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**YUCOMAT 2012**  
Programme and the Book of Abstracts

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**FOURTEENTH ANNUAL CONFERENCE**

# **YUCOMAT 2012**

Hunguest Hotel Sun Resort Herceg Novi, Montenegro,  
September 3–7, 2012  
<http://www.mrs-serbia.org.rs>

## **Programme and The Book of Abstracts**

Organised by:  
**Materials Research Society of Serbia**

under the auspices of  
**Federation of European Material Societies**  
and  
**Materials Research Society**

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P.S.E.10.

**IN VITRO ANTITUMORAL ACTIVITY OF PLATINUM(IV) COMPLEXES WITH *O,O'*-DIALKYL-(*S,S*)-ETHYLENEDIAMINE-*N,N'*-DI-2-(4-METHYL)PENTANOATE LIGANDS ON HUMAN BREST CANCER**

J.M. Vujić<sup>1</sup>, G.N. Kaludjerović<sup>2</sup>, T.P. Stanojković<sup>3</sup>, S.R. Trifunović<sup>4</sup>

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<sup>2</sup>Institut für Chemie, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany,

<sup>3</sup>Institute for Oncology and Radiology of Serbia, Belgrade, Serbia,

<sup>4</sup>Department of Chemistry, Faculty of Science, University of Kragujevac, Kragujevac, Serbia

Many platinum complexes have been synthesized not only in order to investigate their chemistry but also to identify novel complexes with improved antitumoral properties in comparison to the drug cisplatin. There has been a special interest in platinum(IV) complexes, as their greater inertness in comparison with platinum(II) complexes may allow for the oral administration of the drugs, reduce the toxicities associated with platinum-based chemotherapy. The selection of satraplatin for clinical studies was based on its potent *in vitro* growth-inhibitory properties against several tumor cell types, and its *in vivo* oral anticancer activity that was largely comparable to that of administered cisplatin or carboplatin in a variety of murine tumor models.

Herein the antiproliferative activity against human breast cancer (MDA-MB-361 and MDA-MB-453) of four platinum(IV) complexes: tetrachlorido[*O,O'*-dialkyl-(*S,S*)-ethylenediamine-*N,N'*-di-2-(4-methyl)pentaneate]platinum(IV) (alkyl = ethyl, *n*-propyl, *n*-butyl, and *n*-pentyl) are described.

P.S.E.11.

**PHYTOCHEMICAL SCREENING, ANTIMICROBIAL AND ANTIOXIDANT ACTIVITIES OF PLANT SPECIES *SESELI RIGIDUM* WALDST. & KIT.**

P.Z. Mašković<sup>1</sup>, S.R. Solujić<sup>2</sup>, N.T. Manojlović<sup>3</sup>, J. Mladenović<sup>1</sup>,

J. Pantović<sup>1</sup>, M. Cvijović<sup>1</sup>, G. Aćamović-Djoković<sup>1</sup>

<sup>1</sup>Faculty of Agronomy, University of Kragujevac, Čačak, Serbia, <sup>2</sup>Faculty of Science, University of Kragujevac, Kragujevac, Serbia, <sup>3</sup>Medical Faculty, University of Kragujevac, Kragujevac, Serbia

This study was aimed at evaluating the antioxidant activity and efficacy of the ethanolic extract of the plant species *Seseli rigidum* in inhibiting the development of selected fungi and bacteria. The highest susceptibility to the ethanolic extract of *Seseli rigidum* among the bacteria was exhibited by *B. subtilis* and *S. aureus* (MIC = 15.62 µg/ml). Among the fungi, *A. niger* (MIC = 15.62 µg/ml) showed the highest susceptibility. Total phenolic, flavonoid, condensed tannin and gallotannin contents were 94.34 mg GA/g, 34.42 mg RU/g, 76.35 mg GA/g and 33.64 mg GA/g, respectively. Total antioxidant capacity was 98.45 µg AA/g. IC<sub>50</sub> values were determined for each measurement: 20.15 µg/ml for DPPH free radical scavenging activity, 34.36 µg/ml for inhibitory activity against lipid peroxidation, 97.21 µg/ml for hydroxyl radical scavenging activity and 43.21 µg/ml for chelating ability. Rosmarinic acid was found to be the dominant phenolic compound of the extract. This is the first report of chemical constituents and antioxidant and antimicrobial activities of this plant species.

Thursday, 6. September 2012

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## SYMPOSIUM E: BIOMATERIALS

