

Course information “Acoustofluidics”

Introduction

This PhD course is given on-demand by the Biomedical Engineering Division at the Department of Materials Science and Engineering. The aim of the course is to provide PhD students with an introduction to acoustofluidic research. The course is based on regular seminars, led by the PhD students themselves.

Course Structure

The course comprises 12 seminars organized every two weeks. The students will read the designated material before the seminar, where it will be discussed.

Requirements

The course corresponds to 3.5 hp, equivalent to 96 hours working time. It is expected that each three-hour session will require 5 hours of preparation. Active participation in at least eight seminars is required to pass the course. Absences must be reported to susan.peacock@angstrom.uu.se.

Course material

The course is based on the book “Microscale Acoustofluidics” (<https://doi.org/10.1039/9781849737067>), an e-version of which is available through the library.

Topics covered in the course

- Equations in microfluidics
- Acoustic theory
- Piezoelectric materials and acoustic
- Acoustics in continuous flows
- Acoustic trapping
- Other particle manipulation methods
- Streaming
- Surface acoustic waves
- Biocompatibility

Teachers

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