

Metallurgy and Materials PhD/MSc by Research

Postgraduate doctoral research degree in Metallurgy and Materials PhD/MSc by Research:

The quality of the research work in the School of Metallurgy and Materials has been confirmed by our performance in successive Research Assessment Exercises.

We are justly proud of this international reputation and are keen to maintain it by encouraging high quality students from materials, physics, chemistry, life sciences or engineering backgrounds to apply to undertake research with us.

[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: Doctoral research

Study Options: Full time, part time

Duration: PhD: 3 years full-time, 6 years part-time; MSc by Research: 1 year full-time, 2 years part-time

Start date: Contact the School directly for further information

Related courses

[Postgraduate programmes - School of Metallurgy and Materials \(/schools/metallurgy-materials/postgraduate-courses/index.aspx\)](/schools/metallurgy-materials/postgraduate-courses/index.aspx)

Contact

Admissions Tutor: Dr Yu Lung Chiu

[Contact us online \(http://bham.hobsons.co.uk/ask.aspx?cid=1223&did=24\)](http://bham.hobsons.co.uk/ask.aspx?cid=1223&did=24) or at +44 (0)121 414 5190.

[School of Metallurgy and Materials \(/schools/metallurgy-materials/index.aspx\)](/schools/metallurgy-materials/index.aspx)

[Follow us on Twitter \(http://twitter.com/eps_unibham\)](http://twitter.com/eps_unibham)

Details

The School of Metallurgy and Materials (including the IRC in Materials Processing) is the largest centre for materials research in the UK. We have more than 20 full-time academic staff in addition to 30 honorary and visiting staff, 30 research fellows and close to 150 postgraduate students.

Our diverse research portfolio ranges from fundamental aspects of materials science to practical high performance engineering applications. Research is funded from a wide range of sources including the UK research councils, the EU and a cross-section of UK and overseas industry. Our research income is around £4 million per annum. Most of our research projects involve active collaboration with industrial partners.

The quality of the research work in Metallurgy and Materials has been confirmed by our performance in successive Research Assessment Exercises. We are justly proud of this international reputation and are keen to maintain it by encouraging high quality students from materials, physics, chemistry, life sciences or engineering backgrounds to apply to undertake research with us.

“The quality of the research work in the Department of Metallurgy and Materials has been confirmed by our outstanding performance in successive Research Assessment Exercises. We are justly proud of this international reputation and are keen to maintain it by encouraging high quality students from materials, physics, chemistry, life sciences or engineering backgrounds to apply to undertake research with us. We are prepared to help in finding financial support, if needed. If you are interested in coming to do research with us, or with the **[Interdisciplinary Research Centre \(IRC\) in Materials Processing \(/research/activity/irc-materials-processing/index.aspx\)](/research/activity/irc-materials-processing/index.aspx)**, write directly to me or to the contacts given on our website. I look forward to hearing from you.

– Professor Paul Bowen, Head, Metallurgy and Materials



Our research activities are centred on the various groups listed below, although there is broad interaction between the groups.

Related links

- **[Postgraduate programmes - School of Metallurgy and Materials \(/schools/metallurgy-materials/postgraduate-courses/index.aspx\)](/schools/metallurgy-materials/postgraduate-courses/index.aspx)**

Why study this course

Facilities

We have first-class workshop facilities and a large suite of networked PCs, housed in a computing laboratory, which supplements the extensive computer facilities in individual research groups. Workstations and word processing facilities are widely available for our students.

We have an excellent range of research facilities for materials preparation and surface engineering. There are polymer-processing laboratories and the IRC possesses a large plasma-melting furnace, HIP equipment, direct laser fabrication, a shell laboratory and wax-dewaxing facility for investment casting, a laboratory for the hydrothermal synthesis and colloidal processing of ceramics, and the £8 million Net Shape Manufacturing Laboratory.

The physical techniques laboratory contains a wide range of equipment. The world-class mechanical testing laboratories provide facilities for fracture and fatigue studies and are accredited by Rolls-Royce for the acquisition and interpretation of data. Our creep-testing laboratory provides specialised mechanical testing for polymers and foams, and X-ray diffraction facilities provide essential back-up to crystal growth and alloy preparation. Microstructural assessment is provided for with optical microscopes and quantitative image analysis, and an extensive range of electron microscopes. The new hydrogen technology laboratory contains equipment to characterise the properties of materials in hydrogen, and we have good facilities for the fabrication and characterisation of optical fibre sensors.

Fees and funding

Standard fees (</postgraduate/dr-fees/tuition.aspx>) apply.

Learn more about **fees and funding** (</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.

