



University of  
Nottingham

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# School of Chemistry Postgraduate Masters Courses

[nottingham.ac.uk/pgstudy/chemistry](https://nottingham.ac.uk/pgstudy/chemistry)



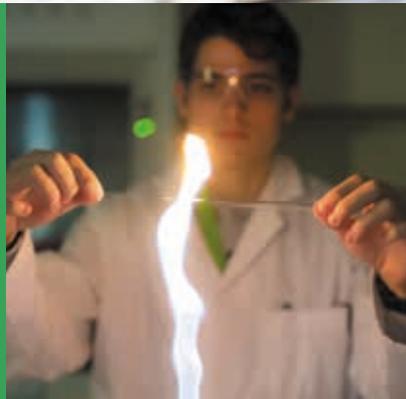
Research-engaged  
teaching



Links with  
industry



Develop your  
research skills



Interdisciplinary  
learning



# Exceed your potential

## Overview

The School of Chemistry has an excellent reputation for teaching and research. The University received a Gold Award in the Teaching Excellence Framework in 2017 and the results of the Research Excellence Framework 2014 judged 95% of the school's research activity to be 'internationally excellent' or 'world-leading.' We are also effective communicators of chemistry – take a look at our award-winning Periodic Videos channel as an example: [periodicvideos.com](http://periodicvideos.com)

## World-class facilities

We are home to the £15.8m GlaxoSmithKline Carbon Neutral Laboratory which opened in 2017. The award-winning building has been designed to offset the carbon emissions from construction within the next 25 years. It houses around 100 researchers with dedicated instrument rooms. This is an example of our commitment to sustainable chemistry as well as providing excellent facilities for our students and researchers. Many of our masters students undertake research in the Carbon Neutral Laboratory.

## Chemistry MSc (by Research)

This one-year research programme is ideal if you wish to develop your chemistry skills by focusing on a research-based masters-level qualification. In addition to providing an opportunity to work on a research project at the cutting-edge of chemistry, the degree gives you experience of postgraduate level research as a stepping-stone to joining a PhD degree.

You will undertake an original research project worth 120-180 credits. You'll then study up to 60 credits of optional taught modules which will reflect our research areas. These currently include: Biological and Medicinal Chemistry, Green and Sustainable Chemistry, Materials, Molecular Bonding and Spectroscopy, and Synthesis and Catalysis.

We also work closely with colleagues in biomedical sciences, physics and engineering. This allows you flexibility to tailor your research to your individual interests.

During the course you'll receive close support and guidance from one or more academic supervisors within the school. The research projects can be developed by you and your supervisors. You'll join an active research group where you'll receive training in advanced techniques, and use of state-of-the-art equipment.

Recent past projects include:

- Chemical Biology of Cancer Metabolism: Developing Molecular Tools
- Green Approaches to the Manufacturing of Anti-Malarial Drugs
- Hydrogen Electrochemistry in Unconventional Settings
- Ruthenium Nanoparticles in Carbon Nanostructures
- Spectroscopic Monitoring of Supercritical Processes
- Restricted Hartree-Fock Calculation on Finite Jellium
- A Click Chemistry Approach Towards Novel Tubulysin Mimetics
- New Reaction Processes with Organozinc and Organoaluminium Reagents

As a student at Nottingham, we'll empower you to think big and provide the support so you can make your own contributions to the world of science.

## Green and Sustainable Chemistry MSc

Chemistry plays a key role in our search for better medicines to improve healthcare in an ageing population, for safer agrochemicals to aid food production for a growing population, and for advanced materials for new technologies. Our objective is to ensure that chemistry is sustainable.

This course trains a new generation of scientists to find innovative sustainable resource and energy-efficient solutions that have low environmental impact, demonstrate social responsibility and make a positive contribution to economic growth. You'll cover many aspects of modern sustainable chemistry including feedstocks, energy, sustainable synthesis (including biocatalysis) and industrial process design.

