
Programme of the 22nd International Students Conference “Modern Analytical Chemistry”

Prague, 17—18 September 2026



FACULTY OF SCIENCE
Charles University

Prague 2026

General Information

The **conference will be held** at the Institute of Chemistry, Faculty of Science, Charles University (Hlavova 2030/8, 128 00 Prague 2) in the lecture hall CH1 (Brauner Theatre).

Registration will take place at the entrance to the building. It will be open on Thursday, September 17 from 7:30 to 8:20. Please contact the organizers in advance if you need to register later.

Oral presentations are limited to **15 minutes**, including discussion. Speakers are kindly asked to upload their PowerPoint presentations to the local computer in the lecture hall before the start of their session. We ask participants to adhere to the scheduled starting and finishing times indicated in the programme. The letter “P” followed by a number refers to the page of the abstract/contribution in the *Proceedings*.

Online participation is possible via Google Meet and requires only an internet connection, a microphone, and speakers or headphones. The link is: <https://meet.google.com/dmn-hzuz-pvj>. Please keep your speakers muted during your presentation to avoid unwanted echoes. Online presentations are indicated in the programme by the symbol .

Each session will be chaired by a designated conference participant. The **chairperson's responsibilities** include introducing each speaker, keeping track of time, and moderating and encouraging discussion after each presentation.

Coffee breaks will take place in the lecture hall.

Lunch will be served in the room G1 (the third door on the left from the main entrance) in the building Albertov 6 (directly opposite the Institute of Chemistry). A joint departure for lunch will be organized. The menu can be found on page 10.

Wi-Fi is available in the building; please use your eduroam account to connect.

Sponsors

The organizers of the 22nd International Students Conference “Modern Analytical Chemistry” gratefully acknowledge the munificent support of His Magnificence Prof. Dr. Jiří Zima, Rector of Charles University, as well as the generous sponsorship of the following companies:



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Programme

Thursday, September 17, 2026

7:30–8:20 **Registration of participants**

8:20–8:30 **Opening ceremony, welcoming address**

Session 1 • chairperson: Mr Tomáš Lener

8:30–8:45 Mr Dominik Müller (AGH University of Krakow, Poland):
Application of AAS method in analysis of zinc content in in vitro mushroom cultures of Pleurotus ostreatus fortified with zinc nanoparticles (P 63)

8:45–9:00 Ms Svetlana Pucovski (Charles University, Czech Republic):
A pilot study on the development of copper film-modified glassy carbon electrodes for the electrochemical detection of 2-nitrofluorene (P 56)

9:00–9:15 Mr Miloš Ilić (University of Belgrade, Serbia): *Development of an analytical protocol for microplastic isolation from human feces using Schweizer's reagent* (P 32)

9:15–9:30 Ms Martyna Drużyńska (AGH University of Krakow, Poland):
Design and performance of a potentiometric sensor for Pb(II) sensing (P 53)

9:30–9:45  Ms Joanna Pluta (Jagiellonian University, Poland): *Development of the White Analytical Chemistry optimization tool: A case study on the determination of organic acids in functional foods by capillary electrophoresis* (P 86)

9:45–10:00 Ms Lucie Dostálková (Charles University, Czech Republic):
Unraveling the oxidation mechanism of synthetic selaginpulvilins with a multidisciplinary approach (P 57)

10:00–10:15  Ms Olamide Akinbode (Warsaw University of Technology, Poland): *Capillary electrophoretic approach for elucidating nanoplastic–biomolecule interaction mechanisms* (P 34)

10:15–10:30 **Coffee Break**

Session 2 • chairperson: Ms Lenka Jánošíková

10:30–10:45 Ms Anna Pavlovová (Charles University, Czech Republic):
Potential of affinity proteomics in the analysis of honey adulteration (P 75)

10:45–11:00  Mr Karol Kubacki (Jagiellonian University, Poland):
Smartphone-based gold nanoparticle colorimetric method for gentamicin determination (P 90)

