



# 51st Congress of the Physical Chemistry Division of the Società Chimica Italiana

7-10 July 2026 Polytechnical University Bari



## Detailed program Tuesday 7 July 2026

Time	Room A	Room B	Room E
09:15-10:00	<b>Registration</b>		
10:00-10:30	<b>Coffee break</b>		
10:30-11:15	<b>Opening</b>		
11:15-12:00	<b>Plenary lecture - Isabel Pastoriza-Santos, Colloidal Plasmonic Nanomaterials as Platforms for (Bio)Sensing – (Room A)</b>		
12:00-13:00	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Donato Ranieri</b> - Enhancing the Optical Response of Gold and Silver Nanoclusters via Rigid Embedding in High-Refractive Index Polyacrylamide Matrix <b>Anna Mercedi</b> - Spectral Reshaping of Porphyrin Excitation by Plasmonic Nanostructures <b>Vittorio Scardaci</b> - Study and Characterization of the Gold Nanoparticle's Formation Mechanism by Re-Irradiation of Linear Bromide Induced Gold Nanoparticle Chains <b>Adriana Grandolfo</b> - Chemical-Affinity-Driven SERS Response of Histidine-Functionalized RGO/Ag Nanowire Nanocomposites on Hydrophobic Paper	<b>Room B</b> <b>Topic: Physical Chemistry for Health and Life Sciences</b>   Chair: TBD <b>Rosario Oliva</b> - Modulating Disease-Related Biocondensates with Small Bioactive Peptides <b>Daniela Roversi</b> - Membrane Interactions of Antimicrobial Peptides: a Kinetic Perspective <b>Marianna Roggio</b> - Aerosol-Assisted Atmospheric Pressure Plasma Jet Deposition of Antimicrobial Zinc-Based Nanocomposite Thin Film	<b>Room E</b> <b>Topic: Materials and Nanoscience for Sustainable Technologies</b>   Chair: TBD <b>Sebastiano Garroni</b> - Low-Temperature Formation of BCZT Piezoceramics: Kinetic Pathways and Structure–Property Relationships <b>Swaseen Slimani</b> - Spin Disorder in Hollow Nanoarchitectures: Beyond Geometric Surface Effects <b>Giuseppe Ragusano</b> - Enhanced Physico-Chemical Characterization of Complex Hybrid Nanocomposites: an O <sub>2</sub> -GCIB TOF-SIMS Depth Profiling Approach <b>Valentina Spampinato</b> - Physico-Chemical Insights into the Stepwise Assembly of Copper-Based Metal-Organic Frameworks Thin Films on Functionalized Silicon Oxide
13:00-14:45	<b>Lunch</b>		
14:45-15:30	<b>Plenary lecture - Cinzia Giannini, Deciphering the Hierarchical Structure of Natural and Engineered Materials - A Multiscale X-ray Scattering-based Approach – (Room A)</b>		
15:30-16:00	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Filomena Luigia Damiani</b> - Crystal Structure Refinement of New Organocatalyst: Benchmarking Between Independent Atom Model (IAM) Refinement and Hirshfeld Atom Refinement (HAR) <b>Luca Evangelisti</b> - Decoding Molecular Structure with Rotational Spectroscopy	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Valerio La Gambina</b> - Exact Stoichiometry Far-Off Neutrality Catanionic Nanotubes: Unconventional Self-Assembly of Oppositely Charged Surfactants <b>Giovanni Li Destri</b> - Macro- and Nanoscale Electrostatics Govern the Static and Dynamic Behaviour of Charged Aqueous Interfaces	<b>Room E</b> <b>Topic: Materials and Nanoscience for Sustainable Technologies</b>   Chair: TBD <b>Davide Peddis</b> - From Cultural Heritage to Fundamental Magnetism: Insights from Nanostructured Hematite <b>Maria Luisa Saladino</b> - The NanoLuBC Project: a Join Chairs on Innovative Nanostructured Materials with Luminescent Properties for Cultural Heritage
16:00-16:45	<b>Coffee break</b>		
16:45-17:30	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Greta Sambucari</b> - Integrating Twisted and Push-Pull Structural Motifs for Efficient Dual-Functioning Near-Infrared Body Photosensitizers <b>Paola Sassi</b> - Spatially Resolved Biochemical Signatures of Cardiorespiratory Syndrome Revealed by FTIR Imaging <b>Sara Massardo</b> - SpeComp: a User-Friendly Tool for Spectral Comparison to Facilitate Microplastics Detection in Complex Biological Matrices	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Serena Napoletano</b> - Soluplus® Micelles Characterization and Application in Drug Delivery <b>Rachel Elisabetta Camerini</b> - Bio-Based Polyglycerol Esters for LLPS-Driven Soft Microencapsulation	<b>Room E</b> <b>Topic: Electrochemistry, Catalysis, and Energy Conversion</b>   Chair: TBD <b>Regina Del Sole</b> - Combined Atomic Layer Deposition and Sputtering of ZnO/Cu Coatings for CO <sub>2</sub> Electroreduction <b>Nevilla Iuliano</b> - Spectroelectrochemical Insights into Heterogeneous Catalysts for the CO <sub>2</sub> Reduction Reaction <b>Federico Panagini</b> - Structural Insights on FeZnCuK Catalysts for Mild Photothermal CO <sub>2</sub> -to-Hydrocarbons
17:30-18:00	<b>Invited lecture – Pier Paolo Abis (Acquedotto Pugliese S.p.A.), Ensuring Drinking Water Quality in Acquedotto Pugliese through the Digitalization of the Water Safety Plan - (RoomA)</b>		
18:00-18:15	<b>Leonardo Marchese – The Research and Development Center for Environmental Remediation and Protection (RisPA CENTER)</b>		
18:30-20:30	<b>Welcome event at Caffè Vergnano Via Amendola</b>		



