

Lecture Series “**Electrochemical Surface Science**”

by Prof. Klaus Rainer Wandelt

Aims of the course:

Introduction to physics/chemistry of metal-electrolyte interfaces: Development of the classical models of the "electrochemical doublelayer" at metal-electrolyte interfaces. Description of various experimental methods, from classical electrochemical methods to atomically resolving in situ scanning tunneling microscopy. Understanding of the physical properties (structure) and chemical processes at metal-electrolyte interfaces on the microscopic scale.

Content:

Description of the metal-electrolyte interface, atomic/molecular structure, redox-processes: adsorption-/desorption kinetics, phase-equilibria and -transitions, molecular selforganization, film growth. Classical and modern analytical methods.

References:

C.H. Hamann, W. Vielstich: "Elektrochemie", Wiley-VCH

E.Budevski, G.Staikov, W.J. Lorenz: "Electrochemical Phase Formation", Wiley-VCH

W.Schmickler, E.Santos: "Interfacial Electrochemistry", Springer

A documentation of the lecture series will be provided.