

## EINLADUNG

zum Vortrag von

**Prof. Dr. Stephan Gekle**

Biofluid Simulation and Modeling, Universität Bayreuth, Deutschland

### Interaction of light and interfacial fluids: from the microwave to organic solar cells

**am Dienstag, 16. Juni 2015, um 17:30 Uhr**

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,  
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

*Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals*

#### Abstract

It is well known that liquid water and ice, although being chemically identical, possess very different physical properties. It is less commonly known that water even in its liquid state does not always behave identically. When the hydrogen bond network is cut by an external interface, a new type of liquid water arises: *interfacial water*. Its properties are often fundamentally different from normal bulk water.

In the main part of the talk I will present molecular dynamics simulations showing that electromagnetic waves are absorbed at very different frequencies in interfacial than in bulk water. The second part will treat the anomalous diffusion of water molecules in the vicinity of lipid bilayers. Finally, I will present a combined computational-experimental study for another kind of interfacial liquid system (perylene bisimide solvated in toluene) and show how classical MD trajectories can be combined with a simple model for quantum-mechanical Förster energy transfer to obtain quantitative agreement with time-dependent fluorescence anisotropy experiments.

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