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## Wednesday 8 July 2026

Time	Room A	Room B	Room E
09:15-10:00	<b>Plenary lecture - Giovanni Pavan, The Information Contained in Self Assembling Systems - (Room A)</b>		
10:00-11:15	<b>Room A</b> <b>Topic: Theory, Modelling, and Data-Driven Physical Chemistry</b>   Chair: TBD <b>Francesco Avanzini</b> - Coarse Graining Photo-Isomerization Reactions: Thermodynamic Consistency and Implications for Molecular Ratchets <b>Gianfranco Bocchini</b> - Multiscale Molecular Dynamics for Probing Second-Timescale Protein Conformational Changes: The SHP2 Activation Case <b>Nunzio Tuccitto</b> - When Molecules Communicate: Entropy Production as the Thermodynamic Cost of Molecular Information Transfer <b>Silvia Pezzola</b> - The Perfect Couple: a Critical Analysis of CAM-B3LYP/SMD for Alcohol pKa Prediction <b>Duccio Tatini</b> - Machine Learning and Data Fusion Strategies for the Investigation of Hofmeister Effects in Polysaccharide Systems Combining IR Spectroscopy and Thermal Analysis	<b>Room B</b> <b>Topic: Physical Chemistry for Health and Life Sciences</b>   Chair: TBD <b>Pierfrancesco Maltoni</b> - Magnetic Response of Giant Unilamellar Vesicles Embedding Functionalized Magnetite Nanoparticles <b>Giulia Quaglia</b> - Photothermal Effect of Gold Nanostructures on Amyloid Aggregates: Role of Shape and Size in the Optical Response <b>Francesco Cardoni</b> - Plasmonic Au NP-Derived Thin Films for Monitoring Cardiac Cells and Their Biomarkers <b>Giacomo Mandriota</b> - Functionalized Petal-Like ZnO as a Promising Nanoplatfor for Gene Delivery <b>Vincenzo De Leo</b> - Liposomal Co-Encapsulation of Curcumin and Quercetin Enhances the Protective Effect on Endothelial Cells from TNF- $\alpha$ -Induced Inflammation, Oxidative Stress, and Apoptotic Damage	<b>Room E</b> <b>Topic: Electrochemistry, Catalysis, and Energy Conversion</b>   Chair: TBD <b>Matteo Grattieri</b> - Tuning Bacteria-Electrode Interfaces for Biohybrid Electrochemical Systems <b>Massimo Viviani</b> - Stability and Electrochemical Properties in Multi-Doped Sr Ferrates <b>Andrea Astengo</b> - The Gilded Cage: Towards High Thermoelectric Efficiency in Single-Filled Skutterudites <b>Vittorio Ferrara</b> - Interference and Plasmonic Effects in Dielectric/Metal/Dielectric Multilayers for Semi-Transparent Perovskite Solar Cells <b>Claudia Zonno</b> - Controlling Energy Flow in <i>Rhodobacter Sphaeroides</i> Chromatophores via Selective Electron Transfer Inhibition
11:15-12:00	<b>Coffee break</b>		
12:00-12:30	<b>Keynote - Pier Luigi Gentili, The Contribution of Photochromic Materials in the Development of Chemical AI - (Room A)</b>		
12:30-13:30	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, And Spectroscopy</b>   Chair: TBD <b>Andrea Scarperi</b> - Multinuclear Solid-State NMR Investigation of Adsorption-Induced Structural Changes and CO <sub>2</sub> Dynamics in Calf-20 <b>Arianna Ghelardi</b> - Molecular Motions of Active Pharmaceutical Ingredients Investigated by Solid-State NMR Spectroscopy <b>Sonia Melandri</b> - The Halogen Advantage: the Role of Halogen Atoms in Architecting Novel Non-Covalent Interactions	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Giuseppe Graziano</b> - Magnitude of Macromolecular