The conference language is English. However, the presentations marked with * will be held in German.

Programm

THURSDAY, 30.06.2022, Plenary session

National Lightweight Validation Center (LEIV)| Leichtbau-Campus Universelle Werke, Zwickauer Straße 48, 01069 Dresden

09:00 Uhr **Welcome**
Prof. Dr. Niels Modler
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Lightweight Design and Structural Assessment, Member of the Board

09:10 Uhr **Greetings**
Prof. Dr. Ursula M. Staudinger
TU Dresden, Rector

09:20 Uhr **Greetings**
Thomas Kralinski
Saxon State Minister for Economic Affairs, Labour and Transport, State Secretary

09:30 Uhr **Corporate Social Responsibility (CSR) als Gestaltungsaufgabe des Controlling (working title)**
Prof. Dr. Edeltraud Guenther
UNU Institute for Integrated Management of Material Fluxes and of Ressources, Director

09:55 Uhr **BMW Group sustainability strategy**
Dr. Thomas Becker
BMW Group, Vice President Sustainability, Mobility

10:20 Uhr **Efficient implementation of technological innovations for climate-friendly aviation**
Dr. Peter Wehle
Rolls-Royce Deutschland Ltd & Co KG, Head of Innovation and Research and Technology

10:45 Uhr **Break**

11:10 Uhr **Building blocks for a holistic sustainability in plastic injection molding**
Dr. Thomas Walther
ARBURG GmbH & Co KG, Head of Application & Process Development

11:35 Uhr **Recycling strategies in the light of the automotive transformation process**
Peter Laichinger [1], Harri Dittmar [2]
[1] ElringKlinger AG, Business Development Lightweight, Leader
[2] ElringKlinger AG, Business Development Lightweight, Consultant (Dittmar Engineering GmbH)

12:00 Uhr **Circular economy through synergetic network of material and energy flows ***
Prof. Dr. Michael Beckmann
TU Dresden, Institute of Process Engineering and Environmental Technology, Chair of Energy Process Engineering, Director of the Institute

12:25 Uhr **Lunch break**

13:30 Uhr **How less becomes more: Resource use and recycling**
Prof. Dr. Jens Gutzmer
Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Director

13:55 Uhr **New lightweight solutions at the crossroads of e-mobility, circular economy and carbon footprint ***
Dr. Oliver Schauerte
Volkswagen AG, Director Materials and Vehicle Projects

14:20 Uhr **Steel pipes for hydrogen applications - ideal products for sustainable CO_2 reduction ***
Dr. Carsten Holste
Mannesmann Line Pipe GmbH, Managing Director

14:45 Uhr **Break**

15:10 Uhr **Vision towards a green and digital polymer value chain – Opportunities and challenges**
Dr. Philippe Dumazet
SABIC, T&I Research Fellow

15:35 Uhr **Sustainability issues in the aircraft life cycle ***
Dr. Kay-Uwe Hörl [1], Alexander Knorr [2]
Elbe Flugzeugwerke GmbH, [1]Chief Corporate Officer, [2]R&D Coordinator

16:00 Uhr **National Lightweight Engineering Validation Center (LEIV) – A step towards the Key Strategic Orientation (KSO): „Making Europe the first digitally enabled circular, climate-neutral and sustainable economy.“**
Prof. Dr. Maik Gude
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Lightweight Design and Structural Assessment, Board Spokesperson

16:25 Uhr **Summary and awarding of the ACL Young Talents**
Prof. Dr. Niels Modler
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Function-Integrative Lightweight Engineering, Member of the Board

FRIDAY, 01.07.2022
Lightweight Engineering Campus Johannstadt

Session 1: Resource-efficient lightweight engineering technologies

Process Development Center (PEZ)| Holbeinstraße 6, 01307 Dresden, Germany

9:00 Uhr **Opening**
Prof. Dr. Niels Modler
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Function-Integrative Lightweight Engineering, Member of the Board

9:10 Uhr **Potentials of extended reality applications for resource-efficient process chains**
Dr. Daniel Weck
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate

9:35 Uhr **The recycling of lithium iron phosphate batteries and measures to reduce the potential hazard during comminution ***
Eric Trebeck
Co-Autoren: Prof. Dr. H. Lieberwirth [1], Dr. H.G. Jäckel, Dr. T. Krampitz
TU Bergakademie Freiberg, Institute of Mineral Processing Machines
[1] Head of the Institute

