



Società Chimica Italiana
Sezione Campania

Workshop on Sustainable Polymers and Circular Economy of Plastics

Ischia

1-4 September 2024



SUNDAY 1st September 2024

14.00	<u>Registration</u>
15.45	<u>Opening</u> Claudio PELLECCIA - <i>University of Salerno, Italy</i>
16.00	Robert M. WAYMOUTH - Stanford University, USA <i>PL-1: Challenges and opportunities for sustainable plastics: a chemist's perspective</i>
16.45	Christophe THOMAS - Chimie-ParisTech, France <i>PL-2: One-pot catalysis: a privileged approach for sustainable polymers</i>
17.30	<u>Coffee-break</u> Chairperson: Mina Mazzeo
18.00	Massimo C. D'Alterio - <i>University of Naples Federico II, Italy</i> <i>OC-1: Stereoselective rac-Lactide Polymerization at Al-Salen Complexes: Models for Enantiomorphic Site and Chain End Control Mechanisms</i>
18.15	Ainara Sangroniz - <i>University of the Basque Country, Spain</i> <i>OC-2: Sustainable polyesters with outstanding barrier character for packaging applications</i>
18.30	Silvia Rossi - <i>Tetra Pak Packaging Solutions Spa, Italy</i> <i>OC-3: Sustainable Polymers for Food Packaging Equipment Design</i>
18.45	Benedetta Brugnoli - <i>University of Rome La Sapienza, Italy</i> <i>OC-4: Sustainable branched polyesters from renewable polyols</i>
19.00	Rachele Zunino - <i>Scuola Superiore Meridionale, Italy</i> <i>OC-5: Highly selective bis-urea catalysts for biodegradable polymers: intricate mechanism(s) revealed by DFT calculations</i>
19.15	<u>End of the session</u>
20.00	<u>Welcome party</u>



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MONDAY 2nd September 2024

	Chairperson: Daniela Pappalardo
9.00	Eugene Y.X. CHEN - Colorado State University, USA <i>PL-3: Sustainable mono-material product design with circular and biodegradable polymers</i>
9.45	Minna HAKKARAINEN - KTH Royal Institute of Technology, Sweden <i>PL-4: Polymers with inherent circularity</i>
10.30	Miriam Scoti - University of Naples Federico II, Italy <i>OC-6: Crystal Structure of Atactic and Isotactic Poly(3-hydroxy-2,2-dimethylbutyrate): A Chemically Recyclable Poly(hydroxyalkanoate) with Tacticity-Independent Crystallinity</i>
10.45	Coffee-break
	Chairperson: Carmine Capacchione
11.15	Bernhard RIEGER - Technical University of München, Germany <i>PL-5: The hidden champions: vi-PHB, polycarbonates & blends</i>
12.00	Marta E. G. Mosquera - University of Alcalá, Spain <i>OC-7: Earth abundant metal catalysts for the chemoselective synthesis of functionalized and biobased polymers</i>
12.15	Pierangiola Bracco - University of Turin, Italy <i>OC-8: Exploring Polyester Biodegradation by Filamentous Fungi</i>
12.30	Federica Santulli - University of Salerno, Italy <i>OC-9: Synthesis and chemical recycling of polyesters promoted by Zn complexes</i>
12.45	Christian Rentero - University of Alcalá, Spain <i>OC-10: Sustainable production of polyethylene brassylate as an innovative bioplastic</i>
13.00	Lunch break & Poster session #1
	Chairperson: Lucia Caporaso
15.00	Stefan MECKING - University of Konstanz, Germany <i>PL-6: Circular and non-persistent polyethylene-like materials from catalysis</i>
15.45	Massimiliano DELFERRO - Argonne National Lab, Department of Energy, USA <i>PL-7: Top-Down Synthesis of Chemically Recyclable Polyolefins</i>
16.30	Barbara Milani - University of Trieste, Italy <i>OC-11: The unexpected, successful interplay between ligand and solvent in Pd-catalysis for functionalized polyolefin synthesis</i>
16.45	Coffee-break



