

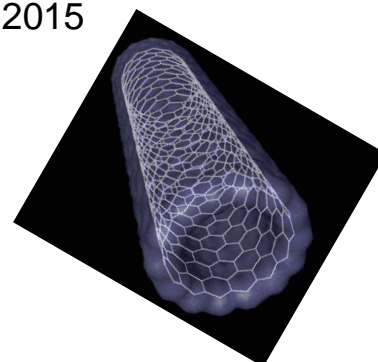
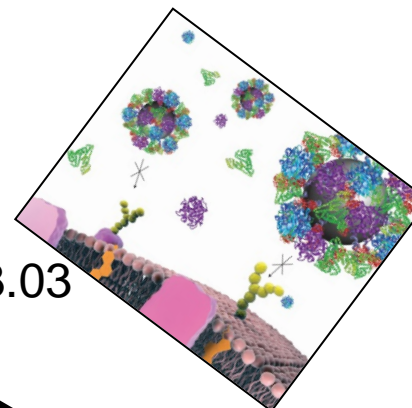
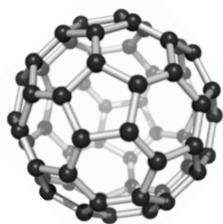
Summer Semester 2015 Lecture

# Polymeric and inorganic bio(nano)materials for biomedical applications

(LV 21238 5 credits)

Wednesdays 9:00 – 13:00 hs, Room 23.03

Course starts Wednesday 15.04.2015



## Program:

- Principles of nanotechnology. Nanochemistry: Synthesis of soft and hard nanoparticles (metal, metal oxide, quantum dots, nanogels, core-shell systems, etc.).
- Chemical modifications of nanoparticles.
- Physicochemical/nanoscale characterization methods for nanoparticles. Technological applications of soft and hard nanoparticles, especially for biomedical applications.
- Biopharmaceutical basics.
- Pulmonary Drug Delivery Targeting the brain, transdermal drug delivery, mucoadhesive drug delivery
- Applications of carbon-based nanoparticles: carbon nanotubes, graphene, etc.
- Interactions of nanoparticles with proteins and cells.
- In vivo fate of nanoparticles (biodistribution, cell internalization, nanotoxicity)
- Discussion of examples from literature and market.