Crowding Caused by Dextran and Ficoll <b>Gerardo Palazzo</b> - The Empirical HLD-NAC Model of Microemulsion Can Be Rationalized on the Basis of Random Field Description of Oil/Water Domains <b>Alessandra Del Giudice</b> - Complex Coacervation Between Sodium Decanoate and Cationic Inulin: Structural and Deposition Studies of Bio-Based Polymer and Surfactant Mixtures <b>Matilde Tancredi</b> - Microfluidic Production of Rhamnolipid Coacervates: Linking Droplet Formation to Internal Organization	<b>Room E</b> <b>Topic: Environmental Physical Chemistry</b>   Chair: TBD <b>Alessio Carmelo Perri</b> - Thiol-Functionalized Chitosan Derivative as a Novel Bioadsorbent for Selective Mercury Remediation <b>Mariafrancesca Baratta</b> - Synthesis and Preparation of Cyclodextrin Modified Carbon Nanotube Buckypapers for the Efficient Removal of Carbofuran from Water <b>Pierluigi Lasala</b> - Cellulose-Based Nanocomposites Embedding Metal Oxides Nanoparticles for Dye Removal from Wastewater by Synergistic Adsorption and Photocatalytic Processes <b>Suwat Nanan</b> - Magnetic Fe <sub>3</sub> O <sub>4</sub> /BiOBr for Sunlight Degradation of Tetracycline Antibiotic
13:30-15:15	<b>Lunch</b>		
15:15-16:00	<b>Plenary lecture - Rebeca Marcilla, Unlocking the Potential of Organic Materials for Energy Storage: The Fascinating Journey Toward Sustainable Batteries – (Room A)</b>		
16:00-16:30	<b>Keynote - Ana B. Muñoz-García, Addressing Complexity in Energy Materials and Interfaces: Predictive Modeling Strategies Beyond DFT - (Room A)</b>		
16:30-17:15	<b>Room A</b> <b>Topic: Theory, Modelling, and Data-Driven Physical Chemistry</b>   Chair: Tbd <b>Michael Alejandro Zambrano Angulo</b> - Atomistic Insights into Hole Injection at Multi-Cation Perovskite/HTL Interface <b>Alessandro Landi</b> - From Electronic Structure to Nonradiative Pathways in INVEST Emitters: a Combined Electronic-Structure and Quantum-Dynamics Perspective <b>Ranjini Sarkar</b> - First-Principles-Based Insights into Adsorption and Reactivity of Na <sup>+</sup> Salt and Room-Temperature Ionic Liquids at Sodium Metal Surface	<b>Room B</b> <b>Topic: Physical Chemistry for Health and Life Sciences</b>   Chair: TBD <b>Ivana Miletto</b> - Advanced Yb <sup>3+</sup> /Er <sup>3+</sup> -TiO <sub>2</sub> Architectures: Mastering Upconversion for NIR-To-Visible Light Harvesting <b>Luigi Fabiano</b> - Tuning Physicochemical Properties of Pedot:PSS/Hnts Nano Composites for Smart Bioactive Interfaces <b>Vincenzo Piscopo</b> - Development of Dielectric/Metal/Dielectric (DMD) Architectures for Optical Biosensing Applications	<b>Room E</b> <b>Topic: Electrochemistry, Catalysis, and Energy Conversion</b>   Chair: TBD <b>Fabrizio Murgia</b> - Boosted Ionic Conductivity in Na <sub>2</sub> B <sub>12</sub> H <sub>12</sub> /SiO <sub>2</sub> Nanocomposite Electrolyte for Solid-State Sodium Batteries <b>Umberto Mattia</b> - Enhanced Biophotocurrent Generation via Tailored Nano-Biointerfaces in <i>Rhodobacter Capsulatus</i> Biohybrids <b>Sergio Brutti</b> - "The SIGNE project: Composite Silicon Nanowire on Graphite Anodes with Ni-Rich Cathodes and Safe Ether based Electrolytes for High-Capacity Li-ion Batteries
17:15-19:00	<b>Poster session and refreshment</b>		
19:30-on	<b>Social event</b>		



