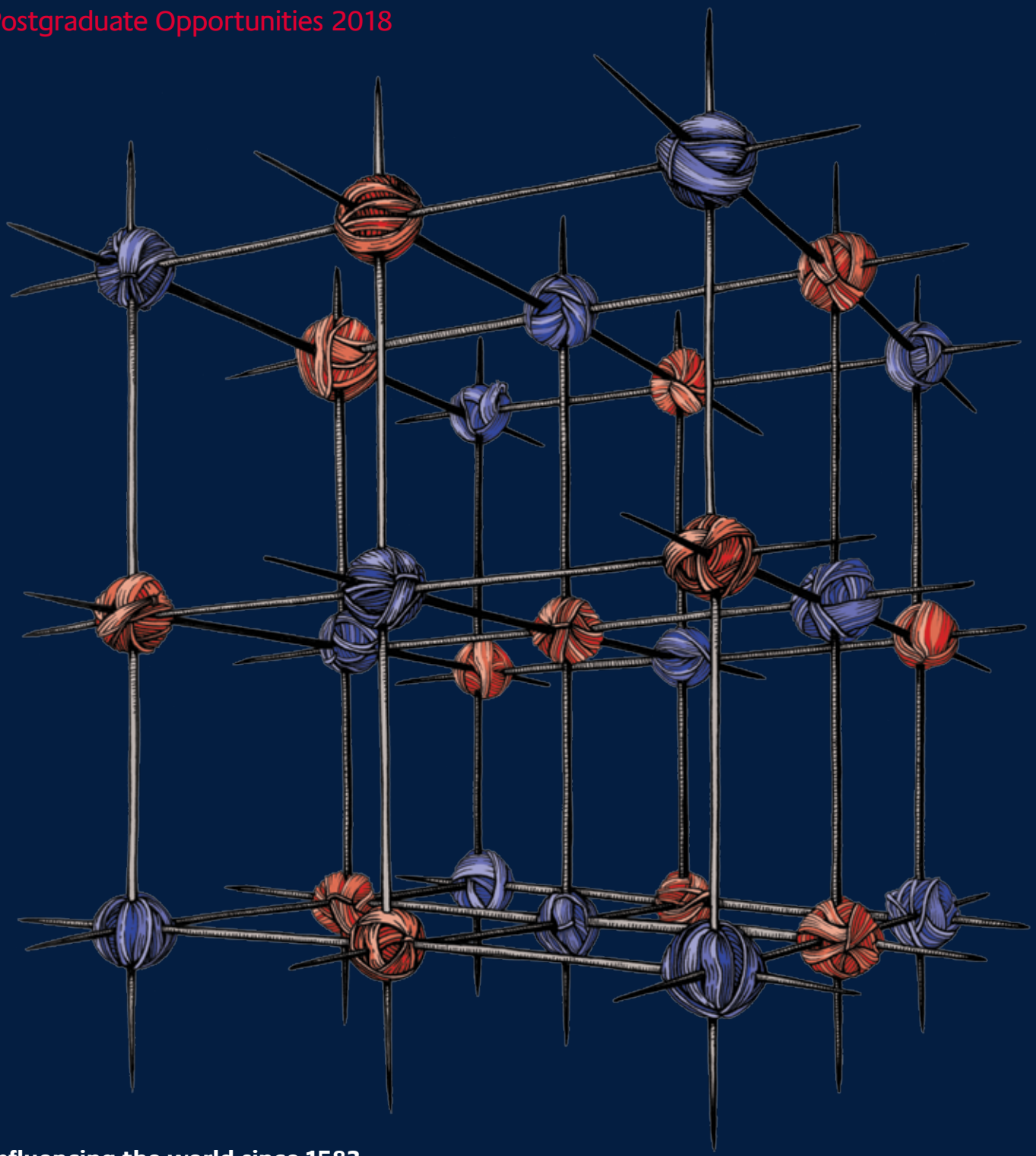
THE UNIVERSITY of EDINBURGH

Chemistry

Postgraduate Opportunities 2018



Influencing the world since 1583

"Edinburgh isn't so much a city, more a way of life … I doubt I'll ever tire of exploring Edinburgh, on foot or in print."

Ian Rankin
Best-selling author and alumnus

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Influencing the world since 1583

15 Nov 2017
Postgraduate Open Day
www.ed.ac.uk/postgraduate-open-day

twitter.com/applyedinburgh
facebook.com/applyedinburgh
youtube.com/edinburghuniversity
instagram.com/applyedinburgh

For more than 400 years the University of Edinburgh has been changing the world. Our staff and students have explored space, won Nobel Prizes and revolutionised surgery. They've published era-defining books, run the country, made life-saving breakthroughs and laid the foundations to solve the mysteries of the universe.

Our distinguished alumni include NASA astronaut Piers Sellers, former MI5 Director-General Dame Stella Rimington, Olympians Sir Chris Hoy and Katherine Grainger and historical greats such as philosopher David Hume, suffragist Chrystal Macmillan, who founded the Women's International League for Peace and Freedom, and physicist and mathematician James Clerk Maxwell.

International collaboration
An internationally renowned centre for academic excellence, we forge world-class collaborations with partners such as the California Institute of Technology (Caltech), Stanford University, the University of Melbourne, Peking University, the University of Delhi and the University of KwaZulu-Natal. As a member of the League of European Research Universities and the Coimbra Group, we link up with leading institutions across Europe.

Linking research and commerce
We were one of the first UK universities to develop commercial links with industry, government and the professions. Edinburgh Innovations promotes and commercialises our research excellence and can assist you in taking the first step to market, through collaborative research, licensing technology or consultancy.

Enhancing your career
We are committed to embedding employability in your University experience and have one of the Russell Group's best track records for graduate employment. From volunteering schemes to our sector-leading careers service, we provide you with opportunities to develop your skills, knowledge and experience, giving you an edge in the competitive job market.

TOP 50
We're consistently ranked one of the top 50 universities in the world. We're 23rd in the 2018 QS World University Rankings.

4TH
We're ranked fourth in the UK for research power, based on research quality and breadth.*

83%
The majority of our research – 83 per cent – is considered world leading or internationally excellent.*

32ND
We're ranked 32nd in the world for the employability of our graduates.†

£268m
In 2015/16 we won £268 million in competitive research grants.

21
We're associated with 21 Nobel Prize winners, including physicists Peter Higgs, Charles Barkla and Max Born, medical researcher Peter Doherty and biologist Sir Paul Nurse.

13TH
We're ranked 13th in the world's most international universities.‡ Students from two-thirds of the world's countries study here.

