

HYPROD:

The Smart composites platform towards advanced functionalization of smart lightweight components for automotive and aeronautics

Sandrine Lebigre

Mathieu Schwander
Dr. Bertrand Fillon

IPC, 2 rue Pierre et Marie Curie, Oyonnax,
France

sandrine.lebigre@ct-ipc.com

To answer the need for new solutions combining high performance and high throughput processes, IPC has developed with its partners new hybrid solutions (thermoplastic composite overmoulding) to produce net-shape lightweight semi-structural parts with an advanced functionalization.

Going one step further, the "smart composites" Pilot Lines were set-up to increase functionality of composites parts by integrating new features to FRPs.

This development answers the need for continuous monitoring of structural composite parts to guarantee user safety. It opens the way to improved competitiveness of composite solutions against other materials by increasing function integration with an underlying mass-production approach.

With this breakthrough Pilot Lines, IPC is developing a wide array of integrated smart solutions - covering various technological approaches and functions: sensing, identification, anti-icing, etc - for automotive and aeronautics applications.

References

- [1] Mathieu Schwander, Plastiques et Caoutchoucs Magazine N°936, Collaborative Innovation for a unique hybrid product,[2017]
- [2] Performances of glass - polyamide 6 hybrid composites : influence of processing and use conditions - R.

Ourahmoune, Michelle Salvia, Jérôme Laborde, Mathieu Schwander, Guillaume Huguet – Oral presentation – SF2M days, Lyon (France) – October 2017

- [3] Advanced functionalization through CFRP overmoulding – M. Schwander et al. - 5th International Carbon Composites Conference, Arcachon (France) - MAY 9-11 2016.
- [4] Smart composites : stakes & examples – M. Schwander - SFIP colloquium, Grenoble (France) – March 2017

Figures

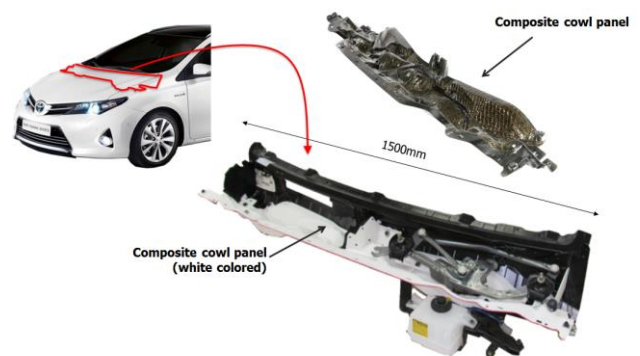


Figure 1: Composite cowl panel produced in the frame of the ARIZONA project (French National project, 2013-2017)

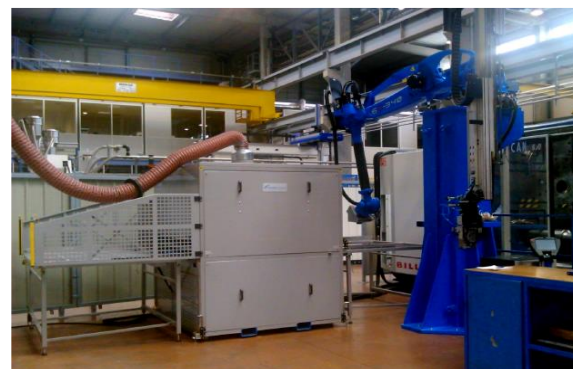


Figure 2: Pieces of equipment of the HYPROD platform
