

**III Convegno Nazionale della Divisione di Chimica per le Tecnologie
della SCI**

**XIV Convegno Nazionale dell'Associazione Italiana di Chimica per
l'Ingegneria – AICIing**

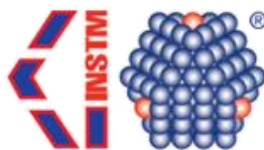
Milazzo, 1–4 settembre 2025



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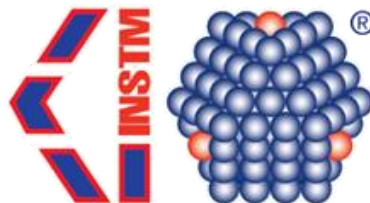


Università
degli Studi di
Messina



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Programma

Lunedì 1° settembre

18:00-21:00 Registrazione Partecipanti & Cocktail benvenuto

Martedì 2 settembre

8:00-9:00 Registrazione partecipanti

8:45-9:00 Apertura Lavori Del Congresso – **Prof.ssa Candida Milone** (Chair), **Prof. Gianluca Farinola** (Presidente della Società Chimica Italiana), **Prof. Luigi Mondello** (Presidente Eletto della Società Chimica Italiana), **Prof. Roberto Paolesse** (Presidente AICIng), **Prof. Piero Mastrorilli** (Presidente della Divisione di Chimica per le Tecnologie della SCI)

Sessione I

Chairs: Piero Mastrorilli – Silvia Licoccia

9:00-9:25 KN1– **Eliodoro Chiavazzo** Politecnico di Torino “*AI tools for material enhancement and discovery in thermal storage and other energy applications*”

9:25-9:40 OC1 – **Maurizia Seggiani** Università di Pisa “*Multifunctional Flexible Bio-based Polyurethane Foams Incorporating Phase Change Materials*”

9:40-9:55 OC2 –**Matteo Bonomo** Università La Sapienza “*A sustainable Deep Eutectic Electrolyte based on glycerol and NaCl for electrochemical energy storage devices*”

9:55-10:10 OC3 –**Emmanuel De Gregorio** Università di Napoli Parthenope “*Innovations in fuel cells: towards sustainable membranes*”

10:10-10:25 OC4 –**Isabella Natali Sora** Università di Bergamo “*Cation doping and transition metals exsolution in complex perovskites*”

10:25-10:40 OC5 –**Matteo Battaglia** Università di Roma Tor Vergata “*Synthesis and characterization of pelletized perovskites for green hydrogen production by two-step thermochemical water splitting cycle*”

10:40-10:55 OC6 – **Rubia Zampiva** Università di Roma La Sapienza “*From waste to added-value materials: sustainable carbon-based electrodes for supercapacitors and Li-ion batteries*”

11:00-11:30 Coffee Break & Posters

Sessione II

Chairs: Alessandra D'Epifanio – Giuseppe Marci

11:30-11:45 OC7 – **Vito Di Noto** Università di Padova *“Interplay Between Synthetic Parameters, Physicochemical Properties and PEMFC performance for PtNix “Core-Shell” Carbon Nitride Electrocatalysts for the Oxygen Reduction Reaction”*

11:45-12:00 OC8 – **Federico Bella** Politecnico di Torino *“Nitrogen species electroreduction into ammonia: industrial chemistry frontiers in the SuN2rise project”*

12:00-12:15 OC9 – **Manuela Montalto** Università di Roma Tor Vergata *“Spinel-type High-Entropy Oxides Electrocatalyst for Anion Exchange Membrane Water Electrolyzers”*

12:15-12:30 OC10 – **Alberta Genco** Università di Palermo *“Carbon-based photocatalysts for H₂ production by photo-thermal catalysis”*

12:30-12:45 OC11 – **Arooj Asif** Università del Salento *“Eco-Friendly Graphene-Like Materials from Coffee Silverskin as Photocatalyst for SolarDriven H₂ Production”*

12:45-13:00 OC12 – **Barbara Di Credico** Università di Milano Bicocca *“A New Life for Tionite Industrial Waste as Photocatalytic Active Material”*

