

College of Engineering  
and Physical Sciences

# What do Birmingham postgraduates do?



## School of Chemical Engineering

*First destinations of postgraduates*

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- Analysis of first employment destinations for the College of Engineering and Physical Sciences
- Employability data for Chemical Engineering postgraduates, 2009–13
- Illustration of the range of occupations undertaken by our postgraduates

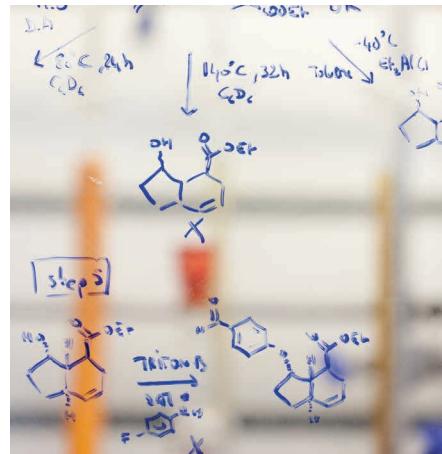
# Foreword

I AM DELIGHTED TO INTRODUCE 'WHAT DO BIRMINGHAM POSTGRADUATES DO?' WHICH LOOKS IN DETAIL AT THE FIRST DESTINATIONS OF OUR CHEMICAL ENGINEERING POSTGRADUATES AND AT EMPLOYMENT PROSPECTS FOR ALL POSTGRADUATES WITHIN THE WIDER COLLEGE OF ENGINEERING AND PHYSICAL SCIENCES.



In addition to providing accessible information on employment destinations, this publication is also designed to give an insight into the kinds of employment sectors and jobs for which a postgraduate degree at Birmingham can prepare you.

Pursuing a postgraduate degree offers you the opportunity to explore your chosen area of interest in depth, as well as developing your knowledge and understanding in a subject area about which you are truly passionate. Beyond the transferable skills that you will take with you into the workplace, your postgraduate



qualification will give you the chance to engage in critical enquiry, to grow as a scholar and even to become an expert in your field.

Here, we show you how your postgraduate qualification can help you make that knowledge and expertise work for you after graduation. For the school that is most relevant to you in the College (Chemical Engineering; Chemistry; Civil Engineering; Computer Science; Electrical, Electronic and Systems Engineering; Mathematics; Mechanical Engineering; Metallurgy and Materials; or Physics and Astronomy) you will see a snapshot of the achievements of our postgraduates six months after graduation.

All data is taken from the results of a 'Destinations of Leavers' survey issued to our postgraduates after this time.

You will be able to see, by school, how many of the postgraduates who replied to this survey successfully entered employment and/or further study within just six months, along with a range of the diverse and exciting career opportunities

that will be open to you after studying for a postgraduate degree in the College of Engineering and Physical Sciences.

Accompanying the data are case studies in which recent postgraduate alumni share their experiences of postgraduate study at Birmingham. Here, our alumni talk about the value inherent in postgraduate study, the knowledge and skills they developed during their degrees and where their qualifications have taken them since graduation.

I hope you find the information presented here useful and our alumni stories inspiring. We very much look forward to welcoming you to our campus soon.

Professor Mark Sterling  
Director of Postgraduates Programmes  
College of Engineering and Physical Sciences



## College of Engineering and Physical Sciences

# Employability

The College of Engineering and Physical Sciences is at the leading edge of modern science and engineering, transforming our understanding of the world to make life easier, healthier and more sustainable.

The College covers a broad range of world-leading research, from developing micro-engines to particle physics research at CERN. With a century of excellence in research and teaching, the College offers exciting initiatives in new fields of study and spearheads activities in strategically important STEM subjects – Science, Technology, Engineering and Mathematics.

The College of Engineering and Physical Sciences plays a significant role in creating new knowledge, training new generations of engineers and scientists, and interfacing with industry.

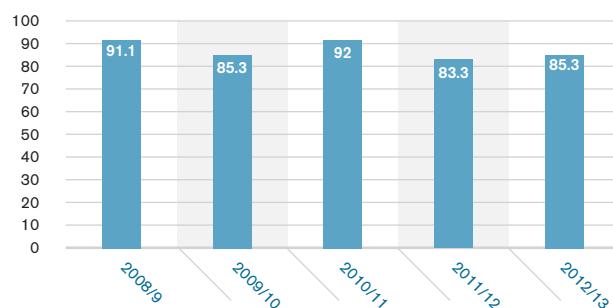
The College consists of the following nine schools:

- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science
- Electronic, Electrical and Systems Engineering
- Mathematics
- Mechanical Engineering
- Metallurgy and Materials
- Physics and Astronomy

