

DPhil studentship in Physical Chemistry

Title: Photobatteries from photocharging materials

Supervisors: Dr Filip Podjaski (primary supervisor), Prof. James Durrant

Start date: 1st October 2026

Applications are invited for a **DPhil studentship** in Photobatteries from photocharging materials available from October 2026, to work under the supervision of **Dr Filip Podjaski** in the Department of Chemistry at the University of Oxford.

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 4 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 Podjaski group is focussing on characterization and understanding of photocharging materials, and on devices from them as emerging technology. Photocharging materials combine functions of solar cells and batteries intrinsically, offering new solutions for photobatteries that operate more independently of fluctuating light, while offering new solutions for mobile or wearable (micro)electronics, and for light-information processing due to internal “memory functions”. Our focus with photocharging lies on organic based semiconductors and on aqueous conditions for photobatteries operating with abundant ions (e.g. sodium) since this is the most sustainable and versatile approach for earth abundant and even bio-compatible solutions.

The Podjaski group uses and develops photo-electrochemical tools to characterize the function and efficiency of these materials, and their operation in junctions as devices. At the same time, we employ transient spectroscopy techniques (supported e.g. by the group of Prof. Durrant) to characterize internal properties with the photocharging state, which are modified over charging time. This new research area enables unprecedented understanding of non-linear behaviours of photocharging materials, and hence their enhancement by rational material and device design.

A key part of your future work is further coupling of both methodologies (aqueous photo-electrochemistry, time resolved optical spectroscopy) to characterize these emerging materials operando. At the same time, we fabricate films for electrodes and heterojunctions for devices, studying the influence of complex material assemblies for the overall performance/efficiency. Dr Podjaski can be contacted for further information: filip.podjaski@chem.ox.ac.uk

Candidates with a first-class or strong upper second-class undergraduate degree in Chemistry or a related subject (e.g. physics, materials, engineering) are encouraged to apply. The candidate is expected to have a strong commitment to research and should have demonstrated the ability to independently learn new skills. The successful applicant will be based in the Physical and Theoretical Chemistry Laboratory (PTCL), Oxford.

Candidates should submit a formal application for DPhil in Chemistry via the 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 **FP/Chem/2026** under ‘Departmental Studentship Applications’.

Application deadline: **12.00 noon UK time on Thursday 8th January 2026.**

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 Podjaski group is dedicated to promoting diversity, equality and inclusion.