



# BOOK OF ABSTRACTS

**First International Conference  
on Medical, Pharmaceutical and Cosmetic Chemistry,  
Household and Industrial Chemistry,  
Forensic and Analytical Chemistry  
Belgrade, Serbia 5 May 2026**

**2026**  
**ChemInno**  
When Science Meets Industry



**65 YEARS OF EXCELLENCE**  
**Institute**  
**of General and Physical Chemistry**



**First International Conference  
on Medical, Pharmaceutical and Cosmetic Chemistry,  
Household and Industrial Chemistry, Forensic and Analytical Chemistry  
ChemInno 2026**

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*Belgrade, Serbia, 5 May 2026*

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First International Conference on Medical, Pharmaceutical and Cosmetic Chemistry,  
Household and Industrial Chemistry, Forensic and Analytical Chemistry - ChemInno 2026

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**65 YEARS OF EXCELLENCE**

**Institute  
of General and Physical Chemistry**

Co-organizer: Academy of Applied Studies Belgrade, Belgrade, Serbia (AASB)



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**2026**  
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*This book contains the abstracts of  
8 plenary lectures  
21 invited lectures  
184 poster contributions,  
accepted for presentation at  
the First International Conference on Medical, Pharmaceutical and Cosmetic  
Chemistry, Household and Industrial Chemistry, Forensic and Analytical Chemistry  
ChemInno 2026*

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## SESSIONS

- 1. Physical Chemistry in Applied Science and Technology*
- 2. Pharmaceutical Formulations, Aesthetic Medicine*
- 3. Biotechnology, Medical & Cosmetic Chemistry*
- 4. Household Chemistry and Materials for Industry*
- 5. Sustainable Chemistry & Green Formulations*
- 6. Forensic & Analytical Chemistry*
- 7. Technological & AI-driven digital innovations*
- 8. Chemical Safety, Regulation, Standards & Knowledge Transfer*



# ChemInno 2026

– When Science Meets Industry –

8:00 – 9:00			
REGISTRATION			
9:00 – 9:20			
OPENING CEREMONY			
The Obilić Choir - the National Anthem of Serbia Ministry of Science, Technological Development and Innovation Prof. Dr. Darija Kisić, Director, Science Fund of the Republic of Serbia Dr. Saša Lazović, Director, Innovation Fund of the Republic of Serbia The Obilić Choir - "Ovo je Srbija"			
9:20-9:35			
Promotion video of the Institute of General and Physical Chemistry			
9:35 – 10:15			
PANEL DISCUSSION			
Jadranka Mirković – BIO4 Campus; Nevena Veljković – Genial; Sanja Krstić – Lab Queen; Danilo Vujošević – Continental; Goran Bijelić – Tecnalía; Rade Surudžić – Elixir			
10:15 – 10:20			
PHOTO SESSION			
TIME	HALL 1	TIME	HALL 2
	<b>Session 1: Physical Chemistry in Applied Science &amp; Technology</b> Chair: Zoran Šaponjić, Institute of General and Physical Chemistry (Serbia)		<b>Session 2: Pharmaceutical Formulations, Aesthetic Medicine</b> Chair: Andrej Podkoritnik, Belinka Perkemija (Slovenia)
10:20-10:30	<b>SPONSOR</b> Nataša Todorov, Elixir Group (Serbia) From Identifying Problems to Creating Value	10:20-10:40	<b>PLENARY LECTURE</b> Danijela Pecarski, Academy of Applied Studies Belgrade (Serbia) Dermal Engineering: The Role of Biomimetic Lipids and Smart Signaling Substances in Restoring the Compromised Skin Barrier
10:30-10:50	<b>PLENARY LECTURE</b> Zoran Žujović, Institute of General and Physical Chemistry (Serbia) Molecular Blueprints for Charge Transport: Probing the Semicrystalline Morphology of Poly(caprolactone)-graft-Oligo(3-hexylthiophene) by using Solid-State NMR	10:40-10:55	<b>INVITED LECTURE</b> Milica Lukić, University of Belgrade, Faculty of Pharmacy (Serbia) Defining the Boundaries Between Medicinal Products and Cosmetics in Aesthetic Practice
10:50-11:05	<b>INVITED LECTURE</b> Janez Cerkovnik, University of Ljubljana, Faculty of Chemistry and Chemical Technology (Slovenia) Stabilizing Molecules with Hydrogen-Bond Acceptors: Co-crystallization as a Valuable Strategy in Crystal Engineering	10:55-11:10	<b>INVITED LECTURE</b> Jelena Planojević Dahlia (Serbia) Guidelines for Monitoring Skin Barrier Parameters in the Evaluation of Cosmetic Product Efficacy
11:05-11:20	<b>INVITED LECTURE</b> Ljubica Vasiljević, University of East Sarajevo, Faculty of Technology in Zvornik (Bosnia and Herzegovina) Synthetic Zeolites, Key Materials in Chemical Processes and Industry	11:10-11:20	<b>SPONSOR</b> Špela Kunej, Asja Graphy Bio Institute (Israel) A Novel Stabilized Ethosomal Gel for Enhanced Delivery of Bioactive Compounds
11:20-11:40	<b>COFFEE BREAK</b>		
	<b>Session 3: Biotechnology, Medical &amp; Cosmetic Chemistry</b> Chair: Milena Opačić, Johnson & Johnson (The Netherlands)		<b>Session 4: Household Chemistry &amp; Materials for Industry</b> Chair: Aleksandar Đorđević, Institute of General and Physical Chemistry (Serbia)
11:40-11:50	<b>SPONSOR</b> Sanja Krstić, Lab Queen (Serbia) Turning Problems into Solutions: The Journey Behind Lab Queen	11:40-11:50	<b>SPONSOR</b> Vladislav Živanić, BS BG Technology Towards Smarter Skies: Optimization of AgI Aerosol Generation for Drone-Based Cloud Seeding Applications



