DOI 10.1515/gps-2012-0053 — Green Process Synth 2012; 1: 489–490

Conference announcement

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Cellular Materials - CELLMAT 2012 (7–9 November 2012, Dresden, Germany)

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Cellular arrangement of matter

Cellular arrangement of matter is a building principle of nature. The combination of material and structural properties results in a set of completely new properties of solids. Currently, physicists, chemists, materials scientists and engineers explore those combinations by mimicking cellular structures of all material classes.

Potential new applications

Potential new applications have been identified in the fields of energy saving, lightweight construction, novel and efficient conversion concepts or biomedical repair functions, just to mention a few. In order to bring together experts from polymer, ceramic, glass and metal communities dealing with cellular materials, the CELLMAT conference series was started in 2010.

Current topics

Current topics of the second CELLMAT will cover all aspects of manufacturing, modification, joining, structural characterization and property analysis. In a side event, a strong focus will be set on applications of cellular materials. International experts will give plenary lectures about the applications in automotive and transportation and mechanical engineering, and for chemical and energy systems, environmental purposes or micro and medical devices and functions.

Conference set-up

The 3-day conference comes up as a discussion panel between researchers, manufacturers and users of cellular materials. During the conference, excellent results in applications of cellular materials will be honored with the CELLMAT Awards, and the three best posters will be selected.

Scientific programme

CELLMAT 2012 opens on Wednesday, 7 November 2012, with a presentation from Peter Greil from the University of Erlangen (Erlangen, Germany) about cellular ceramics. Furthermore, Hideo Nakajima from the Wakasa Wan Energy Research Center (Fukui, Japan) will present his keynote lecture, 'Fabrication of Porous Aluminum and Copper with Unidirectional Pores through Thermal Decomposition Method'. A keynote lecture, 'Designing Porosity in Polymer Derived Ceramics', will be presented by Paolo Colombo from the University of Padova (Padova, Italy).

Topics for this day are bioengineering, biomaterials and life science, medical engineering, manufacturing, and engineering of advanced cellular materials [Symposium of the Engineering of Advanced Materials (EAM) Cluster of the University of Erlangen].

Thursday, 8 November 2012

On this day, the topical focus is set towards energy management and saving, chemical engineering and conversion, surface modification, manufacturing, modeling/simulation, physical, chemical, mechanical, thermal and optical properties, automotive, aerospace and transportation.

Miguel Angel Rodríguez Pérez from the University of Valladolid (Valladolid, Spain) will present his keynote lecture, 'Nano-strategies Applied to the Production of Cellular Polymers with Improved Cellular Structure and Properties'. After thereby considering advanced material aspects, the next keynote lecture switches to the bio area.

Klaus D. Jandt from the University of Jena (Jena, Germany) will give an overview about 'Functional Biomaterials and Biointerfaces on the Nanometre Scale'.

Friday, 9 November 2012

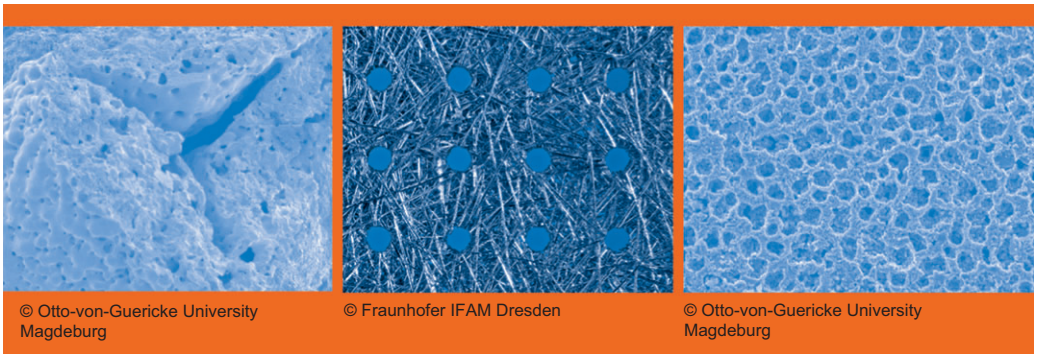
Topics for this last day of CELLMAT 2012 are automotive, aerospace and transportation; structure characterization and mechanical engineering; physical, chemical, mechanical, thermal and optical properties; and in situ mechanical characterization and plastic deformation.

Invited speakers

The keynote lectures will be followed by invited lectures, centering in more detail on a specific research facet such as given below.

- **Volker Altstaedt**, University of Bayreuth, 'Tailoring Properties of Polymer Foams'.
- **Jon Binner**, University of Loughborough, 'Ceramic Foam/Aluminium Alloy Interpenetrating Composites'.
- **Aldo Boccaccini**, University of Erlangen, 'Bioactive Glass Foams for Bone Regeneration and Vascularisation'.
- **David Dunand**, Northwestern University, Titanium with Designed, Elongated Pores – from Aerospace to Biomedical Implants.
- **Urs Gonzenbach**, ETH Zurich, 'Particle-Stabilized Ceramic Foams'.
- **Thomas Hipke**, Fraunhofer Institute for Machine Tools and Forming Technology (IWU), 'Metal Foams in Shipbuilding and Mining'.
- **Yuji Iwamoto**, Nagoya Institute of Technology, 'Microporous Amorphous Silica-Based Ceramic Membranes'.
- **Soho Kim**, Alantum Corp., 'Microporous Amorphous Silica-Based Ceramic Membranes'.
- **Louis-Philippe Lefebvre**, National Research Council, 'Titanium and Ti6Al4V Foams'.
- **Frank Mueller**, University of Jena, 'Bio-inspired Cellular Materials'.
- **Martin Rohleder**, University of Kassel, Foam Injection Moulding of Thermoplastic Materials'.
- **Tobias Schaedler**, HRL Laboratories, 'Ultralight Microlattices as Photopolymer Waveguides'.

Further information, the complete scientific programme and the registration form can be found on the conference homepage: www.cellmat.de.



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