



80th International Scientific
Conference of the
University of Latvia 2022



Faculty of Chemistry
Ķīmijas fakultāte
Physical Chemistry
Fizikālā ķīmija

Friday, 11 February 2022, 10.30 AM, online

Zoom saite: <https://lu-lv.zoom.us/j/99289035496?pwd=Z3NZUE8yWG50UUMyZnBNYTFUZhRjRzQT09>
Meeting ID: 992 8903 5496 Passcode: 260780

Programma/Programme

10.10–10.30	Joining to the meeting, coffee, discussions	
Plenary session of Physical Chemistry and Analytical Chemistry / Fizikālās ķīmijas un Analītiskās ķīmijas plenārsēde Vadītājs/Chair: Asoc. prof. Agris Bērziņš; Vietnieks/co-Chair: MSc Kristaps Saršūns		
10.30–10.40	Atklāšana / Opening Prof. Arturs Vīksna Asoc. prof. Agris Bērziņš	
10.40–10.55	Kārlis Bērziņš <i>University of Otago, Department of Chemistry</i>	A New Frontier for Non-Destructive Spatial Analysis of Pharmaceutical Solid Dosage Forms: Micro-Spatially/Spatially Offset Low-Frequency Raman Spectroscopy Kārlis Bērziņš, Sara J. Fraser-Miller, Keith C. Gordon
10.55–11.10	Zane Bērziņa <i>University of Latvia, Faculty of Chemistry; Institute of Food Safety, Animal Health and Environment “BIOR”</i>	Application of Wastewater – Based Epidemiology for Tracking Human Exposure to Deoxynivalenol and Enniatins Zane Bērziņa, Romāns Pavlenko, Laura Elīna Ikkere, Vadims Bartkevičs
11.10–11.25	Eduards Bakis <i>University of Latvia, Faculty of Chemistry</i>	Experimental and Theoretical Study of Free Volume in Silicon-Functionalized Ionic Liquids Eduards Bakis, Kateryna Goloviznina, Ines Vaz, Agilio Pádua, Margarida Costa Gomes
11.25–11.40	Vladlens Grebņevs <i>University of Latvia, Faculty of Chemistry; Silesian University of Technology, Faculty of Chemistry</i>	Bioactivity Enhancement of Peo Coatings by Introduction of Amorphous Calcium Phosphate Particles Vladlens Grebņevs, Şahin Altundal, Roman Viter, Mateusz Dulski, Marta Wala, Katarzyna Leśniak-Ziółkowska, Arturs Vīksna, Wojciech Simka

11.40–11.55	Raitis Bobrovs <i>Latvian Institute of Organic Synthesis</i>	Exploring Aspartic Protease Inhibitor Binding to Design Selective Antimalarials Raitis Bobrovs, Emils Edgars Basens, Laura Drunka, Iveta Kanepe, Sofija Matisone, Karlis Kristofers Velins, Victor Andrianov, Gundars Leitis, Diana Zelencova-Gopejenko, Dace Rasina, Aigars Jirgensons, Kristaps Jaudzems
11.55–12.10	Ingus Pērkons <i>Institute of Food Safety, Animal Health and Environment "BIOR"</i>	Qualitative Fingerprinting of Psychoactive Pharmaceuticals, Illicit Drugs, and Related Human Metabolites in Wastewater During the Covid-19 Pandemic in Riga, Latvia Ingus Pērkons, Laura Elīna Ikkere, Veronika Šukajeva, Iveta Pugajeva
12.10–12.25	Agnese Miķelsone <i>Riga Stradiņš University</i>	Vitamin B12 Blood Level Variation with the Age of Patients Didzis Gavars, Agris Auce, Eriks Tauckels, Ilze Lindenberga, Dmitrijs Perminovs, Anna Inese Tutane, Agnese Miķelsone
12.25–13.00	Pusdienu pārtraukums, diskusijas/Lunch break, discussions online	

