

**10<sup>th</sup> Conference of Young Chemists of Serbia**

# **Book of Abstracts**

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**University of Belgrade – Faculty of Chemistry**

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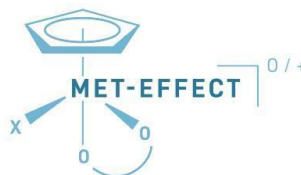
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Република Србија  
МИНИСТАРСТВО НАУКЕ,  
ТЕХНОЛОШКОГ РАЗВОЈА И  
ИНОВАЦИЈА

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# Scientific Program

Time schedule	Program
	<i>Registration of the participants</i>
8:30	Mounting posters for the Poster Session 1 <b>(ODD POSTER NUMBERS AND POSTERS FROM FLASH PRESENTATION APPLICATIONS)</b>
	<i>Conference opening</i>
9:30	Serbian Chemical Society Scientific Committee Serbian Young Chemists' Club presentation
10:00	<i>Sponsor presentation</i> Proanalytica d.o.o.
10:05	<i>Plenary Lecture</i> <b>PP OP 01 – Andrea Nikolić</b> University of Belgrade – Faculty of Chemistry, Belgrade, Serbia <i>“Transition-metal catalysis in organic synthesis”</i>
10:40	<i>Project presentation</i> <b>Stefan Nikolić (MET-EFFECT)</b>
11:00	<i>Oral presentations, Session 1</i> <b>CB OP 01 – Marko Jović</b> Innovative Centre Faculty of Chemistry Ltd., Belgrade, Serbia <i>“HPTLC-FTIR-MS identification of anti-MRSA and antioxidative compounds from Dysidea avara”</i> <b>CB OP 02 – Danilo Trajković</b> University of Belgrade – Faculty of Chemistry, Belgrade, Serbia <i>“Optimization of chromatographic conditions for separation of bee venom constituents by high-performance thin-layer chromatography”</i> <b>EA OP 01 – Marija Kovač</b> University of Novi Sad – Faculty of Technology, Novi Sad, Serbia <i>“Insight on the deterioration phenomena of cultural heritage objects”</i> <b>PCC OP 01 – Aleksandar Mijajlović</b> University of Belgrade – Faculty of Chemistry, Belgrade, Serbia <i>“An efficient electrochemical sensor based on Y<sub>2</sub>O<sub>3</sub> nanoparticles doped with graphitic carbon nitride for sensitive detection of triclosan in real samples”</i> <b>PCC OP 02 – Tatjana Stanković</b> University of Belgrade – Faculty of Physical Chemistry, Belgrade, Serbia <i>“Application of carbon aerogels for supercapacitors”</i> <b>SCFM OP 01 – Nemanja Latas</b> University of Belgrade – Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, Belgrade, Serbia <i>“Characterization of lithiation-induced changes in anatase TiO<sub>2</sub> nanotubes: microstructural, electrical and optical insights”</i>

	<i>Coffee break</i>
12:00	<i>Presentation of ongoing conference</i> Scientific Society of Faculty of Technology Novi Sad
	<i>Invited Lecture</i> <b>PPP OP 01 – Nevena Milčić</b> University of Zagreb – Faculty of Chemical Engineering and Technology, Zagreb, Croatia <i>“Biocatalysis in the spotlight: exploring the complexities of enzymatic processes with a reaction engineering approach”</i>
12:30	
12:55	<i>Popular Scientific Lecture</i> <b>Luka Mihajlović</b> (Analysis d.o.o.)
	<i>European Young Chemists’ Network (EYCN)</i>
13:15	<b>Nathan Carpentier</b> – Treasurer Soft–skills presentation
13:25	<i>Student Section of the Croatian Chemical Society</i>
13:35	<i>Flash presentations</i>
	<b>CB FP 01 – Jelena Ožegović</b> University of Novi Sad – Faculty of Sciences, Novi Sad, Serbia <i>“Influence on iodine to the cytotoxicity of furofuranone compounds”</i>
	<b>CB FP 02 – Jelena Mijatović</b> University of Novi Sad – Faculty of Sciences, Novi Sad, Serbia <i>“Synthesis and cytotoxicity of novel furofuranone analog”</i>
	<b>CB FP 03 – Lazar Popović</b> Innovative Centre Faculty of Chemistry Ltd., Belgrade, Serbia <i>“Effects of different pre-processing methods on the outcome of partial least squares regression in infrared spectra obtained with DoE”</i>
	<b>PCC FP 01 – Katarina Čeranić</b> Innovative Centre Faculty of Chemistry, Belgrade, Serbia <i>“Energy decomposition analysis of cation-<math>\pi</math> interactions of sandwich compounds”</i>
	<b>PCC FP 02 – Milenko Bunović</b> University of Belgrade – Faculty of Chemistry, Belgrade, Serbia <i>“On the nature of O-H/M hydrogen bonds of chelate complexes – DFT and EDA study”</i>
	<b>PCC FP 03 – Andrej Dedić</b> University of Belgrade – Faculty of Chemistry, Belgrade, Serbia <i>“Strong anion-<math>\pi</math> interactions between oxyanions and half-sandwich compounds – a DFT study”</i>
13:50	<b>*GROUP PHOTO*</b>
14:00	<b>Poster session 1 (ODD POSTER NUMBERS AND POSTERS FROM FLASH PRESENTATION APPLICATIONS)</b>
	<i>Lunch</i>
14:50	Removing posters from Poster Session 1 Mounting posters for Poster Session 2 ( <b>EVEN POSTER NUMBERS</b> )



