



# PHYSICAL CHEMISTRY 2022

16<sup>th</sup> International Conference  
on Fundamental and Applied Aspects of  
Physical Chemistry

Organized by  
The Society of Physical Chemists of Serbia

# FINAL PROGRAM



*Online Event*  
**September 26-30, 2022**  
**Belgrade, Serbia**

## International Organizing Committee

- Chairman:** S. Anić (Serbia)  
**Vice-chairman:** M. Gabrovska (Bulgaria)  
A. A. Vedyagin (Russia)  
S. N. Blagojević (Serbia)  
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## International Scientific Committee

- Chairman:** Ž. Čupić (Serbia)  
**Vice-chairman:** V. Bukhtiyarov (Russia)  
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B. Adnađević (Serbia)  
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## Local Executive Committee

- Chairman:** S. N. Blagojević  
**Vice-chairman:** A. Ivanović-Šašić  
**Members:** M. Ajduković, I. N. Bujanja, D. Dimić, J. Dostanić, D. Drakulić, S. Jovanović, Z. Jovanović, D. Lončarević, J. Krstić, B. Marković, J. Maksimović, S. Marinović, D. Milenković, T. Mudrinić, M. Pagnacco, N. Potkonjak, B. Stanković, I. Stefanović, A. Todorović, M. Vasić, F. Veljković, M. Pejčić, G. Stevanović, H. Šalipur, K. Milošević, S. Pavlović.

## *Abbreviations*

- PL** – Plenary Lecture
- SL** – Section Lecture
- O** – Oral Presentation
- P** – Poster Presentation

## **Topics**

- A** – Education and History
- B** – Spectroscopy, Molecular Structure, Physical Chemistry of Plasma
- C** – Kinetics, Catalysis
- D** – Nonlinear Dynamics, Oscillatory Reactions, Chaos
- E** – Electrochemistry
- F** – Biophysical Chemistry, EPR investigations of Bio-systems
- G** – Organic Physical Chemistry
- H** – Material Science
- I** – Photochemistry, Radiation Chemistry, Photonics
- J** – Macromolecular Physical Chemistry
- K** – Environmental Protection, Forensic Sciences, Geophysical Chemistry, Radiochemistry, Nuclear Chemistry
- L** – Phase Boundaries, Colloids, Liquid Crystals, Surface-Active Substances
- M** – Complex Compounds
- N** – Food Physical Chemistry
- O** – Pharmaceutical Physical Chemistry

## Invited lecturers

- PL-01**     **Andrew Clayton**, Swinburne University of Technology, Hawthorn, Melbourne, Australia
- PL-02**     **Zoran Marković**, Institute for Information Technologies, Department of Science, University of Kragujevac, Serbia
- PL-03**     **Vladana Vukojević**, Center for Molecular Medicine, Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden
- PL-04**     **Anne De Wit**, Nonlinear Physical Chemistry Unit, Université libre de Bruxelles, Belgium
- PL-05**     **Hamilton Varela**, São Carlos Institute of Chemistry, University of São Paulo, Brazil.
- PL-06**     **Roberto Faria**, Federal University of Rio de Janeiro, Institute of Chemistry, Brazil
- PL-07**     **Istvan Kiss**, Department of Chemistry, Saint Louis University, USA
- PL-08**     **Silviya Todorova**, Institute of Catalysis, Bulgarian Academy of Sciences, Bulgaria,
- PL-09**     **Astrid Gräslund**, Department of Biochemistry and Biophysics, Stockholm University, Sweden
- PL-10**     **Željko Čupić**, University of Belgrade, Institute of Chemistry, Technology and Metallurgy - National Institute of the Republic of Serbia, Serbia
- PL-11**     **Gregory Yablonsky**, McKelvey School of Engineering, Department of Energy, Environmental and Chemical Engineering, Washington University in St Louis, USA
- PL-12**     **Nadezda Vasilyeva**, Dokuchaev Soil Science Institute, Russian Federation
- PL-13**     **Ana Cristina Silva**, NOVA School of Science & Technology, New University of Lisbon, Portugal
- PL-14**     **Juan Perez-Mercader**, Department of Earth and Planetary Sciences and Origins of Life Initiative Harvard University, United States / Santa Fe Institute, United States
- PL-15**     **Petr Humpolíček**, Tomas Bata University in Zlín, Czech Republic
- PL-16**     **Milenko Plavšić**, Engineering Academy of Serbia / University of Belgrade, Serbia

- PL-17** **Davide Peddis**, Dipartimento di Chimica e Chimica Industriale, Università degli Studi di Genova, Italy / Istituto di Struttura della Materia-CNR, Italy
- PL-18** **Roger Leblanc, Department of Chemistry**, University of Miami, USA
- B-01-SL** **Milovan Stoiljković**, VINČA Institute of Nuclear Sciences-National Institute of the Republic of Serbia, University of Belgrade
- B-02-SL** **Ana Amić**, University of Osijek, Croatia
- C-01-SL** **Gabor Lente**, University of Pécs, Hungary
- C-02-SL** **Vladimir Stoyanovskii**, Boreskov Institute of Catalysis, Russia
- D-01-SL** **Ágota Tóth**, University of Szeged, Hungary
- D-02-SL** **Katarina Novaković**, School of Engineering, Newcastle University, United Kingdom
- D-03-SL** **Guy Schmitz**, Université Libre de Bruxelles, Ecole Polytechnique, Brussels
- F-01-SL** **Dunja Drakulić**, University of Belgrade, VINČA Institute of Nuclear Sciences - National Institute of the Republic of Serbia
- F-02-SL** **Ana Todorović**, University of Belgrade, VINČA Institute of Nuclear Sciences - National Institute of the Republic of Serbia
- G-01-SL** **Milovan Stojanović**, University of Belgrade, Institute of Chemistry, Technology and Metallurgy, Serbia
- I-01-SL** **Zoran Jakšić**, University of Belgrade, Institute of Chemistry, Technology and Metallurgy – National Institute of the Republic of Serbia, Serbia.
- J-01-SL** **Marija Gizdavić-Nikolaidis**, Faculty of Medical and Health Sciences, the University of Auckland, New Zealand
- J-02-SL** **Zoran Žujović**, School of Chemical Sciences, the University of Auckland, New Zealand
- K-01-SL** **George Kyzas**, International Hellenic University, Kavala, Greece
- L-01-SL** **Iosif Grinvald**, Nizhny Novgorod State Technical University, Russia
- O-01-SL** **Jelena Martinović**, VINČA Institute of Nuclear Sciences-National Institute of the Republic of Serbia, University of Belgrade, Serbia.
- O-02-SL** **Mirjana Čolović**, VINČA Institute of Nuclear Sciences-National Institute of the Republic of Serbia, University of Belgrade, Serbia.