You will develop an excellent knowledge of contemporary methods of synthesis, analysis and process design optimised for both energy and reaction mass efficiency. The course will also equip you with the tools to critically evaluate comparable reaction pathways and make decisions in the design of efficient chemical processes key to the pharmaceutical, agrochemical and other chemical-using industries.

Core modules include:

- Introduction to Sustainability (10 credits)
- Energy and Feedstocks (10 credits)
- Sustainable Synthesis: Chemical Approaches (10 credits)
- Sustainable Synthesis: Biological Approaches (10 credits)
- Innovation and Technology Transfer (10 credits)
- From Bench to the Bank (10 credits). This module shows how entrepreneurship and sustainable chemistry may be applied in a commercial context

- Chemistry *in-silico* (10 credits)
- Research Planning and Management (20 credits). This module is linked closely with the Summer Research Project
- Sustainability in Action (10 credits)

You can select 20 credits of optional modules, some examples of which are:

- Advanced Structural Analysis (10 credits)
- Power Generation and Carbon Capture (10 credits)
- Renewable Energy Technologies (10 credits)
- Energy Efficiency for Sustainability (10 credits)
- Managing Projects (10 credits)
- Creative Problem Solving (10 credits)

In addition, you'll undertake a two-month, 60-credit summer research project in original experimental work. In this important component of the course, you will be supervised by one or more academic staff members and will join an active research group.





## Advance your career

Graduates from our masters courses can expect to move into a range of scientific careers, including further study at doctoral level and employment with companies across the chemicals, materials, biotechnology and pharmaceutical sectors. Strong industrial links, including industrial participation in the delivery of material and opportunities to carry out industrially supported research projects, will further enhance your employability.

Other graduates choose to progress to PhD study in a related subject area at the University of Nottingham or at other universities.

Find out more: [nottingham.ac.uk/careers](https://nottingham.ac.uk/careers)

## Student Stories

"I came to the University of Nottingham from Nigeria, because I wanted to develop the knowledge and skills from the MSc Green and Sustainable Chemistry course to help me join the effort to achieve a clean and sustainable environment in Nigeria.

There are state-of-the-art facilities in the University for modern teaching and research in clean energy studies, including experts in different areas. I am most grateful to both academic and non-academic staff of the School of Chemistry; they are always willing to help any time I am faced with a challenge.

After I have completed my MSc course, I wish to progress to a PhD in this area of chemistry, and my ultimate ambition is to establish an ethanol production plant in Nigeria."



**Arinze Ezugwu,**  
MSc Green and Sustainable Chemistry



"My interest in chemistry developed in high school. Now, after completing my MSc in Green and Sustainable Chemistry, I have progressed to PhD study, also at Nottingham, and I plan to be a chemistry researcher in the future.

I am originally from Xi'an in China, and chose the masters course here because of the diversity of the lectures. The best part of studying in the School of Chemistry is the opportunity to do experiments in the lab. I've learned new techniques and broadened my view towards chemistry, and at the same time, developed lots of new ideas. I've also developed my writing skills and how to manage self-directed study.

I also enjoyed working with my supervisor, who gave me lots of encouragement during my final project."



**Yiu Lu,**  
MSc Green and Sustainable Chemistry

This flyer has been drafted in advance of the academic year to which it applies. Every effort has been made to ensure that the information contained in this flyer is accurate at the time of publishing, but changes (for example to course content) are likely to occur given the interval between publication and commencement of the course. It is therefore very important to check our website for any updates before you apply for the course by following [nottingham.ac.uk/pgstudy](https://nottingham.ac.uk/pgstudy). Where there is a difference between the contents of this flyer and our website, the contents of the website take precedence.

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## Fund it

When looking at how to fund your postgraduate studies, it's worth taking the time to research your options, as funding is available from a variety of sources.

Find out more at  
[nottingham.ac.uk/pgstudy/funding](https://nottingham.ac.uk/pgstudy/funding)

Discover more

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