13:00-14:00 Light Lunch

Sessione III

Chairs: Nadia Lotti – Fabio Ganazzoli

14:00-14:15 OC13 – **Patrizia Cinelli** Università di Pisa *“Advancing sustainable packaging: production and recycling of novel furan-based polyester films”*

14:15-14:30 OC14 – **Aurelio Bifulco** Università di Napoli Federico II *“AI-driven design and optimization of flame retardant epoxy nanocomposites and textiles”*

14:30-14:45 OC15 – **Antonio Cosimo Pio Trimboli** Università Mediterranea di Reggio Calabria *“Mechanocatalytic Upcycling of Polyethylene Promoted by the Ru/Al₂O₃ Catalyst”*

14:45-15:00 OC16 – **Michelina Soccio** Università di Bologna *“Synthesis of fully biobased aliphatic/aromatic polymer systems for flexible food and biomedical packaging: the role of chemical structure, composition and architecture”*

15:00-15:15 OC17 – **Annafelicia Civitavecchia** Università Politecnica delle Marche *“Innovative Nonwoven Antimicrobial Fabrics from Discarded Fishing Nets”*

15:15-15:30 OC18 – **Monica Orsini** Università degli Studi Roma Tre *“From Starch to Advanced Biodegradable Films with Tunable Properties”*

Sessione Flash Oral

Chairs: Sara Maria Giannitelli –Emanuela Muscolino

15:30-15:34 FO1 – **Mattia Bonuso** Centro Ricerche Enrico Fermi: CREF “*New high-Z plastic scintillators for total-body SPECT and theranostic dosimetry*”

15:34-15:38 FO2 – **Federica Gulino** Università di Palermo “*Radiation-Crosslinked Wound Dressings Containing Egg White Proteins*”

15:38-15:4 FO3 – **Maya Nobatova** Università di Palermo “*Solar-Driven Photocatalytic Reductions for Sustainable Applications*”

15:42-15:46 FO4 – **Alessia Fata** Università di Roma Tor Vergata “*The Formylation Of N,N-Dimethylcorroles*”

15:46-15:50 FO5 – **Irene Anguillesi** Università di Pisa “*Synthesis and Characterization of Waste Cooking Oil-Derived Polyols for Use as Biolubricants*”

15:50-15:54 FO6 – **Marina Petroselli** Università Politecnica delle Marche “*Ab initio characterization of HfO₂ and its Zr-doped derivatives for energy harvesting applications*”

15:54-15:58 FO7 – **Miriam Cappello** Università di Pisa “*Biodegradable Nanocomposites for a Greener Future: Investigating Nano-SiO₂ in PLA and PBSA-based systems*”

16:00-16:30 Coffee Break & Posters

Sessione IV

Chairs: Roberta Bongiovanni –Michelina Catauro

16:30-16:45 OC19 – **Dario Allevi** Politecnico di Milano “*Renewable rubber composites towards a sustainable future*”

16:45-17:00 OC20 – **Immacolata Climaco** Università di Napoli Federico II “*Selfextinguishing epoxy nanocomposites containing coffee biochar and other additives*”

17:00-17:15 OC21 – **Francesca Baldassarre** Università del Salento “*Agro-food wastes as source of bioactive phytochemicals: extraction, characterization and their nano-encapsulation for cosmeceutical applications.*”

17:15-17:30 OC22 – **Damiano Rossi** Università di Pisa “*Polyamide 6 recycled fishing nets modified with biochar fillers and reclaimed carbon fibers: an effort toward sustainability and circularity*”

17:30-17:45 OC23 – **Angelo Ferlazzo** Università degli studi di Catania “*A Photochemical pathway towards green functional nanostructures*”

17:45-18:00 OC24 – **Francesca Deroberis** Politecnico di Bari “*Copper recovered from waste printed circuit boards as catalytic drive for methanol dehydration to dimethyl ether*”

18:00-18:15 OC25 – **Virginia Venezia** Università di Napoli Federico II “*Electrospun fibers from biowaste for the selective and reductive adsorption of precious metals from e-waste*”

