

10th Slovenian-Serbian-Croatian Symposium on Zeolites
May 23 – 25, 2024, National Institute of Chemistry, Ljubljana, Slovenia

Thursday, 23 May 2024

12:30 – 13:00	Registration	
13:00 – 14:00	Pregl lecture	Chair: Nataša Novak Tušar
	Extra-large Pore Zeolites - Challenges and Prospects	
	<u>Valentin Valtchev</u>	
	<i>Laboratory for Catalysis and Spectrochemistry, ENSICAEN, Normandy University, Caen, France</i>	
14:00 – 14:30	Coffee break	
14:30 – 14:45	Opening	
14:45 – 15:30	Plenary lecture (PL1)	Chair: Venčeslav Kaučič
	On the Applications of the Natural Clinoptilolite from Serbian deposits	
	<u>Nevenka Rajić</u>	
	<i>The University "UNION – Nikola Tesla", Belgrade, Serbia</i>	
15:30 – 15:45	Oral lecture (O1)	
	Comparison of zeolite-based hybrid processes in wastewater treatment – preliminary study	
	Ladislav Vrsalović, <u>Nediljka Vukojević Medvidović</u> , Sandra Svilović, Senka Gudić, Nikolina Mileusnić	
	<i>Faculty of Chemistry and Technology, University of Split, Croatia</i>	
15:45 – 16:00	Oral lecture (O2)	
	Preparation of bioparticles for phosphorus removal from wastewater in real scale	
	<u>Jasna Hrenović</u> ¹ , Stanislaw Lazarek ² , Darko Tibljaš ¹	
	¹ <i>Faculty of Science, University of Zagreb, Croatia</i>	
	² <i>BeAquaAgain AB, Malmö, Sweden</i>	
16:00 – 16:15	Short coffee break	
16:15 – 17:00	Short oral presentations (SO1-SO5)	Chair: Nediljka Vukojević Medvidović
	The preliminary study on the natural zeolite as a potential carrier of tetracycline	
	Danina Krajišnik ¹ , Snežana Uskoković-Marković ² , <u>Aleksandra Daković</u> ³ , Marija Marković ³	
	¹ <i>Department of Pharmaceutical Technology and Cosmetology, University of Belgrade, Faculty of Pharmacy, Serbia</i>	
	² <i>Department of Analytical Chemistry, University of Belgrade, Faculty of Pharmacy, Serbia</i>	
	³ <i>Institute for Technology of Nuclear and Other Mineral Raw Materials (ITNMS), Belgrade, Serbia</i>	
	Natural zeolite clinoptilolite and its sodium form in treatment of zinc contaminated water – how effective are they?	
	<u>Ivona Nuić</u> , Sara Jurkić, Ivana Zelić, Marin Ugrina, Marina Trgo	
	<i>Faculty of Chemistry and Technology, University of Split, Croatia</i>	
	Application of modified natural zeolite phillipsite for removal of ochratoxin A	
	<u>Marija Marković</u> ¹ , Aleksandra Daković ¹ , Danina Krajišnik ² , Milica Ožegović ¹ , George E. Rottinghaus ³ , Bruno de Gennaro ⁴ , Mariano Mercurio ⁵	
	¹ <i>Institute for Technology of Nuclear and Other Mineral Raw Materials, Belgrade, Serbia</i>	
	² <i>Department of Pharmaceutical Technology and Cosmetology, University of Belgrade, Faculty of Pharmacy, Serbia</i>	
	³ <i>Vet. Med. Diag. Lab., College of Veterinary Medicine, University of Missouri, Columbia, USA</i>	
	⁴ <i>DICMAPI, University of Naples, Italy</i>	
	⁵ <i>Department of Sciences and Technology, University of Sannio, Benevento, Italy</i>	
	Natural materials as carriers of microbial consortium	
	<u>Blanka Dadić</u> ¹ , Tomas Corak Grdović ¹ , Zorana Kovacević ² , Jasna Hrenović ¹ , Tomislav Ivanković ¹	
	¹ <i>Faculty of Science, Department of Biology, University of Zagreb, Croatia</i>	
	² <i>Faculty of Textile Technology, University of Zagreb, Croatia</i>	
	Phosphorus retention in peat amended with iron-containing clinoptilolite	
	<u>Jelena Pavlović</u> ¹ , Tore Krogstad ² , Nevenka Rajić ³	
	¹ <i>Institute of Soil Science, Belgrade, Serbia</i>	
	² <i>Norwegian University of Life Sciences, Aas, Norway</i>	
	³ <i>The University "UNION – Nikola Tesla", Belgrade, Serbia</i>	
17:00 – 17:30	Invited lecture (IL1)	Chair: Petar Djinović
	Modeling of sorption and surface reaction microkinetics for vapor-phase hydro(deoxy)genation of levulinic acid over Ni/ZSM-5	
	<u>Miha Grilc</u> ^{1,2} , Žan Lavrič ^{1,2} , Hue-Tong Vu ¹ , Andrii Kostyniuk ¹ , Nataša Zabukovec Logar ^{1,2} , Petar Djinović ^{1,2} , Nataša Novak Tušar ^{1,2} , Blaž Likozar ¹	
	¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i>	
	² <i>University of Nova Gorica, Slovenia</i>	
17:30 – 19:00	Free time	
19:00 – 20:00	Guided tour Ljubljana	

