

E S A S 2026



Budapest, Hungary

European Symposium on Analytical Spectrometry

**Budapest,
August 30 – September 3, 2026**

Programme booklet



Programme overview

Sunday, August 30, 2026 ELTE TTK Lágymányos Campus		Monday, August 31, 2026 Ráday House Conference Center		Tuesday, September 1, 2026 Ráday House Conference Center		Wednesday, September 2, 2026 Ráday House Conference Center		Thursday, September 3, 2026 Ráday House Conference Center	
14:00 - 15:00 Welcome reception		11:00 - 11:15 Opening ceremony		09:00 - 09:45 Plenary talk D. Günther: Nitrogen plasma in ICP-MS		09:00 - 09:45 Plenary talk V. Motto-Ros: Advances in LIBS imaging		09:00 - 09:45 Plenary talk L. Drahos: Trends in mass spectrometry	
15:00 - 16:30 Short courses D. Clases: spICP-MS T. Janáky: Mass spectroscopy		15:00 - 17:00 Oral session 3A Vibration spectro.		10:00 - 11:40 Oral session 4A LA-ICP-MS		09:45 - 10:00 Coffee break		09:45 - 10:00 Coffee break	
17:00 - 18:30 Short courses P. Fürjes: Microfluidics B. Hufnagel: Machine learning		17:00 - 18:00 Meeting of the Continuation Committee		13:00 - 14:40 Oral session 6A PFAS/ μ plastics		10:00 - 11:40 Oral session 8A LIBS		10:00 - 11:40 Oral session 12A Mass spectro.	
		13:00 - 14:40 Oral session 2B Biofood analysis		12:00 - 13:00 Lunch		13:00 - 14:40 Oral session 10A X-ray/IR-ray		12:00 - 12:20 Closing ceremony	
		14:40 - 15:20 Coffee break		13:00 - 14:20 Oral session 7B ICP-MS		14:40 - 15:20 Coffee break		12:20 - 13:00 Lunch	
		15:00 - 15:40 EUCHEM session		15:00 - 17:00 Poster session 1P Biomed/pharma		15:00 - 17:00 Poster session 3P Instrumental			
				15:00 - 17:00 Poster session 2P Enviro./food		15:00 - 17:00 Poster session 4P Materials/geo			
						19:00 - 21:00 Conference dinner			

