIDES WITH VARIOUS CARBON CONTENT** Dr. Igor Konyashin[2,3], **Prof Boris Straumal**[1,3,4,5], Dr. Berndt Ries[2], Prof. Marat Bulatov[6], Dr Brigitte Baretzky[5] *[1]NITU MISiS, Chernogolovka, Russian Federation, [2]Element Six GmbH, Burghaun, Germany, [3]National University of Science and Technology «MISIS», Moscow, Russia, [4]Institute of Solid State Physics, Russian Academy of Sciences, Chernogolovka, Russia, [5]Karlsruher Institut für Technologie, Institut für Nanotechnologie, Eggenstein-Leopoldshafen, Germany, [6]Moscow Technological University (MIREA), Moscow, Russia*
C5-P-THU-P2-12	**WETTING PROPERTIES OF LASER TREATED SURFACES** **Dr. Zoltan Weltsch**[1] *[1]Pallasz Athéné University, Kecskemét, Hungary*
C5-P-THU-P2-13	**EFFECT OF ADDITIVES ON INTERGRANULAR PRESSURE SOLUTION OF CALCITE** **Dr Vladimir Traskine**[1], Professor Zoya Skvortsova[1], Dr Gennady Badun[1], Dr Mariya Chernysheva[1], Yaroslav Simonov[1] *[1]Department of Chemistry, Lomonosov University, Moscow, Russian Federation*
C5-P-THU-P2-14	**WETTABILITY OF TRANSPARENT YAG (Y3AL5O12) BY MOLTEN AGCUTI ALLOYS AND JOINING STUDY OF YAG/AgCuTi/Ti6Al4V SYSTEMS** **Sofia Gambaro**[1], Fabrizio Valenza[1], Gabriele Cacciamani[1], Maria Luigia Muolo[1], Alberto Passerone[1] *[1]National Research Council – Institute of Condensed Matter Chemistry and Technologies for Energy (CNR-ICMATE), Genova, Italy*
C5-P-THU-P2-15	**WETTING OF VITREOUS CARBON BY Ag-Cu-In-Ti REACTIVE ALLOY** **Ms. Meryem Tazi**[1,2], Mrs. Valérie CHAUMAT[1], M. Fiqiri HODAJ[2] *[1]Univ. Grenovle Alpes, CEA, LITEN, DTBH , LCA, Grenoble, France, [2]Univ. Grenoble Alpes , SIMAP , Grenoble, France*
C5-P-THU-P2-16	**WETTING AND SPREADING AT THE NANOSCALE** Dr Emily Brooke[1], Dr Anna Regoutz[1], Dr Catriona McGilvery[1], Prof Eduardo Saiz[1], **Dr David Payne**[1] *[1]Department of Materials, Imperial College London, London, United Kingdom*
C5-P-THU-P2-17	**GRAPHITE FLAKES-Fe(/Co/Ni) PARTICLES/METAL COMPOSITES FOR POWER ELECTRONICS** E. Louis, **Dr J.M. Molina** *[1]Instituto Universitario de Materiales de Alicante, Universidad de Alicante, Ap. 99, E-03080, Alicante, Spain, [2]Departamento de Química Inorgánica, Universidad de Alicante, Ap. 99, E-03080, Spain, [3]Departamento de Física Aplicada, Universidad de Alicante, Ap. 99, E-03080, Alicante, Spain*
C5-P-THU-P2-18	**PREPARATION, HEAT TREATMENT AND SURFACE PROPERTY ASSESSMENT OF Al-MATRIX COMPOSITES IN-SITU REINFORCED WITH Mg2Si AND EX-SITU REINFORCED WITH TiC PARTICLES** **Angeliki Lekatou**[1], Anthi Poulia[1], Alexander E. Karantzalis[1], Emmanouil Georgatis[1] *[1]Applied Metallurgy Laboratory, Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.8: Solidification, Casting, Foundry and Liquid Metal processing

C8-P-THU-P2-1	**INTEGRATED SYSTEM OF THERMAL / DIMENSIONAL ANALYSES FOR QUALITY CONTROL OF METALLIC MELT AND DUCTILE IRON CASTING SOLIDIFICATION** **Phd Stelian Stan**[1], PhD Mihai Chisamera[1], PhD Iulian Riposan[1], PhD Iulian Stan[1], PhD student Loredana Neacsu[1], PhD student Ana Maria Cojocaru[1] *[1]Politehnica University Of Bucharest, Bucuresti, Romania*
C8-P-THU-P2-2	**MICROSTRUCTURAL AND CRYSTALLOGRAPHIC CHARACTERIZATION OF LEDEBURITE IN Fe-C-Si ALLOYS** **Stefan Kante**[1], Prof. Dr. rer. nat. habil. Andreas Leineweber[1] *[1]Institute of Materials Science, TU Bergakademie Freiberg, Freiberg, Germany*
C8-P-THU-P2-3	**EFFECT OF SR ADDITION ON MICROSTRUCTURE AND CORROSION BEHAVIOR OF A356 ALUMINUM ALLOYS** Graduate Student İsmail Öztürk[1], Dr. Gökçe Hapçı Ağaoğlu[1], **Assoc. Prof. Derya Dışpınar**[1], Prof. Dr. Gökhan Orhan[1] *[1]Istanbul University, Istanbul, Türkiye*
C8-P-THU-P2-4	**FEEDABILITY CHARACTERISTICS OF Sr-MODIFIED A356 ALLOY** Gokhan Gorel[1], Ozen Gursoy[1], Dr Eray Erzi[1], **Assoc.Prof.Dr. Derya Dispinar**[1] *[1]Istanbul University*
C8-P-THU-P2-5	**EFFECT OF TI AND Si ON THE MICROSTRUCTURAL CHANGES OF EUTECTIC Al-Si ALLOY** Secil Demirkesen[1], Ozen Gursoy[1], **Eray Erzi**[1], Derya Dispinar[1] *[1]Istanbul University*
C8-P-THU-P2-6	**HEAT TREATMENT PARAMETERS FOR H12 CONDITION FOR Mg AND Sr ADDED AA1050 ALLOY** Emrehan Dogan[1], Onur Kara[1], Ozen Gursoy[1], Eray Erzi[1], **Sebahattin Kirtay**[1], Derya Dispinar[1] *[1]Istanbul University, Turkey*
C8-P-THU-P2-7	**MOULD FILLING ABILITY AND MECHANICAL PROPERTIES OF SIMA PRODUCED 7075** **Eray Erzi**[1], Caglar Yuksel[2], Ozen Gursoy[1], Sebahattin Kirtay[1], Derya Dispinar[1] *[1]Istanbul University, [2]Yildiz Technical University*
C8-P-THU-P2-8	**THREE DIMENSIONAL CHARACTERIZATION OF STRUCTURAL DEFECTS OF MULTILAYER CERAMIC SHELL MOULDS BY X-RAY COMPUTED TOMOGRAPHY METHOD** **Msc. Eng. Adam Tchorz**[1], Msc. Eng. Izabela Krzak[1], Prof. Marzanna Ksiazek[1], Msc. Eng. Lukasz Boron[1] *[1]Foundry Research Institute, Cracow, Poland*
C8-P-THU-P2-9	**EFFECT OF Zn ON SOLID/LIQUID INTERFACE ENERGY OF ß-Sn** **Mr Masaru Nagaoka**[1], Dr Hisao Esaka[1], Dr Kei Shinozuka[1] *[1]National Defense Academy of Japan, Yokosuka, Japan*
C8-P-THU-P2-10	**MELT QUALITY CHANGE WITH DIFFERENT FLUXES IN SECONDARY A356 ALLOY** **Caglar Yuksel**[1], Ozge Tamer[1], Eray Erzi[2], Ugur Aybarc[3], Emre Cubuklusu[3], Ozgur Topcuoglu[3], Mustafa Cigdem[1], Derya Dispinar[2] *[1]Yildiz Technical University, [2]Istanbul University, [3]CMS Wheels*
C8-P-THU-P2-11	**MELT QUALITY AND MECHANICAL PROPERTY CHANGE IN MIXED RATIOS OF SCRAP AND PRIMARY A356** Ozge Tamer[1], **Caglar Yuksel**[1], Eray Erzi[2], Ugur Aybarc[3], Emre Cubuklusu[3], Ozgur Topcuoglu[3], Mustafa Cigdem[1], Derya Dispinar[2] *[1]Yildiz Technical University, [2]Istanbul University, [3]CMS Wheels*
C8-P-THU-P2-12	**POROSITY FORMATION BY Sr, Ti AND B ADDITION TO A413 ALUMINUM ALLOY** **Muhammet Uludag**[1], Derya Dispinar[2] *[1]Bursa Technical University, [1,2]Istanbul University*
C8-P-THU-P2-13	**CHARACTERISATION OF HOT TEARING SUSCEPTIBILITY OF A380** **Muhammet Uludag**[1], Remzi Cetin[2], Murat Tiryakioglu[3], Derya Dispinar[4] *[1]Bursa Technical University, [2]Halic University, , [3]University of North Florida, [4]Istanbul University*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.8: Solidification, Casting, Foundry and Liquid Metal processing

C8-P-THU-P2-14	**STATISTICAL APPROACH ON ASSESSMENT OF ALUMINUM MELT QUALITY BY REDUCED PRESSURE TEST** **Muhammet Uludag**[1], Remzi Cetin[2], Murat Tiryakioglu[3], Derya Dispinar[4] *[1]Bursa Technical University, [2]Halic University,, [3]University of North Florida, [4]Istanbul University, Turkey*
C8-P-THU-P2-15	**HOT TEARING OF Sr-B MODIFIED A356** **Muhammet Uludag**[1], Remzi Cetin[2], Derya Dispinar[3] *[1]Bursa Technical University, [2]Halic University, [3]Istanbul University, Turkey*
C8-P-THU-P2-16	**MICROSTRUCTURAL CHANGES OF HYPEREUTECTIC Al-Si ALLOY BY Sr** Muhammet Uludag[1], **Lokman Gemi**[2], Derya Dispinar[3] *[1]Bursa Technical University, [2]Necmettin Erbakan University, [3]Istanbul University*
C8-P-THU-P2-17	**COMPARISON OF MELT CLEANING WITH AND WITHOUT FLUXES IN 206 ALUMINIUM ALLOY** **Murat Colak**[1], Derya Dispinar[2] *[1]Bayburt University, [2]Istanbul University, Turkey*
C8-P-THU-P2-18	**SOLIDIFICATION KINETICS OF CuZr ALLOY: GROUND-BASED AND MICROGRAVITATIONAL EXPERIMENTS** Dr. Peter Galenko[2], R Hanke[2], Ph Paul[2], S Koch, M Rettenmayr[2], R Kobold[4], M Kolbe[4], J Gegner[4], D Holland-Moritz[4], D Herlach[4], W Dreier[5], **Dr. Evgeny Kharanzhevskiy**[1] *[1]Udmurt State University, Izhevsk, Russian Federation, [2]Friedrich-Schiller-Universität Jena, Physikalisch-Astronomische Fakultät, D-07743 Jena, Germany, [3]Ural Federal University, Laboratory of Multi-Scale Mathematical Modeling, 620002 Ekaterinburg, Russia, [4]Deutsches Zentrum für Luft- und Raumfahrt, Institut für Materialphysik im Weltraum, D51170 Köln, Germany, [5]Ruhr-Universitä, Physikalisch-Astronomische Fakultät, D-44810 Bochum, Germany*
C8-P-THU-P2-19	**PHASE SEGREGATION DISCUSSION IN A HfZrTiNbV HIGH ENTROPY ALLOY: THE PARADOX OF THE HIGH MELTING POINT ELEMENT** Dipl. Eng Anthoula Poulia[1], Dipl. Eng. Emmanuel Georgatis[1], Dipl. Eng. Christina Mathiou[1], **Dr. Alexander Karantzalis**[1] *[1]University Of Ioannina, Ioannina, Greece*
C8-P-THU-P2-20	**SOLIDIFICATION SEQUENCE AND SALINE CORROSION PERFORMANCE OF CAST ALUMINIUM MATRIX COMPOSITES REINFORCED WITH SUBMICRON TUNGSTEN CARBIDE PARTICLES** **Prof. Angeliki Lekatou**[1], Prof. Alexandros Karantzalis[1], Mr. Nicolaos Gkikas[1], Ms. Vasiliki Gousia[1] *[1]University Of Ioannina, Ioannina, Greece*
C8-P-THU-P2-21	**ULTRASONIC MELT TREATMENT OF LIGHT ALLOYS - AN INNOVATIVE APPROACH WITHOUT ENVIRONMENTAL IMPACT** **Joaquim Barbosa**[1], Helder Puga[1] *[1]CMEMS - Center for Microelectromechanical Systems - Universidade Do Minho, Guimarães, Portugal*
C8-P-THU-P2-22	**THE ROLE OF MELT STIRRING AND MN-RICH INTERMETALLIC PHASES IN THE FORMATION OF THE PRIMARY Al-PHASE IN AlSi ALLOYS** **Dr Piotr Mikolajczak**[1], Professor Lorenz Ratke[2] *[1]Poznan University of Technology, Institute of Materials Technology, Poznan,Poland, [2]German Aerospace Center DLR, Institut für Werkstoff-Forschung, Cologne, Germany*
C8-P-THU-P2-23	**UNIVARIANT EUTECTIC SOLIDIFICATION: DIRECTIONAL GROWTH OF Al2Cu AND Ag2Al PHASES IN THE TERNARY Al-Ag-Cu SYSTEM** **Kemal Babayev**[1], Research Assistant Professor Melis Serefoglu Kaya[1] *[1]Koc University, İstanbul, Turkey*
C8-P-THU-P2-24	**EFFECT OF HEAT TREATMENT ON MECHANICAL PROPERTIES IN Al-12 Si ALLOY WITH VARIOUS Mg COMPOSITION RATIO** Dr. Muhammet Uludag[1], **Dr. Mustafa Kocabaş**, Dr. Şakir Yazman, Prof. Dr. Derya Dişpinar *[1]Bursa Technical University, Bursa, Turkey*
C8-P-THU-P2-25	**THE CORRELATION BETWEEN CASTING QUALITY AND WEAR BEHAVIOR IN Al-12 Si ALLOY WITH VARIOUS MG COMPOSITION** Dr. Muhammet Uludag[1], **Mr. Muhammed Abdullah YILDIZ**, Dr. Mustafa KOCABAŞ, Prof. Dr. Derya DIŞPINAR *[1]Bursa Technical University, Turkey*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.9: Manufacturing Processes

