

Vacuum technology

Credits: 5ECTS (hp)

Course period: October-December (next expected course in 2020)

Description: The aim of the course is to give basic theoretical and practical knowledge of vacuum technology and the equipment that is used in vacuum- and thin film technology. Vacuum processing equipment is necessary in various technological fields like physics, chemistry, materials science, electronics and nano technology. Moreover vacuum equipment is used to characterize and analyze samples from an even larger scientific sphere. To be able to use the vacuum based tools in an adequate way, one has to have an understanding of vacuum and related issues such as pressure measurement, pumping mechanisms and pumping speed, monolayer formation time, mean free path etc

Content: The lectures (6-7 lectures in total) will focus on the following subjects: Definition of pressure and how it can be measured, the different gas flow regimes, the materials used in vacuum equipment, different vacuum pumps and manometers, construction of vacuum systems, and residual gas analysis.

Target group and recommended background: Graduate students active in the field of material science, thin film technology, chemistry, physics or other fields related to vacuum technology.

Teacher: Doc Tomas Nyberg

Assessment: Home exam