

An aerial photograph showing a large, clear blue lake on the left, a dense green forest on the right, and a road winding through the forest. A white car is visible on the road. The text 'FOREST' is overlaid in large white letters on a dark blue background.

# FOREST

ADVANCED LIGHTWEIGHT MATERIALS FOR ENERGY-EFFICIENT STRUCTURES

## CONCEPT

The **FOREST** project will develop novel lightweight multifunctional biocomposites as a competitive alternative to conventional composites.

New chemistries will be developed based on bio-based materials (reactive and nonreactive polymeric systems and fire-retardant additives) in combination with fully recycled carbon fibre and EMI particles.

These biocomposite candidates will be obtained using one-shot manufacturing techniques, involving Out-of-Autoclave (OoA) processes to build and test prototypes (TRL5) with improved multifunctional properties (mechanical resistance, fire-retardant, EMI-shielding) for transport application.

**FOREST** will increase the focus area on the sustainability in Circular Economy (CE) by effective circularity solutions applied to multifunctional biocomposite constituents with >50% sustainable materials contained in lightweight products.

## PARTNERS



## GOALS

The **FOREST** project will contribute to the decarbonisation of the transport sector by developing and implementing innovative bio-based polymers & additives and recycled carbon fibres. The goal will be achieved by combining three key drivers: **Reduce, Recovery, and Reshape.**

### REDUCE

**FOREST** will reduce the structural weight of vehicles by providing light components made of carbon fibre-reinforced plastic. In this way, less fuel and energy consumption will be necessary to cover the same distance. And will develop new chemistries based on high-biobased content for polymers and additives. In this regard, the fossil sources dependency will be reduced.

### RECOVERY

**FOREST** will implement efficient methods to recover 100% of carbon fibre waste to develop high-quality semi-finished materials for valuable transport applications.

### RESHAPE

**FOREST** will research the influence of the multifunctional properties on the biocomposite. Therefore, combine the biobased, recycled, and multifunctionality material nature to obtain sustainable solutions for the bus, aeronautic, and automotive sectors.

## FUNDING

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