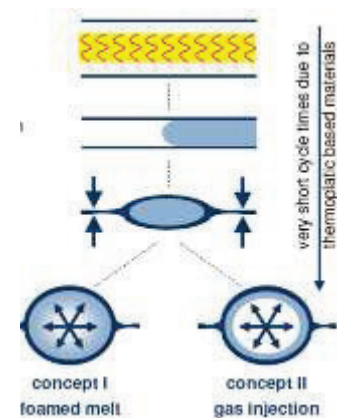


## Category: Applications/ Automotive

### FIT Hybrid: a process for the production of composites hollow structures

**Winner: Jacob Plastics GmbH (Germany)**

**Partners:** Lehrstuhl für Kunststofftechnik Friedrich-Alexander-University in Erlangen-Nuremberg (Germany), Neue Materialien Fuerth GmbH (Germany), Schaumform GmbH (Germany), Audi AG (Germany) and Christian Karl Siebenwurst GmbH & Co. KG (Germany)



In conventional manufacturing processes, lightweight hybrid composite structures are formed in multistage – and thus costly – processes and joined by additional processing steps such as gluing or welding.

The FIT (**Fluid-Injection-Technology**) Hybrid process uses reinforced thermoplastic composites and a fluid injection technology to manufacture lightweight, high-performance composite structures from hollow elements in a single cycle with one mould. It combines **moulding, forming and joining processes in a single step thus** reducing costs, saving on energy and is suitable for mass production.

**The excellent formability of thermoplastic composite materials combined with a tried-and-tested injection moulding technology result in a high degree of design freedom, thus permitting the integration of multi-various functions in compact designs.**

The research and development stage lasted three years and the prototyping stage is in process.

The FIT hybrid technology is an energy-efficient, highly-automated manufacturing process that provides real economic advantages to manufacturers. The innovation can be used in many market segments such as automotive, medical technology, sport and leisure, aerospace, and lightweight construction.