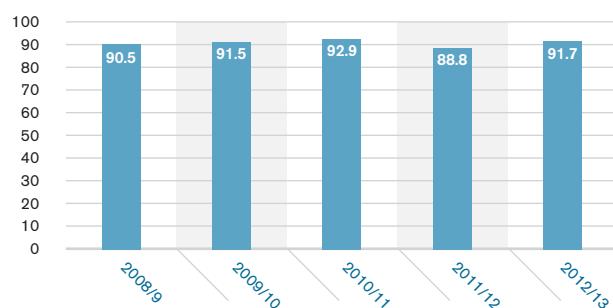
Over the last five years, 90.9% of taught postgraduates and 92.5% of research postgraduates from the College of Engineering and Physical Sciences have been in work and/or further study just six months after graduating.

The two charts to the right show the breakdown of these statistics for each year, for taught postgraduate and research postgraduate respondents.

**Percentage of Engineering and Physical Sciences taught postgraduate respondents in work and/or further study six months after graduation**



**Percentage of Engineering and Physical Sciences research postgraduate respondents in work and/or further study six months after graduation**



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13



'The networking I did during my time at Birmingham and the experience I gained enabled me to secure the position that I have now. I have been working at Cadbury for two years now, mainly on the commercialisation of

products – taking a product from the small-scale development stage and making it on a much larger scale in the factory. This can be anything from making a small change in a recipe to a completely new product. I lead projects from an R&D

perspective right through from the design to the launch of the product.

'Prior to my EngD I had completed a degree in Chemistry and wasn't sure where to go next. The EngD was perfect for me as it enabled me to gain engineering skills and also take part in taught courses. I became particularly interested in the food-related modules, which confirmed my desire to work in the food industry. I spent some time working for Unilever (my sponsor company) in Vlaardingen (Netherlands) from which I gained valuable industrial experience.

'I find the knowledge gained during my EngD has been particularly useful when working alongside engineering colleagues and also whilst running trials in the factory environment. I have been able to show great technical understanding when working on projects, and the general skills gained during my EngD such as organisation, time management and report writing have also been hugely beneficial.'

**Zoe Brown, EngD Engineering Doctorate in Formulation Engineering**

*Since finishing her Engineering Doctorate (EngD) in Formulation Engineering, Zoe has worked in the research and development department at Cadbury (now Kraft) based in Bournville, Birmingham.*

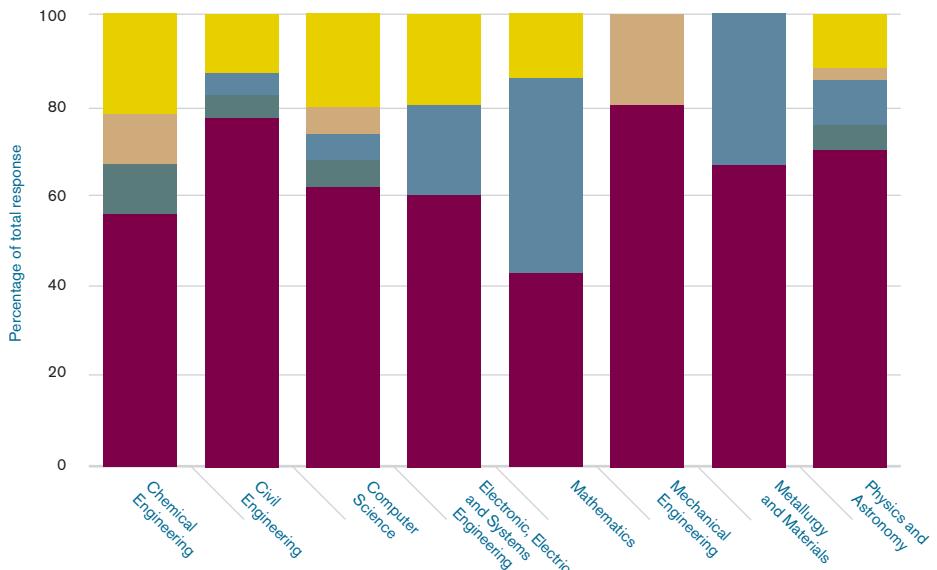
## College of Engineering and Physical Sciences

# Postgraduate destinations

### Taught postgraduate destinations

The chart to the right summarises the destinations of Engineering and Physical Sciences taught postgraduates from the 2012/13 academic year, six months after graduation:

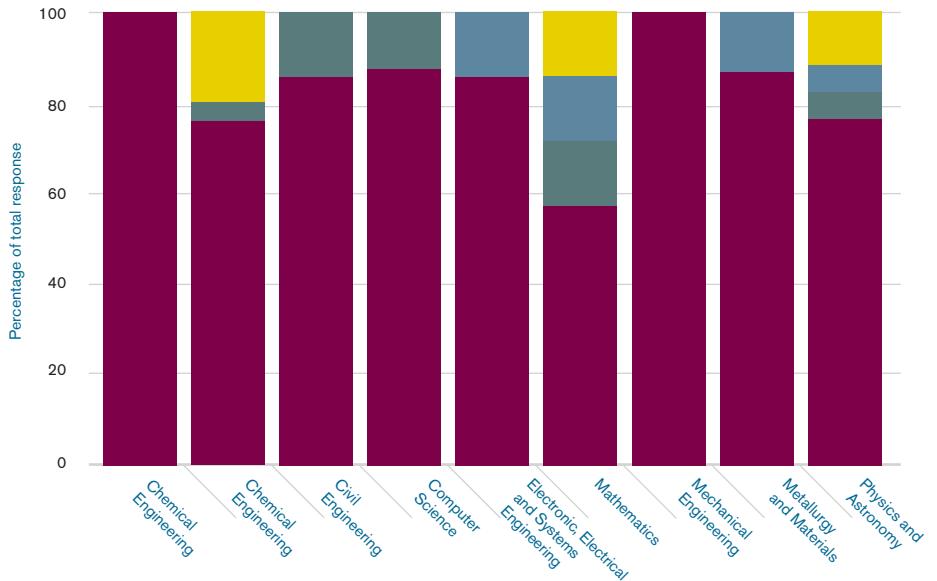
- Working
- Working and studying
- Studying
- Other
- Unemployed



### Research postgraduate destinations

The chart to the right summarises the destinations of Engineering and Physical Sciences research postgraduates from the 2012/13 academic year, six months after graduation:

- Working
- Working and studying
- Studying
- Unemployed



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13



'At Atkins, most of our roles have a minimum requirement of a Masters degree. We value technical knowledge and academic achievement, which we can then build on for the graduate programme. This is why we require most of our graduates to have a Masters.'

**Kate Poade**, Assistant Graduate Recruitment Advisor, Atkins.



# School of Chemical Engineering

## EMPLOYABILITY

Birmingham has one of the largest concentrations of Chemical Engineering expertise in the UK; we also have strong links with key employers.

### Highlights:

Over the past five years:

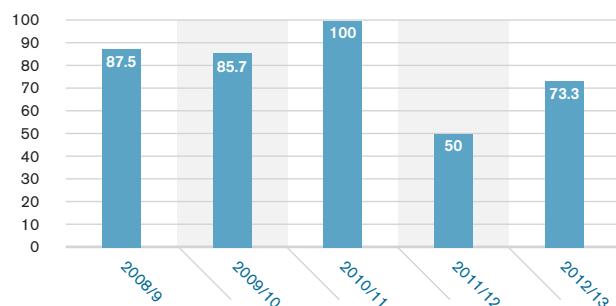
- 79.3% of taught postgraduate respondents were in work or further study six months after graduation
- 95.3% of research postgraduate respondents had successfully found work or further study six months after graduating

Many of Birmingham's Chemical Engineering postgraduates follow a career related to the subject in various sections of the engineering industry. Postgraduate study is therefore increasingly common in this subject area, allowing graduates to specialise after an undergraduate degree.

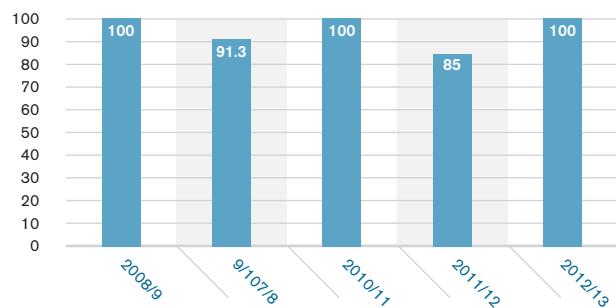
The majority of our postgraduates go on to lucrative careers with chemical engineering companies, mechanical engineering companies, construction companies and contractors, consultancies, oil companies, and local government and government-supported scientific establishments. A number of our research postgraduates forge their own successful careers in academic research and teaching.

The two charts to the right show results from 'Destinations of Leavers' surveys for our Chemical Engineering postgraduates over the past five years.

**Percentage of taught postgraduate respondents in work and/or further study six months after graduation**



**Percentage of research postgraduate respondents in work and/or further study six months after graduation**



SOURCE: *Destinations of Leavers from Higher Education Institutions*, Higher Education Statistics Agency, 2009–13



'The on-the-job commercial experience I gained on the EngD in Formulation Engineering at Birmingham has set me apart from my peers. This was substantiated when I applied to become a Chartered

Engineer a few months after being awarded the EngD. I used a number of examples from the EngD in my application and the Institution of Chemical Engineers (IChemE) judged that the EngD would count as a full four years' worth of experience. I was delighted to be awarded Corporate Membership of the IChemE and Chartered Engineer status within a year of my EngD graduation.