- 11:00–11:15  Ms Anna Bonczyk (Jagiellonian University, Poland):
A DPV method for simultaneous detection of Δ^9 -tetrahydrocannabinol and cannabidiol using screen-printed electrodes (P 93)
- 11:15–11:30  Ms Oliwia Świerczyna (Jagiellonian University, Poland):
Portable smartphone-based approach for the simultaneous determination of silicate and phosphate (P 91)
- 11:30–11:45 Ms Daria Mysiak (Poznań University of Technology, Poland):
Supramolecular deep eutectic solvents: Innovative extraction media for microextraction techniques (P 54)
- 11:45–12:00 Mr Michal Šerfel (University of Chemistry and Technology, Prague, Czech Republic): *Methylene blue-mediated electrochemical detection of blood traces* (P 3)
- 12:00–12:15 Mr Alexander Joy Panjikaran (Charles University, Czech Republic): *Field validation of a portable TXRF system for size-resolved elemental analysis of aerosols* (P 84)
- 12:15–13:00 **Lunch**
- Session 3 •** chairperson: Ms Sandra Chmiel
- 13:00–13:15 **Sponsor presentation:** doc. RNDr. Marek Minárik, Ph.D., MBA (Watrex Praha): *Sample-prep automation solutions for liquid-liquid and solid-phase extractions.*
- 13:15–13:30 **Sponsor presentation:** Ing. Matěj Stočes, Ph.D. (Metrohm Česká republika): *Why analytical chemistry matters: The Metrohm perspective*
- 13:30–13:45 **Sponsor presentation:** Mgr. Josef Michael Haupt (ALS Czech Republic): *Current challenges in a commercial analytical laboratory*
- 13:45–14:00 Ms Maryia-Mazhena Dzemidovich (University of Łódź, Poland): *Thin organic film electrode as a biomimetic platform for vincristine interfacial analysis* (P 42)
- 14:00–14:15 Ms Petra Lišková (Slovak University of Technology in Bratislava, Slovakia): *Deep eutectic solvents in microwave-assisted extraction: Thermal behavior, analyte interactions and application to cinnamon-containing foodstuffs* (P 46)
- 14:15–14:30 Mr Jakub Krakowski (AGH University of Krakow, Poland): *Assessment of the degree of element leaching from glass under environmental exposure conditions using atomic absorption spectrometry* (P 101)
- 14:30–14:45 Mr Vít Novotný (Charles University, Czech Republic): *A miniaturized electrode for the determination of herbicides in complex matrices* (P 82)

14:45–15:00 Coffee Break**Session 4** • chairperson: Mr Miloš Ilić**15:00–15:15 Sponsor presentation:** Ing. Václav Hellán (2Theta): *Sampling is the starting point of everything***15:15–15:30** Ms Sandra Chmiel (University of Łódź, Poland): *From sp^2 to sp^3 carbon: comparative voltammetric analysis of forchlorfenuron* (P 37)**15:30–15:45** Ms Lenka Jánošíková (University of Chemistry and Technology, Prague, Czech Republic): *Simultaneous visualisation of latent fingerprints and human scent analysis on brass surfaces* (P 16)**15:45–16:00** Mr Martin Šefčík (Charles University, Czech Republic): *Studying oxidative degradation of thiabendazole in a new 3D-printed electrochemical cell* (P 99)**16:00–16:15** Ms Renata Pípková (Charles University, Czech Republic): *Optimization of a sheath-liquid CE-MS interface for the analysis of amino acids and protein tryptic digests* (P 68)**16:15–16:30** Mr Fazal Wahab (Charles University, Czech Republic): *Electrochemical degradation using boron-doped diamond electrodes: Cavity-based versus surface-wave MW-PECVD* (P 80)**16:30–16:45** Ms Simona Horkelová (Charles University, Czech Republic): *Near-native characterization of monoclonal antibodies by an MS-compatible CZE method* (P 44)**Friday, September 18, 2026****Session 5** • chairperson: Mr Dominik Müller**8:30–8:45** Ms Simona Adamová (Charles University, Czech Republic): *Determination of silver and titanium dioxide nanoparticles in cosmetics* (P 58)**8:45–9:00** Ms Lucie Pražáková (Charles University, Czech Republic): *Techniques for monitoring the electrochemical degradation of pharmaceuticals* (P 65)**9:00–9:15** Ms Alicja Matyjewicz (AGH University of Krakow, Poland): *Determination of zinc and calcium content in *Pleurotus djamor* mycelium cultivated on a medium fortified with inorganic salts and γ -polyglutamic acid* (P 88)**9:15–9:30** Ms Amanda Leda (University of Łódź, Poland): *Two approaches to electrode modification for the determination of biologically relevant compounds* (P 105)**9:30–9:45**  Ms Monika Wypych (University of Łódź, Poland): *Crime scene investigation: The effect of substrate on the quality and clarity of revealed bloodstains* (P 52)

