



Changing the paradigm of costing in the Automotive Industry

For a long time, Carbon fibre is something the automotive industry has attempted to use in the mass market and premium segments, due to its structural properties and its ability to reduce part count.

However, it has only really been used in the ultra-premium segment of sports cars, due to high production costs.

With its beyond state-of-the-art fibre steering technology, known as Rapid Tow Shearing (RTS), iCOMAT can unlock the performance of composites by rapidly applying tapes in a defect-free manner.

This can change the paradigm of costing in automotive composites by placing fibres and tapes only where needed. RTS can rapidly build up a composite 'skeleton' that can then be combined with other materials to create a full hybrid structure. This can be other composite materials, plastics, or in this case metallic.

The concept of applying dry fibre tapes with a PA6 Nylon film reduced the weight of the equivalent metallic only part by 25%. It also eliminated the need for an inner panel, which meant reduced tooling requirements, reduced material usage and waste along with reduced capital and operational costs.

Further work is being conducted to form parts so that they can be incorporated into a vehicle easily without impacting the existing Bill of Process (BoP).

iCOMAT is expanding its portfolio of turn-key solutions in the automotive industry to not only include composite/metallic hybrid structures, but also Uni-Directional tapes/SMC hybrid structures and monolithic steered composite tape structures.

RTS will change the design paradigm and enable the use of composites in the automotive industry, allowing a step-change in structural and production performance that will pave the way for the wider adoption of composites for future, greener and more sustainable vehicles.



Figure 1 Composite skeleton car bonnet (iCOMAT Limited 2021)