

Work Load

Approximately 140 hours corresponding to 5 ECTS points, including the period at DTU, preparatory reading given before the course, and completion of an individual report after the course.

Study Materials

Notes will be provided before the course.

Evaluation and Diplomas

Diplomas will be issued based on active participation in the entire course.

Participants

The participants are expected to have basic knowledge on electrochemistry. Maximum number of course participants is 20 . All lectures will be given in English.



1st Announcement
PhD course

Electrokinetics in Environmental and Civil Engineering

Further Information

Prof. Lisbeth M. Ottosen
Department of Civil Engineering
Technical University of Denmark
Brovej, Building 118
DK-2800 Kgs. Lyngby, Denmark
E-mail: LO@byg.dtu.dk



Lyngby, Denmark
May 1-5, 2017

Organizers and lecturers

Lisbeth M. Ottosen
Pernille E. Jensen
Gunvor M. Kirkelund

ZeroWaste Byg
Technical University of Denmark

Scope of Course

Electrokinetics inclusive electromigration are powerful tools for removal and supply of matter into or out from porous materials. Electrokinetic transport processes are utilized in civil engineering for repair and maintenance purposes and in environmental engineering for contaminant removal.

The two most well-known methods are chloride extraction from concrete and soil remediation, but there are several other applications within both engineering fields. There are many basic research topics in common to the different electrokinetic techniques. This PhD course aims at developing a common basic foundation and with offset in this, discuss different innovative ideas where electrokinetics are used in solving different challenges related to porous and particulate materials.

The organizers welcome Ph.D. students from both civil engineering and environmental engineering, for whom electrokinetic processes and techniques are a part of the research.

Venue

The course will be given at the Department of Civil Engineering, Technical University of Denmark, Building 118.

Information on hotels in Lyngby close to the university will be e-mailed upon request. There is public transportation from Copenhagen to DTU (approximately 30 minutes from Nørreport Station by bus)

Topics

- Electro-remediation of heavy metal polluted soil
- Electro-remediation of soil polluted with organic compounds
- Electrochemical upgrading of ashes and sediments
- Modeling of transport processes in chemically changing matrix
- Desalination of masonry
- Chloride removal from concrete
- Experiences from upscaling from lab scale to pilot scale

