

Swiss Corrosion Science Day 2023

24. April 2023 10:00 – 16:00 h

at Technopark, Technoparkstrasse 1, 8005 Zürich

Organized by



Hosted by



Sponsors



Programme

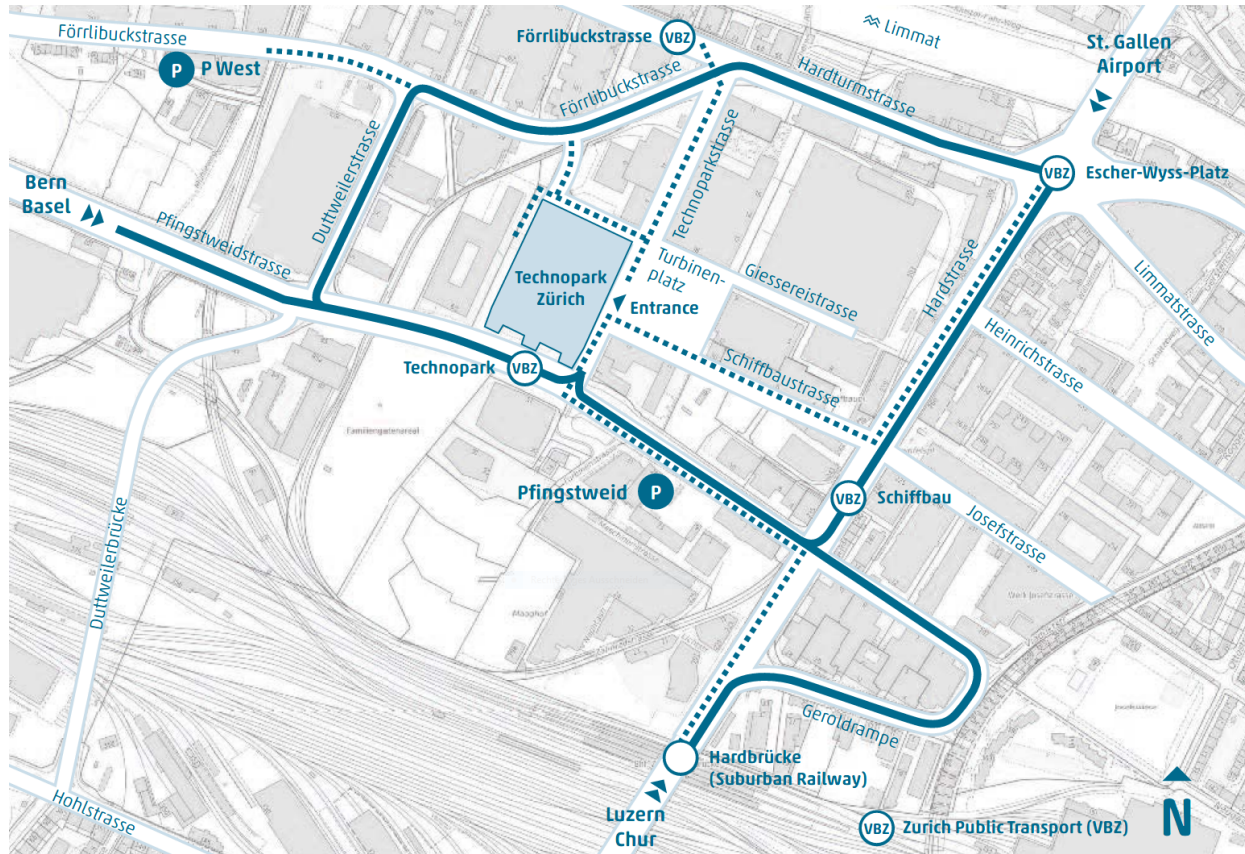
- 10:00 **Welcome and introduction**
Prof. Ueli Angst, ETH Zurich, Institute for Building Materials
Dr. Markus Büchler, SGK Swiss Society for Corrosion Protection, Zürich
- 10:10 **Session 1**
Moderator: Dr. Markus Büchler, SGK, Zürich
- 10:10 **On pitting corrosion**
M. Büchler¹
¹SGK Swiss Society for Corrosion Protection, Zürich
- 10:30 **Development of a Multimodal CT Quantitative Analysis Protocol for Undisturbed Archaeological Iron Artefacts**
Ocson Cocen¹, Elodie Granget¹, Mahdieh Shakoorioskooie¹, Qianru Zhan², David Mannes², Anders Kaestner², Laura Brambilla¹
¹ Haute Ecole-Arc Conservation-restauration (HE-Arc CR), Neuchâtel, Switzerland
² Paul Scherrer Institute (PSI), Villigen, Switzerland
- 10:50 **Synthesis and Corrosion Properties of Manganese Oxide Films**
Roberto Cestaro¹, Noemie Ott¹, Claudia Cancellieri¹, Lars P.H. Jeurgens¹, Patrik Schmutz¹
¹ Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Joining Technologies and Corrosion, CH-8600 Dübendorf, Switzerland
- 11:10 **Reinforcing steel in sulfide-containing concretes – corroding or not corroding?**
Gregor J. G. Gluth¹, Ali Nikoonasab^{1,2}, Marina Licht², Thoralf Müller³, Rebecca Achenbach², Michael Raupach²
¹ Bundesanstalt für Materialforschung und -prüfung (BAM), Division 7.4 Technology of Construction Materials, Berlin, Germany
² RWTH Aachen University, Institute for Building Materials Research (ibac), Aachen, Germany
³ Bundesanstalt für Materialforschung und -prüfung (BAM), Division 7.6 Corrosion and Corrosion Protection, Berlin, Germany

