

## GÖCH-OBERÖSTERREICH PROGRAMMVORSCHAU

**23.05.2017**

**Prof. Dr. Frieder Jäkle**  
Rutgers University Newark, Department of  
Chemistry

“New Functional Materials  
Derived from Organoboron Building  
Blocks”

Johannes Kepler Universität Linz  
17.15 Uhr, HS 13 (TNF-Turm)



Univ.-Prof.Dr. Günther Knör  
Leiter GÖCH – Oberösterreich

## **New Functional Materials Derived from Organoboron Building Blocks**

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Since the early work by H. C. Brown on their use as versatile reagents in organic synthesis, organoboranes have emerged as an important class of functional materials with applications ranging from catalysis to small molecule activation, sensing of anions and biologically relevant species, molecular switches, and even organic electronic materials.

In this presentation I will outline some of our recent efforts on the incorporation of boron into well-defined oligomers and polymers, with a view on exploring new applications in the field of materials chemistry. The presence of electron-deficient tricoordinate borane moieties in conjugated materials gives rise to unique optical and electronic characteristics that can be exploited in anion detection and organic electronic applications. Moreover, the selective replacement of “BN” for “CC” units in organic polymers gives rise to functional molecules with properties that are distinctly different from those of their all-carbon analogs. Finally, I will demonstrate how the self-assembly of organoboron block copolymers can be exploited in sensory applications and stimuli-responsive materials.