Friday, 24 May 2024

8:30 – 9:00	Registration	
9:00 – 9:45	Plenary lecture (PL2)	Chair: Nataša Zabukovec Logar
	Metal-organic frameworks: a dynamic playground for water and energy harvesting <u>Monique A. van der Veen</u> <i>Department of Chemical Engineering, Delft University of Technology, the Netherlands</i>	
9:45 – 10:00	Oral lecture (O3)	
	Zeolitic imidazolate framework materials for potential adsorption thermal battery applications <u>Jan Marčec</u> ^{1,2} , Alenka Ristić ¹ ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>University of Nova Gorica, Slovenia</i>	
10:00 – 10:15	Oral lecture (O4)	
	The Influence of Working Fluids on the Heat Storage Performance of ZIF-93 <u>Ciara Byrne</u> ^{1,2} , Katja Vodlan ³ , Connor Hewson ⁴ , Paul Iacomi ⁴ , Amalija Golobič ³ , Nataša Zabukovec Logar ^{1,2} ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>University of Nova Gorica, Slovenia</i> ³ <i>University of Ljubljana, Slovenia</i> ⁴ <i>Surface Measurement Systems, London, United Kingdom</i>	
10:15 – 10:30	Oral lecture (O5)	
	Water clusters and linde type-A aluminophosphate: interplay between structural order and disorder <u>Janez Volavšek</u> ¹ , Suzana Mal ¹ , Matjaž Mazaj ¹ , Alenka Ristić ¹ , Anže Hubman ¹ , Franci Merzel ¹ , Nataša Zabukovec Logar ^{1,2} , Andraž Krajnc ¹ ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>University of Nova Gorica, Slovenia</i>	
10:30 – 11:00	Coffee break	
11:00 – 11:30	Sponsor talks	Chair: Alenka Ristić
	“Mist-ical Zeolites: Journeying Through Humid Horizons” <u>Ines Topalović Piteša</u> <i>Altium International d.o.o., Zagreb, Croatia</i>	
	Empowering Carbon Dioxide Mitigation: Leveraging Micromeritics Solutions for Next-Gen Technologies <u>Ivana Papaik Levanić</u> <i>AstrinexLab d.o.o., Zagreb, Croatia</i>	
11:30 – 11:45	Oral lecture (O6)	
	A comprehensive overview of the global zeolites market <u>Karmen Margeta</u> , Anamarija Farkaš <i>Institute for Development and International Relations, Zagreb, Croatia</i>	
11:45 – 12:15	Invited lecture (IL2)	Chair: Nataša Novak Tušar
	Industrial Deployment of a Zeolite Catalyst: Past, Present & Future <u>Jean-Pierre Gilson</u> <i>Laboratory for Catalysis & Spectrochemistry ENSICAEN, Caen, France</i>	
12:15 – 14:00	Lunch	
14:00 – 14:30	Keynote lecture (KL1)	Chair: Matjaž Mazaj
	Porous Organic-Inorganic Hybrid Materials: New synthetic Approaches, Engineering and Applications <u>Sebastijan Kovačič</u> ^{1,2} , Matjaž Mazaj ¹ , Zoran Novak ² ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>Faculty of Chemistry and Chemical Engineering, University of Maribor, Slovenia</i>	
14:30 – 14:45	Oral lecture (O7)	
	NICS–24: a new microporous MOF for selective CO₂ capture <u>Andreas Puškarić</u> ^{1,2} , Matjaž Mazaj ² , Nataša Zabukovec Logar ² ¹ <i>Ruder Bošković Institute, Zagreb, Croatia</i> ² <i>National Institute of Chemistry, Ljubljana, Slovenia</i>	
14:45 – 15:00	Oral lecture (O8)	
	Routes towards preparation of pure nickel zeolitic imidazolate frameworks <u>Aljaž Škrjanc</u> ^{1,2} , Dominik Jankovič ³ , Anton Meden ³ , Matjaž Mazaj ¹ , Erik Svensson Grape ⁴ , Martin Gazvoda ³ , Nataša Zabukovec Logar ^{1,2} ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>University of Nova Gorica, Slovenia</i> ³ <i>Faculty of Chemistry and Chemical Technology, University of Ljubljana, Slovenia</i> ⁴ <i>Department of Materials and Environmental Chemistry, Stockholm University, Sweden</i>	

