



Durham  
University

# Chemistry

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# Thriving,

vibrant, research-led department, with an international reputation for cutting-edge science.

## Chemistry

Chemistry is a thriving, vibrant research-led department with an international reputation for its cutting-edge science. The Department is extremely well-equipped, with modern research laboratories, extensive state-of-the-art instrumentation, and world-class facilities. Very enthusiastic and dedicated staff and students underpin its extremely strong research activity. Durham Chemistry was ranked 3rd overall in *The Times Good University Guide 2012* and was awarded the highest graduate prospects score of any UK department.

### ABOUT THE DEPARTMENT

On the basis of the breadth and very high quality of its science, the majority of the Chemistry Department's research has been rated as world-leading or internationally excellent in the 2008 Research Assessment Exercise, with its teaching being rated as 'excellent', the United Kingdom's highest possible grade.

There are 38 tenured members of academic staff leading research groups that comprise around 100 PhD students and about 50 post-doctoral researchers working on projects spanning organic, physical, inorganic, bioactive and computational chemistry, through to catalysis, sustainable chemical processes, materials, and nanoscience.

The Department has very close research links with many industrial partners and other universities in the UK and abroad, with leading scientists from around the world visiting and collaborating with its staff.

The success of its graduate students is clear, with many of the Department's graduates holding academic, industrial, and commercial positions throughout the world.

The Department is an exciting, dynamic, and friendly place to study with a lively student Chemical Society that arranges lectures, external visits, and social events. Chemistry is located on the University's Science Site, approximately a 10 minute walk from the City Centre.





#### RESEARCH DEGREES

- PhD
- MSc.

#### MAIN AREAS OF RESEARCH

The world-leading research in the Department encompasses all of the traditional areas of chemistry and other contemporary topics, and includes both fundamental and applied work. Many of the Department's projects are multidisciplinary in nature, with researchers collaborating with academics and industrialists not only in Durham and the UK, but also worldwide.

The Department's research can be divided into the following broad areas:

- Biological chemistry
- Materials: synthesis and structure
- Optical and molecular electronics
- Soft matter, surfaces and interfaces
- Sustainable chemistry and catalysis
- Theory and dynamics.

#### Current research topics within the Department include:

- Synthetic organic and bio-organic chemistry
- Preparative main group and transition metal chemistry

- Organometallic chemistry
- Structural organic and inorganic chemistry
- Cluster chemistry
- New synthetic and asymmetric organic methodology
- Catalysis and high pressure chemistry
- Development and application of parallel and high throughput syntheses
- Innovative fluorination techniques and methodology
- Macrocyclic and heterocyclic chemistry
- The chemistry and physics of electronic and photonic materials
- Solid-state chemistry
- X-Ray crystallography
- Functional materials
- Chemistry of surfaces and interfaces
- Fullerene and carbon nanotube chemistry
- Flow cytometry
- The chemistry of proteins and lipids
- Metals in medicine and medical diagnostics
- Magnetochemistry
- Computational chemistry and theory.

Further details of all the research being undertaken by the staff in the Department of Chemistry can be found on our website at [www.durham.ac.uk/chemistry/research](http://www.durham.ac.uk/chemistry/research) and in individual staff web profiles at [www.durham.ac.uk/chemistry/staff](http://www.durham.ac.uk/chemistry/staff)

Work undertaken in the Department leads to research papers published in internationally-leading scientific journals, research monographs, and to patents. Recognition of the quality of the Department's science is reflected by the fact that its researchers are in great demand, regularly giving research seminars at other universities and research institutes, and at chemistry-related conferences throughout the world.

The Department is proud of its publication record with more than 180 research papers being published every year. Typically around 30 students graduate each year with PhDs; their theses cover the full range of the Department's research portfolio.

#### POSTGRADUATE RESEARCH FACILITIES AND ACTIVITIES

The Chemistry Department has a comprehensive graduate programme that includes:

- Weekly research seminars
- Integrated graduate training courses and skills portfolio running through the three year PhD study period
- First and second year progress reports
- Second year student poster competition and prizes
- Final year research student presentations and prizes
- Research group activities (problem sessions, seminars)
- Lecture courses on safety and specialised research techniques
- Undergraduate teaching
- Public chemistry awareness schemes
- Active participation at local, national, and international conferences.

The extensive state-of-the-art departmental research facilities and instrumentation provide support across the spectrum of research activities – see [www.durham.ac.uk/chemistry/research/facilities](http://www.durham.ac.uk/chemistry/research/facilities)

#### TYPICAL ENTRY REQUIREMENTS FOR RESEARCH DEGREES

- PhD: Upper second class Masters (MChem) degree
- MSc: Lower second class Masters (MChem) degree, although students with a second class Bachelors degree may be considered for MSc research programmes.

#### ENGLISH LANGUAGE REQUIREMENTS

- IELTS of 6.5 or equivalent.

