



TECHNISCHE UNIVERSITÄT WIEN  
INSTITUT FÜR ANGEWANDTE PHYSIK  
WIEDNER HAUPTSTR. 8-10/E134, 1040 WIEN  
<http://www.iap.tuwien.ac.at>



## Invitation

Institute of Applied Physics – TU Wien

Prof. Dr.

# Markus Valtiner

Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf  
& Technische Universität Bergakademie Freiberg  
Germany

## Structures, processes and interactions at solid/liquid interfaces

### Abstract:

Structure and molecular dynamics at solid/liquid interfaces are central to many applications and processes in biological and technological areas. These range from specific surface/molecule interactions in biological signaling, adhesion and sensor applications, to energy storage and conversion, as well as materials degradation. Here, I will first provide a detailed overview on the chemical physics and our current understanding of solid/liquid interfaces and will discuss their technological importance. I will then specifically detail how force probe techniques allow us to study and understand processes at solid/liquid interfaces. Specific applications of force probe techniques in the field of corrosion, electrolyte structuring and the study of dynamic single molecule/surface interactions will be reviewed in detail. Finally, new ideas and perspectives for further unraveling structure and dynamics at solid/liquid interfaces will be discussed.

### Date:

Friday, **11.11.2016**, 16:00

### Venue:

TU Wien  
Lecture hall – University Library  
Resselgasse 4, 5th floor