



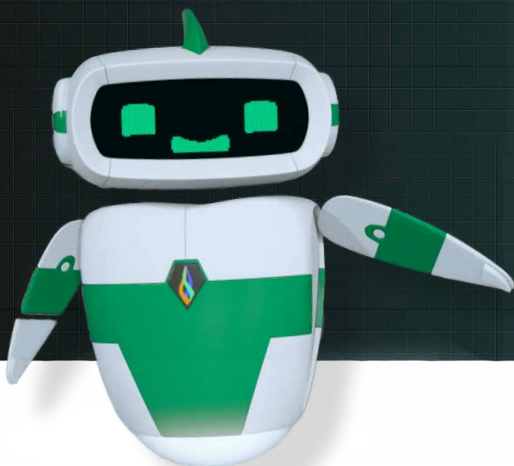
TECHNISCHE UNIVERSITÄT  
CHEMNITZ

CLUSTER OF EXCELLENCE

Merge Technologies for Multifunctional  
Lightweight Structures

## IMTC 2021 Lightweight Structures

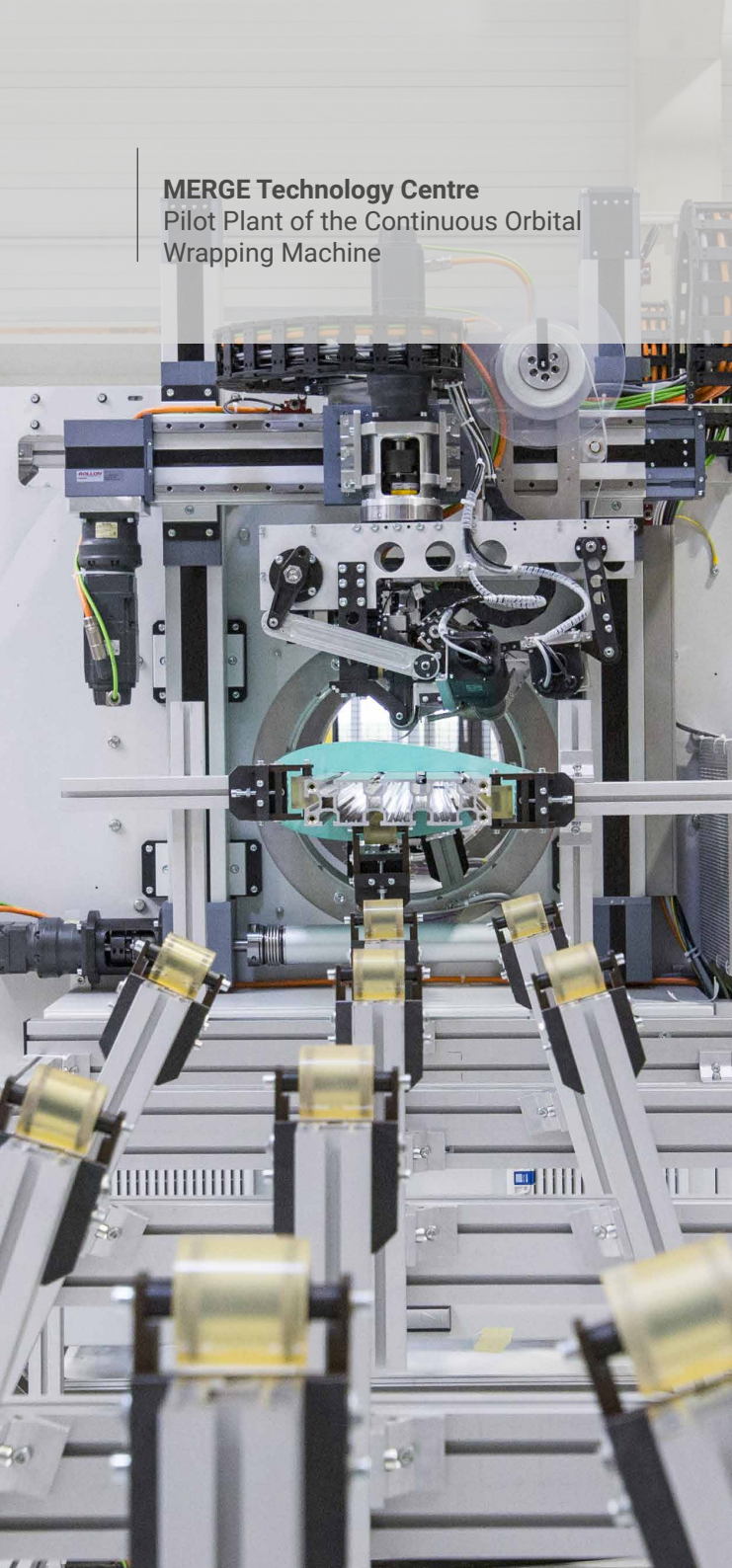
1 – 2 December 2021 | Chemnitz University of Technology



