

**32<sup>nd</sup> Leoben-Conference on  
Polymer Engineering and Science**

**NEW MATERIALS  
NEW PERSPECTIVES**

**November 21<sup>st</sup> and 22<sup>nd</sup>, 2024  
Montanuniversität Leoben**

**CONFERENCE PROGRAM**



# PROGRAM

## THURSDAY, NOVEMBER 21<sup>ST</sup>, 2024

### Opening and welcome

09:30 - 10:00

### PLENARY SESSION

10:00 - 12:30

**Panel discussion** on the topic of “Kunststoffe in einer Welt ohne Erdöl” (in German) with the following participants:

**Harald Bleier**, Ecoplus NÖ

**Alexander Kronimus**, Plastics Europe

**Sabine Nadherny-Borutin**, Plastics Europe Austria

**Markus Seidel**, BMW Group

**Martin Wimmer**, Bundesministerium für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie (BMK)

**Andreas Leitner**, OMV AG

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### Plenary lectures (given by invited speakers)

#### **Bioplastics - curse or blessing ?**

Sabine Nadherny-Borutin, Plastics Europe Austria, and Michaela Plank, Österreichischer Carbon Cycle Circle – Team für nachhaltigen Kohlenstoffkreislauf

#### **Circular Carbon in the Automotive Industry – The BMW Perspective**

Markus Seidel, BMW Group

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### Award ceremony - **POLYMER SCIENCE SCHOOL AWARD**

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### **Presentation of successful spin-off companies**

- Circulyzer GmbH, Daniel Schwabl
- SCIOFLEX Hydrogen GmbH, Bernd Schrittester
- ecolyte GmbH, Georg Rudelstorfer
- Trastic GmbH, Arno Trinkl
- Luxinergy GmbH, Thomas Rockenbauer

**Lunch break**  
12:30 - 14:00

**SESSION A:**  
**Polymers for Sustainability and Circularity**  
*Erzherzog Johann Auditorium*

**SESSION B:**  
**Polymers for Energy Transformation, Storage and Transportation**  
*HS Phys.Chemie*

14:00  
**Conventional, Biobased or Biodegradable Microplastic. Which one would you prefer?**  
Ines Fritz, BOKU University

14:00  
**Underground Sun Storage 2030 / EUH2STARS – 100% hydrogen storage in porous reservoirs**  
Matthias Greiml, RAG Austria AG

14:25  
**Bio-based polymers and materials from lignin-derived monomers**  
Barta Katalin, University of Graz

14:30  
**Thermomechanical Characterization and Simulation of Li-Ion Battery Components**  
Johannes Macher, Polymer Competence Center Leoben

14:50  
**Recycling of packaging films: Properties enhancement and application**  
Katerina Plevova, Montanuniversität Leoben

14:50  
**Development of smart coatings for safety applications in battery systems**  
Daniel Bautista, Polymer Competence Center Leoben

15:10  
**Recycling of Wintersport Hardgoods: The Challenges of Circularity**  
David Zidar, Montanuniversität Leoben

15:10  
**Evaluating Encapsulant Materials for c-Si/Perovskite Tandem Modules**  
Petra Christöfl, Polymer Competence Center Leoben