- IMPaCT PhD studentships (pdf 360 KB)

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

Entry requirements

The PhD is open to candidates with an upper second-class Honours degree or its equivalent in Materials Science, Chemistry, Physics or Engineering. The MSc by Research is open to candidates with a good Honours degree or its equivalent.

Learn more about **entry requirements** (</postgraduate/requirements-dr/step1.aspx>).

International students

We accept a range of qualifications from different countries – learn more about **international entry requirements** (</postgraduate/requirements-dr/step1.aspx>).

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

How to apply

Learn more about **applying** (</postgraduate/requirements-dr/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/EPSo24.htm>)

Apply now (<https://pga.bham.ac.uk/lpages/EPSo24.htm>)

Related links

[Postgraduate programmes - School of Metallurgy and Materials](/schools/metallurgy-materials/postgraduate-courses/index.aspx) (</schools/metallurgy-materials/postgraduate-courses/index.aspx>)

Related news and events

[University of Birmingham and Rolls-Royce announce £60m High Temperature Research Centre](/news/latest/2012/10/8-Oct-University-of-Birmingham-and-Rolls-Royce-announce-60m-High-Temperature-Research-Centre.aspx) (</news/latest/2012/10/8-Oct-University-of-Birmingham-and-Rolls-Royce-announce-60m-High-Temperature-Research-Centre.aspx>)

Research interests of staff

Research groups include:

- Alloy and process development
- Alloy chemistry
- Casting, solidification and welding
- Ceramics
- Corrosion and oxidation
- Fatigue and fracture
- Ferrous metallurgy
- High temperature superconductivity
- Magnetic materials
- Materials processing
- Microstructural studies
- Modelling of manufacturing and materials
- Polymers
- Sports materials

- Surface engineering and heat treatment

Below is a video interview with one of our PhD students that illustrates the kind of research you can get involved with on our PhD/MSc programmes:



Related research

- [Interdisciplinary Research Centre in Materials Processing - IRC \(/research/activity/irc-materials-processing/index.aspx\)](/research/activity/irc-materials-processing/index.aspx)
- [Metallurgy and Materials research \(/research/activity/metallurgy-materials/index.aspx\)](/research/activity/metallurgy-materials/index.aspx)

Employability

University Careers Network

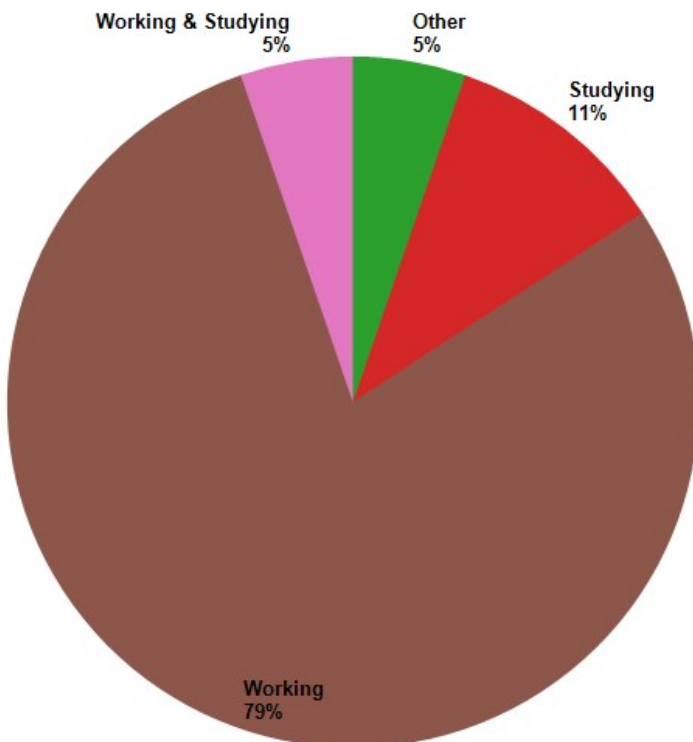
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you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

- Burhill Group Limited
- BAE Systems
- Softcat
- Royal Air Force
- Decathlon UK
- Ministry of Defence
- Corona Technology Limited
- BP
- KBR

Examples of occupations

- Applications Engineer
- Engineering Officer Cadet
- Mechanical Engineering
- Advanced Manufacturing Engineer
- Junior Accounts Manager
- Graduate Consultant Engineer
- Teaching Assistant
- School Sports Partnerships Coach
- Product Development Engineer

Further study - examples of courses

- MSc Advanced Materials
- MSc Material Science
- MSc Diagnostic Radiography

- MSc Energy Engineering
- MRes Science and Engineering

- [PhD Metallurgy and Materials](#)

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

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