WIRreFA

Subproject WIR-V1.2-IV: Processing of fibre-containing waste and valuable materials

CHALLENGE

In CFRP recycling, the high heterogeneity of waste streams (different components, resin systems, contaminants) and the demanding requirement to separate fiber and matrix as gently as possible hinder high-quality reuse. Many processes result in shortened or damaged fibers that can only partially substitute primary fibers. In addition, high process and logistics costs, a lack of standardization of recyclate quality, and the limited integration of recycled CFRP materials into existing value-creation and production chains to date all restrict the utilization potential.

OUR PROJECT

In the project, a thermo-chemical process (pyrolysis) for fiber recovery from CFRP-containing waste is being developed and optimized from laboratory to pilot scale. Based on experimental investigations, an existing pilot plant will be adapted and operated. Building on the insights gained from pilot-plant operation, the process parameters will be evaluated, and a design concept for a scalable, modular processing plant will be developed. The aim is to establish a reliable process engineering basis for feeding large quantities of fiber-containing waste in the Elbe Valley region of Saxony into downstream value chains as secondary raw materials.

PARTNERS

Dresden University of Technology

Technical University Bergakademie Freiberg

Leibniz Institute of Polymer Research Dresden

FUNDING

Federal Ministry of Education and Research (BMBF), FKZ: 03WIR6014D

With funding from the:

Federal Ministry of Research, Technology and Space

DURATION

July 2025 – June 2028 (3 years)