



Conference Programme

Copper Alloys 2018
Milan, Italy, April 11–12, 2018
Scientific conference on copper materials



Deutsches
Kupferinstitut
Copper Alliance

swerea | KIMAB

INVITATION

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

An expansion of the Brass Alloy conference in Stockholm in 2016, Copper Alloys 2018 aims to strengthen the copper and copper alloys community by providing a biennial, international forum for scientific presentations and information exchange.

The copper alloy industry of the 21st century is facing new challenges triggered by new rules and regulations. For example, the phasing out of lead in brass products is accompanied by global research and development work to secure a sustainable and profitable transition to lead-free alloys. Complicating this transition process, the evolving material platforms affect processing methods as well as global material flow and recycling.

Copper Alloys 2018 will give a comprehensive look at challenges and developments of copper industries. Workshops will provide a platform for an active exchange between participants and experts' knowledge and opinions of copper alloy materials and processing.

Welcome to Copper Alloys 2018 in Milan!



CONGRESS OVERVIEW

CONGRESS TOPICS

- Copper materials in water systems
- Copper challenges in automotive, electrical & electronical applications
- R&D on material design
- Corrosion properties and testing
- Processing and machining
- Recycling and refining
- ...

IMPORTANT DATES

Early bird registration deadline ————— February 11th, 2018

Registration deadline ————— March 11th, 2018

GENERAL INFORMATION

Registration fees

The registration fee is EUR 730, student fee EUR 250. Accompanying persons' fee is EUR 250 (no congress participation.) Registration at these prices ends on March 11th, 2018. Afterwards an extra fee of 20% will be charged. The registration fee includes congress participation, congress proceedings, lunches, refreshments and a congress dinner.

Registration

Use the online registration form for attendee registration and for booking of hotel rooms (Code: Copper Alloys 2018) – see our website www.copperalloys.org.

Cancellation and refunds

Cancellations before April 5th, 2018 will be refunded in full. Thereafter 90% of the conference fee will be invoiced. Participation can be transferred to a colleague.

Language

The congress will be conducted in English.

Location

The congress will be held on April 11–12, 2018, at the DoubleTree by Hilton Milan, Via Ludovico di Breme 77, 20156 Milan, Italy.

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 and services to the expert public. The exhibition will be a showcase for all participants and a valuable communication tool. Congress sponsorships are available and can be tailored to your needs. For further details please contact the congress office or our website (www.copperalloys.org).

SCIENTIFIC COMMITTEE

International scientific committee

Lorenzo Omodei – CEN/TC 133
Inger Odnevall Wallinder – KTH, Sweden
Frank Mücklich – University of Saarbrücken, Germany
Paolo Piccardo – University of Genova, Italy
Olivier Rod – Swerea KIMAB, Sweden
Ladji Tikana – Deutsches Kupferinstitut, Germany

11.04.18 // DAY 1

12.00 Registration and Lunch

13.00 Opening
Swerea KIMAB / Deutsches Kupferinstitut

KEYNOTES

13.15 Copper-Alloys – technological benefits and challenges ahead
Michael Sander / Klaus Ockenfeld, Deutsches Kupferinstitut, Germany

14.00 Future prospects of copper alloys by tailored surfaces
Frank Mücklich, Saarland University, Germany

14.45 Application experience – example of Cu In outdoor architecture – possibilities and challenges
Inger Odnevall Wallinder, KTH Royal Institut of Technology, Sweden

15.30 Coffee Break

WORKSHOPS // PARALLEL SESSIONS

Room 1

„Copper material and corrosion – 1“
Chair: Inger Wallinder

- 16.15 The colossus of San Carlo Borromeo: multi-analytical investigation of corrosion layers and constituent materials
Chiara Petiti
Univ. Politecnico di Milano, Italy
- 16.40 The influence of silicate layers to pitting corrosion of copper in drinking water
Ralf Feser
University of applied Sciences Iserlohn, Germany
- 17.05 Effect of microstructure on electrochemical properties of copper
Tadeja Kosec
Slovenian National Building and Civil Engineering Institute, Slovakia
- 17.30 Migration of metals from copper alloys into drinking water – experience and comparison of test standards and test procedures
Wolfgang Werner
TZW Karlsruhe, Germany

Room 2

„Processing, machining and recycling – 1“
Chair: Jean-Marie Welter

- 16.15 Pyrometallurgical recycling of leaded brass by formation and separation of Ca-Pb-intermetallics
Simon Hilgendorf
Fraunhofer IWKS, Germany
- 16.40 Investigation of an alternative pyrometallurgical process for the production of copper-chromium alloys
Janik Brink
IME - RWTH Aachen University, Germany
- 17.05 Brass Rod manufacturing optimization in a mid-sized company
Annalisa Pola
Univ. of Brescia
- 17.30 Copper alloys castability – the role of Pb in quality management
Paolo Piccardo
DCCI - University of Genova, Italy
- 17.55 Casting methods for the production of rotationally symmetric copper compounds
Thomas Greß
Technical Univ. Munich, Germany

EVENING PROGRAMME // Enjoy „La Dolce Vita“

- 19.00 Bus transfer to dinner location
- 19.30 Dinner at Villa Torretta
- 22.30 Bus Transfer to conference hotel



