

Invitation 2024

CORROSION AND CORROSION PROTECTION TRAINING

Optional: Additional day at Proton Technology in Bankeryd, Sweden

To prevent damage, it is essential to understand what causes corrosion on components under certain operating conditions, and what the damage pattern of the corrosion looks like.

- After the seminar you will know the important corrosion mechanisms, triggers, and possible remedial measures.
- In addition, you will learn about the hydrogen produced during corrosion processes and its damage potential.
- Electrochemical tools as a method of examination and prediction are introduced.
- As a practical user, you will receive an excellent basis for better estimating and evaluating a wide variety of applications in advance.
- For users with a theoretical scientific background, the practical relevance is established by many examples from our failure analysis experience.

Documentation: Comprehensive course material and a signed certificate

Target group: Technical professions and development, testing, construction, quality assurance, maintenance, and service. Example: Engineers, Purchasers, Product specialists / designers, Quality technicians / managers, Corrosion engineers / specialists and more.

Class of 2024

Language: English

Level: Intermediate to Advanced

Tutor: Professor Dr. Ing Simon Oberhauser

Schedule: 2 days **10th -11th of September 2024**

Price: 1590 Euro

The seminar will be a hybrid with both digital and physical participants.

Please state your preferred participation at the registration form

(will be decided from the basis):

1. In the classroom, Bankeryd Jönköping Sweden (On-site)
2. Digitally, via Teams

Additional Day

Practical (day 3). Your new theoretical discoveries will come to life through our experiments.

Bring your own examples or we decide together what topic to explore further.

Language: English

Level: Your choice

Tutor: Professor Dr. Ing Simon Oberhauser

Schedule: **12th of September 2024** at Proton Technology in Bankeryd

Price: 650 Euro

About the tutor

Prof. Dr.-Ing. Simon Oberhauser, shareholder of InnCoa GmbH in Neustadt/Danube, Germany. Simon was the Managing Director at the company for more than 12 years and since 2022 Simon is Professor for materials engineering at the Technische Hochschule Ingolstadt. After studies in general mechanical engineering at the same university, he earned a Ph.D. at the TU Bergakademie Freiberg in the field of materials science.

At InnCoa GmbH Simon and his team examine various cases of corrosion failures, feeding the industry with excellence and sustainable solutions. Trainings in the field of corrosion and corrosion protection for the automotive, solar as well as the industrial sector (BMW, Daimler, MAN etc.) has been a part of Simons profession for over 10 years. Simon is very well renowned and one of his primary skills is to combine the highest level of knowledge with the ability to bring out the essence to people with limited knowledge on corrosion.



Content

Basics of corrosion

Corrosion at higher temperatures:

- Dry corrosion and hot gas corrosion at higher temperatures: Oxidation, carburizing/"metal dusting", nitriding, sulfidation
- Electrochemical corrosion: "wet corrosion"
- Chemical reaction (Redox-reactions, some aspects and potential applications of electrochemical characterization)
- Corrosion during transportation
- Hydrogen blister formation and hydrogen embrittlement
- Galvanic corrosion (very often a challenge with light weight design)
- Cathodic protection

Corrosion under dynamic and tribological loads

- Corrosion fatigue, corrosion friction and fretting

Corrosion behavior of important material groups

- Aluminum, Steel & Stainless steel
- Ni-Basis, Stellite, Cu-Basis

Corrosion protection

- Basic rules for constructive corrosion protection
- Extracts of coatings or coverings (possibilities and risks)
- Corrosion protection on polymer basis
- Zinc flake coatings: in between of paint and metallic coverings
- Metallic coatings deposited from electrolytes, as well as electroless
- deposition and hot dip galvanization
- Thermal spray coatings
- Diffusion layers via pack cementation, gas phase or slurry processes

Booking training course

Send the registration form to,
E-Mail: technology@proton.se

Contact

Joakim Ekström, Proton
Technology

E-mail:
joakim.ekstrom@proton.se

ADDITIONAL DAY at Proton Technology in Bankeryd, Sweden

Attendees, please bring your own cases on-site for discussion (coatings and coverings) & introduction of corrosion testing, chances and risks, overview about different testing methods and additional exercises on corrosion.

Proton Technology - leading independent laboratory in the field of corrosion and surface analysis. www.protontechnology.se

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and part of the international
accreditation network ILAC.