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	Chairperson: Marina Lamberti
17.15	Arnaud Thevenon - Utrecht University, Netherlands <i>OC-12: Subtleties in Monomer Design for RO(M)P on Bioderived Diels-Alder Adducts</i>
17.30	Huidi Sun - ESPCI-Paris Sciences, France <i>OC-13: Upcycling polyolefin blends into recyclable high-performance materials by reactive processing</i>
17.45	Maya Jacob John - Nelson Mandela University, South Africa <i>OC-14: Development of compostable materials for use as single-use plastics in the biomedical sector</i>
18.00	Nancy Ferrentino - University of Sannio, Italy <i>OC-15: Dual-Responsive PCL-PEG-PCL triblock copolymer nanoparticles as a novel drug delivery system</i>
18.15	Maria Vittoria Piras - University of Cagliari, Italy <i>OC-16: From local agrifood waste to advanced materials for sensing</i>
18.30	Raffaella Lettieri - University of Rome Tor Vergata, Italy <i>OC-17: Synthesis of lignin nanoparticles through the valorization of winemaking by-products</i>
18.45	Erika Ghiglietti - University of Milano-Bicocca, Italy <i>OC-18: Design of innovative strategies for the synthesis of bio-based nanocapsules: new perspectives</i>
19.00	<u>End of the session</u>



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TUESDAY 3rd September



Chairperson: Giovanni Talarico

9.00 **Anthony J. RYAN - University of Sheffield, UK**

PL-8: Fossil-identical bioplastics enable carbon sequestration at the end-of-life

9.45 **Moshe KOL - Tel Aviv University, Israel**

PL-9: Poly(lactic acid) – circular economy with new catalysts

10.30 **Micaela Vannini - University of Bologna, Italy**

OC-19: The furan ring along the macromolecular chain: effects of polar bio-based unit on the material properties of furan-based polyesters

10.45 Coffee-break

Chairperson: Finizia Auriemma

11.15 **Renaud NICOLAY - ESPCI Paris Sciences & Lettres University, France**

PL-10: Phase separation: an effective tool to improve the performance and processability of vitrimers

12.00 **Erica Laguzzi - University of Piemonte Orientale, Italy**

OC-20: Covalent adaptable networks based on β -amino esters

12.15 **Anna Liguori - University of Bologna, Italy**

OC-21: Isosorbide- and Vanillin-Based Ester and Ester-Imine Thermosets: Structure-Property Recyclability Relationships

12.30 **Beatrice Tagliabue - Politecnico di Milano, Italy**

OC-22: Fully bio-based epoxy coatings from tomato waste for corrosion protection

12.45 **Diana G. Oldal - King Abdullah University of Science and Technology, Saudi Arabia**

OC-23: Biobased polymers and solvents for membrane materials: from macropores to nanopores

13.00 Lunch break & Poster session #2

Chairperson: Alfonso Grassi

15.00 **Maurizio GALIMBERTI - Politecnico di Milano, Italy**

PL-11: Sustainable rubbers

15.45 **Luca Narducci - University of Liège/ Karlsruhe Institute of Technology, Germany**

OC-24: Solvent-free NIPU adhesives and coatings: substituting isocyanate-based polymers with safer alternatives

16.00 **Giuseppe Gravina - University of Salerno, Italy**

OC-25: New Fe(II) catalysts for sustainable biopolymers design

16.15 **Monica Bertoldo - University of Ferrara, Italy**

OC-26: Development of biobased polyesters and polyurethanes from tomato by-products for coating applications

16.30 **Michele Tomasini - University of Salerno, Italy**

OC-27: Phosphazene-Catalysed Ring Opening Polymerization of Aliphatic Cyclic Carbamates: a DFT Study

16.45 **Edoardo Miravalle - University of Torino, Italy**

OC-28: Recovering Thermosetting PU Waste: a Dynamic Polymer Network Approach

17.00 **Sara Mecca - University of Milano Bicocca, Italy**

OC-29: Unlocking Vegetable Waste Potential: A Novel Circular Biorefinery Approach In Sustainable Biofilm Formation