- 11:30 **Corrosion of iron covered with siderite scale in 1 M sodium bicarbonate solution**
Marian Nida Lumongsod¹, Anna Neus Igual-Muñoz¹, Stefano Mischler¹
¹ *Tribology and Interfacial Chemistry Group, TIC, SCI-STI-SM, EPFL, 1015 Lausanne, Switzerland*
- 11:50 **Impact of diffusion potentials in porous materials on corrosion-related investigations – Insight into the research project**
Elke Ziehensack¹, Christoph Gehlen¹, Kai Osterminski¹, Ueli Angst², Zhidong Zhang², Thilo Schmid²
¹ *Technical University of Munich, Centre for Building Materials, Franz-Langinger-Straße 10, 81245 München, Germany*
² *ETH Zurich, Institute for Building Materials (IfB), Laura-Hezner-Weg 7, 8093 Zürich, Switzerland*
- 12:10 **Discussion**
- 12:30 **Lunch**
- 14:00 **Session 2**
Moderator: Dr. Anna Iguol Muñoz, EPFL, Lausanne
- 14:00 **Aerobic and anaerobic oxidation of ferrous ions in near-neutral solutions**
Shishir Mundra¹, Jan Tits², Erich Wieland², Ueli M. Angst¹
¹ *Institute for Building Materials (IfB), ETH Zurich, Stefano-Frascini-Platz 3, 8093 Zurich, Switzerland*
² *Paul Scherrer Institute, Nuclear Energy and Safety Department, Laboratory for Waste Management, 5232 Villigen PSI, Switzerland*
- 14:20 **How can we gain Trust in EIS Measurements on High Impedance Systems?**
Joerg Vogelsang¹, Mirdash Bakalli¹, Patrick Keil², Werner Strunz³, Thomas Broecker², Rainer Herrmann²
¹ *Sika Technology AG, Zurich, Switzerland*
² *BASF Coatings GmbH, Muenster, Germany*
³ *ZAHNER-elektrik GmbH & Co. KG, Kronach, Germany*
- 14:40 **Black stainless steel – a case study**
Bernhard Elsener¹
¹ *IfB ETH Zurich and Department of Chemical and Geological Sciences, University of Cagliari*
- 15:00 **Green and bio-based remediation processes of metal corrosion**
Luana Cuvillier^{1,2}, Arianna Passaretti^{1,2}, Qing Wu¹, Patrycja Petrasz¹, Laura Brambilla¹, Edith Joseph^{1,2}
¹ *Haute Ecole Arc Conservation Restauration, University of Applied Sciences and Arts HES-SO, 2000 Neuchâtel, Switzerland*
² *Laboratory of technologies for Heritage Materials (LATHEMA), Institute of Chemistry, University of Neuchâtel, 2000 Neuchâtel, Switzerland*
- 15:20 **Exploring the role of zinc injection on the oxide film modification and stress corrosion cracking mitigation of Alloy 182 weld metal exposed to boiling water reactor coolant**
Adrianna Mackiewicz¹, Stefan Ritter¹, Kai Chen^{1,2}, Hans-Peter Seifert¹, Sannakaisa Virtanen³
¹ *Paul Scherrer Institute (PSI), Villigen, Switzerland*
² *Now at Shanghai Jiao Tong University, Shanghai, China*
³ *Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany*
- 15:40 **Discussion**
- 16:00 **End**
- 16:00 **General assembly meeting of the Swiss Corrosion Network**
(only for members of the Swiss Corrosion Network, upon invitation to be distributed)