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11:50-12:10	<b>PLENARY LECTURE</b> <b>Jelena Pajnik, Technical University Munich (Germany)</b> Functional Porous Polymer-Zeolite Composites as Carriers for Bioactive Compounds	11:50-12:10	<b>PLENARY LECTURE</b> <b>Stevan Blagojević, Institute of General and Physical Chemistry (Serbia)</b> Physical Chemistry in Household Cleaning Formulations Development
12:10-12:25	<b>INVITED LECTURE</b> <b>Miloš Mojović, University of Belgrade, Faculty of Physical Chemistry (Serbia)</b> Nanocarriers for Bioactive Compounds: Bridging Research and Real-World Performance	12:10-12:25	<b>INVITED LECTURE</b> <b>Zorica Svirčev, University of Novi Sad, Faculty of Sciences (Serbia)</b> Pan-Life-Carpet for Terrestrial Surface Restoration and Pollution Mitigation
12:25-12:40	<b>INVITED LECTURE</b> <b>Jelena Dikić, Innovation Center of the Faculty of Technology and Metallurgy (Serbia)</b> Zeolite-Based Materials as Novel Antibacterial Agents	12:25-12:40	<b>INVITED LECTURE</b> <b>Andrej Podkoritnik, Belinka Perkemija (Slovenia)</b> A 3-in-1 Hydrogen Peroxide-Based Liquid Detergent for Effective Low-Temperature Laundering
12:40-14:20	<b>POSTER SESSION</b>		
13:20-14:20	<b>LUNCH</b>		
<b>TIME</b>	<b>Hall 1</b>		<b>TIME</b>
		<b>Hall 2</b>	
14:20-14:35	<b>INVITED LECTURE</b> <b>Ivana Drvenica, Institute for Medical Research, National Institute of the Republic of Serbia (Serbia)</b> Tailoring Natural Zeolite through Mechanical Activation for Targeted Biomedical Applications		<b>Session 5: Sustainable Chemistry &amp; Green Formulations</b> Chair: Katarina Dimić-Mišić, Institute of General and Physical Chemistry (Serbia)
14:35-14:50	<b>INVITED LECTURE</b> <b>Ivan Lazarević, Jango Technology (Serbia)</b> Biofilm in Industrial Water Systems: Challenges in Detection, Monitoring, and Remediation	14:20-14:40	<b>PLENARY LECTURE</b> <b>Patrick Gane, Aalto University (Finland)</b> Composite Design for the Circular Economy: Embracing Sustainable Filler-Cellulose Interactive Bioproduct Composite Regeneration
14:50-15:05	<b>INVITED LECTURE</b> <b>Lidija Izrael Živković, Institute of Chemistry in Medicine, School of Medicine, University of Belgrade (Serbia)</b> The Impact of Nanomaterials on Bacteria and Enzyme Systems	14:40-14:55	<b>INVITED LECTURE</b> <b>Srećko Stopić, RWTH Aachen University (Germany)</b> Sustainable Chemistry with Green Formulations in Transformation of Bauxite Residues into Metals
15:05-15:15	<b>INVITED LECTURE</b> <b>Anup Paul, Portalegre Polytechnic University (Portugal)</b> Beyond Platinum: Anticancer Activity of Cu(II), Sn(IV), and Ruthenium Complexes	14:55-15:10	<b>INVITED LECTURE</b> <b>Jelena Trifković, University of Belgrade, Faculty of Chemistry (Serbia)</b> Green Extraction of Bioactives from Fruit and Vegetable By-products for Food Applications
15:15-15:35	<b>INVITED LECTURE</b> <b>Nicolina Pop, Polytechnica University of Timisoara (Romania)</b> Structural Defects Analysis of Layered Double Hydroxides for Biomedical Applications	15:10-15:25	<b>INVITED LECTURE</b> <b>Marijana Ponjavić, University of Belgrade Institute of Molecular Genetics and Genetic Engineering (Serbia)</b> Corn Stover-Derived Biocomposites: Enabling Circularity in Material Development
15:35-15:50		15:25-15:35	<b>SPONSOR</b> <b>Zoran Aksentijević, Aksemt (Serbia)</b> Bioengineering of the skin and instrumental proof of the preparation
	<b>COFFEE BREAK</b>		



