



## SCIENTIFIC PROGRAM

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# SCIENTIFIC PROGRAM

Monday 14<sup>th</sup> November 2022

08.30-09.30	Registration	
	Opening session ROOM A	
09.30-09.45	<b>Opening and welcome to the University of Alicante</b> Alfonso Jiménez-María del Carmen Garrigós.	
09.45-10.30	<b>Opening Lecture</b> Lars Berglund (KTH, Stockholm, Sweden). <i>In-situ</i> polymerization of cellulose biocomposites for sustainable development	
10.30-11.00	<b>Keynote Lecture 1</b> Tadahisa Iwata (University of Tokyo, Japan). Development of high-performance microbial polyesters and polysaccharide ester derivatives	
11.00-11.30	<b>Keynote Lecture 2</b> Debora Puglia (University of Perugia, Italy). Multifunctional lignin-based nanocomposites and hybrids	
11.30-12.00	Coffee break	
	ROOM A (Chair Alejandro Muller)	ROOM B (Chair Tadahisa Iwata)
12.00-12.20	<b>OC1.</b> Luc Averous. A brief journey through two decades of active research on renewable polyurethanes	<b>OC6.</b> Yawen Yao. Aqueous processing of polyamide 11/light colored lignin blends under mild conditions
12.20-12.40	<b>OC2.</b> Antonella Esposito. A few examples of the fruitful encounter between biopolymers and advanced thermal analysis	<b>OC7.</b> Anna Czajka. Chemically modified lignocellulose as polylactide filler
12.40-13.00	<b>OC3.</b> Nadia Lotti. Poly(butylene furanoate) film for sustainable food packaging: Mechanical, gas barrier, and welding behaviour	<b>OC8.</b> Izaskun Larraza. Waterborne polyurethane-urea and natural extracts-based bioactive inks for 3D printing
13.00-13.20	<b>OC4.</b> Stefano Fiori. Recent developments on the application of oligomers of lactic acid	<b>OC9.</b> Karen Tatiana Salas-Calderón. Effects of different extraction on properties and future applications of cocoa pod husk pectin
13.20-13.40	<b>OC5.</b> Juan Carlos García-Quesada. Testing the processability of TPS based on blends of starches from different botanical origin	<b>OC10.</b> Silvia Helena Prado Bettini. PLA chain extension by reactive processing aiming foaming
13.40-15.00	Lunch	
15.00-15.30	<b>Keynote lecture 3. ROOM A (Chair José M. Kenny)</b> Francisco Vilaplana (KTH, Stockholm, Sweden) Enzyme technology for the upgrading of agricultural waste biomass into multifunctional materials	

	<b>ROOM A (Chair José M. Kenny)</b>	<b>ROOM B (Chair Nadia Lotti)</b>
<b>15.30-15.50</b>	<b>OC11.</b> Luis Cabedo. Performance and biodegradation of PHA-based bioplastics	<b>OC16.</b> Qiuyuan Huang. Development of enzyme embedded polyester with biodegradability
<b>15.50-16.10</b>	<b>OC12.</b> Chloé Chevigny. Hierarchical materials based on nanocellulose and poly(lactic acid)	<b>OC17.</b> Carlos Javier Pelegrín. Sustainable composites based on thermoplastic starch reinforced with industrial horchata wastes
<b>16.10-16.30</b>	<b>OC13.</b> Alaitz Etxabide. From grape marc to active/intelligent films and poly(3-hydroxybutyrate) production	<b>OC18.</b> Konstantinos Makryniotis. An interdisciplinary approach for the discovery and utilization of novel polymer degrading enzymes
<b>16.30-16.50</b>	<b>OC14.</b> Arunjunai Raj Mahendran. Manufacturing and characterization of bio-based organosheets with natural fibre reinforcement for aerospace interior application	<b>OC19.</b> Marina Ramos. Preparation of biodegradable microcapsules based on chitosan, starch and rice straw biochar for use in agriculture
<b>16.50-17.10</b>	<b>OC15.</b> Stamatina N. Vouyiouka. Sustainable challenges to produce green polymers and manage their waste: Solid state polymerization	<b>OC20.</b> Ahmet Ozan Basar. Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) electrospun nanofibers containing natural deep eutectic solvents exhibiting a 3D rugose morphology and charge retention properties
<b>17.10-18.30</b>	<b>Coffee break/Poster session 1</b>	
<b>20.30</b>	<b>Conference dinner. Casino Alicante</b>	