* Research Excellence Framework (REF) 2014
† Latest Emerging Global Employability University Ranking
‡ Times Higher Education: The World's Most International Universities 2017

Taught masters programmes

Our taught Master of Science (MSc) programmes last 12 months, consisting of two semesters of taught courses followed by an individual supervised research project and dissertation.

www.ed.ac.uk/pg/448

Materials Chemistry

MSc 1 yr FT

Programme description
Materials chemistry has emerged as an important sub-discipline within chemistry. It cuts across the traditional organic/inorganic/physical boundaries of chemistry and overlaps many disciplines from engineering to the biosciences.

Materials chemists now have a leading role in areas such as microelectronics, polymer science, catalysis and nanotechnology. They also make an important contribution to areas of more traditional chemistry such as the pharmaceutical sector where understanding the physical properties of intermediates and products is now recognised as essential in optimising the synthesis and properties of pharmaceutically active ingredients in medicines.

COMPULSORY COURSES PREVIOUSLY OFFERED INCLUDE:

Advanced lecture courses such as: *Properties & Reactions of Matter*; *Chemistry of Functional Materials*; *Physical Techniques in Action*; *Techniques and Concepts in Inorganic Chemistry*. These are studied concurrently with a predominantly practical-based course that develops skills in research methods. You will then proceed to a period of full-time research project work leading to the submission of your masters dissertation.

Programme structure
Lectures are given by leading researchers in the area of materials chemistry. The lecture courses are supported by tutorial sessions and assessed by examination in April/May.

The practical course in research methods includes an exciting, problem-solving exercise where you learn important skills such as communicating science, dealing with intellectual property and grant application writing, together with a literature survey and written report, defining the scope of the subsequent individual research project work. The programme also includes a series of writing skills workshops.

Career opportunities
This programme has been designed to help you take a leading role in areas such as microelectronics, polymer science, catalysis and nanotechnology, or more traditional chemistry such as the pharmaceutical sector.

Entry requirements
A UK 2:1 honours degree, or its international equivalent (**www.ed.ac.uk/international/graduate-entry**), in chemistry or a closely related discipline with a strong chemistry component.

English language requirements:
See page 12.

Fees and funding
For fees see page 12 and for funding information see page 14.

Programme Secretary Claire Dickson
Tel +44 (0)131 651 7257
Email chemistry.pgt@ed.ac.uk

www.ed.ac.uk/pg/450

Medicinal & Biological Chemistry

MSc 1 yr FT

Programme description
This programme requires a thorough understanding of molecules, their structures, properties and synthesis, and a chemical understanding of the nature of biological structures, from macromolecules to cells, the design of pharmaceutical materials in the laboratory and their function in clinical settings.

The knowledge and skills acquired on this programme will leave you well equipped to compete for positions related to drug discovery in chemical, pharmaceutical or biotechnological companies.

COMPULSORY COURSES PREVIOUSLY OFFERED INCLUDE:

Advanced lecture courses in: *Synthetic Organic Chemistry*; *Biomacromolecules; Chemical Medicine*; *Biophysical Chemistry*. These are studied concurrently with a predominantly practical-based course that develops skills in research methods. You will then proceed to a period of full-time research project work, leading to the submission of your masters dissertation.

Programme structure
Lectures are given by leading researchers in the area of medicinal and biological chemistry. The lecture courses are supported by tutorial sessions and assessed by examination in April/May.

The practical course in research methods includes an exciting, problem-solving exercise where you learn important skills such as communicating science, dealing with intellectual property and grant application writing, together with a literature survey and written report, defining the scope of the subsequent individual research project work. The programme also includes a series of writing skills workshops.

Career opportunities
You will be well suited to take up roles in the chemical and pharmaceutical industries, either in research and development or sales and marketing. You will gain valuable work experience in a real-life research environment. Alternatively, a masters is a precursor to a PhD degree.

Our programmes teach students the valuable skills they need to move into other areas outside chemistry. Careers in IT, management or finance are possibilities after completing your programme.

Entry requirements
A UK 2:1 honours degree or its international equivalent (**www.ed.ac.uk/international/graduate-entry**), in chemistry or a closely related discipline with a strong chemistry component. Your undergraduate degree must have included maths and biology.

English language requirements:
See page 12.

Fees and funding
For fees see page 12 and for funding information see page 14.

Programme Secretary Claire Dickson
Tel +44 (0)131 651 7257
Email chemistry.pgt@ed.ac.uk

Research opportunities

The School of Chemistry's vibrant research community is divided into four specialist disciplines. With considerable overlap between these, you will find many research opportunities to fit your interests: **www.ed.ac.uk/pg/16**

There are opportunities to pursue research through the following routes:

- PhD three years full-time (six years part-time available for UK/EU students)
- MPhil two years full-time
- MSc by Research one year full-time

PhD

As a PhD candidate you pursue a research project under continuous guidance, resulting in a thesis that makes an original contribution to knowledge. You will gain specialist background knowledge for your intended research, and develop the skills to research in that field. The majority of our recent graduates have gone into research scientist roles in academia or industry. Others found industry employment, with companies such as Johnson & Johnson, Charnwood Molecular and Sociable Pharma, in roles such as process development chemist, clinical scientist, technical analyst and project manager.

Centres for Doctoral Training

The School is both leading, and involved in, many Centres for Doctoral Training funded by UK research councils, industry and the UK government. Applications for these PhD studentships often require the support of a PhD supervisor who is partnered with a particular training centre. Please note that in the majority of cases, eligibility is restricted to UK or EU nationals, and annual application deadlines apply.

- Criticat – Critical Resource Catalysis: **www.criticat.org/apply.php**
- OPTIMA – Optical Medical Imaging: **www.optima-cdt.ac.uk**
- Integrative Sensing & Measurement: **www.gla.ac.uk/research/opportunities/isensingmeasurement**
- SOFI – Soft Matter and Functional Interfaces: **www.dur.ac.uk/soft.matter/soficdt**
- NERC E3: **www.ed.ac.uk/geosciences/postgraduate/phd/e3**
- EastBIO: **www.eastscotbiodtp.ac.uk**

MPhil

The MPhil resembles a PhD but takes two years instead of three and does not carry the same requirement for original contribution to knowledge. You pursue your individual research project under supervision, submitting your thesis at the end of the project.

MSc by Research

An MSc by Research, which takes one year, is based on a research project tailored to your interests. The project is both a shorter alternative to an MPhil or PhD and a precursor to either, with an MSc project potentially expanding into MPhil or doctorate work as it evolves.

