

Hydrogen, Fuel Cells and their Applications PhD with Integrated Study

Postgraduate combined research and teaching degree programme Hydrogen, Fuel Cells and their Applications PhD with Integrated Study:

The aim of this programme is to produce hydrogen and fuel cell scientists, engineers and economists who are equipped to play leading roles in a professional capacity in both industry and academia, and who have developed the technical, intellectual and transferable skills needed to underpin their education and continuing professional development.

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**.



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

Study Options: Full time

Duration: 4 years full-time

Start date: September

Related courses

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

[Hydrogen, Fuel Cells and their Applications MRes \(/postgraduate/courses/combined/chemical-engineering/hydrogen-fuel-cells-mres.aspx\)](/postgraduate/courses/combined/chemical-engineering/hydrogen-fuel-cells-mres.aspx)

Contact

The Centre for Hydrogen and Fuel Cell Research

Email: hfc@contacts.bham.ac.uk (mailto:hfc@contacts.bham.ac.uk)

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

Details

The aim of this programme is to produce hydrogen and fuel cell scientists, engineers and economists who are equipped to play leading roles in a professional capacity in both industry and academia, and who have developed the technical, intellectual and transferable skills needed to underpin their education and continuing professional development.

PhD graduates will have a systematic knowledge and understanding of hydrogen, fuel cells and their applications, including developments and problems at the forefront of the discipline. They will be able to evaluate current research critically, and be original in the application of their knowledge, proposing new hypotheses as appropriate.

Related links

- [The \(/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\) Centre for Hydrogen and Fuel Cell research \(/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\)](/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx)
- [Hydrogen, Fuel Cells and their Applications MRes \(/postgraduate/courses/combined/chemical-engineering/hydrogen-fuel-cells-mres.aspx\)](/postgraduate/courses/combined/chemical-engineering/hydrogen-fuel-cells-mres.aspx)
- [Postgraduate degree courses - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/index.aspx\)](/schools/chemical-engineering/postgraduate/index.aspx)

Fees and funding

[Standard fees \(/postgraduate/dr-fees/tuition.aspx\)](/postgraduate/dr-fees/tuition.aspx) apply, [contact the School \(mailto:pg-admis-chem-eng@bham.ac.uk\)](mailto:pg-admis-chem-eng@bham.ac.uk) for further information.

Learn more about [fees and funding \(/postgraduate/dr-fees/index.aspx\)](/postgraduate/dr-fees/index.aspx)

Scholarships and studentships

Scholarships may be available. 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 \(mailto:sfo@contacts.bham.ac.uk\)](mailto:sfo@contacts.bham.ac.uk)

Entry requirements

Applications are open to UK/EU nationals with an upper second-class degree or better in any relevant Engineering disciplines, Mathematics, Chemical/Material/Biological/Physical Sciences or Economics. Existing employees with relevant industrial work experience will also be considered.

Learn more about [entry requirements \(/postgraduate/requirements-pgt/index.aspx\)](/postgraduate/requirements-pgt/index.aspx)

International entry requirements

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

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

How to apply

Learn more about [applying \(/postgraduate/courses/apply-pg/index.aspx\)](/postgraduate/courses/apply-pg/index.aspx)

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 \(https://pga.bham.ac.uk/lpages/EPSo61.htm\)](https://pga.bham.ac.uk/lpages/EPSo61.htm)

[Apply now \(https://pga.bham.ac.uk/lpages/EPSo61.htm\)](https://pga.bham.ac.uk/lpages/EPSo61.htm)

Related links

- [Postgraduate degree courses - School of Chemical Engineering \(/schools/chemical-engineering/postgraduate/index.aspx\)](/schools/chemical-engineering/postgraduate/index.aspx)
- [The Centre for Hydrogen and Fuel Cell Research \(/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\)](/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx)

Related news and events

- [University of Birmingham wins Queen's Anniversary Prize for Higher Education \(/news/latest/2011/11/queens-prize.aspx\)](/news/latest/2011/11/queens-prize.aspx)

Learning and teaching

The programme:

- Lasts for four years
- Has taught modules (120 credits) in the first three years in Science, Engineering, Energy, Teambuilding, Business, Economics and Management
- Provides research in hydrogen energy and fuel cell technologies
- Provides a stipend with University fees paid by EPSRC
- Involves industry

It is based within the [Doctoral Training Centre \(DTC\) in Hydrogen, Fuel Cells and their Application \(/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\)](/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx)s. Led by the University of Birmingham in collaboration with Loughborough University and the University of Nottingham, this is the first centre of its kind in the UK.

Related research

- [The Centre for Hydrogen and Fuel Cell Research \(/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx\)](/research/activity/chemical-engineering/energy-chemical/fuel-cells/index.aspx)
- [The Centre for Formulation Engineering \(/research/activity/chemical-engineering/index.aspx\)](/research/activity/chemical-engineering/index.aspx)

Employability

University Careers Network

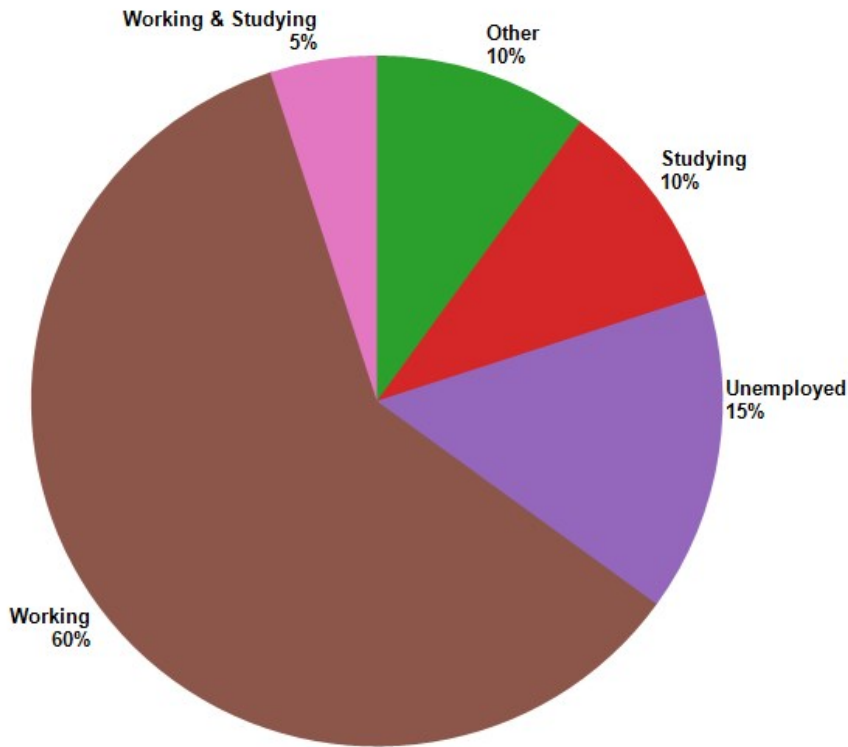
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you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