## Tuesday 15<sup>th</sup> November 2022

<b>08.30-09.15</b>	<b>Plenary Lecture ROOM A. (Chair Lars Berglund)</b> Ipsita Roy (The University of Sheffield, UK). Biobased Materials of Bacterial origin and their use in Biomedical and Environmental Applications	
	<b>ROOM A (Chair Lars Berglund)</b>	<b>ROOM B (Chair Ilaria Cacciotti)</b>
<b>09.15-09.35</b>	<b>OC21.</b> Stephane Bruzaud. Tailor-made biosynthesis of polyhydroxyalkanoates: towards polymers with planned biodegradation	<b>OC25.</b> Jin Ho Seok. Development of fully biodegradable plastic from microbial polysaccharide-PLA copolymer
<b>09.35-09.55</b>	<b>OC22.</b> Tim Huber. The effects of process conditions on the particle size distribution of nano-fibrillated cellulose	<b>OC26.</b> Mattia Grumi. Polyhydroxyalkanoates derived from biowastes of interest in food packaging applications
<b>09.55-10.15</b>	<b>OC23.</b> Daniel Domene-López. From academia to market: Industrial production of TPS by Solublion SL – An University of Alicante spin-off	<b>OC27.</b> Sergio J. Benítez. Green extraction and characterization of 3-HV-enriched PHBV
<b>10.15-10.35</b>	<b>OC24.</b> Demetres Briassoulis. Biodegradation of PHAs-based plastics in soil and benthic environments	<b>OC28.</b> Enrico Bianchi. Insights on the biodegradation mechanism and kinetics of multiblock and random biobased copolyesters from poly(trimethylene 2,4-furanoate) and poly(trimethylene succinate)
<b>10.35-11.00</b>	<b>Coffee break</b>	
<b>11.00-11.30</b>	<b>Keynote lecture-4 ROOM A (Chair Ipsita Roy)</b> Ilaria Cacciotti (University Niccolò Cusano, Italy). Development of osteointegrative and sensorised cranial implants by fused deposition modeling: an innovative strategy	
	<b>ROOM A (Chair Ipsita Roy)</b>	<b>ROOM B (Chair Luc Averous)</b>
<b>11.30-11.50</b>	<b>OC29.</b> Jorge Teno. Development of multilayer electrospun patches made of biopolymers for buccal drug delivery	<b>OC34.</b> Noelia Martínez-Pérez. Promising TPS/PVA/silibinin films for transdermal treatments patches
<b>11.50-12.10</b>	<b>OC30.</b> Fernando Carrascosa. Biocomposites scaffolds foamed with supercritical CO <sub>2</sub>	<b>OC35.</b> Guillermo Martínez Martínez. <i>Haloarchaea</i> as molecular factories to produce PHA by using green approaches
<b>12.10-12.30</b>	<b>OC31.</b> Joana Beigbeder. Life cycle assessment of biobased polymers for skin-contact applications.	<b>OC36.</b> Mercedes A. Betelli. Sustainable wheat protein biofoams – dry upscalable extrusion at low temperature
<b>12.30-12.50</b>	<b>OC32.</b> Serena Danti. Application of chitin nanofibril-coated electrospun cellulose nanofiber mesh in the treatment of tympanic membrane perforation	<b>OC37.</b> María Tommasina Pecoraro. Hemp stem epidermis and cuticle wastes for developing new bio-based materials
<b>12.50-13.10</b>	<b>OC33.</b> Vincent Berthe. Interest of reactive extrusion for improving the hydrothermal ageing resistance and transparency of PLA/PMMA blends	