C9-P-THU-P2-1	**STUDY ON SOLID STATE WELDING AND SUPERPLASTIC FORMING FOR AEROSPACE PRESSURE VESSEL** **Professor Ho-sung Lee**[1] *[1]Korea Aerospace Research Institute, Daejeon, South Korea*
C9-P-THU-P2-2	**DESIGN OF EXPERIMENTS FOR THE OPTIMIZATION OF CUTTING FORCE AND SURFACE ROUGHNESS OF LEAD-FREE BRASS ALLOYS** **Mr Anagnostis Toulfatzis**[1,3], Dr George Pantazopoulos[1], Professor Constantine David[2], Dr Dimitrios Sagris[2], Professor Alkiviadis Paipetis[3] *[1]ELKEME S.A - Hellenic Research Centre for Metals S.A, 56th km Athens – Lamia National Road, 32011 Oinofyta Viotias, Greece, [2]Department of Mechanical Engineering, Technological Educational Institute of Central Macedonia, 62124 Serres, Greece, [3]Department of Materials Science and Engineering, University of Ioannina, 45110 Ioannina, Greece*
C9-P-THU-P2-3	**INFLUENCE OF SUBSTRATE GRANULATION ON SHS SYNTHESIS OF THE BINARY COMPOUNDS IN THE Ti-Al AND Fe-Al SYSTEM** **M.Sc. Katarzyna Chabior**[1], Professor Jerzy Lis[1], D.Sc. Leszek Chlubny[1], M.Sc. Paulina Borowiak[1], M.Sc Karolina Kozak[1] *[1]AGH University of Science and Technology, Krakow, Poland*
C9-P-THU-P2-4	**STATIC AND DYNAMIC MECHANICAL PROPERTIES OF FLUOROCARON POLYMER: MULTI-SCALE INVESTIGATION** **Dr Ahmed Mdarhri**[1], A Nourdine[2,3], A Montagne[4], Ilham EL ABOUDI[1], A Iost[4] *[1]Laboratoire de la Matière Condensée et des Nanostructures (LMCN), FSTG Université Cadi Ayyad Av. A. Khattabi, B.P. 549, 40 000 Marrakech, Maroc , Marrakech, Morocco, [2]LEPMI, University of Savoie Mont Blanc, Chambéry F-73000, France , Chambéry, France, [3]LEPMI, CNRS, Grenoble F-38000, France , Grenoble, France, [4]Arts & Metiers ParisTech; Mechanics, Surfaces and Materials Processing (MSMP), 8 BD Louis XIV, 59046 Lille, France, Lille, France*
C9-P-THU-P2-5	**THE STUDY OF RELATIONSHIPS BETWEEN THE CHARACTERISTICS OF BINDER SYSTEM AND INJECTION MOLDING BEHAVIOR IN THE FABRICATION PROCESS OF HIGH ASPECT RATIO MICRO PATTERN STRUCTURE** **Dr. Yongdae Kim**[1], Dr. Wonsik Lee[1], Mr. Jin-Man Jang[1] *[1]Korea Institute Of Industrial Technology, 156, Getpearl-ro, Yeonsu-Gu, Korea*
C9-P-THU-P2-6	**FABRICATION OF MICRO MOLD FOR POWDER INJECTION MOLDING BY ELECTROFORMING OF Fe-Ni ALLOYS** **Sung Cheol Park**[1], Dr. Seong Ho Son[1], Dr. Ho-Nyun Lee[1], Jin Yeon Lee[1], Dr. Wonsik Lee[1], Dr. Yong-Dae Kim[1] *[1]Korea Institute Of Industrial Technology, South Korea*
C9-P-THU-P2-7	**MODEL-BASED ONLINE TOOL MONITORING FOR HOBBING PROCESSES** Prof. Dr. Ing. Dr. Ing. e.h. Dr. hc Dr. hc Fritz Klocke[1], Dr. Ing. Benjamin Döbbeler[1], **Sven Goetz**[1] *[1]WZL der RWTH Aachen University, Aachen, Germany*

TIME: 13:00-15:00 | ROOM: FOYER, E1/M1

P2 — Thursday September 21, 2017

Symposium C.9: Manufacturing Processes

C9-P-THU-P2-8	**THE EFFECT OF POROSITY ON THE MILLING OF POROUS ALUMINUM** **Dr.-Eng. Nikolaos Michailidis**[1], Mr. Spyridon Kombogiannis[2], Mr. Paschalis Charalampous[2], Dr.-Eng. Georgios Maliaris[3], Dr.-Eng. Fani Stergioudi[1] *[1]Physical metallurgy Laboratory, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Laboratory for Machine Tools and Manufacturing Engineering, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [3]Mechatronics & Electromechanical Systems Automation Laboratory, Dept. of Electrical and Computer Engineering, Polytechnics school, Democritus University of Thrace, Xanthi, Greece*
C9-P-THU-P2-9	**MICROSTRUCTURAL CHANGES OCCURRING IN SHAPE MEMORY ALLOYS AFTER VARIOUS MANUFACTURING PROCESSES** **Dr.-Eng. Nikolaos Michailidis**[1,2], Dr.-Eng. Fani Stergioudi[1,2], Mr. Marios Pantazopoulos[1,2], Dr.-Eng. Konstantinos-Dionysios Bouzakis[3], Dr.-Eng. Georgios Skordaris[3], Mr. Paschalis Charalampous[3], Dr. Theocharis Baxevanis[4], PhD Dimitrios Lagoudas[5,2] *[1]Physical metallurgy Laboratory, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [2]Center for Research & Development of Advanced Materials, KEDEK - AUTh Balkan Center, Thessaloniki, Greece, [3]Laboratory for Machine Tools and Manufacturing Engineering, Dept. of Mechanical Engineering, School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, [4]University of Houston, Houston, USA, [5]Texas Institute for Intelligent Materials and Structures (TiiMS), Texas A&M University, College Station, USA*
C9-P-THU-P2-10	**CURE MONITORING IN FULLY OR PARTIALLY CLOSED TOOLS USING RESONANT ULTRASONIC SPECTROSCOPY** **Christian Pommer**[1] *[1]Tu-braunschweig, Braunschweig, Germany*
C9-P-THU-P2-11	**SINGLE POINT INCREMENTAL FORMING OF COPPER** Mr Kishore Jawale[1], Dr José F Duarte[1], **Dr Ana Reis**[1], Dr M Beatriz Silva[2] *[1]Inegi, Porto, Portugal, [2]IDMEC, IST, Lisbon, Portugal*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.10: Thermomechanical Processing, Severe Plastic Deformation and Nano-structuring

C10-P-THU-P2-1	**Fe-B-INTERSTITIAL ALLOYS, WITH CONTROLLED MICROSTRUCTURE: A DREAM OR A REALITY** **Doctor Catherine Cordier**[1], Professor Jacques Foct[1] *[1]Univ. Lille, CNRS, INRA, ENSCL, UMR 8207, UMET, Unité Matériaux Et Transformations, Lille, France*
C10-P-THU-P2-2	**CARBON NANOTUBES AS ENHANCERS OF THE MICROSTRUCTURE STABILITY IN METAL MATRIX COMPOSITES: A STUDY OF THE STRUCTURAL DEFECTS AFTER SEVERE PLASTIC DEFORMATION** **Dipl. Ing. Katherine Aristizabal**[1], Dr. Ing. Sebastian Suarez[1] *[1]Dept. Materials Science and Engineering, Saarland University, Saarbruecken, Germany*
C10-P-THU-P2-3	**SEVERE PLASTIC DEFORMATION INDUCED DYNAMIC PRECIPITATION IN Cu-Cr-Zr ALLOY** **PhD Student Harun Yanar**[1], Prof.Dr. Gencaga Purcek[1,2], PhD Student Muhammet Demirtas[3], Dr. D.V. Shangina[4,5], Prof. Dr. S.V. Dobatkin[4,5] *[1]Department of Mechanical Engineering, Karadeniz Technical University, Trabzon, Turkey, Trabzon, Turkey, [2]Engineering Faculty, Giresun University, Giresun, Turkey, [3]Department of Mechanical Engineering, Bayburt University, Bayburt, Turkey , Bayburt, Turkey, [4]A.A.Baikov Institute of Metallurgy and Materials Science of RAS, Moscow, Russia, Moscow, Russia, [5]National University of Science and Technology "MISIS", Laboratory of Hybrid Nanostructured Materials, Russia, Moscow, Russia*
C10-P-THU-P2-4	**ANNEALING BEHAVIOR OF A 316L AUSTENITIC STAINLESS STEEL PROCESSED BY LARGE STRAIN WARM ROLLING** **Miss Marina Odnobokova**[1], Andrey Belyakov[1], Rustam Kaibyshev[1] *[1]Belgorod State University, Belgorod, Russian Federation*
C10-P-THU-P2-5	**MICROSTRUCTURE AND DUCTILITY OF UFG BINARY Al-Zn ALUMINUM ALLOY** **Elena Bobruk**[1] *[1]Ufa State Aviation Technical University, Ufa, Russian Federation*
C10-P-THU-P2-6	**RELATIONSHIP BETWEEN SUPERPLASTICITY AND DAMPING CAPACITY IN NATURALLY AGED Zn-Al ALLOYS** MS Muhammet Demirtas[1], PhD Kadri C. Atli[2], MS Harun Yanar[3], **PhD Gencaga Purcek**[3,4] *[1]Bayburt University, Bayburt, Turkey, [2]Anadolu University, Eskişehir, Turkey, [3]Karadeniz Technical University, Trabzon, Turkey, [4]Engineering Faculty, Giresun University , Giresun, Türkey*
C10-P-THU-P2-7	**INFLUENCE OF STRAIN RATE AND STRAIN PATH ON THE MECHANICAL BEHAVIOR OF AA 6061–T6 ALLOY** **Bermane Beucia**[1], Jérôme Mespoulet[3], Hervé Couque[2], Thierry Chauveau[1], Azziz Hocini[1], Damien Faurie[1], Zofia Trzaska[1], Pierre Hereil3, David Tingaud[1], Dominique Vrel[1], Patrick Langlois[1], Guy Dirras[1] *[1]Université Paris 13, Sorbonne Paris-Cité, LSPM-CNRS, Villetaneuse, France, [2]Nexter Munition, Bourges, France, [3]Thiot Ingenierie, Puybrun, France*
C10-P-THU-P2-8	**MICROSTRUCTURE, MECHANICAL AND PERFORMANCE PROPERTIES OF AN Al ALLOY 6101 AFTER ECAP-CONFORM AND COLD DRAWING** **Maxim Murashkin**[1] *[1]Ufa State Aviation Technical University, Ufa, Russian Federation*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday September 21, 2017