Research areas

The chemistry/biology interface

This is a broad area, with particular strengths in protein structure and function, mechanistic enzymology, proteomics, peptide and protein synthesis, protein folding, recombinant and synthetic DNA methodology, biologically targeted synthesis and the application of high throughput and combinatorial approaches. We also focus on biophysical chemistry, the development and application of physicochemical techniques to biological systems. This includes mass spectrometry, advanced spectroscopy and microscopy, as applied to proteins, enzymes, DNA, membranes and biosensors.

Experimental and theoretical chemical physics

This is the fundamental study of molecular properties and processes. Areas of expertise include probing molecular structure in the gas phase, clusters and nanoparticles, the development and application of physicochemical techniques such as mass spectroscopy to molecular systems, and the EaStCHEM surface science group, whose members study complex molecules on surfaces, probing the structure-property relationships employed in heterogeneous catalysis. World-class computational facilities including teraflop capability are available through EaStCHEM Research Computing.

Synthesis

This research area encompasses the synthesis and characterisation of organic and inorganic compounds, including those with application in homogeneous catalysis, nanotechnology, coordination chemistry, ligand design and supramolecular chemistry, asymmetric catalysis, heterocyclic chemistry and the development of synthetic methods and strategies leading to the synthesis of biologically important molecules (including drug discovery). The development of innovative synthetic and characterisation methodologies (particularly in structural chemistry) is a key feature, and we specialise in structural chemistry at extremely high pressures.

Materials chemistry

The EaStCHEM materials group is one of the largest in the UK. Areas of strength include functional polymer synthesis and catalysis, functional (for example magnetic, superconducting and electronic) materials; strongly correlated electronic materials, battery and fuel cell materials and devices; porous solids, fundamental and applied electrochemistry polymer microarray technologies; and technique development for materials and nanomaterials analysis.

Entry requirements

In general, any research area in the School of Chemistry will require you to have a degree in a related field. We may consider your application if your background is not directly related to chemistry; contact your potential supervisor for advice. Please check the specific entry requirements for your programme online before applying.

English language requirements

See page 12.

Fees and funding

For fees see page 12 and for funding information see page 14.

Explore our latest, fully funded studentships: **www.chem.ed.ac.uk/studying/postgraduate-research/studentships**

www.ed.ac.uk/pg/909

Optical Medical Imaging with Healthcare Innovation & Entrepreneurship

PhD 4 yrs FT

Research profile

OPTIMA is the Engineering and Physical Sciences Research Council (EPSRC) and Medical Research Council (MRC) Centre for Optical Medical Imaging. It brings together world-class research teams in both the clinical and physical sciences.

OPTIMA is hosted by the universities of Edinburgh and Strathclyde. Our focus is on training the next generation of scientific entrepreneurs in healthcare technologies and we place great emphasis on interdisciplinary projects, commercially relevant training and strong ties to the clinical environment.

Our supervisors have international standing in their respective fields. Collectively they have published more than 1,300 peer-reviewed papers, received research grant income in excess of £110 million and supervised more than 300 PhD students.

This four-year PhD with integrated study programme combines excellent research and PhD supervision in world-leading scientific environments with a bespoke programme of business training in healthcare innovation and entrepreneurship.

You will choose from a portfolio of exciting and innovative projects that break down the barriers between physics, chemistry, medicine and engineering and use cutting-edge optical technology to address key clinical questions via medical imaging.

In addition to optical medical imaging research, you will embark on a bespoke programme of integrated study in healthcare innovation and entrepreneurship. Training modules for this run concurrently with your research to help you understand and appreciate the innovative leaps you are making and capitalise on your discoveries.

English language requirements

See page 12.

Fees and funding

For fees see page 12 and for funding information see page 14.

Contact OPTIMA CDT Administrator/Project Manager
Email imaging.cdt@ed.ac.uk

The University is piloting PhDs by online learning. If you're interested in studying with us this way, we're keen to investigate possibilities in some of our areas of research.

See also…

Closely related taught and research programmes are offered elsewhere across the University, particularly the College of Medicine & Veterinary Medicine and the Schools of Biological Sciences, Engineering, GeoSciences, and Physics & Astronomy.

www.ed.ac.uk/studying/prospectus-request

THE UNIVERSITY *of* EDINBURGH

Case study: Edinburgh's research with impact

Protecting the population from air pollution

Up to 30 per cent of the EU urban population is estimated to be exposed to pollutant levels greater than the EU-specified limit. Air pollution is the environmental factor with the greatest impact on human health in Europe. Dr Mathew Heal of the EaStCHEM School of Chemistry has been leading a programme of pollution research on the three most important air pollutants – particulate matter, ozone and nitrogen dioxide – for 20 years, contributing valuable findings that are changing the way the world protects itself from the effects of pollution.

Project background

Exposure to particulate matter alone is estimated to reduce average life expectancy in the UK by six months, with estimated costs of £9bn–20bn a year. The group led by Dr Heal recognised the importance of detecting particulate matter and other airborne pollutants, and set about analysing current prescribed air quality assessment methods. As well as finding that these systems are subject to inaccuracies, they researched and defined optimal methods for new, more accurate and reliable measurements. Dr Heal's group research also showed how atmospheric models can simulate current ozone concentrations with high spatial resolution and predict future concentrations, as well as regional hospital admissions and deaths resulting from a range of future emissions and climate change scenarios.

Project results

The findings from Dr Heal and his team have been groundbreaking and have contributed evidence for the formulation of government policies, informing UK national guidance and policy-evidence documents for the Department for Environment, Food and Rural Affairs (Defra), the Health Protection Agency, and the UK's environment agencies. The more accurate and reliable methods originating from the Edinburgh team are now incorporated into protocols applied to measurements of nitrogen dioxide for statutory air quality assessments in all urban areas in the UK.

The findings from Dr Heal and his team have been groundbreaking and have contributed evidence for the formulation of government policies…

See more online: www.ed.ac.uk/research/impact

About the **School of Chemistry**

The teaching of chemistry at Edinburgh has a long and distinguished history – 2013 marked our 300th anniversary of the establishment of the 'Chair of Physick and Chymistry'.

Today we continue that proud tradition as a leader in the field. In collaboration with the University of St Andrews, we have formed EaStCHEM, one of the largest and most successfully funded chemistry research organisations in the UK. EaStCHEM was ranked second in the UK in the Research Excellence Framework (REF) 2014 power table – a combination of excellence and volume. Overall, 95 per cent of our research was classed as world leading or internationally excellent.

