



21st European Conference on the Spectroscopy of Biological Molecules

August 30 – September 3, 2026, Cluj-Napoca, Romania

ECSBM 2026 Conference Program

August 30, 2026	
Time: 17:00 – 18:00	Registration & Conference Materials Collection Venue: Lobby outside Casa Universitarilor (Restaurant Piramida) <i>Address: 1 Emmanuel de Martonne Street</i> <i>Location: City Center, next to Babeş-Bolyai University</i>
Time: 18:00 – 20:00	Welcome Reception Venue: Lobby outside Casa Universitarilor (Restaurant Piramida) <i>Address: 1 Emmanuel de Martonne Street</i> <i>Location: City Center, next to Babeş-Bolyai University</i>



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August 31, 2026	
Time: 8.45 – 9:00	Opening Ceremony, Aula Victor Jinga, First Floor, FSEGA
Time: 9:00 – 10:30	Venue: Aula Victor Jinga, First Floor, FSEGA Session Chair: Monica FOCȘAN, Babeș-Bolyai University
9:00 – 9:30	Plenary Lecture: <i>Solving the Inverse Problem in Biophotonics: From Diffuse Light to Intrinsic Tissue Parameters</i> Dror Fixler , Tel-Aviv University, Israel
9:30 – 9:50	Invited Lecture: <i>Development and Application of Excited-State Infrared Probes based on DNA Binding Transition Metal Complexes</i> Susan Quinn , University College Dublin, Ireland
9:50 – 10:10	Invited Lecture: <i>Spectroscopic Imaging of Cells from Analytical and Physical Chemistry Perspectives</i> Małgorzata Barańska , Jagiellonian University, Kraków, Poland
10:10 – 10:30	Invited Lecture: <i>Engineering Nanoscale Interfaces Toward Predictive Bioanalytics</i> Sivashankar Krishnamoorthy , Luxembourg Institute of Science and Technology, Luxembourg
10:30 – 11:00	Coffee Break
Time: 11:00 – 12:30	Venue: Hall A1, FSEGA Session Chair: Dror FIXLER, Tel-Aviv University, Israel
11:00 – 11:20	Invited Lecture: <i>Mapping the Invisible: Molecular Spectroscopy of Nanoarchitectonic Biomaterials in Living Cells</i> Anna Piperno , Università degli Studi di Messina, Italy
11:20 – 11:40	Invited Lecture: <i>Breaking the Diffraction Barrier: Submicron Infrared Imaging of Protein Misfolding and Amyloid Formation with O-PTIR</i> Miriam Unger , Photothermal Spectroscopy Corporation, Germany
11:40 – 12:00	Invited Lecture: <i>SERS as a tool for studying enzyme inhibitors: example of aldehyde dehydrogenase</i> Alina Vasilescu , International Center of Biodynamics, Romania
12:00 – 12:15	<i>Surface-Enhanced Raman Spectroscopy of Equine Peritoneal Fluid: Protocol Optimisation Towards Rapid Colic Diagnosis</i> Oana Biro , Babeș-Bolyai University, Romania



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12:15 – 12:30	<i>Assessment of the Diagnostic Potential of FTIR Spectroscopy on Urine in Two Clinical Contexts: Urothelial Bladder Cancer and Renal Transplant</i> Olivier Piot , University of Reims, France
Time: 11:00 – 12:30	Venue: Hall A2, FSEGA Session Chair: Simion AȘTILEAN, Babeș-Bolyai University
11:00 – 11:15	<i>Insights into Solute-Solvent Interactions of Naringin through Solvatochromic and Quantum-Chemical Approaches</i> Dan-Gheorghe Dimitriu , Alexandru Ioan Cuza University, Romania
11:15 – 11:30	<i>Synchronized Quartz Crystal Microbalance with Dissipation Module / SERS Platform for Real-Time Analysis of DNA Hybridization</i> Vlad Cucuiet , Babeș-Bolyai University, Romania
11:30 – 11:45	<i>Shining the Beam on Archaeological Artifacts</i> Maria Paula Marques , University of Coimbra, Portugal
11:45 – 12:00	<i>Ultrafast Photoactivation Dynamics of Phytochrome Proteins Under Blue-Light Excitation</i> Roosa Vanhatalo , University of Jyväskylä, Finland
12:00 – 12:15	<i>A Time-Resolved Fluorescence and IR Study of a Bacterial Red-Light Photosensor</i> Janne Ihalainen , University of Jyväskylä, Finland
12:15 – 12:30	<i>From phenotyping to Metabolic Reprogramming: A Spectralomic Study of Transformed Hairy Roots</i> Syeda Takmeel Zahra , Jagiellonian University, Poland
12:30 – 13:30	Lunch Break



