

Einladung zum Vortrag von

Dr. Vladimir Lesnyak

Physical Chemistry TU Dresden

**“Colloidal Semiconductor Nanocrystals: Design,
Assembly & Applications”**

In this talk I will summarize our recent work on the colloidal synthesis of different semiconductor nanocrystals from simple binary compounds, such as CdTe, copper chalcogenides to more complex multicomponent ternary and quaternary systems, such as Cu-Zn-In-S and Cu-Zn-Sn-Se. Particular attention will be paid to cation exchange reactions, as a convenient method for modifying the chemical composition of inorganic nanocrystals as well as to ligand exchange, as an approach to modify their surface chemistry. In the framework of the colloidal synthesis I will show a well-controllable approach to create core/shell heterostructures based on CdSe quantum dots. Furthermore, quite novel and intensively developed aspect of semiconductor nanoparticles, namely localized surface plasmon resonance, will be touched upon on the example of copper chalcogenide nanocrystals with demonstration of electrochemical modulation of their light absorption. Thereafter, applications of semiconductor nanocrystals as conducting layers, quantum dot-in-polymer composites as solar concentrators will be discussed.

Montag, 18. Juni 2018, 11:00 Uhr
Seminarraum 1 der Fakultät für Chemie
Boltzmann-gasse 1, 1090 Wien

Peter Lieberzeit
Institut für Physikalische Chemie

Veronika Somoza
Vizedekanin

Bernhard Keppler
Dekan

Lothar Brecker
Vizedekan