Dresden.

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Best Practice: Successful Founding

Qpoint Composite: Taking Custom-Tailored Heating Structures on the Road to Success

A spinoff of a research group at the Leibniz Institute for Polymer Research Dresden, Qpoint Composite serves the trend toward extreme-lightweight construction in the aviation and automotive industries with unique, electric heatable forming tools. The company's founders and managers are scientists Holger Orawetz and Matti Reppe.

The lighter a vehicle or airplane the less energy it requires setting it in motion. This is why fiber reinforced components are playing an important role in automotive and aviation manufacturing. The components are extremely lightweight yet mechanically durable; but their production is very time-and energy-intensive.

Qpoint Composite's unique, electric heatable forming tools are specifically designed for the construction of fiber composite components. The Qpoint Composite process integrates electrically and thermally well-conductive carbon fiber into composite forming tools. During production, the textile heating element is directly fitted into the fiber composite form and creates heat when electric voltage is applied. These electric heatable forms significantly accelerate the manufacturing process of fiber reinforced components. "It is comparable to a cake pan that has to stay in the oven for an extended amount of time until the cake is ready," Orawetz says. "If you take the pan from the oven and replace it with some kind of waffle iron, heat is applied directly and economically to the cake and the baking process is reduced significantly."

Researchers Team up on a Start-Up

Qpoint Composite is a spinoff of the Leibniz Institute for Polymer Research Dresden (IPF) where Orawetz and Reppe, until 2008, were conducting research as part of a team that was dealing with the manufacture of heating structures made from carbon fibers.

"We had the courage to become independent, had the idea, the market knowledge and almost no competition in this particular area of technology – the signs were good," Orawetz says. His team was able to profit from the experience of Hightex Verstärkungsstrukturen, a company that emerged from IPF years before and that is today located in Klipphausen, on the outskirts of Dresden. In addition, the founding team was supported by IPF, by the start-up initiative of the Technical University Dresden (TU Dresden) called 'dresden exists' and by the GWT, the Association for Knowledge and Technology Transfer at TU Dresden that supports researchers on their way to application and manufacturing. The greatest help, according to Orawetz, was

the FACC, an Austrian Company that specializes in aviation structures, and which became their first customer. “Together we developed and delivered a new system for the manufacturing of ‘pre-forms’ for structural components of airplane wings,” Orawetz says. “This is how in its first year Qpoint Composite had a market-ready product and an excellent reference from the demanding aviation sector.”

At Home in the Stronghold of Lightweight Fiber Composite Construction
A year after it was founded, Qpoint moved to its current location in Dresden’s Dobritz district, close to the ITM Institute for Textile Machinery and Textile High Performance Material Technology of the Technical University Dresden that operates a machine shop in the neighborhood. A central part of Qpoint manufacturing is the industrial sewing machine used to produce tailor-made heating structures that apply the heat to the exact point where it is needed in the forming tool. The heating textile allows the creation of fiber composite components of any electric heatable geometrical shape. Other applications, such as inserting de-icing structures into aircraft wings to either prevent or revert icing, are possible. Such structures are part of current development orders, which are fulfilled by the two managers and their 12 employees. Another business segment is the production of electric heatable forming tools for suppliers of the automotive industry: the forming tools are used for the leather trimmings of interior parts and designs.

“Along with Munich and Hamburg, Dresden is one of the strongholds of lightweight fiber composite construction, and lightweight construction is definitely a growth market.” Orawetz says. Dresden distinguishes itself by its forward-thinking know-how and excellent funding options, and through its large resource of highly qualified personnel, all of which are very important assets for technology start- ups. In addition, the company benefits from Dresden’s well-networked research sector that offers a broad base of knowledge. Through research and development projects, Qpoint Composite continues to improve and optimize its products and processes as the young company plans to remain one of the top innovators in the field of extreme lightweight construction for the aviation and automotive industries.

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