# IAP Seminar

## Frank Uwe Renner

*Hasselt University, Institute for Materials Research (IMO) & IMOMEC, Diepenbeek/Belgium*

**Tuesday, 16th January 2018, 16:00 s.t.**
TU Wien, Institut für Angewandte Physik, E134
1040 Wien, Wiedner Hauptstraße 8-10
Yellow Tower „B“, 5th floor, SEM.R. DB gelb 05 B

## Surface Science Approach to Understand Corrosion and Inhibition

Understanding of electrochemical (wet) corrosion processes constitutes a complex challenge with its dependence on substrate and environment chemistry, surface morphology, and eventual confinement. With a surface science approach we aim to reduce the complexity of corroding systems to well controlled initial states in addition to using in-situ techniques and high-resolution characterization. In this presentation I will provide two example cases. Dealloying of binary noble metal alloys in combination with a well-controlled approach to apply molecular inhibitor films provides unprecedented insights in corrosion inhibition. In-situ AFM allows to follow the initial steps of dealloying. Second, Fe-based bulk metallic glasses, so-called amorphous steels offer a very homogeneous elemental distribution in the starting material. The influence of even nanometer-scale fluctuations in the local composition on the passivity of this system is made visible by Atom Probe Tomography and elemental solution analysis.

All interested colleagues are welcome to this seminar lecture (45 min. presentation followed by discussion)

Friedrich Aumayr
(LVA-Leiter)

Markus Valtiner
(Seminar Chair)