



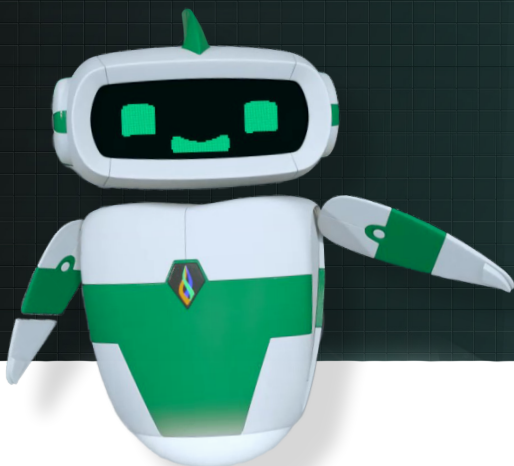
TECHNISCHE UNIVERSITÄT
CHEMNITZ

CLUSTER OF EXCELLENCE

Merge Technologies for Multifunctional
Lightweight Structures

IMTC 2021 Lightweight Structures

1 – 2 December 2021 | Chemnitz University of Technology



5th International MERGE Technologies Conference

Conference Programme



MERGE Technology Centre
Pilot Plant of the Continuous Orbital
Wrapping Machine

First Conference Day

Wednesday, 1st 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, 1st 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

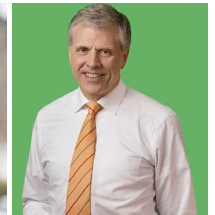
Welcome Speeches



Sebastian Gemkow



Thomas Schmidt



Peter W. Patt

Keynote Speeches



Werner Loscheider



Georg Holzinger

Wednesday, 1st 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, 2nd 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, 2nd 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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Cluster of Excellence MERGE
Chemnitz University of Technology
Reichenhainer Straße 31/33
09126 Chemnitz, Germany

Univ.-Prof. Dr.-Ing. habil. Prof. h. c. Dr. h. c. Prof.
Lothar Kroll, Coordinator

Dipl.-Ing. Camilo Zopp, Scientific Director

Dr. rer. nat. Isabelle Roth-Panke,
Administrative Director

Phone: +49 371 531-13910

Fax: +49 371 531-13919

Email: merge@tu-chemnitz.de

www.tu-chemnitz.de/MERGE



Organisation Team

General Organisation

Sylvia Strauß

Phone: +49 371 531-35501

Dr. Isabelle Roth-Panke

Phone: +49 371 531-35632

Scientific Organisation

Dipl.-Ing. Camilo Zopp

Phone: +49 371 531-34845

Email: imtc@tu-chemnitz.de

www.tu-chemnitz.de/IMTC



TECHNISCHE UNIVERSITÄT
CHEMNITZ

Chemnitz University of Technology
09107 Chemnitz
www.tu-chemnitz.de