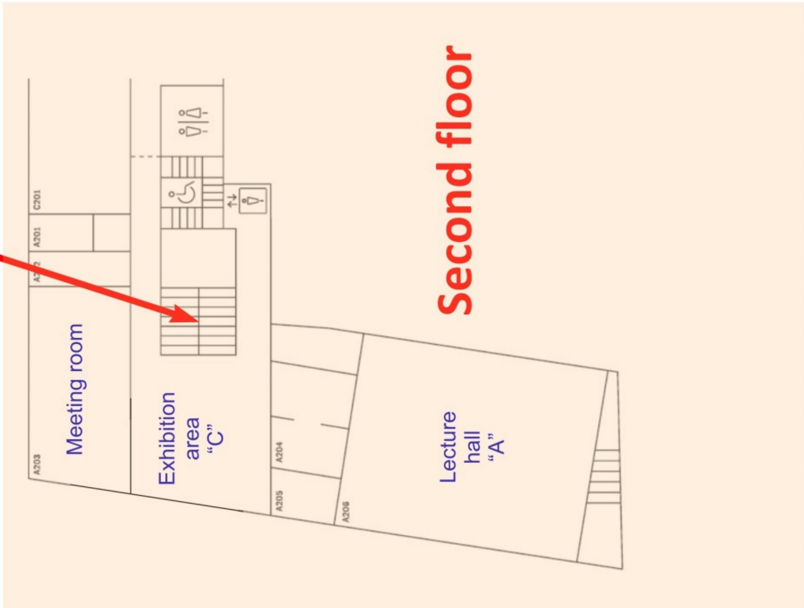
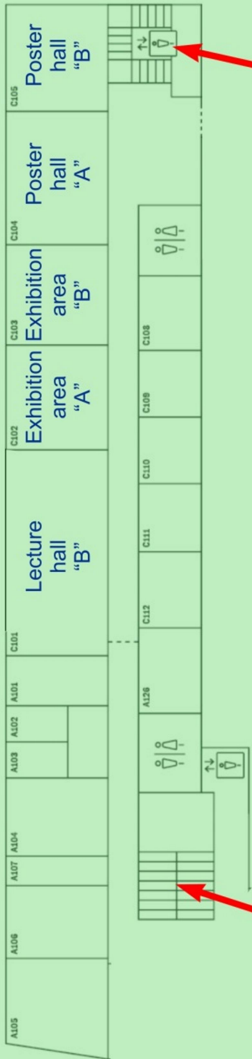
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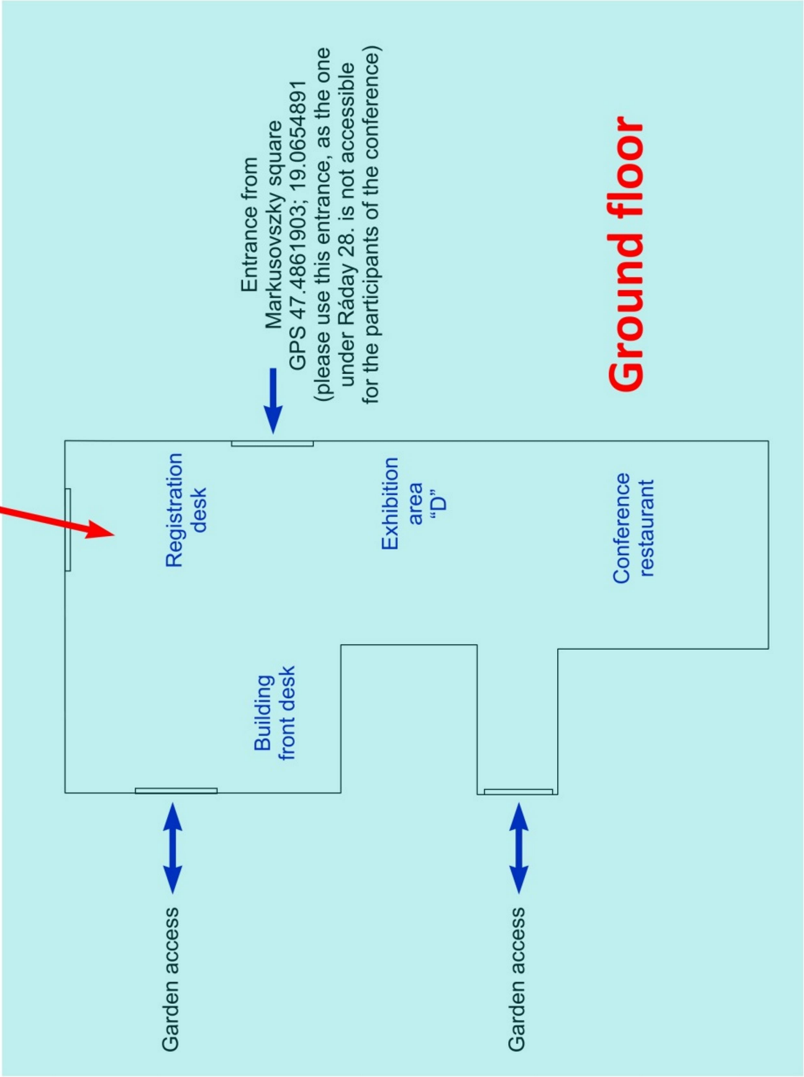
Budapest, Hungary

**Venue map of the
Ráday House
Conference Center**

First floor



Second floor



Ground floor

Entrance from
Markusovszky square
GPS 47.4861903; 19.0654891
(please use this entrance, as the one
under Ráday 28. is not accessible
for the participants of the conference)

Sunday, August 30, 2026

ELTE TTK Lágymányos Campus (1117 Budapest, Pázmány Péter promenade)

Mineral and rock collection exhibit (Southern Building, Pázmány P. Promenade 1/C, Gate I.)

