

TWELFTH ANNUAL CONFERENCE

# YUCOMAT 2010

Hotel "Plaža", Herceg Novi, Montenegro, September 6–10, 2010  
<http://www.mrs-serbia.org.rs>



## Programme and The Book of Abstracts

Organised by:

**Materials Research Society of Serbia**  
and

**Institute of Technical Sciences of the  
Serbian Academy of Sciences and Arts, Belgrade**

under the auspices of

**Federation of European Materials Societies (FEMS)**

and

**Materials Research Society (MRS)**

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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

**GENERAL INFORMATION**

**DATE AND VENUE:** The conference will be held on September 6-10, 2010, at the Plaža Hotel, in Herceg Novi, Montenegro. Participants will also be accommodated there. The conference will begin on Monday, September 6, at 09.00 and end on Friday, September 10<sup>th</sup>, 2010 at 12.00.

**REGISTRATION:** Registration, registration fee payment, conference materials distribution, etc. will take place at the conference desk (Conference Secretariat) open on Sunday, September 5, Monday, September 6, and Tuesday, September 7, from 8.00 to 19.00, on Wednesday and Thursday 8.00-13.00 and 19.00-20.00, and on Friday from 8.00 to 12.00. At registration, the participants are requested to submit a proof of their advance registration fee payment.

**INSTRUCTION FOR AUTHORS:** The conference will feature plenary sessions, oral sessions, poster sessions, and an Exhibition of synthesis and characterization equipment.

Time of papers' presentations to be given in ORAL SESSIONS is limited. Time available for delivery is 30 min for plenary 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) which is open Tuesday to Thursday 18.00-22.00.

**PUBLICATION OF PAPERS:** Abstracts will be included in a book of abstracts and distributed to each participant at registration. Only the papers presented at the Conference will be peer reviewed and, if positive, selected papers will be published in the International Journal of Modern Physics B (by World Scientific, IF 0.408, <http://ejournals.wspc.com.sg/ijmpb/mkt/guidelines.shtml>), on SCI list. Manuscripts prepared according to the guidelines for this journal, which are of good quality, comprehensible English language and with more than 50% references from the last 5 years, will have advantage. Detailed instructions for preparation of manuscripts are available on the website given above.

**CONFERENCE AWARDS:** Materials Research Society of Serbia 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. Awarded researchers are granted free registration at the next YUCOMAT Conference.

**ADDITIONAL ACTIVITIES:** An Exhibition of synthesis and characterization equipment will be held during the Conference. Traditional Cocktail Party on Monday evening and excursions on Wednesday afternoon to Dubrovnik (Croatia) and Thursday afternoon (boat trip around Boka Kotorska Bay) will be organized again.

P.S.A.26.

**SYNTHESIS AND CRYSTAL STRUCTURE OF 1,2,3,4-TETRAHYDRO-9-AMINOACRIDINE TETRACHLOROZINCATE(II) MONOHYDRATE**

K. Andjelković<sup>1</sup>, G. Bogdanović<sup>2</sup>, D. Jovanović<sup>3</sup>, D. Mitić<sup>1</sup>, Dj. Miodragović<sup>1</sup>  
<sup>1</sup>Faculty of Chemistry, University of Belgrade, Belgrade, Serbia, <sup>2</sup>Vinča Institute of Nuclear Sciences, Laboratory of Theoretical Physics and Condensed Matter Physics, Belgrade, Serbia, <sup>3</sup>Medicine Department of Nutrition and Botany, Faculty of Veterinary, University of Belgrade, Belgrade, Serbia

In the reaction of ZnCl<sub>2</sub> with tacrine hydrochloride in water novel tetracoordinated (C<sub>13</sub>H<sub>15</sub>N<sub>2</sub>)<sub>2</sub>[ZnCl<sub>4</sub>]H<sub>2</sub>O complex has been obtained and characterized by elemental analysis, molar conductivity and X-ray analysis. The structure contains two crystallographically different molecules of protonated tacrine present as counter cations, [ZnCl<sub>4</sub>]<sup>2-</sup> complex anion and one water solvent molecule. The counter cations slightly differ in puckering of the cyclohexenyl ring. The molecules of protonated tacrine are involved in different intermolecular hydrogen bonds. The π-π stacking interactions between the rings of protonated tacrine have been evidenced in the crystal. The [ZnCl<sub>4</sub>]<sup>2-</sup> complex anion has distorted tetrahedral geometry. Three out of four Cl atoms are involved in intermolecular hydrogen bonds. Intermolecular H-bond interactions that involve Cl atoms affect the Zn-Cl bond lengths.

P.S.A.27.

**INFLUENCE OF SOLVENT ON THE FORMATION OF MELOXICAM-CARBOXYLIC ACID CO-CRYSTALS**

S.A. Myz<sup>1,2</sup>, T.P. Shakhshneider<sup>1,2</sup>, N.A. Tumanov<sup>2</sup>, E.V. Boldyreva<sup>1,2</sup>  
<sup>1</sup>Institute of Solid State Chemistry and Mechanochemistry, SB RAS, Novosibirsk, Russia, <sup>2</sup>Research and Education Centre "Molecular Design and Ecologically Safe Technologies" at the Novosibirsk State University, Novosibirsk, Russia

Meloxicam is a non-steroidal anti-inflammatory drug poorly soluble in water and in most of the organic solvents. One of the methods which allows to improve the bioavailability of poorly soluble drug is its co-crystallization with a suitable co-former. Seventeen co-crystals of meloxicam with different carboxylic acids were obtained by solvent-drop grinding technique using an agate mortar and SPEX 8000 vibration ball mill. In order to understand how solvent influence on the co-crystal formation, different kinds of solvents have been tested. For comparison, the co-crystals were prepared by crystallization from solution, using the same solvents. It was shown that depending on the solvent the co-crystals could be obtained in different forms or could not be obtained at all. The structures of the crystals generated by grinding and from solution were identical.

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