

**NINTH ANNUAL CONFERENCE OF THE YUGOSLAV MATERIALS
RESEARCH SOCIETY**

YUCOMAT 2007

Hotel "Plaža", Herceg Novi, Montenegro, September 10–14, 2007
<http://www.yu-mrs.org.yu>



Programme and The Book of Abstracts

Organised by:
**Yugoslav Materials Research Society,
Faculty of Metallurgy and Technology, Podgorica**
and
**Institute of Technical Sciences of the
Serbian Academy of Sciences and Arts, Belgrade**

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CONFERENCE PROGRAMME

SYMPOSIUM A Advanced Methods in Synthesis and Processing of Materials
SYMPOSIUM B Advanced Materials for High-Technology Application
SYMPOSIUM C Nanostructured Materials
SYMPOSIUM D Composites
SYMPOSIUM E Biomaterials
WORKSHOP: Serbia-Slovenia Bilateral Cooperation
TECHNOLOGICAL FORUM

GENERAL INFORMATION

DATE AND VENUE: The conference will be held on September 10-14, 2007, at the PLAŽA Hotel, in Herceg Novi, Montenegro. Participants will be accommodated at the Plaža Hotel. The conference will begin on Monday, September 10th, at 09.00 and end on Friday, September 14th, 2007 at 12.30.

REGISTRATION: Registration, registration fee payment, conference materials distribution, etc. will take place at the conference desk (Conference Secretariat) open on Sunday, September 9, and Monday, September 10, from 8.00 to 19.00, on Tuesday to Thursday 8.00-10.00, 14.00-16.00 and 18.00-20.00, and on Friday from 8.00 to 12.30. At registration, the participants are requested to submit proof of their advance registration fee payment.

INSTRUCTION FOR AUTHORS: The conference will feature plenary sessions, poster sessions, Workshop on Slovenia-Serbia Bilateral Cooperation and Technological Forum.

Oral presentations of papers to be given in **PLENARY SESSIONS** are limited. Time available for delivery is 30 min for invited and 15 min for other papers including discussion (5-10 min). Video-beam is available. PowerPoint presentations, recorded on CD only, should be given at registration.

In **POSTER SESSIONS**, the authors are requested to display their papers minimum two hours before the session and to be present beside their posters during the session. Poster sessions are held in Business Club (next to the National Restaurant, looking at the beach) and it is open Tuesday to Thursday 8.00-10.00, 14.00-16.00 and 18.00-22.00.

During Technological Forum, leading experts from business, industry, research laboratories and universities from Europe and United States will be discussing topics related to the current status of various aspects in the field of advanced materials (education, research, technological aspects), the significance of transferring technologies and outsourcing to the developing countries, the significance of innovations and spin off companies in the modern production network, clean production, environment recognition, the necessities of industries in specialized engineering staff, etc.

PUBLICATION OF PAPERS: Abstracts will be included in a book of abstracts and distributed to each participant at registration.

The Proceedings will be published, as those from the previous conferences, by Trans Tech Publications Ltd., Switzerland, in Materials Science Forum Edition. The papers will be refereed and those selected will be included in the Proceedings Volume. Certain number of papers will be published as special thematic issue in "Materials and Manufacturing Processes" and "Surface Engineering", invited by the publishers "Taylor and Francis" and "Maney Publishing".

CONFERENCE AWARDS: The Yugoslav Materials Research Society will award the authors (preferable young members under 35) of the best oral and poster presentation at the conference, and also the authors of highly rated PhD and MSc theses defended between two conferences. The benefits include free registration and YUCOMAT 2007 Conference Proceedings.

EXCURSIONS: Excursions will be organised on Wednesday afternoon (bus trip to Dubrovnik) and Friday after the close of the Conference (boat trip around Boka Kotorska Bay).

P.S.E.3

pH SENSITIVE HYDROGELS BASED ON METHACRYLATES

M. Mičić¹, S. Tomić², J. Filipović², D. Djokić¹, E. Suljovrujić¹

¹Vinča Institute of Nuclear Sciences, Belgrade, Serbia

²Faculty of Technology and Metallurgy, Belgrade University, Belgrade, Serbia

Novel copolymeric hydrogels based on methacrylates were prepared by chemical radical copolymerization of poly(alkylene glycol) methacrylates (BIS) and 2-hydroxyethyl methacrylate (HEMA) in a mixture of water/ethanol as solvent. These hydrogels were characterized in terms of swelling in conditions similar to the biological fluids (buffers pH range of 2.2-7.4), compression-strain measurements and thermal properties. The influence of the Bisomer type on swelling and mechanical properties, as well as on thermal behavior of the resulting hydrogels, were investigated. The prepared copolymeric hydrogels with non-ionizable groups in compositions showed an interesting pH-sensitivity in the pH range of 2.2-7.4. The mechanical properties, as well as the thermal behavior of the prepared copolymeric hydrogels based on methacrylates are satisfactory that these polymeric biomaterials possess a potential for drug carriers, dressings and other medical devices.

P.S.E.4

SYNTHESIS AND CHARACTERIZATION OF Cu(II), Cd(II), Pt(II) AND Pd(II) COMPLEXES WITH CONDENSATION DERIVATIVE OF PYRIDINE-2- CARBOXALDEHYDE AND ETHYL HYDRAZINOACETATE

K. Andjelković¹, N. Filipović², T. Todorović¹, D. Jovanović³, S. Tufegdžić⁴, D. Sladić¹

¹Faculty of Chemistry, University of Belgrade, Serbia; ²Faculty of Agriculture, University of Belgrade, Serbia; ³Faculty of Veterinary Medicine, University of Belgrade, Serbia;

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In search for agents that might show less negative side effects and overcome the resistance to cisplatin, in this work a series of complexes of Cd(II), Cu(II), Pd(II) and Pt(II) with the condensation product of pyridine-2-carboxaldehyde and ethyl hydrazinoacetate were synthesized. All four complexes were obtained by template synthesis. Elemental analysis, molar conductivity, magnetic susceptibility (with Cu(II) complex), IR, ¹H NMR and ¹³C NMR spectral data showed that all the obtained complexes had a coordination number four. In the neutral square planar Pt(II), Pd(II) and Cd(II) complexes, the organic ligand is coordinated as a bidentate *via* pyridine and hydrazone nitrogen atoms, the remaining two coordination sites being occupied by chloride ion. In Cu(II) complex the ligand is coordinated as a tridentate, with chloride in the fourth coordination site, so that the geometry is tetrahedral, and the complex is 1 : 1 electrolyte.

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