	<i>Invited Lecture</i>
15:30	<b>PPP OP 02 – Nevena Mihailović</b> University of Kragujevac – Faculty of Science, Kragujevac, Serbia <i>“Harnessing the power of plants: the science behind natural antioxidants in cosmetic formulations”</i>
15:55	<i>Chem2Change presentation</i> <b>Sladana Savić</b>
16:05	<i>Oral presentations, Session 2</i>
	<b>CB OP 03 – Andrija Vukov</b> University of Novi Sad – Faculty of Sciences, Novi Sad, Serbia <i>“Physicochemical characteristics, antimicrobial activity and effect on Chard (Beta vulgaris L.var.cicla) of newly synthesised nicotine-based ionic liquids”</i>
	<b>EA OP 02 – Đorđe Todorović</b> University of Novi Sad – Faculty of Sciences, Novi Sad, Serbia <i>“The application of green ZnO nanoparticles based on tartaric acid for the sustainable removal of the antipsychotic sulpiride”</i>
	<b>PCC OP 03 – Aleksandra Roganović</b> University of Novi Sad – Faculty of Science, Novi Sad, Serbia <i>“Comparative study of synthetic, natural, and blended graphite anodes in lithium-ion batteries”</i>
	<b>PCC OP 04 – Sladana Đorđević</b> University of Kragujevac – Faculty of Science, Kragujevac, Serbia <i>“Magnetic properties of periodo-bicyclic hydrocarbons”</i>
	<b>PFC OP 01 – Anita Smailagić</b> Innovative Centre Faculty of Chemistry, Belgrade, Serbia <i>“Correlation between phenolic compounds and mineral content in wood species generated from cooperage”</i>
	<b>SCFM OP 02 – Jovan Rackov</b> University of Novi Sad – Faculty of Science, Novi Sad, Serbia <i>“Investigation of the water stability of postmodified zirconium-based metal-organic frameworks with 4-nitrobenzaldehyde”</i>
17:05	<i>Poster session 2 (EVEN POSTER NUMBERS) and Coffee break</i>
	<i>Closing ceremony</i>
18:10	<ul style="list-style-type: none"> <li>● <b>Best Oral Presentation Award</b></li> <li>● <b>Best Poster Presentation Award</b></li> </ul>
19:00	<i>End of the Conference</i>

All scientific contributions are divided into the following categories:

Chemistry and Society (CS)

Chemistry meets Biology (CB)

Developments in Chemical Synthesis (DCS)

Environmental Awareness (EA)

Physical and Computational Chemistry (PCC)

Phytochemistry and Food Chemistry (PFC)

Solution Chemistry and Chemical Equilibrium (SCCE)

Supramolecular Chemistry and Functional Materials (SCFM)

**POSTER NUMBER** is the last part of the contribution code, e.g. XY PP 15.

**VENUE:**

- Lectures, oral and flash presentations will take place at the **large chemistry amphitheater (VHA)** on the ground floor, Faculty of Chemistry, University of Belgrade (address: Studentski Trg 12–16, Belgrade).
- The Poster sessions will take place in the hallway **in front of the library** on the 1<sup>st</sup> floor.
- The lunch will take place in Faculty council meeting room (SZS) on the 1<sup>st</sup> floor.

## The ion selectivity of the cryptand: prediction of ion selectivity by quantum chemical calculations XVII<sup>\$</sup>

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Virgil L. Goedken and Shie-Ming Peng developed cryptand. They investigated it with the help of computational chemistry (B3LYP/LANL2DZp) and its interaction with metal ions was examined.[1] It was investigated in order to gain insight into the influence of the flexibility of the chelate N-C-C-N group on the overall selectivity towards the metal ion. According to our research the most suitable cation for the cryptand is Li<sup>+</sup>, because Na<sup>+</sup> is too large, and this was proven using DFT calculations. We were able to confirm that it is the most effective method for hosting the guest cations is for the cryptand to twist itself, and the flexibility of the chelating N-C-C-N group serves as the most effective structural motive for the Goedken-Peng cryptand to interact with the guest cation. [2]

### References

1. <sup>\$</sup>T. Capponi, J. Weigel, D. Čoćić, B.M. Alzoubi, R. van Eldik, R. Puchta. *J. Coord. Chem.* **2024**, 77, 843-854.
2. J. Jorg, R. Puchta, T. Soldatović, M. Kolenović Serezlić, R. van Eldik. *J. Coord. Chem.* **2024**, 77, 1256-1265.