15:00 – 15:15	<p>Oral lecture (O9)</p> <p>Transformations and synthesis of zeolites upon exerting mechanical force at elevated temperature Mladenka Jurin¹, Sanja Bosnar¹, Natalija Pantalon Juraj², Nikola Jakupec¹, Martin Etter³, Krunoslav Užarević², <u>Ana Palčić</u>¹ ¹Laboratory for Synthesis of New Materials, Ruđer Bošković Institute, Zagreb, Croatia ²Laboratory for Applied and Sustainable Chemistry, Ruđer Bošković Institute, Zagreb, Croatia ³Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany</p>
15:15 – 15:45	Coffee break
15:45 – 16:30	<p>Short oral presentations (SO6-SO11) Chair: Ana Palčić</p> <p>Synthesis of zeolite and carbon-zeolite composite from waste silica fumes <u>Saša Zeljković</u>¹, Toni Ivas² ¹Faculty of Natural Sciences and Mathematics, University of Banja Luka, Bosnia and Herzegovina ²Swiss Federal Laboratories for Materials Science and Technology - EMPA, Thun, Switzerland</p> <p>Mineralogical, micro-structural and mechanical properties of lime mortars containing natural zeolite <u>Marina Škondrić</u> Faculty of Civil Engineering, University of Belgrade, Serbia</p> <p>Novel zinc oxalate-triazolate framework for selective low-concentration CO₂ capture <u>Klara Klemenčič</u>¹, Andreas Puškarić^{1,2}, Matjaž Mazaj¹ ¹National Institute of Chemistry, Ljubljana, Slovenia ²Ruđer Bošković Institute, Zagreb, Croatia</p> <p>Copper's story in ZIF-62: surface or structure? <u>Marija Švegovec</u>^{1,2}, Andraž Krajnc¹ ¹National Institute of Chemistry, Ljubljana, Slovenia ²University of Nova Gorica, Slovenia</p> <p>In situ PXRD measurements of mechanochemically induced interzeolite conversion – advantages and drawbacks <u>Nikola Jakupec</u>¹, Erik Uran², Martin Etter³, Krunoslav Užarević¹, Ana Palčić¹ ¹Ruđer Bošković Institute, Zagreb, Croatia ²Jožef Stefan Institute, Ljubljana, Slovenia ³Deutsches Elektronen-Synchrotron, Hamburg, Germany</p> <p>Dehydration performance of a novel solid solution library of mixed and supported tutton salts as thermochemical heat storage materials Jakob Smith, <u>Anton Larchier</u>, Weinberger Peter, Werner Andreas TU Wien, Technische Universität Wien Lehartrakt, Österreich</p>
16:30 – 17:00	<p>Keynote lecture (KL2) Chair: Aleksandra Daković</p> <p>Microbiological applications of natural zeolite <u>Tomislav Ivanković</u>¹, Jasna Hrenović¹, Nevenka Rajić², Jelena Dikić³, Sabine Rolland du Roscoat⁴ ¹Faculty of Science, University of Zagreb, Croatia ²Faculty of Ecology and Environmental Protection, University Union Nikola Tesla, Belgrade, Serbia. ³Innovation centre of the Faculty of Technology and Metallurgy, University of Belgrade, Serbia ⁴Laboratoire 3SR, Université Grenoble Alpes, Domaine Universitaire, France</p>
17:00 – 20:00	Free time
20:00	Conference dinner – at Nebotičnik, Ljubljana

