



Inorganic Chemistry

Tom Nilges

Energy and Materials Science

Our research focus lies on the investigation and optimization of materials for energy conversion, storage and efficiency. We work on solid ion conductors, thermoelectric materials and hybrids that combine high charge carrier dynamics, electron and ion transport with stability and applicability in energy related processes.

We work on group 15 and late transition metal ion containing chalcogenides and halides covering the whole spectrum from element allotropes to very complex semiconductors. Two and one-dimensional semiconductors are of interest as source for hybrid materials. We seek for new physical effects due to the reduced dimensionality and intriguing electronic properties caused by the anisotropic material interactions.

Our goals are to develop sustainable and efficient materials with an application potential for batteries, sensors and other electronic devices.