## **Regular lecturers**

- H-01-O*** **Dorđe Antonijević**, Department of Anatomy, School of Dental Medicine, University of Belgrade, Serbia
- H-02-O*** **Dorđe Antonijević**, Department of Anatomy, School of Dental Medicine, University of Belgrade, Serbia
- H-03-O*** **Milica Pejčić**, Vinča Institute of Nuclear Sciences – National Institute of the Republic of Serbia, University of Belgrade, Serbia
- K-02-O*** **Dunja Đukić**, Institute of Botany and Botanical Garden-Faculty of Biology, University of Belgrade, Serbia

# FINAL DETAILED PROGRAM

Monday, September 26<sup>th</sup>

## Opening Ceremony

10:00 AM - 10:15 AM

**Slobodan Anić**

President of the Society of Physical Chemists of Serbia

**Željko Čupić**

University of Belgrade, Institute of Chemistry,  
Technology and Metallurgy

*Chairperson: dr Jelena Savović*

10:15 AM - 10:45 AM    **PL-01**

**A. Clayton**

*Detecting intermediate states in ligand-protein interactions using edge-excitation spectroscopy*

10:45 AM - 11:00 AM

**Coffee Break**

*Chairperson: dr Jelena Savović*

11:00 AM - 11:20 AM    **B-01-SL**

**M. Stoiljković, Đ. Kapuran, S. Veličković, F. Veljković**

*Spectroscopic characterisation of laser-supported detonation wave (LSDW)*

11:20 AM - 11:40 AM    **B-02-SL**

**A. Amić**

*Mactanamide and lariciresinol as radical scavengers and Fe<sup>2+</sup> ion chelators – a DFT study*

11:40 AM - 12:00 AM

**Coffee Break**

12:00 PM - 01:30 PM    **POSTER SESSION**

*Chairpersons: dr Tihana Mudrinić, dr Dragan Ranković*

Spectroscopy, Molecular Structure, Physical Chemistry of Plasma

**(B)**

Electrochemistry

**(E)**

Organic Physical Chemistry

**(G)**

Complex Compounds

**(M)**

01:30 PM - 01:45 PM      **Coffee Break**

*Chairperson: dr Dejan Milenković*

01:45 PM - 02:15 PM      **PL-02**

**Z. Marković**

*Advanced oxidation processes of coumarin by hydroxyl and hydroperoxyl radicals: Combination of traditional antiradical mechanisms in order to obtain less toxic products*

02:15 PM - 02:45 PM      **PL-03**

S. Oasa, A. J. Krmpot, S. N. Nikolić, L. Terenius, R. Rigler, **V. Vukojević**

*Extending fluorescence correlation spectroscopy to imaging: quantitative scanning-free confocal mapping of the cellular dynamics and local environment of molecules in live cells*

*Chairperson: dr Dejan Milenković*

02:45 PM - 03:05 PM      **G-01-SL**

**M. Stojanović**, J. Aleksić, M. Baranac-Stojanović

*Fluorescence properties of 1,2- and 1,4-dihydropyridines*



**Tuesday, September 27<sup>th</sup>**

*Chairperson: dr Ljiljana Kolar-Anić*

10:00 AM - 10:30 AM    **PL-04**    **A. De Wit**  
*Spatio-temporal dynamics of reaction fronts  
in radial geometries*

10:30 AM - 10:50 AM    **Coffee Break**

*Chairperson: dr Ljiljana Kolar-Anić*

10:50 AM - 11:10 AM    **D-01-SL**    **P. Kumar, D. Horváth, Á. Tóth**  
*From tubular to self-propulsing chitosan  
hydrogels*

11:10 AM - 11:30 AM    **D-02-SL**    **K. Novakovic**  
*Dynamic materials for optimisation of  
therapies*

11:30 AM - 11:50 AM    **D-03-SL**    **G. Schmitz**  
*Role of radicals in the Bray-Liebhaftsky  
reactions*

11:50 AM - 12:00 AM    **Coffee Break**

12:00 PM - 01:30 PM    **POSTER SESSION**

*Chairpersons: dr Marija Ajduković, dr Bojana Marković*

Nonlinear Dynamics, Oscillatory Reactions, Chaos    **(D)**  
Biophysical Chemistry, EPR investigations of Bi-osystems    **(F)**  
Food Physical Chemistry    **(N)**

01:30 PM - 01:45 PM    **Coffee Break**

*Chairperson: dr Katarina Novaković*

01:45 PM - 02:15 PM    **PL-05**    **H. Varela**  
*Kinetic instabilities in electrocatalytic  
systems: the effect of surface structure,  
reaction mechanism, and efficiency*

- 02:15 PM - 02:45 PM    **PL-06**    **R. B. Faria**, E. V. Monteiro, R. T. P. Sant'Anna,  
R. O. Pires  
*Nonlinear behavior of chlorate based systems  
- clock reactions and oscillations*
- 02:45 PM - 03:15 PM    **PL-07**    **I. Kiss**  
*Collective synchronization of electrochemical  
oscillator networks*

