



FSK3750 Elektrostråle och jonstråle nanofabrikation 3,0 hp

Nanofabrication with Focused ion and Electron Beams

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för FSK3750 gäller från och med VT10

Betygsskala

Utbildningsnivå

Forskarnivå

Särskild behörighet

Admitted in to a PhD program in physics, Chemistry microelectronics, or other related subject. Note that students wishing to receive training at the console, must have sponsorship of a research group who will pay laboratory usage fees.

Good general science or technical education. Advanced level courses are not necessary to understand the basic ideas. A good sense for physical apparatus and computer interfaces are needed to properly use this rather complex system.

Language of instruction: English

Undervisningspråk

Undervisningspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

This course is designed for students and researchers who are interested in using Electron Beam Lithography (EBL) or Focused Ion Beam (FIB) for nanofabrication in their research projects.

After this course the students are expected to be able to:

- Understand the basic concepts and be ready to receive training to use an EBL and FIB systems.
- Understand the fundamental principles and limitations of EBL and FIB.
- Know the main industrial and basic research applications of EBL and FIB.

Kursinnehåll

The course consists of 5 x 2 hours of lectures given in one week. The lectures will cover the basic principles of EBL and FIB, as well as the principles of Scanning Electron Microscopy (SEM). Students wishing to receive training at the EBL and or FIB console, will train with experienced users. Note that such training requires sponsorship of a research group to pay for the lab fees. Students not wishing to receive training, can do a literature study project.

- Electron Beam Lithography- principles and possibilities
- Focused Ion Beam nanofabrication.
- Advanced Exposure Strategies for EBL
- Principles of operation, Raith 150 and FEI Nova.

Lectures: 8 h, laboratory training ca. 25H

Kurslitteratur

Lecture notes, Handbook material and other articles, made available via a restricted access web site.

Examination

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.

- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.