Session of Physical Chemistry / Fizikālās ķīmijas sēde		
13.00–13.15	Toms Upmanis <i>Latvian Institute of Organic Synthesis</i>	Approach of Using the Opposite Chirality of Crown Ether Stationary Phases in Chiral Recognition of Tetrapeptide Enantiomers Toms Upmanis, Helena Kažoka
13.15–13.30	Valda Valkovska <i>University of Latvia, Faculty of Chemistry</i>	Identification of the Main Dyestuffs Present in Barks of Alders, Birch, Oak and Aspen Valda Valkovska, Liāna Orola
13.30–13.45	Laura Drunka <i>Latvian Institute of Organic Synthesis</i>	Plasmepsin II Labeling Strategies to Study Conformational Changes of Binding Site with NMR Spectroscopy Laura Drunka, Raitis Bobrovs
13.45–14.00	Kristīne Krūkle-Bērziņa <i>Latvian Institute of Organic Synthesis</i>	Cyclodextrin Based Metal Organic Framework Crystallization and Evaluation as Potential Drug Carrier Kristīne Krūkle-Bērziņa, Anatolijs Mishnev, Kirills Šubins
14.00–14.15	Aina Semjonova <i>University of Latvia, Faculty of Chemistry</i>	Control Possibilities of 2,6-Dimethoxybenzoic Acid Conformational Polymorphism Using Crystallization Additives Aina Semjonova, Agris Bērziņš
14.15–14.30	Kristaps Saršūns <i>University of Latvia, Faculty of Chemistry</i>	Fine-Tuning Solid State Luminescence Properties of Molecular Crystals via Solid Solution Formation Kristaps Saršūns, Agris Bērziņš, Toms Rekis
14.30–14.45	Zane Čerpakovska <i>University of Latvia, Faculty of Chemistry</i>	Mechanochemical Preparation of Crystal Forms of Selected Pharmaceutical Substances Zane Čerpakovska, Artis Kons, Agris Bērziņš
14.45–15.00	Kristīne Krūkle-Bērziņa <i>Latvian Institute of Organic Synthesis</i>	Use of Selective MOF Formation for Separation of α -, β - and γ -Cyclodextrins Kristīne Krūkle-Bērziņa, Kirills Šubins, Sergejs Beļakovs

15.00–15.15	Kafijas pauze, diskusijas tiešsaitē/Coffee break, discussions on-line	
15.15–15.30	Kaspars Meijers <i>University of Latvia, Faculty of Chemistry</i>	Mircocalorimeter Performance Determination and Stability Determination of Nitrocellulose-Based Substances and Their Comparison with Chromatographic Results Kaspars Meijers, Pēteris Mekšs
15.30–15.45	Agris Auce <i>University of Latvia, Institute of Chemical Physics</i>	Cost Gains and CO ₂ Reduction in Greenhouse Heating by Air to Water Heatpump Latvia during 2nd Half of 2021 Agris Auce, Indulis Horns, Aivars Jeremuss, Ādolfs Ruciņš, Mareks Drozdovs, Ivars Auce, Uģis Grīnbergs
15.45–16.00	Līga Avotiņa <i>University of Latvia, Institute of Chemical Physics</i>	Impact of Physical Pretreatment on Thermal Properties of Coursed Sheep Wool Fibers Jānis Nesenbergs, Taisija Gricenko, Līga Avotiņa, Artūrs Zariņš, Mihails Haljovs, Gunta Ķizāne
16.00–16.15	Margarita Baitimirova <i>University of Latvia, Institute of Chemical Physics</i>	Graphene in Layered Nanostructures Margarita Baitimirova, Jana Andzane, Roman Viter, Mikhael Bechelany, Donats Erts
16.15–16.30	Edgars Mamis <i>University of Latvia, Institute of Chemical Physics</i>	Mass-Separation of ^{43,44,47} SC Radionuclides from Irradiated Natural Ti Targets at the CERN-MEDICIS Facility Edgars Mamis, Elīna Pajuste, Thierry Stora, Sebastian Rothe, Eric Chevallay, Charlotte Duchemin, Maija Radziņa
16.30–16.45	Madara Tomele <i>University of Latvia, Institute of Chemical Physics</i>	X-Ray Induced Defects in Lithium Orthosilicate and Lithium Metatitanate Ceramics Prepared Using Solid State Synthesis Method Madara Tomele, Mareks Senko, Artūrs Zariņš, Aleksejs Zolotarjovs, Larisa Baumanė, Gunta Ķizāne
16.45–17.00	Aleksandrs Novikovs <i>Institute of Solid State Physics, University of Latvia</i>	Metallic Nanoparticle Dispersions for Conducting Ink Preparation Aleksandrs Novikovs, Boriss Poļakovs
17.00–17.15	Dmitrijs Bogdanovs <i>Institute of Solid State Physics, University of Latvia</i>	Thermal Analysis and IR Spectroscopy Usage to Determine the Degree of Sulfonation of SPEEK Dmitrijs Bogdanovs, Einārs Sprūģis, Guntars Vaivars
17.15–17.--	Noslēgums, diskusijas tiešsaitē/Conclusion, discussions on-line	