



ADAPT TO NEW CHALLENGES, TAKE
ADVANTAGE OF NEW OPPORTUNITIES

COPPER ALLOYS 2022

Conference Programme

Düsseldorf, Germany 22–23 November, 2022

Scientific conference on copper materials

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Invitation

Copper Alloys 2022: International arena for scientific and technical development – forum for copper alloys industries, universities and research institutions

Copper Alloys continues to be the biggest and broadest scientific forum focusing on copper materials sciences. The conference in 2022 aims to further strengthen the copper and copper alloys community by providing up to date research, reflecting necessary R & D approaches against the background of actual megatrends in society.

The growing awareness for the need to deal with resources more responsibly, environment stability and health protection has driven society and legislation to change agenda priority settings. Circular economy, fossil energy sources, free power production and other keywords represent this new thinking and help triggering the implementation of new legislations such as the Green Deal in Europe.

In response to related challenges, emerging applications and processes are needed, and universities, research institutes and market players must further strengthen their common efforts. The evolving materials research and development platforms put high demands on optimizing and complementing processing methods, closing gaps in global material flows and implementing loss-free recycling technologies.

Copper Alloys 2022 will give a comprehensive look at challenges and developments of copper user industries and will allow active sharing of knowledge and opinions.

Welcome to Copper Alloys 2022!

GENERAL INFORMATION

Registration fees

The registration fee is EUR 890, for students EUR 250. Accompanying persons' fee is EUR 300 (no congress participation). Latest registration acceptance at those prices is November 5th, 2022. After that date an extra fee of 20 % will be charged. The fee includes congress participation, congress proceedings, lunches, refreshments and congress dinner.

Registration

Use the online registration form for attendee registration and for booking hotel rooms – see our website www.copperalloys.eu

Cancellation and refunds

Cancellations before November 5th, 2022 will be refunded. Thereafter 90 % of the conference fee will be invoiced. Participation can be transferred to a colleague.

Language

The congress language will be English.

Location

The congress will take place November, 22nd and 23rd, 2022 at the Lindner Congress Hotel, Düsseldorf, Germany, Lütticher Strasse 130.

Congress Topics

The focus of the conference this year is on:

- **the importance of copper materials for a sustainable future**
- **the topics of material design and characterisation**
- **casting and parameters**
- **innovative joining techniques**
- **material analysis and digitalisation**
- **material processing**

EXHIBITION & SPONSORING

The exhibition part of the conference offers a forum for copper alloy companies. They are invited to display their range of instruments, equipment, products and services to the expert public. The exhibition will be a showcase for all participants and a valuable communication tool.

Furthermore, we are offering sponsorship initiatives designed to strengthen your company's image. For further details please contact the congress office or visit our website www.copperalloys.eu.

SCIENTIFIC COMMITTEE

International scientific committee

Joacim Hagström, Swerim, Sweden

Frank Mücklich, Saarbrücken University, Germany

Klaus Ockenfeld, Kupferverband, Germany

Inger Odnevall Wallinder, KTH Royal Institute of Technology, Sweden

Lorenzo Omodei, Traflerie Carlo Gnutti, Italy, representing CEN

Paolo Piccardo, Genova University, Italy

Michael Pohl, Bochum University, Germany

Olivier Rod, RISE, Sweden

Jan-Erik Stahl, Lund University, Sweden

Ladji Tikana, Kupferverband, Germany

REGISTRATION DEADLINE

November 5th, 2022

10.30 **Registration / Welcome Coffee**

11.00 **Opening**
RISE/Kupferverband

SUSTAINABLE FUTURE

11.15 **LEVEL(S) – framework for more sustainable buildings**
Marzio Traverso, RWTH Aachen

12.00 **Semis industry activities – towards a world with sustainable copper materials**
Ladji Tikana, Kupferverband

12.45 **Challenges and potentials of electric vehicles on the path towards mass market**
Ingo Olschewski, fka GmbH, Aachen

13:15 **Lunch Break**

MATERIAL DESIGN & CHARACTERISATION (I) – Chair: Frank Mücklich

14.00 **Production of Polypropylen and Polyethylene Matrix Copper Reinforced Bio-composite and Investigation of Mechanical, Thermal and Morphologic Properties**
Ömer Alparslan Kaya, Saglam Metal San. ve Tic.