Symposium C.10: Thermomechanical Processing, Severe Plastic Deformation and Nano-structuring

C10-P-THU-P2-9	**MECHANICAL PROPERTIES OF LIGHT ALLOYS AT HIGH TEMPERATURES** **Mr. Salar Salahi**[1], Mr. Kambiz Shojaei[1], Prof. G. Guven Yapici[1] *[1]Ozyegin University, Istanbul, Turkey*
C10-P-THU-P2-10	**ULTRAFINE GRAINED MICROSTRUCTURE IN THE Ti-5.7Al-3.8Mo-1.2Zr-1.3Sn ALLOY PROCESSED BY EQUAL-CHANNEL ANGULAR PRESSING** **G.S. Dyakonov**[1], I. P. Semenova[1], Y. F. Grishina[1], G. I. Raab[1] *[1]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russian Federation*
C10-P-THU-P2-11	**THE EFFECT OF Nb ON THE MICROTEXTURE AND MICROSTRUCTURE OF A NOVEL AS-ROLLED WEAR RESISTANT SLURRY PIPELINE STEEL** **Ph.d Student Vahid Javaheri**[1], Professor David Porter[1] *[1]University Of Oulu, Oulu, Finland*
C10-P-THU-P2-12	**LOCALIZATION OF DEFORMATION UNDER SHOCK WAVE IMPACT** Doctor of physics and mathematical science Sergey Plotnikov[1], Doctor of physics and mathematical science Vladimir Oleshko[2], **Amanzhol Turlybekuly**[1] *[1]D. Serikbayev East Kazakhstan State Technical University, Ust-kamenogorsk, Kazakhstan,* *[2] Tomsk Polytechnic University, Tomsk, Russia*
C10-P-THU-P2-13	**INFLUENCE OF THE UFG STRUCTURE OF THE Mg-Zn-Ca ALLOY ON ITS MECHANICAL AND CORROSION PROPERTIES** **Olga Kulyasova**[1,2], A.P. Tarasova[1], R.K. Islamgaliev[1] *[1]Institute of Physics of Advanced Materials, Ufa State Aviation Technical University, Ufa, Russian Federation, [2]Saint Petersburg State University, Peterhof, Saint Petersburg, Russian Federation*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.11: Processes and Materials for Nanoelectronics

C11-P-THU-P2-1	**DEMONSTRATION OF ULTRA-LOW POWER MULTILEVEL SWITCHING WITH ENHANCED UNIFORMITY IN FORMING FREE TiO2-X-BASED RRAM WITH EMBEDDED PT NANOCRYSTALS** **Dr. Menelaos Tsigkourakos**[1], Phd Student Panagiotis Bousoulas[1], Phd Student Vaggelis Aslanidis[1], Phd Student Patrick Asenov[1], Professor Dimitris Tsoukalas[1] *[1]Department Of Applied Physics, National Technical University Of Athens , Heroon Polytechniou 9, Greece*
C11-P-THU-P2-2	**TERBIUM BASED METAL ORGANIC NETWORK FOR SOLUTION PROCESSED OLEDS** **Prof. Carmen Coya**[1], Prof. Angel Luis Álvarez[1], Prof. Mª Ángeles Monge[2], Prof. Enrique Gutiérrez-Puebla[2], Prof. Alicia de Andrés[2] *[1]Escuela Técnica Superior de Ingeniería de Telecomunicación (ETSIT), Universidad Rey Juan Carlos, Móstoles, Spain, [2]Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas (CSIC), Cantoblanco, Spain*
C11-P-THU-P2-3	**COMPACT MODELING OF NANOSCALE TRIPLE-GATE JUNCTIONLESS TRANSISTORS COVERING DRIFT-DIFFUSION TO QUASI-BALLISTIC CARRIER TRANSPORT** **Mr. Theodoros Oproglidis**[1], Ms. Theano Karatsori[1], Dr. Sylvaine Barraud[3], Prof. Gerard Ghibaudo[2], Prof. Charalabos Dimitriadis[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]IMEP-LAHC Laboratory in Minatec, Grenoble, France, [3]LETI-CEA, Grenoble, France*
C11-P-THU-P2-4	**OPTIMIZATION OF THE CATALYTIC SYSTEM TOWARDS WELL-DEFINED DONOR-ACCEPTOR SEMICONDUCTING POLYMERS** **Michael Spanos**[1,2] *[1]Department of Materials Science and Engineering, University of Ioannina, Ioannina, Greece, [2] Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Athens, Greece, [3]Advent Technologies S.A, Patras, Greece*
C11-P-THU-P2-5	**CIRCUIT DESIGN AT SUB-20NM FinFET TECHNOLOGY: MATERIALS AND DESIGN TECHNIQUES EFFECTS** **Mr Dimitrios Balobas**[1], Dr Nikos Konofaos[1] *[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece*
C11-P-THU-P2-6	**ELECTRICAL PERFORMANCE OF ATOMIC LAYER DEPOSITED ALUMINA FILMS USING DIFFERENT OXIDANTS** Dr Nikolaos Nikolaou[1], Dr Panagiotis Dimitrakis[1], Dr Pascal Normand[1], Aggelos Zeniou[1], Dr Kaupo Kukli[2,3], Professor Mikko Ritala[2], Professor Markku Leskelä2, **Dr Vassilios Ioannou-Sougleridis**[1] *[1]Institute of Nanoscience and Nanotechnology, NCSR 'Demokritos', 153 10 Aghia Paraskevi, Greece, [2]Department of Chemistry, University of Helsinki, FI-00014 Helsinki, Finland, [3]Institute of Physics, University of Tartu, Ravila 14c, EE-50411 Tartu, Estonia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday September 21, 2017

Symposium C.11: Processes and Materials for Nanoelectronics

C11-P-THU-P2-7	**INVESTIGATION OF INSTABILITIES IN OXIDE-NITRIDE-ALUMINA MEMORY CAPACITORS** Dr Nikolaos Nikolaou[1], Dr Panagiotis Dimitrakis[1], Dr Pascal Normand[1], Dr Konstantinos Giannakopoulos[1], Dr Mario Barozzi[2], Dr Giancarlo Pepponi[2], Dr Kaupo Kukli[3,4], Professor Mikko Ritala[3], Professor Markku Leskelä[3], **Dr Vassilios Ioannou-Sougleridis**[1] *[1]Institute of Nanoscience and Nanotechnology, NCSR 'Demokritos', 153 10 Aghia Paraskevi, Greece, [2]Fondazione Bruno Kessler, CMM, MNF, MateC, Trento, Italy, [3]Department of Chemistry, University of Helsinki, FI-00014 Helsinki, Finland, [4]Institute of Physics, University of Tartu, Ravila 14c, EE-50411 Tartu, Estonia*
C11-P-THU-P2-8	**A 3-DIMENSIONAL SIMULATOR OF A TENSILE STRESS SENSOR BASED ON TUNNELING BETWEEN CNTS** Prof John Xanthakis[1], **Mr Menelaos Tsagarakis**[1] *[1]National Technical University of Athens, Athens, Greece*
C11-P-THU-P2-9	**ON THE APPLICABILITY OF THE NATORI FORMULA TO REALISTIC MULTI-LAYER QUANTUM WELL III-V FETS** **Dr Argyro Gili**[1], Professor John Xanthakis[1] *[1]National Technical University Of Athens, Athens, Greece*
C11-P-THU-P2-10	**OPTICAL PROPERTIES OF PEROXY BRIDGES FROM FIRST PRINCIPLES: SITE-TO-SITE DISORDER EFFECTS** **Blaz Winkler**[1,2], Layla Martin-Samos[1,4], Nicolas Richard[3], Luigi Giacomazzi[4], Antonino Alessi[2], Sylvain Girard[2], Aziz Boukenter[2], Youcef Ouerdane[2], Matjaz Valant[1] *[1]University Of Nova Gorica, Materials Research Laboratory, Ajdovscina, Slovenia, [2]University Jean Monet, Laboratorie Hubert Curien, Saint-Etienne, France, [3]CEA, DAM, DIF, Arpajon, France, [4]CNR-IOM/Democritos National Simulation Center, Trieste, Italy*
C11-P-THU-P2-11	**STRUCTURAL, MORPHOLOGICAL AND ELECTRICAL CHARACTERIZATION OF HOT-WIRE DEPOSITED METAL OXIDES** **Dr Giorgos Papadimitropoulos**[1], Dr Dimitrios Kouvatsos[1], Dr Dimitrios Davazoglou[1] *[1]NCSR Demokritos, Athens, Greece*
C11-P-THU-P2-12	**THE INFLUENCE OF EMBEDDED HAFNIUM NANOPARTICLES ON THE RESISTIVE SWITCHING BEHAVIOR OF METAL OXIDE THIN FILMS** Irini Michelakaki[1], Panagiotis Bousoulas[1], Nikos Boukos[2], **Dimitris Tsoukalas** *[1]NTUA, Zographou, Greece, [2]NCSR Demokritos, Aghia Paraskvi, Greece*
C11-P-THU-P2-13	**INELASTIC NEUTRON SCATTERING AND INFRARED SPECTROSCOPIC STUDY OF THE ORTHORHOMBIC-TETRAGONAL PHASE TRANSITION IN CH3HN3PbI3** **Götz Schuck**[1], Daniel M. Többens[1], Monika Koch-Müller[2], Ilias Efthymiopoulos[2], Susan Schorr[1] *[1]Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, 14109 Berlin, Germany, [2]Helmholtz-Zentrum Potsdam, Deutsches GeoForschungsZentrum - GFZ, Telegrafenberg, 14473 Potsdam, Germany*
C11-P-THU-P2-14	**CHALLENGES IN PREPARATION OF MICROWAVE TUNABLE DEVICES WITH DOPED BaTiO3 THIN FILMS** **Jelena Vukmirovic**[1], Branimir Bajac[1], Andrea Nesterovic[1], Georges Dubourg[2], Jovana Stanojev[2], Sanja Kojic[3], Goran Stojanovic[3], Vladimir Srdic[1] *[1]Faculty Of Technology Novi Sad, Novi Sad, Serbia, [2]BioSense Institute, Novi Sad, Serbia, [3]Faculty Of Technical Sciences, Novi Sad, Serbia*
C11-P-THU-P2-15	**GROWTH AND PROPERTIES OF GESISN STRAINED LAYERS ON Si(100)** **Dr. Alexandr Nikiforov**[1,2], Dr. Vaycheslav Timofeev[1], Artur Tuktamyshev[1], Michail Loshkarev[1], Dr. Serge Teys[1], Prof. Oleg Pchelyakov[1,2] *[1]Rhanov Institute Of Semiconductor Physics SB RAS, Novosibirsk, Russian Federation, [2]National Research Tomsk State University, Tomsk, Russian Federation*
C11-P-THU-P2-16	**IMPEDIMETRIC NANOWIRE-APTASENSOR, FOR SELECTIVE PESTICIDE DETECTION** **E. Skotadis**[1], L. Madianos[1], G. Tsekenis[2], L. Patsiouras[1], D. Tsoukalas[1] *[1]Department of Applied Physics, National Technical University of Athens, Athens, Greece, [2]Biomedical Research Foundation of the Academy of Athens, Athens, Greece*
C11-P-THU-P2-17	**THE SURFACE OF SILICON NANOWIRES AND ITS ROLE IN THE DEACTIVATION OF DOPANTS** Dr. Stefano Paleari[1], **Dr. Matteo Belli**2, Prof.Marco Fanciulli[1,2] *[1]Universita' Di Milano - Bicocca, Milan, Italy, [2]CNR-IMM MDM Laboratory, Agrate Brianza, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Thursday September 21, 2017

Symposium D.3: Materials at extreme conditions: static or dynamic compression combined or not with low or high temperatures