Our membership of ScotCHEM takes this collaborative spirit even further, providing links with all the major schools of chemistry in Scottish universities.

We offer you a large, internationally recognised research community, and the benefits of the latest facilities, well-published and award-winning academic staff, a lively graduate school environment and a broad range of study opportunities.

Nobel Laureate
Our notable alumni include Professor Sir J Fraser Stoddart who was jointly awarded the Nobel Prize in Chemistry in 2016 for his work on the design and synthesis of molecular machines. Professor Stoddart graduated from the University with a BSc in 1964 and later with a PhD. He continues to inspire current students through the Fraser and Norma Stoddart PhD prize, established 2013, which recognises excellence in research.

The best teaching
The School of Chemistry offers a globally connected teaching community, enriched by incoming students from around the world. Our programmes are all accredited by the Royal Society of Chemistry and we're a recent 'Best Department' winner in the Edinburgh University Students' Association Teaching Awards.

We teach all the chemistry skills you will require for employment in the modern research environment. We have a well-developed training policy that ensures many different sources of training are available to you including courses at School, College and University level.

Rewarding research
Pursuing research at the School of Chemistry could be one of the best experiences of your life. In addition to gaining research skills, making friends, meeting eminent researchers and being part of the research community, a research programme will help you to develop invaluable transferable skills which you can apply to academic life or a variety of professions outside of academia.

Supporting business opportunities
As well as pursuing research for the purpose of academic advancement, we are ever alert to the commercial possibilities of our findings, and we work with business to identify and develop these opportunities. Should your research show potential for industrial applications, we have the tools available to support its development and commercial success.

Facilities and resources

Our facilities are among the best in the world, offering an outstanding range of capabilities. You'll be working in modern laboratories that meet the highest possible standards, packed with state-of-the-art equipment for both analysis and synthesis.

We offer on-site services ranging from full-time glassblowing and electronics workshops to video conferencing and computer research support.

We have close links with the Edinburgh Parallel Computing Centre, whose Europe-leading supercomputing capabilities put us at the forefront of computational chemistry.

Make it, test it
You will have access to facilities for the synthesis and characterisation at ambient and extreme conditions of organic and inorganic compounds, including those with application in homogeneous catalysis, nanotechnology, supramolecular chemistry, drug discovery and ligand design. The development of innovative synthetic and characterisation methodologies is a key feature of our work, using the latest techniques and technology.

A 1,000-tonne pressure chamber enables the synthesis of materials at high pressures and temperatures. Fluorescence spectroscopy and microscopy instruments are available within our Collaborative Optical Spectroscopy Micromanipulation & Imaging Centre (COSMIC).

We have excellent facilities for creating and analysing biomolecules, including advanced mass spectrometry, NMR stopped-flow spectrometers, electron paramagnetic resonance spectroscopy, high-performance liquid chromatography, fast protein liquid chromatography and atomic absorption spectroscopy.

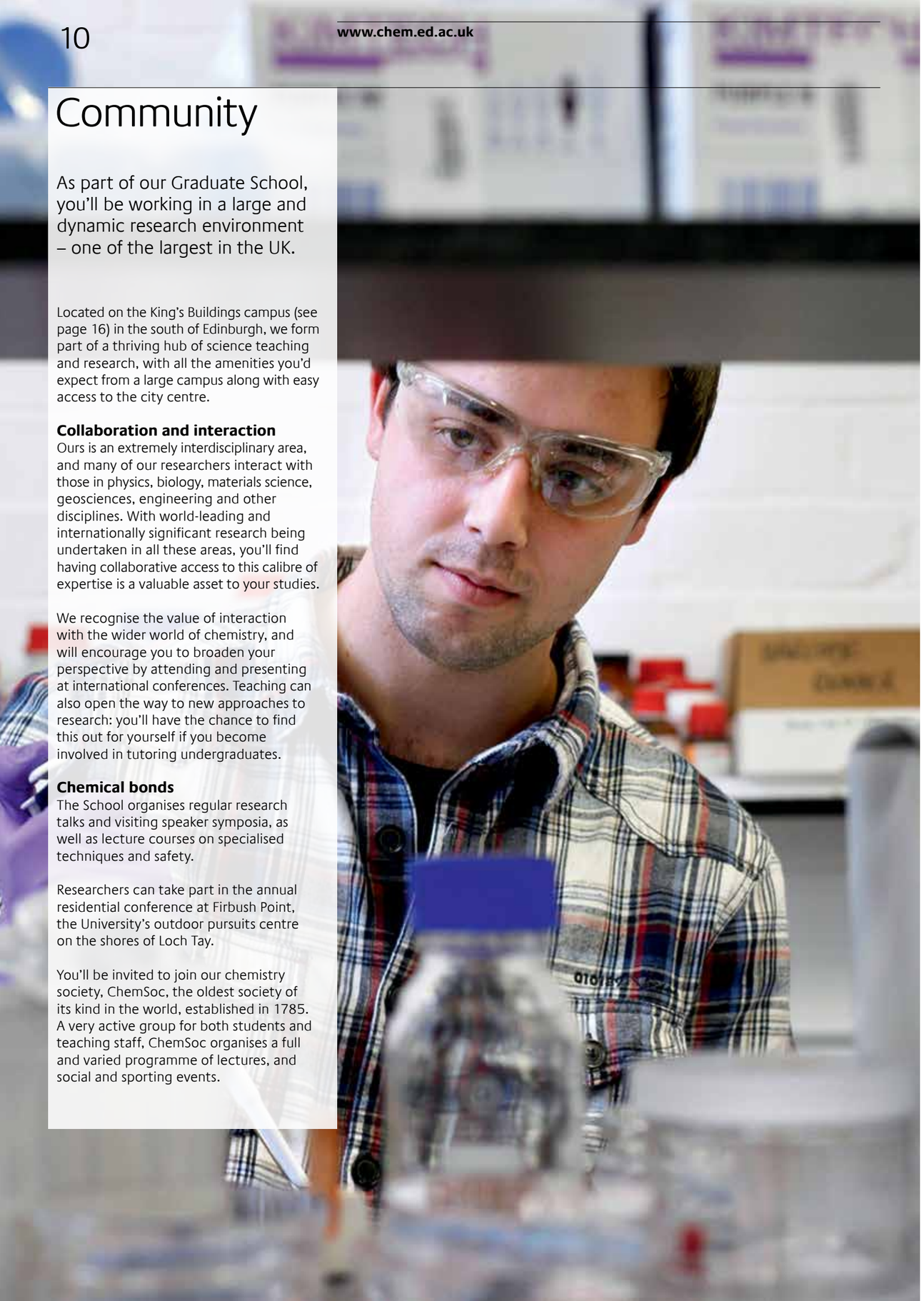
High-specification hardware
For NMR in the solution and solid state, we have 10 spectrometers at field strengths from 200 MHz to 800 MHz; our mass spectrometry resource has a 12T FT-ICR mass spectrometer for routine mass analysis, and we have expertise in mass spectrometry imaging and ion mobility mass spectrometry. New combinatorial chemistry laboratories are available, equipped with a modern fermentation unit.

