

PROGRAMMA SCIENTIFICO

XIII Congresso Nazionale AICIng - e II Congresso Nazionale della Divisione di Chimica per le Tecnologie della Società Chimica Italiana

Politecnico di Milano, 25-28 giugno 2023

Domenica 25 giugno - Rettorato del Politecnico di Milano - Piazza Leonardo da Vinci, 32

18:00: **REGISTRAZIONE**

19:00-21:00 **APERITIVO DI BENVENUTO**

Lunedì 26 giugno

8:30-9:00	REGISTRAZIONE Aula De Donato del Politecnico di Milano - Piazza Leonardo da Vinci, 32
9:00-9:20	APERTURA LAVORI DEL CONGRESSO Chairs: Prof.ssa Giuseppina Raffaini e Prof. Fabio Ganazzoli SALUTI DI BENVENUTO: Prof.ssa Isabella Nova – Prorettrice Delegata (<i>Politecnico di Milano</i>) Prof. Antonio Capone – Preside della Scuola di Ingegneria Industriale e dell'Informazione 3I (<i>Politecnico di Milano</i>) Prof.ssa Marinella Levi – Direttore del Dipartimento di Chimica, Materiali, e Ingegneria Chimica "G. Natta" (<i>Politecnico di Milano</i>) Prof. Roberto Paolesse – Presidente AICIng (<i>Università degli Studi di Roma Tor Vergata</i>) Prof. Piero Mastrorilli – Presidente della DCT-SCI (<i>Politecnico di Bari</i>)
9:20-10:00	Chairs: Prof. Roberto Paolesse e Prof. Piero Mastrorilli INVITED PLENARY LECTURE – PL1 PREMIO AICIng per l'impegno a servizio del raggruppamento e dell'Associazione Prof. SALVATORE FAILLA <i>Università degli Studi di Catania</i> Una fucina sotto il Vulcano: dalle molecole ai materiali

Sessione 1		Chairpersons: Prof.ssa Candida Milone e Prof. Giuseppe Marci	
10:00-10:15	OC1 - Claudio IMPARATO <i>Università degli Studi di Napoli Federico II</i> Synthesis of multifunctional materials by sol-gel: from mixed oxide catalysts to polymer-based hybrid nanocomposites		
10:15-10:30	OC2 - Sara DALLE VACCHE <i>Politecnico di Torino</i> Composites from cellulose microfibrils and biobased latexes crosslinked via [2 + 2] photocycloaddition		
10:30-10:45	OC3 - Francesca BALDASSARRE <i>Università del Salento</i> Cellulose nanocrystals-based emulsions of thyme essential oil: preparation and characterization as crop protection tools		
10:45-11.:00	OC4 - Carola ROMANI <i>Politecnico di Milano</i> Synthesis of Fluorinated PAMAM-Arginine and Guanidine Conjugates as Non-Viral Vectors		
11:00-11:30	<i>Coffee Break</i>		
Sessione 2			
Chairpersons: Prof.ssa Roberta Bongiovanni e Dr.ssa Vincenzina Barbera			
11:30-11:50	PREMIO AICIng per Tesi di Dottorato Dr.ssa Emanuela MUSCOLINO <i>Università degli Studi di Palermo</i> Polysaccharide hydrogels for regenerative medicine applications		
11:50-12:05	OC5 - Vincenzo VILLANI <i>Università degli Studi della Basilicata</i> Hydrogels and Bioplastics based on Agar, Gelatin and Chitosan: viscometry and kinetic models of gelling, thixotropy and crosslinking		
12:05-12:20	OC6 - Emanuele LIMITI <i>Università Campus Bio-Medico di Roma</i> Tailoring the physicochemical properties of nanogels via a pneumatically driven microfluidic device		