03:15 PM - 03:30 PM            *Coffee Break*

*Chairperson: dr Ana Popović Bijelić*

- 03:30 PM - 03:50 PM    **F-01-SL**    **D. Drakulić**, K. Bobić, T. Milovanović, S.  
Pejić, S. Stanković, S. Pajović, A. Todorović  
*Impact of surfaced-modified TiO<sub>2</sub>  
nanoparticles on neurological functions and  
purinergic signaling in rat brain*
- 03:50 PM - 04:10 PM    **F-02-SL**    **A. Todorović**, S. Pejić, K. Bobić, T.  
Milovanović, S. Stanković, D. Drakulić  
*Acute oral intake of surface-modified TiO<sub>2</sub>  
nanoparticles promotes biochemical and  
morphological changes in rat female  
reproductive system*

**Wednesday, September 28<sup>th</sup>**

*Chairperson: dr Predrag Banković*

10:00 AM - 10:30 AM    **PL-08**    **S. Todorova**, An. Naydenov and Al. Larin  
*Co and Ni modified Pd-Al<sub>2</sub>O<sub>3</sub> catalysts for methane combustion-a short review*

*Chairperson: dr Predrag Banković*

10:30 AM - 10:50 AM    **C-01-SL**    A. Karpakala, S. Kumar, **G. Lente**, R. Szabó  
*A polynomial-based method to approximate kinetic curves in multistep mechanisms*

10:50 AM - 11:10 AM    **C-02-SL**    **V. Stoyanovskii**, P. Plyusnin, Y. Shubin, A. Vedyagin  
*Application of diffuse reflectance UV-vis and luminescence spectroscopies for characterization of alumina-based catalysts*

11:10 AM - 11:20 AM    **Coffee Break**

*Chairperson: dr Željko Čupić*

11:20 AM - 11:50 AM    **PL-09**    **A. Gräslund**  
*The amyloid beta peptide: biophysical studies of interactions, structure conversions and aggregation*

11:50 AM - 12:00 AM    **Coffee Break**

12:00 PM - 01:30 PM    **POSTER SESSION**

*Chairpersons: dr Sanja Marinović, dr Leposava Pavun*

Kinetics, Catalysis (C)  
Pharmaceutical Physical Chemistry (O)

01:30 PM - 01:45 PM    **Coffee Break**

*Chairperson: dr Stevan Maćešić*

01:45 PM - 02:15 PM **PL-10**

**Ž. Čupić**

*Importance of feedback loops and rhythmicity in neuroendocrine systems*

02:15 PM - 02:30 PM

**Coffee Break**

*Chairperson: dr Dunja Drakulić*

02:30 PM - 02:50 PM **O-01-SL**

**J. Martinovic, S. Ivkovic, M. Zaric Kontic, I. Gusevac Stojanovic, N. Mitrovic, I. Grkovic, J. Samardzic**

*Different effect of zaleplon on gabaergic signaling in the prefrontal cortex and hippocampus of male wistar rats*

02:50 PM - 03:10 PM **O-02-SL**

**M. B. Čolović**

*Toxicity evaluation of promising contrast-enhancing staining agents for micro-computed tomography*

*Chairperson: dr Stevan Maćešić*

03:10 PM - 03:40 PM **PL-11**

**G. S. Yablonsky**

*A brief history of time in chemistry*

**Thursday, September 29<sup>th</sup>**

*Chairperson: dr Olga Jakšić*

10:00 AM - 10:30 AM    **PL-12**    **N. Vasilyeva**, A Vladimirov  
*Nonlinear dynamics and deterministic chaos  
in soil microbial activity*

10:30 AM - 11:00 AM    **PL-13**    **A. G. Silva**, J. Fonseca, T. Bendikov, Z. Li, K.  
Pedersen  
*Al and Ga heterostructures on  
SiO<sub>2</sub>/SiC/Si(111)*

11:00 AM - 11:10 AM    **Coffee Break**

*Chairperson: dr Stevan Blagojević*

11:10 AM - 11:30 AM    **I-01-SL**    **Z. Jakšić**  
*Freestanding or free-floating nanomembranes  
in nanophotonics and nanoplasmonics*

11:30 AM - 11:50 AM    **L-01-SL**    **I.I. Grinvald**, R.V. Kapustin  
*Formation and structure of transient phase  
state near solid surface in organic systems*

11:50 AM - 12:00 AM    **Coffee Break**

12:00 PM - 01:30 PM    **POSTER SESSION**

*Chairpersons: dr Sonja Jovanović, dr Ivan Stefanović*

Education and History (A)

Environmental Protection, Forensic Sciences, Geophysical Chemistry,  
Radiochemistry, Nuclear Chemistry (K)

01:30 PM - 01:45 PM    **Coffee Break**

*Chairperson: dr Srđan Petrović*

01:45 PM - 02:15 PM     **PL-14**

**J. Pérez-Mercader**

*How oscillatory chemistry computes and what one can do with it*

02:15 PM - 02:30 PM

**Coffee Break**

*Chairperson: dr Srđan Petrović*

02:30 PM - 02:50 PM

**K-01-SL**

D. A. Gkika, N. Malesic-Eleftheriadou, E. Evgenidou, M. Lazaridou, D. N. Bikiaris, D.A. Lambropoulou, A. C. Mitropoulos, **G. Kyzas**

*Chitosan-modified polymeric material for wastewater treatment*

02:50 PM - 03:00 PM

**K-02-O**

D. Đukić, **A. Krstić**, I. Bracanović, A. Kalijadis, K. Jakovljević, M. Mirković  
*Lemna minor as an indicator of potentially toxic elements on the Begej river surface*

**Friday, September 30<sup>th</sup>**

*Chairperson: dr Marija Gizdavić-Nikolaidis*

10:00 AM - 10:30 AM    **PL-15**    **P. Humpolíček**  
*Biocompatibility of conducting polymers*

10:30 AM - 11:00 AM    **PL-16**    **M. B. Plavšić, M. M. Plavšić**  
*Membrane rheology theory of targeted release materials*

11:00 AM - 11:10 AM    **Coffee Break**

*Chairperson: dr Dragomir Stanisavljev*

11:10 AM - 11:30 AM    **J-01-SL**    **M. Gizdavić-Nikolaidis, J. M. Pupe, A. Jose, I. N. Bujanja, L. P. Silva, D. Stanisavljev, D. Svirskis, S. Swift**  
*Fast and facile enhanced microwave approach for eco-friendly polymer synthesis: the example of polyaniline/chitosan composite*