D3-P-THU-P2-1	**DIELECTRIC MATERIAL MEASUREMENT OF HYPERSONIC ELECTROMAGNETIC WINDOWS FOR HIGH TEMPERATURE** **Yinfang Xu**[1], Junwu Zhang[1] *[1]Beijing Institute Of Space Long March Vehicle, Fengtai, China*
D3-P-THU-P2-2	**HIGH PRESSURE RESPONSE AND HYDROSTATICITY OF THE FC70 FLUORINERTTM STUDIED BY RAMAN SPECTROSCOPY** **Mr Stavros Misopoulos**[1], Ms Aspasia Zerfiridou[1,2], Mr Kyriakos Filintoglou[1], Mr Dimitris Christofilos[3], Mr Sotirios Ves[1], Mr Gerasimos A. Kourouklis[3], Mr John Arvanitidis[1] *[1]Physics Department, Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]Food Technology Department, ATEI of Thessaloniki, Thessaloniki, Greece, [3]Chemical Engineering Department, Aristotle University of Thessaloniki, Thessaloniki, Greece*
D3-P-THU-P2-3	**COMPARATIVE HIGH PRESSURE RAMAN STUDY OF THE MIXED VALENCE Sm2.75C60 AND Eu2.75C60 FULLERIDES** Dr. S.M. Souliou[1,2], **Dr. J. Arvanitidis**[3], Dr. D. Christofilos[4], Dr. K. Papagelis[5], Prof. S. Ves[3], Prof. G.A. Kourouklis[4], Prof. K. Prassides[6], Prof. Y. Iwasa[7], Prof. K. Syassen[2] *[1]European Synchrotron Radiation Facility, BP 220, F-38043 Grenoble Cedex, France, [2]Max-Planck Institut für Festkörperforschung, Max-Planck Institut für Festkörperforschung, 70569 Stuttgart, Germany, [3]Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [4]Chemical Engineering Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [5]Physics Department, University of Patras, 26504 Patras, Greece, [6]WPI-Advanced Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Sendai 980-8577, Japan, [7]Department of Applied Physics, University of Tokyo, 113-8656 Tokyo, Japan*
D3-P-THU-P2-4	**HIGH PRESSURE RAMAN STUDY OF ARAMIDE FIBRES** **Miss Niki Sorogka**[1], Mr Fannis Sebros[1], Mr John Arvanitidis[1], Mr Dimitris Christofilos[2], Mr Sotirios Ves[1], Mr John Parthenios[3], Mr George Anagnostopoulos[3], Mr Costas Galiotis[3,4], Mr Konstantinos Papagelis[5] *[1]Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [2]Chemical Engineering Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [3]Institute of Chemical Engineering, FORTH/ICE-HT, 26500 Patras, Greece, [4]Chemical Engineering Department, University of Patras, 26504 Patras, Greece, [5]Physics Department, University of Patras, 26504 Patras, Greece*
D3-P-THU-P2-5	**HIGH PRESSURE RAMAN STUDY OF Dy3Ga5O12** **Mr Michail Margas**[1], Mr John Arvanitidis[1], Mr Dimitrios Christofilos[2], Mr Konstantinos Papagelis[3], Mr Hideo Kimura[4], Mr Gerasimos Kourouklis[2], Mr Sotirios Ves[1] *[1]Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, , Greece, [2]Chemical Engineering Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [3]Physics Department, University of Patras, 26504 Rio Patras, Greece, [4]National Institute for Materials Science, Sengen 1-2-1, Tsukuba, Ibaraki 305-0047, Japan*
D3-P-THU-P2-6	**STRAIN ENGINEERING IN FEW LAYER MOLYBDENUM DISULFIDE TWO DIMENSIONAL CRYSTALS** Dr Dimitris Anestopoulos[1], Dr Spiros Grammatikopoulos[1], Dr. Charalampos Androulidakis[1], Dr Marino Arroyo[4], Prof Kostas Papagelis[1,2], Prof Costas Galiotis[1,3], **Dr John Parthenios**[1] *[1]FORTH/ICE-HT, Patras, Greece, [2]Dept. of Physics, Patras, Greece, [3]Dept. of Chemical Engineering, Patras, Greece, [4]Universitat Politecnica de Catalunya (UPC), Barchelona, Spain*
D3-P-THU-P2-7	**DC AND AC ELECTRICAL PROPERTIES OF GLASSES FROM THE SYSTEM Cu-Ag-Ge-As-Se** **Ms. Vasilisa Zaikova**[1], Ms. Nina Melnikova[1] *[1]Ural Federal University, Institute of Natural Science and Mathematics, Ekaterinburg, Russian Federation*
D3-P-THU-P2-8	**PRESSURE INDUCED STRUCTURAL STUDY OF Sb2S3** **Utpal Dutta**[1], S Pallavi S Malavi[2], Subodha Sahoo[1], S Karmakar[1] *[1]Bhabha Atomic Research Center, MUMBAI, India, [2]Department of Physics, Washington University, C.B. 1105, One Brookings Dr., St. Louis, MO 63130*
D3-P-THU-P2-9	**INFLUENCE OF EXTREME DEFORMATION ON THE EVOLUTION OF MICROSTRUCTURE AND MECHANICAL PROPERTIES** **Dong-Hyun Ahn**[1], Hyoung Seop Kim[2] *[1]Korea Atomic Energy Research Institute, Daejeon, South Korea,* *[2]Pohang University of Science and Technology, Pohang, South Korea*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

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Thursday September 21, 2017

Symposium D.3: Materials at extreme conditions: static or dynamic compression combined or not with low or high temperatures

D3-P-THU-P2-10

PRESSURE-ASSISTED PHOTOPOLYMERIZATION IN THE FULLERENE LAYERS OF THE MOLECULAR DONOR-ACCEPTOR COMPLEX {ZnDABCO}C60

Dr K. P. Meletov[1], Dr J. Arvanitidis[2], Prof. G. A. Kourouklis[3], **Dr D. Christofilos**[3]

[1]Institute of Solid State Physics RAS, Chernogolovka, Moscow region 142432, Russia, [2]Physics Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece, [3]Chemical Engineering Department, Aristotle University of Thessaloniki, 54124 Thessaloniki, Greece

D3-P-THU-P2-11

HP-MoO2: A HIGH-PRESSURE POLYMORPH OF MOLYBDENUM DIOXIDE

Dr. Tobias Luedtke[1], Dr. Dennis Wiedemann[1], **Dr. Ilias Efthimiopoulos**[2], Mr. Nils Becker[3], Mr. Stefan Seidel[5], Dr. Oliver Janka[5], Prof. Dr. Rainer Poettgen[5], Prof. Dr. Richard Dronkowski[3,4], Prof. Dr. Monika Koch-Mueller[2], Prof. Dr. Martin Lerch[1]

[1]Institut für Chemie, Technische Universität Berlin, Straße des 17. Juni 135, 10623 Berlin, Germany, [2]Deutsches GeoForschungsZentrum Potsdam, Telegrafenberg, 14473 Potsdam, Germany, [3]Institut für Anorganische Chemie, RWTH Aachen University, Landoltweg 1, 52056 Aachen, Germany, [4]Jülich-Aachen Research Alliance (JARA-HPC), RWTH-Aachen University, , Germany, 5Institut für Anorganische und Analytische Chemie, Universität Münster, Corrensstraße 30, 48149 Muenster, Germany

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday September 21, 2017

Symposium D.6: Multi-Length-Scale Innovations in Damage Evolution in Materials: Characterization, Modeling, and Validation

D6-P-THU-P2-1

CONTRIBUTION OF Cu-Ni PRECIPITATES TO HARDENING IN Bcc Fe MATRIX

Yankun dou[1], Lixia Jia[1], Xinfu He[1], Shi Wu, Dongjie Wang

[1]China Institute Of Atomic Energy, China

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday, September 21, 2017

Symposium D.8: Ab initio models for thermodynamic and elastic properties of advanced materials

D8-P-TUE-P2-1	**AB INITIO STUDY OF STRUCTURE AND ELASTIC PROPERTIES OF HIGH ENTROPY ALLOYS** **Dr. Natalia Koval**[1], Dr. Maite Alducin[1], Prof. Iñaki Juaristi[1], Dr. Ricardo Díez Muiño[1] *[1]Centro De Física De Materiales, San Sebastian, Spain*
D8-P-TUE-P2-2	**INVESTIGATION OF STRUCTURAL, MECHANICAL AND STORAGE OF HYDROGEN PROPERTIES IN RENi4Mg (RE: Y AND LA): FIRST PRINCPLES CALCULATIONS** **Dr. Mostafa Kerim Benabadji**[1] *[1]Division Etude et Prédition des Matériaux,Unité de Recherche Matériaux et Energies Renouvelables, Tlemcen, Algeria*
D8-P-TUE-P2-3	**MACHINE-LEARNING BASED POTENTIAL FOR IRON: PLASTICITY AND PHASE TRANSITION** **Dr Jean-Bernard Maillet**[1], Dr Christophe Denoual[1], Pr Gabor Csanyi[2] *[1]CEA-DAM/DIF, Arpajon, France, [2]Engineering lab, Uninveristy of Cambridge, Cambridge, United Kingdom*
D8-P-TUE-P2-4	**MATERIALS FOR ADDITIVE MANUFACTURING – HIGH-THROUGHPUT AB-INITIO PROPERTIES COMPUTATION** **Dr Alexander Perlov**[1], Dr Martin P. Persson[1], Prof Marcel H.F. Sluiter[2], Dr Victor Milman[1] *[1]Dassault Systèmes Biovia, Cambridge, United Kingdom, [2]Delft University of Technology, Delft, The Netherlands*
D8-P-TUE-P2-5	**MULTI-SCALE SIMULATION OF SEGREGATION FORMATION ON THE GRAIN BOUNDARIES IN Al ALLOYS** Mikhail Petrik[1,2], Yuri Gornostyrev[1,2], Andrey Kuznetsov[1,2], Lidia Karkina[1] *[1]Institute of Metal Physics Ural Branch RAS, Yekaterinburg, Russian Federation, [2]Institute of Quantum Materials Science, Yekaterinburg, Russian Federation*
D8-P-TUE-P2-6	**MECHANICAL PROPERTIES OF Ti-Nb BASED ALLOYS BY DENSITY FUNCTIONAL THEORY CALCULATIONS** **Accos Prof Christina Lekka**[1], Dr J.J. Gutierrez-Moreno[2], Ms K.G. Ioannou[1], Assoc Prof D.G Papageorgiou[1], Prof G A Evangelakis[1] *[1]University Of Ioannina, Ioannina, Greece, [2]Tyndall National Institute, Cork, Ireland*
D8-P-TUE-P2-7	**THEORETICAL INVESTIGATIONS ON ELECTRONIC, MAGNETIC AND STRUCTURAL PROPERTIES OF Mn3-X-C (X = Ga, Ge, Sn, In) COMPOUNDS** **Dr Vladimir Sokolovskiy**[1], Mr. Dmitriy Kopilov[1], Dr Mikhail Zagrebin[1], Prof Vasiliy Buchelnikov[1] *[1]Chelyabinsk State University, Chelyabinsk, Russian Federation*
D8-P-TUE-P2-8	**THE THERMODYNAMIC PROPERTIES AND BONDING FEATURE OF THE SOME B2 RARE-EARTH INTERMETALLIC COMPOUNDS: FIRST PRINCIPAL STUDY** **SEKKAL Abdessamad**[1] *[1]School Preparatory Science And Techniques Algiers, Tlemcen, Algeria*
D8-P-TUE-P2-9	**SELF-DIFFUSION AND IMPURITY-DIFFUSION OF Ag AND Pd: FIRST-PRINCIPLES CALCULATIONS** **Sergiy Zamulko**[1], Oleg Gorbatov[2,3], Sergiy Sidorenko[4], Andrei Ruban[2] *[1]University Of Oslo, Oslo, Norway, [2]KTH Royal Institute of Technology, Stockholm, Sweden, [3]Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia, [4]National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine*
D8-P-TUE-P2-10	**STUDY OF AMYLOID STABILITY** **Professor Snezana Zaric**[1,2], Dragan Ninkovic[1], Dusan Malenov[2], Predrag Petrovic[1] *[1]Texas A&m University At Qatar, Doha, Qatar, [2]University of Belgrade, Belgrade, Serbia*
D8-P-TUE-P2-11	**AB-INITIO AND CVM CALCULATIONS ON Fe-M SYSTEMS (M=TRANSITION METAL)** **Prof. Luiz T. F. Eleno**[1], Prof. Helena M. Petrilli[3], Prof. Arles G. Rebaza[2], Prof. Leonardo Errico[2], Prof. Claudio G. Schon[4] *[1]Lorena School of Engineering, University Of Sao Paulo, Lorena, Brazil, [2]Universidad de la Plata, La Plata, Argentine, [3]Physics Institute, University of Sao Paulo, Sao Paulo, Brazil, [4]Polytechnic School, University of Sao Paulo, Sao Paulo, Brazil*
D8-P-TUE-P2-12	**CHARGED VACANCY DEFECTS IN THE AlN NANOSHEET: A FIRST-PRINCIPLES DFT STUDY** **Dr William Perez**[1], Dr Rafael Gonzalez[1], Msc Alvaro Gonzalez[1] *[1]Universidad Del Norte, Barranquilla, Colombia*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday, September 21, 2017