17.15 End of the session

17.30 Excursion & Social dinner



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WEDNESDAY 4th September 2024

Chairperson: Gaetano Guerra

9.00	Gert-Jan GRUTER - University of Amsterdam & Avantium, Netherlands <i>PL-12: The future of plastics from biomass and CO₂</i>
9.30	Mariagiovanna VETERE - NatureWorks, USA <i>PL-13: PLA and innovative biopolymers in the circular bioeconomy context</i>
10.00	Nicola FIOROTTO - Versalis S.p.A., Italy <i>PL-14: Versalis' approach to plastic circularity through complementary solutions</i>
10.30	<u>Coffee-break</u>
11.00	Filippo LONGA - Plastipak, USA <i>PL-15: PET as an example of sustainable polymers for the circular economy of plastics: the Plastipak case</i>
11.30	Michael NORTON - EASAC, Belgium <i>PL-16: How can the plastics treaty stimulate plastics sustainability and circularity?</i>
12.00	<u>Closing</u> Gaetano GUERRA - University of Salerno, Italy



POSTER SESSION #1 (MONDAY 2nd September 2024)

P1	Maria Rosaria ACOCELLA - Biochar as sustainable filler for regenerated PLA
P2	David ALBANO - Sustainable Recovery of Ethylene Vinyl Acetate and Terephthalic Acid from end-of-life photovoltaic panels
P3	Sara ALFANO - Advancements in sustainable poly-hydroxyalkanoates (PHAs) recovery
P4	Matilde ARESE - Post-industrial recycled polypropylene for automotive application: mechanical properties after thermal ageing
P5	Federico BEGNI - Porous carbons from urban plastic wastes for CO ₂ adsorption
P6	Alice CARAVELLA - Grape shoots: from sustainable polymers extraction to synthesis of biobased bioplastic
P7	Francesco CATALINI - Investigation of a new bio-based monomer synthesis for an active poly(urethane-acrylate)
P8	Clarissa CIARLANTINI - Recovery and recycling of polypropylene socks to increase the sustainability of mussel farming
P9	Irene CONTENTO - Selective aerobic oxidation and oxidative esterification of furanic compounds over gold nanoparticles embedded in porous poly(2,6-dimethyl-1,4 phenylene oxide)
P10	Jessica COSTA - Chitosan: A Polymer of Limitless Potential
P11	Valerio CUBONI - From NANOpastics to bioplastic toward environmental sustainability: a green algae-based approach
P12	Olga D'ANANIA - From stereoselective α -olefin polymerization to diastereoselective cyclopolymerization of α,ω -diolefins: closing the loop
P13	Fabio DE STEFANO - Stereoselective propene/ α,ω -non conjugated dienes copolymerization as a tool to obtain novel functional isotactic polypropylene-based materials
P14	Ludovica DI LORENZO - Innovative bio-based and waste-derived fillers in polypropylene compounds for reduced environmental impact in automotive applications
P15	David DUMAS - Bio-derived tetrahydrofuranic lactone as a toughening statistical comonomer for lactide
P16	Sara ESPOSITO - Synthesis of Copolymers from ROCOP of Renewable Sources' Epoxides, CO ₂ and/or Cyclic Organic Anhydride Promoted by β -Diiminato-Zinc-Complex
P17	Anna Maria FOVANNA - Experimental and theoretical investigation of iminopyridine iron complexes as precatalysts for the polymerization of β -myrcene
P18	Licia GAETA - Recyclable Thermosetting Materials from Renewable Sources: Synthesis and Characterization of PLA-Based Thermosets
P19	Maria GENTILE - Sustainable end-of-life management of poly(lactide) promoted by Zn catalysts
P20	Alessia GIANNATTASIO - Impact of microplastics in wastewater and seawater
P21	Angelo GIORDANO - Tailoring the mechanical properties of iPP-based copolymers through the addition of specific polymeric additives
P22	Ilaria GRIMALDI - Isospecific Polymerization of Bio-Based trans-1-phenyl-1,3-butadiene Promoted by Titanium-OSSO Complexes and Its Copolymerization with Linear Terpenes
P23	Pedro Henrique HERMES DE ARUJO - Enzymatic polycondensation: branching selectivity of poly(propylene succinate-co-glycerol succinate)
P24	Elena Aurora INCARBONE - Chameleonic Cosmetics: Developing Innovative Photochromic Polymers and Macromolecules
P25	Jonathan JAYARATNAM - Tuning optical properties of films by using self-patterning
P26	Elisabetta LACOLLA - Characterization of urban park littering in Italy to promote new policy actions
P27	Briec LE BESNERAIS - Boronic Ester-Based Vitrimers Exhibiting Improved Mechanical Properties and Flow Properties



