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Formulation Engineering EngD

Postgraduate combined research and teaching degree programme in Formulation Engineering EngD:

This is an EPSRC-sponsored doctoral research and training programme. You combine a research project based in industry with a Masters-level training and development programme.

The **EngD Studentships at the School of Chemical Engineering (/schools/chemical-engineering/postgraduate/eng-d/index.aspx)** programme has a 100% employment record and has been recognised by the IChemE as counting towards Chartered Engineer status.

Chemical Engineering is dynamic and evolving. It provides many solutions to problems facing industries in the pharmaceutical, biotechnological, oil, energy and food and drink sectors. It is vital to many issues affecting our quality of life; such as better and more economical processes to reduce the environmental burden, and more delicious and longer lasting food due to the right combination of chemistry, ingredients and processing.

Birmingham is a friendly, self-confident, School which has one of the largest concentrations of chemical engineering expertise in the UK. The School is consistently in the top five chemical engineering schools for research in the country.

It has a first-class reputation in learning, teaching and research, and is highly placed in both ***The Guardian*** and ***The Times*** league tables. The School was recently awarded the **Queen's Anniversary Prize for Higher Education.**

THE QUEEN'S ANNIVERSARY PRIZES
FOR HIGHER AND FURTHER EDUCATION
2011

Study here and find out why the University of Birmingham has been awarded The Times and The Sunday Times University of the Year 2013-14 (http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx)

Course fact file
Type of Course: Combined research and taught
Study Options: Full time
Duration: 4 years full-time
Start date: September

Related courses

Postgraduate degree courses - School of Chemical Engineering (/schools/chemical-engineering/postgraduate/index.aspx)

Contact

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School of Chemical Engineering (/schools/chemical-engineering/index.aspx)

Details

This is an EPSRC-sponsored doctoral research and training programme. You combine a research project based in industry with a Masters-level training and development programme. The programme has been recognised by the IChemE as counting towards Chartered Engineer status.

The training element comprises modules in:

- Fundamental Science

- Formulation Methods
- Teambuilding
- Business Skills
- Research Skills

There is a choice of over 35 different modules – mostly at Birmingham – but you can also select specialised modules at the Universities of Newcastle, Liverpool, Surrey and Delft.

Companies participating in the scheme are involved in modern process engineering and the formulation of multiphase structured materials (foods, bioproducts, pharmaceuticals, agrochemicals and fine minerals). They range from blue chip multinationals such as Unilever, Rolls Royce, Cargill, Johnson Matthey, Imerys and Procter & Gamble to SMEs such as Green Biodiesel, Tornex and Mast Carbon,

Careers

The programme has a 100 % employment record. A third of the Research Engineers have been recruited by their sponsors, whilst several Research Engineers now work for companies that did not sponsor their project but support the scheme. But more importantly over 70% are still employed in the field of Formulation Engineering.

Related links

- **Engineering Doctorate (EngD) Studentships at the School of Chemical Engineering (/schools/chemical-engineering/postgraduate/eng-d/index.aspx)**
- **EngD in Formulation Engineering frequently asked questions (/schools/chemical-engineering/postgraduate/eng-d/engd-faq.aspx)**
- **Vacancies / available projects - Engineering Doctorate (EngD) in Formulation Engineering (/schools/chemical-engineering/postgraduate/eng-d/available-projects.aspx)**
- **The Centre for Formulation Engineering (/research/activity/chemical-engineering/index.aspx)**
- **Postgraduate degree courses - School of Chemical Engineering (/schools/chemical-engineering/postgraduate/index.aspx)**

Modules

All Modules are held at Birmingham unless otherwise stated.

The number in brackets is the number of credits; 120 taught credits must be taken during the 4–year programme.

Foundation Modules

- Process engineering fundamentals [*1] (10)
- Bioscience for graduates from other scientific disciplines [*2] (10)

[*1] May not be taken by someone with a chemical engineering or related degree.
[*2] May not be taken by someone with a bioscience or related degree.

