

Chemical Vapor Deposition, 8.0 credits

Kemisk ångdeponering, 8.0 hp

Third-cycle education course

6FIFM10

Department of Physics, Chemistry and Biology

Valid from: Second half-year 2024

Approved by

Approved

Registration number

Entry requirements

Entry requirement for studies on third-cycle education courses

- second-cycle degree,
- 240 credits in required courses, including at least 60 second-cycle credits,
or
- acquisition of equivalent knowledge in some other manner

Specific information

This course is intended for PhD students (and other interested, such as master students and post docs) who in some way work with some sort of thin films deposited by Chemical Vapor Deposition (CVD) or just want to broaden their view on thin film deposition and materials science

Contents

The course will cover the major sorts of CVD techniques used in the scientific world today such as:

- Thermally activated CVD
- Photo activated CVD
- Plasma activated CVD
- Metal Organic CVD (MOCVD)
- CVD at low and high pressures
- ALD (Atomic Layer Deposition)
- Deposition chemistry in the CVD process, i.e. surface- and gas phase chemistry
- CVD precursor design and synthesis
- Basics of CVD reactors

Educational methods

Lectures, seminars

Examination

The course will be examined in the popular manner applied in many Ph D courses:

- Before each lecture (including the first one), you read the assigned texts. At the start of the lecture, there is a pre-lecture quiz on the content of the upcoming lecture.
- After each lecture (including the last one), a set of home assignments will be given. The home assignment is to be handed in at the latest at the start of the next lecture or one week after the last lecture.
- A home exam essay where you will apply your knowledge on CVD to discuss around a few CVD related cases.

Depending on how well you performed in the continuous examination, you will automatically pass a set of questions on the home exam (i.e., you will not have to do all assignments in the home exam). Details will be given in connection with the home exam.

The home exam will be peer reviewed and discussed in an ending seminar, in which active participation is mandatory.

Grading

Two-grade scale

Course literature

The course will be based on several review papers and book chapters. All reading material and other course material will be available in a shared OneDrive folder.

General information

The course is planned and carried out according to what is stated in this syllabus. Course evaluation, analysis and suggestions for improvement should be fed back to the Research and PhD studies Committee (FUN) by the course coordinator.