

PRESS RELEASE

PRESS RELEASEJune 28, 2018 || Page 1 | 3

“Future of Composites in Transportation 2018”, JEC Innovation Award for hybrid roof bow

The use of composite materials for ground transportation will be in the spotlight at an upcoming JEC event, “The Future of Composites in Transportation”, on June 27 and 28, 2018 in Chicago. For the Fraunhofer Institute for Laser Technology ILT in Aachen, a highlight at the event will be receiving the “Future of Composites in Transportation 2018 Innovation Award” in the category “Passenger Cars”. This accolade honors the development of a hybrid roof bow in collaboration with Weber Fibertech GmbH, Werkzeugbau Siegfried Hofmann GmbH, Fraunhofer Institute for Structural Durability and System Reliability LBF, SCANLAB GmbH and the BMW Group. In short, this component demonstrates successful implementation of laser processes in lightweight production.

The timing of the award presentation is perfect: After all, the “Future of Composites in Transportation 2018 Innovation Award” will serve as the culmination of the HyBriLight project, which ended in June and was funded by the German Federal Ministry of Education and Research (BMBF). Along with industrial partners, the Fraunhofer Institutes ILT and LBF spent nearly four years developing new photonic tools for lightweight production. The highlight of this project is a component known as a hybrid roof bow, which allows project partners to demonstrate how to optimize a hybrid automotive component for series production.

Shorter process time and reduced costs of raw materials

The hybrid roof bow is based on an original component in a BMW 7 Series vehicle. It consists of a fiber-reinforced plastic brace and metallic joining partners, which connect the hybrid roof bow with the chassis. As an alternative to the conventional approach of adhesive bonding and riveting, Fraunhofer ILT developed a new laser-based process that joins plastic and metal by means of adhesion and positive locking. The company Weber Fibertech optimized the design of the component. Project partners can be proud of their joint innovation, which reduces process times by 70 percent compared to conventional methods, cuts the costs of raw materials in half and integrates multiple process steps into a single, highly automated process.

The HyBriLight exhibition piece demonstrates just how successfully researchers and manufacturers can jointly realize practical, new laser-based techniques for lightweight production. These innovative techniques even surpass conventional approaches in

Editorial Notes

Petra Nolis M.A. | Group Manager Communications | Telephone +49 241 8906-662 | petra.nolis@ilt.fraunhofer.de
Fraunhofer Institute for Laser Technology ILT | Steinbachstraße 15 | 52074 Aachen, Germany | www.ilt.fraunhofer.de

FRAUNHOFER INSTITUTE FOR LASER TECHNOLOGY ILT

many parameters, such as shear loading (maximum of 50 MPa) and resistance to internal pressure (maximum of 45 bar), which is crucial to tightness.

PRESS RELEASE

June 28, 2018 || Page 2 | 3

HyBriLight project

The BMBF project HyBriLight developed photonic tools for lightweight production. More precisely, this endeavor focused on a “process chain adapted for specific materials for cost-efficient and hybrid lightweight production using highly productive laser systems”.

Project partners

- Fraunhofer Institute for Laser Technology ILT, Aachen, Germany (project coordination)
- Fraunhofer Institute for Structural Durability and System Reliability LBF, Darmstadt, Germany
- Weber Fibertech GmbH, Markdorf, Germany
- Werkzeugbau Siegfried Hofmann GmbH, Lichtenfels, Germany
- SCANLAB GmbH, Puchheim, Germany
- Bayerische Motoren Werke Aktiengesellschaft, Munich, Germany
- Airbus Group Innovations, Munich, Germany
- DILAS GmbH, Mainz, Germany
- Held Systems GmbH, Heusenstramm, Germany



Image 1:
On June 27, 2018, the development and manufacture of the hybrid roof bow received the "Future of Composites in Transportation 2018 Innovation Award" in Chicago.
© Fraunhofer ILT, Aachen, Germany.

FRAUNHOFER INSTITUTE FOR LASER TECHNOLOGY ILT

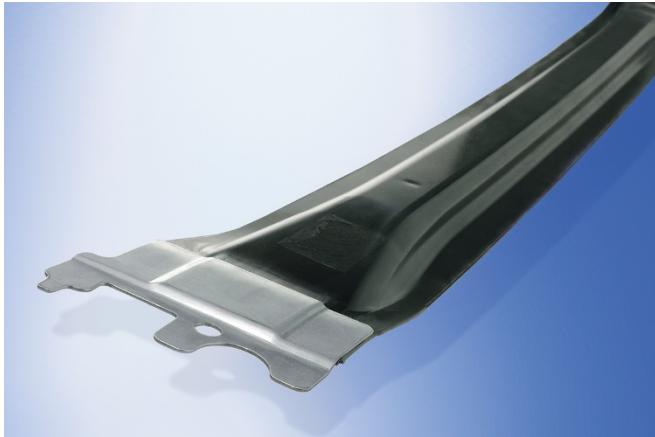


Image 2:
Multi-material roof bow:
This exhibition piece demonstrates how costs and process time can be reduced for an automotive component.
© Fraunhofer ILT, Aachen, Germany.

PRESS RELEASE

June 28, 2018 || Page 3 | 3

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of more than 25,000, who work with an annual research budget totaling 2.3 billion euros. Of this sum, almost 2 billion euros is generated through contract research. Around 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

contact

Kira van der Straeten | Group Micro Joining | Telephone +49 241 8906-158 | kira.van.der.straeten@ilt.fraunhofer.de

Dr. Ing. Alexander Olowinsky | Group Manager Micro Joining | Telephone +49 241 8906-491 | alexander.olowinsky@ilt.fraunhofer.de
Fraunhofer Institute for Laser Technology ILT | Steinbachstraße 15 | 52074 Aachen, Germany | www.ilt.fraunhofer.de