Chemistry PhD

Chemistry at Newcastle University is a vibrant centre of research in Chemistry with an international reputation in a wide range of fields from structural chemistry to anticancer drug design and molecular photonics to nanotechnology. We offer a minimum of three years full-time or five years part-time Doctor of Philosophy (PhD).

Why study Chemistry PhD at Newcastle University?

Outstanding research facilities
You will have access to a wide range of state-of-the-art instrumentation, modern laboratories and research-active staff. Modern spectroscopic techniques are available for studying slow to ultrafast reactions. Excellent facilities exist to carry out the synthesis and characterisation of novel materials. We have extensive computational resources for performing molecular modelling. Our NMR facilities include 300-700 MHz spectrometers. Glass-blowing, mechanical and electrical/electronic workshops are available.

Research degree training and skills development
You will work closely with your internationally recognised supervisor and receive a high level of training in your specialised subject area. At the start, your supervisor will direct the project and discuss your training requirements. As you gain confidence and expertise you will be given increasing responsibility for the day-to-day running of the project and to explore your own ideas.

Industry and collaborations
Chemistry has strong industrial links with small to large companies. Collaborative engagement, links with other Schools, Faculty Research Institutes and multidisciplinary research are encouraged.

Thriving collaborations exist with Biology, Medicine, Chemical Engineering and Materials, Cell and Molecular Biology, Electrical and Civil Engineering. The School is also associated with the Northern Institute for Cancer Research and the Institute for Research in Environment and Sustainability.
Research areas
Research in the School of Chemistry at Newcastle is organised into five groupings:

Medicinal Chemistry and Chemical Biology
Medicinal Chemistry is a traditional strength at Newcastle University with a track record of successful research, including the discovery of drugs that have progressed to clinic. The area has core capacity in anti-cancer drug discovery and biomolecular imaging along with expertise in computational chemistry and chemical biology.

Nanoscience and Materials
Our research is focused around the key activities of developing new methods to synthesise, characterise and improve our understanding of materials with useful properties particularly those with features on the nanoscale.

Photonic Materials
Photonic materials refer to systems, ranging from single molecules to intricate architectures to molecular devices, which respond critically to stimulation by light. Many such systems are aimed at the conversion of sunlight into chemical potential or the concentration of excitonic energy. Emphasis is placed on understanding fundamental principles by way of spectroscopic examination.

Structure and Dynamics
Structure underpins the majority of research in chemistry, biology and materials science. However, the world is dynamic not static and understanding how structures evolve during a chemical reaction is critical. Our research area studies structure and dynamics relating to fundamental and applied research fields over a broad range of time and length scales.

Synthesis, Reactivity and Catalysis
With the combined expertise of Inorganic and Organic Chemists, this area aims to advance fundamental knowledge and capability in synthesis and reactivity involving elements from s, p, d and f blocks across the periodic table and thereby to develop new and improved materials and catalytic processes.

Enhancing your employability
Our graduates find employment in a wide range of occupations in industry or academia. Students are encouraged to network and develop their communication skills throughout their studies. You will have the opportunity to present your work at national and international conferences. You will come into contact with top scientists during our weekly research seminars. Students have the chance to be involved in the School’s undergraduate teaching via laboratory demonstrating and tutorials.

The postgraduate student committee provides an important means to allow research students to have an influence on School policy, as well as running its own social events, seminars, careers and training workshops.

Entrance requirements
An upper-second-class MChem, or international equivalent, in chemistry or a related subject. We will also consider applicants on an individual basis with BSc qualifications if they have additional relevant experience. International students are welcome and are encouraged to contact the admissions tutor for advice: pg.chemistry@newcastle.ac.uk.

Applicants whose first language is not English require IELTS 6.0, or equivalent.

All postgraduate applications should be made via the University’s online application form: www.ncl.ac.uk/postgraduate/apply

Find out more at: www.ncl.ac.uk/chemistry