World-class facilities are available for small molecule and macromolecular X-ray diffraction, utilising both single crystal and powder methods. Application of diffraction methods at high pressures is a particular strength of ours, and we enjoy strong links to central facilities for neutron, muon and synchrotron science in the UK and further afield.

Also available are instruments for magnetic and electronic characterisation of materials (SQUID), electron microscopy (SEM, TEM), force-probe microscopy, and high-resolution FT-Raman, Fourier Transform infrared, and X-ray photoelectron spectroscopy.

Collections of the University
The University of Edinburgh has one of the world's great collections, which has been growing ever since its foundation in 1583. Our collections include rare books, archives and manuscripts, art, historical musical instruments and a wide range of museum objects from geological specimens to anatomical models. If laid out end to end, we would have almost 60 kilometres of shelving and storage space devoted to our heritage material, from 1st-century Greek papyrus fragments to new works of sculpture. This is curated by specialist staff across 45 sites and used for our teaching and research and by the wider public community.

The Centre for Research Collections in the Main Library is the hub for all our collections, where specialist curators make them available for study, research and pleasure. Postgraduate students are welcome to study original objects and have made many important research discoveries while working on the archives. You will find an incredible range of material in our collections that is available nowhere else in the world.



Community

As part of our Graduate School, you'll be working in a large and dynamic research environment – one of the largest in the UK.

Located on the King's Buildings campus (see page 16) in the south of Edinburgh, we form part of a thriving hub of science teaching and research, with all the amenities you'd expect from a large campus along with easy access to the city centre.

Collaboration and interaction
Ours is an extremely interdisciplinary area, and many of our researchers interact with those in physics, biology, materials science, geosciences, engineering and other disciplines. With world-leading and internationally significant research being undertaken in all these areas, you'll find having collaborative access to this calibre of expertise is a valuable asset to your studies.

We recognise the value of interaction with the wider world of chemistry, and will encourage you to broaden your perspective by attending and presenting at international conferences. Teaching can also open the way to new approaches to research: you'll have the chance to find this out for yourself if you become involved in tutoring undergraduates.

Chemical bonds
The School organises regular research talks and visiting speaker symposia, as well as lecture courses on specialised techniques and safety.

Researchers can take part in the annual residential conference at Firbush Point, the University's outdoor pursuits centre on the shores of Loch Tay.

You'll be invited to join our chemistry society, ChemSoc, the oldest society of its kind in the world, established in 1785. A very active group for both students and teaching staff, ChemSoc organises a full and varied programme of lectures, and social and sporting events.

Employability and graduate attributes

With your postgraduate qualification you will be perfectly placed for a successful career in the chemical or pharmaceutical industries, such as in research and development or sales and marketing, or to continue in academia. At Edinburgh you will also learn valuable skills that will open doors in areas outside chemistry.

Many of the skills that will ensure success in your postgraduate studies at the School of Chemistry will benefit your personal and professional development regardless of the direction your career may take, be it into finance, management, IT, patent law, government or other sectors.

The skills you will learn include:

- how to work independently to identify the aims of a project from the outset;
- teamwork and high-level networking skills;
- how to argue a case and offer constructive criticism;
- analytical and problem-solving skills;
- effective communication of complex information, including presentation skills.

Institute for Academic Development
All postgraduate students can benefit from our Institute for Academic Development (IAD), which provides information, events and courses to develop the skills you will need throughout your studies and in the future. IAD events also offer the perfect opportunity to meet and network with other postgraduates from across the University.

Further information is available online:
www.ed.ac.uk/iad/postgraduates

For taught postgraduates, IAD provides a popular study-related and transferable skills support programme. It is designed to help you settle into postgraduate life, succeed during your studies and move confidently to the next stage of your career. We offer on-campus and online workshops and one-to-one study skills consultations, plus online advice and learning materials. Workshops and learning resources cover key topics tailored to different academic stages, including getting started with your studies; critical reading, writing and thinking; managing your exams; and planning for and writing up your dissertation.

IAD also provides a comprehensive programme of transferable skills training, resources and support for researchers completing a doctorate. The workshop programme is designed to help you successfully prepare for the various milestones of your PhD, from getting started with your research, to writing up and preparing for the viva. Workshops cover topics such as writing skills, reference management tools, statistics, preparing for conferences, delivering presentations, time and project management, and personal development. IAD also offers online resources and planning tools to help get your research started, plus support for tutoring and demonstrating, and research public engagement and communication.

Careers Service
Our Careers Service plays an essential part in your wider student experience at the University, offering a range of tailored careers and personal development guidance and support. We support you to recognise the wealth of possibilities ahead, while at university and after graduation, helping you explore new avenues, tap into your talents and build your employability with confidence and enthusiasm.

We provide specialist support for postgraduate students. From exploring career options to making decisions, from CV writing to interview practice, from Employ.ed internships to graduate posts and from careers fairs to postgraduate alumni events, we help you prepare for the future.

We sustain and continually develop links with employers from all industries and employment sectors, from the world's top recruiters to small enterprises based here in Edinburgh. Our employer team provides a programme of opportunities for you to meet employers on campus and virtually, and advertises a wide range of part-time and graduate jobs.

More information:
www.ed.ac.uk/careers/postgrad

Connect.ed
Edinburgh encourages its alumni to stay in touch with current students who share an academic background or are interested in a similar career path. Connect.ed is a networking system run by the Careers Service that provides an informal and confidential opportunity for alumni to share their occupational knowledge and experience with current students, who can contact them for advice and guidance on their future career.

More information:
www.ed.ac.uk/careers/connected

Backing bright ideas
LAUNCH.ed is the University's award-winning programme for student entrepreneurs. Each year, LAUNCH.ed works with hundreds of students to assess their ideas and develop their business skills and helps many start their businesses. We have helped Edinburgh students and alumni launch almost 100 new businesses in the last three years, ranging from language tuition to robotics companies.