13.10-14.15	<b>Lunch</b>	
14.15-14.45	<b>Keynote lecture-5 ROOM A (Chair Stefano Fiori)</b> Artur J M Valente (University of Coimbra, Portugal). Cyclodextrin nanosponges as efficient matrices for pesticide removal	
	<b>ROOM A (Chair Stefano Fiori)</b>	<b>ROOM B (Chair Francisco Vilaplana)</b>
14.45-15.05	<b>OC38.</b> Nicolas Joly. Complete characterization of Fatty Acid Cellulose Esters (FACEs) according to both Substitution degree and fatty acid chain length – Applications of FACEs as Biomaterials, electronics support and biopolymer additives	<b>OC42.</b> Soraya Sánchez. Nanocellulose as reinforcement in PLA based packaging materials: Dry or wet addition in extrusion process?
15.05-15.25	<b>OC39.</b> Jennifer Martínez-Castro. Oligomers based on citric acid and glycerol for the production on non-retrogradable TPS/PVA blends	<b>OC43.</b> Grzegorz Wegrzyk. An investigation of the influence of nanocellulose filler on structure and properties of rigid polyurethane foam composite using two dispersing methods
15.25-15.45	<b>OC40.</b> Shanmugam Thiyagarajan. Substituted anhydrides: a series of aromatic and cycloaliphatic based plasticizers derived from renewable feedstocks	<b>OC44.</b> Francesca Luzi. Effect of natural pigment from logwood bark in the coloring of biopolymeric matrices: Role of the matrices and ageing stability
15.45-16.05	<b>OC41.</b> Giulia Guidotti. Blends of poly(butylene furanoate) and poly(pentamethylene furanoate) for high performant sustainable packaging	<b>OC45.</b> Silvia Helena Prado Bettini. Orange juice residue: an opportunity to obtain new biodegradable composites
16.05-17.15	<b>Coffee break/Poster session 2</b>	
17.15-18.00	<b>Buses to Alicante</b>	
18.00-20.30	<b>Social event. Archaeological Museum Alicante</b>	

## Wednesday 16th November 2022

08.45-09.30	<b>Plenary lecture ROOM A (Chair Debora Puglia)</b> Alejandro J Müller (Universidad del País Vasco, UPV/EHU). Crystallization, morphology and properties of biodegradable isodimorphic copolyesters	
09.30-10.00	<b>Keynote lecture-6 ROOM A (Chair Debora Puglia)</b> Patrizia Cinelli (University of Pisa, Italy). Overview of biomass by products valorization by a circular economy approach	
	<b>ROOM A (Chair Debora Puglia)</b>	<b>ROOM B (Chair Juan F. Rodríguez)</b>
10.00-10.20	<b>OC46.</b> Antonio Greco. Closed loop recycling of bio-based composites from food wastes	<b>OC49.</b> Katharina Resch-Fauster. Bio-based epoxy resin for flexible and biodegradable bio-composites
10.20-10.40	<b>OC47.</b> Irene Bavasso. Mechanical recycling of commercial biodegradable polymer blend: multiple melt processing and performance analysis	<b>OC50.</b> Fabio Hernández-Ramos Lignin-based polyurethane adhesives
10.40-11.00	<b>OC48.</b> Sandra Domének. Efficient architectures to obtain high gas barrier materials using PLA and nanocellulose	<b>OC51.</b> Francisca Arán-Aís. Formulating more sustainable reactive polyurethane hot melt adhesives with biobased macroglycols
11.00-11.30	<b>Coffee break</b>	
11.30-12.00	<b>Keynote lecture-7 ROOM A (Chair Artur J M Valente)</b> Juan Francisco Rodríguez (Universidad de Castilla La Mancha). Production of Bio-based Non-Isocyanate Polyurethanes (NIPUs) through supercritical CO <sub>2</sub> technologies	
	<b>ROOM A (Chair Artur J M Valente)</b>	<b>ROOM B (Chair Patrizia Cinelli)</b>
12.00-12.20	<b>OC52.</b> Ignacio Martín-Gullon. Quartz crystal microbalance as a useful technique for <i>in-situ</i> monitoring the effect of humidity on the performance of TPS	<b>OC55.</b> María Jordá-Reolid. Optimization of the percentage of beer bagasse fibres in bioPE polymeric matrix- <i>Biovalor</i> project
12.20-12.40	<b>OC53.</b> Jaume Gómez-Caturla. Study of the mango kernel flour particle size on the mechanical and morphological properties of plasticized films with glycerol	<b>OC56.</b> Alexandra Gabriela Simica. Engineered <i>Haloferax mediterranei</i> to optimize the production of PHBV
12.40-13.00	<b>OC54.</b> Francisca Arán-Aís. Recovery of high added-value protein-based biopolymers for different industrial applications	
13.00-13.15	<b>Farewell ceremony/next BIOPOL/poster prizes</b>	
13.15-15.00	<b>Farewell Lunch</b>	

