



Polymers under Multiple Constraints

# Kolloquium

**Thursday,**

**30<sup>th</sup> April 2015**

**at: 5.00 pm**

Hörsaal für  
Theoretische  
Physik  
Linnéstr. 5  
04103 Leipzig

*Coffee will be  
served from  
4.30 pm!*

## **Prof. Dr. Michael Vogel**

(Institut für Festkörperphysik,  
Technische Universität Darmstadt)

### **Experimental and Computational Studies on the Dynamics of Confined Water**

Water in confinements of nanoscopic size and in mixtures with various molecules, ranging from alcohols to proteins, is of great relevance in many fields, from biology to geology. For these systems, the water properties can be strongly affected by finite-size effects and specific interface interactions. To gain fundamental insights, we combine nuclear magnetic resonance (NMR) and broadband dielectric spectroscopy (BDS) with molecular dynamics (MD) simulations. Moreover, we systematically vary the properties of the environments, using hard and soft confinements as well as hydrophilic and hydrophobic interfaces. We focus on systems where crystallization is, at least partially, suppressed so that liquid water can be studied in the deeply supercooled regime, providing access to much debated phenomena such as the liquid-liquid and liquid-glass transitions of water.