

Berlin, 31.8.-2.9.2023

37th Annual Meeting of the German Society for Minerals and Trace Elements (GMS)



Preliminary Program & Book of Abstracts

ORGANISATION AND PROGRAM COMMITTEE

Organisation

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Program-Committee

Dirk Schaumlöffel (Université de Pau et des Pays de l'Adour/CNRS, France)

Anna Kipp (Friedrich Schiller University Jena, Institute of Nutritional Sciences, Germany)

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Julia Bornhorst (University of Wuppertal, Food Chemistry, Germany)

Bernhard Michalke (Helmholtz Zentrum München, Germany)

Lothar Rink (RWTH Aachen University Hospital, Institute of Immunology, Germany)

Esther Humann-Ziehank (LABVETCON, Burgdorf, Germany)

Maria Maeres (TU Berlin; Institute of Food Technology and Food Chemistry, Germany)

Barbara Witt (University of Kaiserslautern, Department Chemistry/Food Chemistry & Toxicology, Germany)

Talks

For invited speakers: 20 min talk and 10 min discussion

For talks chosen from abstracts: 13 min talk and 7 min discussion

The 37th Annual Meeting of the German Society for Minerals and Trace Elements was evaluated by the "Zertifizierungsstelle für die Fortbildung von Lebensmittelchemikern (ZFL)". You will receive 13.5 points following the submission of your confirmation of attendance (<https://zefo.org/member-login/>).

Thursday, August 31th

15:00- 16:30 GMS board meeting

17:00 Registration & Coffee

18:30 **Öffentlicher Abendvortrag** (Public Talk in German)

Eisen, Iod, Selen und Co: Zu viel, zu wenig oder gerade richtig?

Prof. Dr. Tanja Schwerdtle Vice President of the German Federal Institute for Risk Assessment (BfR)

Friday, September 1st

8:30 Registration & Coffee

9:15 – 9:30 Opening

Session 1 **Copper in Human health and Disease**

Chair: Barbara Witt

9:30 – 10:00 **T1: A new Treatment Regimen for Wilson Disease**

Hans Zischka (Helmholtz Center, Munich)

10:00 – 10:20 **T2: A Peptide-based Fluorimetric Sensor to determine free Copper in Serum**

Maria Maares (Technical University Berlin)

10:20 – 10:50 **T3: Selenium and Copper – an opposing relationship?**

Anna Kipp (Friedrich Schiller University, Jena)

10:50 – 11:15 coffee break

Session 2 **Role of Minerals and Trace Elements in Humans**

Chair: Esther Humann-Ziehank

11:15 – 11:45 **T4: The Impact of the Ionic Microenvironment on Immunity and Disease**

Markus Kleinewietfeld (Hasselt University, Diepenbeek)

11:45 – 12:05 **T5: Selenium in control of ferroptosis – unresolved questions regarding the potential roles and cross-talk between glutathione peroxidases and thioredoxin reductases**

Elias Arner (Karolinska Institutet, Stockholm)

12:05 – 12:25 **T6: Bioavailability of Essential Trace Elements after consumption of Micronutrient-rich Food: Interactions and Age-specific Differences**

Denny Pellowski (University of Potsdam)

12:25 – 13:05 **T7: Magnesium - Update 2023, new Aspects of a forgotten Cation**

Oliver Micke (Department of Radiotherapy and Radiation Oncology, Bielefeld)

13:05 – 14:30 lunch break

13:30 – 14:30 GMS Membership Meeting

Session 3 TraceAge

Chair: Hajo Haase

14:30- 15:00 **T8: Trace element status in vegans**

Cornelia Weikert (German Federal Institute for Risk Assessment, Berlin)

15:00 – 15:30 **T9: Interaction of Zinc and Copper status with Fatty Acid Desaturases on Incidence of Type 2 Diabetes**

Olha Bezuhla (German Institute of Human Nutrition, Potsdam-Rehbrücke)

15:30 – 16:00 **T10: Role of Iron Homeostasis in the Heart**

Christiane Ott (German Institute of Human Nutrition, Potsdam-Rehbrücke)

16:00 – 16:30 coffee break

Session 4 Minerals and Trace Element Analytic

Chair: Bernhard Michalke

16:30 – 17:00 **T11: SyncLab for Elemental Imaging with X-rays: Combined Laboratory and Synchrotron Radiation Experiments**

Ioanna Mantouvalou (HZB/Technical University, Berlin)

17:00 – 17:20 **T12: Biometals and phagocytosis – elemental analysis using high spatial resolution imaging and quantitative mass spectrometry**

Martin Herzberg (UFZ Leipzig, Department Analytic, Germany)

17:20 – 17:40 **T13: Metal imaging of human skin: Zinc and Copper distribution and ratio as potential biomarkers of ageing and inflammation**

Nishat Zakaria (King`s College, London)

17:40 – 18:10	T14: New Possibilities in Single Cell Analysis via ICP-ToF-MS – Zooming into the region where Materials meet Environment Björn Meermann (Federal Institute for Materials Research and Testing, Berlin)
18:10 – 19:00	Short Presentations of posters (1 min each)
19:00	Poster Session with Drinks & Food

Saturday, September 2th

Session 5	Toxicology of Trace elements
Chair:	Dirk Schaumlöffel
9:00 – 9:20	T14: Neurotoxicity of Copper – In Vitro Studies on the Mode of Action Barbara Witt (RPTU Kaiserslautern-Landau, Kaiserslautern)
9:20 – 9:40	T15: The Species-Specific Effect of three Iron Species on Iron Homeostasis, Oxidative Stress and Cell Death in Caenorhabditis Elegans Anna Gremme (University of Wuppertal)
9:40 – 10:00	T16: Bioavailability and Toxicity Mechanisms of Co(II) and Ni(II) and their Interactions in HepG2 cells Alicia Thiel (University of Wuppertal)
10:00 – 10:30	coffee break
Session 6	Zinc in Human Health
Chair:	Maria Maares
10:30 – 11:00	T17: Zinc and the Aryl Hydrocarbon Receptor (AHR) cooperate to maintain differentiation, proliferation and integrity of the intestinal epithelium Christer Hogstrand (King`s College, London)
11:00 – 11:20	T18: Zn²⁺ and Ca²⁺ Signals are two separate and for T Helper Cell 1 differentiation Synergistic Pathways of T Cell Activation Jana Jakobs (RWTH Aachen University Hospital)
11:20 – 11:40	T19: Zinc Diffusion in Dentine: Investigating Elemental Gradients and chemical changes at the Interface with Dental Restorations Oleksandra Marushchenko (Helmholtz Zentrum Berlin)
11:45 – 12:00	Poster prizes and fare well
13:00 – 14:00	optional visit Futurium Berlin