DPhil studentship in Chemical Biology/Nanopore Chemistry and Biotechnology

Supervisor: Professor Yujia Qing

Start date: 1st October 2025

Prof. Yujia Qing's group invites curious, talented, and highly motivated students to pursue PhD research on multidisciplinary topics that broadly fall within single-molecule chemistry, biophysics, or nanotechnology. We work at the forefront of sensing technologies based on protein nanopores. Leveraging the ability to 'see' molecular interactions within protein nanopores, we uncover structural, dynamic, and chemical insights that were previously unattainable, with far-reaching implications in both fundamental and applied chemical and biomedical research.

Our lab has recently achieved notable advances in nanopore technologies for small-molecule and biopolymer analysis, such as detecting post-translational modifications on full-length polypeptides (Nature Nanotechnology, 2023; JACS, 2024) and profiling complex mixtures of volatile organic compounds for diagnostics (bioRxiv, 2024). In addition, we are exploring basic chemistry by employing nanopores as nanoreactors. This approach has opened up avenues for creative applications, including our development of an ON-OFF photopore to mediate transmembrane ionic communications (Nature Nanotechnology, 2024).

Our group provides a vibrant research environment, bringing together expertise in chemistry, biology, engineering, and physics. We take a flexible, technique-agnostic approach and are always open to exploring new methods and forming collaborations. PhD projects in the group are inherently interdisciplinary and can encompass experimental chemistry, molecular biology, protein engineering, and computational data analysis, tailored to align with the interests of the student.

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 £19,237 p.a.) for 3 years.

Candidates with strong academic footing in chemistry, biophysics, engineering, or related disciplines, along with a keen interest in experimental research, are encouraged to apply.

Professor Qing can be contacted for further information: yujia.qing@chem.ox.ac.uk.

Candidates should submit a formal application for DPhil in Chemistry via the Oxford online application system:

https://www.ox.ac.uk/admissions/graduate/applying-to-oxford

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

Please quote **YQ/Chem/2025** under 'Departmental Studentship Applications'.

Application deadline: **12.00 noon UK time on 29th January 2025**

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 is an Equal Opportunities Employer and holds the Athena SWAN Silver Award.