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Time: 13:30 – 15:30	Venue: Hall A1 Session Chair: Anna PIPERNO, Università degli Studi di Messina, Italy
13:30 – 13:50	Invited Lecture: <i>Surface-enhanced Raman spectroscopy (SERS) sensing in complex biomatrices - drug monitoring and biomarker detection</i> Dana Cialla-May , Leibniz Institute of Photonic Technology, Germany
13:50 – 14:10	Invited Lecture: <i>Next Generation of Non-Plasmonic and Hybrid Plasmonic/Non-Plasmonic Materials for SERS</i> Marek Procházka , Charles University, Prague, Czech Republic
14:10 – 14:30	Invited Lecture: <i>Exploring the Circulating Nanoworld by Raman Spectroscopy</i> Carlo Morasso , Istituti Clinici Scientifici Maugeri IRCCS, Pavia, Italy
14:30 – 14:45	<i>Monitoring the Temporal Evolution of Virus-Induced Cellular Changes Using Raman Microspectroscopy</i> Swati Kashikar , Technological University Dublin, Ireland
14:45 – 15:00	<i>Toxicological phenotyping of Novel Synthetic Drugs using Raman Spectroscopy in Hepg2</i> Marta Lafarga , Universitat de Valencia, Spain
15:00 – 15:15	<i>Spectroscopic insights into the morpho-chemical evolution of stem cells: from 2D cultures to 3D neuronal spheres</i> Karolina Augustyniak , Jagiellonian University, Poland
15:15 – 15:30	<i>Vibrational Spectroscopy for Assessing Blood-Brain Barrier functionality in Hypoxia</i> Aleksandra Pragnąca , Jagiellonian University, Poland
15:30 – 16:00	Coffee Break
Time: 16:00 – 18:00	Venue: First Floor Lobby POSTER SESSION
Time: 19:30 – 20:15	Organ Concert - Erich Turk - Evangelical Church, Bulevardul 21 Decembrie 1989, no. 1



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September 1, 2026	
Time: 9:00 – 10:30	Venue: Aula Victor Jinga, First Floor, FSEGA Session Chair: Dana Cialla-May, Institute of Photonic Technology, Germany
9:00 – 9:30	<i>Plenary Lecture: Engineered Protein–Nanomaterial Hybrids for Biosensing and Theranostic Platforms</i> Aitziber Cortajarena , CIC biomaGUNE, Donostia-San Sebastián, Spain
9:30 – 10:00	<i>Plenary Lecture: Multiplexed biosensing using plasmonic nanoparticles</i> Wolfgang Fritzsche , Leibniz Institute of Photonic Technology, Jena, Germany
10:00 – 10:30	<i>Plenary Lecture: Raman spectroscopy techniques for intra-operative diagnosis in cancer surgery</i> Ioan Notingher , University of Nottingham, UK
10:30 – 11:00	Coffee Break
Time: 11:00 – 12:20	Venue: Aula Victor Jinga, First Floor, FSEGA Session Chair: Aitziber Cortajarena, CIC biomaGUNE, Donostia-San Sebastián, Spain
11:00 – 11:30	<i>Plenary Lecture: Monitoring cellular processes in vitro, using vibrational spectroscopy</i> Hugh J. Byrne , Technological University Dublin, Ireland
11:30 – 11:50	<i>Invited Lecture: Molecular Fingerprints of Psychiatric Disorders: Infrared and Raman Spectroscopy as Holistic Biomarkers</i> Gulce Ogruc Ildiz , Istanbul Kültür University (IKU), Turkey; Chemistry Research Center of the University of Coimbra, Portugal
11:50 – 12:20	<i>Plenary Lecture: From Spectra to Usable Biochemical Information: Data Fusion and Data Augmentation Strategies for More Explainable Machine Learning</i> David Perez-Guaita , University of Valencia, Spain
12:30 – 13:30	Lunch Break
13:30 – 22:00	Excursion (dinner included)



