

DPhil studentship in Polymerisation Catalysis

Title: Mechanistic Investigations and New Catalysts for CO₂ Copolymerisation

Supervisor: Prof. Charlotte Williams

Start date: 1st October 2026

Applications are invited for a **DPhil studentship in Polymerisation Catalysis** available from October 2026, to work under the supervision of **Professor Charlotte Williams** in the Department of Chemistry at the University of Oxford.

The studentship will cover home rate course fees and provide a stipend for 3 years. Please note the eligibility criteria set out by the UKRI at: <https://www.ukri.org/what-we-do/developing-people-and-skills/esrc/funding-for-postgraduate-training-and-development/eligibility-for-studentship-funding/>

Research in the Williams group centres around the utilisation of catalysis for the synthesis of sustainable materials from oxygenated polymers through controlled polymerisation processes. Our catalysis is versatile, enabling the consumption of CO₂, as a feedstock with other cyclic monomers, in ring opening copolymerisations as well as accessing ring opening polymerisations of cyclic esters and cyclic carbonates. The resulting high-performance polycarbonates and polyesters have a range of applications including coatings, construction, adhesives, and formulations. The group work to gather insights and improve the processes across the polymer lifecycle, from synthesis, materials processing and reprocessing, and chemical recycling.

This research project will focus on the key area of catalyst innovation for polymerisation processes. The project will include catalyst synthesis, kinetic and thermodynamic analysis of the polymerisation performance, and detailed analysis of structure-performance relationships. Work will include organic synthesis of ligands, synthesis and thorough characterisation of inorganic catalysts (through NMR, MS, solid state techniques, XRD etc), polymerisation testing, and investigations to probe the details of the catalytic processes.

Candidates with a first-class or strong upper second-class undergraduate degree in Chemistry or a closely related subject are encouraged to apply. Prior research experience (such as a Masters research project or equivalent) in a synthetic inorganic/organic chemistry laboratory is essential, as is a strong commitment to research and willingness to learn new skills. The successful applicant will be based in the Chemistry Research Laboratory, Oxford.

Candidates should contact Professor Charlotte Williams (charlotte.williams@chem.ox.ac.uk) before submitting a formal application for DPhil in Chemistry via Oxford online application system:

<https://www.ox.ac.uk/admissions/graduate/application-guide>

<https://www.ox.ac.uk/admissions/graduate/courses/dphil-chemistry>

Please quote **CW/Chem/2026** under 'Departmental Studentship Applications'.

Queries relating to the application and admission process should be directed to: graduate.admissions@chem.ox.ac.uk ; tel.: +44 (0) 1865 272569.

The Department of Chemistry holds the Athena SWAN Silver Award and the Williams group is dedicated to promoting diversity, equality and inclusion.