12:20-12:35	OC7 - Franca CASTIGLIONE <i>Politecnico di Milano</i> Nanosponges-based hydrogels for drug delivery: an HR-MAS NMR investigation
12:35-12:50	OC8 - Antonio D'ANGELO <i>Università degli Studi della Campania "Luigi Vanvitelli"</i> Dyeing metakaolin-based geopolymers with pH indicators: a feasibility study
12:50-13:05	OC9 - Michele BACK <i>Università Ca' Foscari Venezia</i> Cr ³⁺ -doped Phosphors for Thermal Sensing: Advantages and Limitations
13:05-14:30	PRANZO – accanto all'Aula De Donato del Politecnico di Milano
Sessione 3 Chairpersons: Prof.ssa Nadia Lotti e Dr.ssa Maria Enrica Di Pietro	
14:30-14:50	PREMIO AICIng per Tesi di Dottorato Dr.ssa Giselle DE ARAUJO LIMA E SOUZA <i>Politecnico di Milano</i> Study of Structure and Dynamics of Protic Ionic Liquids (PILs) as Electrolytes and Components for Polymer Electrolytes
14:50-15:05	OC10 - Francesco LANERO <i>Università degli Studi di Padova</i> Microwave synthesis of new co-polypyrrole- polyketone anion exchange membranes
15:05-15:20	OC11 - Serena DE SANTIS <i>Università degli Studi Roma Tre</i> Nanostructured titania decorated with copper: effect of the substrate pretreatment on morphology and electrochemical performance of the electrodes
15:20-15:35	OC12 - Virginia VENEZIA <i>Università degli Studi di Napoli Federico II</i> Active bio-packaging produced by encapsulation of Humic Substances into electrospun PHBV films

15:35-15:50	OC13 - Francesca SCARAMUZZO <i>Sapienza - Università di Roma</i> Self-standing Membranes of TiO ₂ Nanotube Arrays: Fabrication, Decoration and Use in Li-Ion Batteries
15:50-16:05	OC14 - Carla BONOLA e Niccolò MANGONE <i>Casa Editrice Pearson</i> Insegnare Chimica con <i>Mastering Chemistry</i>
16:05-16:30	<i>Coffee Break</i>
Sessione 4 Chairpersons: Prof. Antonio Aronne e Prof.ssa Valentina Dichiarante	
16:30-16:50	INVITED KEY-NOTE - KN1 Prof.ssa CRISTINA LEONELLI <i>Università degli Studi di Modena e Reggio Emilia</i> Calcination of N-doped TiO ₂ nanoparticles in a microwave oven
16:50-17:05	OC15 - Alberta GENCO <i>Università degli Studi di Palermo</i> Photoreforming of organics in aqueous suspension of Nb ₂ O ₅ /C ₃ N ₄ composites to obtain H ₂
17:05-17:20	OC16 - Luigi VERTUCCIO <i>Università degli Studi della Campania "Luigi Vanvitelli"</i> Development of composites with Self-responsive functions: Self-sensing, Self-heating and Self-curing
17:20-17:35	OC17 - Fabrizio CAROLEO <i>Università degli Studi di Roma Tor Vergata</i> Colorimetric Hg ²⁺ detection by novel cellulose-based xerogels functionalized by porphyrin receptors
17:35-17:50	OC18 - Stefano ELLI <i>Politecnico di Milano</i> Mechanochemical synthesis of mechanical bonds and guest-inclusion in M12L8 poly-[n]-catenanes

17:50-18:05	OC19 - Elisabetta FINOCCHIO <i>Università degli Studi di Genova</i> Community of Practice and Faculty Development at the Polytechnic School of Genoa University
18:05-19:00	<i>POSTER SESSION</i> <i>Si svolgerà accanto all'aula De Donato.</i>