14:00 – 15:00 Welcome reception

Short courses (Northern Building, Pázmány P. Promenade 1/A, Gate III.)

Course room A (Richter Room)

15:00 – 16:30 David Clases: Single particle ICP-MS analysis

17:00 – 18:30 Benedikt Hufnagl: Machine learning in spectroscopy

Course room B (Room 348)

15:00 – 16:30 Tamás Janáky: Mass spectroscopy in proteomics

17:00 – 18:30 Péter Fürjes: Microfluidics in spectroscopy

The registration desk will be open between 8:00 and 17:00, every day.

Monday, August 31, 2026

Ráday House Conference Center, 1092 Budapest, Markosovszky square

Lecture hall A

11:00-11:15 Opening ceremony

11:15-12:00 Plenary talk - Volker Deckert: Three decades of nanoscale Raman spectroscopy: limits, lessons and opportunities

12:00-13:00 Lunch (in the restaurant of the Conference Center)

Oral session 1A - Machine learning and data fusion in spectroscopy

Chair: Barbara Wagner

13:00-13:40 Keynote 1A – E. Bulska: Omics sciences in the era of artificial intelligence: an analytical chemistry perspective

13:40-14:00 1A1 – C. Jakopin: FTIR and LIBS data fusion – a chemometric approach for the classification of polyimides in the semiconductor industry

14:00-14:20 1A2 – Y. Kim: Improving major element quantification in complex geomaterials via portable LIBS–XRF data fusion

14:20-14:40 1A3 – A. Khezr pour: Dual-domain spectral data fusion of ICP-OES and FTIR via chemometric embedding for robust environmental source discrimination and multi-scale fingerprinting

14:40-15:20 Coffee break

Oral session 3A - Vibration spectroscopy

Chair: Volker Deckert

15:00-15:40 Keynote 3A – M. Veres: Detection of DNA hybridization with alkyne-labelling and Raman spectroscopy

15:40-16:00 3A1 – Z.H. Luo: Infrared spectroscopic measurement of isolated surfactant protein A and D for predictive quantification modelling

16:00-16:20 3A2 – K. Kotaška: Application of FTIR in medicine

16:20-16:40 3A3 – A. Deák: Optical spectroscopy of individual nanoparticles: insights into structure, dynamics, and surface chemistry at the nanoscale

16:40-17:00 3A4 – T. Alwaraa: Real-time SERS monitoring of plasmonic coupling during thiocyanate-induced gold nanoparticle aggregation

Monday, August 31, 2026

Ráday House Conference Center, 1092 Budapest, Markosovszky square

Lecture hall B

12:00-13:00 Lunch (in the restaurant of the Conference Center)

Oral session 2B - Analysis of biological and food samples

Chair: Mihály Dernovics

13:00-13:40 **Keynote 2B** – E. Baranyai: Comprehensive elemental and isotopic characterization of U.S. East Coast honeys

13:40-14:00 2B1 – Á. Dienes: Complex analytical investigation of natural and artificial sweeteners

14:00-14:20 2B2 – I. Machado: Evaluation of *in vitro* bioaccessibility of essential and toxic elements in insects by MIP-OES: integration with LC-MS/MS polyphenol profiling

14:20-14:40 2B3 – K. Solymosi: The effect of salt stress on the photosynthetic activity, pigment content, greening and ion (Na^+ and K^+) uptake of light-grown, dark-grown and greening wheat seedlings

14:40-15:20 Coffee break

Chemistry Europe session – Analysis and sensing

Chair: Katja Glatz

15:00-15:40 Meet the editor

Tuesday, September 1, 2026

Ráday House Conference Center, 1092 Budapest, Markosovszky square

Lecture hall A

09:00-09:45 Plenary talk - Detlef Günther: Fundamental studies using nitrogen as plasma gas for ICP-MS and as carrier gas for laser aerosols

09:45-10:00 Coffee break

Oral session 4A - LA-ICP-MS analysis

Chair: Detlef Günther

10:00-10:40 Keynote 4A - M. Holá: Quantitative LA-ICP-MS analysis of strategic minerals using tailor-made glass reference materials

10:40-11:00 4A1 - O. Lanaridi: LA-ICP-MS analysis of impurities in SiC materials: how does a microdroplet generator approach compare to standard addition?