- P.S.E.7. EYE POSITIONING SYSTEM LENS INVESTIGATION BY SCANNING PROBE MICROSCOPY**  
I. Djuričić<sup>1</sup>, I. Mileusnić<sup>1</sup>, I. Koruga<sup>2</sup>, A. Debeljković<sup>1</sup>, R. Sofrenić<sup>1</sup>, Dj. Koruga<sup>1</sup>  
<sup>1</sup>Nanolab, Faculty of Mechanical Engineering, University of Belgrade, Serbia,  
<sup>2</sup>Oraya Therapeutics, Newark, CA, USA
- P.S.E.8. SYNTHESIS OF GOLD NANOPARTICLES BY ULTRASONIC SPRAY PYROLYSIS AND HYDROGEN REDUCTION**  
 S. Stopić<sup>1</sup>, R. Rudolf<sup>2,3</sup>, M. Colić<sup>4</sup>, I. Anžel<sup>2</sup>, B. Friedrich<sup>1</sup>  
<sup>1</sup>IME Process Metallurgy and Metal Recycling, RWTH University Aachen, Germany,  
<sup>2</sup>Faculty of Mechanical Engineering, Maribor, Slovenia, <sup>3</sup>Zlatarna Celje d.d., Celje, Slovenia,  
<sup>4</sup>Military Medical Academy, Institute of Medical Research, Belgrade, Serbia
- P.S.E.9. EFFECT OF SILVER(I) AND COPPER(II) IONS ON CONTROLLED RELEASE AND ANTIMICROBIAL ACTIVITY OF SILVER AND COPPER/POLY(2-HYDROXYETHYL ACRYLATE/ITACONIC ACID) HYBRID HYDROGELS**  
E.H. Suljovrujić<sup>1</sup>, J.S. Jovašević<sup>2</sup>, J.M. Filipović<sup>2</sup>, S.Lj. Tomić<sup>2</sup>  
<sup>1</sup>Vinča Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia,  
<sup>2</sup>Faculty of Technology and Metallurgy, University of Belgrade, Belgrade, Serbia
- P.S.E.10. IN VITRO ANTITUMORAL ACTIVITY OF PLATINUM(IV) COMPLEXES WITH O,O'-DIALKYL-(S,S)-ETHYLENEDIAMINE-N,N'-DI-2-(4-METHYL)PENTANOATE LIGANDS ON HUMAN BREAST CANCER**  
J.M. Vujić<sup>1</sup>, G.N. Kaludjerović<sup>2</sup>, T.P. Stanojković<sup>3</sup>, S.R. Trifunović<sup>4</sup>  
<sup>1</sup>Faculty of Agronomy, University of Kragujevac, Čačak, Serbia, <sup>2</sup>Institut für Chemie, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany, <sup>3</sup>Institute for Oncology and Radiology of Serbia, Belgrade, Serbia, <sup>4</sup>Department of Chemistry, Faculty of Science, University of Kragujevac, Kragujevac, Serbia
- P.S.E.11. PHYTOCHEMICAL SCREENING, ANTIMICROBIAL AND ANTIOXIDANT ACTIVITIES OF PLANT SPECIES *SESELI RIGIDUM* WALDST. & KIT.**  
P.Z. Mašković<sup>1</sup>, S.R. Solujić<sup>2</sup>, N.T. Manojlović<sup>3</sup>, J. Mladenović<sup>1</sup>, J. Pantović<sup>1</sup>, M. Cvijović<sup>1</sup>, G. Aćamović-Djoković<sup>1</sup>  
<sup>1</sup>Faculty of Agronomy, University of Kragujevac, Čačak, Serbia, <sup>2</sup>Faculty of Science, University of Kragujevac, Kragujevac, Serbia, <sup>3</sup>Medical Faculty, University of Kragujevac, Kragujevac, Serbia

**FOURTEENTH ANNUAL CONFERENCE  
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**GENERAL CONFERENCE PROGRAMME**

*Sunday, September 2, 2012*

08<sup>00</sup>-19<sup>00</sup>                      **Registration**

*Monday, September 3, 2012*

08<sup>00</sup>-09<sup>00</sup>                      **Registration**

09<sup>00</sup>-9<sup>30</sup>                      **OPENING CEREMONY**  
- Introduction and Welcome

9<sup>30</sup>-13<sup>00</sup>                      **First Plenary Session**

13<sup>15</sup>                              **Photo Session**

15<sup>00</sup>-18<sup>45</sup>                      **Symposium C**

19<sup>30</sup>-21<sup>00</sup>                      **Cocktail Party**

**SYMPOSIUM A:** Advanced Methods in Synthesis  
and Processing of Materials  
**SYMPOSIUM B:** Advanced Materials for High-  
Technology Application  
**SYMPOSIUM C:** Nanostructured Materials  
**SYMPOSIUM D:** Eco-materials and Eco-  
technologies  
**SYMPOSIUM E:** Biomaterials

*Tuesday, September 4, 2012*

09<sup>00</sup>-12<sup>30</sup>                      **Second Plenary Session**

15<sup>00</sup>-18<sup>45</sup>                      **Symposium A**

20<sup>00</sup>-22<sup>00</sup>                      **Poster Session I (Symposium A)**

*Wednesday, September 5, 2012*

09<sup>00</sup>-11<sup>00</sup>                      **Third Plenary Session**

14<sup>00</sup>-19<sup>00</sup>                      **Excursion to Dubrovnik, Croatia**

20<sup>00</sup>-22<sup>00</sup>                      **Poster Session II (Symposium B)**

*Thursday, September 6, 2012*

09<sup>00</sup>-10<sup>30</sup>                      **Fourth Plenary Session**

11<sup>00</sup>-12<sup>00</sup>                      **Symposium E**

14<sup>00</sup>-19<sup>00</sup>                      **Boat-trip around Boka Kotorska Bay**

20<sup>00</sup>-22<sup>00</sup>                      **Poster Session III (Symposiums C and E)**

*Friday, September 7, 2012*

09<sup>00</sup>-12<sup>45</sup>                      **Symposium B**

12<sup>45</sup>-13<sup>15</sup>                      **Awards and Closing of the Conference**