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September 2, 2026	
Time: 9:00 – 10:20	Venue: Aula Victor Jinga, First Floor, FSEGA Session Chair: Rui Fausto, University of Coimbra, Portugal; IKU-SPECTRA Istanbul Kültür University, Turkey
9:00 – 9:30	<i>Plenary Lecture: Accurate prediction of vibrational spectra: facing the problem of dimensionality and flexibility in biomolecules</i> Julien Bloino , Scuola Normale Superiore, Pisa, Italy
9:30 – 9:45	<i>Natural and Artificial Orange Carotenoid Protein: Spectroscopic Studies and Modeling</i> Elizaveta Grishaeva , Sorbonne University, France
9:45 – 10:00	<i>Resonant inelastic X-ray scattering: Performance of linear response TDDFT and application to OPV materials</i> Iulia Emilia Brumboiu , Nicolaus Copernicus University in Torun, Poland
10:00 – 10:20	<i>Invited Lecture: The Effect of Site-Specific ¹³C-Labeling on the Infrared Spectrum of Beta-Sheets</i> Andreas Barth , Stockholm University, Sweden
10:30 – 11:00	Coffee Break
Time: 11:00 – 12:30	Venue: Hall A1 Session Chair: Wolfgang Fritzsche, Leibniz Institute of Photonic Technology, Jena, Germany
11:00 – 11:20	<i>Invited Lecture: Observation of DNA Strand Interaction by SERS</i> Marc Lamy de la Chapelle , Université du Mans, Le Mans, France
11:20 – 11:40	<i>Invited Lecture: Engineering Plasmonic Metasurfaces for Enhanced Molecular Sensing</i> Nordin Féliđj , Université Paris Cité, ITODYS, CNRS, Paris, France
11:40 – 12:00	<i>Invited Lecture: Spectroscopic Liquid Biopsy: From Cutting-Edge Science to Future Clinical Practice</i> Rareş Ştiufiuc , Iuliu Haţieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania
12:00 – 12:15	<i>From AI-Driven Plasmonic Optimization to Particulate Analyte Detection using Colloidal-Templated SERS Substrates</i> Cosmin Farcău , National Institute for Research and Development of Isotopic and Molecular Technologies, Romania



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12:15 – 12:30	<i>Hybrid Nb₂O₅/Ag and Nb₂O₅/Au Platforms for Surface-Enhanced Raman Scattering (SERS): Sensitivity and Recyclability</i> Eva Kočíšová , Charles University, Institute of Physics, Czech Republic
12:30 – 13:30	Lunch Break
Time: 13:30 – 15:25	Venue: Hall A1 Session Chair: Ioan Notingher, University of Nottingham, UK
13:30 – 13:50	Invited Lecture: <i>Raman Microscopy of Crystalline Inclusions in Microalgae</i> Peter Mojzeš , Charles University, Prague, Czech Republic
13:50 – 14:10	Invited Lecture: <i>Multi-Analytical Approaches Coupled to Advanced Data Processing Tools for Spices and Herbs Authentication</i> Dana Alina Magdaş , National Institute for Research and Development of Isotopic and Molecular Technologies, Romania
14:10 – 14:25	<i>Approaches to Data mining Reaction Kinetics Using Raman Spectroscopic Data of Claisen-Schmidt Condensation</i> Muhammad Kashif , Technological University Dublin, Ireland
14:25 – 14:40	<i>Reduction of Acquisition Time in Fourier Transform Infrared Spectral Imaging by Deep Learning</i> Seydou Kane , Université de Reims Champagne-Ardenne, France
14:40 – 14:55	<i>Overcoming Limited Calibration Data for Milk Fatty Acid Prediction Using Transfer Learning</i> Uladzislau Blazhko , Norwegian University of Life Sciences, Norway
14:55 – 15:10	<i>Characterising Diabetes-Associated Alterations in Human Skeletal Muscle with FTIR and Machine Learning</i> Mohamed Abdelmonaem , National Institute of Chemistry, Slovenia
15:10 – 15:25	<i>Dataset Scale vs. Domain Knowledge in Deep Learning for Spectroscopy</i> Eirik Almklov Magnussen , Norwegian University of Life Sciences, Norway
15:25 – 15:45	Invited Lecture: <i>Mass spectrometry - a powerful analytical tool in omics' technology, applied in biological sciences</i> Carmen Socaciu , University of Agricultural Sciences and Veterinary Medicine (USAMV) Cluj-Napoca, Romania
15:45 – 16:00	Coffee Break



