# Composite materials circular economy: the case of “green” fibres and nanoenhanced fibrous polymer composites

A.F. Trompeta, T. Kosanovic-Milickovic, E.P. Koumoulos, C.A. Charitidis*

*Research Unit of Advanced, Composite, Nanomaterials and Nanotechnology (R-NanoLab), School of Chemical Engineering, National Technical University of Athens, 9 Heroon Polytechniou str., Zographos, GR-15780, Greece.*

Science and Technology are pushing the boundaries, aiming to design composites structures by carbon fibers (CFs) through environmental friendly processes, with reduced cost and improved mechanical properties. After long research, a growing industry with a multitude of applications has been established and the need of new precursors has been revealed. New approaches are necessary to be developed based on chemical modification and functionalization of CFs. This requires novel techniques that introduce the challenge of CFs production from “green” precursors and manufacturing of fibre-reinforced composites via ecofriendly-production methodologies. In this context, CFs production, matrices modification, hybrid materials, smart structures, surface/interface functionalization, manufacturing and processing, pilot and upscaling, as well as green and low cost materials, together with recycling topics, are considered. In addition, development of innovative reclamation and repurposing routes for the end-of-life of fibre-based composites in on the scene. Practices of interest for electronics, aviation and automotive industry have been addressed during the last four years, proving that EC provided a consistent strategic plan with NMBP Programs, offering regularity, stability and continuity in composites research.

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