

18th Nordic Corrosion Congress

May 31-June 2, 2022

Turku, Finland

Tuesday, May 31

18:00-19:30

**Reception, refreshments and registration
sponsored by city of Turku**
Street address: Aurakatu 2

Wednesday, June 1

8:30-9:30

Registration and coffee, Aurum
Street address: Henrikinkatu 2

9:30-9:40

Welcome in aud. Argentum

9:40-10:30

**Keynote 1, *High-temperature corrosion in
combustion processes – reflections*, prof. em.
Mikko Hupa, Åbo Akademi University**

Palladium	Rhodium
10:40-11:40 Advanced analysis techniques-1 Chair: Christofer Leygraf (KTH)	10:40-11:40 Energy: Aggressive environments at high temperatures Chair: Juho Lehmusto (ÅAU)
1.1 Surface analytical comparison of microstructure and corrosion mechanisms of Zn (with ~0.2% Al) and Zn-Al (with ~5% Al) coated steels Ville Saarimaa, Top Analytica Oy, Turku, Finland	2.1 Thickness and composition of native oxides on Ni superalloys Alfred Larsson, Lund University, Lund, Sweden
1.2 Advanced analysis techniques revealing corrosion inside copper microstructure Jinshan Pan, KTH Royal Inst. of Techn., Stockholm, Sweden	2.2 High-temperature corrosion challenges in combustion of carbon-neutral fuels Hanna Kinnunen, Valmet Technologies Oy, Tampere, Finland
1.3 Synchrotron X-ray spectroscopic studies of corrosion in metallic materials Konstantin Simonov, Swerim AB, Kista, Sweden	2.3 Alternative oxygen scavenging chemicals for hydrazine in power plant steam-water cycles Konsta Sipilä, VTT, Espoo, Finland

11:40-13:00 Lunch

Palladium

Rhodium

13:00-14:00 Advanced analysis techniques-2 Chair: Emil Vainio (ÅAU)	13:00-14:00 Energy: Nuclear Chair: Olof Forsén (Aalto Uni.)
3.1 Non-destructive evaluation of coating degradation and rust creep Huichao Bi, CoaST, Technical University of Denmark, Lyngby, Denmark	4.1 The oxidation of copper in air at temperatures up to 100 °C Jari Aromaa, Aalto University, Espoo, Finland
3.2 Corrosion testing of additive manufactured stainless steel for safe implementation in aggressive environments Markus Uhlirsch, Swerim AB, Kista, Sweden	4.2 The corrosion of copper in synthetic ground water and bentonite pore water Jari Aromaa, Aalto University, Espoo, Finland
3.3 Direct evidence of corrosion cells. Initial atmospheric corrosion studies of copper from macroscale to nanoscale Christofer Leygraf, KTH Royal Inst. of Techn., Stockholm, Sweden	4.3 Corrosion of OFP-copper in anoxic simulated groundwater with sulphide concentrations of 3.2 and 32 mg/L Elisa Isotahdon, VTT, Espoo, Finland

14:00-14:20 Break, refreshments

Palladium

Rhodium

14:20-15:20 Monitoring and testing-1 Chair: Tor Hemmingsen (Uni. Stavanger)	14:20-15:20 Energy: Bio-oil and biomass Chair: Torben Skovhus (VIA Uni. College)
5.1 Laboratory simulation of long-term outdoor exposures and zinc release of naturally and pre-patinated zinc sheet at atmospheric conditions Gunilla Herting, KTH Royal Inst. of Techn., Stockholm, Sweden	6.1 Cold-end corrosion caused by calcium chloride in biomass combustion during variations in flue gas humidity Alessandro Ruozzi, Åbo Akademi University, Turku, Finland
5.2 On CO₂ corrosion resistance of low carbon steels in the formation water chemistry: The impact of Cr content as an alloying element Kapil Kumar Gupta, Technical University of Denmark, Lyngby, Denmark	6.2 Corrosion of two boiler steels exposed to hygroscopic salts – an investigation using the linear polarization method Sarah Yahia, Åbo Akademi University, Turku, Finland
5.3 Understanding the development of the corrosion products/scale during CO₂ corrosion of steels using in-situ and ex-situ synchrotron X-ray diffraction Saber Haratian, Technical University of Denmark, Lyngby, Denmark	6.3 Amino acids reduce the corrosivity of used cooking oils Nina Bruun Åbo Akademi University, Turku, Finland

