

FORTAPE

Research on efficient integrated systems for the manufacturing of complex parts based on unidirectional tapes for the automotive and aeronautical industries



The FORTAPE concept is based on the development of new processes to produce unidirectional carbon and glass fibre tapes and the optimization of the automotive and aeronautical complex parts made there-of in order to improve the materials and energy efficiency while eliminating the appearance of defective parts.

Technical and economic impacts

- ▶ 30% reduction of material usage
- ▶ 20% reduction of energy consumption
- ▶ Elimination of faulty manufactured parts

Keywords

Composite manufacturing // UD tapes
Energy and material efficiency // Carbon
Glasse fibre // Overmoulding



INDUSTRIAL CONTEXT

More and more industrial sectors (e.g. automotive, aeronautics, wind energy, boatbuilding, etc.) are demanding high performance composite materials to face new challenges related to creative design, weight reduction, resistance under extreme conditions, environmental concerns, etc. This issue represents a very strong driving force to further develop the composite technologies. Carbon fibre and glass fibre unidirectional continuous tape composites are one of the new options for hybrid materials with higher promising properties.



INNOVATIVE FEATURES

- ▶ Novel UD tape manufacturing process
- ▶ Overmoulding of single and bi-layer UD tape composite for the automotive sector
- ▶ In-situ consolidation of fire-proof parts for the aeronautic sector
- ▶ Novel mathematical modelling and predictive computational simulation tools

Partners

- ▶ IRT JULES VERNE
- ▶ CTAG (coordinator)
- ▶ FORD
- ▶ GRUPO ANTOLIN
- ▶ OPTEL
- ▶ ADERA/CANOE
- ▶ ARKEMA
- ▶ AIRBUS GROUP INOVATION
- ▶ MATEX
- ▶ FRAUNHOFER ICT

INDUSTRIAL APPLICATIONS

FORTAPE will develop a sustainable and efficient technology for the manufacture of UD tapes and its implementation for the fabrication of complex parts for the automotive and aeronautic sector.

Equipment IRT Jules Verne

- ▶ Tape placement and injection machine

Budget

- ▶ 5 030 k€

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