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	<b>Session 6: Forensic &amp; Analytical Chemistry</b> Chair: Vladimir Nikolić, Institute of General and Physical Chemistry (Serbia)	<b>Session 7: Technological &amp; AI-Driven Digital Innovations</b> Chair: Boris Rajčić, Institute of General and Physical Chemistry (Serbia)
15:50-16:10	<b>PLENARY LECTURE</b> <b>Dušan Dimić, University of Belgrade, Faculty of Physical Chemistry (Serbia)</b> From Molecular Structure to Biological Activity: Quantum Chemistry and Molecular Modeling in Forensic Science	<b>PLENARY LECTURE</b> <b>Nevena Veljković, Genial (Serbia)</b> From Expert Workflows to Scalable Biomedical Analytics: Bridging Science and Industry
16:10-16:25	<b>INVITED LECTURE</b> <b>Živoslav Tešić, University of Belgrade, Faculty of Chemistry (Serbia)</b> Polyphenols of Domestic Grapevine Variety from Serbia	<b>INVITED LECTURE</b> <b>Tomaž Fakin, Silkem (Slovenia)</b> Zeolites - Small Pores, Great Solutions
16:25-16:40	<b>INVITED LECTURE</b> <b>Nikola Milašinović, Faculty of Forensic Sciences and Engineering (Serbia) – INV</b> New Frontiers and Sustainable Strategies for Next-Generation Latent Fingerprint Visualization	<b>INVITED LECTURE</b> <b>Dušan Malenov, University of Belgrade, Faculty of Chemistry (Serbia)</b> Digital Tools for Knowledge Transfer - CSD4NCI Workshop
16:40-17:00	<b>INVITED LECTURE</b> <b>Biljana Stankov, University of Belgrade, Institute of Physics, National Institute of the Republic of Serbia</b> Acoustic Signatures in LIBS-Based Detection of Explosive Traces	<b>Session 8: Chemical Safety, Regulation, Standards &amp; Knowledge Transfer</b> Chair: Boris Rajčić, Institute of General and Physical Chemistry (Serbia)
		<b>PLENARY LECTURE</b> <b>Marijana Milosavljević MNS Center (Serbia)</b> Endocrine Disruptors Between Science and Law
17:00-17:30	<b>CLOSING REMARKS &amp; AWARD</b>	