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## Thursday 9 July 2026

Time	Room A	Room B	Room E
09:15-10:00	<b>Plenary lecture - Raffaele Mezzenga, Amyloid-metal Supramolecular Hybrids for Health and Environmental Remediation Technologies – (Room A)</b>		
10:00-10:30	<b>Keynote - Enrica Gianotti, Confined Spaces, Boundless Opportunities: Controlling Confinement in Porous Materials from Catalysis to Nanomedicine – (Room A)</b>		
10:30-11:15	<b>Room A</b> <b>Topic: Theory, Modelling, and Data-Driven Physical Chemistry</b>   Chair: TBD <b>Marta Corno</b> - Atomistic Modeling of Hydroxyapatite Surfaces: from Biomolecular Adsorption to Environmental Catalysis <b>Valeria Palumbo</b> - A New Method to Characterize the Porosity of Materials: Distribution of Nanoporous Volume, Specific Surfaces and Prediction of Gas Adsorption <b>Sofia Chiara Sarnataro</b> - Computational Exploration of Derivatized Cyclodextrin-Based Drug Delivery Systems	<b>Room B</b> <b>Topic: Physical Chemistry for Health and Life Sciences</b>   Chair: TBD <b>Paola Albanese</b> - Photomodulation of Vesicle Dynamics Using Fluorescent Photoswitchable Amphiphiles <b>Nicoletta Depalo</b> - pH-Responsive Dendritic Large-Pore Mesoporous Silica Nanoplatfoms for 5-Fluorouracil Delivery in Colorectal Cancer <b>Alessandro Auditore</b> - Decoding Molecular Information via Mass Transport–Electron Transfer Coupling	<b>Room E</b> <b>Topic: Environmental Physical Chemistry</b>   Chair: TBD <b>Gioele Ancora</b> - A Sequential Probe Adsorption Approach for the Characterization of Acid Sites in Hierarchical Zeolites <b>Fausto Secci</b> - Probing Aluminum Speciation and Surface Acidity in Mesoporous Aluminosilicates: Structure–Acidity Insights for CO <sub>2</sub> -to-DME Conversion
11:15-12:00	<b>Coffee break</b>		
12:00-12:45	<b>Plenary lecture - Debora Berti, Engineering Nano-Bio Interfaces: From Self-Assembly to Functional Hybrid Nanosystems – (Room A)</b>		
12:45-13:15	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Luigi Gentile</b> - Acid-Induced Plasticization on Cellulose Thin Films <b>Raffaella Lettieri</b> - Structure-Property Relationships In Cellulose Acetate Composites Containing Microalgal Residues	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Leonardo Bellandi</b> - Physicochemical Characterization of PVA-Based Twin Chain Polymeric Networks Loaded with a Citric Acid Solution <b>Pietro Tordi</b> - Ion-Programmed Biopolymer Organohydrogels for Multiresponsive Soft Electronics	<b>Room E</b> <b>Topic: Materials and Nanoscience for Sustainable Technologies</b>   Chair: TBD <b>Rossella Labarile</b> - Microbial Photosynthesis for Space Applications <b>Giulia Rando</b> - Next-Generation Sustainable Membranes: Nanostructured Platforms for Environmental and Energy Challenges
13:15-14:45	<b>Lunch</b>		
14:45-15:15	<b>Keynote lecture - Chiara Milanese, The C Treasure in Biomasses for Energy and Analytical Systems – (Room A)</b>		
15:15-16:00	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Donato Valli</b> - Doping Strategies in Lead-Free Double Perovskites for X-Ray to NIR Photodetection <b>Maria Chiara Di Gregorio</b> - Engineering Metal-Organic Frameworks for Highly Nonlinear Photonics <b>Tommaso Gentili</b> - Infrared-Activated Dynamic Crystals: Remote Motion in a Metal-Organic Framework	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Emanuela Gatto</b> - From Nature to Nanoscience: Peptide Building Blocks Driving Photoinduced Electron Transfer <b>Massimo Trotta</b> - Repurposing Bacterial Photosynthesis	<b>Room E</b> <b>Topic: Electrochemistry, Catalysis, and Energy Conversion</b>   Chair: TBD <b>Hans Peter Bloch</b> - A Comprehensive DFT Study of the Mechanism of Selective PE Oxidation with a Ruthenium-Porphyrin Catalyst <b>Daniele Conelli</b> - Photoinduced Surface-Driven Bromination of Electron-Rich Arenes on Lead-Free Cs <sub>2</sub> AgBiBr <sub>6</sub> Microcrystals under Sustainable Conditions <b>Gabriele Manca</b> - Ultrafast Piezo-Assisted Engineering of Metal-ZnO Interfaces for Catalytic Applications
16:00-16:45	<b>Coffee break</b>		
16:45-19:00	<b>Assembly of the Physical Chemistry Division and Medals Ceremony</b>		
20:30-on	<b>Social dinner at Villa Romanazzi Carducci</b>		



