

PLATFORM: Study of the integration and characterization of new materials manufactured with carbon nanotubes in current manufacturing processes in the aeronautical sector

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PLATFORM project turns up for the need to improve non-intrinsic properties of composite materials, principally its mechanical and electrical properties. The main objective of the project is to study the capacity to introduce three new nano-enable materials into the current manufacturing processes in aeronautical sector, improving the properties of the raw material.

Several material developments are made with carbon nanotubes in three different formats: buckypapers [1], thermoplastic doped veils [2] and CNT treated prepreg [3].

The implementation of each material has been studied in current infusion processes, more concretely manufacturing by RTM (Resin Transfer Moulding) [4] and manufacturing with prepregs cured in an autoclave [5].

The studied possibilities are:

- Buckypapers incorporated and doped veils embedded in prepreg laminates.
- Full manufacturing with treated prepreg.
- Buckypapers integrated and doped veils included in RTM laminates.

All manufactures panels were studied physical-chemically and mechanically. In this study are shown the principally obtained results in the project, and the final selection to manufacture a final demonstrator (Figure 1).



Figure 1. Scale manufactured demonstrator

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