

PhD Studentship in Solar Fuels

Background

The global potential of solar energy is vast; for example, more of the sun's energy hits the face of the earth in two hours than is consumed globally in a year. Artificial photosynthesis uses sunlight to excite photocatalytic materials and convert CO₂ to fuels. The development of efficient solar fuels systems would help address CO₂ emissions, security of energy supply and access to platform chemicals. Through the US-Ireland R&D Partnership Programme, we have assembled an international and multidisciplinary team from Northwestern University in the USA, Tyndall National Institute in Cork and Ulster University to investigate novel photocatalysts and their integration into a prototype reactor. The main aim of this project is to use Computational Fluid Dynamics models to simulate the photo-driven CO₂ reduction reactions, and to use these models in the development of a prototype photosynthetic reactor. The prototype reactors will be tested under real sun conditions at the solar platform in Spain. International travel to Spain and the USA will be required. The research will be based at the Nanotechnology and Integrated BioEngineering Centre at Ulster's Jordanstown Campus. NIBEC is a modern state-of-the-art facility and provides an excellent environment for research into nanomaterials for clean technology applications.

Requirements

Applications are invited for a PhD studentship titled "Solar Fuels: Photo-Reactor Design and Modelling." Candidates should hold a first or upper second class honours degree in Chemistry, Chemical engineering or a cognate area. Applications will be considered on a competitive basis with regard to the candidate's qualifications, skills experience and interests. Successful candidates will enrol on a full-time programme of research studies leading to the award of the degree of Doctor of Philosophy.

Further Information

The studentship will comprise fees (Home and EU) and an annual stipend of £14,057. It will be awarded for a period of up to three years subject to satisfactory progress and is tenable in the Engineering Research Institute at the Jordanstown Campus.

For further details on the project please contact:

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Procedure

For more information on applying go to ulster.ac.uk/research

Apply online ulster.ac.uk/applyonline

Closing date and interviews

The closing date for receipt of completed applications is 31 October 2015

Interviews will be held in November 2015