Symposium D.8: Ab initio models for thermodynamic and elastic properties of advanced materials

D8-P-TUE-P2-13	**Ab-INITIO STUDY OF STRUCTURAL, MECHANICAL AND HYDROGEN STORAGE PROPERTIES IN RARE EARTH COMPOUNDS RENi4Mg (RE: Y AND La)** **Dr. Mostafa Kerim Benabadji**[1] *[1]Division of Materials Study and Prediction (DEPM),Research Unit for Materials and Renewable Energies (URMER) Abou Bekr Belkaid University Tlemcen, Tlemcen, Algeria, [2]High School in Electrical and Energy Engineering, Oran, Algeria*
D8-P-TUE-P2-14	**EFFECTIVE MODEL POTENTIALS: APPLICATION TO FERROIC MATERIALS** **Carlos Escorihuela**[1], Dr Jorge Íñiguez[1,2] *[1]Luxembourg Institute Of Science And Technology, Esch sur Alzette, Luxembourg, [2]Institut de Ciència de Materials de Barcelona, Bellaterra, Spain*
D8-P-TUE-P2-15	**DOPANT-DEFECT INTERACTIONS IN Ge AND GeO2: DENSITY FUNCTIONAL THEORY CALCULATIONS** Dr E. N. Sgourou[1,2], Prof Alexander Chroneos[3,4], **Dr Yerassimos Panayiotatos**[1] *[1]Department of Mechanical Engineering, Piraeus University of Applied Sciences, Athens, Greece, [2]Solid State Physics Section, University of Athens, Panepistimiopolis Zografos, Greece, [3]Department of Materials, Imperial College London, London SW7 2BP, United Kingdom, [4] Faculty of Engineering and Computing, Coventry University, Priory Street, Coventry CV1 5FB, United Kingdom*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday, September 21, 2017

Symposium D.10: Multiscale Modeling of Materials

D10-II-P-THU-P2-1	**THE EFFECTS OF RELATIVE POSITION ON THE INTERACTION BETWEEN EDGE DISLOCATION AND INTERSTITIAL DISLOCATION LOOP IN BCC-Fe** **Lixia Jia**[1], Xinfu He[1], Shi Wu, Yankun Dou, Dongjie Wang, Wen Yang *[1]China Institute of Atomic Energy, Beijing, China*
D10-II-P-THU-P2-2	**SELF-MULTIPOLE-CONSISTENT TIGHT BINDING FOR MATERIALS MODELLING** **Mr Max Boleininger**[1], Dr. Andrew Horsfield[1] *[1]Department of Materials, Imperial College London, London, United Kingdom*
D10-II-P-THU-P2-3	**PARTICLE MANIPULATION IN MICROFLUIDIC SYSTEMS** Using Peristaltic Waves *Dr. Keyvan Sadeghy[1], Ms. Zahra Poursharifi[1]*
D10-II-P-THU-P2-4	**ATOMISTIC STRUCTURE OF CALCIUM SILICATE HYDRATE IN CEMENTITIOUS SYSTEMS** **Aslam Kunhi Mohamed**[1], Dr. Sandra Galmarini[2], Prof. Paul Bowen[1], Prof. Karen Scrivener[1], Prof. Stephen Parker[3] *[1]EPFL, Lausanne, Switzerland, [2]EMPA, Dubendorf, Switzerland, [3]University of Bath, Claverton Down, United Kingdom*
D10-II-P-THU-P2-5	**ATOMIC-SCALE COMPUTATIONAL DESIGN OF HYDROPHOBIC MATERIALS FOR AEROSPACE APPLICATIONS** **Prof. Krzysztof Jan Kurzydlowski**[1,2], MSc. Kamil Czelej[2], MSc. Marcin Zemla[2], PhD. Piotr Spiewak[2], MSc. Mateusz Grybczuk[2], DSc. Tomasz Wejrzanowski[2] *[1]Technology Partners Foundation, Warsaw, Poland, [2]Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw, Poland*
D10-II-P-THU-P2-6	**MULTISCALE MODELLING OF GRADIENT NANOSTRUCTURES MATERIALS WITH GRAIN SIZE GRADIENT** **Associate Professor Xu Zhang**[1] *[1]Soutwest Jiaotong University, Chengdu, China*
D10-II-P-THU-P2-7	**VHDL-AMS MODELING OF A STERLING MACHINE** **Doctors Fatima Zohra Baouche**[1], Master student Benatman Yassine[1] *[1]University Djilali Bounaama Khemis Miliana, Route Theniet Elhad; 44225, Khemis Miliana, Algeria*
D10-II-P-THU-P2-8	**HYBRID ATOMISTIC-CONTINUUM MODELLING OF LIQUID-LIQUID INTERFACE** **Dr. Angelo Damone**[1] *[1]University Of Brescia, Brescia, Italy*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday, September 21, 2017

Symposium E.4: Materials for Nuclear Energy (fusion, fission)

E4-P-THU-P2-1	**MULTIWAVELENGTH RAMAN MICROSCOPY STUDY OF LABORATORY TUNGSTEN SAMPLES: NATIVE OXIDES AND W-D BONDS** **Dr. Cedric Pardanaud**[1], Dr. Y. Ferro[1], Dr Z. Piazza[1], G. Giacometti[1], Dr C. Martin[1], Dr Y. Addab[1], Dr H. Hijazi[1], Dr. L. Couedel[1], Dr C. Arnas[1], Pr. P. Roubin[1], Dr T. Oda[2], Dr. G. H. Kim[2], Dr Y. Jin[2], Dr K. B. Roh[2], Dr D. Dellasega[3,4], Dr. A. Pezzoli[3], Dr. M. Passoni[3], Pr. C. P. Lungu[5], Dr. C. Porosnicu[5], Dr. M. I. Rusu[5,6], Dr. P. Dinca[5], Dr. M. Lungu[5] *[1]Aix-marseille Université, Marseille, France, [2]Seoul National University, Gwanak-gu, South Korea, [3]Dipartimento di Energia, Politecnico di Milano, Milano, Italy, [4]Istituto di Fisica del Plasma "P.Caldirola", Consiglio Nazionale delle Ricerche, Milano, Italy, [5]eNational Institute for Laser, Plasma and Radiation Physics, Magurele-Bucharest, Romania, [6]National Institute of R&D for Optoelectronics , Magurele-Bucharest, Romania*
E4-P-THU-P2-2	**RESPONSE OF TUNGSTEN AS PLASMA FACING MATERIAL TO TRANSIENT THERMAL LOADS** **Marius Wirtz**[1], Jochen Linke[1], Thorsten Loewenhoff[1], Gerald Pintsuk[1], Inge Uytdenhouwen[2] *[1]Forschungszentrum Jülich Gmbh, Jülich, Germany, [2]SCK•CEN, The Belgian Nuclear Research Centre, Mol, Belgium*
E4-P-THU-P2-3	**CORROSION BEHAVIOUR AND MICROSTRUCTURAL STABILITY OF ALUMINA-FORMING AUSTENITIC STEELS EXPOSED TO OXYGEN-CONTAINING MOLTEN LEAD** **Hao Shi**[1], Dr. Adrian Jianu[1], Dr. Alfons Weisenburger[1], Chongchong Tang[1], Dr. Annette Heinzel[1], Dr. Renate Fetzer[1], Prof. Georg Mueller[1] *[1]Karlshuhe Institute of Technology, Eggenstein-Leopoldshafen, Germany*
E4-P-THU-P2-4	**NEUTRON IRRADIATED HIGH Cu-CONTAINING RPV STEELS** **Dr. Jarmila Degmova**[1], MSc. Stanislav Pecko[1], Dr. Julius Dekan[1], Dr. Jana Simeg Veternikova[1], Dr. Stanislav Sojak[1], Dr. Martin Petriska[1], Prof. Vladimir Slugen[1] *[1]Inpe Fei Stu, Bratislava, Slovakia*
E4-P-THU-P2-5	**THERMAL PROPERTIES OF NOVEL WC-Cu CERMETS FOR FUSION APPLICATIONS** Miss Marta Dias[1], F. Guerreiro[1], **Elena Tejado**[2], U.V. Mardolcar[3], J.B. Correia[4], T. Palacios[2], J.Y. Pastor[2], P. A. Carvalho[1,5], E. Alves[1] *[1]Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal, [2]Departamento de Ciencia de Materiales-CIME, Universidad Politécnica de Madrid, Madrid, Spain, [3]Departamento de Física, Instituto Superior Técnico, Lisbon, Portugal, [4]LNEG, Laboratório Nacional de Energia e Geologia, Lisbon, Portugal, [5]CEFEMA, Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Spain*
E4-P-THU-P2-6	**DEFECT PROCESSES OF Ti3AC2 MAX PHASES: INSIGHTS FROM ATOMISTIC MODELLING** **Dr Nikolaos Kelaidis**[1], Dr Stavros-Richard G. Christopoulos[1], Dr David C. Parfitt[1], Dr. Micheal E. Fitzpatrick[1], Dr Alexander Chroneos[1,2] *[1]Faculty of Engineering, Environment and Computing, Coventry University, Coventry CV1 5FB, United Kingdom, [2]Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom*
E4-P-THU-P2-7	**GRAIN BOUNDARY SELF-DIFFUSION IN FLUORITE-STRUCTURED OXIDES** Dr. Stavros-Richard G. Christopoulos[1], Dr. David C. Parfitt[1], Dr. Paul Fossati[2], Dr. Micheal E. Fitzpatrick[1], **Dr. Nikolaos Kelaidis**[1], Dr. Alexander Chroneos[1,2] *[1]Faculty of Engineering, Environment and Computing, Coventry, United Kingdom, [2]Department of Materials, Imperial College London, South Kensington Campus, London SW7 2AZ, United Kingdom*
E4-P-THU-P2-8	**MODELLING MeV ION IMPLANTATION IN ALPHA-Fe WITH OBJECT KINETIC MONTE CARLO** **Dr Juan Pablo Balbuena**[1], A. Sand[2], C. Björkas[2], K. Nordlund[2], R. Schäublin[3], Prof. Dr. Maria José Caturla[1] *[1]Dept. Física Aplicada, Facultat de Ciencies, Universitat d'Alacant, Alacant, Spain, [2]Dept. of Physics, University of Helsinki, Post-office box 43, FIN-00014, Helsinki, Finland, [3]Dept. of Materials, ETH Zurich, 8093, Zürich, Switzerland*
E4-P-THU-P2-9	**ASSURANCE OF SAFE AND LONG TERM OPERATION OF WWER-440 NUCLEAR REACTOR PRESSURE VESSEL INTERNALS** **Bc. Ondřej Buršík**[1], Ing. Radim Kopriva[1], Ing. Milos Kytka[1], Ing. PhD. Ales Materna[2] *[1]ÚJV Řež, a.s., Husinec, Czech Republic, [2]FNSPE CTU in Prague, Prague, Czech Republic*
E4-P-THU-P2-10	**GRAIN BOUNDARY DIFFUSION OF Ag AND Pd IN SIC** David Navarro[1], Felix Cancino[1], **Dr Eddie Lopez-honorato**[1] *[1]Cinvestav, Saltillo, Mexico*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday, September 21, 2017

Symposium E.4: Materials for Nuclear Energy (fusion, fission)

E4-P-THU-P2-11	**PRECIPITATION IN ZIRCONIUM ALLOYS: CHARACTERIZATION METHODS** **Mr Zaheen Shah**[1], Professor Joseph Robson[1], Professor Michael Preuss[1], Mr Magnus Limbäck[2], Mr Mattias Alm[3] *[1]University Of Manchester, Manchester, United Kingdom, [2]Westinghouse, Västerås, Sweden, [3]AB Sandvik Materials Technology, Sandviken, Sweden*
E4-P-THU-P2-12	**ESTIMATION OF THE TRITIUM RETENTION IN ITER TUNGSTEN DIVERTOR TARGET USING MACROSCOPIC RATE EQUATION SIMULATIONS** **Christian Grisolia**[1,2], E.A. Hodille[3], E. Bernard[1], S. Markelj[4], J. Mougenot[5], C. Becquart[6], R. Bisson[3] *[1]Cea - France, Saint Paul Lez Durance, France, [2]National Research Nuclear University "MEPhI", Moscow, Russia, [3]Aix-Marseille University, Marseille, France, [4]Jozef Stefan Institute,, Ljubljana, Slovenia, [5]LSPM, Villetaneuse, France, [6]Lille University, UMET, Villeneuve d'Ascq, France*
E4-P-THU-P2-13	**MEV ELECTRON-BEAM IRRADIATION OF TUNGSTEN FOR VACANCY CREATION** **Dr. Fabio Borgognoni**[1], Dr. Matej Mayer[2], Dr. Luigi Picardi[1], Dr. Monia Vadrucci[1], Mr. Mikhail Zibrov[2,3] *[1]ENEA, Frascati, Italy, [2]Max-Planck-Institut für Plasmaphysik, Garching, Germany, [3]Ghent University, Ghent, Belgium*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday, September 21, 2017