- 9:45–10:00 Ms Michaela Heinzka (Mendel University in Brno, Czech Republic): *Mechanochemically synthesized Fe-BTC as a screen-printed electrode modifier for determination of gallic and ferulic acid in cosmetics* (P 71)
- 10:00–10:15 Ms Karolina Hofman (Gdańsk University of Technology, Poland): *Analytical methods based on capillary electrophoresis for the determination of parabens* (P 22)
- 10:15–10:30 **Coffee Break**
- Session 6** • chairperson: Ms Marta Filomena
- 10:30–10:45 Mr Tomáš Lener (Charles University, Czech Republic): *EGA-MS and GC-MS techniques including analytical pyrolysis for comparative characterization and stability study of modern and historical juniper oil* (P 69)
- 10:45–11:00 Ms Alexandra Hadbavnicková (Charles University, Czech Republic): *UV-photochemical vapor generation of silver and gold: Setup optimization and single particle ICP-MS insights into species characterization* (P 95)
- 11:00–11:15  Ms Aleksandra Zalewska (AGH University of Krakow, Poland): *Evaluation of analytical properties of potentiometric sensors fabricated using 3D printing methods* (P 61)
- 11:15–11:30 Ms Nikol Vlčková (Charles University, Czech Republic): *Photochemical vapor generation of cobalt with atomization in a dielectric barrier discharge for atomic absorption spectrometry: Optimization and mechanistic study* (P 9)
- 11:30–11:45 Mr Armin Oberosler (University of Innsbruck, Austria): *Analysis of mycosporine-like amino acids by UPLC-HILIC-DAD-MS/MS* (P 31)
- 11:45–12:00 Mr Sanay Prakash (Charles University, Czech Republic): *Electrochemically driven degradation of the veterinary drug levamisole at boron-doped diamond anode* (P 97)
- 12:00–12:15 Mr Vojtěch Vilím (Charles University, Czech Republic): *Dating of egg tempera by amino acid racemization* (P 103)
- 12:15–13:00 **Lunch**
- Session 7** • chairperson: Mr Armin Oberosler
- 13:00–13:15 Ms Marta Filomena (University of Pisa, Italy): *Advanced analytical methods for polyethylene quantification in compostable bioplastics* (P 41)
- 13:15–13:30 Ms Agnieszka Kowaluk (Nicolaus Copernicus University in Toruń, Poland): *Response surface methodology with a three-level, three-factor Box–Behnken design to optimize the preparation of gingerbread samples prior to the simultaneous determination of iron, copper, and zinc* (P 66)