11:00-11:20 4A2 - B. Wagner: Spectral analysis of historical inks assisted by machine learning

11:20-11:40 4A3 - T. Procházková: New glass reference materials for in-situ analysis of lithium- and uranium-rich minerals

12:00-13:00 Lunch (in the restaurant of the Conference Center)

Oral session 6A - PFAS and microplastic analysis

Chair: Ursula Fittschen

13:00-13:40 Keynote 6A - J. Feldmann: The element strikes back: atomic spectrometry meets the PFAS challenge

13:40-14:00 6A1 - R. Gonzalez de Vega: Multi-modal BaF⁺-ICP-MS/MS: a comprehensive analytical platform for tracing environmental PFAS, microplastics, and inorganic fluorine

14:00-14:20 6A2 - Z. Kowalewska: Graphite furnace and fluorine determination: 2026

14:20-14:40 6A3 - B. Hufnagl: FTIR imaging from microplastics to microfibers: tackling spectral complexity

14:40-15:00 6A4 - O. Urbán: Classification of contaminated plastic microparticles using laser induced breakdown spectroscopy with machine learning algorithms

14:40-15:20 Coffee break

Tuesday, September 1, 2026

Ráday House Conference Center, 1092 Budapest, Markosovszky square

Lecture hall B

09:45–10:00 Coffee break

Oral session 5B - Single particle and cell analysis

Chair: Jörg Feldmann

- 10:00–10:20 5B1 – D. Clases: Particles – gotta catch 'em all! – Pushing the boundaries of single particle methods
- 10:20–10:40 5B2 – K. Tvrđy: Single-cell LA-ICP-MS in assessing the elemental composition of the algae *G. Sulphuraria*
- 10:40–11:00 5B3 – B. Godlewska-Żytkiewicz: Multi-approach assessment of migration and human exposure to ZnO nanoparticles from medical materials
- 11:00–11:20 5B4 – D. Eichert: Weathering impact on uranium particles from Sierra Pena Blanca, Mexico: a synchrotron-based study
- 12:00–13:00 Lunch (in the restaurant of the Conference Center)

Oral session 7B - Challenges and novel technologies in ICP-MS

Chair: Markéta Holá

- 13:00–13:20 7B1 – É.M.M. Flores: Determination of rare earth elements by ICP-MS: new challenges and trends
- 13:20–13:40 7B2 – J. Karasiński: Isotopic and elemental composition analysis of historical artifacts to enhance the interpretation of past research findings
- 13:40–14:00 7B3 – G. Kajner: 3D-printed nebulizers for ICP-MS: feasibility, limitations, and analytical performance
- 14:00–14:20 7B4 – B. Lajin: Removing a bottleneck in speciation analysis with novel chromatographic eluents
- 14:40–15:20 Coffee break