Mercoledì 3 settembre

8:30-9:00 **“Medaglia Rosario Pietropaolo” – Prof.ssa Silvia Licoccia**

Sessione V

Chairs: Cristina Leonelli –Vito Gallo

9:00-9:25 KN2– **Gianfrancesco Licandro** Raffineria di Milazzo *“RAM Sustainability”*

9:25-9:40 OC26 – **Lorenzo Viganò** Politecnico di Milano *“Silica derived from hexafluorosilicic acid waste valorization for CO2 capture and re-use”*

9:40-9:55 OC27 –**Alessandro Francini** Università di Modena e Reggio Emilia *“Comparing environmental metrics for noble metal recovery from e-waste: a dual assessment using the ESCAPE approach and the LCA methodology”*

9:55-10:10 OC28 – **Ciro Migliaccio** Università di Napoli Parthenope *“Innovative Acid and Alkaline Red Mud-Metakaolin Based Geopolymers: Characterization and Applications in Construction and Environmental Remediation”*

10:10-10:25 OC29 – **Claudio Imparato** Università di Napoli Federico II *“Valorization of biochar and aqueous phase derived from the hydrothermal liquefaction of sewage sludge”*

10:25-10:40 OC30 – **Francesco Lanero** Università di Padova *“Cationic fluorinated polyphosphazenes for the decontamination of wastewater from anionic pollutants”*

10:40-10:55 OC31 –**Muhammad Umair** Università di Palermo *“Photocatalysis Applications: Photoreforming of Biomass Derivatives and Organic Drugs Removal. Preparation and Characterization of Nanocomposites Materials”*

11:00-11:30 Coffee Break & Posters

Sessione VI

Chairs: Marcella Trombetta –Clelia Dispenza

11:30-11:45 OC32 – **Martina Marsotto** Università di Roma Tor Vergata *“Synthetic challenges and opportunities in corrole chemistry: the reaction of beta-alkylcorroles with Ag(I) salts”*

11:45-12:00 OC33 – **Emanuela Muscolino** Università di Palermo *“Injectable Degalactosylated Xyloglucan Hydrogel for Mitochondrial Transplantation in Cardiac Repair”*

12:00-12:15 OC34 – **Lucia Mergola** Università del Salento *“Green preparation of gold nanoparticles and their activity in photothermal cancer therapy”*

12:15-12:30 OC35 – **Viviana Vergaro** Università del Salento *“Light-Responsive Flavone–Platinum Complexes: Photochemical Activation and Anticancer Evaluation in 3D Cell Models”*

12:30-12:45 OC36 – **Giulia Guidotti** Università di Bologna *“Aromatic copolyesters containing furan and isophthalic rings for vascular tissue engineering: from design to device”*

12:45-13:00 OC37 – **Andrea Cocco** Università di Cagliari “*Synthesis and characterization of new heteroleptic platinum complexes with second-order nonlinear optical properties*”

13:00-14:00 Light Lunch

Sessione VII

Chairs: Salvatore Failla –Marilena Tolazzi

14:00-14:15 OC38 – **Simona Crispi** Università degli studi di Messina “*New Nanomaterials for the Development of High-performance Chemical Sensors for Environmental Applications*”

14:15-14:30 OC39 – **Fabrizio Caroleo** Università di Roma Tor Vergata “*Catch, Signal, Remove: Dual-Function porphyrinoid materials for fluorinated pollutant Sensing and Remediation*”

14:30-14:45 OC40 – **Ivan Pietro Oliveri** Università di Catania “*Vapochromic and vapoluminescent paper-based sensors based on a Zn(salen-type) complex for the discriminative detection of volatile primary aliphatic mono- and diamines vapours*”

14:45-15:00 OC41 – **Amerigo Beneduci** Università della Calabria “*Smart optical materials and devices based on organic mixed valence compounds*”

15:00-15:15 OC42 – **Francesco Pizzoli** Università di Roma Tor Vergata “*Novel N-alkylcorrole-based sensing materials for the development of e-nose platforms*”

15:15-15:30 OC43 – **Roberta Bongiovanni** Politecnico di Torino “*Green electrospinning processes for membranes suitable for water treatment*”