Martedì 27 giugno

Sessione 5 <i>Chairpersons: Prof.ssa Isabella Chiarotto e Prof. Alessandro Sacchetti</i>	
8:30-8:45	OC20 - Francesca BALDELLI BOMBELLI <i>Politecnico di Milano</i> Fluorinated nanoparticles as powerful probes for bioimaging
8:45-9:00	OC21 - Lucio MELONE <i>Università Telematica eCampus</i> Cyclodextrin-based polynitroxides for in vivo imaging
9:00-9:15	OC22 - Consuelo CELESTI <i>Università degli Studi di Messina</i> Nanobiochar derived from orange peel for targeted cancer therapy
9:15-9:30	OC23 - Simona SABBATINI <i>Università Politecnica delle Marche</i> In vitro Cytotoxicity of asbestos: a combined FTIR and EPR study
Sessione 6 <i>Chairpersons: Prof.ssa Silvia Licoccia e Prof. Andrea Mele</i>	
9:30-10:10	INVITED PLENARY LECTURE – PL2 Dr. FRANCESCO ROMANI <i>Head of Materials Management – Pirelli Tyre Milano</i> Materiali per l'Industria dello pneumatico, la Sfida della Sostenibilità
10:10-10:30	PREMIO AICIng per Tesi di Dottorato Dr.ssa Federica PIRAS <i>Università del Salento</i> Integrated Advanced Oxidation and Biofiltration Technologies for Wastewater Reuse
<i>10:30-11:00</i>	<i>Coffee Break</i>
Sessione 7 <i>Chairpersons: Prof.ssa Marta Feroci e Dr.ssa Arianna Rossetti</i>	
11:00-11:15	OC24 - Piero MACCHI <i>Politecnico di Milano</i> Coordination network for spintronic applications: the role of high pressure

11:15-11:30	<p>OC25 - Martina LIPPI <i>Università degli Studi di Firenze</i> Chiral resolution via selective crystallization of diastereomeric salts: a case study involving NSAIDs</p>
11:30-11:45	<p>OC26 - Serena DUCOLI <i>Università degli Studi di Brescia</i> Plastic Pollution at the micro and nanoscale: “true-to-life” test materials</p>
11:45-12:00	<p>OC27 - Mirko MAGNI <i>Università degli Studi di Milano</i> Different approaches for a common scope: improving the sustainability of polymer coatings for corrosion protection</p>
<p>Sessione 8 Chairpersons: Prof. Pierluigi Stipa e Prof.ssa Sandra Dirè</p>	
12:00-12:20	<p>INVITED KEY-NOTE - KN2 Prof.ssa ALESSANDRA D'EPIFANIO <i>Università degli Studi di Roma Tor Vergata</i> Design of hierarchical nanostructures for oxygen reduction reaction in energy conversion systems</p>
12:20-12:35	<p>OC28 - Emanuela MASTRONARDO <i>Università degli Studi di Messina</i> Doping Strategies for The Enhancement of The Thermochemical Heat Storage Capacity of CaMnO₃</p>
12:35-12:50	<p>OC29 - Marialuigia RAIMONDO <i>Università degli Studi di Salerno</i> Outperforming electrical properties of hybrid composites based on carbon nanotubes and graphene nanosheets</p>
12:50-13:05	<p>OC30 - Maria Chiara SPENNATO <i>Università degli Studi di Bologna</i> Recent advances in enzyme exploitation for polymer science: recycling and upcycling</p>
13:05-14:30	<p>PRANZO – accanto all’Aula De Donato del Politecnico di Milano</p>

Sessione 9	
14:30-15:30	Chairs: Prof. Piero Mastrorilli (President) e Prof. Salvatore Failla (Past President) ASSEMBLEA soci DCT-SCI
15:30-16:30	Chairs: Prof. Roberto Paolesse (President) e Prof.ssa Marilena Tolazzi (Past President) ASSEMBLEA soci AICIng
16:30-17:00	<i>Coffee Break</i>
17:00-18:30	TAVOLA ROTONDA "Dalla ricerca all'innovazione. Il ruolo del trasferimento tecnologico" Coordinatore: Prof. Maurizio Galimberti (Politecnico di Milano) Intervengono: Enrico ALBIZZATI - <i>Pirelli e Università degli Studi di Milano-Bicocca</i> Alessia MOLTANI - <i>Comftech srl</i> Chiara MARCOLIN - <i>Leonardino Srl</i> Roberto TIEZZI - <i>Università degli Studi di Milano</i> Enrico ZANOLI - <i>Zanoli & Giavarini S.p.A.</i>
20:00	CENA SOCIALE: "Osteria del Treno" – Via S. Gregorio 46 - 20124 Milano

