Advanced Materials Processes and Nanotechnology (CENG0030)

Description

Aims:
To give students an understanding of processes involved in the production of novel materials. To provide students with a systematic approach to the selection of material fabrication routes with applications to the biomedical, coating, fine chemical, food, microelectronic and semiconductor industries.

Learning Outcomes:
On completion of this course students are expected to:

- be aware of novel materials and recently developed material processes;
- understand essential concepts in materials science at multiple scales, from the molecules to manufacturing;
- be able to apply fundamental chemical engineering principles (such as transport phenomena, chemical kinetics, thermodynamics) in the design and operation of materials processes involving nanofabrication, templating, self-assembly

Synopsis:
To introduce the concepts of:

- Processes in the electronics industry:
  1. epitaxial & polycrystalline silicon production
  2. silicon doping
  3. microlithography
  4. chemical vapour deposition
  5. physical vapour deposition.

Soft matter fundamentals & applications: Lipids, proteins, colloids, polymers, emulsions, self-assembly, thin-film processing, templating.

Key information

Year: 2019/20
Credit value: 15 (150 study hours)
Delivery: PGT L7, Campus-based
Reading List: View on UCL website
Tutor: Dr Michail Stamatakis
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

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.
Chemical Engineering

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