



A Safe, Sustainable  
and Performant Design towards  
the future lightweight materials

**repoxyble**  
BIO-BASED MULTIFUNCTIONAL RECYCLABLE COMPOSITES

**Newsletter**



Following our [first newsletter issue](#), we are delighted to share with you the latest updates on the **REPOXYBLE project**, which contributes to a new generation of multifunctional, safe and sustainable-by-design plastics **developing cost and energy effective, recyclable and sustainable biobased epoxy composites, while maintaining their high performance and functional properties during their use phase.**

In this issue, you will find:

- Insight video: high quality recycling, recover & reuse of REPOXYBLE composites
- REPOXYBLE developed cleavable hardeners at lab scale for the production of depolymerizable epoxy resin systems
- REPOXYBLE is organizing a workshop on recycling plastics and advanced composites
- Join REPOXYBLE in upcoming conferences and events
- EcoComposite Cluster: collaboration between EU composite projects

Enjoy reading!

### **The advantages of REPOXYBLE composites: high quality recycling, recover & reuse**

Advanced epoxy composites are inherently sustainable and lightweighting, and in REPOXYBLE we're improving them by keeping high performances while reducing their emissions.

We achieve this using bio-based raw materials and addressing End of Life challenges of recycling, allowing the reuse of our components in demanding applications and drastically increasing their lifespan compared to single-use plastics.

Discover the advantages of REPOXYBLE Depolymerizable Closed Loop Epoxy system through our partners' voice



*“We have included the recyclability already in the design phase, and in best case we’ll be able to recover up to 85% or more of the inherent materials of the composite system, including the epoxy resin matrix”.*

*“A key benefit is to allow materials to be recycled, but maintain high value through a closed loop recycling scheme and be reintroduced into future composites, whilst maintaining low emissions throughout that whole recycling process; so, that the whole net use of those recyclable composites is inherently sustainable”.*

[Follow us on our website](#) and [LinkedIn](#) for more interviews in the next months.

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**REPOXYBLE way to recycle composites**

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REPOXYBLE successfully achieved its second Milestone, concerning new bio-based chemistries with inherent recyclability properties!

Our partner ONYRIQ developed cleavable hardeners for the production of our epoxy resin systems, and now successfully tested in their lab the depolymerization of the REPOXYBLE epoxy system through chemical recycling.

Indeed, to achieve the recyclability of our composites, and the upcycling of all their recovered components at the End-of-Life, we need to make our epoxy-system depolymerizable. Thus, we developed two material-prototype product solutions containing proprietary cleavable building blocks (hardeners), from existing competitive market bio-based materials. This approach, together with the inclusion of bio-based fibres in the final composites, reduces the use of fossil-based raw materials, replacing them with bio-based and renewable alternatives.

This strategy is instrumental to obtain our Depolymerizable Closed Loop Epoxy (DCLE) system, to explore and improve the recyclability for thermoset composites. DCLE systems allow the retrieval and reuse of both, fossil based and bio-based components, and the efficient valorisation of all the composite constituents into high value products.

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**Workshop on recycling**

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REPOXYBLE is organizing the **workshop *Circular plastics and advanced composites***

The REPOXYBLE partners from the BOKU will present recent findings of the project in a workshop at the [20th International Symposium on Waste Management, Resource Recovery and Sustainable Landfilling](#) (13-17 October in Santa Margherita di Pula, Sardinia, Italy).

The workshop will focus on barriers and drivers of circular business concepts, also in line with the Safe and Sustainable by Design (SSbD) principle. The workshop will be held in cooperation with partners from the project [RETURN](#) (Multi-Risk sciEnce for resilient commUnities undeR a changiNg climate).

Follow us on our website and LinkedIn for updates in the next months.

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**Meet REPOXYBLE: join us in these upcoming events**

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Meet our partners participating to:

- [JEC World 2025](#), 4-6 March 2025, Paris – Avanzare Innovación Tecnológica
- [3rd EURECOMP project workshop](#), 19 March 2025, Athens – University of Patras
- [SETAC Europe 35th Annual Meeting](#), 11-15 May 2025, Wien - Avanzare Innovación Tecnológica, Airi – Italian Association for Industrial Research
- [13th Venice Training School 2025](#) - “Innovating with Purpose: A Hands-on Journey into Functional, Safe and Sustainable Advanced Materials”, 9-13 June 1015, Venice

**REPOXYBLE is one of the co-organizing EU-funded projects for this year's edition!**

The *13th Venice Training School 2025* marks one of the key events on safe and sustainable advanced materials, taking an in-depth look at the application of Safe-and-Sustainable-by-Design (SSbD) in early, mid and late stages of innovation, and what it takes to put theory into practice.

