



7th European Summer School on Industrial Biotechnology

Enzymes and polymers in the context of biocircular economy

Toulouse, 7.-10. July 2025

Monday July 7

- 13:30 Welcome
- 14:00-14:45 **Jürgen Pleiss** (University of Stuttgart): Navigating the sequence space of plastics-active enzymes: databases, bioinformatics, machine learning
- 14:45-15:30 **Magali Remaud-Siméon, Claire Moulis** (Toulouse Biotechnology Institute): Synthesis and functionalization of biopolymers: can enzymes help us to move towards new and controlled designs?
- 15:30-16:00 Coffee break
- 16:00-18:00 **Presentations by the participants:** research topic and interests

Tuesday July 8

- 9:00-9:45 **Aurore Labourel** (Toulouse Biotechnology Institute): Bacterial degradation of plant polysaccharides. How I met your sugars.
- 9:45-10:30 **Bastien Bissaro** (Aix-Marseille University): Oxidative enzymes in lignocellulose depolymerization, and beyond!
- 10:30-10:45 Coffee break
- 10:45-11:30 **Pablo Perez-Garcia** (University Hamburg): Decoding nature's potential for plastic degradation through innovative enzyme discovery strategies
- 11:30-12:15 **Isabelle André** (Toulouse Biotechnology Institute): Improving polymer-acting enzymes by protein engineering and computer-aided design
- 12:15-14:00 Lunch
- 14:00-17:30 **Jérémy Esque, Gianluca Cioci** (Toulouse Biotechnology Institute): Practical session: Molecular modeling and biophysics dedicated to polymer acting enzyme optimization
- 17:30-19:00 Poster session

Wednesday July 9

- 9:00-10:30 **Gabrielle Potocki-Véronèse** (Toulouse Biotechnology Institute): From medium to ultra-high throughput assays for function-based discovery and engineering
- 10:30-10:45 Coffee break
- 10:45-12:15 **Etienne Paul** (Toulouse Biotechnology Institute): Biopolymer transformation via native or engineered microorganisms or consortia
- 12:15-14:00 Lunch
- 14:00-17:00 **Etienne Severac, David Guieysse** (Toulouse Biotechnology Institute): Practical session: Characterization of natural and engineered polymerases
- 19:00 Gala dinner

Thursday July 10

- 9:00-10:00 **Nicolas Chabot** (Carbios): Synthetic polymer degradation: closing the loop
- 10:00-10:30 Coffee break
- 10:30-11:30 **Mike O'Donohue** (Toulouse Biotechnology Institute): Challenges and opportunities for biotechnology and biomanufacturing within and beyond the bioeconomy
- 11:30-12:15 Round-table discussion
- 12:15-14:00 Lunch
- 14:00-17:30 **Visit of the "Toulouse BioTech Alley":** Toulouse Biotechnology Institute, Toulouse White Biotechnology and CRITT Bioindustry