

EUROMAT 2017/ Symposia Structure/Area E (Energy)

Title: Materials for Energy harvesting		
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Summary		
<p>Major energy saving solutions need to be developed and implemented as soon as possible due to the increasing global demands as well as the environmental impact of using fossil fuels. The need for renewable energy, energy efficiency, and energy harvesting is motivating the discovery of new materials and design of new devices and structures. At energy harvesting, the energy is derived from sources such as solar, thermal, and vibrational energy. In the view of this demand, this symposium emphasizes on energy harvesting and aims to cover a wide spectrum of recent developments on materials used for energy harvesting based on solar energy (PV, photocatalysts), the utilization of thermal gradients (thermoelectrics) and the vibrational energy (piezoelectrics).</p> <p>This symposium will focus on the following, but not limited, areas; manufacturing/processing issues, characterization of structures/nanostructures, structural defects, surface, bulk and interfacial phenomena, optoelectronic and thermoelectric properties, transport properties, multiscale modeling, new concepts for next-generation materials. The symposium aims at linking the fundamental knowledge and information obtained from characterization, modeling and testing to the development of devices with improved performance and if possible reduced costs.</p> <p>Topics to be covered by the symposium:</p> <ul style="list-style-type: none"> ✓ Silicon-based solar cells ✓ Thermal PV materials ✓ Innovative materials for solar applications ✓ Perovskite solar cells ✓ Compound semiconductor based solar cells ✓ Tandem and heterojunction solar cell structures ✓ Current and new practices in processing ✓ Materials challenges of thermoelectric devices ✓ Bulk materials and Low-dimensional thermoelectric materials ✓ Piezoelectric Materials: composition, fabrication and characterization ✓ Pb-free Piezoelectric materials ✓ Characterization and modelling of materials, properties and devices ✓ Advances in materials processing ✓ Solar energy conversion materials properties ✓ Photocatalysts ✓ Photoelectrochemical (PEC) cells ✓ Solar-driven charge carrier function and energy conversion 		

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KEYNOTE SPEAKER

Prof. Young Soo Kang, Sogang University, Korea

“Artificial Photosynthesis via Solar Light Driven CO₂ Reduction into Methanol”

Papers presented in the Symposium will be published in a special issue on "Materials for Energy Harvesting" in *Physica Status Solidi A*