Symposium E.6: Advanced Materials for Transport Applications

E6-P-THU-P2-1	**MICROSTRUCTURAL AND MECHANICAL PROPERTIES OF FRICTION STIR WELDED 5083 ALUMINUM ALLOYS REINFORCED WITH MICRO- AND NANO-PARTICLES** Dr. Axel von Hehl[1,2], **Anastasiya Egorova**[1,2] *[1]University of Bremen, Bremen, Germany, [2]IWT Stiftung Institut für Werkstofftechnik, Bremen, Germany*
E6-P-THU-P2-2	**INTERNAL STRUCTURING IN ADDITIVELY MANUFACTURED METAL PARTS: A THEORETICAL STUDY ON POTENTIALS AND APPROACHES BASED ON THE BINDER JETTING PROCESS** **Dr.-Ing. Dirk Lehmhus**[1], Dr.-Ing. Axel von Hehl[2], Ramil Basyrov[1], Maurice Bethke[1], Robert Koesters[1], Prof. Dr.-Ing. Matthias Busse[3], Prof. Dr.-Ing. Hans-Werner Zoch[2] *[1]University Of Bremen, Bremen, Germany, [2]Stiftung Institut für Werkstofftechnik, Bremen, Germany, [3]Fraunhofer Institute for Manufacturing Technology and Advanced Materials (IFAM), Bremen, Germany*
E6-P-THU-P2-3	**APPROACH TO A FASTER ALLOY DEVELOPMENT FOR ADDITIVE MANUFACTURING USING MEDIUM MANGANESE STEEL** **Lena Heemann**[1], Daniel Knoop[1], Dr. Axel von Hehl[1], Farhad Mostaghimi[1], Dr. Volker Uhlenwinkel[1], Bernd Schob[2], Frank Schubert[2], Prof. Dr. Lothar Kroll[2] *[1]IWT Bremen, Bremen, Germany, [2]TU Chemnitz, SLK, Chemnitz, Germany*
E6-P-THU-P2-4	**MICROSTRUCTURAL AND MECHANICAL PROPERTIES OF FRICTION STIR WELDED 5083 ALUMINUM ALLOYS REINFORCED WITH MICRO- AND NANO-PARTICLES** Dr. Dimitrios Dragatogiannis[1], Ioannis Pantelis[2], Panagiotis Karakizis[2], **Irene Kanellopoulou**[1], Prof. Dimitrios Pantelis[2], Prof. Costas Charitidis[1] *[1]Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, Athens, Greece, [2]Shipbuilding Technology Laboratory, School of Naval Architecture and Marine Engineering, National Technical University of Athens, 9 Heroon, Polytechniou st., Zografos, Athens, GR-157 80, Greece*
E6-P-THU-P2-5	**HEAT TREATMENT PROCESS FOR LASER ADDITIVE MANUFACTURED, HIGH-STRENGTH ALUMINUM STRUCTURES** **Daniel Knoop**[1], Eric Gärtner[2], Gunther Mohr[3], Dr. Axel von Hehl[1], Prof. Dr. Hans-Werner Zoch[1] *[1]Stiftung Institut für Werkstofftechnik Bremen, Bremen, Germany, [2]Universität Bremen, Bremen, Germany, [3]Technische Universität Hamburg, Hamburg, Germany*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2 Thursday, September 21, 2017

Symposium F.2: Biomaterials for therapeutic delivery

F2-P-THU-P2-1

NANOEMULSIONS BY NATURAL COMPOUNDS: AN INNOVATIVE APPROACH TO BRAIN DELIVERY

Dr Federica Rinaldi[1], Dr Patrizia Nadia Hanieh[2], Professor Elena Del Favero[3], Professor Maria Carafa[2], Dr Carlotta Marianecci[2]

[1]Fondazione Istituto Italiano di Tecnologia, Center for Life Nano Science@Sapienza, Roma, Italy, [2]Department of Drug Chemistry and Technology, University of Rome "Sapienza", Rome, Italy, [3]Department of Medical Biotechnologies and Traslational Medicine, University of Milan, Milan, Italy

F2-P-THU-P2-2

COMPARING TRANSFECTION EFFICACY BETWEEN LIPOPLEXES AND GOLD NANOPARTICLES

Professor Jesus Santamaria[1], Ms Maria Encabo-Berzosa, Ms Maria Sancho-Albero, Dr Victor Sebastian, Dr Silvia Irusta, Dr Manuel Arruebo, Dr Maria Pilar Martin Duque

[1]Universidad De Zaragoza, Zaragoza, Spain

F2-P-THU-P2-3

ION-DOPED MESOPOROUS BIOACTIVE GLASS NANOPARTICLES FOR WOUND HEALING APPLICATIONS

Alessandra Bari[1], Sonia Fiorilli[1], Carlotta Pontremoli[1], Joanna Shepherd[2], Anthony J. Bullock[3], Sheila MacNeil[3], Chiara Vitale-Brovarone[1]

[1]Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi [24], [1]0[12]9, Torino, , [2]School of Clinical Dentistry, The University of Sheffield, [1]9 Claremont Crescent, Sheffield S[1]0 [2]TA, , [3]Department of Engineering Materials, Kroto Research Institute, University of Sheffield,Broad Lane , Sheffield S[3] 7HQ,

F2-P-THU-P2-4

SYNTHESIS, CHARACTERIZATION AND DRUG RELEASE PROFILE OF A THREE-STIMULI-SENSITIVE HOLLOW NANOCONTAINER

Gianluca Toniolo[1,2], Dr. Eleni Efthimiadou[1,3], Dr. George Kordas[1], Dr. Chryssostomos Chatgilialoglu[4]

[1]National Center for Scientific Research Demokritos, INN, Athens, Greece, [2]Università degli Studi di Ferrara, Ferrara, Italy, [3]National and Kapodistrian University of Athens, Panepistimioupoli, Zografou, Athens, Greece, [4]Consiglio Nazionale delle Ricerche (CNR), ISOF, Bologna, Italy

F2-P-THU-P2-5

MESOPOROUS GLASSES DOPED WITH IONS: BIOCOMPATIBILITY, OSTEOGENIC ACTIVITY AND ANTIBACTERIAL EFFECT

Carlotta Pontremoli[1], Alessandra Bari[1], Giorgio Iviglia[2], Elisa Torre[2], Clara Cassinelli[2], Marco Morra[2], Sonia Fiorilli[1], Chiara Vitale-Brovarone[1]

[1]DISAT, Politecnico Di Torino, Torino, [2]Nobil Bio Ricerche Srl, Portacomaro, AT

F2-P-THU-P2-6

SYNTHESIS AND MODIFICATION OF POROUS CARBON NANOPARTICLES FOR THERAPEUTIC APPLICATIONS

Dr. Dimitra Giasafaki[1], Mr. Miguel Gisbert[2,3], Dr. Georgia Charalambopoulou[1], Ms. Lamprini Boutsika[1], Dr. Miguel Manzano[2,3], Prof. María Vallet-Regí[2,3], Dr. Theodore Steriotis[1]

[1]National Center For Scientific Research "Demokritos", Agia Paraskevi Attikis, Greece, [2]Departamento de Química Inorgánica y Bioinorgánica, Universidad Complutense de Madrid, Madrid, Spain, [3]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain

F2-P-THU-P2-7

NON-INVASIVE IMAGING OF PH IN BACTRIALLY INFECTED TISSUE ENGINEERED SKIN MODELS; IMPLICATIONS FOR PAYLOAD RELEASE FROM MESOPOROUS THERAPEUTIC GLASS NANOPARTICLES.

Dr Anthony Bullock[1], Marcela Garcia[1], Dr Joey Shepherd[1], Alessandra Bari[2], Manuel Gisbert-Garazán[3], Dr Manuel Manzano[3], Professor Maria Vallet-Regi[3], Professor Sonia Fiorilli[2], Professor Chiara Vitale-Brovarone[2], Professor Sheila MacNeil[1]

[1]University Of Sheffield, Broad Lane, United Kingdom, [2]Politecnico di Torino, Torino, Italy, [3]Complutense University of Madrid, Madrid, Spain

F2-P-THU-P2-8

"SMART" DRUG DELIVERY SYSTEMS OF ANTITUMOR ACTION BASED ON METALORGANIC FRAMEWORKS

Anna Simagina[1], Evgeny Pidko[1,2], Alexandr Vinogradov[1], Alexander Shtil[3]

[1]Laboratory of Solution Chemistry of Advanced Materials and Technologies, ITMO University, Saint-petersburg, Russian Federation, [2]Inorganic Materials Chemistry group, Eindhoven University of Technology, Eindhoven, The Netherlands, [3]Federal State Budgetary Scientific Institution «N.N. Blokhin Cancer Research Center» of the Ministry of Health of the Russian Federation, Moscow, Russian Federation

F2-P-THU-P2-9

BIOCOMPATIBLE AND SUPERHYDROPHOBIC ACUSTO-MAGNETIC MICROSWIMMERS FOR HEALTHCARE

Dr. Carmela De Marco[1], Dr. Daniel Ahmed[1], Matilde Fiori[1], Cornel Dillinger[1], Dr. Salvador Pané-Vidal[1], Prof. Bradley Nelson[1]

[1]ETH, Zurich, Switzerland

F2-P-THU-P2-10

SYNTHESIS OF MN0.[5]ZN0.[5]FE[2]O[4] FERRITE NANOPARTICLES VIA MECHANICAL ACTIVATION AND SUBSEQUENT MICROWAVE HEATING

Associate Professor Omid Mirzaee[1], Bs student Maryam Jahanaray[1]

[1]Faculty Of Materials & Metallurgical Engineering Of Semnan University, Semnan, Iran

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday, September 21, 2017

Symposium F.3: Nanobiomaterials and nanotechnology for implants, devices and theranostics

F3-P-THU-P2-1	**NANO-HYBRIDS OF CURCUMIN AND Fe-BASED CLUSTERS BY DENSITY FUNCTIONAL THEORY** **Accos Prof Christina Lekka**[1], Ms K.N. Botsiou[1], Mr D.G. Karantzinis[1] *[1] University Of Ioannina, Ioannina, Greece*
F3-P-THU-P2-2	**STUDY OF THE INTERACTION OF WATER ON HYBRID SILANIZED POROUS SILICON BY ENVIRONMENTAL SEM** **Chloé Rodriguez**[1], Dr Vicente Torres Costa[1], María Cascajo Castresana[2], Dr Sylvie Morin[2], Dr Alexander Bittner[2], Dr Miguel Manso[1] *[1] Universidad Autónoma Of Madrid, Madrid, Spain, [2]C.I.C. Nanogune, San Sebastián, Spain*
F3-P-THU-P2-3	**TITANIA DOPED ZnO; IMPROVING THE LIFETIME AND STABILITY OF ZnO BIOMEDICAL DEVICES** MSc Rehab Ramadan[1], MSc Rosalía Delgado Carrascón[1], Phd Maria D Ynsa Alcalá[1], PhD Vicente Torres Costa[1], **Phd Miguel Manso Silvan**[1] *[1] Universidad Autónoma De Madrid, Madrid, Spain*
F3-P-THU-P2-4	**HYBRID HYDROXYAPATITE-POLYETHYLENE OXIDE COATING ON YTTRIA STABILIZED ZIRCONIA (3Y-TZP) DISCS** Professor Athena Tsetsekou[1], **student Panagiotis Karayannis**[1], PHD student Fotini Petrakli[1], PhD student Giorgos Stergiou[1] *[1] School of Mining and Metallurgical Engineering, National Technical University of Athens, Athens, Greece*
F3-P-THU-P2-5	**PAIR DISTRIBUTION FUNCTION ANALYSIS OF SYNTHESISED FLUORAPATITE IMPLANT COATINGS FOR USE IN REGENERATIVE DENTISTRY** **Mr. Ovando Carter**[1] *[1] Queen Mary, University Of London, Flat 4, 2 Ordell Court, United Kingdom, [2]Queen Mary, University of London, Mile End, London, U.K.*
F3-P-THU-P2-6	**ADDITIVE MANUFACTURING OF PERSONALISED BIOFUNCTIONAL SCAFFOLDS FOR TISSUE REGENERATION** Dr. Despoina Brasinika[1,2], Eleni Gartzou[1], **Dr. Elias Koumoulos**[1,2], Prof. Costas Charitidis[1] *[1] Research Unit of Advanced, Composite, Nano-Materials and Nanotechnology, School of Chemical Engineering, National Technical University of Athens, http://nanolab.chemeng.ntua.gr/, Athens, Greece, [2]BioGen3D-New 3D Printing Technologies, Technological Cultural Park Lavrion, http://biogen3d.gr, Lavrion, Greece*
F3-P-THU-P2-7	**CONTROLLING ZINC OXIDE NANOPARTICLES BEHAVIOR IN INORGANIC AND BIOLOGICAL FLUIDS** **MD Eng. Bianca Dumontel**[1], MD Biol. Marta Canta[1], MD Biol. Luisa Racca[1], Dr. Giancarlo Canavese[1], Prof. Valentina Cauda[1] *[1] Department of Applied Science and Technology (DISAT), Politecnico Di Torino, Turin, Italy*
F3-P-THU-P2-8	**ENCRYPTED PEPTIDE SEQUENCE FOR ACTIVATABLE SEQUENTIAL TISSUE AND CELLULAR TARGETING** **Dr. Alejandro Baeza**[1], Dr. Gonzalo Villaverde[1,3], Mss Valentina Nairi[2], Prof. Maura Monduzzi[2], Prof. Maria Vallet-Regí[1,3] *[1]Universidad Complutense De Madrid, Madrid, Spain, [2]Dept. Scienze Chimiche e Geologiche, Cagliari University, Cagliari , Italy, [3]Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN), Madrid, Spain*

TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday, September 21, 2017

Symposium F.6: Bio-Inspired Materials: From structural materials towards multi-functional biomaterials

F6-P-THU-P2-1	**INFLUENCE OF THE THERMAL TREATMENT AND PARTICLE SIZE OF Ce-TZP AND Y-TZP MIXTURES, FOR DENTAL APPLICATION** **Dr. Joana Mesquita-guimaraes**[1,2], MSc Diana Faria[1], Karen Bolis[2], Dr. Júlio Souza[3], Prof. Bruno Henriques[2,1], Prof Márcio Fredel[2], Prof Filipe Silva[1] *[1]1Center for Microelectromechanical Systems (CMEMS-UMinho) University of Minho, Guimarães, Portugal, [2]2Department of Mechanical Engineering (EMC) Federal University of Santa Catarina (UFSC), Florianópolis, Brazil, [3]3Center for Research on Dental Implants (CEPID), School of Dentistry (ODT), Federal University of Santa Catarina (UFSC), Florianópolis, Brazil*
F6-P-THU-P2-2	**CHARACTERIZATION OF TERNARY TITANIUM BASED ALLOYS FOR ADVANCE BIOMEDICAL APPLICATIONS** **Mr. Ahmet Burçin Batıbay**[1], Dr. Hasan Kotan[1], Dr. Atilla Evcin[2] *[1]Konya Necmettin Erbakan University, Konya, Turkey, [2]Afyon Kocatepe University, Afyon, Turkey*
F6-P-THU-P2-3	**COST EFFECTIVE NATURAL MATERIALS FOR REMEDIATION OF HEAVY METALS** **Prof. Ibrahim Medhat**[1] *[1]Spectroscopy Department, National Research Centre (NRC), Dokki, Cairo, Egypt*
F6-P-THU-P2-4	**IMPROVED MECHANICAL PROPERTIES OF DIOPSIDE CERAMICS SYNTHESIZED FROM COPRECIPITATION-DERIVED POWDERS** **Dr. Noriyuki Iwata**[1,2], Dr. Shin-ichi Tanaka[2], Dr. Geun-hyoung Lee[3], Dr. Norimichi Kawashima[4] *[1]Department of Materials System Engineering, National Institute of Technology, Kurume College, Japan, [2]Department of Materials Science and Engineering, National Institute of Technology, Kurume College, Japan, [3]Division of Advanced Materials Engineering, IT Convergence College of Components and Materials Engineering, Dong-eui University, Busan, South Korea, [4]International Institute for Science and Education, International Pacific University, Yokohama, Japan*

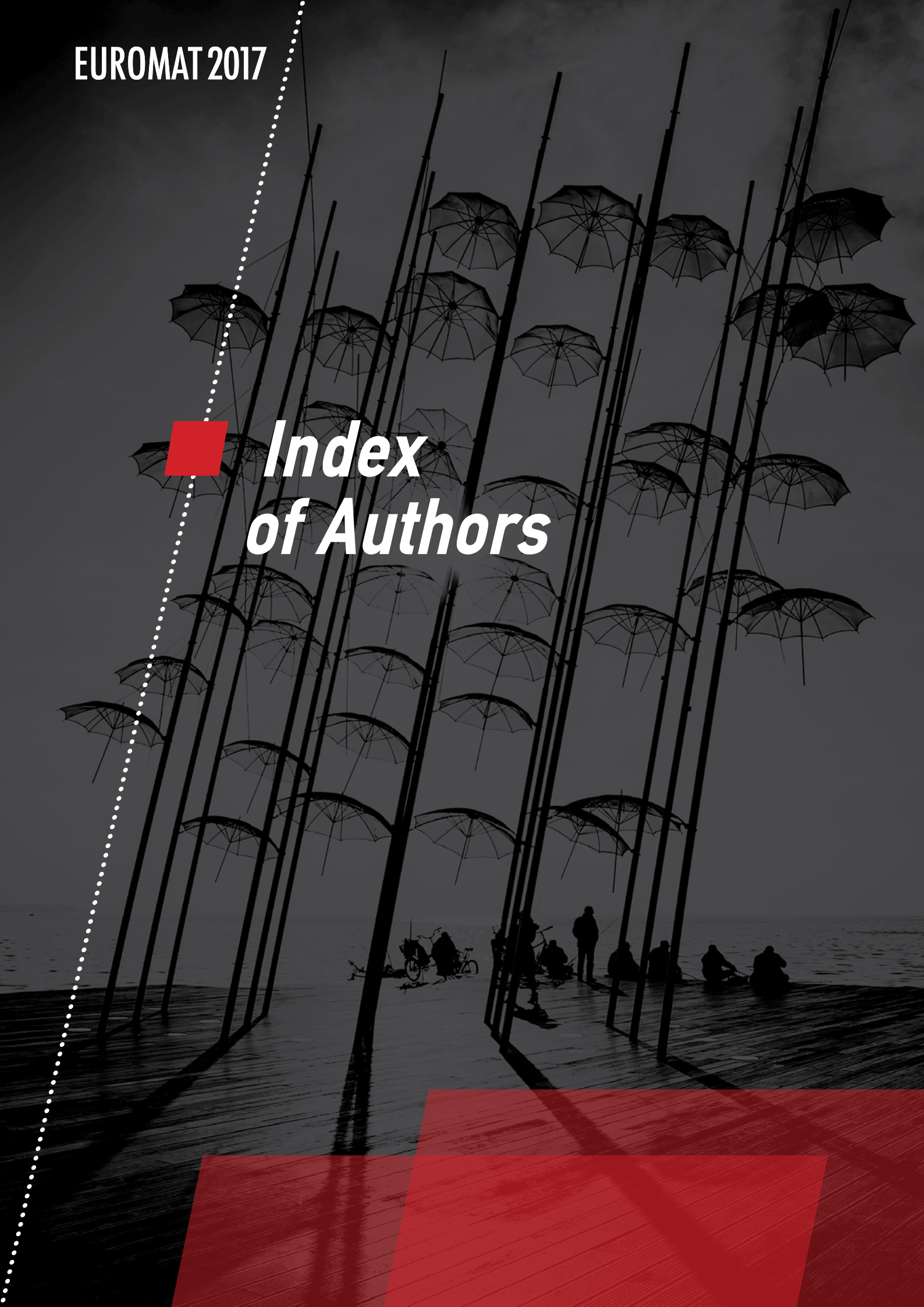
TIME: 13:00-15:00 ROOM: FOYER, E1/M1

P2

Thursday, September 21, 2017

Symposium F.5: Translation of biomaterials research towards innovation and product development: from concepts to clinic

F5-P-THU-P2-1	**BIOMIMETIC BONE SCAFFOLDS WITH HIERARCHICAL ORGANIZATION GENERATED BY BIOMORPHIC TRANSFORMATIONS APPLIED TO NATURAL WOODS** **Ph.D Simone Sprio**[1], Ph.D Andrea Ruffini[1], Ph.D Alberto Ballardini[1], Ph.D Silvia Panseri[1], Ph.D Anna Tampieri[1] *[1]National Research Council, Institute Of Science And Technology For Ceramics, Faenza, Italy*
F5-P-THU-P2-2	**COPPER SURFACE CHANGES DURING WET PLATING TESTS IN ANTI-BACTERIAL SURFACE RESEARCH** **Jiaqi Luo**[1,2], Dr. Christina Hein[3], Prof. Marc Solioz[4], Prof. Jean François Pierson[2], Prof. Frank Mücklich[1] *[1]Functional Materials, Saarland University, , Germany, [2]Institut Jean Lamour, Université de Lorraine, France, [3]Inorganic Solid State Chemistry, Saarland University, Germany, [4]Department of Clinical Research, University of Bern, Switzerland*



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1987 – 2017
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Networking for European Materials Scientists and Engineers

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In June 1986, the Institute of Metals in London (IOM), the German Society for Metals (DGM) and the French Society for Metallurgy (SFM) agreed the need for European metals and materials societies to act more in concert and behave in a generally more "European" manner.

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- The exchange and dissemination of knowledge, by organizing or sponsoring related conferences, workshops and seminars.
- The contribution to the improvement of Greek education in the area of interest.
- The representation of the Greek metallurgical (scientific and engineering) community in relevant international societies, like FEMS.
- The support of young scientists by offering scholarships and opportunities to join Materials Science and Engineering conferences.

Hellenic Society for the Science and Technology of Condensed Matter (HSSTCM)

The **Hellenic Society for the Science and Technology of Condensed Matter (HSSTCM)** is a non-profit Greek Scientific Society, established in 1981. The Society's vision is to be a catalyst for scientific and technological excellence in the fields of Condensed Matter and Materials Science in Greece. HSSTCM aims at promoting the exchange of new developments and achievements in Condensed Matter and Materials Science and supporting their applications. It serves the corresponding Hellenic communities with vigour and responsibility, in Greece and globally, and brings together Greek research groups, which perform research on Condensed Matter and Materials Science, with research groups abroad. The Society's activities include the organisation of seminars, conferences, lectures, and workshops; newsletters with events, news, and other information; awards to young researchers, and any other activity which supports the communities of Condensed Matter and Materials Science.

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Granta Design supports thousands of university educators worldwide as they teach materials, processes, and sustainability to the next generation of engineers and scientists. Our software and teaching resources are used at more than 1,000 universities and colleges worldwide. Granta also helps to organize the Materials Education Symposia, global events for materials educators where they can share ideas, tools, and best practice. The FEMS 30th Anniversary Education Tutorial with Granta Design will focus on the visual and interactive materials teaching resources developed by Professor Mike Ashby and Granta. It will demonstrate CES EduPack and its visual tools for materials science, design, and engineering, and it will give participants hands-on experience. As the materials intelligence experts, Granta helps hundreds of leading engineering enterprises to manage information on the materials that are essential to their businesses, enabling them to make better materials decisions.

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HALCOR GROUP
A leading global producer of innovative and value added copper solutions

Halcor is a leading Group of companies that specialize in the production of copper and copper alloys products with dynamic commercial presence in the European and global markets. For more than 75 years, Halcor has been offering innovative and added-value solutions that meet contemporary client demands in fields, such as plumbing, HVAC&R, renewable energy, architecture, engineering and industrial production.

As a result of the Group's strategic investments in research & development, Halcor is recognized as one of the leading copper producers globally, setting new standards in copper processing. The company maintains a consistent focus on quality and environmental protection and a strong commitment to the principles of sustainable development. In this context, all production facilities in the Group's plants leverage advanced technologies to bringin the market innovative products that are energy efficient and environmentally friendly.

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ICE Publishing
Stand 25

ICE Science is the innovative multi-disciplinary materials science series from ICE Publishing, the publishing division of the Institution of Civil Engineers, who have been uniting research and practice in science and technology since 1836.