Mercoledì 28 giugno

Sessione 10 <i>Chairpersons: Prof. Francesco Mauriello e Prof.ssa Isabella Natali Sora</i>	
8:30-8:45	OC31 - Lorenzo VIGANÒ <i>Università degli Studi di Milano-Bicocca</i> Adsorbent-photocatalytic multifunctional materials for wastewater treatment
8:45-9:00	OC32 - Maria Grazia MUSOLINO <i>Università Mediterranea di Reggio Calabria</i> High-entropy oxides-based electrode materials for water desalination via capacitive method
9:00-9:15	OC33 - Francesca ABATEMATTEO <i>Politecnico di Bari</i> Poly(vinyl alcohol) formulations as waterborne coatings to improve paper media resistance
9:15-9:30	OC34 - Michelina SOCCIO <i>Università degli Studi di Bologna</i> Green recycling of biobased polymeric systems
Sessione 11 <i>Chairpersons: Prof.ssa Michelina Catauro e Prof. Giuseppe Ciccarella</i>	
9:30-9:50	PREMIO AICInG per Tesi di Dottorato Dr.ssa Laura RIVA <i>Politecnico di Milano</i> Nanocellulose: production and applications of an innovative eco sustainable resource
9:50-10:05	OC35 - Alessandra ZANOLETTI <i>Università degli Studi di Brescia</i> A microwave-enhanced method for the recovery of strategic metals from spent lithium-ion batteries
10:05-10:20	OC36 - Biagia MUSIO <i>Politecnico di Bari</i> Eco-design of innovative release agents

10:20-10:35	OC37 - Dhanalakshmi VADIVEL <i>Università degli Studi di Pavia</i> The investigation of LD540 behavior with albumins
<i>10:35-11:00</i>	<i>Coffee Break</i>
Sessione 12 Chairpersons: Prof.ssa Laura Eleonora Depero e Prof. Carlo Punta	
11:00-11:15	OC38 - Ivan Pietro OLIVERI <i>Università degli Studi di Catania</i> Vapochromic and vapoluminescent Zn(II) Schiff- base complexes as chemosensors for volatile organic compounds
11:15-11:30	OC39 - Gabriele MAGNA <i>Università degli Studi di Roma Tor Vergata</i> Conductive Polycorrole Sensors for Room-Temperature Detection of Nitric Oxide
11:30-11:45	OC40 - Damiano ROSSI <i>Università degli Studi di Pisa</i> Doped Li ₄ SiO ₄ -based sorbents for CO ₂ capture at high temperature
11:45-12:00	OC41 - Nico ZAMPERLIN <i>Università degli Studi di Trento</i> BaTiO ₃ -PDMS nanocomposites for energy harvesting: enhancing the dielectric performance through ceramic particles' functionalization
12:00-12:15	OC42 - Stefano FALCINELLI <i>Università degli Studi di Perugia</i> Doubly Charged Species in the Upper Atmosphere of Planets and Space
12:15-12:45	PREMIAZIONI e CONCLUSIONE DEI LAVORI

POSTER SESSION

18:05-19:00: Lunedì 26 giugno (accanto all'aula De Donato)

Non si svolgeranno *Flash Poster Presentation* in aula De Donato

- **P1** TOLAZZI, Marilena Rare-Earth Magnet Recycling using Phosphonium based Ionic Liquids
- **P2** PUNTA, Carlo Nanocellulose-based solutions for water treatment
- **P3** DAL POGGETTO, Giovanni Inorganic polymers with waste cork powder
- **P4** CHIAROTTO, Isabella Bottom-up Synthesis and Application of Carbon Dots from Agri Food Waste
- **P5** BUGNOTTI, Daniele Effect of storage time and relative humidity in bio-nanocomposites for sustainable food packaging (BIOSTAR-PACK)
- **P6** BLANCO, Ignazio Chemical Recycling of Fully-recyclable Bio-Epoxy Matrices and Re-use strategies: a Cradle-to-Cradle approach
- **P7** CATAURO, Michelina Recycling ash from wood-fired ovens through geopolymers: synthesis and characterisation.
- **P8** ROMANO, Angela Recycling by-design of plastics through thermally protected enzymes
- **P9** BOTTARI, Alberto Chemical recycling of elastomeric and viscoelastic polyurethanes
- **P10** RUINI, Chiara Integrated approach of Life Cycle Assessment and Experimental Design in the study of an organic synthesis
- **P11** BONTEMPI, Elza Sustainability analysis of lithium-ion batteries recycling processes developed at low TRL
- **P12** BRESSI, Viviana Organosolv Treatment of Bagasse Beer for Enhanced Biomass Valorization and Microwave- Assisted Conversion of Hemicellulose to Furfural as a Platform Chemical
- **P13** SIRACUSA, Valentina Sustainable aliphatic/aromatic furan-based films for food packaging applications