11:30 AM - 11:50 AM    **J-02-SL**    **Z. Žujović, E. Wai Chi Chan, J. Travaš-Sejdić**  
*Solid-state NMR of negatively charged polyanionic acid side chains grafted onto poly(3-hexylthiophene): structure and molecular dynamics*

11:50 AM - 12:00 AM    **Coffee Break**

12:00 PM - 01:30 PM    **POSTER SESSION**

*Chairpersons: Hristina Šalipur, Gordana Stevanović*

Material Science    **(H)**  
Macromolecular Physical Chemistry    **(J)**

01:30 PM - 01:45 PM    **Coffee Break**

*Chairperson: dr Milovan Stoilković*

01:45 PM - 02:15 PM     **PL-17**     **D. Peddis**  
*Design advanced magnetic nanocomposites*

02:15 PM - 02:30 PM     **Coffee Break**

*Chairperson: dr Milovan Stoilković*

02:30 PM - 02:40 PM     **H-01-O**     D. Četković, A. Dožić, A. Despotović, K. Janjetović, N. Zogović, **Dj. Antonijević**  
*Effect of various radiopacifiers on selected physical properties and cytotoxicity of calcium silicate based dental cement enriched with hydroxyapatite*

02:40 PM - 02:50 PM     **H-02-O**     A. Dožić, D. Četković, A. Despotović, K. Janjetović, N. Zogović, **Dj. Antonijević**  
*Surface morphology, compressive strength and biocompatibility of calcium aluminate dental cement*

02:50 PM - 03:00 PM     **H-03-O**     **M. Pejčić**, Ž. Mravik, D. Bajuk-Bogdanović, S. Uskoković-Marković, B. Nedić Vasiljević, S. Jovanović, Z. Jovanović  
*The modification of surface chemistry of GO and GO/WPA nanocomposites for decolorization of methylene blue*

03:00PM – 03:30 PM     **PL-18**     **R. Leblanc**  
*Carbon dots as novel cargo for drug delivery in modern medical healthcare*

### **Closing session**

03:30 PM - 03:40 PM     **Slobodan Anić**  
President of the Society of Physical Chemists of Serbia

**Željko Čupić**  
University of Belgrade, Institute of Chemistry,  
Technology and Metallurgy



## POSTERS

### (A) EDUCATION AND HISTORY

- A-01-P** **T. Halaši**, S. S. Kalamković, M. Ž. Kalamković, J. M. Kalamković  
*Lars Onsager*
- A-02-P** **T. Halaši**, S. S. Kalamković, M. Ž. Kalamković, J. M. Kalamković  
*Fritz Haber*
- A-03-P** **T. Halaši**, S. S. Kalamković, M. Ž. Kalamković, J. M. Kalamković  
*Saul Dushman*

### (B) SPECTROSCOPY, MOLECULAR STRUCTURE, PHYSICAL CHEMISTRY OF PLASMA

- B-03-P** M. Žižić, M. Stanić, I. Rodić, T. Cvetić Antić, M. Živić, **J. Zakrzewska**  
*Production and characterisation of selenium nanoparticles by mycelium of fungus phycomyces blakesleeanus*
- B-04-P** M. Žižić, M. Stanić, G. Aquilanti, T. Cvetić Antić, N. Todorović, M. Živić, **J. Zakrzewska**  
*Selenite metabolism in the mycelium of the fungus phycomyces blakesleeanus*
- B-05-P** **J. Petrović**, J. Marinković, S. Živković, D. Marković, M. Momčilović  
*Application of LIBS technique for dental analysis*
- B-06-P** **J. Petrović**, J. Savović, D. Ranković, M. Kuzmanović  
*Quantitative analysis of the major elements in coal using laser induced breakdown spectroscopy based on tea CO<sub>2</sub> laser*
- B-07-P** **A. Šajić**, D. Ranković, M. Savić, J. Savović, M. Kuzmanović  
*Determination of nickel, cobalt, and chromium in a soda-lime glass by using LIBS based on pulsed IR laser*
- B-08-P** **D. Dimić**, Ž. Milanović, M. Antonijević, A. Rakić, Z. Marković, D. Milenković, J. Dimitrić Marković  
*Spectroscopic and theoretical analysis of 6-hydroxydopamine, a neurotoxin*
- B-09-P** **M. Marković**, D. Ranković, M. Kuzmanović, D. Milovanović, J. Savović  
*Profilometric analysis of pig bone damage in LIBS measurements based on tea CO<sub>2</sub> laser*

- B-10-P** **M. G. Nikolić**, N. S. Krstić, G. M. Nikolić  
*Electron spin resonance study of the product of prolonged autoxidation of hydroquinone in alkaline aqueous solution*
- B-11-P** **N. Nikolić**, M. Pagnacco, J. Maksimović, S. Blagojević, J. Senčanski  
*Molecular structure optimization and deconvolution of complex Raman spectrum bands vibrations of indigo carmine*

