



School of Chemistry, University College Dublin

Photocurrent Generation with Spin-Switchable Transition Metal Complexes

Applications are invited for a 4-year PhD studentship in synthesis and photophysical characterization of spin crossover complexes with potential in light harvesting applications. The proposed work with Associate Professor Grace Morgan (<http://www.ucd.ie/research/people/chemistry/assoc%20professorgracemorgan/>) and Professor Dominic Zerulla (UCD School of Physics) focuses on designing a new type of photovoltaic cell. The design paradigm will use specific transition metal complex dyes with access to two spin states. These will be integrated into a new prototype photovoltaic cell with two semiconductors, one which harvests light from a spin-allowed metal-ligand spin transition and a second to accept photocurrent from the metastable spin-forbidden high-spin state which is populated during relaxation in the spin-switchable complex. The work will involve synthesis of low spin and spin crossover iron(III) complexes and investigation of their magnetic, optical and magneto-optical properties at room temperature. The project involves transnational collaboration with colleagues at the University of Rennes, Université Catholique de Louvain, Université de Bordeaux, University of Florida, Queen's University Belfast and Dublin City University, and the candidate will have excellent opportunities for travel to the collaborating labs for research visits within the four year PhD programme.

Applicants will be expected to be highly motivated and have an MSc in Chemistry (or good honours degree for UK/Ireland candidates). In addition to research, the candidate will complete specific taught modules as part of the Dublin Chemistry graduate school programme, thus enhancing research expertise as well as furthering professional development.

A fully funded PhD scholarship will be awarded for a maximum of 4 years and will include:

- A tax-free stipend of €25,000 per year + university fees.
- UCD minimum English Language requirements must be satisfied, see [here](#).

Apply by email including a CV and cover letter, containing a personal statement as to why you want to apply for this position, and full contact details for two academic referees to grace.morgan@ucd.ie.

Applications will be accepted until the position is filled.

Start Date: 1 September 2025.