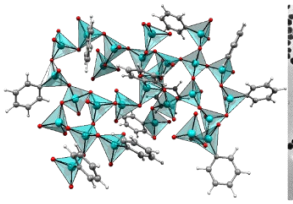
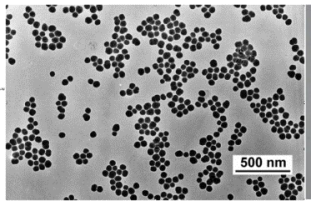
Prof. Dr. Guido Kickelbick
Inorganic Solid State Chemistry

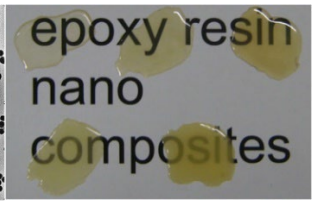
UNIVERSITÄT DES SAARLANDES

Lecture Announcement

Summer Term 2025







Hybrid Materials and Nanocomposites
Basics, Synthesis, Applications

Prof. Dr. Guido Kickelbick

2 SWS (3 CP)

Dates:	Tuesday at 10:00 -12:00 am, Starting Tue Apr 08, 2025
Lecture room:	Building C4.3, Seminar Room II
Registration:	mandatory registration via LSF course catalog

Today's advances in electronics, energy storage, pharmaceuticals and medicine require breakthrough material properties that conventional materials simply can't deliver. Embark on a journey of discovery and explore innovative material combinations that meet the demands of modern applications. Immerse yourself in the realm of inorganic-organic hybrid materials and nanocomposites, a fast-growing class of materials that offer unimagined possibilities. Through targeted chemical design, these materials can develop the desired functionality that is critical to today's technological and medical breakthroughs. This interdisciplinary course offers a unique insight into this dynamic and exciting field. Don't miss your chance to be at the forefront of tomorrow's innovations!

Content:

Fundamentals: Definitions and concepts, principles of construction of hybrid materials, interface determined materials, coatings, porosity, hierarchical structuring, nano building blocks

Synthesis: Sol-gel process, nanoparticles, concepts of linking inorganic and organic units, in situ synthesis, mixing processes

Applications: selected examples from the fields of coatings, electronics, lightweight, sensors, biomaterials, energy storage

Target audience: Students of science and engineering master courses, PhD students