**P3.27 From Biochemistry to Cosmetology: Epigenetic Approaches for Safe Anti-Aging Skin Treatments**

J. Savić, A. Božić, J. Arsić, D. Brkić, M. Stamenović

**P3.28 Low light Stress Modulates Redox Metabolism in *Chlamydomonas acidophila* Pm01**

F. Sekereš, J. Danilović Luković, I. Santrač, V. Ćurić, M. Tanović, M. Žižić, M. Dimitrijević, S. Kovačević, M. Stanić, I. Spasojević

**P3.29 Cloning and Expression of a Recombinant Monovalent Anti-TNT scFv Antibody**

M. Simonović, A. Radulović, I. Vuković, V. Nešić, M. Jovanović

**P3.30 Selective Uptake and Biosorption of Rare Earth Elements in *Chlamydomonas acidophila* Strains**

M. Tanović, M. Dimitrijević, M. Stanić, M. Žižić, J. Danilović Luković, S. Kovačević, I. Santrač, V. Ćurić, I. Spasojević

**P3.31 Use of Cosmetic and Wellness Treatments Among Young Adults**

M. Trajkov, G. Grbić, Lj. Šimpraga

**P3.32 The use of cosmetic products in massage therapy**

M. Trajkov, D. Marinović, I. Mitrović

**P3.33 Synthesis and Characterization of Chitosan/Starch/Gelatin Composite Hydrogels Reinforced with Calcium Hydroxyapatite for Biomedical Applications**

N. Urošević, V. Ugrinović, Đ. Veljović

**P3.34 Influence of extraction solvent on different parts of *Galanthus nivalis* L. for antioxidant properties**

V. Veličković, G. Đelić, A. Ćirić, M. Pavlović, M. Luković

**P3.35 Taxifolin inhibits endovascular differentiation of human trophoblast cells**

A. Vilotić, G. Ilić, A. Pirković, M. Jovanović Krivokuća

**P3.36 Disruption of Monoamine Oxidase Enzymes by SARS-CoV-2 Spike Protein: From Molecular Insights to Potential Health Implications**

L. Vrbanić, J. Mavri, R. Vianello

## Selective Uptake and Biosorption of Rare Earth Elements in *Chlamydomonas acidophila* Strains

M. Tanović, M. Dimitrijević, M. Stanić, M. Žižić, J. Danilović Luković, S. Kovačević, I. Santrač, V. Čurić, I. Spasojević

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Rare earth elements (REEs) are essential for advanced technologies, including electronics, renewable energy, and catalysis, yet their recovery is challenging due to low natural concentrations and chemical similarity among elements [1]. Selected microalgal strains may serve the purpose selective uptake and separation of REEs from complex aqueous matrices. Acidophilic microalgae are particularly suitable for REE bio-extraction, as they can grow under low pH conditions in which REEs remain soluble and bioavailable. The species *Chlamydomonas acidophila* exhibits high tolerance to acidic environments at pH values as low as 1.5. This study aimed to evaluate the uptake capacity and the ability to preferentially accumulate individual REEs from a mixture in two *C. acidophila* strains (136 and PM01 isolated from two acid mines tailing ponds). Both strains were cultured in MAM medium at pH 3 and treated with a mixture of La, Ce, Pr, Eu, Sm, and Tb (0.2 mM each). After 24 h of treatment, biomass was collected and washed three times with deionized water or 1 mM EDTA (extracellular metal chelator) to distinguish between metals bound to the cell wall and metals accumulated inside the cell. ICP-OES analysis showed that all analyzed metals bind to the cell wall but are also accumulated intracellularly. Both strains preferentially accumulated Ce, Pr, and Eu, demonstrating selective interactions with specific REEs. Discrimination between  $\text{Eu}^{3+}$  and  $\text{Sm}^{3+}$  is of particular importance since these show very close ionic radii and are very hard to separate using conventional approaches [2]. These results demonstrate the importance of resolving surface-bound versus intracellular metals, highlighting the dominant role of cell wall interactions in apparent REE accumulation, and support the potential of acidophilic microalgae as efficient and selective biological systems for REE recovery from complex environments.