**(C) KINETICS, CATALYSIS**

- C-03-P** **G. Stevanović**, N. Jović-Jovičić, A. Popović, B. Dojčinović, B. Milovanović, H. Šalipur, M. Ajduković  
*Kinetic and thermodynamic study of the oxidative catalytic degradation of tartrazine in the presence of Oxone<sup>®</sup> and cobalt supported chitosan-derived carbon-montmorillonite*
- C-04-P** **B. Milovanović**, S. Marinović, R. Petrović, P. Banković, T. Mudrinić  
*Kinetic study of glucose oxidation reaction on carbon paste electrode modified with pillared clay-supported cobalt*
- C-05-P** **G. M. Nikolić**, S. C. Živanović, A. M. Veselinović, M. G. Nikolić  
*The influence of pH and presence of Mg(II) ions on the kinetics of caffeic acid autoxidation in aqueous solutions*
- C-06-P** **N. Jović-Jovičić**, I. Ilić, M. Ajduković, A. Milutinović-Nikolić  
*Kinetic and thermodynamic study of nicotine degradation by Oxone<sup>®</sup> activated by cobalt based catalyst*
- C-07-P** **K. Milošević**, D. Lončarević, J. Dostanić  
*Simultaneous photodegradation of methylene blue and orange G dyes using g-C<sub>3</sub>N<sub>4</sub>/titanate heterojunction nanocomposite*
- C-08-P** **H. Šalipur**, J. Dostanić, D. Lončarević  
*Photocatalytic production of hydrogen on platinum doped titanate catalyst: influence of alcohol chain length*
- C-09-P** **V. Kosić**, S. Pavlović, N. Božić, B. Dojnov, G. Stevanović, Z. Knežević-Jugović, A. Milutinović-Nikolić  
*Immobilization of  $\alpha$ -amylase from bacillus aralicheniformis on bentonites*
- C-10-P** **S. Marinović**, T. Mudrinić, B. Milovanović, G. Stevanović, A. Milutinović-Nikolić  
*Effect of different cobalt loadings on the kinetic performance of cobalt-supported aluminum pillared clay towards tartrazine degradation*

**C-11-P** **S. Marinović**, T. Mudrinić, M. Ajduković, N. Jović-Jovičić, P. Banković, T. Novaković  
*Catalytic properties of cobalt-doped alumina catalyst in oxone<sup>®</sup> activated degradation of orange g*

**(D) NONLINEAR DYNAMICS, OSCILLATORY REACTIONS, CHAOS**

**D-04-P** A. Joksimović, **I. N. Bubanja**, D. Stanisavljev  
*Gas evolution dynamics following oscillatory evolution in Bray-Liebhafsky and Briggs-Rauscher reactions*

**D-05-P** **N. Potkonjak**, Đ. Čokeša, M. Marković  
*On the influence of current interrupt method on stability of the electrochemical system - on the strange attractors*

**D-06-P** **M. Pagnacco**, J. Maksimović, N. Nikolić, S. Blagojević, J. Senčanski  
*Indigo carmine determining by UV/VIS spectrometric and the kinetic method using Briggs-Rauscher oscillator: two methods comparison*

**D-07-P** **A. M. Spasic**, V. Manojlovic, M. Jovanovic, M. Sokic  
*Theory of electroviscoelasticity and its possible application in quantum medicine*

**D-08-P** **S. Maćešić**, Ž. Čupić, Lj. Kolar-Anić  
*Stability analysis of autocatalator in the presence of diffusion using stoichiometric network analysis*

**D-09-P** **A. S. Stojiljković**, Ž. Čupić, S. Maćešić, A. Ivanović-Šašić, Lj. Kolar-Anić  
*Ultradian oscillations of corticotropin-releasing hormone (CRH) and arginine vasopressin (AVP) in modelling of hypothalamic-pituitary-adrenal axis: influence of feedback loop between CRH and cortisol*

**D-10-P** **S. Maćešić**, K. Novaković  
*Simulation of the swelling of pH responsive anionic hydrogel*

**D-11-P** **F. Muzika**, I. Valent,  
*Anti-phase oscillations and nonuniform stationary state in coupled glycolytic*

**(E) ELECTROCHEMISTRY**

**E-01-P** M. Pagnacco, V. Krstić, **Z. Mojović**  
*Hydrogen evolution reaction on Rhenium modified phosphate Mo- and phosphate W-bronze*

**E-02-P** A. Pavićević, F. Peyrot, **Z. Mojović**, M. Mojović  
*Electrochemical and EPR investigation of spin probes acetoxymethoxycarbonyl- and carboxy-proxyl*

- E-03-P** **A. Gavran**, Z. Mojović  
*Electrochemical behavior of activated carbon blacks*
- E-04-P** G. Tasić, S. Mitrović, **I. Perović**, N. Zdološek, M. Seović,  
P. Laušević, S. Brković  
*Electrocatalytic activity of Co-W coatings for hydrogen  
production*
- E-05-P** S. Mitrović, S. Brković, N. Zdološek, G. Tasić, M. Seović,  
M. Čurčić, **I. Perović**  
*Efficient energy consumption for hydrogen production using  
Co-Mo based ionic activators*
- E-06-P** **J. Senčanski**, N. Nikolić, S. Blagojević, I. Stojković  
Simatović  
*The examination of  $ZnMnO_4$  in an aqueous solution of  $ZnCl_2$   
and  $Mn(NO_3)_2$*
- E-07-P** **D. Ž. Popović**, T. G. Ivanović, J. M. Miladinović, Z. P.  
Miladinović, F. T. Pastor, A. Zlatić  
*Thermodynamic properties of the system  $\{yNaCl+(1-y)Na_2HPO_4\}(aq)$  at  $T = 298.15$  K by electromotive force  
measurements*

**(F)** **BIOPHYSICAL CHEMISTRY, EPR  
INVESTIGATIONS OF BIO-SYSTEMS**

- F-03-P** K. Milićević, M. Lazarević, M. Momčilović, N. Todorović,  
B. Petković, G. Stojadinović, **Lj. Nikolić**  
*Naïve astrocytes react to CNS-infiltrated immune cells*
- F-04-P** **Lj. Nikolić**, M. Vidović, N. Todorović, B. Petković, G.  
Stojadinović, Lj. Martać, J. Bogdanović Pristov  
*Protoplast patch-clamping using an upright microscope with  
a movable stage*
- F-05-P** **M. B. Čolović**, G. Gajski, M. Gerić, N. Savić, D. Z. Krstić  
*Cytotoxicity evaluation of promising staining agents for  
contrast-enhanced microfocus computed tomography*
- F-06-P** **M. B. Čolović**, A.-M. Domijan, G. Gajski, M. Gerić, T.  
Parac-Vogt, D. Z. Krstić  
*Prooxidative properties of contrast agent candidates for  
micro-computed tomography*
- F-07-P** A.-M. Domijan, G. Gajski, M. Gerić, N. Savić, T. Parac-  
Vogt, D. Z. Krstić, **M. B. Čolović**  
*In vitro toxicity evaluation of potential contrast agents for  
micro-computed tomography: effect on cell membrane*
- F-08-P** **I. Guševac Stojanović**, J. Martinović, M. Zarić Kontić, N.  
Mitrović, Z. Stojanović, I. Grković, D. Drakulić  
*Modest protective effects of progesterone treatment in  
hippocampus of male rats submitted to cerebral hypoperfusion*

