Chemical Engineering

Fluid Particle Systems (CENG0024)

Description

Aims:
This course is designed to convey the fundamentals of fluidization and crystallization and their applications to industrial scale units and sustainable development;

Learning Outcomes:
On completion, students are expected:

to be able to formulate realistic differential equation descriptions of multiphase systems;

to have an understanding of the two-phase nature of gas-solid fluidized beds and of how to apply their basic quantitative features to the design of reactors;

to be able to apply methods to analyse the characteristics and performance of particulate crystal formation systems and to design crystallization equipment;

Synopsis:
Fundamentals of gas-solid and liquid-solid systems.
Fluid-particle interaction.
Fluid-bed stability theory.
Bubble dynamics.
Particle mixing and segregation.
Heat and mass transfer.
Fluidized bed chemical reactors;
Theories of nucleation and crystal growth.
Measurement of nucleation and growth kinetics;
Crystallization processes and crystallizers.
The population balance equation and crystallizer design;

Key information

Year           2018/19
Credit value   15 (150 study hours)
Delivery       PGT L7, Campus-based
Reading List   View on UCL website
Tutor          Dr Luca Mazzei
Term           Term 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
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**Disclaimer:** All information correct as of December 2018. Please note that aspects of the module may be subject to change. UCL will make best efforts to inform applicants of major changes.