Saturday, 25 May 2024

9:00 – 9:30	Invited lecture (IL3) Zeolites in photocatalytic treatment of water <u>Ivana Grčić</u> <i>Faculty of Geotechnical Engineering, University of Zagreb, Varaždin, Croatia</i>	Chair: Nataša Novak Tušar
9:30 – 9:45	Oral lecture (O10) Thermal and visible light-assisted CO₂ hydrogenation to CO over an industrial copper based catalyst Giovanni Cardolini Rizzo ¹ , Miha Okorn ^{2,3} , Kristijan Lorber ² , Nataša Novak Tušar ^{2,3} and <u>Petar Djinić</u> ^{2,3} ¹ <i>Politecnico di Torino, Italy</i> ² <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ³ <i>University of Nova Gorica, Slovenia</i>	
9:45 – 10:00	Oral lecture (O11) Bimetal (Cu/Fe) modified mesoporous silica as an efficient fenton-like catalyst for bisphenol A removal <u>Andraž Šuligoj</u> ^{1,2} , Ksenija Maver ¹ , Albin Pintar ¹ , Nataša Novak Tušar ¹ ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>Faculty of Chemistry and Chemical Technology, University of Ljubljana, Slovenia</i>	
10:00 – 10:15	Oral lecture (O12) Exploring the diverse applications of TiO₂+PT catalysts <u>Gregor Žerjav</u> , Albin Pintar <i>National Institute of Chemistry, Ljubljana, Slovenia</i>	
10:15 – 10:45	Coffee break	
10:45 – 11:15	Keynote lecture (KL3) The efficiency of TiO₂/zeolites for photocatalytic degradation of different pollutants from aqueous solution <u>Srna Stojanović</u> ¹ , Milan Damjanović ² , Marija Lješević ³ , Vladimir Beškoski ⁴ , Vladislav Rac ⁵ , Ljiljana Damjanović-Vasilčić ¹ ¹ <i>University of Belgrade - Faculty of Physical Chemistry, Belgrade, Serbia</i> ² <i>Laboratory for Agrochemicals, Agrosava d.o.o., Serbia</i> ³ <i>University of Belgrade - Institute of Chemistry, Technology and Metallurgy, Belgrade, Serbia</i> ⁴ <i>University of Belgrade - Faculty of Chemistry, Belgrade, Serbia</i> ⁵ <i>University of Belgrade - Faculty of Agriculture, Belgrade, Serbia</i>	Chair: Ciara Susan Byrne
11:15 – 12:00	Short oral presentations (SO12-16) Exploring the impact of plasmonic metals on the properties of plasmonic metal + TiO₂ catalysts <u>Špela Slapničar</u> , Gregor Žerjav, Albin Pintar <i>National Institute of Chemistry, Ljubljana, Slovenia</i> Comparison of potential of fruit processing by-products and natural zeolite clinoptilolite in treatment of ZINC(II)-contaminated water <u>Sunčica Mileta</u> ¹ , Ivona Nuić ² , Ana Palčić ³ , Marin Ugrina ² , Ivana Raguž ² ¹ <i>Ivanal d.o.o., Šibenik, Croatia</i> ² <i>Faculty of Chemistry and Technology, University of Split, Croatia</i> ³ <i>Ruđer Bošković Institute, Zagreb, Croatia</i> The sorption and retention capability of natural and iron-modified zeolites toward manganese ions <u>Marin Ugrina</u> , Lorena Tomić, Ana Terzić, Ivona Nuić, Marina Trgo <i>Department of Environmental Engineering, Faculty of Chemistry and Technology, University of Split, Croatia</i> Synthesis and characterization of hydroxyapatite/clinoptilolite adsorbent for removal of organic pollutants <u>Katarina Sokić</u> ¹ , Teodora Taškov ¹ , Jelena Dikić ² , Ljiljana Tolić Stojadinović ² , Sanja Jevtić ¹ ¹ <i>Faculty of Technology and Metallurgy, University of Belgrade, Serbia</i> ² <i>Innovation Centre of the Faculty of Technology and Metallurgy Ltd, University of Belgrade, Serbia</i> Solid-state nuclear magnetic resonance used for operando studies of Na-ion batteries <u>Matej Gabrijelčič</u> ^{1,2} , Blaž Tratnik ¹ , Gregor Kapun ¹ , Elena Tchernychova ¹ , Nataša Zabukovec Logar ¹ , Andraž Krajnc ¹ , Robert Dominko ^{1,3,4} , Alen Vižintin ¹ ¹ <i>National Institute of Chemistry, Ljubljana, Slovenia</i> ² <i>Faculty of Mathematics and Physics, University of Ljubljana, Slovenia</i> ³ <i>Faculty of Chemistry and Chemical Technology, University of Ljubljana, Slovenia</i> ⁴ <i>ALISTORE-European Research Institute, CNRS FR 3104, Amiens Cedex, France</i>	Chair: Sanja Jevtić
12:00 – 12:15	Closing remarks	
12:15	Lunch	

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