3.5 Year PhD Studentship available for September 2019

Department: Chemistry

Supervisors: Dr Fabrizio Ortu

Eligibility: Home/EU students only

Project Title: Earth-abundant organometallic reagents for sustainable synthesis

Project Description: Applications are invited for highly motivated students wishing to undertake research towards a PhD in synthetic chemistry with Dr Fabrizio Ortu at the University of Leicester.

Dr Ortu’s research interests focus on the development of new co-operative chemistry of main group and f-block metals, applied to the discovery of sustainable methods for the production of fine chemicals.

The formation of carbon-carbon (C-C) bonds promoted by precious metal catalysts is a keystone of chemical industry. However, due to the reliance of these reactions on exceedingly expensive platinum-group metal catalysts, a top priority for the chemical industry is to make these processes more sustainable by employing Earth-abundant, cheap and non-toxic metals. This would have a tremendous impact on the production of key molecules for the pharmaceutical (e.g. Sartan drugs for the treatment of high blood-pressure) and agrochemical (e.g. Boscalid, a broad-spectrum fungicide) industries, constituting markets worth billions of pounds per annum.

One solution to this problem is to use lanthanide (Ln) and s-block metals, which are amongst the most abundant groups of elements in the Earth’s crust and are virtually non-toxic. In this project we will develop new organometallic chemistry of s-block and Ln metals to efficiently promote synergic C-H activation chemistry and photo-redox catalysis.

As part of this multidisciplinary project, the successful candidate will handle highly air- and moisture-sensitive materials and will develop a broad knowledge of synthetic chemistry. Additionally, the synthetic work will be complemented by hands-on experience of a wide range of characterisation techniques e.g. X-ray crystallography, multinuclear NMR, UV/vis/NIR spectroscopy etc.

References:


**Funding details:**
Directly funded 3.5 year project studentship from the Department of Chemistry.

**Entry requirements:**
Applicants are required to hold/or expect to obtain a UK Bachelor Degree 2:1 or better in a relevant subject. The University of Leicester [English language](#) requirements apply where applicable.

Knowledge of synthetic chemistry and experience of anaerobic techniques is desirable, but adequate training will be provided.

**How to apply:**
You should submit your application using our [online application system](#).

Apply for a PhD in Chemistry

In the funding section of the application please indicate you wish to be considered for the **Ortu 2019 Studentship**

In the proposal section please provide the name of the supervisor and project.

**Project / Funding Enquiries:** [chempgr@le.ac.uk](mailto:chempgr@le.ac.uk)

**Application enquiries to:** [pgradmissions@le.ac.uk](mailto:pgradmissions@le.ac.uk)