POSTER SESSION #2 (TUESDAY 3rd September 2024)

P28	Alessandro MAGRO - Controlled upcycling of commodity plastics
P29	Leonardo MARCHESE - Eco-sustainable development of ultra porous polymers and carbons for hydrogen storage and delivery: the ECOSTORE-H2 project
P30	Raffaele MARTUCCI ZECCA - Sustainable-by-design PLA adaptable networks
P31	Francesca MIGLIOLI - Compatibilization of polyolefins for food packaging applications via associative CANS
P32	Carmen MINICHELLO - From food waste to eco-friendly functionalized polymer composites: investigation of orange peels as active filler
P33	Serena MOCCIA - The origin of stereoselectivity at Achiral Al-Salen Complexes Toward <i>rac</i> -LA Polymerization: a DFT investigation
P34	Muhammad MUDASSIR - Seawater samples analysis for the detection and classification of microplastics validating the innovative KYTHARATM device
P35	Ester MULA HERRERO - Catalyzed ROP of BBL for the obtention of green additives for bacterial PHB with advanced properties
P36	Hafiza Hifza NAWAZ - Photocatalytic Degradation of Pollutants by 2D Material Based Nanochannels for Water Filtration
P37	Riccardo NOVELLI - Advancing Polymer Sustainability in Defence: The UTILE Project's Innovations
P38	Giulio CARACCILO - A Step Forward in Chemical and Mechanical Recycling of Plastics through a FLA-Based Technology for Micro- and Nanoplastics Detection
P39	Matteo RIGHETTI - Development and properties optimization of bio-nanocomposite sustainable packaging solutions through combination of thermo plasticized starches and organo-modified nanoclays
P40	Gianluca RINALDI - Structural Modifications and Keratin Integration in Polybutylene Succinate for Sustainable Advanced Materials
P41	Eugenio ROMANO - DFT insights on homo and copolymerization of Lactide and Caprolactone promoted by Zn(II) and Fe(II) pyridylamido catalysts
P42	Simona RUSSO - Chemical Recycling of Post-Consumer PLA waste: One-pot Degradation and Functionalization
P43	Aldo Jesus RUTA - Mathematical modeling of the tensile behavior of biocomposites based on bioplastics and agri-food waste
P44	Luce SALOME - Dynamic silyl ether linkages for advanced material design
P45	Claudia SAYER - Enzymatic copolymerization of macrolactones: modulating polymer properties
P46	Teresa PADUANO - Design of stimuli-responsive BIO-based materials for Lf release
P47	Mariachiara SPENNATO - Advances in upcycling of plastic packaging waste: chemical and enzymatic strategies for post-consumer Poly(lactic acid)
P48	Nicolò SPIGARIOL - Agri-food waste valorization: development of a sustainable innovative polymer composite
P49	Martina MORELLO - Polybutadiene degradation studies through NMR spectroscopy
P50	Federica TUFANO - NHC-Based Zinc Complexes for the synthesis and chemical upcycling of Polyesters and Polycarbonates
P51	Micaela VANNINI - Alternative valorisation of biodegradable polymers: versatile depolymerization of poly(lactic acid) towards oligomers
P52	Joan Martin VINUEZA VACA - Titanium at the Helm: Driving Sustainable Additives for Poly(Lactic Acid) Improvement through Polymyrcene and Polyanehtol Synthesis
P53	Maria VOCCIA - Mechanistic Insights into Nonalternating Ethylene-Carbon Monoxide Copolymerization Reaction