Fundamental Modules

- Modern genome-based bioscience (10)
- Measurement techniques (10)
- Colloids and Rheology (20)
- Supplementary Colloids and Rheology* (10)
- Molecular delivery (10)
- Supplementary Molecular Delivery* (10)
- Mathematical modelling of time-dependent processes (10)
- Developing food structure through thermal processing (10)
- Hygienic food processing (10)
- Food flavour (10)
- Manufacturing principles in pharmaceutical production (10)
- From bench to market: the development of pharmaceutical drug products (10)
- Design and development of drug delivery systems (10)
- Particle technology (10)
- AF4 - Food Structure Change through Physical Processing: Low Water Content (Nottingham)
- UCL1 - Biological Product Formation and Delivery (UCL)
- SU1 - Clean Technology and Sustainability (Surrey)

* the supplementary modules can only be taken by arrangement with the course director.

Management and Marketing Skills Modules

- Effective project management (10)
- Business methods and industrial economics (10)
- Marketing and quality management (10)

Fees and funding

Tuition fees for home/EU students (2015/2016)

Research programmes (including Masters by research) **£4,090***
*Research fees are yet to be confirmed by Research Councils UK, and may change.
Part-time programmes
Most part-time programmes run for two years and their fees are one half of the standard full-time programme fees.

Tuition fees for international students (2015/2016)

International student tuition fees are set at **£17,365** .
For further information please view the **fees for international students (http://www.birmingham.ac.uk/international/students/finance/fees.aspx)** page.

Part-time programmes
UK student visa regulations mean that students classed as overseas for fees purposes may normally only register on a full-time basis.

Standard fees (/postgraduate/pgt-fees/fees.aspx) apply
Learn more about **fees and funding (/postgraduate/pgt-fees/index.aspx)**

Scholarships and studentships
This is an EPSRC-sponsored programme. Other sources of funding include the BBSRC, the Knowledge Transfer Partnership (KTP), the European Union and industrial funding for UK and EU students. International students can often gain funding through overseas research scholarships, Commonwealth scholarships or their home government.

For further information contact the School directly or email **sfo@contacts.bham.ac.uk (mailto:sfo@contacts.bham.ac.uk)**

Entry requirements

An upper second-class Honours degree or equivalent in Chemical Engineering, Biological or Physical Sciences, or Mathematics

Learn more about **entry requirements (/postgraduate/requirements-pgt/index.aspx)** .

International entry requirements
We accept a range of qualifications from different countries – learn more about **international entry requirements (/postgraduate/requirements-pgt/international/index.aspx)**

Standard English language requirements (/postgraduate/requirements-pgt/international/index.aspx) apply

How to apply

Learn more about **applying (/postgraduate/courses/apply-pg/index.aspx)**

Apply now (https://pga.bham.ac.uk/lpages/EPS037.htm)

When clicking on the Apply Now button you will be directed to an application specifically designed for the programme you wish to apply for where you will create an account with the University application system and submit your application and supporting documents online. Further information regarding how to apply online can be found on the **How to apply pages (http://www.birmingham.ac.uk/students/courses/postgraduate/apply-pg/index.aspx)**

Apply now (https://pga.bham.ac.uk/lpages/EPS037.htm)

Related links

Postgraduate degree courses - School of Chemical Engineering (/schools/chemical-engineering/postgraduate/index.aspx)

Engineering Doctorate (EngD) Studentships at the School of Chemical Engineering (/schools/chemical-engineering/postgraduate/eng-d/index.aspx)

Vacancies / available projects - Engineering Doctorate (EngD) in Formulation Engineering - School of Chemical Engineering (/schools/chemical-engineering/postgraduate/eng-d/available-projects.aspx)

Learning and teaching

This is an EPSRC-sponsored doctoral research and training programme. You combine a research project based in industry with a Masters-level training and development programme.

The Engineering Doctorate in Formulation Engineeringwas established in 2001 with a £ 4.5 million grant from the EPSRC and to date has recruited 79 students (65 EngD students or Research Engineers and 14 MRes students).

In September 2009 the Centre was re-funded with a second EPSRC grant of £ 5.5 million to fund an Industrial Doctorate Centre with a further 50 studentships.