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JEOL(EUROPE)SAS
Stand 07

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LARCO GMM SA

LARCO is a leading mining and metallurgical Company exploiting nickeliferrous ore mines and lignite mines in Greece, operating continuously since 1963.

The main field of its activities is the extraction of approximately 18.000–20.000 tons of Ni per year -in the form of ferronickel granules (FeNi) - out of the Greek nickeliferrous ores. The whole FeNi production is being exported.

LARCO presently occupies in all its activities 1.200 employees and workers and is very well known among European stainless steel producers for the quality of its products and the best after sales services provided to them.

The company's activities implement and efficiently operate an Integrated Management System that fully meets the requirements of ISO 9001: 2008, OHSAS 18001: 2007 and ISO 14001: 2004.

LARCO's activities are widely distributed allover Greece: Metallurgical Plant for the ferronickel production at Larymna Fthiotida, Mines at Viotia, Euboia and Kastoria and a Lignite Mine at Servia Kozani. The coordination of these activities is performed by the Headquarters in Athens.

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- Stable isotopes
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Furthermore MaTecK develops crystals and material samples with previously not tested compositions mainly according to customers' requirements.
Please find more information on our web-site: www.mateck.com

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M.J. PRINIOTAKIS S.A.I.C came into existence in the year 1969, initially, serving as a distributor of a small number of Manufacturing Houses from Europe, U.S.A. and far East areas on exclusive basis. The company's goal has been the importation, distribution and support of high quality scientific apparatuses direct in the Research, Industrial, Electronic and Medical Sector. Until 1985, M.J. PRINIOTAKIS SAIC had become a Market Leader in the Greek market. In order to serve the above sectors, the company has established three full strength sales departments consisting of University Degree Diploma specialists. Through its specialized attention on all the market sectors, the company managed to grow and expand during these years by having exclusive arrangements with world's leading manufacturers in many fields, like Struers (Denmark) in the field of Materialographic Equipment and Consumables and Phenom World (Netherlands) in the field of Desktop Scanning Electron Microscopy (SEM). Today our company is on the peak of its growth cycle with important annual revenues through sales all over Greece, Cyprus and Balkans.

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Motor Oil Hellas Corinth Refineries S.A
Stand 10

MOTOR OIL (HELLAS) CORINTH REFINERIES S.A. (MOH) was founded in 1970 and started operating its refinery in 1972.

MOTOR OIL is the largest private industrial complex in Greece and among the top refineries in Europe in terms of complexity (11.5 according to Nelson Complexity Index). It can process crude oil of various characteristics and produce a full range of petroleum products, serving major petroleum marketing companies in Greece and abroad. Additionally, the refinery of Motor Oil is the only one that produces base oils in Greece.

The annual distillation capacity of the refinery has reached 185,000 bbl/day. It has a storage capacity of 2.5 million cubic meters, modern port facilities for tanker docking suitable for tankers up to 450,000 tons DWT and state of the art truck loading terminal which can serve up to 220 road tankers per day.

Since 2001, the company is listed in the Athens Stock Exchange, and is a constituent of the FTSE/ATHEX LARGE CAP INDEX, the ATHEX COMPOSITE INDEX, and of other sectoral indices. Furthermore, since May 2006 the company is a constituent of the MSCI GREECE INDEX (Morgan Stanley Capital International).

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N. ASTERIADIS S.A.

N. ASTERIADIS S.A., successor of NICOLAOS ASTERIADIS, established in 1955, is the older supplier of scientific instruments in Greece.

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NanoMEGAS SPRL

NanoMEGAS was created in 2004 by a team of scientists and experts in the field of electron crystallography and catalysis, and was the first to commercialize in 2004 a universal precession device for TEM.

Today as a result of our developments, precession diffraction / electron crystallography applications are present in almost every major electron microscopy /X-Ray crystallography scientific congress, with more than 400 publications (2004-2017) from various laboratories worldwide.

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Ovako AB
Stand 18

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Ovako develops high-tech steel solutions for, and in cooperation with, its customers in the bearing, transport and manufacturing industries. Our production is based on recycled scrap and includes steel in the form of bar, tube, ring and pre-components. Our steel makes our customers' end products more resilient and extends their useful life, ultimately resulting in smarter, more energy-efficient and more environmentally-friendly products.

Oxford Instruments NanoAnalysis
Stand 12

Oxford Instruments NanoAnalysis provides leading-edge tools that enable materials characterisation and sample manipulation at the nanometre scale. Used on electron microscopes (SEM and TEM) and ion-beam systems (FIB), our tools are used for R&D across a wide range of academic and industrial applications including semiconductors, renewable energy, mining, metallurgy, and forensics.

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PPC S.A.-TRSC
Stand 08

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KDEP employs high-caliber scientific staff, mainly coming from the Engineering and Exact Sciences fields.

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With more than 55 years of steel industry expertise, Sidenor Steel Industry and its subsidiaries are reliable partners offering high quality and innovative solutions to their world-class customers.

Sidenor Group is a leading producer of steel products in South East Europe. Its extensive product portfolio, which includes long and flat steel products, and downstream products, is manufactured across nine facilities.

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Sidenor Group provides a full range of solutions in the steel sector, to cater to the complex needs of its clients in Greece and internationally.

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- outstanding quality
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- particularly innovative characteristics, which provide customers and end consumers with added value.

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- Boron flats
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Thermo-Calc Software AB
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The head office is based in Sweden with a subsidiary in the U.S. Thermo-Calc Software has also a network of local sales and marketing representatives worldwide.

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TMS
Stand 05

The Minerals, Metals & Materials Society (TMS) is an international, member-driven, professional society that connects minerals, metals, and materials scientists and engineers around the world.

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TZIOLA Publications
Stand 14

TZIOLA Publications is a Greek leading Publishing House founded in Thessaloniki in 1978, having as main goal the enrichment of the educational field and the scientific knowledge in Greece.

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TZIOLA Publications is widely recognizable in Greece for its textbooks in a matter of content, printing and binding. In addition, thanks to the use of modern digital technology, TZIOLA Publishing House is ranked among the top innovative publishing houses.

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Stand 16

EUROFusion

EUROfusion, the 'European Consortium for the Development of Fusion Energy', manages and funds European fusion research activities on behalf of Euratom.

Thirty members*, representing 26 European Union member states plus Switzerland and Ukraine, signed the agreement of the EUROfusion consortium. In addition about 100 Third Parties** contribute to the research activities through the Consortium members. EUROfusion collaborates with Fusion for Energy (Spain) and intensively supports the ITER International Organization (France).

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**The majority of Third Parties are Universities followed by laboratories and industry.

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MDPI

MDPI (Multidisciplinary Digital Publishing Institute) is an academic open-access publisher with headquarters in Basel, Switzerland. Additional offices are located in Beijing and Wuhan (China), Barcelona (Spain) as well as in Belgrade (Serbia). MDPI publishes 179 diverse peer-reviewed, scientific, open access, electronic journals, including Molecules (launched in 1996; Impact Factor 2.861), the International Journal of Molecular Sciences (launched in 2000; Impact Factor 3.226), Sensors (launched in 2001; Impact Factor 2.677), Marine Drugs (launched in 2003; Impact Factor 3.503), Energies (launched in 2008; Impact Factor 2.262), Viruses (launched in 2009; Impact Factor 3.465), Remote Sensing (launched in 2009; Impact Factor 3.244) and Metals (launched in 2011; Impact Factor 1.984). Our publishing activities are supported by more than 12,800 active scientists and academic editors on our journals' international editorial boards, including several Nobelists. More than 216,400 individual authors have already published with MDPI. MDPI.com receives more than 4.2 million monthly webpage views.

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Taylor & Francis Group
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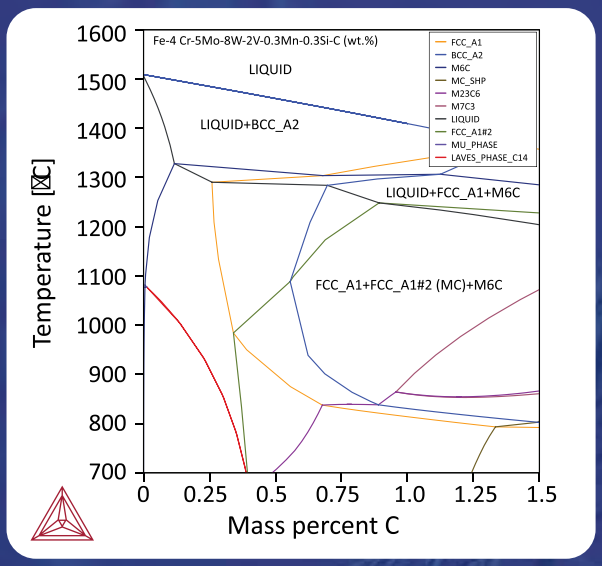

Mapped diagram for M42 high speed steel

Benefits:

- ✓ **Predict** what phases form as a function of composition, temperature
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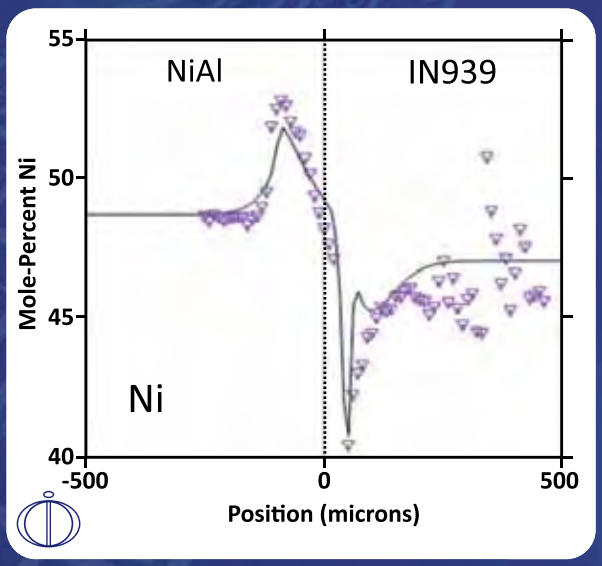

Diffusion in ordered phases

Visit our booth or join our presentations:

1. Selected as a highlighted presentation: New extensions for the efficient development of CALPHAD-based ICME-tools: Development of property models for martensitic steels by Dr.-Ing. Ralf Rettig.

2. A "high entropy" alloy database TCHEA2 and its application in alloy design by Dr. Hai-Lin Chen.

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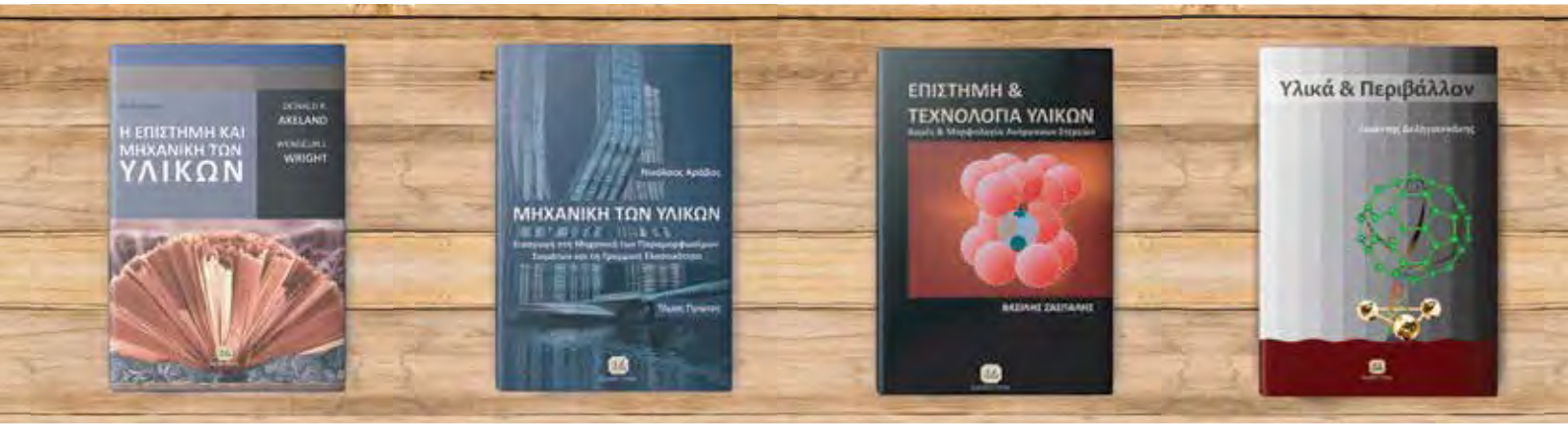

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