### Acknowledgements

This study was supported by the Ministry of Science and Technological Development of Serbia and the Science Fund of the Republic of Serbia and #7078– BioSynthClust.

### References

1. Vítová, M., Mezricky, D. (2024). Microbial recovery of rare earth elements from various waste sources: a mini review with emphasis on microalgae. *World Journal of Microbiology and Biotechnology*, 40(6), 189.
2. Li, X. Z., Zhou, L. P., Yan, L. L., Dong, Y. M., Bai, Z. L., Sun, X. Q., Diwu, J., Wang, S., Bünzli, J. C., Sun, Q. F. (2018). A supramolecular lanthanide separation approach based on multivalent cooperative enhancement of metal ion selectivity. *Nature communications*, 9(1), 547.

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## Low light Stress Modulates Redox Metabolism in *Chlamydomonas acidophila* PM01

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Light stress is a key factor in activating the antioxidative system in microalgae. Under intense light conditions, the reactive oxygen species (ROS) formation can lead to impairment of cellular structures [1]. Less is known about stress induced by low light conditions. *Chlamydomonas acidophila* is a microalga that thrives in acidic environments and exhibits unique adaptations in its photosynthetic processes [2]. In this study, we aimed to investigate the effect of reduced light intensity on ROS content and cell viability in the culture of *Chlamydomonas acidophila* strain PM01 during the early stationary growth phase. After 15 days of cultivation under optimal conditions, the culture was exposed to a two-fold lower light intensity for 1 h and 24 h. A slight increase in ROS levels was observed following 1 hour after treatment, followed by more pronounced rise after 24 hours. This did not affect cell culture viability, as the proportion of live cells remained above 90%. Acidophilic strains exhibit an enhanced capacity to regulate electron transport rates, likely reducing electron leakage and ROS formation under stress conditions [3], or accumulate high concentrations of lutein, a carotenoid with antioxidant properties, when exposed to different carbon sources and light conditions [4]. Our results show that short-term exposure to reduced light increases ROS level in *Chlamydomonas acidophila* PM01 without affecting viability, reflecting robust antioxidative regulation. These adaptive mechanisms could be harnessed in biotechnology for production of biomass under suboptimal environmental conditions.

### Acknowledgements

This study was supported by the Ministry of Science and Technological Development of Serbia and the Science Fund of the Republic of Serbia and #7078– BioSynthClust.

### References:

1. Murata, N., Takahashi, S., Nishiyama, Y., & Allakhverdiev, S. I. (2007). Photoinhibition of photosystem II under environmental stress. *Biochimica et Biophysica Acta - Bioenergetics*, 1767(6), 414–421.
2. Flexas, J., Bota, J., Galmés, J., Medrano, H., & Ribas-Carbó, M. (2006). Keeping a positive carbon balance under adverse conditions: responses of photosynthesis and respiration to water stress. *Plant, Cell & Environment*, 29(3), 347–369.
3. Zhan, D., Liu, Y., Yu, N., & Hao, C. (2024). Photosynthetic response of *Chlamydomonas reinhardtii* and *Chlamydomonas* sp. 1710 to zinc toxicity. *Frontiers in Microbiology*, 15, 1383360.
4. Del Campo, J. A., García-González, M., & Guerrero, M. G. (2008). Effect of abiotic stress on the production of lutein and  $\beta$ -carotene by *Chlamydomonas acidophila*. *Process Biochemistry*, 43(10), 1158–1161.

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