The current level of direct industrial support is over £2.5 million with in-kind industrial contributions of approximately £40,000 p.a. per student. Since Sept 2009 seven new Eng.D. projects have started. The scheme currently has 37 registered Research Engineers and 10 one year M.Res. students (three of whom are supporting themselves)

Company support

Twenty-three different companies have sponsored projects to date ranging from blue chip multinationals such as Unilever, Rolls Royce, Cargill, Johnson Matthey, Imerys and Procter & Gamble to SMEs such as Green Biodiesel, Tornex and Mast Carbon; see Table 1 for a breakdown of companies involved.

The scheme is now pushing into Europe with projects based in Unilever in the Netherlands and BASF in Germany. Additionally, we are currently in discussions with many other companies to create new projects, in particular Akzo Nobel, Syngenta, Nestle, Pepsico, Kraft and Tarmac.

Related research

- **The Centre for Formulation Engineering (/research/activity/chemical-engineering/index.aspx)**

Related staff

Dr Richard Greenwood (/staff/profiles/chemical-engineering/greenwood-richard.aspx)

Employability

University Careers Network

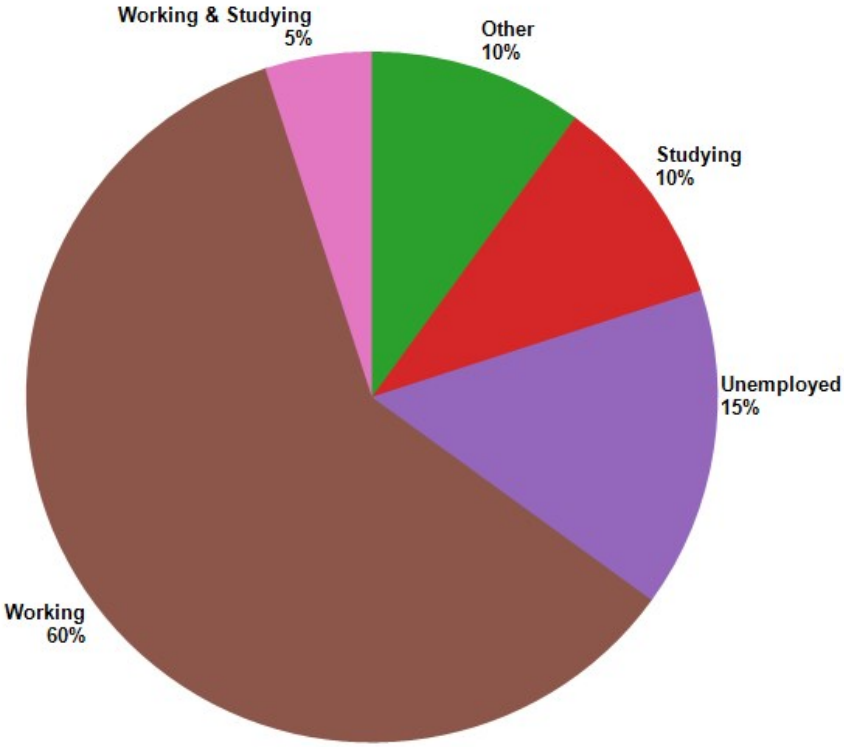
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive work experience opportunities to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge.

If you make the most of the **wide range of services (https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx)** you will be able to develop your career from the moment you arrive.

Destinations of Leavers from Higher Education (DLHE) 2011/12 (postgraduate taught graduates)

The DLHE survey is conducted 6 months after graduation.



Examples of employers:

- BP
- British Gypsum
- Citi
- Coca-Cola
- Foster Wheeler Energy
- Jacobs Engineering
- Johnson Matthey
- KBR
- Pepsico
- RBC Capital Markets

Examples of occupations:

- Chemical Engineer
- Development Engineer
- Finance Analyst
- Market Analyst
- Performance Engineer
- Process Engineer
- Process Development Technologist
- Process Support Engineer
- Team Leader
- Test and Validation Engineer

Further study - examples of courses:

- MRes Chemical Engineering Science
- MSc Advanced Chemical Engineering
- MSc Biochemical Engineering
- MSc Chemical Engineering
- PhD Chemical Engineering
- PhD Formulation Engineering
- PhD Regenerative Medicine
- PGCE Mathematics

Visit the **Careers section of the University website (https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx)** for further information.

Professional accreditation

The EngD Studentships at the School of Chemical Engineering has been recognised by the IChemE as counting towards Chartered Engineer status.

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