15:00-17:00 Poster session 1P - Biomedical and pharmaceutical spectrometry

Chairs: Gábor Galbács, Viktor G. Mihucz

- 1P01 - H. Kopřivová: Spatially resolved quantification of elements in cutaneous tumors by LA-ICP-TOFMS
- 1P02 - K. Vaňková: Elemental mapping of dental tissues in SATB2-associated syndrome using LIBS
- 1P03 - Š. Kosina: Suppression of nonspecific sorption of nanoparticle-antibody conjugate in p53 protein detection
- 1P04 - A. Ruszczynska: ICP-MS-based elemental profiling of paired psoriatic skin biopsies: distinguishing local tissue-specific alterations
- 1P05 - N. Altannak: Assessment and density functional theory of bioactive compounds of *Curcuma Longa L.* root responsible for its cardio-protective and anti-cancer activities
- 1P06 - Z. Kowalewska: Investigation of fluorine release from dental fillings using HR-CS FMAS and HR-CS GFMS
- 1P07 - B. Berlinger: Advances in the application of single-cell ICP-MS for investigating cellular metal uptake
- 1P08 - O. Dushna: Mass spectrometric insights into selective electrochemical defluorination of fluorinated pharmaceuticals
- 1P09 - M. Dernovics: Metabolomic profiling of dandelion and related food product using coupled mass spectrometry method
- 1P10 - M. Dernovics: Artefact or feature: the follow-up of cultivation- dependent stress response to selenium exposure of *Cardamine hupingshanensis* with ULPC-PDA-ESI-HR-AM MS-based (seleno)metabolomics
- 1P11 - A. Herczegh: Characterization of Hank's balanced salt solution (HBSSs) for quality control using spectroscopic and chemometric approaches
- 1P12 - E. Fehérvári: Resolving isobaric post-translational modifications by cyclic ion mobility tandem mass spectrometry
- 1P13 - B. Schwartz: Unveiling the molecular complexity of shilajit supplements by high-resolution mass spectrometry
- 1P14 - H. Ayvaz: Near- and mid-infrared spectroscopy with chemometrics for classification and quantification of oil adulteration in oleogels

15:00-17:00 Poster session 2P - Environmental, industrial and food analysis

Chairs: Viktor G. Mihucz, Gábor Galbács

- 2P01 - T. Vozár: Monitoring lithium accumulation in plants using laser-induced breakdown spectroscopy
- 2P02 - D. Csontos: Sensitivity improvement of ELCAD-OES for the determination of some environmentally relevant elements in water samples
- 2P03 - A.B. Nagy: Determination of antioxidant capacity in tea leaves using the DDPH scavenging method
- 2P04 - D. Princz: Assessment of toxic elements in online market cocoa powders
- 2P05 - C. Zatykó: Toxic element profiling in fast-beauty lipsticks
- 2P06 - N. Apriyani: Statistical analysis of real-time concentration of air pollutants in vegan and vegetarian commercial kitchens
- 2P07 - Á. Freiler-Nagy: Integrated atomic spectrometric methods for multi-matrix elemental assessment of the soil-plant-animal continuum
- 2P08 - K. Csicskovics: Adsorption of heavy metal ions in microplastic-containing waters
- 2P09 - B. Bodó: Detection of halogenated pesticides on tomato fruits using laser-induced plasma spectroscopy and machine learning algorithms
- 2P10 - P.G.K. Hemachandra: Development of a direct sampling GFAAS method for simultaneous determination of cadmium and lead in fruit juices
- 2P11 - P.G.K. Hemachandra: Simultaneous determination of chromium and beryllium in fruit juices by direct sampling GFAAS
- 2P12 - E. Küntzelmann: Direct analysis of size fractionated airborne particles with total reflection X-ray fluorescence spectrometry
- 2P13 - E. Terbák: Aging the timeless pollutant: the analysis of artificially aged PET samples using positron annihilation lifetime spectroscopy
- 2P14 - M.Q. Hoang: The use of bacterial cellulose in the field of anti-counterfeiting using fluorescence additive

09:00-09:45 Plenary talk - Vincent Motto-Ros: How far can LIBS imaging go?
A journey across scales

09:45-10:00 Coffee break

Oral session 8A – Laser-induced breakdown and ionization spectroscopy

Chair: Vincent Motto-Ros

10:00-10:20 8A1 – S. Blume: Comparing femtosecond and nanosecond laser-induced XUV spectroscopy (LIXS)

10:20-10:40 8A2 – D. Palásti: Laser-induced breakdown spectroscopy using kHz repetition rate pulses from a fiber laser

10:40-11:00 8A3 – K. Novotný: Several aspects of the LIBS potential as a complementary technique in geological sciences

11:00-11:20 8A4 – M. Veis: Spectroscopy across energy scales: from laser induced plasmas to cold atoms

11:20-11:40 8A5 – I. Schechter: Multiphoton electron extraction spectroscopy (MEES) and its analytical applications

12:00-13:00 Lunch (in the restaurant of the Conference Center)

Oral session 10A – X-ray and gamma-ray spectroscopy

Chair: Miklós Veres

13:00-13:20 10A1 – U.E.A. Fittschen: Laboratory based XANES and XES analysis of slag