Applications are welcomed from holders of international qualifications. For advice on the equivalency of international qualifications and further information on English language requirements, please contact the University's International Office on [international.office@durham.ac.uk](mailto:international.office@durham.ac.uk) or visit their website at [www.durham.ac.uk/international](http://www.durham.ac.uk/international)

#### FUNDING OPPORTUNITIES FOR RESEARCH POSTGRADUATE STUDENTS

The Department recruits around 35 research postgraduate students per year, which typically includes a mixture of UK, EU and international PhD students. In recent years the Department is delighted to have postgraduate students from many different countries around the world amongst its numbers, including from: Australia, Canada, China, Cyprus, Egypt, France, Finland, Germany, Greece, India, Iran, Ireland, Italy, Japan, Malaysia, Nigeria, Pakistan, Portugal, Russia, Saudi Arabia, Singapore, Spain, South Africa, Thailand, Turkey and the USA. The Department's students are funded in a variety of ways:

- Doctoral Training Account studentships: assigned to individual research leaders who appoint students competitively on the basis of referees' reports and examination performance. Only students from the EU are eligible for these studentships
- Studentships funded through industry, research foundations, or bodies such as the European Commission. A number of these awards are open to non-UK citizens
- UK Research councils including EPSRC and BBSRC.



Details of these can be found at [www.durham.ac.uk/chemistry/postgraduate/research\\_degrees/current\\_opportunities](http://www.durham.ac.uk/chemistry/postgraduate/research_degrees/current_opportunities)

- Durham University offers a number of studentships to UK and EU applicants. They are highly competitive with an application deadline that is in early January
- Students from overseas are often funded from their own countries, either by government agencies or from private funds. In particular, Chevening Scholarships and funding from the British Council, UKIERI or Royal Society may be available; for further details see: [www.chevening.com](http://www.chevening.com) [www.britishcouncil.org](http://www.britishcouncil.org) [www.ukieri.org](http://www.ukieri.org) [www.royalsociety.org](http://www.royalsociety.org)
- Applications are welcomed from November for PhD and MSc positions starting in October the following year.

Details of all funding possibilities are available from the Department of Chemistry. The University also has a range of funding opportunities for

postgraduate students. To find out what support you could be eligible to receive see our online funding database at [www.durham.ac.uk/study/postgraduate/fees/search](http://www.durham.ac.uk/study/postgraduate/fees/search)

#### CAREER OPPORTUNITIES

Chemical science postgraduates possess an excellent range of degree-related skills including numeracy, problem solving, data handling, analysis, observation, team working, report writing, presentation, laboratory and research skills. These can open the door to a huge range of job opportunities including those in a host of different industries (oil and energy; chemicals manufacture; pharmaceuticals; cosmetics; nanomaterials; environmental) where chemists have both R&D and management roles, through to work in government laboratories/agencies, teaching, marketing, sales, and even finance. A significant number of Chemistry postgraduates stay on in higher education going on to do post-doctoral research and then progressing on as academics in their own right.

#### CAREERS AND EMPLOYABILITY

For further information on career options and employability, including the results of the Destination of Leavers survey, student and employer testimonials and details of work experience and study abroad opportunities, please visit [www.durham.ac.uk/chemistry/postgraduate/employability](http://www.durham.ac.uk/chemistry/postgraduate/employability)

#### KEY INFORMATION

The Department comprises approximately 600 undergraduates and has around 100 postgraduate students, with the large majority studying for a PhD. The Department has 50 academic staff who are all involved in both research and teaching.

Name:  
**Cen Chen**

Home Country:  
**China**

Postgraduate Course:  
**PhD Chemistry**

I would like to follow a career in academic research after my PhD, preferably in the field of crystallisation, as this is what my undergraduate fourth year project and PhD course are based on, and it has been my dream and goal for years.

A Chemistry qualification from Durham is well-recognised around the world considering Durham is one of the world-leading universities for both teaching and research. Not to mention the amount of knowledge and practical experience that I will be able to gain from this PhD course. Additionally the opportunities to attend various academic conferences and to carry out industrial placements would provide me a platform to communicate with many researchers from similar fields and also to understand the practical applications of my project.

What I enjoy most about studying here is the academic environment. Durham's students are very hard working; and this generates a very positive attitude and a good atmosphere for our study. For example there are always many students studying in the library, in the café area and many other places, no matter whether it is in the examination period or not.

Durham is a beautiful and historic city. The town has a large student population so it is a very active place. People here are kind, friendly and willing to help. For social life, Durham University is based on a collegiate system and students from many different disciplines will live in the same college. This provides a very good opportunity for the students to communicate with each other and to learn something more than their own subject. Additionally, there are various student communities to join in Durham University, ranging from sports, art, music, language and many international societies such as the French, Korean and Chinese Societies.

Last but not least, chemistry at Durham would certainly be one of the best course choices. It has a good reputation and a promising future after graduation. However, hard work is required in order to make the most of the experience.



### Contact details

For further information on research degrees contact:

**Mrs Anne Carrahar**

(General Graduate Admissions Enquiries)

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(Graduate Admissions)

**Professor Jon Steed**

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