Venue & Directions

The event will be held at Technopark, Technoparkstrasse 1, Zürich, in Meeting Room Cobol, 2nd Floor. This meeting room is modern and large and will allow for keeping distance between participants. No options to attend online are planned to be provided.

How to find us:



Arrival by public transport

- › Tram (VBZ) No. 17 to Förrlibuck (4 minutes' walk to Technoparkstrasse, follow dashed lines across Escher Wyss site)
- › Tram (VBZ) No. 4, 13 or 17 to Escher Wyss Platz (8 minutes' walk to Technoparkstrasse, follow dashed lines along Hardstrasse / Pfingstweidstrasse)
- › Tram (VBZ) No. 4 to Technopark (1 minutes' walk to Technoparkstrasse, follow dashed lines) or Tram (VBZ) No.8 to Schiffbau (follow dashed lines, 4 minutes' walk to Technoparkstrasse)
- › Bus (VBZ) No. 33 to Schiffsbau (4 minutes' walk to Technoparkstrasse, follow dashed lines)
- › Bus (VBZ) No. 72 to Schiffsbau (4 minutes' walk to Technoparkstrasse, follow dashed lines)
- › Suburban train S3 /S5 /S6 /S7 /S9 /S12 /S15 /S16 (all via Zurich main station), or various mainline trains via Zurich main station to Hardbrücke (then 8 minutes' walk to Technoparkstrasse, follow dashed lines along Hardstrasse)

Arrival by car

- Very few metered parking spaces in the TECHNOPARK® Zurich underground garage, more parking garages: P Pfingstweid and P West
- › from St. Gallen / Flughafen: take Rosengartenstrasse, Escher-Wyss-Platz (bridge), Hardturmstrasse, Förrlibuckstrasse, Duttweilerstrasse (Toni-Areal / ZHDK), Pfingstweidstrasse (continuous line), Technoparkstrasse (dashed line)
 - › from Berne or Basle: take Pfingstweidstrasse (continuous line), Technoparkstrasse (dashed line)
 - › from Lucerne / Chur: over Hardbrücke bridge, take Geroldstrasse exit to Pfingstweidstrasse (continuous line), Technoparkstrasse (dashed line)
 - › from Zurich city: via Escher Wyss Platz, Hardstrasse or Hardturmstrasse (continuous line)
 - › from Hardturm «Park and Ride»: take tram (VBZ) No. 17 to Förrlibuckstrasse

Leaving TECHNOPARK® in the Pfingstweidstrasse direction: to Bern / Basel

Leaving TECHNOPARK® in the Förrlibuckstrasse direction: to St.Gallen / airport / Luzern / Chur and Zurich city