

**15 décembre 2017 à 10h,**  
*dans la salle des conseils de l'UFR de Chimie, T32-42-103.*

## **Ionic Liquids for Materials Design and Tuning**

**Andreas Taubert**

Institute of Chemistry, University of Potsdam, D-14476 Potsdam, Germany.

[ataubert@uni-potsdam.de](mailto:ataubert@uni-potsdam.de), [www.taubert-lab.net](http://www.taubert-lab.net)

Ionic liquids (ILs) are not only interesting as a materials or solvents. They also are interesting precursors or templates for the synthesis of (inorganic) materials. The presentation will show how ILs can act as ionic liquid precursors (ILPs) for materials synthesis and how the phase behavior of the ILPs enables the tuning of the materials produced. The talk will focus on metal chalcogenides, including examples of applications of the materials in solar cells and electrochemical sensors, but the route can be adapted to other materials as well.

In a second part, the presentation will show how ILs can be used to fabricate cellulose/calcium phosphate and silk/silica hybrid materials for biomaterials applications. Scanning electron microscopy, transmission electron microscopy, energy-dispersive X-ray spectroscopy, X-ray diffraction, infrared spectroscopy, and thermogravimetric analysis/differential thermal analysis show that, depending on the reaction conditions, cellulose/hydroxyapatite, cellulose/chloroapatite, or cellulose/monetite composites form. Preliminary studies with MC3T3-E1 pre-osteoblasts show that the cells proliferate on the hybrid materials suggesting that the ionic liquid-based process yields materials that are potentially useful as scaffolds for regenerative therapies.