

## Undergraduate study

# Chemical Physics



## Key highlights



### Intellectual challenges

At the interface of chemistry and physics you'll explore the building blocks of our existence and their governing principles, studying topics from atomic and molecular science to materials science and nanoscience.



### Outstanding departments

Bristol is in the country's top 10 for physics, and third in the UK for chemistry research quality (QS World University Rankings by Subject, 2020; *Times Good University Guide* 2020).



### Industry accreditation

Accelerate your career with a degree accredited by both the Institute of Physics and the Royal Society of Chemistry.



### Research experience

Complete a six-month research project in your final year, working with one of our expert staff on a current problem in chemistry or physics.

## Why study chemical physics at Bristol?

Our integrated chemical physics degrees are perfect if you enjoy chemistry, physics and mathematics, and wish to develop your knowledge and skills in a challenging and rewarding subject.

Chemical physics is the study of matter and its properties and covers a range of fundamental and applied science. You will discover how atoms and molecules interact and how techniques such as spectroscopy, diffraction and electron microscopy may be used to investigate their structure and properties. You will also study nanoscience, liquid crystals, polymers and surface science.

At Bristol you'll be part of two internationally renowned departments with state-of-the-art facilities.

Our courses are designed to be as flexible as possible. The three-year BSc will provide you with a fundamental knowledge of chemical physics, while the four-year MSci courses will enable you to develop a deeper understanding. You can choose to spend your third year working in industry.

### What you will study

The structure of the first year is the same for all our chemical physics degree courses, with units in chemistry, physics and maths. During your first year, it is possible to transfer between different chemical physics courses, as well as to courses in chemistry or physics.

In subsequent years, you will study units 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.

The final year of all our courses includes a six-month project in which you will work with a member of academic staff and their research team on a current scientific problem. You will have access to labs containing advanced research equipment; it is not uncommon for a final-year student to operate equipment worth many millions of pounds. Some students have their work published in internationally renowned journals.

'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)



Choose our course with industrial experience to spend your third year working in a paid position in an industrial or commercial environment. Recent partners have included AkzoNobel, Pfizer, Renishaw, the Defence Science and Technology Laboratory, and companies in the US.



Bristol has its own chemical physics society, Duality; you can also join the chemistry society Fusion and the physics society Chaos – named the country's best society (National Societies Awards, 2019).



Bristol is associated with seven Nobel prize-winning physicists and chemists, including Paul Dirac, Sir Nevill Mott, and our former chancellor Dorothy Hodgkin.



Our state-of-the-art facilities include a six-metre radio telescope and Bristol ChemLabS, the UK's only chemistry-based Centre for Excellence in Teaching and Learning.

### Find out more

Entry requirements, course structure and units  
[bristol.ac.uk/ug2021-chemphys](http://bristol.ac.uk/ug2021-chemphys)

# Courses

BSc / MSci Chemical Physics

MSci Chemical Physics with Industrial Experience

## Connect with the Schools of Chemistry and Physics

 @BristolChem / @UniBrisPhysics

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### Photography

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This leaflet contains information for students planning to start university in autumn 2021. We have made every effort to ensure all details are correct at the time of going to press (May 2020). However, since this information is subject to change, you are advised to check the University's website, [bristol.ac.uk/ug-study](http://bristol.ac.uk/ug-study) for the latest updates. Any sample units listed are indicative and offerings may change due to developments in the relevant academic field. Unit availability varies depending on staffing, student choice and timetabling constraints.



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