The Laser in Composites Symposium in Aachen presents the latest developments and state-of-the-art-applications in laser processing of composite materials.

Laser processing of composite materials has a wide range of applications, e.g. in the automotive industry, aeronautics, electro mobility and other fields of lightweight production. Therefore, the focus of the symposium will be on the topics laser cutting and drilling of composites and prepregs, laser joining of thermoplastic composites and hybrid structures and laser-assisted tape-laying processes as well as process control and quality assurance.

Major goal of the symposium is to bring together specialists from laser manufacturers, process engineering and the industry to exchange the latest results and future prospects in the laser processing of composite materials.

The symposium will be held in collaboration with the Aachen Center for Integrative Lightweight Production (AZL).

We look forward to seeing you there!

Prof. Reinhart Poprawe
Fraunhofer ILT

Prof. Christian Brecher
Fraunhofer IPT

**Organization**

Fraunhofer Institute for Laser Technology ILT
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Fraunhofer Institute for Production Technology IPT
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PROGRAM – DAY 1 – TUESDAY, APRIL 9, 2019

9.30  Registration
10.00  Welcome
   Dr. Arnold Gillner, Fraunhofer ILT, Aachen (D)
10.15  Laser Processing of Composites – Current Applications and Trends
   Dr. Alexander Olowinsky, Fraunhofer ILT, Aachen (D)
10.45  Metal meets Composites – Hybrid Joining of Plastics and Metals
   Kira van der Straeten, Fraunhofer ILT, Aachen (D)
11.15  Laser Hybrid Joining of Textured Metal and Plastic Components
   Johannes Eckstädt, Leister Technologies AG, Kägiswil (CH)
11.45  Laser Pretreatment as an Inline Combination Technology
   Richard Schares, AZL – RWTH Aachen University, Aachen (D)
12.15  Lunch
13.15  Cutting of Composites with High-power Lasers
   Dr. Frank Schneider, Fraunhofer ILT, Aachen (D)
13.45  Comparison of Long and Ultrashort Pulsed Laser Drilling of Carbon Fiber Preforms
   Stefan Janssen, Fraunhofer ILT, Aachen (D)
14.15  Laser Treatment of Printed Flexible Conductive Paths on Fiber Pre-products for Heating Structures
   Jonas Mertin, Fraunhofer ILT, Aachen (D)
14.45  Coffee Break
15.00  Visit of Fraunhofer ILT, Fraunhofer IPT and AZL laboratories
16.00  Get together with Drinks and Snacks
17.30  End of the First Day

DAY 2 – WEDNESDAY, APRIL 10, 2019

9.00  3 Decades of Laser-Assisted Thermoplastic Tape Placement in Aachen – From Simple Beginnings to Adaptive Heating by Laser Irradiation
   Christian Kukla, Fraunhofer IPT, Aachen (D)
9.30  Industrial Scale Composite Pipe Manufacturing
   Dr. Patrick Köther, AFPT GmbH, Dörth (D)
10.00  Trustful Composite Part Manufacturing using Continuous Digitalization Measures in Laser-based Tape Placement
   Malena Schulz, Fraunhofer IPT, Aachen (D)
10.30  Coffee Break
11.00  Quality Monitoring of Laser-beam-welded Tapes made of Fibre-reinforced Plastics by Means of Thermography and Machine Learning
   Andrea Lanfermann, Fraunhofer ILT, Aachen (D)
11.30  Sensor Technology for Process Control in Laser Materials Processing of FRP
   Dr. Markus Kogel-Hollacher, Precitec Optronik GmbH, Neu-Isenburg (D)
12.00  Summary and Closing Remarks
   Henning Janssen, Fraunhofer IPT, Aachen (D)
12.15  Lunch
13.15  End of Symposium

GENERAL INFORMATION

Venue
Fraunhofer Institute for Laser Technology ILT
Steinbachstraße 15, 52074 Aachen, Germany
www.ilt.fraunhofer.de

Conference Language
All lectures are presented in English.

Registration
To register please use the form provided online at www.laser-in-composites-symposium.fraunhofer.de. Once you have signed up, you will receive a confirmation of participation as well as your invoice which can be settled either by credit card (VISA, MasterCard) or by bank transfer. Registration deadline: March 29, 2019.

The registration fee amounts 590 EUR. A reduced registration fee of 490 EUR is applicable for members of the Aachen Center for Integrative Lightweight Production (AZL). The fee includes lunch and snacks, coffee breaks.

Conditions
Please find the conditions of participation also online: www.laser-in-composites-symposium.fraunhofer.de

Program subject to minor changes.