

Seminar

IS A CIRCULAR ECONOMY FOR POLYMERS POSSIBLE?

Donostia / San Sebastián

May 22-23, 2024

Carlos Santamaria Zentroa

PROGRAM

Renewable resources for more circular plastics

May 22

Polymers synthesised from renewable sources stand as sustainable alternatives to petro-based polymers because they are produced from biomass derivatives or recycled raw materials. Immense challenges remain for these plastics to significantly contribute to a more circular plastic economy as they only represent 1% of the current plastics production worldwide.

The talented speakers of day 1 should help us understand what are these challenges and how they are about to be overcome with new processes, innovative catalysis methods and efficient technology transfer.

Program

- 08:30** *Arrival and registration in Carlos Santamaria Zentroa*
- 09:00** *Introduction*
Coralie Jehanno / Polykey Polymers (Spain)
- 09:15** Karolien Vanbroekhoven / Flemish institute for technological research (VITO, Belgium)
Biorefineries and industrial trends – biobased building blocks: what's on the move?
- 10:45** *Coffee break*
- 11:15** Sylvain Caillol / CNRS, University of Montpellier (France)
A journey around circularity in polymers, from renewable resources to recycling
- 13:00** *Lunch break*
- 14:30** Luis Cabedo Mas / University Jaume I (Spain)
Integration of Biodegradable Plastics into the Circular Economy: Challenges and Opportunities
- 15:30** Philip Scholten / Bloom Biorenewables (Switzerland)
Sustainable production of high-performance bio-based chemicals and materials

Circularity in Light-Mediated Additive Manufacturing

May 23

Additive Manufacturing (AM) has the potential for both reducing energy consumption and polymeric material utilization. As the name implies, AM contrasts with subtractive processes, as it relies on a layer-by-layer deposition. This allows geometric designs of 3D objects with unprecedented complexity with reduced waste generation. Among AM methods vat photopolymerization (VP) techniques are well established and considered one of the advanced AM techniques owing an improved efficiency and printing resolution. However, little attention has been paid to the sustainability of the process in line with the industrial requirements.

Speakers from day 2 will help us to understand the key design parameters for next generation materials for AM, and how to increase the circularity of products derived from AM ensuring that this industrial revolution does not create a new plastic waste problem.

Program

- 08:30** Arrival and registration in Carlos Santamaria Zentroa
- 09:00** Introduction
Haritz Sardon / Polymat – UPV/EHU (Spain)
- 09:15** Timothy E. Long / Arizona State University (USA)
Explanation of different light mediated AM techniques, emphasising the importance of process design for getting the best performance of each of them
- 10:45** Coffee break
- 11:15** Joe DeSimone / Stanford University (California, USA)
Industrialization of AM; Successful example of Continuous Liquid Interface Production (CLIP) process
- 13:00** Lunch break
- 14:30** Haritz Sardon / Polymat – UPV/EHU (Spain)
Sustainability aspects related with VAT AM from biosourced monomers to recyclable resins
- 15:30** Eva Blasco / Heidelberg University (Germany)
Miniaturization and functionalization of AM from small scale system to living 3D objects

Acknowledgements

Event managing

Edurne Gaston and Elena Righini

Organisation

Haritz Sardon, Coralie Jehanno, Andere Basterretxea

Speakers

Eva Blasco, Luis Cabedo Mas, Sylvain Caillol, Joe DeSimone, Tim Long, Haritz Sardon, Philip Scholten, Karolien Vanbroekhoven

Communication and graphic design

Elena Righini



POLINA

eman ta zabal zazu



UPV EHU

POLYMAT



polykey



Funded by
the European Union

Discover more in

haritzsardonlab.com

or check our social networks!

NATURE has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956439.

POLINA project is funded by the European Union under grant agreement No 101129842.