

Summer Semester 2013 Lecture / Master

Chemical Nanotechnology (3 SWS)

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- Part 1: Thursday 30.05.2013, 09:00 – 13:00 hs, Room 24.16
Part 2: Friday 31.05.2013, 08:00 – 12:00 hs, Room 24.16
Part 3: Thursday 06.06.2013, 09:00 – 13:00 hs, Room 24.16
Part 4: Friday 07.06.2013, 08:00 – 12:00 hs, Room 24.16
Part 5: Thursday 13.06.2013, 09:00 – 13:00 hs, Room 24.16
Part 6: Friday 14.06.2013, 08:00 – 12:00 hs, Room 24.16
Part 7: Thursday 20.06.2013, 09:00 – 13:00 hs, Room 24.16
Part 8: Friday 21.06.2013, 08:00 – 12:00 hs, Room 24.16
Exam: July 2013, Date to be confirmed

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.
- Applications of carbon-based nanoparticles: carbon nanotubes, fullerenes, etc.
- Interactions of nanoparticles with proteins and cells.
- In vivo fate of nanoparticles (biodistribution, cell internalization, nanotoxicity)
- Discussion of examples from literature and market.

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