10:00 Uhr **Recycling-adapted multi-material design for lightweight components ***
Dr. Robert Kupfer
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate, Head of Neutral Lightweigt Engineering

10:25 Uhr **Complex lightweight structures for electronic applications within mobility**
Christian Walbrecker-Baar
Siemens AG

10:50 Uhr **Break**

11:15 Uhr **Versatile joining technology - an essential component of resource-efficient production ***
Prof. Dr. Alexander Brosius [1]
Co-Autoren: Prof. Dr. Gerson Meschut [2], Prof. Dr. Marion Merklein [3]
[1] TU Dresden, Institute of Manufacturing Science and Engineering, Chair of Forming Processes, Institute Director
[2] Padernborn University, Institute for Lightweight Design with Hybrid Systems, Research Group Materials and Joining Technology, Head of Institute
[3] Friedrich-Alexander-Universität, Faculty of Engineering – Department of Mechanical Engineering Institute of Manufacturing Technology

11:40 Uhr **LIGNOBRAID - Customised lightweight hollow profiles made of wood**
Alexander Liebsch
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate

12:05 Uhr **Development of an integrative process-structure simulation strategy for crash-loaded fibre-reinforced lightweight structures ***
Simon Wehler
Volkswagen AG

12:30 Uhr **Lunch break**

13:30 Uhr **Challenges in non-destructive testing of carbon fiber. Eddy current an innovative solution?**
Richard Kupke
SURAGUS GmbH, Director Product Management

13:55 Uhr **Developing maritime components by using resource efficientadditive production technologies**
Thomas Pauly
Wärtsilä Shaft Line Solutions, General Manager, Future Portfolio & Market Intelligence

14:20 Uhr **Inline hybridisation: combining metal die casting and plastic injection moulding using the DuoCast system - potentials and challenges ***
Thomas Joachim
FRIMO GmbH, Director Sales, Center of Competence Form & Punch

14:45 Uhr **Closing**
Prof. Dr. Niels Modler
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Function-Integrative Lightweight Engineering, Member of the Board

Session 2: Mobility of the future

Polymer Application Center (KAZ)| Marschnerstraße 30, 01307 Dresden, Germany

09:00 Uhr **Opening**
Prof. Dr. Maik Gude
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Lightweight Design and Structural Assessment, Board Spokesperson

09:10 Uhr **Thermoplastic multi-cell pressure vessels for hydrogen storage – design, manufacturing and testing**
Tobias Lebelt
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate, Head of Thermoplastic processing

09:35 Uhr **State-overarching aviation cluster of eastern Germany for the development of future, climate-friendly aircraft**
Prof. Dr. Lars Enghardt
Deutsches Zentrum für Luft- und Raumfahrt. German Aerospace Center, Institute of Electrified Aero Engines, Director

10:00 Uhr **Alternative propulsion technologies for climate-friendly aviation**
Nicolai Neumann [1], Prof. Dr. Dieter Peitsch [2]
TU Berlin, Institute of Aeronautics and Astronautic
[1] Research associate, [2] Chair for Aero Engines

10:25 Uhr **Modular research aircraft for the demonstration of climate-friendly propulsion technology ***
Prof. Dr. Johannes Markmiller
TU Dresden, Institute of Aerospace Engineering, Chair of Aircraft Engineering

10:50 Uhr **Break**

11:15 Uhr **Model Based Systems Engineering – Key Competence for the Development of Climate-friendly Vehicles**
Prof. Dr. Wojciech Moczulski, Prof. Dr. Wojciech Skarka
Silesian University of Technology, Faculty of Mechanical Engineering Technology

11:40 Uhr **Automated bus shuttle to demonstrate driverless public transport operation in public transport areas ***
Mario Nowack
Leipziger Verkehrsbetriebe GmbH, Technology Manager Automated Driving

12:05 Uhr **1000kmPLUS: Scalable European Powertrain Technology Platform for Cost-Efficient Electric Vehicles to Connect Europe**
Florian Kalleder [1], Christian Ohms [2]
[1] Infineon Technologies AG
[2] Mercedes-Benz AG