WORKSHOPS // PARALLEL SESSIONS

Room 1

„Copper material and corrosion – 2“

Chair: Inger Wallinder

- 08.30 **Corrosion damage of copper-bound materials**
Johannes Ruppert
DVGW, Germany
- 08.55 **Development of a procedure to prevent dezincification of brass components in drinking water installations**
Theresa Klein
IKS Dresden GmbH, Germany
- 09.20 **Fundamental understanding of intergranular corrosion in brass**
Stanka Tomovic-Petrovic
SINTEF Raufoss manufacturing, Norway
- 09.45 **Corrosion-microstructure interrelations in new low-lead and lead-free brass alloys**
Emil Stålnacke
Swerea KIMAB, Sweden

10.10 **Coffee Break**

WORKSHOPS // PARALLEL SESSIONS

Room 1

„Material properties and application – 1“

Chair: Lorenzo Omodei

- 10.45 **Minican, in situ model experiment of long-term storage of spent nuclear fuel in copper canisters**
Andrew Gordon
Swerea KIMAB, Sweden
- 11.10 **Preciousness of copper – 5 millennia of copper alloys used in food production**
Paolo Picardo
DCCI - University Genova, Italy
- 11.35 **Suitability of CuAl10Fe3 alloy used as die in the industry of pasta extrusion**
Giorgia Ghiara
Università degli studi di Genova, Italy

12.00 **Lunch**

Room 2

„Processing, machining and recycling – 2“

Chair: Jean-Marie Welter

- 08.30 **Experimental and numerical evaluation of high strain rate mechanical joining process for copper**
Philipp Skoda
Deutsches Kupferinstitut, Germany
- 08.55 **Effect of combined thermomechanical treatment with elements of severe non-monotonic deformation on the structure and properties of low-alloyed bronze of the Cu-Cr system**
Rashid Asfandiyarov
Ufa State Aviation Technical University, Russia
- 09.20 **Determining process parameters for successful material reclamation of lead free brass chips using hot forging operations, part one – Lubrication**
Jakob Johansson
Lund University, Sweden
- 09.45 **Machinability and burr formation in brass alloys**
Henrik Persson
Lund University, Sweden

Room 2

„Material development and characterization –1“

Chair: Frank Mücklich

- 10.45 **Improving the quality of die-cast copper through microalloying**
Luc Milhem
FAVI S.A., France
- 11.10 **Diffusion samples as a high-throughput method for alloy development**
Karin Ratschbacher
FEM Research Institute, Germany
- 11.35 **Microstructural refinement and performance improvement of Cu-36 wt% Zn alloy by Al₂O₃ nanoparticles coupling electromagnetic stirring**
Ya-Bo Fu
School of Physics and Electronic Engineering, China



WORKSHOPS // PARALLEL SESSIONS

Room 1

„Material properties and application – 2“

Chair: Lorenzo Omodei

- 13.00 **Investigations on the cavitation erosion behavior of aluminium bronze**
Magali Blumenau
Ruhr-University Bochum, Germany
- 13.25 **Development of a pseudoelastic CuZnSi Alloy for cavitation applications**
Julia Baak
Ruhr-University Bochum, Germany
- 13.50 **GEnBMT (Genomics and Engineering for BMT)**
Elizabeth Bryce / Richard Dixon
Vancouver General Hospital (VGH), Canada
- 14.15 **Deploying innovative self-disinfecting copper surfaces (DISCS)**
Elizabeth Bryce / Richard Dixon
Vancouver General Hospital (VGH), Canada

14.45-
15.30 **Goodbye Coffee**

Room 2

„Material development and characterization –2“

Chair: Frank Mücklich

- 13.00 **Surface modification of copper and copper alloys via ultrashort laser pulses**
Daniel Wyn Müller
Saarland University, Germany
- 13.25 **Structure transformation in the process of application of ultrasonic action during the deformation of the Cu-0.5Cr alloy**
Tibor Donic
University of Zilina, Slovakia
- 13.50 **Mechanical behaviour and microstructure of heat treated Cu-Ni-Si alloy**
Anagnostis Toulfatzis
ELKEME S.A., Greece
- 14.15 **Prediction of the mechanical behavior of copper alloy components under complex thermomechanical loadings by electro-thermomechanical coupled simulations**
Matthias Weber
Fraunhofer IWM, Germany
- 14.40 **Characterization of the mechanical properties such as stress relaxation of a CuNi1.5Si alloy for the simulation of electrical contacts based on micro- and macrostructural parameters**
Miriam Eisenbart
Fem Forschungsinstitut, Germany



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CONGRESS OFFICE

Birgit Schmitz, Deutsches Kupferinstitut Berufsverband e.V., Germany
Margaretha Sönnergaard, Swerea KIMAB, Sweden

Organisation Committee

Mirjam Lilja, Swerea KIMAB, Sweden
Klaus Ockenfeld, Deutsches Kupferinstitut Berufsverband e.V., Germany
Margaretha Sönnergaard, Swerea KIMAB
Birgit Schmitz, Deutsches Kupferinstitut Berufsverband e.V., Germany

Exhibition, sponsoring and accompanying program

Margaretha Sönnergaard, Swerea KIMAB
sonnergaard@swerea.se
www.copperalloys.org