DPhil studentship in Biological Supramolecular Chemistry

Title: Photo-responsive supramolecular amino acid transport in synthetic cells

Supervisor: Prof. Matthew Langton

Start date: 1st October 2026

Applications are invited for a DPhil studentship in synthetic supramolecular chemistry available from October 2026, to work under the supervision of Prof. Matthew Langton in the Department of Chemistry at the University of Oxford. The studentship is funded by the Leverhulme Trust.

The studentship will cover course fees at a Home rate and provide a stipend of no less than the standard UK Research Council rate (currently set at £20,780 p.a.) 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 Langton group is focussed primarily on synthetic supramolecular chemistry at the interface with biology (see the group website for further information and recent publications). Current research goals include developing stimuli-responsive supramolecular systems (such as catalysts, ion transporters and molecular machines) that function in lipid bilayer membranes in synthetic and living cells.

The advertised project aims to design and synthesise photo-responsive supramolecular amino acid transporters, and will apply these systems for spatiotemporal control over amino acid delivery and enzyme activation in next-generation responsive synthetic cells containing protein machinery. The project will involve the synthesis of synthetic transport systems for amino acids, photochemistry and fabrication of responsive synthetic cells containing biological components. The project will involve collaboration with Professor Alexander Zelikin at Aarhus University, Denmark.

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 organic/inorganic chemistry laboratory is desirable. The successful applicant will be based in the state-of-the-art Chemical Research Laboratory.

Candidates should submit a formal application for DPhil in Chemistry via Oxford online application system: https://www.ox.ac.uk/admissions/graduate/application-guide , quoting **MJL/LT/2026.**

Application deadline: **12.00 noon UK time on Friday 14th November 2025**

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

For informal enquiries email matthew.langton@chem.ox.ac.uk

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