

Multi-material Assembly

LIMECO² Project



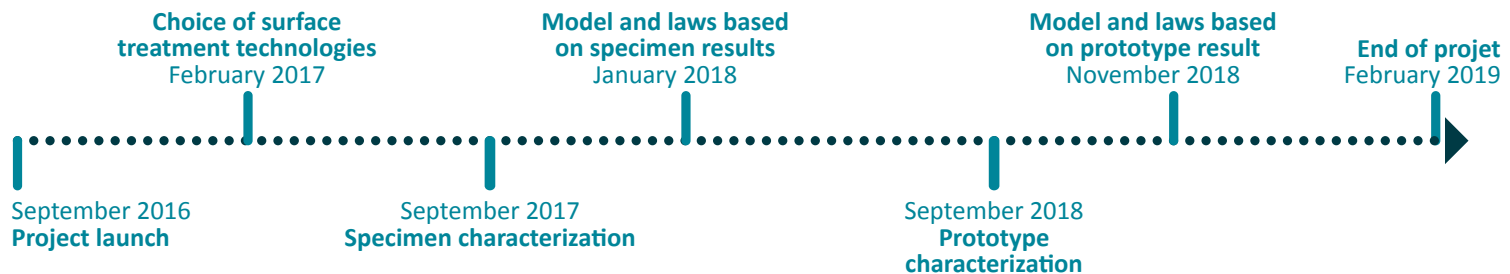
LIMECO² aims to develop, test and validate structural multi-material assemblies. The materials considered are steel or aluminum, combined with thermoplastic polymers high-performance (aerospace) or mass-market (automotive). The polymers are processed by thermoplastic injection or, when they are reinforced with continuous fibers by thermo-stamping or a combination of these two processes.

Technical and economic impacts

- ▶ Multi-material assembly Technologies
- ▶ «High throughput» and «high performance» thermoplastic composites
- ▶ Design, optimization of the process and assembly simulation

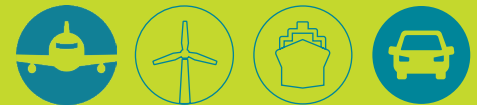
Keywords

Multi-material Assembly // Simulation // Thermoplastic composites // Overmolding



INDUSTRIAL CONTEXT.....

In the automotive and aerospace fields, lightening is one of the main contributors to reduce fossil fuel consumption and reach CO2 emission targets. Whether in the automotive field or in aeronautics, this reduction involves an increase in the use of thermoplastic polymers. It is therefore necessary to take into account a multi-material approach right from the design phase, with in particular a key issue on metal/composite assemblies and interfaces.



INNOVATIVE FEATURES.....

- ▶ Design highly stressed structural connections between a metal part and a thermoplastic part.
- ▶ Develop a process integrating all the steps of assembly.
- ▶ Characterize the interface.
- ▶ Modeling the multi-material assembly interface.



INDUSTRIAL APPLICATIONS.....

There are many possible applications in the automotive and aeronautical fields. We can cite the vehicle interior (seat frames, dashboard crossbars,...), the bodywork (bumper beams, opening doors, floors,...) for the automotive sector and engine parts, boxes for the aeronautics sector.

Partners

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Budget

▶ 971 k€

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