

Swiss Corrosion Science Day 2024

24. April 2024 10:00 – 16:00 h

at Sika Technology AG, Zurich, Switzerland

Organized by



Hosted and sponsored by



an EFC event (no. 508)



On the occasion of the World Corrosion Awareness Day

Programme

- 10:00 **Welcome and introduction**
Prof. Ueli Angst, ETH Zurich, Institute for Building Materials
Dr. Jörg Vogelsang, Sika Technology AG
- 10:10 **Session 1**
Moderator: Dr. Jörg Vogelsang, Sika Technology AG
- 10:10 **Insights on the mechanism of corrosion products precipitation in voids at the steel-concrete interface in reinforced concrete.**
E. Rossi¹, S. Governo¹, M. Shakoorioskooie², Q. Zhan², D. Mannes², A. Kaestner², S. Mundra¹, U. Angst¹
¹ Institute for Building Materials, ETH Zurich, Switzerland
² Laboratory for Neutron Scattering and Imaging (LNS), Paul Scherrer Institut (PSI), Switzerland
- 10:30 **Corrosion behavior of heat-treated Fe-based shape memory alloys.**
Pranav Vivek Kulkarni¹, Meet Jaydeepkumar Oza^{2,3}, Anna Igual-Munoz¹, Jean-Michel Sallese⁴, Moslem Shahverdi^{2,5}, Christian Leinenbach^{2,3}, Stefano Mischler¹
¹Tribology and Interfacial Chemistry (TIC) Group, École polytechnique fédérale de Lausanne (EPFL),
² Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf,
³ Laboratory for Photonic Materials and Characterization, École polytechnique fédérale de Lausanne (EPFL)
⁴ STI GR-SCH-IEL, École polytechnique fédérale de Lausanne (EPFL), Lausanne,
⁵ School of Civil Engineering, University of Tehran, Iran
- 10:50 **Hydrogen diffusion into structural steel – hydrogen permeation barriers and their characterization.**
Bernhard Elsener, Raouaa Hanachi, Deborah Biggio, Marzia Fantauzzi, Antonella Rossi
University of Cagliari, Italy
- 11:10 **Localized aluminum corrosion phenomena studied with electrochemical liquid phase electron microscopy.**
Morgan Barbey Binggeli, Vasiliki Tileli
Institute of Materials, École Polytechnique Fédérale de Lausanne (EPFL)

- 11:30 **Towards an accurate biocorrosion prediction of magnesium-based implants by closer mimicking the in vivo environment.**
Mustafa Yalcinkaya, Arie Bruinink, Martina Cihova, Patrik Schmutz
 EMPA-Swiss Federal Laboratories for Materials Testing and Research, Dübendorf, Switzerland
- 11:50 **Discussion**
- 12:00 **Lunch**
- 13:30 **Session 2**
 Moderator: Dr. Anna Igual-Muñoz, EPFL, Lausanne
- 13:30 **Regulatory landscape and compliance requirements for Zinc dust in coatings for corrosion protection.**
Guy Decelles
 DEC Solutions, Fully/Switzerland
- 13:45 **Efficacy of cavitation peening in reducing SCC susceptibility of Alloy 182 – studies in simulated light water reactor environments.**
Annesha Dash, Stefan Ritter, Hans-Peter Seifert
 Paul Scherrer Institut (PSI), Switzerland
- 14:05 **Does the manufacturing process of steel affect the corrosion susceptibility of reinforcing steel bars?**
Ahmad Takriti, Sylvia Kessler
 Helmut-Schmidt-University / University of the Federal Armed Forces Hamburg, Hamburg/Germany
- 14:25 **Benefits of 3D numerical simulation using finite element method in the design of cathodic protection system for steel-reinforced concrete structures.**
Elie Sassine, Chantal Chalhoub, Stéphane Laurans, Erwan Colomb, Stéphane Panin, Arnaud Dubosc,
 CORROHM, 815, La Pyrénéenne 31670 Labège, France
- 14:45 **Unique corrosion behavior of an archaeological Roman iron ring: microchemical characterization and thermodynamic considerations.**
Valentina Valbi¹, Fabio Enrico Furcas², Delphine Neff³, Philippe Dillmann³, Ueli Angst², Myriam Krieg⁴, Anika Duvauchelle⁴, Marion Berranger¹, Stefano Mischler⁵, Laura Brambilla⁶, Naima Gutknecht⁶, Christian Degrigny⁶
¹ Laboratoire Métallurgies et Cultures, Université Technologique de Belfort-Montbéliard, Belfort, France
² Institute for Building Materials, ETH Zürich, Switzerland
³ Laboratoire Archéomatériaux et Prévision de l'Altération CEA, Université Paris-Saclay, France
⁴ Site et Musée romains d'Avenches (SMRA), Avenches, Switzerland
⁵ Tribology and Interfacial Chemistry (TIC), EPFL, Lausanne, Switzerland
⁶ Haute Ecole Arc Conservation-restauration / HES-SO, Neuchâtel, Switzerland
- 15:05 **Assessment of tarnished silver test systems prepared with bio-based green aging methods.**
 Qing Wu¹, Han Zhou², Kirill Gubanov³, Arianna Passaretti^{1,4}, Jorge Gonzalez Frutos^{1,5}, Christian Degrigny¹, Loïc Bertrand⁶, Maartje Stols-Witlox², Laura Brambilla¹, Edith Joseph¹
¹ Haute Ecole Arc Conservation-Restauration, HES-SO University of Applied Sciences and Arts Neuchâtel
² University of Amsterdam, The Netherlands
³ Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
⁴ University of Neuchâtel, Switzerland
⁵ Swiss Federal Laboratories for Materials Science and Technology, (EMPA) Dübendorf, Switzerland
⁶ Université Paris-Saclay, ENS Paris- Saclay, France
- 15:25 **Discussion**
- 15:45 **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 Sika Technology AG, Tüffenwies 16, 8048 Zurich (Altstetten), Switzerland.

