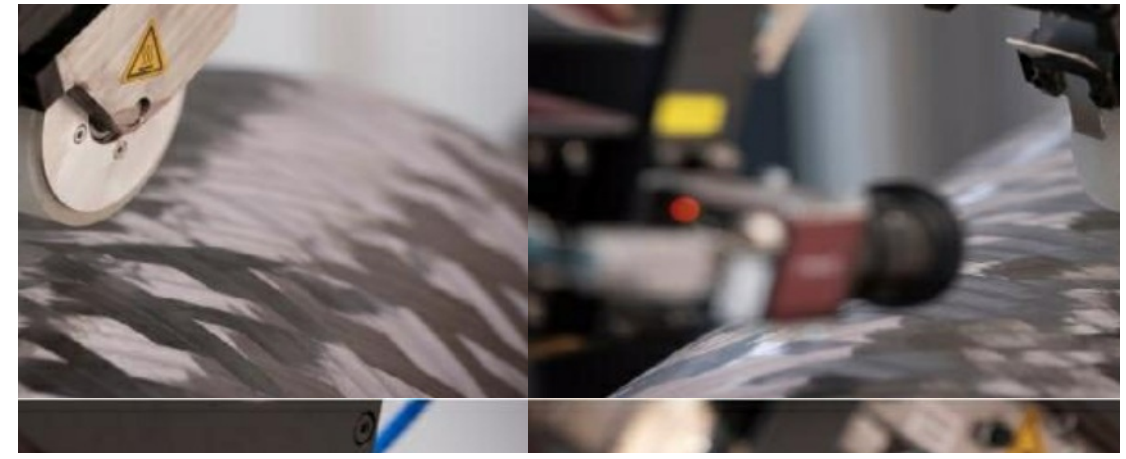


INTEGRATION OF COMPOSITE MATERIALS IN YOUR PRODUCTS

How to develop and industrialize composite parts



Your expectations

You want to bring competitive assets to your products by:

Improving their performance: through a significant weight reduction, a better corrosion resistance, a strong shock absorbing potential

Reducing your costs: by reducing the number of components of a system

Proposing your customers a new design

Getting implied in eco-design

Diversifying into growth markets such as the manufacture of hydrogen tanks.

Our solutions

Cetim offers you to develop a general methodology with:

Technical and economical feasibility studies

Support for choosing materials and processes

Parts and tooling design and dimensioning

Rheological simulation of parts in order to optimize manufacturing processes

The manufacturing of industrial prototypes by various processes like thermoforming, pultrusion, filament winding, RTM, infusion, adhesive bonding, machining

Development of production monitoring and control tools,

Quality control and in-service monitoring.

ZOOM ON HYDROGEN

[HyMEET](#), our technological platform dedicated to H₂, provides mechanical engineering with resources and skills needed to master low-carbon hydrogen production, distribution, storage and utilization technologies. HyMEET combines an ambitious R&D program with a €25 million investment in resources dedicated to characterization and validation tests (up to 1000 bar and in a range of temperatures from deep cryogenics to high temperatures) as well as consulting and training.

Its activities are dedicated to:

Characterizing the behavior of materials in contact with hydrogen

Development of specific test methods

Characterization of specific mechanical equipment and systems in severe hydrogen environments.

Our equipment enables:

Mechanical characterization of materials using fatigue machines in a high-pressure hydrogen environment
Control of sealing systems and plant containment, with test benches developed to study gas diffusion phenomena, resistance to rapid decompression and sealing performance under severe conditions
The study of the ageing of test specimens in high-pressure autoclaves
Tests under cryogenic conditions for the use of hydrogen in liquid form, with several cryostats fed by a helium-hydrogen liquefier
Multiphysics tests with pressure, temperature and cycling.
Manufacture of thermoplastic composite parts (tanks, tubes) by in-situ deposition and consolidation (in real time, with no further steps required) using our HySPIDE TP robotized cell.

Our specific services dedicated to the design of Hydrogen tanks in thermoplastic composites:

Design and simulation
Material characterization
Manufacturing (HySPIDE TP)
In-service inspection
Regulatory compliance

Your benefits

Access to the most advanced technologies, resources and experts to handle your project!
Our engineers and technicians offer you the benefit of all their skills, from design and implementation to material recycling. Their industrial culture and know-how are assets for successful industrialization.



Question and Answer Service
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