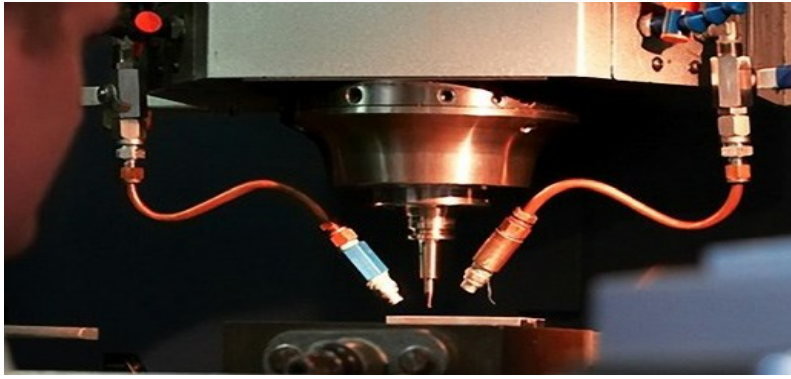


Mechanical Engineering PhD/MSc by Research



Postgraduate doctoral research degree in Mechanical Engineering PhD/MSc by Research:

From nanotechnology to vehicle and aero-technology, our research scales the full range of engineering disciplines to support manufacturing industry worldwide.

Research degrees in Mechanical Engineering are offered through three research specialist centres: Biomedical and Microengineering; the Advanced Manufacturing Centre; and Vehicle Technology.

[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; MSc by Research: 1 year full-time (part-time equivalents also available)

Start date: Contact the School directly for further information

Related courses

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

Contact

Contact us online (<http://bham.hobsons.co.uk/ask.aspx?cid=1223&did=24>) or:

Biomedical and microengineering research

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Advanced Manufacturing Centre

Professor Stefan Dimov

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Vehicle technology research

Professor Hongming Xu

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[School of Mechanical Engineering \(/schools/mechanical-engineering/index.aspx\)](/schools/mechanical-engineering/index.aspx)

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

Details

Research degrees in Mechanical Engineering are offered through three research specialist centres:

- **[Bio-medical and micro engineering \(/research/activity/mechanical-engineering/bio-micro/index.aspx\)](/research/activity/mechanical-engineering/bio-micro/index.aspx)**
- **[Advanced Manufacturing Centre \(/research/activity/mechanical-engineering/advanced-manufacturing/index.aspx\)](/research/activity/mechanical-engineering/advanced-manufacturing/index.aspx)**
- **[Vehicle technology \(/research/activity/mechanical-engineering/vehicle-technology/index.aspx\)](/research/activity/mechanical-engineering/vehicle-technology/index.aspx)**

View the **[programme details tab \(#optTabID\)](#)** for further information.

Related links

- [Postgraduate degree courses -School of Mechanical Engineering \(/schools/mechanical-engineering/postgraduate/index.aspx\)](#)
- [Mechanical Engineering research \(/schools/mechanical-engineering/research/index.aspx\)](#)

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

Currently we provide support for five or six UK/EU research students a year from a variety of sources, together with part-funding for two to three highly qualified overseas research students. Other sources of funding are the Engineering and Physical Sciences Research Council (EPSRC), the Biotechnology and Biological Sciences Research Council (BBSRC), the Knowledge Transfer Partnership (KTP), the European Union and industrial funding for UK and EU students. For more information contact the School directly or email sfo@contacts.bham.ac.uk (<mailto:sfo@contacts.bham.ac.uk>)

International students can often gain funding through overseas research scholarships, Commonwealth scholarships or their home government.

Entry requirements

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 \(https://pga.bham.ac.uk/lpages/EPS013.htm\)](https://pga.bham.ac.uk/lpages/EPS013.htm)

[Apply now \(https://pga.bham.ac.uk/lpages/EPS013.htm\)](https://pga.bham.ac.uk/lpages/EPS013.htm)

Related links

[Postgraduate degree courses -School of Mechanical Engineering \(/schools/mechanical-engineering/postgraduate/index.aspx\)](#)

Research interests of staff

Mechanical Engineering research is organised into three focused research centres:

- [Bio-medical and Micro Engineering \(/research/activity/mechanical-engineering/bio-micro/bio-medical/index.aspx\)](#)
- [Advanced Manufacturing Centre \(/research/activity/mechanical-engineering/advanced-manufacturing/index.aspx\)](#)
- [Vehicle Technology \(/research/activity/mechanical-engineering/vehicle-technology/index.aspx\)](#)

We apply engineering science to solving problems that are important to industry and society, and pride ourselves on our active role in passing this expertise to future generations of mechanical engineers. Our teaching and research cover new technologies, such as micro-engineering, novel combustion and fuel technologies, conventional mechanical and manufacturing engineering, and new applications such as medical implants. Our research is often interdisciplinary, involving not only other areas of engineering but also biological sciences, chemistry, medicine, physics and psychology.