## 5<sup>th</sup> International MERGE Technologies Conference

Conference Programme





**MERGE Technology Centre**  
Pilot Plant of the Continuous Orbital  
Wrapping Machine

# First Conference Day

Wednesday, 1<sup>st</sup> December

## Opening, Welcome and Keynote Speeches

09:00 - 10:30

Showcase Structural Change in Saxony  
"Transition for Regions and Generations"

Networking Coffee

## SPECIAL SESSION

Circular Economy and the Carbon Footprint

11:15 - 12:45

Lunch

## Session 1

Materials, Semi-Finished Products and  
Composite Structures

13:45 - 15:15

Networking Coffee

## Technology Showcase

MERGE Research Centre "Lightweight Technologies"

15:30

## Wednesday, 1<sup>st</sup> December

### 09:00 **Opening**

Prof. Lothar Kroll  
Coordinator of the Cluster of Excellence MERGE,  
Chemnitz University of Technology

### **Welcome**

Prof. Gerd Strohmeier  
Rector of Chemnitz University of Technology

### **Welcome Speeches**

Sebastian Gemkow  
Saxon State Minister for Science  
Thomas Schmidt  
Saxon State Minister for Regional Development  
Peter W. Patt  
Member of the Saxon State Parliament

## Keynote Speeches

### 09:30 **Game-changer Technology: Lightweight Construction**

MinR Werner Loscheider  
Head of Division "Construction industry, lightweight construction/new materials and resource efficiency",  
Federal Ministry for Economic Affairs and Energy

### 10:00 **Pultrusion – innovative lightweight application for minimizing carbon footprint**

Dr. Georg Holzinger  
Vice President Global Application & Product Owner,  
KraussMaffei Technologies GmbH, München

### 10:30 **Showcase Structural Change in Saxony "Transition for Regions and Generations"**

### 10:45 **Networking Coffee | Business Speeddating**

### 11:15 **Begin of the Sessions**

## Opening | Welcome



Prof. Lothar Kroll



Prof. Gerd Strohmeier

## Welcome Speeches



Sebastian Gemkow



Thomas Schmidt



Peter W. Patt

## Keynote Speeches



Werner Loscheider



Georg Holzinger

## Wednesday, 1<sup>st</sup> December

### SPECIAL SESSION

#### Circular Economy and the Carbon Footprint

- 11:15 **Ways to a Circular Economy**  
Dr. P. Dieckhoff  
General Secretary Science Policy,  
Fraunhofer Gesellschaft, Berlin
- 
- 11:35 **Cooperation as Strategy: The Alliance for Lightweight Construction in Saxony**  
Prof. H. Jäger  
Chairman of the Board, Leichtbau Allianz Sachsen e.V.,  
Freiberg
- 
- 11:55 **Reduction of the Carbon Footprint in Lightweight Production**  
Prof. A. Herrmann  
CEO of CTC GmbH an AIRBUS company, Stade
- 
- 12:15 **Solutions for Plastics Recycling to realize Circular Economy**  
C. P. Pöpel  
Director Global Application & Product Ownership,  
KraussMaffei Extrusion GmbH, Hannover