- **P14** GALLO, Vito Food analysis by Community-Built NMR Analytical Systems
- **P15** MAURIELLO, Francesco The full valorization of anchovy fillet leftovers: a prospective life cycle assessment
- **P16** DIRÈ, Sandra Biostar-Pack: preparation of starch nanocomposites towards the valorization of organic food waste for sustainable packaging
- **P17** RAOS, Guido CO₂ sequestration and storage in seawater: experimental and modelling approaches
- **P18** PILIA, Luca Cyclopentadienyl-phenylendiamino-cobalt complexes as homogeneous selective electrocatalysts for CO₂ reduction.
- **P19** DEPERO, Laura Eleonora Exploring the Circular Economy's Potential for Foundry Sands
- **P20** MARZORATI, Stefania Targeting phenolics through supercritical CO₂ technology: valorization of coffee silverskin for functional extracts production
- **P21** RAOS, Guido Squalane: a test case for computational rheology of molecular and complex fluids
- **P22** PICARELLI, Chiara Study on Perampanel for drug sensing by DFT and Raman spectroscopy
- **P23** FINOCCHIO, Elisabetta A close look at the catalyst surface: Oxygenated and Chlorinated VOCs conversion over Fe-Ceria catalyst through FT-IR spectroscopy
- **P24** FAMULARI, Antonino Unusual properties of M12L8 poly-[n]-catenanes: a QM/X-ray study
- **P25** CAPPELLO, Miriam Waste oil/water emulsions as absorbents for volatile organic solvents abatement
- **P26** PETRUCCI, Rita Blood-Brain Barrier (BBB) permeability of new miconazole-like scaffold compounds by HPLC-ESI-MS/MS
- **P27** LOTTI, Nadia Hydrogel-like PBS-based thermoplastic copolymer for biomedical applications
- **P28** GIANNITELLI, Sara Maria Printability assessment of a thermosensitive photocurable biomaterial ink

- **P29** MILESI, Pietro Development of MEK and AURKA drug inhibitors delivery systems for the treatment of metastatic melanoma tumour
- **P30** NADDEO, Simone Multifunctional uses of furan derivatives: from fine chemicals to bio-based materials
- **P31** GUAITA, Lorenzo Macrostructure control of bio-derived elastomeric polyesters
- **P32** DISPENZA, Clelia Novel functional biomaterials from egg white protein irradiation
- **P33** MELCHIOR, Andrea Adsorption of Cisplatin and Its Derivatives on Graphene
- **P34** PIROZZI, Pasqualina Intermolecular interactions between quercetin and amorphous SiO₂ surface for drug delivery in biomedical applications
- **P35** ARONNE, Antonio In Situ Modification of Hybrid Silica-Epoxy Flame Retardant Nanocomposites by Phosphorus via a Green Hydrolytic Sol-Gel Route
- **P36** FONTANA, Francesca Azahelicenes as inherently chiral selectors for electrochemical enantiodiscrimination of biomolecules
- **P37** BERTOLOTTI, Benedetta Preparation and characterization of a new hybrid heterohelicene
- **P38** GUIDOTTI, Giulia Ad-hoc designed aliphatic random copolymers for cardiac differentiation of pluripotent stem cells
- **P39** TERRANEO, Giancarlo Halogen-bonded Metal -Organic Frameworks
- **P40** ZAMBITO MARSALA, Massimo Bionanocomposites based on a covalent network of chitosan and edge functionalized graphene layers
- **P41** CECCATO, Riccardo Low temperature synthesis of bismuth-halogen perovskites for photoelectrochemical applications
- **P42** NATALI SORA, Isabella X-Ray diffraction analysis of historic mortars of the Bergamo Walls
- **P43** DICHIARANTE, Valentina Co-Crystal Strategy for Tuning the Properties of Amino Acid-based Hydrogels
- **P44** DI PIETRO, Maria Enrica A deep dive into structure and dynamics of hydrophobic eutectics and eutectogels

