University of BRISTOL

# Chemical Physics

Undergraduate study

# Courses

## Single Honours

**BSc Chemical Physics**
three years F320

**MSci Chemical Physics**
four years F322

**MSci Chemical Physics with Industrial Experience**
four years F323

This leaflet contains information for students planning to start university in autumn 2019. We have made every effort to ensure all details are correct at the time of going to press (June 2018). However, since this information is subject to change, you are advised to check the University's website, **bristol.ac.uk/ug-study**, for the latest updates.

# Why study chemical physics at Bristol?

Chemical physics covers nanotechnology, surface science, laser spectroscopy, atomic and molecular structure, materials, and other subjects that lie at the interface between chemistry and physics. If you enjoy the physical and mathematical aspects of chemistry and are interested in the atomic and molecular applications of physics, this is the subject for you.

Our Chemical Physics courses are integrated programmes of study taught jointly by the School of Chemistry and the School of Physics. Both schools are among the largest in the UK and have superb reputations for the quality of their teaching and research. The School of Chemistry is home to the UK's only Centre for Excellence in Teaching and Learning devoted to chemistry, while the School of Physics houses the Centre for Nanoscience and Quantum Information – one of the 'quietest' buildings in the world for atomic-scale measurements.

Research plays an important part in ensuring that we can offer our students the best teaching. Undergraduate students benefit from our outstanding research facilities; for many of our undergraduates the highlight of their studies is the chance to perform a final-year research project or scientific dissertation.

'I enjoy the quality of the labs in both the Chemistry and Physics departments and the wide range of experiments they offer. The practical skills I'm gaining will definitely give me an advantage when I enter the world of work.'

Sanmi (MSci Chemical Physics with Industrial Experience)

# What will you study?

We understand that your interests may change and develop as you study at university, so our degree courses are designed to be as flexible as possible. Our three-year BSc course will provide you with a fundamental knowledge of chemical physics, while our four-year MSci courses will enable you to develop a deeper understanding.

During your first year, it is possible to transfer between different Chemical Physics courses, as well as to courses in chemistry or physics. The structure of the first year is the same for all our Chemical Physics degree courses. You will take units in chemistry, physics and maths. In subsequent years, you will study units in chemistry and physics that allow you to build on your fundamental knowledge and develop a deeper understanding of applications in chemical physics. The aspects of both chemistry and physics that are not relevant to chemical physics are gradually phased out after the first year, so you will no longer take courses such as organic synthetic chemistry, nuclear physics and electronics. Instead, you will take units on nanophysics, quantum mechanics, structure and bonding of molecules, kinetics, thermodynamics, semiconductors and superconductors.

Practical work is an important part of all our science degree courses. You will benefit from the superb facilities available within both schools, with well-equipped lecture theatres and rooms for small-group teaching. Our chemistry and physics teaching laboratories have recently been refurbished to create outstanding facilities that would not be out of place in a research environment. Computer rooms are available for teaching and private study. You will have access to excellent libraries in both schools, which are stocked with recommended course books and more specialist texts and equipped with IT facilities.

The final year of all our degree courses includes a research project in which you will work with a member of academic staff and their research team on a current scientific problem. You can choose from projects offered in both chemistry and physics. You will have access to labs containing state-of-the-art research equipment; it is not uncommon for a final-year student to operate equipment worth many millions of pounds. For many students this project is the highlight of their undergraduate studies, and some have their work published in internationally renowned journals.



Assessment is primarily through examination, although practical work and some coursework is continually assessed. This gives you time to think about the subjects that you are studying without the pressure of regular assessment deadlines.

If you choose the MSci Chemical Physics with Industrial Experience you will spend your third year working as a paid employee in an industrial or commercial environment. Not only will you develop excellent technical skills, but you will also gain a valuable insight into how chemical physics works in practice.

Our excellent reputation for research means that we have strong links with a range of companies in the UK and abroad in many areas of pure and applied science. Placements are available in a range of environments, from multinational companies such as AkzoNobel and Pfizer to more specialised enterprises such as Renishaw and the Defence Science and Technology Laboratory, and companies in the USA.

'I spent my industrial placement with the Fluids Department at Schlumberger Gould Research, and my final year project in the Diamond Lab. When I graduated I wasn't sure what I wanted to do and by chance found myself interviewing for a role at Hydrock NMCL, a specialist nuclear safety and environmental consultancy. I'm really enjoying my job; I've recently started my own project and every day brings something different.'

Sophie (MSci Chemical Physics with Industrial Experience), Graduate Consultant, Hydrock NMCL

# Careers and graduate destinations

A degree in chemical physics will open the door to careers in both scientific and non-scientific sectors.

Your expert knowledge and superb technical skills will be highly sought after by employers in many areas of science and technology. Employers value the unique understanding and knowledge that chemical physics students possess. You will be ideally placed to take advantage of the opportunities available in the developing areas of nanotechnology and materials science.

While many chemical physics graduates choose careers in science, your opportunities will not be limited to this sector. You will also develop essential transferable skills that employers in non-scientific sectors value.

The University of Bristol has an excellent reputation with employers and our graduates enjoy a wide range of satisfying, financially rewarding career opportunities.

The University of Bristol has one of the best employment records in the UK. We are rated sixth in the UK in the QS Graduate Employability Rankings 2018 and are the fourth most targeted university by top UK graduate employers (High Fliers Research 2018).



# Making your application

**Typical offer for BSc Chemical Physics***

Visit **bristol.ac.uk/ug19-chemphys** for other qualifications.

**A-levels** AAB (contextual ABB†) including Chemistry, Physics and Mathematics (in any order).

**IB Diploma** 34 points overall (contextual 32†) with 17 at Higher Level, including 6, 6, 5 at Higher Level in Chemistry, Physics and Mathematics (in any order).

**English Language profile** C††

**GCSEs** Standard literacy requirement (C in GCSE English or equivalent).

†For information on contextual offers, visit **bristol.ac.uk/contextual-offers**.

††For details of English language profiles, visit **bristol.ac.uk/ug-language-requirements**.

**Selection** UCAS or Common Application.

*The typical offer is indicative only and the University accepts a wide range of qualifications. The information is correct at the time of printing (June 2018); however, we recommend you check the University's website for the most up-to-date information: **bristol.ac.uk/ug-study**.

We welcome applications from academically able and well-motivated students from all backgrounds, from both the UK and abroad. Competition for places is strong.

The four-year MSci courses are designed for students who wish to continue with a scientific career, either in academia or industry. These courses cover the subject in more depth and have longer research projects. The BSc course is suitable for students who want the benefits of a scientific degree, but who may want to go into non-scientific careers such as finance, IT, teaching or management. If you are unsure, we recommend you apply to one of the MSci courses, as it is easy to transfer to the BSc at a later date.

**Further information**
Find out more about the School of Chemistry at **bristol.ac.uk/chemistry** and the School of Physics at **bristol.ac.uk/physics**.

To find out more about the University of Bristol's student societies, Fusion (Chemistry), Chaos (Physics) and Duality (Chemical Physics), please visit **bristolsu.org.uk/activities/societies**.

Royal Society of Chemistry: **www.rsc.org**.

Institute of Physics: **www.iop.org**.

# Contact us

**Enquiries Team**
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If you have any questions about courses, applications or any aspect of being a UK or international student at Bristol please contact the Enquiries Team.

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University guide to the city of Bristol
**bristol.ac.uk/citybristol**

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