**F-09-P** *M. Pajovic, M. Aleksic, A. Zivanovic, M. Mitic, S. Ivkovic, M. Adzic, I. Lukic*  
*The effects of fecal microbial transplantation from adolescent stressed mice on depressive- and anxiety-like behavior*

**F-10-P** **J. Simonović Radosavljević**, D. Mutavdžić, D. Spasojević, M. Prokopijević, K. Radotić, A. Lj. Mitrović  
*FTIR analysis of normal and tension wood in Populus X Euramericana*

**(G) ORGANIC PHYSICAL CHEMISTRY**

**G-02-P** **A. M. Veselinović**, J.V. Živković, G. M. Nikolić  
*Predicting the auto-ignition temperatures of organic compounds based on monte carlo optimization method*

**G-03-P** **J. Aleksić**, M. Stojanović, M. Baranac-Stojanović  
*Substituent effect at the nitrogen atom on electrocyclization reaction of polyfunctionalized 1-azatrienes*

**G-04-P** **A. Rašović**, M. Stojanović, V. A. Blagojević  
*The correlation between the C=C bond lengths and its barriers to rotation: en route to quantify the push-pull effect of 2-alkylidene-4-oxothiazolidines under solvent conditions*

**G-05-P** **A. Rašović**, M. Stojanović, V. A. Blagojević  
*The impact of solvent dielectric constants on the barriers to rotation around the C=C bond of 2-alkylidene-4-oxothiazolidines*

**(H) MATERIAL SCIENCE**

**H-04-P** **N. Velinov**, M. Radović Vučić, M. Kostić, M. Petrović, J. Mitrović, D. Bojić, A. Bojić  
*The effect of different solvents in the synthesis of wood-aluminum sorbents. Dye sorption investigation*

**H-05-P** M. Radović Vučić, **N. Velinov**, M. Kostić, J. Mitrović, M. Petrović, S. Najdanović, A. Bojić  
*Characterization of iron-bearing wood material for application in heterogeneous fenton-like process*

**H-06-P** M. Kostić, **N. Velinov**, M. Radović Vučić, S. Najdanović, T. Jovanović, D. Bojić, A. Bojić  
*Effect of pH and equilibrium studie for the dye sorption onto layered double hydroxide*

**H-07-P** D. Aćimović, **T. Brdarić**, B. Savić, D. Vasić Anićijević, M. Simić, J. Ciganović, M. Momčilović  
*Modification of graphite electrode surface by laser irradiation-role of irradiation atmosphere*

- H-08-P** **T. Brdarić**, B. Savić, D. Aćimović, M. Simić, M. Ječmenica Dučić, Z. Vranješ, D. Vasić Anićijević  
*Comparative study of oxygen evolution reaction kinetics on nanocomposite metal oxide-carbon-base anodes*
- H-09-P** D. Vasić Anićijević, M. Ječmenica Dučić, D. Aćimović, B. Savić, M. Simić, D. Maksin, **T. Brdarić**  
*Is it possible to design a water-resistant material for carbon capture?*
- H-10-P** M. Vuksanović, **I. M. Stajčić**, Z. Veličković, J.D. Gržetić, F. Veljković, S. Veličković, A. Marinković  
*Synthesis and application of waste-pet glycolyzate plastisizer for recycled pvc production*
- H-11-P** **M. Kokunešoski**, M. Pošarc-Marković, Dj. Katnić, Z. Bašcarević, S. Ilić, A. Grc, A. Šaponjić  
*Modifying mesoporous SBA-15 by a microencapsulation method in the matrix of sodium alginate*
- H-12-P** **A. Šaponjić**, M. Kokunešoski, S. Ilić, A. Radosavljević Mihajlović, T. Barudžija, B. Matović  
*Silicon nitride based powders obtained by carbothermal reduction and nitridation of diatomite*
- H-13-P** **N. Nikolić**, A. Radosavljević, J. Spasojević, U. Stamenović, V. Vodnik, J. Tadić, Z. Kačarević-Popović  
*Physico-chemical characterization of Bi-layered Au-PNiPAAm/PVA hydrogel nanocomposites*
- H-14-P** M. Ivanović, **A. Krstić**, S. Knežević, S. Nenadović, Lj. Kljajević, M. Mirković, M. Nenadović  
*Effects of high-temperature heat treatment on structural properties of alkali-activated materials*
- H-15-P** **M. M. Vasić**, I. Stojković Simatović, D. M. Minić  
*Corrosion behavior of Fe-based amorphous and amorphous/nanocrystalline alloys in different media*
- H-16-P** **M. Perić**, M. Radović, M. Mirković, Z. Milanović, D. Stanković, A. Vukadinović, Đ. Petrović, D. Janković, S. Vranješ-Đurić, I. Krstić, M. Kuraica  
*The analysis of 2,3-dicarboxipropane-1,1- diphosphonic acid-coated magnetite nanoparticles under an external magnetic field*
- H-17-P** **M. M. Milić**, N. Jović Orsini  
*Structural and optical properties of crystalline TiO<sub>2</sub> nanoparticles – effect of heat treatment*

