FKD3300 Nanostructured Materials 6.0 credits

Nanostrukturerade material

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for FKD3300 valid from Autumn 2012

Grading scale

Education cycle

Third cycle

Specific prerequisites

Some knowledge about self-assembly and intermolecular forces is beneficial, but not a requirement

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing the course you shall be able to:

· Describe what a nanostructured material is

· Describe nanostructured materials that can be found in nature and in technology

· Describe different methods for preparation of nanostructured materials

· Describe self-association phenomena that lead to formation of nanostructured materials

· Describe the unique physical properties that arise in nanostructured materials and why they appear

· Describe how the unique properties of nanostructured materials are used in nature and technology

· Describe some different characterization methods for nanostructured materials

Course contents

The course is focused on describing different types of nanostructured materials, and to provide explanations to the unique properties of nanostructured materials. The nature is full of nanostructured materials with fascinating organization and function. Some of these will be described with emphasis on structure-function relationships. Similar nanostructures and their use in some current technology areas will also be addressed. Self-association phenomena, preparation methods, and characterization methods will be discussed.

The course consists of 11 lectures and 1 seminar

Course literature

Lecture notes and scientific articles

Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Participation in the seminar

Satisfactory oral and written report on a topic related to nanostructured materials

Satisfactory result on written examination

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.