



Loughborough
University

Department of Chemical Engineering

School of Aeronautical, Automotive,
Chemical and Materials Engineering

Brahim Benyahia

PG Programme Director

Accolades



Top 15
FOR CHEMICAL
ENGINEERING

THE GUARDIAN UNIVERSITY
GUIDE 2021



3rd UK
REF 2014

Accreditations

Advanced Chemical Engineering with IT and Management MSc is accredited by leading professional institutions, including the IChemE

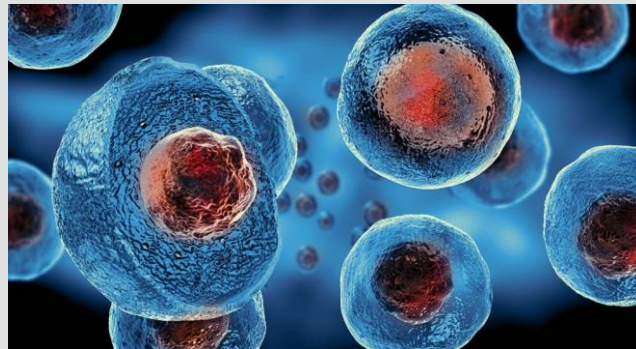
Our new Advanced Chemical Engineering MSc was designed in line with the accreditation criteria of the IChemE



Research areas

Tackling global challenges expected over the next 50 years including:

Energy and Environment	Healthcare	Advanced Manufacturing
<ul style="list-style-type: none">• Low carbon technologies and carbon capture• Energy storage and fuel cells• Energy and chemicals from waste• Water purification• Energy and Environmental Engineering	<ul style="list-style-type: none">• Regenerative medicine• Anti-microbial Resistance• Drug delivery• Particle Technology	<ul style="list-style-type: none">• Plant-wide control and optimisation• Artificial Intelligence• Pharmaceutical and Bioengineering• Crystallisation, Encapsulation and Membrane technologies• Drying, Microfluidics



Research projects

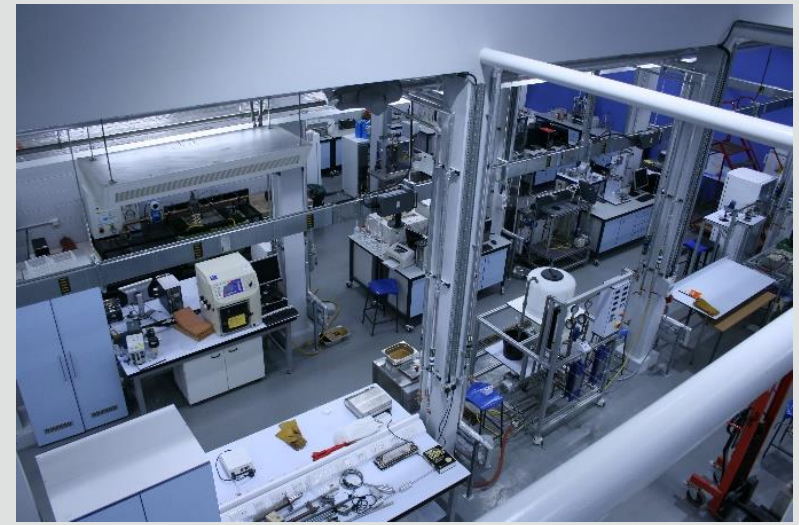
- CMAC HUB - EPSRC
- ARTICULAR: ARtificial inTelligence for Integrated ICT-enabled pharmaceUtical mAnufactuRing - EPSRC
- RDC2MT: Research, Demonstration and Commercialisation of DC Microgrid Technologies - European Commission Horizon 2020
- Development of next generation fit-for-purpose high performance low cost alkaline direct fuel cells - The Royal Society

Our academics

- Research intensive community of around 30 academics and 45 researchers and doctoral students
- Contributed to the development of cutting-edge innovative solutions to real world problems
- World-leading research publications
- Strong connection with industry and other stakeholders

Facilities

- “S Building” redevelopment (2019) - £25 million
- STEMLab (2017) - £17 million
- West Park Teaching Hub
- Pilot plant
- Control room and 3D Virtual reality suite (Igloo)
- Tissue Cell Culture



Programme introduction

- Advanced Chemical Engineering
- Advanced Chemical Engineering with Information Technology and Management

Programme structure and assessment

Advanced Chemical Engineering

Module	Assessment
Research Methods	Report/oral
Modelling of Chemical Engineering Systems	Report/oral
Advanced Process Design and Optimisation	Reports
Chemical Product Design	Report/exam
MSc Project	Literature review/reports/oral
Advanced Engineering Separations	Report
Clean Energy, Materials and Sustainability	Exam
Process Intensification	Reports
Advanced Biochemical Engineering	Report/exam
Colloidal Science and Engineering	Exam
Drug Delivery and Targeting	Report/exam
Global Logistics and Supply Chain Management	Report/exam

Programme structure and assessment

Advanced Chemical Engineering with Information Technology and Management

Module	Assessment
Research Methods	Report/oral
Modelling of Chemical Engineering Systems	Report/oral
Advanced Process Design and Optimisation	Reports
Global Logistics and Supply Chain Management	Report/exam
Strategic Management for Construction and Engineering	Report/oral/exam
MSc Project	Literature review/reports/oral
Advanced Engineering Separations	Report
Process Systems Engineering & Applied IT Practice	Programming
Chemical Product Design	Report/exam
Clean Energy, Materials and Sustainability	Exam
Downstream processing	Exam
Mixing of Fluids and Particles	Review/exam
Colloidal Science and Engineering	Exam

Student projects and competitions

- Low Carbon Processes, Carbon capture, Fuel cells, LCA
- Synthesis and Characterisation of Novel Particulate Materials and Fibers
- Design and Optimisation of Separation and Purification Technologies
- Encapsulation and Drug Delivery
- Phage Therapy
- Modelling and Simulation
- Design and Construction of New Processes
- 3D printing
- Water Treatment
- Catalytic Reactions

Industry partnerships and collaborations

Our strong research community has many close links with industrial partners including

- E.ON
- Exxon
- PepsiCo
- GlaxoSmithKline
- Unilever
- Nestle
- Pfizer
- Astra Zeneca
- Perceptive Engineering

ExxonMobil

e.on



PEPSICO

Career prospects

- Industry (Process Engineers, R&D, Consult etc.)
- PhD (Loughborough University, USA, ...)

Our graduates

Notable companies hosting our postgraduate students over the past three years include:

- Affinity Water – Graduate Engineer
- Apetito UK – Graduate Project Engineer
- Deutsche Bank – Junior Consultant
- ICL – Researcher
- Avanade – Analyst, Business and Technology Integration
- Siemens
- IXM (Louis Dreyfus Company Metals)



Deutsche Bank



SIEMENS



Our graduates

“I would recommend this course to those who find themselves in a variety of situations requiring **business, management and chemical engineering skills**, as well as specialist skills.

The Project Module allowed me to explore a more specialist area of interest – **nano-scale effects transferred to macro-scale improvements**, which is an area I find fascinating”


Keith Schou

MSc Advanced Chemical Engineering with IT and Management



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Thank you for listening

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