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Book of Abstracts

4th November 2023

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ИНОВАЦИЈА

Acknowledgement

Acknowledgement to the University of Novi Sad - Faculty of Sciences for the use of the space of the faculty during the 9th Conference of Young Chemists' of Serbia.

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Scientific Program

Time schedule	Program
8:30	*Registration of the participants* Mounting posters for the Poster Session 1 (**ODD POSTER NUMBERS**)
9:30	*Conference opening* Serbian Chemical Society Scientific Committee Serbian Young Chemists' Club presentation
9:45	*Plenary Lecture* **PP OP 01 – Gordana Krstić** University of Belgrade, Faculty of Chemistry, Belgrade, Serbia *"Determining the structure of natural products using NMR spectroscopy - is it enough or not?"*
10:20	*Popular Scientific Lecture* **Luka Mihajlović** (Analysis doo)
10:50	*Invited Lecture* **PPP OP 01 – Jelena Lazić** University of Belgrade, Institute of Molecular Genetics and Genetic Engineering, Belgrade, Serbia *"From waste streams to biotherapeutics: making a connection using bacteria"*
11:15	*Coffee break*
11:30	*Invited Lecture* **PPP OP 02 – Alen Albreht** National Institute of Chemistry, Ljubljna, Slovenia *"Towards future food supplement ingredients: chemical modification of natural antioxidants"*
11:55	*European Young Chemists' Network (EYCN)* **Gaia De Angelis** – Global Connection Team Leader Soft-skill presentation

12:25	*Oral presentations, Session 1*
	DSC OP 01 – Nikola Radnović University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"Syntheses and structures of Ag(I) complexes with pyrazole-type ligand"*
	PFC OP 02 – Nikola Horvacki Innovation Centre of Faculty of Chemistry Ltd., Belgrade, Serbia *"Comparative assessment of preeminent sugars and organic acids in fruits of several apple cultivars"*
	PCC OP 02 – Katarina Ćeranić Innovation Centre of Faculty of Chemistry Ltd., Belgrade, Serbia *"Benzene coordination strengthens cation-π interactions: A DFT study"*
	SCCE OP 01 – Andrija Vukov University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"Hydration properties of the antidiabetic drug metformin in the presence of selected artificial sweeteners"*
	SCFM OP 01 – Daliborka Odoboša University of Belgrade, Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, Belgrade, Serbia *"A novel gamma rays dosimeter based on organic dye and PVA: microwave synthesis and spectroscopic studies"*
	PFC OP 03 – Nikolina Sibinčić Innovation Centre of Faculty of Chemistry Ltd., Belgrade, Serbia *"Arthrospira platensis and Porphyra sp. – prospective serum-substitute in HEK293T cell culture"*
13:25	***GROUP PHOTO***
13:30	*Poster session 1* (**ODD POSTER NUMBERS**)
14:20	*Lunch* Removing posters from Poster Session 1 Mounting posters for Poster Session 2 (**EVEN POSTER NUMBERS**)

15:10	*Workshop* University of Novi Sad, Faculty of Sciences – Parliament University of Belgrade, Faculty of Chemistry – Parliament Young Division of Croatian Chemical Society
15:55	*Invited Lecture* **PPP OP 02 – Tatjana Majkić** University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"Polyphenols as modulators of prostaglandin E_2 and thromboxane A_2 production"*
16:20	*Oral presentations, Session 2*
	PCC OP 01 – Milica Bogdanović University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"The crystal structure of 3-(1-pyrazolyl)-L-alanine and its Ag(I) polymeric complex"* **PFC OP 01 – Mihajlo Jakanovski** Innovation Centre of Faculty of Chemistry Ltd., Belgrade, Serbia *"Validation and optimization of ion chromatography based method for citric acid determination in Robinia pseudoacacia honey"* **CS OP 01 – Branislav Kokić** Innovation Centre of Faculty of Chemistry Ltd., Belgrade, Serbia *"Teaching chirality on dynamic systems"* **CB OP 01 – Ana Matošević** Institute for Medical Research and Occupational Health, Zagreb, Croatia) *"Design, synthesis and biological evaluation of carbamates as cholinesterases inhibitors in the treatment of Alzheimer`s disease"* **EA OP 01 – Marija Kuč** University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"Photodegradation of organic UV filters in water using UV/chlorine and UV/H_2O_2"* **EA OP 01 – Sara Pepić** University of Novi Sad, Faculty of Sciences, Novi Sad, Serbia *"Physico-chemical and structural characterization of the pharmacologically active ionic liquid tetracainium-ibuprofenate"*

17:10	*Poster session 2* (**EVEN POSTER NUMBERS**) *and Coffee break*
	Closing ceremony
18:00	• **Best Oral Presentation Award** • **Best Poster Presentation Award**
18:15	*End of the Conference*

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

VENUE:

- Lectures and oral presentations will be taken place at the "Mihajlo Pupin" amphitheater on the ground floor at the Department of Matematics and Informatics and the Department of Physics, Faculty of Science, University of Novi Sad (address: Trg Dositeja Obradovića 4, Novi Sad).
- The Poster sessions will take place in the hallway in front of the "Mihajlo Pupin" amphitheater.

CB PP 14

Investigation of pH dependent Fe^{3+} - levofloxacin interactions in water by fluorescence spectroscopy

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Interactions of antibiotics with biometals can affect their antimicrobial activity by changing their bioavailability, redox properties, and stability toward hydrolysis. [1,2] The pH of biological fluids can significantly affect interactions between biometals and ionizable drugs. In this study, we investigated the interactions of Fe^{3+} with levofloxacin in water at different pH using fluorescence spectroscopy. The coordination of Fe^{3+} with levofloxacin is pH dependent due to the ionization of levofloxacin and solubility of $Fe^{3+}_{(aq)}$ ions. The formation of levofloxacin-Fe^{3+} complex was detected in the pH range 4–5 as a decrease in fluorescence intensity of levofloxacin. The Stern-Volmer diagrams of levofloxacin in the presence of different concentrations of Fe^{3+} ion at pH 4 and pH 5 correspond to the static fluorescence quenching confirming the coordination of levofloxacin with high-spin Fe^{3+}. At pH < 4 and pH > 5 the addition of $FeCl_3$ as a source of Fe^{3+} ions results in an increase in fluorescence intensity which can be attributed to the change of the ionic strength of solution and electrostatic interactions between different ionic species instead of coordination of Fe^{3+} ions with levofloxacin. The coordination of Fe^{3+} with levofloxacin at pH < 4 is prevented by protonation of its carboxyl and piperazinyl groups (pKa_1 = 6.02, pKa_2 = 8.15). At pH > 5, despite the presence of zwitterionic and anionic forms of levofloxacin available for coordination, there is no complex formation due to the precipitation of insoluble ferric hydroxide.

References

1. Božić B, Korać J, Stanković DM, Stanić M, Romanović M, Pristov JB, Spasić S, Popović-Bijelić A, Spasojević I, Bajčetić M. *Free Radical Biol. Med*. **2018**, 129, 279.
2. Chen J, Wang Y, Qian Y, Huang T. *J. Hazard. Mater.* **2017**, 335, 117.

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