

# **Boeing To Establish Thermoplastic Composites Research Centre**

ENSCHDEDE, The Netherlands - Officials from Boeing, Royal Ten Cate, Stork Fokker and the University of Twente signed an agreement today to establish the Thermoplastic Composites Research Centre (TPRC) at the University of Twente in The Netherlands.

Reasons for pursuing research into thermoplastic composites technologies are that they can offer cost-efficient fabrication and assembly processes and have environmental advantages. Thermoplastics are by nature more ductile (impact resistant), and thermoplastic composites are potentially more sustainable than thermoset composites. These unique properties can result in shorter cycle times and more environmentally friendly processing methods. As a result, thermoplastic materials are expected to have a major impact on the development of sustainable and cost-effective methods of production.

Serving as a catalyst for innovation, the concept of the consortium is to collaborate with different parties within the supply chain on thermoplastic composites. The research centre will focus on development of thermoplastic composite technologies for a broad range of end-use markets including wind energy, oil and gas, aerospace, automotive, medical, machinery, infrastructure, sports and marine.

A key factor that has led to the formation of the TPRC consortium is the growing use of thermoplastics in the aerospace industry, which is happening because customers are increasingly demanding products that are lighter, more cost efficient and environmentally progressive. To satisfy that demand, aerospace companies are looking for innovations that will accelerate development of thermoplastic composites technologies and spur their deployment into product lines quickly and efficiently.

The physical centre will enable researchers and developers from all parties to work closely together on open innovations. It also will enable all parties to share research equipment. New additional members to the TPRC consortium will be encouraged to join in the coming years, including organisations that will represent a wide range of market sectors.

### **Start of the initiative**

The effort to establish TPRC at the University of Twente began last year, when Boeing, TenCate, Stork Fokker and the University of Twente began collaborating on two joint research projects, cofounded by the Province of Overijssel, that involve materials used in thermoplastic composites, as well as joining/bonding methods. The regional development agency Oost NV and Kennispark Twente have managed the start and process of the TPRC project. For Kennispark Twente, this included

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legal preparations. Oost NV, which is commissioned by the Ministry of Economic Affairs and the Provinces of Overijssel and Gelderland, facilitated the complete process, enabling the continuity of structuring the centre.

In a later phase, realizing public funding together with the regional innovation platform will be the major focus of the activities. In the innovation platform, the Province of Overijssel and the region of Twente work together to generate innovative projects like TPRC. In this combined platform the cooperation and financing for TPRC will be developed.

In the near future, the research centre will be housed in 'de Etalage', a Kennispark building that will physically bring together science and entrepreneurship. Kennispark Twente is an initiative of the University of Twente, the Province of Overijssel and the municipal government of Enschede (on behalf of Netwerkstad Twente). Through Kennispark Twente, the University of Twente actively approaches businesses to share knowledge and contribute to innovation. The initiative includes joint research programs, commercial use of the University's research facilities and development of business activities and centers on and around the University campus. The University of Twente will be responsible for managing its day-to-day operation and member's research projects.

The TPRC agreement was signed today before the annual Innovation Lecture of the University of Twente at the 'De Grolsch Veste' in Enschede, which this year was presented by Jan Narlinge, president of Boeing Northern Europe. According to the agreement, the industrial partner members will support TPRC with membership fees and technical guidance to assure the work carried out by the centre will benefit these members. All parties will allocate an equal share in the joint research projects.

### Reaction from the founding partners

"For the University of Twente, good relations between science and industry are essential. The fact that our partners in TPRC choose the University campus, and thus Kennispark Twente, underlines the entrepreneurial character of our University", said Anne Flierman, President of the University of Twente. "TPRC will prove to be a typical example of translating excellent science into actual applications in society."

"This collaboration will enable us to leverage our investment in advanced composites technology and increase our supplier base in the Netherlands in the area of thermoplastic composites," said Jan Narlinge of Boeing. "The TPRC will provide our customers with access to an accelerated development and use of thermoplastic materials and processing technologies, world-class suppliers and aircraft components at reduced cost, cycle time and weight."

Loek de Vries, CEO and president Royal Ten Cate: "TPRC is a great opportunity for TenCate to develop next generation thermoplastic composite applications. Cooperation with the entire value chain and knowledge institutes enables us to combine material development, processing technologies and design engineering

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concurrently. In short term, we foresee a further increase in the demand for thermoplastic composite materials. TPRC is a great platform to expand the scope of applications within the aerospace industry, but will also be of interest for many industrial markets."

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