Sessione Flash Oral

Chairs: Antonella Sola –Claudio Imparato

15:30-15:34 FO8 – **Micaela Vannini** Università di Bologna “*Decoding the Chemistry-Performance Link in Furan-Based Polymers*”

15:34-15:38 FO9 – **Federica Bucolo** Università di Messina “*ZnO@GQDs based gas sensor for the detection of H₂S*”

15:38-15:4 FO10 – **Annamaria Greco** Politecnico di Bari “*Metabolomic changes in xylem tissue of susceptible and resistant olive cultivars to Xylella fastidiosa infection*”

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15:54-15:58 FO14 – **Marika Fiorentino** Università di Napoli Federico II “*SiO₂-Sodium Alginate Hybrids: Structural and Biocompatibility Assessment*”

16:00-16:30 Coffee Break & Posters

16:30-17:30 Assemblea AICIng

17:30-18:30 Assemblea Divisione Chimica per le Tecnologie

20:00 Cena sociale

Giovedì 4 settembre

9:00-9:40 **Premio AICIng – Prof.ssa Marilena Tolazzi & Ricordo del Prof. Vincenzo Lorenzelli**

Sessione VIII

Chairs: Roberto Paolesse –Andrea Melchior

9:40-9:55 OC44 – **Simone Ranieri** Università Politecnica delle Marche *“Lignin-Based Cationic Hydrogels for the Adsorption of Emerging Pollutants from Aqueous Media”*

9:55-10:10 OC45 – **Viviana Bressi** Università degli studi di Messina *“Development of Innovative Technologies for the Synthesis of Materials for Sensing and Environmental Applications”*

10:10-10:25 OC46 —**Ilaria Di Filippo** Università di Roma Tor Vergata *“Porphyrin-based SURMOFs: from synthesis to application”*

10:25-10:40 OC47–**Antonio D'Angelo** Università della Campania Luigi Vanvitelli *“Understanding the behaviour of natural and artificial dyes in metakaolin-based geopolymers”*

10:40-10:55 OC48 – **Giulia Fioravanti** Università dell'Aquila *“Tuning Paramagnetism in Graphene Oxide Derivatives: Impact of Reduction Degree and Metal Impurities Revealed by EPR and MRI Analyses”*

11:00-11:30 Coffee Break

Sessione IX

Chairs: Pierluigi Stipa –Isabella Chiarotto

11:30-11:45 OC49 – **Maria Trisolini** Politecnico di Bari *“Accuracy and Reproducibility of a ^1H NMR protocol for Quantification of Betaine in Wheat and Pasta”*

11:45-12:00 OC50 – **Andrei Ungureanu** Università di Modena e Reggio Emilia *“Environmental Life Cycle Assessment (LCA) of Curcumin-stabilized Silver Nanoparticles (Cur-AgNPs)”*

12:00-12:15 OC51 – **Gabriele Magna** Università di Roma Tor Vergata *“Disposable Sensor Array Embedded in Facemasks by using PEDOT:PSS doped with porphyrins”*