12:45 - 13:45 Lunch

### Session 1 Materials, Semi-Finished Products and Composite Structures

- 13:45 **Experimental investigation of automotive component in hybrid fibre reinforced thermoplastic design**  
A. Maier  
BMW Group, München
- 
- 14:05 **Investigation of material degradation during multiple recycling loops of a glass fibre reinforced polypropylene compound to evaluate life cycle analysis based on mechanical properties**  
I. Pfisterer  
Mercedes Benz AG, Sindelfingen
- 
- 14:25 **New casting process for the production of aluminium matrix composites with high volume content of reinforced particle phase (high-grade particle reinforced AMC)**  
Dr. M. Graf  
CMMC GmbH, Chemnitz
- 
- 14:45 **Investigating the changes in polyamide 1010 composite properties and structure after adding the metal halides**  
Dr. A. Nikiforov  
Kazan National Research Technological University, Kazan,  
Russian Federation

15:15 - 15:30 Networking Coffee

### Technology Showcase

#### MERGE Research Centre "Lightweight Technologies"

- 15:30 - 16:30 **In-person participants: Guided Tour** through the MERGE Research Centre
- 
- 15:30 - 15:45 **Online participants: Virtual Guided Tour** through the MERGE Research Centre





**MERGE Technology Centre**

Composite press with approx. 25000 kN  
pressing force

# Second Conference Day

Thursday, 2<sup>nd</sup> December

**Session 2**

Processing, Systems and Applications for  
Large-Scale Production

09:00 - 10:30

Poster Slam and Discussion  
Best Poster Award

10:30

**Session 3**

Modelling and Simulation of Hybrid Structures  
and their Production Processes

11:15 - 12:45

Lunch

Company Trade Fair

13:45

**Session 4**

Smart Systems Integration

14:15 - 15:45

Closing Remarks

15:45

**WICKERT**

# Thursday, 2<sup>nd</sup> December

## Session 2 Processing, Systems and Applications for Large-Scale Production Design

- 09:00 **SEAMHex - Fast 6D Additive Manufacturing using an innovative Screw Extruder applied on a Hexapod Parallel Kinematic**  
L. Jankowsky  
Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz
- 
- 09:20 **Energy-efficient double belt press with integrated inductive heating system**  
Dr. M. Emonts  
Aachen Centre for Integrative Lightweight Production of RWTH University, Aachen
- 
- 09:40 **Metal substitution by thermoplastic commodities without reinforced structures**  
Prof. J. Weg  
Hailo Wind Systems GmbH & Co. KG, Haiger
- 
- 10:00 **Development of Multi-Material-Joint Made of Copper-Coated FRP and Steel by Innovative Technology Fusion**  
J. Gebauer  
Fraunhofer Institute for Material and Beam Technology IWS, Dresden

10:30 - 11:15 Poster Slam and Discussion

Voting  
Best  
Poster

## Session 3 Modelling and Simulation of Hybrid Structures and their Production Processes Design

- 11:15 **Designing bended pipes under internal pressure**  
M. Herold  
Chemnitz University of Technology, Chemnitz
- 
- 11:35 **Influence of Nonwoven Interleave Layer on Interlaminar Fracture of Sandwich-Structured Composite**  
Zain Ali  
Chemnitz University of Technology, Chemnitz
- 
- 11:55 **Simulative Design of a Load-Path Adapted Fiber Reinforced Composite (FRP) Transporter Rear Door**  
A. Saleem  
Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz
- 
- 12:15 **Design and mechanical behaviour modelling of corkboard honeycomb cores and its composite sandwich structures**  
P. Nóvoa  
University of Porto, Porto, Portugal

12:45 - 13:45 Lunch

13:45 - 14:15 Company Trade Fair

## Session 4 Smart Systems Integration

- 14:15 **Radar sensor integration and quality testing of sheet moulding compound parts in the automotive frequency range**  
T. Bonfig  
Volkswagen AG, Wolfsburg
- 
- 14:35 **Individual functionalization of fiber-reinforced profiles via pultrusion**  
C. Drebenstedt  
Fraunhofer Institute for Machine Tools and Forming Technology IWU, Chemnitz
- 
- 14:55 **Prediction of accurate thermal and phase fractions in SLM components of Advanced High Strength Steels for automotive applications using numerical simulation**  
K. A. Venkata  
Simufact Engineering GmbH part of Hexagon, Hamburg
- 
- 15:15 **Integration of RFID Tag in additive manufactured Parts**  
K. Winkler  
Chemnitz University of Technology, Chemnitz

15:45 Closing Remarks



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