More information:
www.LAUNCH.ed.ac.uk

The School of Chemistry holds an Athena SWAN silver award in recognition of our commitment to advancing women's careers in science.
www.athenaswan.org.uk

Applications and fees

We have an online application process for all postgraduate programmes. It's a straightforward system with full instructions, including details of any supporting documentation you need to submit.

When applying, you will set up an account, which lets you save your application and continue at another time.

Full guidance on our application system is available at: **www.ed.ac.uk/postgraduate/applying**

General requirements

Our usual entrance requirement for postgraduate study is a UK 2:1 degree, or its international equivalent (see **www.ed.ac.uk/international/graduate-entry**), in a subject related to your chosen programme. You will also need to meet the University's language requirements (see below).

Entry requirements for individual programmes can vary, so check the details for the specific programme you wish to apply for. Research applicants with a background not directly related to chemistry may sometimes be considered – your potential supervisor can advise you on this.

References

For applications to taught programmes, the normal requirement is one reference, although an additional reference may be requested in individual cases. For applications to research programmes, two references are required. You should check online for the exact requirements for your intended programme of study. For general guidance on references, visit: **www.ed.ac.uk/postgraduate/references**

Deadlines

Some programmes have application deadlines. Please check online for details. For all other programmes, you are encouraged to apply no later than one month before the programme starts to ensure there is sufficient time to process your application. However, earlier application is recommended, particularly where there is a high demand for places or when a visa will be required. Should you wish to submit a late application, please contact us for guidance. There are no formal deadlines for research applicants, but we strongly recommend that students interested in our projects apply as soon as they become available, as places are highly competitive.

English language requirements

Students whose first language is not English must show evidence of one of the qualifications below.

- IELTS Academic: total 6.5 (at least 6.0 in each module).
- TOEFL-iBT: total 92 (at least 20 in each module).
- PTE(A): total 61 (at least 56 in each of the Communicative Skills sections).
- CAE and CPE: total 176 (at least 169 in each module).
- Trinity ISE: ISE II (with distinctions in all four components).

Please note:

- English language requirements can be affected by government policy so please ensure you visit our degree finder to check the latest requirements for your programme: **www.ed.ac.uk/postgraduate/degrees**
- Your English language certificate must be no more than two years old at the beginning of your programme.
- We also accept recent degree-level study that was taught and assessed in English in a majority English-speaking country (as defined by UK Visas & Immigration).

Abbreviations: IELTS – International English Language Testing System; TOEFL-iBT – Test of English as a Foreign Language Internet-Based Test; PTE(A) – Pearson Test of English (Academic); CPE – Certificate of Proficiency in English; CAE – Certificate in Advanced English; Trinity ISE – Integrated Skills in English.

www.ed.ac.uk/english-requirements/pg

Tuition fees

The following table provides an overview of indicative fee levels for programmes commencing in 2018.

Figures marked * show the fee level set for the 2017/18 academic year. All other figures are indicative of expected fee levels for your studies during the 2018/19 academic year. Because these figures are indicative, it is important you check online before you apply and check the up-to-date fee level that will apply to your specific programme: **www.ed.ac.uk/student-funding/tuition-fees/postgraduate**

Please note:

- International students starting full-time taught programmes of study lasting more than one year will be charged a fixed annual fee.
- All other students on full-time and part-time programmes of study lasting more than one year should be aware that annual tuition fees are subject to revision and are typically increased by approximately five per cent per annum. This annual increase should be taken into account when you are applying for a programme.
- In addition to tuition fees, your programme may be subject to an application fee and additional costs/programme costs may apply. Please check the latest programme information online.

Tuition fees for EU students

EU students enrolling in the 2018/19 academic year will be admitted as Scottish/EU fee status students. Taught masters students will be eligible for the same tuition support as Scottish domiciled students from the Student Awards Agency for Scotland (SAAS).

For UK/EU students

	Annual fee
Taught programme 1-year FT	£13,100
MSc by Research 1-year FT	£7,900
MPhil 2-years FT	£4,195*
PhD 3-years FT	£4,195*
PhD 6-years PT	£2,098*

Online Learning

	Annual fee
PgCert 1-year FT	£5,900
PgCert 2-years PT	£2,950

For international students

	Annual fee
Taught programme 1-year FT	£27,100
MSc by Research 1-year FT	£25,100
MPhil 2-years FT	£21,000
PhD 3-years FT	£21,000

* Figure shown is the 2017/18 fee level

All other fees quoted are indicative of 2018/19 fee levels. Because these figures are indicative, it is important you check online before you apply and check the up-to-date fee level that will apply to your specific programme: **www.ed.ac.uk/student-funding/tuition-fees/postgraduate**

Funding

A large number of scholarships, loans and other funding schemes are available for your postgraduate studies. It is only possible to show a small selection in print. To see the full range, please visit: **www.ed.ac.uk/student-funding/postgraduate**

Awards are offered by the School of Chemistry, the College of Science & Engineering, the University of Edinburgh, the Scottish, UK and international governments and many funding bodies. Here we list a selection of potential sources of financial support for postgraduate students applying to the School of Chemistry. This list was correct at the time of printing but please check the full and up to date range online (see above).

Tuition fee discounts

We offer a 10 per cent discount on postgraduate fees for all alumni who have graduated with an undergraduate degree from the University. We also offer a 10 per cent discount for international graduates who spent at least one semester at the University of Edinburgh as a visiting undergraduate: **www.ed.ac.uk/student-funding/discounts**

Key
- Taught masters programmes
- Masters by Research programmes
- Research programmes