<b>(J) MACROMOLECULAR PHYSICAL CHEMISTRY</b>	
<b>J-03-P</b>	J. V. Džunuzović, <b>I. S. Stefanović</b> , E. S. Džunuzović, S. J. Brzić, C. Marega <i>The influence of TiO<sub>2</sub> nanoparticles on viscoelastic properties and thermo-oxidative stability of polyurethane network</i>
<b>J-04-P</b>	<b>I. S. Stefanović</b> , J. V. Džunuzović, E. S. Džunuzović, C. Marega <i>Structure and mechanical properties of polyurethane/organoclay nanocomposites</i>
<b>J-05-P</b>	J. V. Džunuzović, I. S. Stefanović, E. S. Džunuzović, C. Marega <i>Preparation and swelling properties of polyurethane/TiO<sub>2</sub> nanocomposites</i>
<b>J-06-P</b>	<b>J. Tadić</b> , A. Radosavljević, N. Nikolić, J. Spasojević, Z. Kačarević-Popović <i>Vanillin-crosslinked chitosan as bio-functional material: effect of molecular weight on swelling, porosity and degradation properties</i>
<b>J-07-P</b>	<b>B. M. Marković</b> , T. T. Tadić, A. B. Nastasović, N. Radić, Z. M. Vuković <i>CO<sub>2</sub> capture by amine porous polymeric sorbent</i>
<b>J-08-P</b>	<b>B. M. Marković</b> , T. T. Tadić, Lj. T. Suručić, A. B. Nastasović, Z. P. Sandić, A. Onjia <i>Non-linear kinetic isotherms and thermodynamic behavior of As(V) onto hybrid nanocomposite</i>
<b>J-09-P</b>	<b>T. T. Tadić</b> , B. M. Marković, A. B. Nastasović, Lj. T. Suručić, A. E. Onjia <i>Application of macroporous nanocomposite in microextraction of aromatic amine from water</i>
<b>J-10-P</b>	<b>M. M. Plavšić</b> <i>Polymer-saccharide conjugates IV. Possibilities for incorporation of oscillatory response for anti-stress protection</i>
<b>J-11-P</b>	<b>M. M. Plavšić</b> <i>Mechanisms of polymer supramolecular structures formation for mass and heat transport control in cell systems under stress</i>

(K)	ENVIRONMENTAL PROTECTION, FORENSIC SCIENCES, GEOPHYSICAL CHEMISTRY, RADIOCHEMISTRY, NUCLEAR CHEMISTRY
K-03-P	<p><b>A. Čučulović</b>, J. Stanojković, R. Čučulović, S. Nestorović, N. Radaković  <i>Radioactivity in soil from region Donji Milanovac, np Đerdap in 2018-2020</i></p>
K-04-P	<p><b>I. Smičiklas</b>, M. Jović, A. Čupić, S. Dragović  <i>Manganese removal from acidic mine effluents by thermally treated bovine bones</i></p>
K-05-P	<p><b>J. Avdalović</b>, N. Lugonja, T. Šoštarić, M. Lukić, J. Milić, J. Milojković, V. Conić  <i>Recovery of copper from ore dump using bioleaching approach</i></p>
K-06-P	<p>T. Šoštarić, J. Milojković, <b>J. Avdalović</b>, N. Lugonja, V. Adamović, A. Antanasković, Z. Lopičić  <i>Removal efficiency of Pb(II), Zn(II) and Cu(II) in mono- and multimetal systems by alkali treated apricot shells biosorbent</i></p>
K-07-P	<p>V. Milanković, T. Tasić, S. Mitrović, S. Brković, <b>I. Perović</b>, T. Lazarević-Pašti  <i>Spent coffee grounds as an adsorbent for malathion and malaoxon</i></p>
K-08-P	<p><b>T. Stanišić</b>, M. Đolić, M. Ristić, A. Perić Grujić  <i>Comparative analysis of Pb<sup>2+</sup> separation using natural and synthetic silicate materials</i></p>
K-09-P	<p><b>M. Maletić</b>, A. Lazović, N. Karić, M. Vukčević, K. Trivunac, M. Ristić, A. Perić-Grujić  <i>Fly ash modified waste cotton and cotton-polyester yarns for removal of heavy metals from water</i></p>
K-10-P	<p><b>M. Vukčević</b>, M. Maletić, N. Karić, B. Pejić, K. Trivunac, A. Perić Grujić  <i>Modification of cellulose-based waste materials for removal of methylene blue from wastewater</i></p>
K-11-P	<p><b>N. Karić</b>, M. Vukčević, M. Maletić, M. Ristić, A. Perić-Grujić, K. Trivunac  <i>The effect of starch modification on the dye adsorption efficiency</i></p>
K-12-P	<p><b>A. Vasić</b>, N. Nišić, K. Nikolić, I. Kandić, M. Stojmenović, J. Gulicovski, M. Kragović  <i>Influence of pH of aqueous solutions on xanthates removal by using waste slag</i></p>



- K-13-P** T. Tasić, V. Milanković, **M. Kokunešoski**, A. Šaponjić, A. Valenta Šobot, A. Grce, T. Lazarević-Pašti  
*Wood-waste-derived activated porous carbon material for pesticide removal from water*
- K-14-P** **K. Popović**, M. Antonijević Nikolić, B. Dražić, S. Tanasković  
*The potential health risk of heavy metals in herbal tea commercially available in Šabac, Serbia*
- K-15-P** K. Kokanov, T. Tasić, V. Milanković, **N. Potkonjak**, T. Lazarević-Pašti  
*Malathion remediation in water by biowaste-based carbon material*
- K-16-P** **A. Krstić**, I. Bracanović, P. Batinić, D. Vasić-Anićijević, Dj. Katnić, A. Kalijadis  
*Removal of pharmaceutical residues from aqueous solution by doped cryogels materials*
- K-17-P** G. Devic , M. Pergal, M. Pergal  
*Characterization of groundwater quality in the alluvial area of Danube River near Kostolac Basin, Serbia using chemometric techniques*
- K-18-P** G. Devic , M. Pergal, M. Pergal  
*Heavy Metal Contents and Assessment of Soil Contamination in Kostolac basin, Serbia*
- K-19-P** **N. Sarap**, M. Ničić, M. Janković  
*Content of <sup>90</sup>Sr in monastery spring waters*