## POSTER SESSION 1. Monday 14th November 2022 (17:10-18:30)

**P1.1.** Noelia Martínez-Pérez. Mechanical recycling of TPS/PVA blends as supplement to compost treatments in circular economy field

**P1.2.** Jennifer M. Castro. TPS/PVA blends plasticized by oligomers based on dicarboxylic acids and glycerol

**P1.3.** Ricardo Mallavia. Fabrication of PEO electrospun nanofibers loaded with piscidin for antibacterial applications

**P1.4.** Rocío Díaz-Puertas. Thermoplastic polyurethane films with silver nanoparticles as promising antiviral materials

**P1.5.** Eva Moll. Effect of p-coumaric acid on thermal behavior and microstructure of PHBV

**P1.6.** Amparo Chiralt. Evaluation of poly(3-hydroxybutyrate-co-3-hydroxyvalerate)-based green composite lids for storage-keeping quality of minced pork meat

**P1.7.** Pedro A. V. Freitas. Obtaining cellulose aerogels from rice straw pre-treated with subcritical water extraction

**P1.8.** Gabriela Soukupová. High performance flexible nanocellulose bases pseudocapacitive electrodes

**P1.9.** Rut Fernández-Marín. Optimisation of chitin nanocrystal isolation with deep eutectic solvent by microwave irradiation

**P1.10.** Vincent Berthe. Synthesis and characterization of high Tg non-isocyanate polyurethanes by reactive extrusion

**P1.11.** Amaia Morales. Quercetin extraction and delivery from lignin hydrogels

**P1.12.** Pilar Hernández-Muñoz. Synthesis and characterization of chitosan hydrogels using  $\alpha,\beta$  unsaturated aldehydes as crosslinkers

**P1.13.** Pilar Hernández-Muñoz. Smart release of antimicrobials immobilized in chitosan films via reversible Schiff base synthesis

**P1.14.** Gracia López-Carballo. Antibacterial activity of salicylaldehyde immobilized in chitosan films via reversible Schiff base

**P1.15.** Sandra Domenek. Film blowing of biodegradable poly(hydroxybutyrate-co-hydroxyvalerate) and poly(butylene succinate-co-adipate) blends

**P1.16.** Antonella Esposito. Investigation of the thermal stability of cyclohexane-based polyesters under N<sub>2</sub> and O<sub>2</sub>