12:30-13:00 Premiazioni

13:00-14:00 Conclusione lavori

SESSIONE POSTER

Martedì 2 settembre

FO1	Mattia Bonuso	<i>New high-Z plastic scintillators for total-body SPECT and theranostic dosimetry</i>
FO2	Federica Gulino	<i>Radiation-crosslinked wound dressings containing egg white proteins</i>
FO3	Maya Nobatova	<i>Solar-Driven Photocatalytic Reductions for Sustainable Applications</i>
FO4	Alessia Fata	<i>The formylation of N,N-dimethylcorroles</i>
FO5	Irene Anguillesi	<i>Synthesis and Characterization of Waste Cooking Oil-Derived Polyols for Use as Biolubricants</i>
FO6	Marina Petroselli	<i>Ab initio characterization of hfo_2 and its Zr-doped derivatives for energy harvesting applications</i>
FO7	Miriam Cappello	<i>Biodegradable Nanocomposites for a Greener Future: Investigating Nano-SiO_2 in PLA and PBSA-based systems</i>
PO1	Isabella Lancellotti	<i>Alkali activation for ceramic exhausted lime inertization</i>
PO2	Giovanni Angelo Riva	<i>Through-Plane Ionic Conductivity Measurements of Commercial Membranes and Separators Toward Industrial Nonaqueous Redox Flow Batteries</i>
PO3	Ilenia Acquaro	<i>Innovative composite materials based on biochar and salt hydrate...</i>
PO4	Marianna Bellardita	<i>Photocatalytic CO_2 reduction</i>
PO5	Sara Filippi	<i>Eco-sustainable recycling of red gypsum waste in road pavements</i>
PO6	Gianluca Viscusi	<i>Fabrication of a novel cellulose-based bio-adsorbent functionalised with Mn-doped Fe_3O_4</i>
PO7	Saman Fatima	<i>Physico-chemical and Cytotoxicity Study of Silica/Sodium Alginate Hybrid Biomaterials</i>
PO8	Gian Paolo Suranna	<i>Photodegradation vs. Adsorption Activity in Dye Removal by Surface-Modified TiO_2 Nanorods</i>
PO9	Maria Michela Dell'Anna	<i>Waste cooking oil valorization in the field of sustainable mobility</i>
PO10	Marialuigia Raimondo	<i>Improving the properties of Poly(ethylene-co-methacrylic acid) (EMAA) using carbon nanotubes and expanded graphite</i>
PO11	Viviana Bressi	<i>Sustainable Conversion of Plastic Waste into Valuable Liquid Fuels via Mild Catalytic Processes</i>
PO12	Valentina Siracusa	<i>Life cycle assessment of non-thermal technologies: Cold Plasma & HHP</i>
PO13	Federica Giuliano	<i>Sol-Gel Synthesis and Characterization of Biomaterials with Ferulic Acid</i>
PO14	Roberto Nicoletti	<i>Sodium Iron Phosphate: Cathode Material for Large Scale Batteries</i>
PO15	Ignazio Blanco	<i>Physicochemical Characterization of LDPE greenhouse films treated with agrochemicals</i>

PO16	Ignazio Blanco	<i>Thermal Conductivity Measurements: a Combined Instrumental Approach</i>
PO17	Federica Mandoj	<i>Novel hybrid nanocellulose-porphyrins based optical chemical sensors for heavy metal ions detection</i>
PO18	Giuseppe Vitiello	<i>Amphiphiles-functionalized colloidal F/ZnO quantum dots as biocompatible fluorescent nanoprobe</i>
PO19	Andrea Melchior	<i>Application of a natural zeolite for the recovery of neodymium</i>
PO20	Matteo Bonomo	<i>A new push-pull dye for semi-transparent p-type DSSCs</i>
PO21	Alessandro Francini	<i>Porous geopolymers for thermal insulation: insights from a Life Cycle Assessment study</i>
PO22	Alessia Iennaco	<i>Waste Ceramic Capacitors as Efficient and Recyclable Catalyst...</i>
PO23	Giuseppina Luciani	<i>Hybrid nanomaterials from biowastes for sustainable agriculture</i>
PO24	Antonio Aronne	<i>Synthesis of nonlinear optical materials for quantum sources</i>
PO25	Mengistu Gelaw	<i>Comparative Study of Adsorption and Mechanical Characteristics of Composite Coatings using Zeolite 13X, SAPO-34, and Silica gel for sorption technologies</i>
PO26	Naghmeh Fallah	<i>Carbon-Based Materials in Combined Processes for Removal and Functional Application of Indigo Dye</i>
PO27	Cristina Leonelli	<i>Chemical characterization of heavy metals and anions in geopolymers</i>
PO28	Erica Sonaglia	<i>Nanocellulose from Industrial By-Products as a Renewable Platform for Advanced Materials</i>