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Time: 16:00 – 18:00	Venue: Hall A1 Session Chair: Marc Lamy de la Chapelle, Université du Mans, Le Mans, France
16:00 – 16:15	<i>Thermoplasmonic Sensing on Calligraphy-Patterned Paper: A Gold Nanoparticle Study with Complementary LSPR and SERS Readouts</i> Daria Stoia , Babeş-Bolyai University, Romania
16:15 – 16:30	<i>Infrared imaging for characterizing tumoral invasive front of breast cancer samples from normal weight and obese patients</i> Cymoril Combescot , Université de Reims Champagne-Ardenne, France
16:30 – 16:45	<i>Dynamics of nanoparticle internalization in human cells studied by Raman microscopy</i> Faustyna Pachacz , Jagiellonian University, Faculty of Chemistry, Poland
16:45 – 17:00	<i>Feasibility of Diffuse Raman Spectroscopy to Detect in Vivo Molecular Changes in the Tissue Induced by Subcutaneous Implants</i> Nga Tsing Kayto Tang , University of Nottingham, UK
17:00 – 17:15	<i>Multimodal Optical Diagnosis of Head and Neck Cancer: Integrating Steady-State and Time-Resolved Fluorescence Spectroscopy</i> Tatiana Tozar , National Institute for Laser, Plasma and Radiation Physics, Romania
17:15 – 17:30	<i>Machine Learning-Assisted Infrared Spectral Histopathology for the Diagnosis of Dermatomyositis</i> Hayat El Tahech , University of Reims Champagne-Ardenne, France
17:30 – 17:45	<i>Spectroscopic Profiling of Cyst Fluid and Matched Serum Identifies Patients at Higher Risk of Pancreatic Cancer</i> Outmane Bouzerda , Université de Reims Champagne Ardenne, France
17:45 – 18:00	<i>Autofluorescence-Raman Spectroscopy for Ex Vivo Investigation of Colorectal Liver Metastases</i> Radu Boitor , University of Nottingham, UK
20:00 – 24:00	Gala Dinner <i>(Courtyard by Marriott, Cluj-Napoca Downtown)</i>



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September 3, 2026	
Time: 9:00 – 10:30	Venue: Aula Victor Jinga, First Floor, FSEGA Session Chair: Andreas Barth, Stockholm University, Sweden
9:00 – 9:30	<i>Plenary Lecture: Tunnelling-Driven Chemistry: From Conformational Changes to Optically-Controlled Tunnelling-Based Molecular Switches</i> Rui Fausto , University of Coimbra, Portugal; IKU-SPECTRA Istanbul Kültür University, Turkey
9:30 – 09:45	<i>Investigation of DNA Hybridization Mechanisms via SERS and Application to miRNA Biosensing</i> Ismael Mahboub , Babeş-Bolyai University, Romania
9:45 – 10:00	<i>Charging and Discharging Colloidal Silver Nanoparticles</i> Nicolae Leopold , Babeş-Bolyai University, Romania
10:00 – 10:15	<i>Don't Blame SERS for Lack of Reproducibility, Blame Sample: Environmental Nanoplastics</i> Simona Cîntă Pînzaru , Babeş-Bolyai University, Romania
10:15 – 10:30	<i>Optimization of A 6 MV LINAC Cellular Irradiation Setup Using a Custom Plexiglass Phantom and MTT Viability Analysis</i> Elena Cristina Gheară , The Oncology Institute, Romania
10:30 – 11:00	Coffee Break
Time: 11:00 – 12:30	Venue: Hall A1 Session Chair: Nicolae Leopold, Babeş-Bolyai University, Romania
11:00 – 11:15	<i>Laser-Excited Temperature-Jump IR Spectroscopy to Unravel the Dynamics of Disease-Related Fibril Formation</i> Karin Hauser , Department of Chemistry, University of Konstanz, Germany
11:15 – 11:30	<i>Mapping Vibrational Energy Transfer in Proteins</i> Yunxia Shen , Johann Wolfgang Goethe-University Institute of Biophysics, Germany
11:30 – 11:45	<i>Investigating protection mechanisms of LPMOs against oxidative inactivation - The role of Tyr/Trp chains,</i>



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	Frank Hendrik Pilz , University of Bonn, Germany
11:45 – 12:00	<i>Interaction Dynamics of Membrane Proteins by QCL-Based IR Spectroscopy</i> Paul Stritt , University of Konstanz, Germany
12:00 – 12:15	<i>Investigating the Membrane Insertion of the Antimicrobial Peptide Gramicidin S via Time-Resolved Temperature-Jump IR Spectroscopy</i> Manuel Oestinger , University of Konstanz, Germany
12:15 – 12:30	<i>Temperature-Jump Dual-Comb Spectroscopy for Time-Resolved Studies of Peptide Folding</i> Lorenz Mattes , University of Konstanz, Germany
12:30 – 13:30	Lunch Break
13:30 – 14:30	Awards and Closing Ceremony (Aula Victor Jinga, First Floor)