



# 20 | PLANSEE SEMINAR 2021

International Conference on  
Refractory Metals and Hard Materials

Reutte/Austria  
June 7–11, 2021

First Circular

20<sup>th</sup> Plansee Seminar, June 7–11, 2021

## Message from the Organizers

We are delighted to announce that the 20<sup>th</sup> Plansee Seminar will take place on the premises of the Plansee Group in Reutte, Austria from June 7–11, 2021.

We are committed to continuing the tradition of a highly successful series of conferences, which from the onset in 1952 have been regarded as a global forum for the technical and scientific P/M community to exchange ideas and keep up with the latest innovations and market trends in the fields of Refractory Metals and Hard Materials.

It is our aim to organize a conference which will provide ample opportunity for gaining insights into all aspects of this important class of materials – from materials science to the latest achievements in extractive metallurgy, manufacturing technology, industrial applications and recycling.

Moreover, the 20<sup>th</sup> Plansee Seminar will be an ideal platform to foster personal contact between industry and academia. Practitioners and scientists alike, both experienced or novice, are cordially invited to participate. The Plansee Seminar is the ideal event to augment your knowledge by visiting lectures from renowned experts, attending the poster sessions and participating in lively discussions.

We are looking forward to meeting you in Reutte for this unique opportunity to exchange knowledge and experience with experts and professionals from academia and all branches of the industry.

As we are not only celebrating the 20<sup>th</sup> Plansee Seminar in 2021, but also the 100<sup>th</sup> anniversary of the Plansee Group, it is a special pleasure for us to welcome you to Reutte in early summer 2021!



Karlheinz Wex  
Chairman of the Plansee Seminar



Heinrich Kestler  
Secretary of the Plansee Seminar

## Applications

The presentations at the 20th Plansee Seminar will cover all market segments where products based on **Refractory Metals** and **Hard Materials** are playing an important role, or where they are promising alternatives to present material solutions.

In particular, the following fields of application will be addressed by key-note lectures and/or by oral and poster presentations:

### **Refractory Metals and Composites for Application in**

- Transportation
- Electronics
- Thermal management
- Lighting technology
- Medical technology
- Energy generation and distribution
- Power engineering
- Chemical engineering
- Coating technology
- Joining technology
- Metal, glass, plastic, and ceramics production
- High temperature furnaces and devices
- New areas

### **P/M Hard Materials for Application in**

- Wear parts
- Machining of metals, composites, graphitic materials, wood and stone
- Precision tooling
- Chipless forming
- Mining and constructions
- Joining technology
- New areas

# Refractory Metals and Composites

## Materials

- Refractory metals and alloys, composites, laminates and functionally graded materials
- Coatings

## Metallurgy of Refractory Metals

- Extractive metallurgy
- Recycling

## P/M Processes

- Mixing, alloying and doping
- Compaction, forming and near net shaping
- Additive manufacturing and rapid prototyping
- Sintering and infiltration
- Hot isostatic pressing, hot pressing and spark plasma sintering
- New consolidation processes
- Surface engineering and coating
- Joining

## Simulation and Modeling

- Materials and microstructure
- Stresses and deformation
- Failure and reliability
- Oxidation and corrosion
- Constitutional and multi scale modeling
- Components and devices

## Characterization and Testing

- Microstructure
- 3D and small scale characterization
- Destructive and non-destructive inspection

# P/M Hard Materials

## Materials

- Hard compounds, binders, dopants, impurities
- New alloying concepts and material design
- Alternatives to hard metals

## Powders and P/M Processes

- Powder production and processing
- Innovative production processes
- Ultrafine and nano-scaled powders and microstructures
- Additive manufacturing and rapid prototyping
- Novel compaction and sintering technologies
- Safety, recycling and environmental aspects

## Surface Engineering

- Coating materials and processes
- Coating/substrate interactions
- Gradient structures
- Friction and wear

## Simulation and Modeling

- Powders and granules
- Mechanical properties and reliability
- Constitutional and multi scale modeling
- Components and devices

## Characterization and Testing

- Microstructure
- Surface characterization (coatings, interfaces, residual stresses)
- 3D and small scale characterization
- Novel methods of analysis and testing

# Scientific and Organizing Committee

## Scientific Committee

Helmut Antrekowitsch  
Montanuniversität Leoben, Leoben, Austria

Edgardo Cisternas  
Molibdenos y Metales S.A., San Bernardo, Chile

Mark Gee  
National Physical Laboratory, Teddington, United Kingdom

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CERATIZIT Austria GmbH, Reutte, Austria

Juan R.L. Trasorras  
Global Tungsten & Powders Corp., Towanda, USA

Ralph Useldinger  
CERATIZIT Luxembourg S.à.r.l., Mamer, Luxembourg

## Local Organizing Committee

Heinrich Kestler, Uwe Schleinkofer, Andreas Pilz



## Contact

For communication on the Plansee Seminar, please submit changes of your address and/or affiliation by e-mail.

Please pass on this circular to colleagues who might not have received it. If you are not on our mailing list and would like to get upcoming information on the Plansee Seminar, please forward your full name, affiliation and address by e-mail.

The Second Circular and Call for Papers will be distributed in April 2020.

Information on the Plansee Seminar, including this circular, is also available at [www.plansee-seminar.com](http://www.plansee-seminar.com).

### **Please address all communications related to the Plansee Seminar to:**

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