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## Friday 10 July 2026

Time	Room A	Room B	Room E
09:15-09:45	<b>Keynote lecture - Maria Rosaria Plutino, Innovative Hybrid Materials for a Sustainable Future: Bridging Circular Resources, Nanotechnologies, and Green Transition (Room A)</b>		
09:45-11:00	<b>Room A</b> <b>Topic: Fundamental Physical Chemistry: Structure, Dynamics, and Spectroscopy</b>   Chair: TBD <b>Rita Gelli</b> - Bisphosphonates and Polyacrylates Control the Size and Assembly of Amorphous Magnesium-Calcium Phosphate Particles <b>Andrea Mangolini</b> - Structural and Magnetic Properties of Iso-Oriented Assemblies of Co-Zn Ferrite Nanoparticles <b>Carlo Nazareno Dibenedetto</b> - Assembling Colloidal Emissive Nanocrystals into 3D Super-Architectures <b>Federico Locardi</b> - Persistent Luminescence Nanocrystals <b>Lorenzo Viacava</b> - Flexible Synthesis of Copper, Iodine – Based Coordination Polymers with Modulable Luminescent Emission	<b>Room B</b> <b>Topic: Soft Matter, Interfaces, and Complex Systems</b>   Chair: TBD <b>Francesco Sarnelli</b> - A Physicochemical Approach to Surfactant-Mediated Deposition of Volatile Compounds from Detergent Formulations onto Fabrics <b>Céline Adamo</b> - Controlling Fibroin Self-Assembly in Sustainable Consolidants for Fragile Silk Artifacts <b>Michele Baglioni</b> - Influence of Surfactants on Industrial Cheese Sauces <b>Giorgia Ballabio</b> - Interfacial and Emulsifying Properties of Potato Protein Hydrolysates Obtained by Enzymatic Processing <b>Jessica Costa</b> - Physicochemical Characterization of High-Performance Chitosan Based Adhesives: a Sustainable Approach to Enhances Interfacial Adhesion	<b>Room E</b> <b>Topic: Materials and Nanoscience for Sustainable Technologies</b>   <b>Carlo Carandente Coscia</b> - Modulating the Morphology of Lignin Microparticles via Green Solvent-Shifting <b>Gabriele Mulas</b> - Valuable Waste for CO <sub>2</sub> Conversion and H <sub>2</sub> Evolution Induced by Mechanical Energy <b>Federico Morari</b> - Activated Carbon Derived from Agro-Industrial Waste for H <sub>2</sub> Storage <b>Giuseppe Cappelletti</b> - Valorization of Soot into Carbon Nanomaterials for Both Nanocomposite-Based Sensors and for Fluorescent Devices <b>Monica Tonelli</b> – 3D-Printable Bioreceptive M–S–H Cements Containing Large Quantities of Marble Dust Waste
11:00-12:00	<b>Coffee break</b>		
12:00-13:00	<b>Conference awards ceremony</b>		
13:00-13:30	<b>Closing remarks</b>		