Chemical Reaction Engineering II (CENG0018)

Description

Aims:
To provide an understanding of advanced reactor design and the principles and phenomena that are present in multiphase and catalytic reactions.

Learning Outcomes:
Upon completion of this module student should be able to:
- design advanced chemical reactors;
- evaluate the influence of mass transfer and hydrodynamics on reactor performance;
- apply advanced concepts for the design of chemical reactors;
- combine analytical and computational approaches for reactors design;
- critically evaluate what phenomena and under what circumstances need to be considered as related to the level of accuracy required for a specific design problem;
- gain experience on the operation and data analysis form laboratory chemical reactors;

Synopsis:
- Nonisothermal reactor design at steady and unsteady state
- Multiple reactions in PFR/CSTR
- Introduction to heterogeneous catalysis
- Mass transfer and reaction in heterogeneous catalytic reactions
- Design of fixed bed reactors
- Mass transfer and reaction in gas/liquid and gas/liquid/solid reactions
- Design of gas/liquid and las/liquid/solid reactors
- Nonideal reactors and residence time distribution

Key information

Year: 2019/20
Credit value: 15 (150 study hours)
Delivery: UG L6, Campus-based
Reading List: View on UCL website
Tutor: Prof Asterios Gavriilidis
Term: Terms 1 and 2
Timetable: View on UCL website

Assessment

- Written examination (main exam period): 80%
- Coursework: 20%

Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit ucl.ac.uk

Disclaimer: All information correct as of August 2019. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.
The Masters level (level 7) version of the module (CENG0018) has a stronger focus on unseen, and more open ended, problem solving.
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