

Thomas T + I · Walkmühlenstr. 93 · 27432 Bremervörde

## **PRESS RELEASE**

# **Mass-production of automotive carbon composite parts enabled by Radius-Pultrusion and showcased at JEC World 2019**

- Thomas Technik & Innovation to showcase Radius-Pultrusion at JEC World 2019**
- Production volumes of 100,000 carbon composite parts a year achievable using the process**
- Parts available in curved or coiled profiles**
- Radius-Pultrusion meets the cost and consistency demands of the automotive industry and can be licensed to other manufacturers.**

*19th February 2019, Thomas Technik and Innovation, Germany:* At this year's JEC World, pultrusion specialist Thomas Technik & Innovation (TTI) is to showcase manufacturing technology that can produce affordable carbon fibre-reinforced plastic (CFRP) parts in high-enough volumes for the mainstream automotive industry.

Visitors to TTI's stand (Hall 5, P80) and the Automotive Planet will see a CFRP bumper (fender), 100,000 of which could be manufactured each year using the company's innovative Radius-Pultrusion process. TTI Sales Engineer Sebastian Mehrstens says: "There are not many CFRP manufacturing processes that can do these numbers."

Uniquely, this process enables the manufacture of curved and coiled profiles. Mehrtens explains: “In the normal pultrusion process you have a mould that is stationary and two grippers or a caterpillar that pull the fibres through a heated mould. In our Radius-Pultrusion process, we move the mould.”

The mould grips incoming resin-impregnated carbon fibre material at the upstream end of the line, then moves downstream through a curve, curing the profile as it proceeds towards a stationary gripper. The gripper stays open as the cured profile is pushed through it towards an automated cut-off saw, and only closes when the mould reaches it. The gripper holds the cured profile in place while the die opens and returns upstream to pull and cure the next length of curved material.

Further to producing parts for customers on its Radius-Pultrusion machines, TTI is licensing the technology to others. For instance, the bumper to be shown at *JEC World* is a generic part manufactured by Thomas Technik customer Shape Corp. It comprises a thermoset resin reinforced with carbon fibre veils and rovings. Mehrtens says: “When people think of pultrusion, they tend to think of unidirectionally reinforced, simple parts, but with Radius-Pultrusion complex reinforcements such as non-crimp fabrics can be used.”

The process can be carried out with minimal human intervention. Mehrtens adds: “Radius-Pultrusion is highly automated; it’s a start and-stop process comparable with injection moulding.” This ensures that the resulting parts can be produced in the volumes and with the consistency demanded by the automotive industry.

Further, different profiles can be manufactured quickly and efficiently using just one Radius-Pultrusion line. With conventional pultrusion lines it can take up to

seven hours to switch from producing one profile to another. With a Radius-Pultrusion line, this process can be carried out in under an hour.

Companies investing in a TTI Radius-Pultrusion line will also benefit from the company's two decades of pultrusion expertise. Mehrtens says: "Pultrusion looks very simple, but twenty years ago when we built our own pultrusion line for the first time, we realised that there can be quite a steep learning curve. So when we sell a pultrusion line, we offer our development expertise to our customers as they produce their first profile. Learning how to make moulds and guide the fibres and so on, that's the know-how that we provide."

Based in Bremervörde, Germany, TTI is part of family-owned Thomas Holding and has over 200 employees. It has been involved extensively in the research, development and manufacture of composites for the last 25 years and in 2009 it unveiled the Radius Pultrusion process, for which it was presented with *JEC Innovation Awards* in both 2010 and 2016.

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### Media Enquiries

100% Marketing

+971 509766138

[sam@100percentmarketing.com](mailto:sam@100percentmarketing.com)