MARKET & NEEDS

Composites are mainly used on several aeronautic and space applications. For future programs, thermoplastic composite have a huge potential of growth because of their manufacturing cycle time and maintenance benefits. It could be a very strong competitor for metal in the aerospace market by offering new design opportunities.

To answer these challenges, materials supply chain needs to provide cost efficient prepreg solutions with out of autoclave consolidation and multi functionalities properties.

IRT Saint Exupéry installed a fully modular thermoplastic impregnation line. This unique semi-industrial pilot is dedicated to the development of next generation of high performance thermoplastic prepreg materials.

TECHNOLOGICAL OFFERS

Manage the risks on thermoplastic prepreg technologies,…

- Interdisciplinary skills to support industrial needs
- Take benefit from an independent expertise

...accelerating technological innovations…

- Semi-industrial prepreg pilot
- On demand build to spec. thermoplastic prepreg
- On demand build to spec. multifunctional thermoplastic prepreg
- Optimize iterative cycle for thermoplastic prepreg material development

...and transfer to industrial partners

- Transfer to material suppliers
- Provide cost efficient thermoplastic solutions (OoA prepregs, multifunctional prepregs…)

- Plug & Play technology
- Semi-industrial pilot for thermoplastic prepreg development
- Prepreg width up to 12 inches
- Line speed up to 10 m/min
- Sized or unsized carbon fiber (HR, IM, HM)
- Slurry powder impregnation with various matrix (PAEK, PEI, PPS…)
UD prepreg of PAEK and HR carbon fiber has been manufactured by the IRT Saint Exupery pilot with a fiber volume content between 50 to 60%. A homogeneous fiber distribution along the tapes is observed by optical microscopy.

First functionalized prepregs have been made to assess integration of specific particles into the tape process. These first results are really positive for the future.