- P1.17.** Cristina Pavón. Monitoring of the evolution of crystallinity in thermoplastic starch
- P1.18.** Harrison de la Rosa-Ramírez. Use of exotic floral resins in the crystallization of biodegradable thermoplastic materials
- P1.19.** Harrison de la Rosa-Ramírez. Use of medium chain carbohydrate in the improvement of biodegradable thermoplastic materials
- P1.20.** Teresa Carranza. Proteins and polysaccharide mixture behaviour under different sterilization methods
- P1.21.** Edoardo Bondi. New ad hoc designed cyclohexane-based random copolyesters for biomedical applications: from the synthesis to the characterization
- P1.22.** Jaume Gómez-Caturla. Mechanical properties and morphology of composites based on polylactide and mango kernel flour
- P1.23.** Ramón Tejada Oliveros. Improved impact strength and elongation at break of polylactic acid by blending with a natural plasticizer
- P1.24.** Juan Ivorra-Martínez. The effect of a plasticizer on the manufacturability of poly(lactic acid)
- P1.25.** Juan Ivorra-Martínez. Revalorization of almond shell for the development of polyhydroxyalkanoate (PHA) composites
- P1.26.** Santiago Estévez-Areco. Release kinetics of chlorogenic acid from gelatin electrospun nanofibers
- P1.27.** Ignacio Solaberrieta. Molecularly imprinted polymers for selective elimination of laxative compounds from aloe vera skin extracts
- P1.28.** Giulia Guidotti. PBS-based hydrogel containing ether oxygen atoms for biomedical applications
- P1.29.** José Gámez-Pérez. PHA/lignocellulosic fiber composites: Effect of the lignin on their compostability
- P1.30.** Izaskun Larraza. Valorization of bovine ear tags to obtain photocatalytic membranes by electrospinning
- P1.31.** Nagore Gabilondo. Thiolated chitosan nanoparticles as promising nanocarriers for curcumin delivery
- P1.32.** Nagore Gabilondo. 3D-printed starch tablets for personalized medicine
- P1.33.** Arantxa Eceiza. Novel biobased polyurethane resin for structural composites
- P1.34.** Arantxa Eceiza. Furan-containing biobased polyurethane nanofibers: A new versatile and green support clickable via Diels-Alder reaction

**P1.35.** Stamatina Voiyiouka. PRecycling: Making “waste to product” transformation of plastic waste streams viable, scalable and safe-to-use

**P1.36.** Gerda Gaudikova. Hydrothermal ageing of 3D printed biopolymers: Effect of water type and printing conditions

**P1.37.** Francesca Luzi. Mechanical performance of polybutylene succinate composites loaded with mycelia grown on different media

**P1.38.** Franco Dominici. Effect of metal organic frameworks (MOFs) as stabilizers of natural pigments in bioplastic composites

**P1.39.** Franco Dominici. Polymeric films produced by plasticizing non-edible durum wheat flours: processing and variety-property relationship

## **POSTER SESSION 2. Tuesday 15th November 2022 (16:05-17:15)**

**P2.1.** Nicolas Joly, Conception, characterization and behavior towards fungi and bacteria of clay-added  $\alpha$ - and  $\beta$ -chitosan-based films

**P2.2.** Carol López de Dicastillo. Development of an antimicrobial multilayer food packaging material through the combination of processing techniques

**P2.3.** Mohammad Mahbubul Alam. Development of innovative biofilms from waste materials for packaging applications

**P2.4.** Abel Guarda. Development of a sustainable food packaging material based in a novel polymeric and biodegradable multilayer system with antibacterial property

**P2.5.** Alejandra Torres. Processing of PLA-based bionanocomposites by supercritical foaming with CO<sub>2</sub> to obtain sustainable materials

**P2.6.** Francisco J. Rodríguez-Mercado. Design of ethylene scavenger materials based on ecofriendly thermoplastic materials and nano-TiO<sub>2</sub>

**P2.7.** Frutos Carlos Marhuenda Egea. Importance of composting systems in biodegradability and compostability studies of biopolymers

**P2.8.** Javiera Sepúlveda. Recycling processes of food grade non-PET materials: Legislation, EFSA evaluations and challenges

**P2.9.** Marina P. Arrieta. Plasticized PLA reinforced with bacterial cellulose obtained from Kombucha fermented in coffee waste