13:20-13:40 10A2 – D. Eichert: X-ray fluorescence-based studies of particulate matter on filters

13:40-14:00 10A3 – Z. Homonnay: A closer look at the speciation of iron: the power of Mössbauer spectroscopy

14:00-14:20 10A4 – K. Kovács: Iron components in various dietary supplements – a Mössbauer-spectroscopic study

14:20-14:40 10A5 – Zs. Végvári: Technical art history as an objective method for the scientific authentication of paintings

14:40-15:20 Coffee break

09:45–10:00 Coffee break

Oral session 9B - Environmental and biomedical spectrometry

Chair: Edina Baranyai

- 10:00–10:40 **Keynote 9B** - Y.-I. Lee: Microfluidic paper devices and hollow microneedles: emerging platforms for next-generation optical sensing of environmental pollutants and biomarkers
- 10:40–11:00 **9B1** - E. Covaci: Small-sized electrothermal vaporization capacitively coupled plasma optical emission spectrometry for Cd, Cu, Pb and Zn determination in surface waters after micro-solid phase extraction
- 11:00–11:20 **9B2** - S.H. Hosseini: Optimizing copper-doped bioactive glass compositions via ion release for antibacterial applications in bone tissue engineering
- 11:20–11:40 **9B3** - N. Vlčková: Photochemical vapor generation of cobalt for atomic absorption spectrometry with atomization in a dielectric barrier discharge: optimization and mechanistic study
- 11:40–12:00 **9B4** - A.A. Ambushe: Speciation analysis of arsenic, chromium and mercury in water and river sediments
- 12:00–13:00 Lunch (in the restaurant of the Conference Center)

Oral session 11B - Material characterization

Chair: Ewa Bulska

- 13:00–13:20 **11B1** - I. Tolnai: Durability studies of cementitious mixtures containing reinforcing steel
- 13:20–13:40 **11B2** - J. Osán: Metal and selenite sorption on clays as barriers for radioactive waste repository
- 13:40–14:00 **11B3** - B. Zsirka: Synthesis and characterization of clay mineral-based graphitic carbon nitride composite photocatalysts
- 14:00–14:20 **11B4** - J. Kóth: Red mud - from industrial waste to functional and structural material
- 14:20–14:40 **11A5** - V. Vágölgöyi: In/Zn-oxide - clay mineral triple composite systems as photocatalysts
- 14:40–15:20 Coffee break

15:00-17:00 Poster session 3P – Instrumentation and method development

Chairs: Gábor Galbács, Viktor G. Mihucz

- 3P01 – A. Gawor: The hidden language of proteins in psoriasis: a mass spectrometry perspective
- 3P02 – M. Svoboda: Sensitive determination of germanium using hydride generation, miniature plasma and high-resolution mass spectrometry with orbitrap analyzer
- 3P03 – K.N. Pap: Elemental composition and bio-based content of polymers using ICP-OES and ^{14}C techniques
- 3P04 – G. Coelho: Feasibility study of coupling photochemical vapor generation and high resolution mass spectrometry with orbitrap analyzer for tungsten ultra-trace determination
- 3P05 – Z. Lyu: Optimization of photochemical vapor generation of fluorine coupled with indirect detection by ICP-MS/MS
- 3P06 – D. Csontos: Graphite furnace atomic absorption spectrometric analysis of some trace elements in lithium niobate optical crystals
- 3P07 – L.F.P. Prado Moreira: Ultratrace determination of trimethylgermanium (TMGe) by HG-CT-ICP-MS/MS
- 3P08 – F. Shoeb: Imaging flow-enhanced spatiotemporal pH oscillations in a microfluidic reactor
- 3P09 – B. Godlewska-Żytkiewicz: Development of a new HR-CS ETAAS method for Eu determination in LED phosphors using permanent graphite tube modifiers
- 3P10 – Gy. Kajner: A modular microfluidic platform for sample preparation in single particle ICP-MS analysis
- 3P11 – A.R. Rweyemamu: Assessment of the suitability of 3D-printed porous polymer substrates for use in liquid microsample analysis by laser induced breakdown spectroscopy
- 3P12 – A.R. Rweyemamu: Discrimination of aerosolized contaminants originating from burning plastics using LIBS and machine learning
- 3P13 – D. Palásti: A fast pulsed UV Raman microscope for microplastic imaging
- 3P14 – T. Drobil: Improving spatial resolution of laser-induced breakdown spectroscopy for mineralized biological structures
- 3P15 – D. Eichert: The importance of scientific terminology and concepts: TXRF new standard ISO 18115-4
- 3P16 – L. Szabó: Methodological advances in microplastic analysis of agricultural soils: preliminary results using sample preparation, automated image analysis, and Raman spectroscopy