15:30-17:30 Social programme

19:00 Dinner at restaurant Grädda. Street address: Piispankatu 15

Thursday, June 2



9:00-9:30

Registration and coffee, Aurum
Street address: Henrikinkatu 2

9:30-10:20

Keynote 2, Dr. Claus Weinell, CoaST, Technical University of Denmark, Lyngby, Denmark
Anti-corrosive coating systems – challenges and opportunities exemplified through CoaST research activities (Argentum)

Palladium	Rhodium
10:30-11:50 Monitoring and testing-2 Chair: Markus Engblom (ÅAU)	10:30-12:10 Aggressive environments at low temperatures Chair: Leena Hupa (ÅAU)
<i>7.1 Exploring the possibilities of machine learning for prediction of alkali salt induced high-temperature corrosion of boiler superheater materials</i> Rasmus Fagerlund, Åbo Akademi University, Turku, Finland	<i>8.1 Sour and sweet corrosion in oil- and gas pipelines</i> Tor Hemmingsen, University of Stavanger, Norway
<i>7.2 Microstructure and intergranular corrosion of Al-Mg-Si alloy under a trace level copper content</i> Emad Hasan Bartawi, Technical University of Denmark, Lyngby, Denmark	<i>8.2 The corrosion rate of the gas shells at the "Paardenmarkt"</i> Geert Potters, Antwerp Maritime Academy, Antwerp, Belgium
<i>7.3 Monitoring corrosion and aquatic environmental markers in a long-term controlled environment</i> Wikke Witteween, Antwerp Maritime Academy, Antwerp, Belgium	<i>8.3 The effect of surface condition on the corrosion and biofouling of EN1.4404 austenitic stainless steel in brackish water</i> Vilma Ratia-Hanby, VTT, Espoo, Finland
<i>7.4 Effect of Mn on filiform corrosion susceptibility of coated rolled AA3005 aluminium alloys</i> Erlind Mysliu, Norwegian University of Science and Technology, Trondheim, Norway	<i>8.4 Failure investigation of microbiologically influenced corrosion (MIC) in the North Sea oil and gas production – the urgent need of bridging our extensive knowledge to the renewable energy sector</i> Torben Lund Skovhus, VIA University College, Horsens, Denmark
	<i>8.5 Behaviour of stainless steels in chloride-containing sulphuric acid</i> Elina Huttunen-Saarivirta, VTT, Espoo, Finland

12:00-13:00 Lunch

Palladium

Rhodium

13:00-14:00 Environmental and health Chair: Maria Zevenhoven (ÅAU)	13:00-14:00 Advanced materials and electronics Chair: Rajan Ambat (DTU)
9.1 European MIC Network: New paths for science, sustainability and standards executed via the new COST Action CA20130 Torben Lund Skovhus, VIA University Collage, Horsens, Denmark	10.1 Degradation pathways of amine cured epoxy novolac coatings at HPHT conditions Narayanan Rajagopalan, Technical University of Denmark, Lyngby, Denmark
9.2 The interplay between atmospheric corrosion and antimicrobial functionality of Cu metal and a Cu-based alloy Tingru Chang, KTH Royal Inst. of Techn., Stockholm, Sweden	10.2 Corrosion and tribo-corrosion behavior of cemented carbides in synthetic mine water Jayamani Jayaraj, Dalarna University, Falun, Sweden
9.3 Degradation of glass – a desired and undesired phenomenon Leena Hupa, Åbo Akademi University, Turku, Finland	10.3 Quantification of water film formation under transient condensing condition and related printed circuit board assemblies failures Helene Consell-Gudla/Rajan Ambat, Technical University of Denmark, Lyngby, Denmark

Closing 14:10-14:20, Argentum