**Poster introduction (2 – 3 min each)**  
15:30 - 15:45

**Coffee break**  
15:45 - 16:15

**SESSION: A:**  
**Polymers for Sustainability and  
Circularity**

*Erzherzog Johann Auditorium*

**SESSION B:**  
**Polymers for Energy Transformation,  
Storage and Transportation**

*HS Phys.Chemie*

16:15

**Enhanced mechanical recycling of PP**

Jutta Geier, Polymer Competence Center  
Leoben

16:15

**Importance of Cryogenic Testing Data  
for Composites – Matrix dominated  
properties and permeability**

Michael Scheerer, Aerospace & Advanced  
Composites GmbH

16:45

**Property prediction of polymers using  
spectroscopy**

Márton Bredács, Polymer Competence  
Center Leoben

16:45

**High cycle fatigue and creep of  
reinforced PEEK for large size bearings  
in wind industry**

Gabriel Stadler, Montanuniversität Leoben

17:05

**Wet mechanical processing of post-  
consumer plastics**

Daniel Schwabl, Circulyzer

17:05

**Polyethylene pipes for distribution of  
gaseous hydrogen**

Florian Arbeiter, Montanuniversität Leoben

17:25

**Repair solutions for PV modules with  
damaged polymer backsheets**

Sonja Feldbacher, Polymer Competence  
Center Leoben

17:25

**Enabling glass-free light weight PV  
modules using honeycomb structures**

Nikolina Pervan, Polymer Competence  
Center Leoben

17:45

**Sustainable polymers in coatings  
industry**

Martin Ocepek, Helios Resins

**Dinner in the Arkadenhof, Leoben**

19:30

# PROGRAM

## FRIDAY, NOVEMBER 22<sup>ND</sup>, 2024

<b>SESSION D:</b> <b>Future Trends in Polymer Technology</b> <i>Erzherzog Johann Auditorium</i>	<b>SESSION C:</b> <b>Materials for Additive Manufacturing</b> <i>HS Phys.Chemie</i>
9:00 <b>Materials and methods for the enzymatic cross-linking of hydrogels</b> Rupert Kargl, Graz University of Technology	
9:30 <b>Advances in the Detection of Micro- and Nanoplastics: Methods and Technologies</b> Michael Feuchter, Montanuniversität Leoben	9:30 <b>Additive Manufacturing Activities at the Polymer Competence Center Leoben</b> Michael Berer, Polymer Competence Center Leoben
9:50 <b>Design of covalent adaptable networks for advanced applications</b> Elisabeth Rossegger, Polymer Competence Center Leoben	9:50 <b>Wavelength Orthogonal Photochemistry in Additive Manufacturing: Towards 3D Structures with Tailored Properties</b> Thomas Griesser, Montanuniversität Leoben
10:10 <b>Bio-based covalent adaptable networks: From monomer synthesis to applications in 3D-printing and nanoimprint lithography</b> Bernhard Sölle, Polymer Competence Center Leoben	10:10 <b>Design and Additive Manufacturing of Mechanical Metamaterials for Structural Applications</b> Mathias Fleisch, Polymer Competence Center Leoben
<b>Poster introduction</b> 10:30 - 10:45	
<b>Coffee break</b> 10:45 - 11:15	
11:15 <b>Beyond carbon: novel inorganic polymers for applications in biomedicine and sustainable material development</b> Ian Teasdale, JKU Linz	11:15 <b>Strategies for robot based large-scale polymer additive manufacturing</b> Dominik Fleischhacker, ADAXIS

<p>11:40</p> <p><b>Polymerization Initiation Systems – How everything will start</b></p> <p>Patrick Knaack, TU Wien</p>	<p>11:45</p> <p><b>Analyzing and Predicting Failure Modes in Mono- and Multi-Material Extrusion-based Additive Manufactured Structures</b></p> <p>Christoph Waly, Montanuniversität Leoben</p>
<p>12:05</p> <p><b>Controlling Monomer Curing with Orthogonal Photochemistry: Towards Continuous Printing of Thiol-Ene Resins</b></p> <p>Rita Höller, Montanuniversität Leoben</p>	<p>12:05</p> <p><b>Feedstock Development for Material Extrusion of Aluminium: Printability and Debinding</b></p> <p>Stephan Schuschnigg / Vahid Momeni / Christian Kukla, Montanuniversität Leoben</p>
<p>12:25</p> <p><b>Photopolymerization with Ge-based Initiators - Applications and Perspectives</b></p> <p>Christine Bandl, Montanuniversität Leoben</p>	<p>12:25</p> <p><b>Manufacturing of Soft Dielectric Actuator Assemblies by Material Extrusion</b></p> <p>Ivan Raguz, Polymer Competence Center Leoben / Montanuniversität Leoben</p>
<p><b>Poster and Bachelor Thesis Award</b> 12:45 - 13:10</p>	
<p><b>Closing remarks and farewell</b> 13:15</p>	

## BEST POSTER AWARD 2024

### How can you vote as a conference participant?

This year, the poster voting will be held online using the voting platform feedbackr. On this platform, you can use your smartphone to vote for the best poster during the conference. You will find a QR code and session code on the poster walls that will take you directly to the voting platform.



**Session Code: zzewr**

Simply scan the QR code, enter the session code, and cast your vote for your favorite poster! The evaluation is possible from Thursday, November 21<sup>st</sup>, 2024 from 15:45 until Friday, November 22<sup>nd</sup>, 2024 11:45. After that, the QR code will be deactivated.

An event is only as good as its partners:



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