Scholarships at the University of Edinburgh

- **Beit Trust** ● ●
  Beit Trust and the University of Edinburgh Scholarships jointly fund postgraduate students from Malawi, Zambia and Zimbabwe to undertake a masters: **www.beittrust.org.uk**
- **Chemistry Tercentenary International Masters Scholarships** ●
  A number of scholarships available to overseas applicants starting a full-time MSc programme in the School of Chemistry: **www.ed.ac.uk/student-funding/tercentenary-masters**
- **Chemistry Tercentenary International PhD Scholarships** ●
  A maximum of 10 scholarships open to overseas research students starting full-time PhD programmes in the School of Chemistry: **www.ed.ac.uk/student-funding/tercentenary-phd**
- **China Scholarships Council/University of Edinburgh Scholarships (China)** ●
  A number of scholarships for PhD study available to candidates who are citizens and residents of China: **www.ed.ac.uk/student-funding/china-council**
- **Edinburgh Global Masters Scholarships** ● ●
  A number of scholarships are available to international students for masters study: **www.ed.ac.uk/student-funding/masters**
- **Edinburgh Global Research Scholarships** ●
  These scholarships are designed to attract high-quality international research students to the University: **www.ed.ac.uk/student-funding/global-research**
- **Edinburgh Principal's Career Development Scholarships** ●
  A number of scholarships, open to UK, EU and international PhD students: **www.ed.ac.uk/student-funding/development**
- **Enlightenment Scholarships** ●
  The University is currently developing a new style of PhD scholarship to attract the best PhD applicants from around the world. These scholarships will provide funding for up to four years. For the latest information, and for details on which Schools will be participating, please check: **www.ed.ac.uk/student-funding/enlightenment**
- **Edinburgh Syrian Postgraduate Scholarships** ● ●
  A number of scholarships are available to postgraduate students from Syria studying a full-time one-year masters: **www.ed.ac.uk/student-funding/postgraduate/syria**
- **Highly Skilled Workforce Scholarships** ●
  A number of scholarships are available to UK nationals permanently domiciled in Scotland, and to EU nationals domiciled either on mainland EU or in Scotland, who have been accepted on an eligible full- or part-time masters programme. The scholarships, which are funded by the Scottish Funding Council and subject to annual confirmation, cover the UK/EU tuition fee. At the time of printing, we are awaiting confirmation of these scholarships from the Scottish Government: **www.ed.ac.uk/student-funding/sfc-hsw**
- **Julius Nyerere Masters Scholarship (Tanzania)** ● ●
  One scholarship is available to citizens of Tanzania who are normally resident in Tanzania who are accepted on a full-time masters programme: **www.ed.ac.uk/student-funding/nyerere**
- **School of Chemistry Research Studentships** ●
  Approximately 30 research studentships available to new postgraduate research students: **www.chem.ed.ac.uk/studying/postgraduate-research/studentships**

"The Scottish Government's initiative to attract international students through the Saltire Scholarship Scheme, as well as the University of Edinburgh's help and support for international students, has helped provide me with an opportunity that I would never have conceived of prior to starting my studies at Edinburgh."

Robert Starr, MSc High Performance Computing, Scotland's Saltire Scholarship

Research council awards

Research councils offer awards to masters, MPhil and PhD students in most of the Schools within the University of Edinburgh. All studentship applications from the research councils must be made through the University, through your School or College office. Awards can be made for both taught and research programmes.

Normally only those UK/EU students who have been resident in the UK for the preceding three years are eligible for a full award. For some awards, candidates who are EU nationals and are resident in the UK may be eligible for a fees-only award. The UK Government has confirmed that EU postgraduate research students commencing their studies in 2018/19 will retain their fee status and eligibility for research council support for the duration of their programme: **www.ed.ac.uk/student-funding/research-councils**

The University also offers a number of scholarships in partnership with the following overseas government agencies:

- **Chile** ● ● ●
  National Commission for Scientific and Technological Research (CONICYT): **www.conicyt.cl**
- **Colombia** ●
  Administrative Department of Science, Technology and Innovation (Colciencias): **www.colciencias.gov.co**
- **Ecuador** ● ● ●
  Secretaria Nacional de Educacion Superior, Ciencia y Tecnologia (SENESCYT): **www.educacionsuperior.gob.ec**
- **Iraq** ●
  Ministry of Higher Education and Scientific Research: **www.iraqiculturalattache.org.uk**
- **Mexico**
  National Council of Science and Technology of the United Mexican States (CONACYT): ● ● ● **www.conacyt.mx**
- Banco de Mexico and the Banco de Mexico's FIDERH trust (FIDERH): ● ● ● **www.fiderh.org.mx**
- Fundacion Mexicana para la Educacion, la Tecnologia y la Ciencia (FUNED): ● ● **www.funedmx.org**
- **Pakistan** ●
  Higher Education Commission, Pakistan (HEC): **www.hec.gov.pk**

Loans available for study at the University of Edinburgh

The University of Edinburgh is a participating institution in the following loans programmes, meaning we certify your student status and can help with the application process.

- **The Canada Student Loans Program** ● ● ●
  The University is eligible to certify Canadian student loan applications: **www.ed.ac.uk/student-funding/canadian-loans**
- **Erasmus+** ●
  The Erasmus+ Master Loan helps masters students with their living and tuition costs when studying in an Erasmus+ country other than where they live or where they took their first degree. For more information: **https://erasmusplus.org.uk/master-loan**
- **Postgraduate Loans (PGL) England** ● ●
  Student Finance England offers postgraduate loans for taught and research masters programmes, payable to eligible students: **www.gov.uk/postgraduate-loan**
- **Postgraduate Loans (PGL) Northern Ireland** ● ●
  Student Finance Northern Ireland offers a tuition fee loan for taught and research programmes, at certificate-, diploma-, and masters-level, which will be paid directly to the University: **www.studentfinanceni.co.uk**
- **Postgraduate Loans (SAAS) Scotland and EU** ● ●
  The Student Awards Agency Scotland offers tuition fee loans for taught diploma and masters programmes which will be paid directly to the University. Full-time students resident in Scotland can also apply for a non-income assessed living cost loan: **www.saas.gov.uk**
- **Postgraduate Loans (PGL) Wales** ● ●
  Student Finance Wales offers eligible students postgraduate loans for taught and research masters programmes: **www.studentfinancewales.co.uk**
- **US Student Loans** ● ● ●
  The University is eligible to certify loan applications for US loan students. Full details on eligibility and how to apply can be found online: **www.ed.ac.uk/student-funding/us-loans**

