

Final Report

Project acronym: *EPIC*

Project number: *TH06020001*

M-ERA.NET Call 2018

Period covered: 1/9/2019 to 31/8/2022

Publishable project summary

The objective of European Partnership for Improved Composites (EPIC) is research, development and manufacturing of new hybrid composite materials based on epoxy/carbon fiber composites combined with certain types of special structured molecules and/or with the use of carbon or inorganic nanostructures. Better compatibility and interconnection of polymeric system with carrying carbon matrix will be achieved by suitable chemical modification of primary materials. New types of organically modified nanostructured composites will significantly decrease delamination and crack propagation in epoxy carbon composites. If necessary, functionalization of carbon fibers will be carried out enabling resulting chemical bond with carrying polymeric system.

Expected result is a composite design which can be applied in more challenging applications in terms of mechanical strain and durability.

Systems intended for the transport industry (aviation, automotive, shipbuilding) and for the construction industry (concrete structures reinforcement) will be aimed to focus on the industrial implementation.