



# The potential of enzymatic plastic recycling



Three research projects, BIZENTE, RECOVER and ENZYCLE, funded by the Bio-Based Industries Joint Undertaking under the EU's Horizon 2020 innovation and research program, are demonstrating the power of enzymes for boosting the circular economy in Europe.

All projects will finish in 2024 and in a joint webinar, we will share our achievements in terms of **enzymatic ways to degrade non-recyclable agricultural and packaging plastics, microplastic pollution, thermoset composites and plastic fractions that could not be recycled before**. Let's have a look on the re-use of particular monomeric products and the potential to create new value out of these recycled components.

What was successful, what did not work? In this event we share our lessons-learned. Let's discuss the challenges that might be tackled in the future and the chances that arise from our results.

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10:00 WELCOME ADDRESS

### Three enzymatic approaches of plastic degradation: Main results and major learnings

10:05	<b>Juan Antonio Tamayo Ramos</b> ITENE, Coordinator of ENZYCLE	Microbial enzymes for treatment of non-recycled plastic fractions (ENZYCLE)
	<b>Marta Redrado</b> AITIIP, Coordinator of BIZENTE	Applying enzymes to resolve end-of-life issues of thermoset composite plastics
	<b>Maria J Lopez</b> UAL, Coordinator of RECOVER	Innovative biotic symbiosis for plastic biodegradation and synthesis (RECOVER)

10:30 Urgent Questions

10:35 COFFEE BREAK (10 MIN)

### Requirements for industrial application

10:45	<b>Robin Neven</b> Organic Waste Systems, RECOVER	Environmental impacts of enzymatic recyclability of plastics.
	<b>Susana Quiles</b> Acciona, BIZENTE	Enzymatic perspectives to convert future composites into sustainable and high-value products
	<b>Tommaso de Santis</b> acib, ENZYCLE	Techno-economic assessment of enzymatic plastic recycling

11:09 Urgent Questions

### Going the next step

11:10	<b>Patrizia Cinelli</b> , UNIPI <b>Raul Moral</b> , UMH, RECOVER	New products from plastic biodegradation biochain: chitin-based bioplastics and biofertilizers
	<b>Mathéo Berthet</b> Specific Polymers, BIZENTE	Potential applications for enzymatic degradation products
	<b>Peter Spannring</b> and <b>Ashwin Briedjlal Indorama</b> , ENZYCLE	The potential of recycled monomers for PET production

### Open discussion and Conclusions (10 min)

12:00 End of webinar

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#### OBJECTIVES:

**To show** the feasibility of integrating enzymatic recycling into common recycling processes (chemical, mechanical recycling) as a complementing process.

**To explain** how enzymatic recycling is not only technically feasible but also cost-efficient.

**To demonstrate** how new enzymatic processes can be applied at an industrial level to boost the transition to the circular economy.

#### TARGET AUDIENCE:

- **Industrial end-users** from different sectors (packaging, agriculture, waste water treatment)
- **Waste managers and recyclers**
- **Scientists** specialised in biotechnology treatments
- **Technology providers**

#### WHY SHOULD YOU JOIN THIS WEBINAR?

Scientists, technology providers or industrial end-users from different industry sectors (packaging, agriculture, waste water treatment, waste managers, recyclers, chemical industry etc.) will find a joint platform to discuss urgent demands and burning questions in this field of circular economy and zero pollution.

We cordially invite exploiters, decision makers and potential technology users from industry and academia to join our virtual event and to discuss application fields, perspectives and lessons-learnt!



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