Other sources of funding

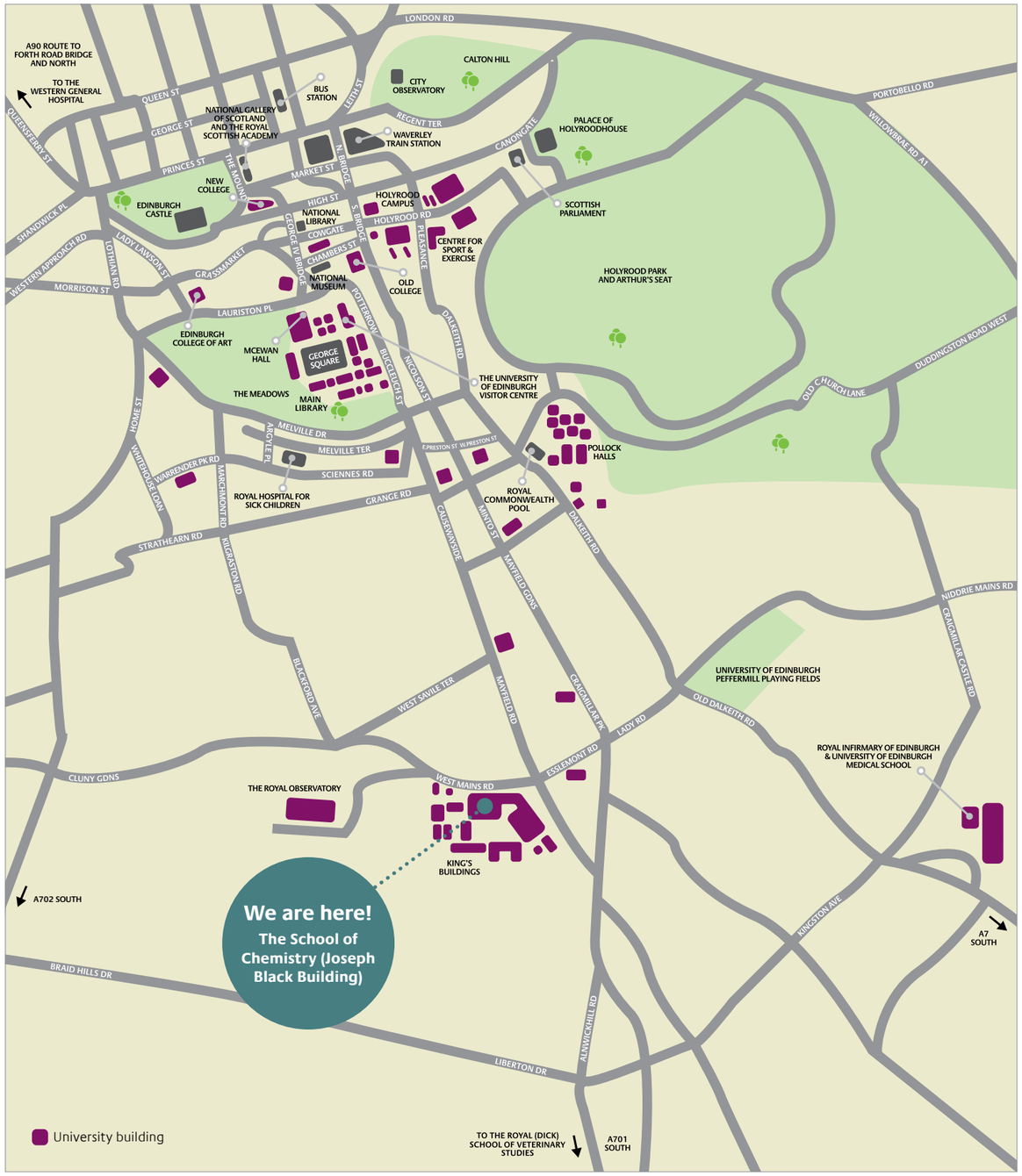
The following are examples of the many scholarships and support schemes available to students from particular countries who meet certain eligibility criteria.

- **Chevening Scholarships** ● ●
  A number of partial and full funding scholarships are available to one-year masters students: **www.chevening.org**
- **Commonwealth Scholarships** ● ● ●
  Scholarships available to students who are resident in any Commonwealth country, other than the UK: **www.dfid.gov.uk/cscuk**
- **Marshall Scholarships (USA)** ● ● ●
  Scholarships available to outstanding US students wishing to study at any UK university for at least two years: **www.marshallscholarship.org**
- **Scotland's Saltire Scholarships** ● ●
  A number of scholarships open to students who are citizens permanently and ordinarily resident in Canada, China, India, Pakistan and the USA for one year of masters study: **www.ed.ac.uk/student-funding/saltire**

Campus map

The School of Chemistry is based in the Joseph Black Building on the King's Buildings campus. The campus is around two miles from Edinburgh city centre and is well served by buses, including a free University shuttle service during semester time.

Detailed maps can be found at: www.ed.ac.uk/maps



Get in touch

Contact us

For more information about taught MSc programmes, please contact:

Claire Dickson
Tel +44 (0)131 651 7257
Email **chemistry.pgt@ed.ac.uk**

For more information about our doctorate programmes, please contact the Postgraduate Administrator:

Gill Law
Email **chemistry.gradschool@ed.ac.uk**

To discuss your PhD proposal, you should identify potential supervisors. A full list of academic staff contact details can be found at: **www.chem.ed.ac.uk/staff/academic-staff**

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Visit us

Our Postgraduate Open Day is your opportunity to come and meet current staff and students. Our next campus-based Open Day takes place on 17 November 2017. For more information, visit: **www.ed.ac.uk/postgraduate-open-day**

The School of Chemistry welcomes prospective postgraduate students at all times, so get in touch if you would like to arrange your own visit.

Our visits to you

If you are unable to visit the University, we attend events throughout the year so you can meet and speak to us in person.

UK and Europe: **www.ed.ac.uk/postgraduate/uk-eu-events**

International: **www.ed.ac.uk/international/our-visits-overseas**

Chat online

We offer all postgraduate students monthly online information sessions. To find out more and see when the next session will be: **www.ed.ac.uk/postgraduate/online-events**

For international students, Edinburgh Global runs two online chat sessions each month. These are timed to give students in all timezones a chance to get involved. You can find out more and register online: **www.ed.ac.uk/international/chat-to-us-online**

Drawn to
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You are in good company. More than 37,000 of the world's brightest minds study here. Learn more at www.ed.ac.uk

Illustration by:
Katy Wiedemann, MA Illustration

The front cover shows the first model of the crystal lattice structure of sodium chloride. This was created in 1883 from 27 balls of wool and 18 steel knitting needles. It was made by Alexander Crum Brown, Chair of Chemistry at the University, as a teaching aid for his lectures.

The items in this illustration are part of the University's unique Centre for Research Collections, a rich resource for all our students, staff and the wider community.

#drawntoedinburgh

This publication is available online at **www.ed.ac.uk/postgraduate** and can be made available in alternative formats on request. Please contact communications.office@ed.ac.uk or call +44 (0)131 650 2252.

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We have made every effort to ensure the accuracy of the information in this prospectus before going to print. However please check online for the most up-to-date information: **www.ed.ac.uk**

On 23 June 2016 the UK electorate voted in a national referendum to leave the European Union. At the time of going to print, there was no immediate, material change known that would impact applicants for 2018 entry. However we recommend that you check online for the latest information before you apply: **www.ed.ac.uk/news/eu**

The University's standard terms and conditions will form an essential part of any contract between the University of Edinburgh and any student offered a place here. Our full terms and conditions are available online: **www.ed.ac.uk/student-recruitment/terms-conditions**

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