19:00-21:00 Conference dinner (in the restaurant of the Conference Center)

15:00-17:00 Poster session 4P - Materials, geoscience and cultural heritage

Chairs: Viktor G. Mihucz, Gábor Galbács

- 4P01 – B. Želazko: Comparative elemental analysis of eighteenth-century inks in historical handwritten documents by X-ray fluorescence spectrometry
- 4P02 – M. Švecova: From instability to reliability: oxidative modification of copper SERS substrates
- 4P03 – P. Zima: Development of (LA)-ICP-MS analytical methodology for elemental analysis of historical silver coins and assessment of isotope analysis possibilities
- 4P04 – E. Maťaš: Rapid IMS-MS analysis of thermal degradation in biodegradable polymers
- 4P05 – V. Grossová: Laser-based detection and imaging of microplastics in cave sediment matrices
- 4P06 – K. Csonka: investigation of the photochemical transformation of substituted benzoquinone and anthraquinone derivatives and LC-MS/MS-based identification of reaction products
- 4P07 – M. Kudor: Mössbauer and XRD investigations of Eu-doped goethites for novel battery electrodes
- 4P08 – P. Hać: Isotope dilution-assisted LC-HRMS fingerprinting of selenized yeast
- 4P09 – R. Sevcik: Comprehensive investigation of the carbonation reaction of lime pastes produced by modern and traditional technologies
- 4P10 – M. Horvath: Biocompatible composite protective thin layer based on cellulose matrix reinforcing with silica cryogel
- 4P11 – P. Mácová: FTIR analysis and micro-Raman mapping of organosilane-based additives in geopolymers
- 4P12 – V. Kóródi: Structure and thermal decomposition studies of different [hexakis(urea-o)iron(III)] complexes
- 4P13 – F. Herczeg: Hypothesized metasomatic alteration of olivine minerals in carbonaceous chondrite meteorites
- 4P14 – M. Zabielska-Konopka: Urban mining of mobile phones: determination of palladium and platinum in printed circuit boards by atomic absorption spectrometry
- 4P15 – M. Kmetík: Effect of environmental conditions on the stability of forensic samples studied by vibrational spectroscopy
- 4P16 – L. Bauer: Pollution-driven soil organic matter restructuring alters organic micropollutant sorption in agricultural soil

19:00-21:00 Conference dinner (in the restaurant of the Conference Center)

Thursday, September 3, 2026

Ráday House Conference Center, 1092 Budapest, Markosovszky square

Lecture hall A

09:00-09:45 Plenary talk - László Drahos: Current trends in mass spectrometry

09:45-10:00 Coffee break

Oral session 12A - Advanced mass spectroscopy

Chair: László Drahos

10:00-10:40 Keynote 12A - M.A.Z. Arruda: Specimics: integrating elemental and molecular mass spectrometry for comprehensive chemical species analysis

10:40-11:00 12A1 - S. Musil: Photochemical vapor generation coupled with DART-HRMS: identification of volatile species of transition metals and potential for their sensitive determination

11:00-11:20 12A2 - M.F. Mesko: Determination of halogens and their species by mass spectrometric techniques: sample preparation strategies

11:20-11:40 12A3 - L. Márk: Single cell imaging mass spectrometry

12:00-12:20 Closing ceremony

12:20-13:00 Lunch (in the restaurant of the Conference Center)

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