14.25 **Effect of Heat Treatment on Transformation Temperatures, Microstructure, Strength, and Deformation Behavior of a High Temperature Copper-based Shape Memory Alloy**
Christian Krancher, FGW – Forschungsgemeinschaft Werkzeuge und Werkstoffe

14.50 **Distribution of alloying elements and measurable shape memory effect of continuous cast copper aluminum alloy**
Benjamin Scheinberger, FGW – Forschungsgemeinschaft Werkzeuge und Werkstoffe

15.15 **Copper Wave Springs for Electromechanical Applications**
Jean Philipp & Andreas Frehn, KERN-LIEBERS Group of Companies and Materion Corporation

15.40 **Coffee Break**

MATERIAL DESIGN & CHARACTERISATION (II) – Chair: Michael Pohl

16.10 **Corrosion susceptibility of the CuZn35Pb1,5AlAs (CW625N) brass alloy in various environments**
Stanka Tomovic-Petrovic, SINTEF Manufacturing

16.35 **Corrosion resistance of lead-free brass alloys in contact with drinking water**
Theresa Klein, Institut für Korrosionsschutz Dresden GmbH

17.00 **Corrosion of lead-free brass alloys in drinking water and CuCl₂-solution**
Charlotta Obitz, RISE

17.25 **CuSn₄Zn₂PS – Lead Free Gunmetal for drinking water applications**
Martin Haake, REHAU SE & Co

EVENING GET TOGETHER

19.00 **Bus transfer to dinner location**

19.30 **Dinner at Industrieclub, Düsseldorf**

22.30 **Bus transfer to conference hotel**



8.30 **Welcome Coffee**

Parallel Session

CASTINGS AND PARAMETERS – Chair: Lorenzo Omodei

9.00 **Wettability of Copper and Copper Alloys on Industrial Filter Materials**

Celaida Gayle Gumban, Technische Universität Bergakademie Freiberg, Institute of Ceramics

9.25 **Overview of non-metallic inclusions in Copper and Copper Alloys**

Claudia Voigt, Technische Universität Bergakademie Freiberg, Institute of Ceramics

9.50 **Casting properties of lead free brass**

Joacim Hagström, Swerim

10:15 **Coffee Break**

MATERIAL ANALYSIS AN DIGITALISATION – Chair: Roberto Spotorno

10.45 **Microstructure and crystallographic variations in different positions in OFP copper canisters for nuclear waste storage**

Joacim Hagström, Swerim

11.10 **Recrystallization model of oxygen-free phosphorus doped copper (Cu-OFP)**

Robert Sundström, Swerim

11.35 **Phase Transformations and Kinetic Simulations of Cu-based Alloys**

Åke Jansson, Thermo-Calc Software AB

12.00 **Development of an ontology for the life-cycle of copper and copper alloys**

Miriam Eisenbart, fem Forschungsinstitut Edelmetalle und Metallchemie

12.25 **Lunch Break**

MATERIAL PROCESSING – Chair: Ladji Tikana

13.15 **Experimental optimization of tool geometry and lubricoolant supply in plunge milling of lead-free Brass**

Stefan Baier, Laboratory for Machine Tools and Production Engineering (WZL) at RWTH Aachen University

13.40 **Assessment and Comparison of the Machinability of Innovative Copper Alloys**

Christoph Zachert, Laboratory for Machine Tools and Production Engineering (WZL) at RWTH Aachen University

14.05 **Investigation of heat treatment to improve the machinability of lead-free brass alloy CW511L**

Magdalena Müller, Norwegian University of Science and Technology (NTNU)

14.30 **Analysis of CuSn8 components manufactured using the material jetting process**

Maximilian Plötz, Chair of Metal Forming and Casting TU Munich

14.55 **Closing / Goodbye Coffee**

RISE/Kupferverband

Parallel Session

JOINING PROCESSES – Chair: Inger Wallander

Innovative Laser Technologies for Copper Applications in eMobility

Mauritz Möller, TRUMPF Laser- und Systemtechnik GmbH

Efficient processing of copper and its alloys with blue diode laser

Luisa-Marie Heine, Laserline GmbH

Modern clad material systems for battery, charging and thermal management challenges in automotive electrification

Andreas Frehn, Materion Brush GmbH

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Congress Office

Jeanette Almquist, RISE, Sweden
Birgit Schmitz, Kupferverband, Germany
Margaretha Sönnergaard, Swerim, Sweden

Organisation Committee

Jeanette Almquist, RISE, Sweden
Klaus Ockenfeld, Kupferverband, Germany
Charlotta Obitz, RISE, Sweden
Birgit Schmitz, Kupferverband, Germany
Margaretha Sönnergaard, Swerim, Sweden

Exhibition, sponsoring and accompanying persons' program

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