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### Collaboration

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# ECOCOMPOSITES

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**In collaboration with five other Horizon Europe research projects, we have recently launched the EcoComposites Cluster.**

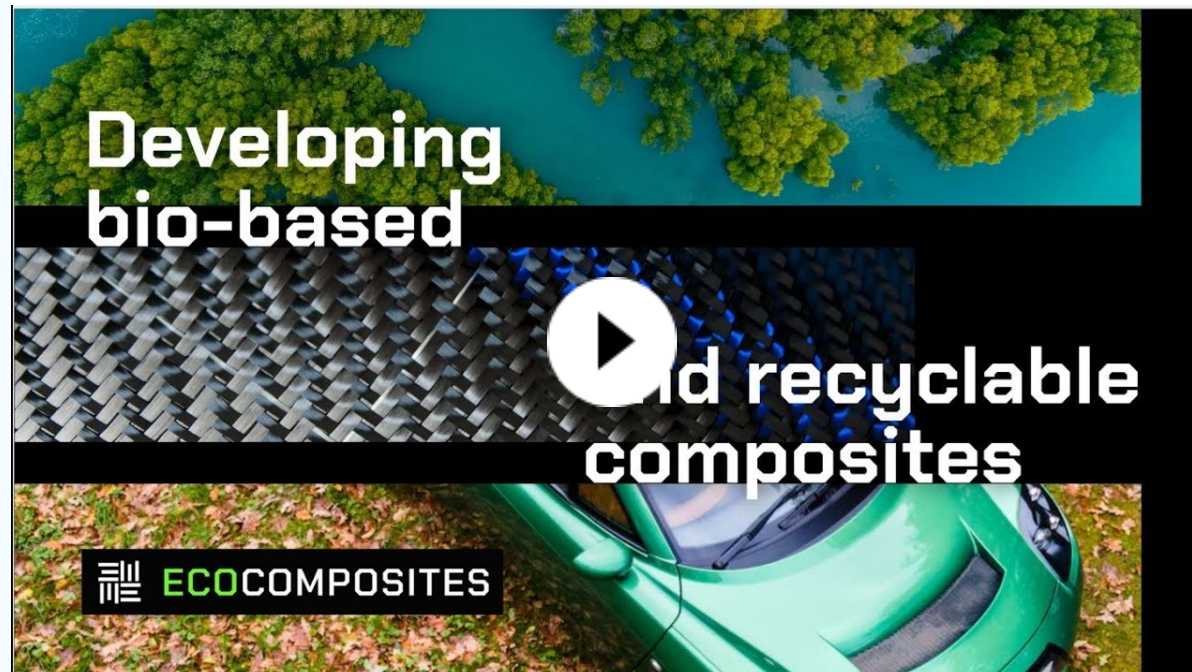
The [EcoComposites Cluster](#) is a communication and dissemination cluster that brings together six EU-funded research projects. Its goal is to increase reach and impact of the more sustainable composite that these projects are developing, promoting their visibility, acceptance, and adoption.



The cluster's projects focus on research and development of sustainable composite solutions, minimizing the environmental impact of composite materials throughout their entire lifecycle: from production to use, End of Life, and beyond.

Key objectives include reducing emissions and energy consumption, developing efficient recycling methods, and promoting circular value chains to reduce waste and dependency on non-renewable resources. The Cluster aims to facilitate the wider application of sustainable composites across several industries, contributing to a resource-efficient and climate-neutral future in line with the goals of the EU Green Deal.

Learn more on us in this video!



We appreciate your interest in REPOXYBLE. Please, pass on this newsletter to those who you think would like to join this growing community. We are looking forward to the journey ahead.

[Subscribe here](#)

## The Consortium

REPOXYBLE brings together 16 partners, including 7 SMEs and a large company, 5 universities, one RTD, and two clusters, from 8 countries: Spain, United Kingdom, Italy, Switzerland, Austria, Grece, Slovenia, and Portugal.

Together, we cover the entire value chain of the material lifecycle, and includes experts in safety, sustainability assessment, data management, and dissemination, communication and exploitation.



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