12:30 Uhr **Lunch break**

13:30 Uhr **Hydrogen-powered Tram ***
Alexander Wünsche
HÖRMANN Vehicle Engineering GmbH, Head of System Design and Calculation

13:55 Uhr **Potentials of hydrogen-powered drive systems for rail vehicles ***
Prof. Dr. Arnd Stephan
TU Dresden, Institute of Railway Vehicles and Railway Technology, Chair of Electric Railways, Head of Institute

14:20 Uhr **Safe and Efficient Storage of Ammonia within Ships**
Lambros Nakos [1], Dr. Angelos Filippatos [2], Dr. Ioannis Ergas [3]
[1] HYDRUS Engineering S.A., Executive Director
[2] TU Dresden, Dresden Center for Intelligent Materials (DCIM), Group Leader Hierarchical Topologies
[3] WEGEMT, Research Director

14:45 Uhr **Closing**
Prof. Dr. Maik Gude
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Chair of Lightweight Design and Structural Assessment, Board Spokesperson

Session 3: Dresden Lightweight Alumni – Trend-Setting Across All Industries

Lightweight Structures Innovation Center (LIZ), CAD-Pool | Dürerstraße 28, 01307 Dresden, Germany

09:00 Uhr **Opening**
Dr. Mike Thieme
TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate

09:10 Uhr **Does more electromobility mean better urban quality of life due to less noise? ***
Prof. Dr. Martin Dannemann [1], Prof. Dr. Ercan Altinsoy [2]
[1] Westsächsische Hochschule Zwickau, Institute of Energy and Transport Engineering
[2] TU Dresden, Institute of Acoustics and Speech Communication, Chair of Acoustics and Haptics

09:35 Uhr **Synthetic Fuels - Promising Solutions for the Decarbonization of the Transport Sector**
Julia Kaufhold
Sunfire GmbH, Manager Project Coordination

10:00 Uhr **Recycling of in-house residual materials ***
Prof. Dr. Lothar Kroll [1], Dr. Stefan Hoyer[2]
TU Chemnitz, Institute of Lightweight Structures,
[1] Head of Institute, [2] Research Associate

10:25 Uhr **Silesian Competence Center Industry 4.0**
Prof. Dr. Anna Timofiejczuk
Silesian University of Technology, Faculty of Mechanical Engineering Technology, Dekanin

10:50 Uhr **Break**

11:15 Uhr **Industrial software application for data-based monitoring of composite process chains ***
Christian Prescher
Strucnamics Engineering GmbH

11:40 Uhr **Structural batteries - Ultralight composite structures with integrated electrical storage function ***

Prof. Dr. Robert Böhm [1], Dr. Thomas Behnisch [2]

[1] HTWK. Leipzig University of Applied Sciences

[2] TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate, Head of Novel Materials and Special Processes

12:05 Uhr **Simulation as the key to neutral lightweight engineering ***

Prof. Dr. Matthias Berner [1], Ralph Bochynek [2]

[1] Westsächsische Hochschule Zwickau

[2] Leichtbau-Zentrum Sachsen GmbH, Head of Materials, Component and System Testing

12:30 Uhr **Lunch break**

13:30 Uhr **High-performance lightweight materials for rail vehicles of the future**

Dr. Andreas Ulbricht [1]

Co-Autoren: Franz Bilkenroth, Alexandra Otto, Sepp Renner

CG Rail GmbH, [1]Chief Executive Officer

13:55 Uhr **Fiber Patch Placement – Automation solutions for complex composites**

Dr. Florian Lenz [1], Henriette Morgenstern [2]

Cevotec GmbH, [1] Technical Director, [2] Technical Marketing & Business Development Managerin

14:20 Uhr **Forged carbon composites for structural bicycle applications and activity of Polish Cluster of Composite Technologies**

Dr. Andrzej Czulak [1], Jacek Sykulski [2]

[1] Carbon Design Sp. z o.o., CEO / Polish Cluster of Composite Technologies, Leader

[2] Carbon Design Sp. z o.o., CTO / Polish Cluster of Composite Technologies, Project Manager

14:45 Uhr **Closing**

Dr. Mike Thieme

TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Research Associate