- 13:30–13:45 Ms Paula Lazorová (Slovak University of Technology in Bratislava, Slovakia): *Achiral and chiral high-performance liquid chromatography separation of pharmaceuticals* (P 49)
- 13:45–14:00 Mr Michał Świdorski (University of Łódź, Poland): *Square-wave voltammetric determination and photoelectrolytic degradation of Solvent Green 3* (P 79)
- 14:00–14:15 Ms Patrycja Łęgowska (Gdańsk University of Technology, Poland): *The use of natural-origin solvents for the extraction of selected phthalates* (P 36)
- 14:15–14:30 Ms Kateřina Štefanová (Charles University, Czech Republic): *Analytical determination of calprotectin in biological material and its potential clinical significance* (P 39)
- 14:30–14:45 Ms Victória Žužichová (Charles University, Czech Republic): *Electrochemical reduction of RNA nucleosides and their epitranscriptomic modifications on microcrystalline boron-doped diamond electrodes* (P 73)
- 14:45–15:00 **Coffee Break**
- Session 8 • chairperson: Ms Paula Lazorová**
- 15:00–15:15  Ms Amelia Pogorzała (Jagiellonian University, Poland): *Development of a smartphone-based method for cortisol determination* (P 100)
- 15:15–15:30 Ms Sofiia Ivakh (Charles University, Czech Republic): *Fast voltammetric detection of salinomycin in blood plasma using disposable lab-made sensors* (P 106)
- 15:30–15:45 Ms Gabriela Machura (University of Łódź, Poland): *Electrochemical analysis of the interactions between DNA and a potential new drug in targeted therapy* (P 51)
- 15:45–16:00 Ms Ghazaleh Kholafazadehastamal (Charles University, Czech Republic): *Electrochemical characterization of activated 3D-printed carbon composite electrodes* (P 77)
- 16:00–16:15 Mr Michal Adámek (Charles University, Czech Republic): *Ion mobility separation of isomers for microbial metabolomics* (P 48)
- 16:15–16:30 Mr Aashutosh Dube (Charles University, Czech Republic): *Diazonium-functionalized diamond interfaces for a stable alkaline phosphatase-based electrochemical biosensing platform* (P 83)
- 16:30–16:45 Mr Zhendong Lyu (Charles University, Czech Republic): *Optimization of photochemical vapor generation of fluorine coupled with indirect detection by ICP-MS/MS* (P 59)
- 16:45–16:55 **Closing ceremony**

Lunch

Lunch will be served in the room G1 (the third door on the left from the main entrance) in the building Albertov 6 (directly opposite the Institute of Chemistry). A joint departure for lunch will be organized.

Lunch will be provided for the following participants who requested it during registration:

Mr Michal Adámek
Ms Sandra Chmiel
Ms Martyna Drużyńska
Mr Aashutosh Dube (veg.)
Ms Maryia-Mazhena Dzemidovich
Ms Marta Filomena
Ms Michaela Heinzka
Ms Karolina Hofman
Ms Simona Horkelová
Mr Miloš Ilić
Ms Sofii Ivakh (veg.)
Mr Alexander Joy Panjikkaran
Ms Ghazaleh Kholafazadehastamal
Ms Agnieszka Kowaluk
Ms Paula Lazorová
Ms Amanda Leda
Ms Patrycja Łęgowska (veg.)
Mr Tomáš Lener
Ms Petra Lišková

Mr Zhendong Lyu
Ms Gabriela Machura
Ms Daria Mysiak
Mr Vít Novotný
Mr Armin Oberosler
Ms Anna Pavlovová
Ms Renata Píplová
Mr Sanay Prakash
Ms Lucie Pražáková
Ms Svetlana Pucovski
Mr Martin Šefčík
Mr Michal Šerfel
Ms Kateřina Štefanová
Mr Michał Świdorski
Mr Vojtěch Vilím
Ms Nikol Vlčková
Mr Fazal Wahab (veg.)
Ms Victória Žužičová

Menu

Thursday, September 17, 2026

- Potato gnocchi with chicken, broccoli, cream sauce, and Grana Padano.
- *vegetarian*: Creamy zucchini risotto with Grana Padano.

Friday, September 18, 2026

- Caprese-style chicken breast with mashed potatoes.
- *vegetarian*: Roasted vegetables with couscous and herb dip.

