PRESSEMITTEILUNG
SIEBENWURST GMBH & CO. KG

Dietfurt, March 29th, 2011

Altogether excellent: FIT Hybrid process receives JEC Innovation Award

Efficient production method for fibre-composite plastics is ready to be implemented

Having already been awarded the "Innovation-Champion Top 30" award from the Network of Automotive Excellence, the "FIT Hybrid" research team has now received a second prestigious prize: The JEC Innovation Award. The FIT Hybrid process – "FIT" being the abbreviation for Fluid Injection Technology – is an especially efficient production process for manufacturing large quantities of fibre-composite plastic hollow parts that are lightweight but can still bear heavy loads. The prize will be awarded during the JEC Composites trade fair, taking place from 29th to 31st March in Paris. The process combines several innovative trends which form the basis of this year's JEC trade fair: Sustainability, innovative tool manufacture and the increasing use of composite materials in the car manufacturing sector. This makes lightweight construction possible without compromising comfort, safety and performance.

The FIT Hybrid project is a collaboration between the development institute Neue Materialien Fürth GmbH, industrial partners Audi AG, Schaumform GmbH, Jacob Plastics GmbH and Christian Karl Siebenwurst Modell- und Formenbau GmbH & Co. KG, together with the Institute for Polymer Technology at the University of Erlangen-Nuremberg. The project is subsidised by Germany's Federal Ministry of Education and Research, and supervised by the project executing organisation Jülich. As part of this team, Siebenwurst developed the tool used for manufacturing the component.

The prototype model was a back rest from the Audi AG product range. "We integrated the stipulations of the Audi requirement specification into the project", explains Wolfgang Rauscher, who is responsible for the research project at Siebenwurst. At the end of a three-year research and development phase, he concludes: "The process is ready to be implemented."

Based on conventional hybrid technology, FIT Hybrid combines moulding and forming processes in a single tool. The combination of organic sheet forming and injection moulding technology provides an extremely high degree of design flexibility and mechanical performance while also reducing the weight of the product. At the same time, different functions can be combined in a compact design.

Organic sheets – semi-finished products made of fabric or core-reinforced thermoplastic – are highly rigid and mechanically durable thanks to their high degree of orientation and the high packing density of the long fibres or continuous filaments used. In conventional manufacturing processes, lightweight composite structures are formed in multi-level processes and then glued or welded together in subsequent working stages. In comparison, the integrative manufacture of high-performance thermoplastic composites made possible by the FIT Hybrid process offers a range of advantages.

The hybrid structures achieve strength values comparable to those of steel, and combine material and constructive lightweight construction, the latter of which is even possible with glass fibre-reinforced organic sheets and without the use of expensive carbon fibres. Cost efficiency is increased both by significantly shorter process chains and short cycle times, allowing components to be produced in large quantities and in a cost-effective way while

keeping production in time with the customer's demands. Another bonus is the energy saved through the use of integrative manufacture.

The FIT Hybrid process is not only suited to the car manufacturing sector – it can also be used in the aviation, aerospace and medical technology sectors, in the manufacture of sport and leisure products and in most lightweight construction applications.

Visit us at the following trade fairs:

JEC Composites Show Paris, 29th – 31st March 2011
Joint booth of the Europe Enterprise Network
Hall 1, stand F 31

Chinaplas, Guangzhou, 17th –20th May 2011
Hall 3.2, stand C 71

About Christian Karl Siebenwurst Modell- und Formenbau GmbH & Co. KG:

Christian Karl Siebenwurst Modell- und Formenbau GmbH & Co. KG produces pressure diecasting and injection moulding tools for 3D moulded components in aluminum and plastic, including complete solutions for special processes for the manufacture of large-area components. As a systems supplier for well-known companies in the automotive and aerospace industries, Siebenwurst supports its customers from the design model through to series production. Institutionalised process management optimises all processes with the aim of standardisation. In the lightweight construction sector, Siebenwurst is working on research and development together with several universities (TU Chemnitz, FAU Erlangen-Nuremberg, TU Dresden, RWTH Aachen, TU Kaiserslautern) in development and process technology for new mobility concepts. That Siebenwurst was the recipient of the "Tool Manufacturer of the Year 2009" and the "Top 100 – Innovator 2010" awards also shows that the company's commitment to process optimisation and innovative technologies has been deemed worthy of praise by the jury members responsible for these national award ceremonies. The company, which was founded in 1897 and has its headquarters in Dietfurt, in Germany's Upper Palatinate, today has 340 employees and is one of the region's most important employers and apprenticing companies.

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