For security reasons, you are kindly requested to register at the reception in good time.

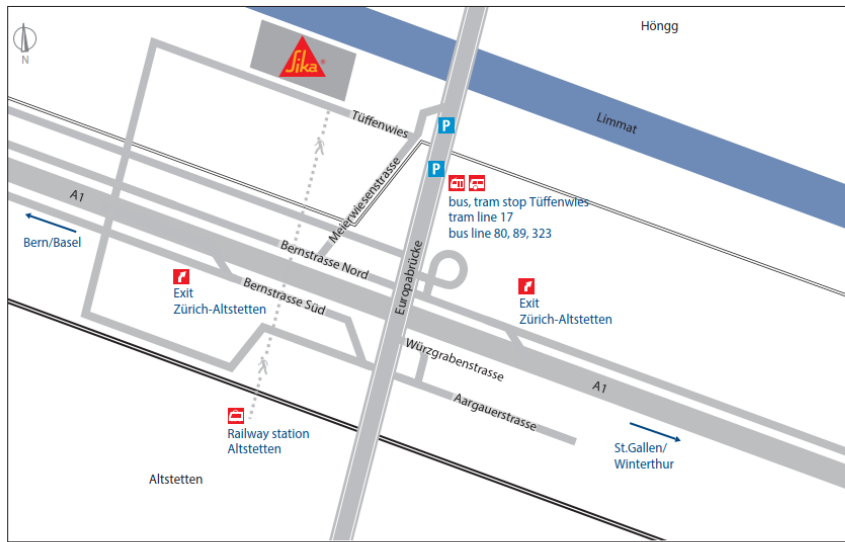
You will be given a badge for access control, which you should carry with you and return when you leave the company premises.

Together with the badge you will receive safety instructions on how to behave in an emergency.

No options to attend online are planned to be provided.









How to find us:

It is strongly recommended to travel by public transport, as there is hardly any parking available.



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-  Exit
-  Parking (under Europa Bridge)
-  Bus
-  Tram
-  Railway station
-  Walkway
-  Tram line
-  Railway line

ARRIVAL BY CAR:

From Zurich Airport / St. Gallen / Bern / Basel / Chur / Lucerne:

- At Limmattaler Kreuz (S9) go to direction Zurich City
- Take exit no. 2 Altstetten / Höngg
- Go on Bernstrasse Süd and keep in direction Höngg
- Go left on Aargauerstrasse and again left on Würzgrabenstrasse
- On the Europa Bridge take the exit on the right side (direction motorway / Tüffenwies)
- Go on Bernstrasse Nord and turn right in Meierwiesenstrasse (direction Tüffenwies)
- Turn left into Tüffenwies

ARRIVAL BY PUBLIC TRANSPORT:

- Tram line no. 17 Werdhölzli / Bahnhofplatz HB, station Tüffenwies (under Europa Bridge)
- With Bus no. 80, 89, 323 until station Tüffenwies (on Europa Bridge)
- Railway station Altstetten, around 12 minutes to walk to Tüffenwies

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