

Open Innovation Workshop

Processes and methods for recycling, reuse, and recovery of advanced composite materials in the transport sector

Hybrid event, 7th June, 2024 (9:30-13:00), Rue du Trône, 62, Brussels and online

Fiber-reinforced composites are amongst the enabling materials for the green and digital transitions in the transport and mobility sector. They allow for lightweighting, purpose-built functions, and high performances even in extreme applications. However, their overall safety and sustainability profile still suffers from potential negative impacts mainly related to manufacturing, and the end-of-life dimensions.

Research is on-going to develop more sustainable solutions, introducing biobased components, developing more efficient processes, exploring reuse and recycle solutions.

REPOXYBLE and several other European projects in the field are exploring and addressing key research questions to progress in developing more sustainable composites, including:

- *What are the most relevant factors to reduce the overall environmental footprint?*
- *Can the recovery of high-value constituents be considered a real breakthrough in **improving circularity** of composite materials?*
- *Which would be the main **trade-offs** in moving from lab scale to industrial scale in recycling?*
- *How could the reversibility of the matrix affect **material performances**?*
- *How to integrate the different aspects in a comprehensive and effective **SSbD framework**?*
- *How to make the recovery of high-value constituents of composites a viable **market**?*

The workshop aims to share insights with experts in the field on chemical systems and novel technologies, and production techniques toward recycling and recovery of high-value composite constituents, and to understand the interplay among these variables. A focus will be made on automotive, aerospace, marine and infrastructures applications.

It is organized the day after of the European Commission event [“Efficient, Lightweight, Sustainable Advanced Materials – Supporting EU industries to meet the Green Deal targets”](#).

Who should attend? Research and industry experts, research projects active on similar topics.

Format: hybrid, in presence at the CSIC office in Brussels and online.

Info: info@repxyble.eu - www.repxyble.eu

[Register here](#)

About REPOXYBLE: the project aims to develop a new generation of multifunctional, Safe and Sustainable-by-Design epoxy-based resin. We are exploring new chemistries to provide high-performance, lightweight, and advanced functionalities, and at the same time overcome current thermosets recycling constrains, with novel formulations and recycling systems enabling efficient regain of high-value components.

Preliminary agenda

9.30-9.45 Introduction

- Introductory talk on recycling of composite materials
The University of Natural Resources and Life Sciences of Vienna (BOKU)

9.45-11.15 **Setting the scene: new generation of high-performance, sustainable composites, technologies for circularity and recyclability**

Pitch presentations from experts & projects: experiences, roadblocks and solutions

- **FURHY** - FULLY Recyclable HYbrid bio-composite for transport applications
- **r-LightBioCom** - New bio-based and sustainable raw materials enabling circular value chains of high performance lightweight biocomposites
- **FOREST** - Advanced lightweight materials FOR Energy-efficient Structures
- **EuReComp/Carbo4Power** - European recycling and circularity in large composites components/ New generation of offshore turbine blades with intelligent architectures of hybrid, nano-enabled multi-materials via advanced manufacturing
- **SUSPENS (TBC)**- Sustainable structural sandwiches and hollow composites parts for automotive, boat and aerospace markets
- Q&A with the in presence and online audience

11.15-11.30 Break

11.30-13.00 **Discussion: roadblocks and solutions**

- **Biobased materials:** performance and advanced functionalities
- **Circularity, recyclability and depolymerization:** methods, technologies, and case studies
- **Trade-offs and key factors:** technical, functional, economic and market, environmental, social impact, and legal aspect

13.00 **Closing remarks**

Note: Depending on the number of *in presence* registrations, the final part of the event could be made only offline

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