



furhy

fully recyclable hybrid
bio-composite
for transport application

Furhy in a nutshell

The **FURHY project** will develop a new, **bio-based, smart and fully recyclable composite material**, obtained by a fast and low energy consumption **out-of-autoclave process**.

The matrix will be made by a new **bio-based epoxy resin** formulation filled by expanded graphite (EG), that will have a multiple role in the enhancement of both material and manufacturing process, providing smart-functions.

A **hybrid composite** will be developed, using **hemp** and **recycled carbon fibres (rCFs)**, thus maximizing the environmental benefits with a life-cycle perspective. The hybridisation will let to exploit the advantages offered by both fibres, minimizing the relevant drawbacks. The manufacturing process will consist in a low energy version of the prepreg compression moulding (PCM).

Aeronautics and automotive are the main sectors of interest.

Partners



Objectives

OB1. To develop an optimized **bio-based, fast curing, recyclable epoxy resin**

OB2. To develop **hybrid reinforcing fibres** textiles

OB3. To develop an **energy saving, high performance prepreg compression moulding (PCM)**

OB4. To design and develop a set of new composites to tailor functionality for a range of possible applications.

OB5. To design components, **2 aeronautic** and **2 automotive applications**, with the new materials

OB6. To develop a **new recycling technology** suitable for the **recovery of all the constituents of the composite structure**

OB7. To demonstrate the validity of the proposed **business case**

Impact

- **25% of costs reduction**
- More than **50% of sustainable, bio-based materials** contents
- Up to **30% lightweight potential**
- At least **20% of CO2 emission reduction**
- **Business models** and **circular value chains** for bio-based lightweight components



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