In the 2008 UK Research Assessment Exercise, 70% of our research was judged to be world leading or internationally excellent.

Facilities

We occupy 7,000 square metres in a recently-refurbished building shared with Civil Engineering. Our new Design Centre houses over 80 networked computers for computer-aided engineering including computer-aided design (CAD), computer-aided manufacture (CAM), finite-element analysis (FEA), computational fluid dynamics (CFD) and systems modelling (engine systems; 1-d gas dynamic). There are also facilities for group design work, two new RP3D printing machines complementing the existing Denford table top four axis Compact 1000 Pro CNC router and milling machines.

Our £2.5 million machining research equipment is housed in a single purpose-built laboratory, enabling us to complete research contracts with industrial partners involving aeroengine manufacture, new materials evaluation (including titaniums and carbon fibre composites) and micro-sensor development for a whole range of applications. Our new engines laboratories are being used to research engines for hybrid vehicle power-trains in highly realistic transient speed/load conditions, including the effects of very cold start and combustion air (from -20°C) on emissions and performance.

We also have a biomedical engineering laboratory within a Class 2 containment area, equipped with the latest electro-mechanical testing machines for evaluating surgical implants, enabling us to work with surgeons and with the healthcare industry. Our clean room houses nanotechnology equipment used to make micro-electro-mechanical systems (MEMS).

Related research

- [Research - School of Mechanical Engineering \(/research/activity/mechanical-engineering/index.aspx\)](#)

Related staff

[Professor Kyle Jiang \(/staff/profiles/mechanical/jiang-kyle.aspx\)](/staff/profiles/mechanical/jiang-kyle.aspx)

[Professor Stefan Dimov \(/staff/profiles/mechanical/dimov-stefan.aspx\)](/staff/profiles/mechanical/dimov-stefan.aspx)

[Professor Hongming Xu \(/staff/profiles/mechanical/xu-hongming.aspx\)](/staff/profiles/mechanical/xu-hongming.aspx)

Employability

University Careers Network

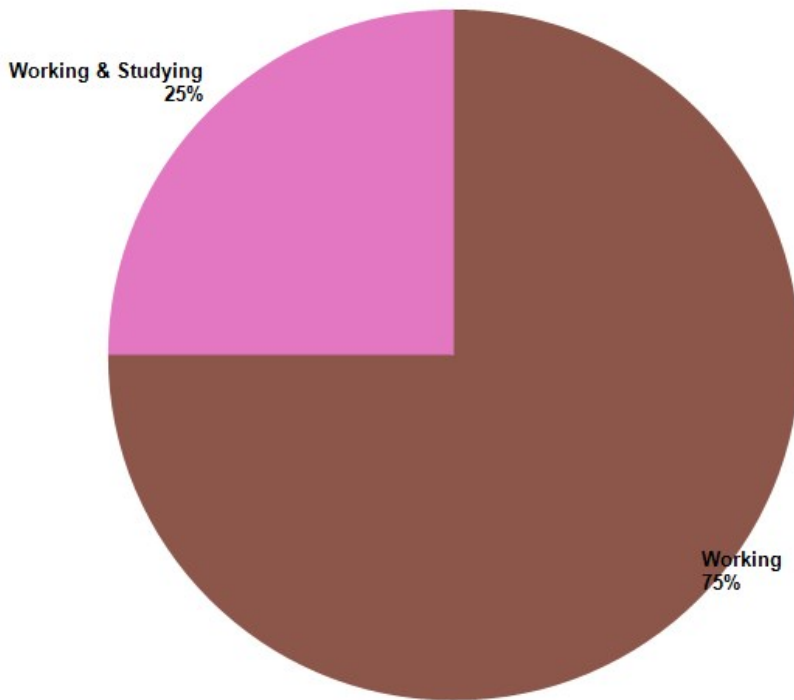
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you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

- Acturis
- Aston Martin
- BP
- BAE Systems
- Demag Cranes
- Ministry of Defence
- PA Consulting
- Penso
- PricewaterhouseCoopers
- Royal Air Force

Examples of occupations

- Aerospace Engineer
- Auditor
- Calibration Engineer
- Design Engineer
- Engineer
- Engineering Officer Cadet
- Financial Analyst
- IT Consultant
- Mechanical Engineer
- Project Engineer

Further study - examples of courses

- MSc Automotive Engineering

- MSc Computer Science
- MSc Environment and Sustainable Technologies
- MSc Industrial Product Design
- MSc Physics
- PGCE Mathematics
- PhD Aerospace Engineering
- PhD Biomedical Engineering
- PhD Manufacturing and Mechanical Engineering

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