**(M) COMPLEX COMPOUNDS**

- M-01-P** **M. Antonijević Nikolić**, B. Dražić, S. Tanasković  
*New macrocyclic Cu(II) complexes with leucine/isoleucine co-ligands*
- M-02-P** **J. M. Živković**, S. S. Zrilić, S. D. Zarić  
*Comparison of NH...O interaction of coordinated ammonia and ethylenediamine*
- M-03-P** M. Došić, T. Eichhorn, **D. Dimić**, J. Dimitrić Marković, E. Avdović, N. Pantelić, D. Simijonović, G. N. Kaluđerović  
*Novel Ru(II) complex with 1-naphthylhydrazine - synthesis, structural characterization, and interactions with transport protein*
- M-04-P** S. Mišić, T. Eichhorn, F. Kolbe, **D. Dimić**, J. Dimitrić Marković, T. Ruffer, D. Milenković, J. Đorović Jovanović, N. Pantelić, G. N. Kaluđerović  
*Binuclear ruthenium(II) complex with 1-naphthylhydrazine – structural optimization, hirshfeld surface analysis, and bovine serum albumin binding studies*

**(N)****FOOD PHYSICAL CHEMISTRY**

- N-01-P** N. Lugonja, **J. Avdalović**, M. Ilić, Z. Lopičić, T. Šoštarčić, D. M. Stanković, S. Spasić  
*Contemporary methods of testing human milk quality*
- N-02-P** **S. Zlatanović**, D. Micić, M. Đuriš, S. Ostojić, F. Pastor, M. Jovanović, S. Gorjanović  
*Enhancement of nutritional, physical and structural characteristics of apple pomace flour by agglomeration with prebiotics using fluid-bed granulation*
- N-03-P** **N. Đorđević**, N. Todorović Vukotić, L. Korićanac, J. Žakula, S. Pejić, S. B. Pajović, V. Tešević  
*Phenolic composition and cytotoxic activity of red wine*
- N-04-P** S. Gorjanović, F. Pastor, D. Micić, **S. Zlatanović**  
*Tomato and carrot pomace flour produced at industrial scale level by dehydration as a nutrient source in food fortification*
- N-05-P** **F. Veljković**, S. Veličković, N. Manić, I. Stajčić, B. Janković  
*TG-DTG analysis of fruit-based waste pyrolysis: a case study of goji berry mesocarp*
- N-06-P** **Đ. Nakarada**, D. Milosavljević, J. Milivojević, J. Dragišić Maksimović, M. Mojović  
*Antiradical activity of new strawberry cultivar extracts incorporated into liposomes – an EPR study*
- N-07-P** A. Gavran, A. Jevremović, D. Bajuk-Bogdanović, M. Milojević-Rakić, M. Mojović, **A. Pavićević**  
*Microwave assisted isolation of pectin from red orange peels using green solvents*

**(O)****PHARMACEUTICAL PHYSICAL CHEMISTRY**

- O-03-P** **M. Zarić Kontić**, M. Dragić, J. Martinović, K. Mihajlović, N. Mitrović, I. Guševac Stojanović, I. Grković  
*Prolonged alprazolam treatment differentially modulates the protein expression of excitatory amino acid transporters 1 and 2 both in vivo and in vitro*
- O-04-P** **M. Popović Nikolić**, M. Čakar, G. Popović  
*The protolytic equilibria of raloxifene*
- O-05-P** **M. Popović Nikolić**, J. Mudrić, G. Popović  
*The determination of the ionization profile of ceftazidime*
- O-06-P** **Lj. Nikolić**, D. Savić, J. Korać Jačić, B. Petković, G. Stojadinović, Lj. Martać, J. Bogdanović Pristov  
*Membrane currents of C6 cells in pharmacological investigation*

- O-07-P** **M. Radović**, M. Mirković, M. Perić, A. Vukadinović, D. Stanković, Z. Milanović, Đ. Petrović, D. Janković and S. Vranješ-Đurić  
*<sup>177</sup>Lu-phosphate and phosphonate magnetic nanoparticles as potentialtheranostic nanoagents*
- O-08-P** **Z. Milanović**, M. Radović, D. M. Stanković, M. Perić, A. Vukadinović, Đ. Petrović, D. Janković, S. Vranješ Đurić, M. Mirković  
*The electrochemical characterization, radiolabeling, and biodistribution in tumor-bearing mice of <sup>177</sup>Lu-doxycycline*
- O-09-P** **M. Čarapić**, M. Petković, B. Marković, M. Popović Nikolić, D. Agbaba, K. Nikolic  
*Characterization of unknown impurity of ziprasidone with NMR spectroscopy*
- O-10-P** A. Zivanovic, M. Mitic, E. Glavonic, I. Lukic, M. Adzic, **S. Ivkovic**  
*Inhibition of kappa opioid receptor (KOR) augments ketamine anti-depressive properties in the mouse model of depression*
- O-11-P** **A. M. Bondžić**, D. Jovanović  
*Quenching of bovine serum albumin fluorescence by methionine coated silver nanoparticles: insight in the mechanism of interaction*
- O-12-P** **A. M. Bondžić**, D. Jovanović, Z. Džambaski, A. Filipović, B. P. Bondžić  
*New derivatives of 2-phenyl-1,2,3,4-tetrahydroisoquinoline as dual inhibitors of cholinergic enzymes*
- O-13-P** **A.M. Bondžić**, N. D. Savić, T.N. Parac-Vogt  
*Zr(IV)-substituted Keggin type polyoxotungstates as acetylcholinesterase inhibitors*
- O-14-P** **D. Spasojević**, D. Mutavdžić, J. Simonović Radosavljević, A. Lj. Mitrović, D. Đikanović, K. Radotić  
*Kinetic release study of synthetic lignin (DHP) from calcium alginate beads*
- O-15-P** **M. Ranković**, A. Janošević Ležaić, A. Jevremović, A. Arsenijević, V. Dobričić, B. Nedić Vasiljević, D. Bajuk-Bogdanović, M. Milojević-Rakić  
*Zeolite carriers for the acridine derivatives delivery*
- O-16-P** D. Mašojević, V. Vodnik, J. Spasojević, T. Barudžija, M. Otoničar, S. Davidović, **U. Stamenović**  
*Antibacterial activity of copper/polypyrrole nanocomposite*