'I have worked on a wide range of projects in the past three years, from spending a month offshore in Cameroon, assessing a floating storage and offloading (FSO) vessel ahead of a major safety study, to designing processes and equipment for major capital projects in the North Sea. In my current role, I am responsible for assessing the feasibility of – and subsequently project managing – projects to boost production from a significant number of fields in the southern North Sea. My current job requires sound commercial knowledge, combined with excellent technical understanding of the project implications, neither of which I would possess had I not completed the EngD.'

'The EngD has been an enabling qualification for me. Having moved to an industry where

the tackling of operational issues is valued over academic research skills, I still consider the EngD and the skills I gained on it to have been key to my success.'

**John Ritchie, EngD Engineering Doctorate in Formulation Engineering**

*Since leaving Birmingham, John has worked for Production Services Network (UK) Ltd in Aberdeen, initially as a Process Engineer, but has recently been contracted to a major oil and gas operator as a Development Engineer.*

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# School of Chemical Engineering

## RANGE OF OCCUPATIONS

**Below is an overview of the kinds of employment sectors, organisations and professions that recent Chemical Engineering postgraduates have entered, based on responses to 'Destinations of Leavers' surveys conducted six months after graduation.**

### Range of employment sectors

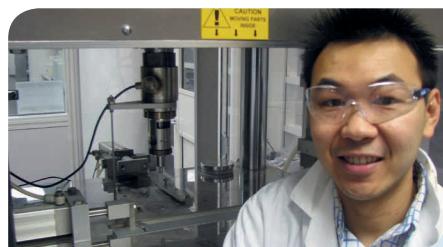
- Engineering and related technical consultancy
- Higher education
- Human health activities
- Legal activities
- Manufacture of beer
- Manufacture of other chemical products
- Manufacture of paints
- Preservation of food
- Regulation of the activities of providing health care, education, cultural services and social services
- Research and experimental development in natural sciences and engineering
- Secondary education

### Range of employers

- AkzoNobel
- BarkerBrettell (Trademark and patent attorneys)
- Food Standards Agency
- Intelligent Energy
- Koch-Glitsch (solutions for chemical, petrochemical, and gas processing industries)
- Lorien Engineering Solutions
- McCain Foods (GB) Ltd
- Molson Coors Brewery
- National Nuclear Laboratory
- Nucleargraduates
- PepsiCo
- Unilever
- University of Birmingham
- Walsall Council
- WSP CEL Ltd (project management, engineering and consultancy)

### Range of occupations

- Assistant Technical Officer
- Biochemical Engineer
- Business and Consumer Support Officer (Environmental Health)
- Commercialisation Technologist
- Environmental Health Officer
- Graduate Process Engineer
- Lecturer
- Quality Coordinator
- Research and Development Project Manager
- Research Engineer
- Research Fellow
- Research Scientist
- Scientific Officer
- Technical Process Engineer
- Trainee Patent Attorney



'My PhD in Chemical Engineering at Birmingham provided a firm platform to gain the complex technical skills required to become a recognised international specialist in my chosen field. The School was highly supportive and encouraged PhD students to present research findings at international conferences. Particularly, the spirit within the School enhanced my research experience – different research groups, academic and support staff were so eager to share knowledge, assist and encourage each other to foster positive energies.

'Apart from the technical intricacy, I was accountable for the success of my PhD, empowered to design my research framework, established collaborations with external research organisations, applied for a research grant and managed a research budget. I was able to strike a 'work-life balance' to embrace my life at Birmingham as an international student, and was actively engaged with the International Office in providing support to fellow students. Shortly before completing my PhD, the postgraduate experience at Birmingham landed me a permanent position with GlaxoSmithKline (GSK), the largest pharmaceutical company in the UK. I started my career within the manufacturing arm introducing newly developed products into the production stream. A year later I was promoted to become a Senior Formulation Scientist in the research and development arm of the company. I was able to polish my

technical expertise and personal skills acquired during my postgraduate study at Birmingham and respond to real business needs. More recently, I expanded my horizon to become a Contract Research Organisation (CRO) Manager – a business representative of GSK, co-ordinating and defining outsourcing strategies for research and development projects.'

**Jin-Thau Chung, PhD Chemical Engineering, graduated 2005**

*Jin-Thau is now Contract Research Organisation (CRO) Manager at GlaxoSmithKline.*

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