

# HIVOCOMP

Advanced materials enabling high-volume road transport applications of lightweight structural composite parts

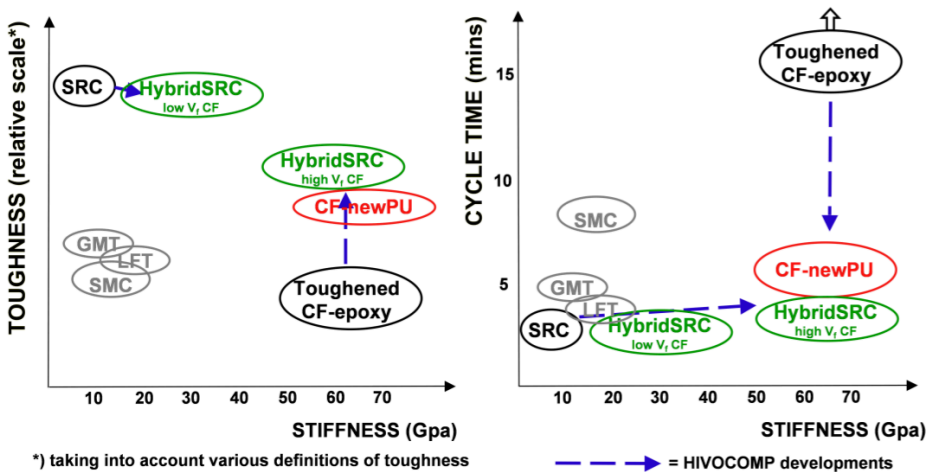


## Motivation and Objectives

Current applications of carbon fibre reinforced plastics (CFRP) can be found mostly in sectors where their use is principally not cost-driven and which have limited production volumes, such as aerospace and sports cars. In order to achieve a step-change in the application of high-performance composites in larger-volume applications, new materials systems are needed that combine very short production cycle times with performance that meets automotive requirements.

HIVOCOMP will develop two materials systems that show unique promise for cost effective, higher-volume production of high performance carbon fibre reinforced parts. These materials systems are:

- **Advanced polyurethane (PU) thermoset matrix materials** offering a combination of improved mechanical performance and reduced cycle times in comparison with conventional matrix systems,
- **Thermoplastic PP- and PA6-based self-reinforced polymer composites incorporating continuous carbon fibre reinforcements** offering increased toughness and reduced cycle times in comparison to current thermoplastic and thermoset solutions.



## Project Plan, Milestones and Deliverables

- HIVOCOMP launched officially in October 2010 and will run until September 2014.
- The latest results from the research on Hybrid-SRC and PU-based composites were presented at the 12 month consortium meeting in October 2011, hosted by EPFL in Lausanne, Switzerland.

## Technical Approach

The project will analyse and develop these matrix materials, their combination with advanced textile preforms, and optimise material properties for advanced processing technologies, joining technologies (adhesives / welding) and the incorporation and self-diagnosis (sensing) materials.

The work will include material testing, chemical and micro-mechanical modelling and simulation tool development, as well as LCA, cost and recycling analysis, and prototyping of typical applications to successfully translate these material innovations into high-impact industrial applications.

The project puts primary focus on the passenger cars, including hybrid and fully electric, but it has identified spin-off applications in other sectors as well. Validated demonstrator parts will be produced in 2013, ensuring the large-scale societal impact of the innovation.

Budget	7.3 M€	Funding	4.8 M€
Duration	48 months	Start	October 2010
DG	Research / FP7-NMP	Contract n°	246389
Coordinator	Ignas Verpoest, KU Leuven	Contact	Ignas.Verpoest@mtm.kuleuven.be
Partners	16 partners, among them CRF, Daimler, VW, Samsonite, Huntsman Polyurethanes, Airborne, Composites, Benteler-SGL, Propex Fabrics, KU Leuven, University of Leeds, TU Munich		
Website	www.hivocomp.eu		