

EUROMAT 2017/ Symposia Structure/Area D

D.3	Title: Materials at extreme conditions: static or dynamic compression combined or not with low or high temperatures		
	Organizer	Institution	Contact email
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	Summary		
	<p>This symposium intends to host papers addressing the experimental or theoretical study of the electronic, mechanical and structural properties of all states of matter (solid, liquid or gaseous) under static or dynamic compression combined or not with low or high temperatures. It allows for the understanding of the behavior of materials, probing their property modifications, possible phase transitions or chemical reactions and aims to act as a lighthouse, illuminating an era of new paradigms in materials science and technology.</p>		
	<p>Scope:</p> <p>Pressure and temperature are state variables intimately connected with our description and understanding of Nature. Although achievement of extreme pressure and/or temperature conditions is still not a trivial experimental task, the continuing advances in Instrumentation and Techniques allow their access by a broader body of scientists. Moreover, the increasing accessibility of Large Facilities for fast and/or specialized types of measurements allow also further advancement in the field. Today, extreme conditions extend far beyond the fields of Physics and Chemistry, both experimentally and theoretically, in the more applied fields of Material Science, Material Technology and Industry, Life Sciences, Food Science and Technology, GeoSciences and AstroSciences. Revisiting Matter and its applications in the nanoscale regime -Nanoscience and Nanotechnology- is also an element of study under extreme conditions. Hence, the study of materials under extreme conditions cover today all the fields of contemporary Science as evidenced in the following Topics covered by this Symposium and find more and more commercial/industrial applications.</p>		
	<p>Topics to be covered by the symposium:</p> <ul style="list-style-type: none"> ✓ Bio- and Life Sciences ✓ Chemistry, Synthesis and Novel Materials ✓ Dynamic Pressure in Synchrotron Radiation Sources ✓ Electronic, Magnetic and Transport Properties ✓ Food Science and Technology ✓ Functional Materials at High Pressure ✓ Earth and Planetary Sciences ✓ Instrumentation, Metrology and Techniques ✓ Nanoscience and Nanotechnology ✓ New States of Matter at High Pressure and Low Temperature ✓ Phase Transitions: Thermodynamics and Kinetics 		

- ✓ Simple Systems and Experiments at Extreme Conditions
- ✓ Spectroscopy
- ✓ Structural and Mechanical Properties
- ✓ Theory: Modeling and Molecular Dynamics

Keynote talk

Dr. Pascale Roy, SOLEIL Synchrotron (France)

"Evidence of a new energy scale for superconductivity in H₃S"