Conference Programme

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

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).

IMPORTANT DATES

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<td>Early bird registration deadline</td>
<td>February 11th, 2018</td>
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<td>Registration deadline</td>
<td>March 11th, 2018</td>
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SCIENCES 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

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.
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 Institute 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
TZV 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
Bruno Cavagnini
Metallurgica San Marco, Italy

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 Rulfoss manufacturing, Norway

09.45  Corrosion-microstructure interrelations in
        new low-lead and lead-free brass alloys
        Emil Stålnacke
        Swerea KIMAB, Sweden

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  Feasibility for material reclamation of brass chips
        using hot forging operations and determining of
        suitable process parameters
        Jakob Johansson
        Lund University, Sweden

09.45  Machinability in brass alloys
        Henrik Persson
        Lund University, 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 Piccardo
        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

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  Surface modification of copper and copper
        alloys via ultrashort laser pulses
        Daniel Wyn Müller
        Saarland University, Germany

12.00  Lunch
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  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

13.25  Mechanical behaviour and microstructure of heat treated Cu–Ni–Si alloy
        Anagnostis Toulfatzis
        ELKEME S.A., Greece

13.50  Prediction of the mechanical behavior of copper alloy components under complex thermomechanical loadings by electro-thermomechanical coupled simulations
        Matthias Weber
        Fraunhofer IWM, Germany

14.15  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
        Fraunhofer IWM, Germany
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
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Exhibition, sponsoring and accompanying program

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www.copperalloys.org