

## **Material characterization of ionic liquids for the dissolution of cellulose at different water contents and water activities**

The goal of this project is to characterize essential new material aspects of ionic liquids. The measurement of water content and water activity for the determination of water absorption isotherms is the main focus of this work. The results will contribute to the better understanding of ionic liquids in general as well as the dissolution of cellulose and wood, using ionic liquids. It is known that cellulose can be dissolved in ionic liquids and that water functions as an anti-solvent. Therefore the water content and water activity are directly connected to the cellulose dissolution behaviour and the correlations need to be investigated.

The project is in collaboration with the institute of thermodynamics (Lehrstuhl für technische Thermodynamik – LTT) and ITMC. The measurements performed at our institute will be applied for the development of a mechanistic model, describing ionic liquids and the cellulose dissolution in COSMO RS. This will contribute to a deeper understanding of the cellulose dissolution process with ionic liquids.