

Plastics

Challenges and Biotechnological Solutions

20 March 2024 Virtual conference



Scientific programme

All times in CET

Wednesday, 20 March 2024

Session 1: New biobased plastics and biodegradation

Chair: **Jeff Cole**, EFB President, United Kingdom

- 9:00 – 9:05 Welcome and introduction: **Jeff Cole**, EFB President, United Kingdom
- 9:05 – 9:25 Keynote lecture: **Nick Wierckx**, Forschungszentrum Jülich, Germany
- 9:25 – 9:45 Keynote lecture: Enzymatic synthesis and structural modelling of biobased oligoesters as an approach for fast screening of marine biodegradation and ecotoxicity, **Anamaria Todea**, Polytechnical University of Timisoara, Romania
- 9:45 – 9:55 Valorisation of cassava waste into polyhydroxyalkanoates: integration of biomass pretreatment and biological conversion, **Alfred Fernandez-Castane**, Aston University, United Kingdom
- 9:55 – 10:15 Keynote lecture: New biobased materials through selective enzymatic catalysis, **Alessandro Pellis**, Università degli Studi di Genova (UNIGE), Italy
- 10:15 – 10:35 Keynote lecture: Plastics from biobased wastes, **Idalina José Monteiro Gonçalves**, University of Aveiro, Portugal
- 10:35 – 10:45 Polyhydroxyalkanoates as biobased polymers produced by bacteria using renewable feedstocks, **Justyna Możejko-Ciesielska**, University of Warmia and Mazury in Olsztyn, Poland
- 10:45 – 10:50 ECB2024 announcement, **Jeff Cole**, EFB President, United Kingdom

10:50 – 11:10 *break*

Session 2: New biobased plastics and biodegradation

Chair: **Alessandro Pellis**, Università degli Studi di Genova (UNIGE), Italy

- 11:10 – 11:15 Introduction
- 11:15 – 11:35 Keynote lecture: Polyhydroxyalkanoate (PHA) circularity, the role of PHA depolymerases, **Auxiliadora Prieto**, Biological Research Institute Margarita Salas (CIB), Spain
- 11:35 – 11:45 Developing bioengineered polyhydroxyalkanoate (PHA)-producing microbial chassis for PET plastic bio-upcycling, **Ahmad Bazli Ramzi**, Universiti Kebangsaan Malaysia, Malaysia

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- 11:45 – 12:05 Keynote lecture: Enhanced adhesion promoter peptides for plastic degradation, **Yu Ji**, RWTH Aachen University, Germany
- 12:05 – 12:15 On the non-catalytic role of lytic polysaccharide monoxygenases in boosting the action of PETases on PET polymers, **Thamy Correa**, University of York, United Kingdom
- 12:15 – 12:35 Keynote lecture: **Cristiano Varrone**, Aalborg University, Denmark
- 12:35 – 12:45 Reuse of agrifood and footwear wastes in the development of bioplastic 3D packaging, **Carolina Martins**, CICECO - Aveiro Institute of Materials, University of Aveiro, Portugal
- 12:45 – 12:55 Industry perspective: Latest research by Pfeifer & Langen

13:00 – 13:30 *break*

Session 3: Plastic recycling and environmental impact of discarded plastics

Chair: **Auxiliadora Prieto**, Biological Research Institute Margarita Salas (CIB), Spain

- 13:30 – 13:35 Introduction
- 13:35 – 13:55 Keynote lecture: Soil-derived microbial consortia and their potential to transform plastics, **Diego Javier Jiménez Avella**, KAUST, Saudi Arabia
- 13:55 – 14:05 One-pot biosynthesis of acetone from waste poly(hydroxybutyrate), **Benjamin Armijo Galdames**, University of Edinburgh, United Kingdom
- 14:05 – 14:25 Keynote lecture: **Ren Wei**, Universität Greifswald, Germany
- 14:25 – 14:35 Biotechnological treatment of polyethylene terephthalate mixed plastic streams, **Jeovan Araujo**, Technological University of the Shannon Midlands Midwest, Ireland
- 14:35 – 14:45 Plastic upcycling by mycelium-based materials, **Onur Kirdök**, Biopbiotech, Turkey
- 14:45 – 15:05 Keynote lecture: **David Meier**, University of California, Berkeley, USA

15:10 – 15:30 *break*

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Session 4: Plastic recycling and environmental impact of discarded plastics

Chair: **Joana Pereira**, University of Aveiro, Portugal

- 15:30 – 15:35 Introduction: **Joana Pereira**, University of Aveiro, Portugal
- 15:35 – 15:55 Keynote lecture: Plastic weathering and contaminant transport within the environment, **Maryam Salehi**, Herff College of Engineering, USA
- 15:55 – 16:05 Effect of microplastic ageing on glyphosate sorption and toxicity, **Anna Parus**, Poznan University of Technology / Institute of Chemical Technology and Engineering, Poland
- 16:05 – 16:25 Keynote lecture: **Jana Asselman**, Ghent University, Belgium
- 16:25 – 16:35 Dissecting xenobiotic interactions in aquatic environment vulnerable to the presence of microplastic, **Natalia Lisiecka**, Politechnika Poznańska, Wydział Technologii Chemicznej, Instytut Technologii i Inżynierii Chemicznej, Poland
- 16:35 – 16:55 Keynote lecture: **Miguel Oliveira**, University of Aveiro, Portugal
- 16:55 – 17:05 Microplastics occurrence in biosolids, **Zuzanna Prus**, AGH University of Cracow, Poland
- 17:05 – 17:15 Volatile fatty acids production from bioplastics: a new opportunity to create a closed-loop bioplastics supply chain, **Octavio Garcia Depraect**, University of Valladolid, Spain