

Nanomaterials and Nanotechnology Issues Dominate YUCOMAT 2006

www.yu-mrs.org.yu/confprogram.htm

Montenegro was again the host of the Yugoslav Materials Research Society Conference (YUCOMAT 2006), held September 4–8 in Herceg Novi. The general sponsor of the conference was the Institute of Technical Sciences of the Serbian Academy of Sciences and Arts.

The program consisted of three plenary sessions, with 15 invited lectures, five one-day symposia, and 161 oral and poster presentations dedicated to advanced methods in materials synthesis and processing, advanced materials for high-technology application, nanostructured materials, composites, and biomaterials. Several hundred attendees from more than 30 countries were represented at this eighth conference. Proceedings will be published by Trans Tech Publications Inc., Zurich, Switzerland (www.ttp.net), as selected papers in the "Materials Science Forum" edition.

During the opening ceremony, Dragan Uskokovic, president of Yu-MRS and director of the Institute of Technical Sciences of the Serbian Academy of Sciences and Arts, gave a welcoming speech to attendees about this year's conference and its dominating theme of nanomaterials and nanotechnology. He said that while advances in nanotechnology address issues of developed countries, the technology's "application in the automobile industry, for tennis racquets, skis wax, and anti-sunburn creams does not represent the essential interest for more than five billion people in developing countries." Uskokovic cited five critical problems for developing countries: water, energy, health and environment, agriculture, and management of biodiversities and ecosystems, as identified at the United Nations Summit on Sustainable Development held in 2002 in Johannesburg. Uskokovic said, "Therefore, further development in this field should be balanced so that the ongoing primary focus on industrial countries shifts to better attention of the needs of developing countries, having in mind the great number of that population and the benefits those solutions would bring."

During the first plenary session, O. Umezawa (Yokohama Univ., Japan) spoke on present and future prospects of comaterials, I. Bozovic (Brookhaven Natl. Lab, USA) on casting high-temperature superconductors layer by atomic layer, T. Yagisawa (Keio Univ., Japan) on numerical modeling of rf magnetron sputtering, J.M. Calleja (Autonomous Univ. of Madrid, Spain) on optical properties of InAs/AlAs self-assembled quantum dots, and D. Suvorov (Jozef Stefan



Some of the attendees of YUCOMAT 2006.



Attendees at the opening ceremony of YUCOMAT 2006.

Inst., Slovenia) on the formation of chrysolite nanotubes.

During the second plenary session, E.F. Sheka (Russian Univ. for New Materials, Russia), O. Iglesias (Univ. of Barcelona, Spain), B. Viana (Laboratory for the Chemistry of Condensed Matter of the Natl. Research Centre, France), and N. Kamanina (Vavilov State Optical Inst., Russia) addressed new aspects in nanomaterials modeling, research in magnetic nanoparticles, optical nanomaterials in medicine, and photophysics of nanostructures, respectively.

The third plenary session consisted of six invited lectures, where the first two, given by R.A. Andrievski (Inst. for Chemical Physics Problems, Russia) and A. Montone



Members of the awards committee discuss one of the posters with the author.

(Natl. Research Centre Casaccia, Italy), were dedicated to hydrogen energy and nanostructures. A. Auroux (Inst. for Catalysis of the Natl. Research Centre, France), F.T. Hong (Wayne State Univ., USA), M. Dugic (Univ. of Kragujevac, Serbia), and Z.S. Petrovic (Pittsburg State Univ., USA) spoke on binary oxide catalysts, interaction between nanotechnology and biology, a unified decoherence-based model of microparticles in a solution, and interdependence of structure and properties of polyurethane foams, respectively.

To encourage prospective young scientists, Yu-MRS at this conference selected the

authors of the best PhD and MSc theses completed since the last conference and the best oral and poster presentations of the conference. Awards were given to researchers not older than 35, as a rule. The award for the best PhD thesis went to **Zeljka Nikitovic** (Inst. for Physics, Zemun); for the best MSc thesis, **Magdalena Stevanovic** (Inst. of Technical Sciences of SASA, Belgrade); and for the best oral presentation, **Snezana Lazic** (Autonomous Univ. of Madrid). Awards for the best posters were given to **Radenka Krsmanovic** (Univ. of Antwerp), **Marin Tadic** (Vinca Inst. for Nuclear Sciences,

Belgrade), **Ivana Jovanovic** (Inst. of Technical Sciences of SASA, Belgrade), and **Irena Icevici** (Faculty of Medicine, Novi Sad).

The next YUCOMAT Conference will also be held in Herceg Novi, September 10–14, 2007. Updated information can be accessed at Web site www.yu-mrs.org.yu.

DRAGAN USKOKOVIC
President of Yu-MRS
and Director of the Institute of
Technical Sciences
of the Serbian Academy of
Sciences and Arts

Printing of Functional Materials Conference Focuses on Fundamental Chemistry and Materials Science

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The First International Conference on the Printing of Functional Materials, co-sponsored or endorsed by the Royal Society of Chemistry, the Materials Research Society, the Institute of Physics, and the Organic Materials Innovation Centre, was held in Manchester, United Kingdom, June 12–14, 2006. Brian Derby and Stephen Yeates of the University of Manchester co-chaired the organizing committee. In Derby's opening remarks, he spoke about the importance of additive printing technologies in emerging areas as diverse as organic electronics, three-dimensional rapid manufacturing, and bioengineering. The conference provided a timely opportunity to review progress in these and many other research fields as well as a forum to discuss the chemistry and materials challenges.

Several speakers reviewed developments in the field of organic electronics.

Of note were developments in the inkjet printing of conductive tracks and interconnects as described by A. Hudd (Xennia Technology Ltd., UK). Emphasis was placed on the challenges encountered and solutions developed in taking initial proof of concept through to an industrially reliable process. This theme was echoed by F. Dijkstra (Philips Research Eindhoven, the Netherlands) in describing the detailed understanding of inkjet drop formation in both single- and multipulsed sequences; this understanding is required to enable a robust process to be developed.

A number of speakers reported developments in the application of inkjet and microcontact printing in the biosciences area. The generation of bioactive scaffolds was reported by G. Vozzi (Univ. of Pisa, Italy), where the challenges not only of developing macroscale three-dimensional

structures but also of the correct microstructure and surface topology and chemistry were highlighted. Another area of importance is in the field of bioassaying, where biomolecules need to be accurately dispensed. A. Pierik (Philips Research Eindhoven, the Netherlands) described the challenges associated with developing a reliable printing process where missing droplets or droplets deposited in the wrong location can be identified and then removed.

Altogether, 120 delegates heard 25 presentations in what was a highly interactive meeting. The strong mix of both academics and industrialists allowed for many fruitful discussions, with a movement toward potential collaborative programs.

STEPHEN G. YEATES
University of Manchester
Co-Chair, Organizing Committee

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