- **P45** ROMANO, Susanna Starch films plasticised by novel dicationic imidazolium-based ionic liquids
- **P46** BARBIERI, Luisa Chemical and technological solutions for the management of WEEE: the PINECOR project
- **P47** BELLARDITA, Marianna Noble metal free Cu₂O/TiO₂ catalysts for glycerol photoreforming
- **P48** CASULA, Maria Magnetic nanocomposite aerogels in catalysis
- **P49** LEONE, Maria Stella Steel Slags based catalyst for partial hydrogenation of Fatty Acid Methyl Esters from Waste Cooking Oil
- **P50** MARCÍ, Giuseppe Catalytic valorisation of Chlorella sp. algae to obtain 5-Hydroxymethylfurfural in the presence of Nb₂O₅ or NbOPO₄
- **P51** PARRINO, Francesco Selective photocatalytic degradation in the presence of amine-stabilized boronate groups grafted at the surface of TiO₂
- **P52** PELOSATO, Renato Degradation of oxytetracycline in water using photocatalyst powder immobilized on mullite ceramic foam
- **P53** CALABRESE, Giulia ABO₃ perovskite oxides as candidate materials for hydrogen storage
- **P54** MAGNI, Mirko Towards the recovery of metals from spent lithium-ion batteries: an academy-industry joint venture to face the several challenges
- **P55** GOTTUSO, Alessandro Oxidative cleavage of C=C double bond through nitrate radicals generated in photocatalytic TiO₂ suspensions
- **P56** FEROCI, Marta Carbon Dots: Electrochemical Synthesis and Applications
- **P57** ROMEO, Chiara Enhancing thermal conductivity of polymer nanocomposites through filler functionalization
- **P58** SGRECCIA, Emanuela Low-Cost Metal-Free Electrodes for the Oxygen Reduction Reaction
- **P59** FERLAZZO, Angelo Nanobiochar wasted-derived from orange peel for the detection of nitrites and sulfites by electrochemical sensor

- **P60** NARDUCCI, Riccardo Different Strategies to Increase the Stability of Anion Exchange Membranes
- **P61** NATALI, Daniele Synthesis and characterization of tailored PBS-PCL cross-linked systems as potential shape-memory material
- **P62** D'ALESSANDRO, Eleonora Droplet-based synthesis of nanogels: a Design of Experiments approach
- **P63** DONDI, Daniele Butlerov reaction: a detailed LC-MS characterization
- **P64** ROSSETTI, Arianna Microwave-assisted multicomponent cascade for the synthesis of novel thiophene[3,2-d]pyrimidine derivatives
- **P65** SEGGIANI, Maurizia Pyrolyzed tannery sludge as sorbent of volatile organic compounds from tannery emissions
- **P66** SGARBOSSA, Paolo Pt(II) and Au(I) complexes with ionic- and hydrophobic-groups functionalized TPA derivatives
- **P67** NEFEDOVA, Darya Cu based catalysts on Steel Slags for the reduction of nitroarenes in aqueous medium
- **P68** RIGHETTI, Grazia Isa Carla Development of a flow process for an easy and fast access to 2-pyrone derivatives
- **P69** PIRAS, Federica Advanced Oxidation Processes (AOPs) for the Efficient Removal of Organic Pollutants: Link Bench to Pilot Scale
- **P70** D'EPIFANIO, Alessandra Synthesis of new water-soluble electroactive species for sustainable Redox Flow Batteries (RFB)
- **P71** MUSCOLINO, Emanuela Gamma-radiation induced modifications on polysaccharides to increase their 3D printability for tissue engineering applications
- **P72** DI NOTO, Vito Correlation Between Structure, Coordination, and Ion Conductivity of POE-Based Polymer Electrolytes for Calcium Secondary Batteries
- **P73** DI NOTO, Vito High-Temperature "Ex-Situ" Cyclic Voltammetry to Study the Oxygen Reduction Reaction on Electrocatalysts in Conditions Mimicking Fuel Cell Operation