Organic Electronics 2, 6.0 credits

Organisk elektronik 2, 6.0 hp

Third-cycle education course

6FITN05

Department of Science and Technology

Valid from: First half-year 2024

Approved by
The Board of PhD Studies

Approved
2024-03-19

Registration number

Entry requirements

Admitted to studies at postgraduate level.
Organic Electronics 1 (or equivalent)

Learning outcomes

After finishing the course, the students should be able to:

- identify the fundamental principles that define the material properties of organic electronic materials and describe how the properties can be used for various applications
- describe the structure and explain the working principles of organic electronic components/devices
- analyze how various organic electronic devices can be used in applications reflect on current research in organic electronics
- reflect on current research in organic electronics
- generate ideas on new device concepts or applications for organic electronics

Contents

Fundamental principles of mixed ionic electronic conduction in organic materials; multiscale modeling in organic electronics; organic electronic devices for charge storage; iontronics (applications based on ion transport, diodes and transistors); flexible and stretchable electronics; hybrid photonic systems; advanced bioelectronics in mammalian systems; plant bioelectronic and biohybrid systems; functional wood based materials; thermoelectrics (converting heat to electricity); advanced principles of organic electrochemical transistors; current research in organic electronics.
In addition to lectures and seminars the participants will have a project where they will have to give a presentation on a selected topic of current research in organic electronics.

Educational methods

Teaching will consist of lectures and student-led seminars.

Examination

Seminar 1 credits
Written examination 5 credits

Grading

Two-grade scale

Course literature

Articles and Compendiums

General information

Education components

Preliminary scheduled hours: 36 h
Recommended self-study hours: 120 h