**P2.10.** Marina P. Arrieta. Rosemary tea encapsulated into cellulosic particles for the production of active PLA films

**P2.11.** María José Galotto. Supercritical foaming and impregnation with eugenol of PLA nanocomposites

**P2.12.** Julio E. Bruna. Development of biodegradable active material with antimicrobial capacity based on Graphene Oxide, PLA/PHB and Copper oxide nanoparticles with potential use in food packaging

**P2.13.** María Dolores Samper. Effect of sericin and maleinized linseed oil on polylactic acid films properties

**P2.14.** María Dolores Samper. Development of biodegradable films based on polylactic acid incorporating nanoparticles from residues of herbal infusions

**P2.15.** Carolina Villegas. Effect acid ellagic/chitosan active coating on commercial biopolymer Mater-Bi® films

**P2.16.** A. Candela Gil. Study of lignin glyoxilation to phenol substitution in PF resins

- P2.17.** M. Muñoz-Martí. Screening of enzymes for the degradation of polyurethane of different nature
- P2.18.** Patricia Rivera. Evaluation of the incorporation of inclusion complexes by supercritical impregnation
- P2.19.** Soraya Sánchez. Fluorescent markers for bioplastics from encapsulated algae chlorophyll
- P2.20.** Alejandro Aragón-Gutiérrez. Scale-up production of compostable gliadin/polycaprolactone blend films by twin-screw extrusion
- P2.21.** Salvador García. Use of packaging waste and confectionary industry waste for bioplastic production using haloarchaeas as cell factories
- P2.22.** Salvador García. Upcycling of polyethylene terephthalate (PET) wastes to generate biodegradable bioplastics for food and drink packaging
- P2.23.** Cristina Muñoz. Disintegrability under composting conditions of active polylactic acid films loaded with inclusion complexes
- P2.24.** Tannia Silva Pavez. Effect of reprocessing on the physical properties of poly (lactic acid)
- P2.25.** Gregory Albornoz-Palma. Dielectric characteristics of lignocellulose nanofibrils from *Eucalyptus*
- P2.26.** F.R. Beltrán. Effect of maleinized linseed oil on the structure and properties of mechanically recycled poly(lactic acid) bowls
- P2.27.** Laura San Sebastián. Biocomposites based on bio-polyethylene reinforced with rice straw for food packaging applications
- P2.28.** Asma Khalfi. Microwave-assisted extraction of essential oils from date seeds and encapsulation by spray-drying
- P2.29.** Radia Belhadj. Invasive seaweed *Rugulopteryx okamurae*: an overview of its biochemical composition for potential food packaging applications
- P2.30.** Yaiza Flores. Research and development of biorefineries with applications in textiles. VEGGIE 2021 project
- P2.31.** Pilar Albaladejo. Application of chitin nanofibers extracted from black soldier fly insects as biobased coating for food packaging applications
- P2.32.** Alejandro-Aragón Gutiérrez. On the use of black soldier fly *Hermetia Illucens* as a novel source for the development of chitin nanofibers by disintegration method

**P2.33.** Daniel Domene-López. Raman technique as a useful tool for the determination of carbon nanotubes dispersion in starch matrices

**P2.34.** Cristina Mellinas. Synthesis of lignin nanocapsules for active food packaging applications

**P2.35.** Cristina Mellinas. Active films based on pectin, cocoa bean shell extract and ZnO/Zn-NPs for food packaging applications

**P2.36.** R.L.L Fialho. Melting and drying properties of PBS bio-composite with wood sawdust and lignin for injection moulding applications

**P2.37.** Alaitz Etxabide. Environmental and physicochemical analyses of whey protein films

**P2.38.** Luis Quiles-Carrillo. Analysis of the incorporation of a natural terpene-based plasticizer on the mechanical properties of a PLA and tangerine peel flour WPC

**P2.39.** Juan Carlos García-Quesada. Biodegradable composite films prepared from starch/PVA blends plasticized by ionic liquid

**P2.40.** James Hewlett. Submerged Fermentation of *Ganoderma lucidum* and *G. tsugae* mycelium for the production of exopolysaccharides