Mercoledì 3 settembre

FO8	Micaela Vannini	<i>Decoding the Chemistry-Performance Link in Furan-Based Polymers</i>
FO9	Federica Bucolo	<i>ZnO@GQDs based gas sensor for the detection of H₂S</i>
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FO13	Alessio Carmelo Perri	<i>Neodymium and Yttrium adsorption on citrate-modified cellulose: experimental and computational insights</i>
FO14	Marika Fiorentino	<i>SiO₂-Sodium Alginate Hybrids: Structural and Biocompatibility Assessment</i>
PO29	Maria Stella Leone	<i>Preliminary Characterization of Synthetic Fibers from Fast Fashion</i>
PO30	Sara Maria Giannitelli	<i>Microfluidic-assisted synthesis of bioactive glass nanoparticles</i>

PO31	Alberto Rainer	<i>In vitro models of marine ecotoxicology</i>
PO32	Mariagrazia Musolino	<i>Bifunctional nickel-based compounds as electrocatalysts for green hydrogen production</i>
PO33	Giulia Maria Itri	<i>Direct recovery of spent lithium-ion battery for catalytic hydrogenation reaction</i>
PO34	Emiliano Laudadio	<i>Tunable antioxidant properties of mixed lipid-PLGA matrix encapsulating polyphenols</i>
PO35	Marilena Tolazzi	<i>Recovery of cobalt from lithium-ion batteries by extraction with zeolite modified with ionic liquids</i>
PO36	Michelina Soccio	<i>Chemical modification of potatoes by-products for PLA-based smart packaging</i>
PO37	Simona Ciurciu'	<i>Hybrid nanostructured polyethylene sulfone sulfonate membranes for water remediation</i>
PO38	Luigi Vertuccio	<i>Strain and damage monitoring of expanded graphite /nylon composites</i>
PO39	Salvatore Failla	<i>Dinuclear semi-rigid Zn(salen-type) complex as chemosensor of ditopic amines</i>
PO40	Paola Paoli	<i>Efficient Capture and Dynamic Solvent-Exchange of VOCs via Cu(II)-Bispidine</i>
PO41	Margherita Colombo	<i>Engineering of biomass: bioplastic films from proteins</i>
PO42	Alberto Bottari	<i>A circular approach to flexible electronics: biobased PET recycling</i>
PO43	Roberta Del Sole	<i>Green gold nanoparticles for pollutants removal from water</i>
PO44	Giovanni Sotgiu	<i>An integrated electrochemical system for the purification of polluted water</i>
PO45	Mimimorena Seggio	<i>Advanced Plasmonic-based PoCTs for Attomolar-Level Cytokine Detection</i>
PO46	Giuseppe Marci	<i>Hydrochar from orange peel waste and Black Mass from Spent Li-batteries as co-catalysts of C₃N₄ for H₂ generation from aqueous solutions of organics</i>
PO47	Francesca Anna Scaramuzzo	<i>Sustainable materials from industrial waste for beyond lithium devices</i>
PO48	Tayyaba Kanwal	<i>Photoreforming of glucose via BiOX-TiO₂ composites</i>
PO49	Luisa Barbieri	<i>Green solution for ceramic glazes using vitreous fibers waste</i>
PO50	Piero Mastrorilli	<i>Utilization of Lignin-Rich Biorefinery Residues to Produce Biofuels</i>
PO51	Lavinia Pitari	<i>Pd-catalyzed Suzuki-Miyaura in soy-protein cryogels</i>
PO52	Andrea Ravicini	<i>Pd-decorated carbon nanostructures for sustainable catalysis</i>
PO53	Gioele Pagot	<i>Properties and Conductivity Mechanisms of Hybrid Inorganic Organic Polymer Electrolytes for Na Batteries</i>
PO54	Alessia Scarpiello	<i>Safe and Sustainable Development of Functional Materials for Technical Documentation Systems</i>
PO55	José Miguel Silva Ferraz	<i>A Dual-Mode Knudsen/Langmuir Apparatus with QCM Detection for High-Sensitivity Vapor Pressure Measurements</i>

PO56	Dhanalakshmi Vadivel	<i>From Regolith to Resilience: Geopolymer Materials for Space Construction Under Vacuum Conditions</i>
PO57	Pietro Argurio	<i>Membrane Scale-Up for Chemical Industries (MEASURED)</i>