

PhD position in Molecular Magnetic Framework Materials at University College Dublin

Applicants are sought for a postgraduate student in the School of Chemistry for conducting research into molecular magnetic framework materials in the Keene group. This PhD scholarship is for a period of four years and is supported by the School of Chemistry.

Framework materials provide a stable platform for the incorporation of multiple chemical and physical properties, such as guest storage and separation, catalysis and magnetic switching. They can be constructed around reactive species that can be affected by chemical or physical stimuli, potentially leading to detection of guest molecules and a means of monitoring chemical and physical change in the materials. This can give insight into the processes that occur in these frameworks. The inclusion of molecular magnetic centres in these frameworks can allow us to detect this change in minute detail due to the sensitivity of magnetic characterisation, highlighting subtle variation in structure as the material properties evolve.^[1,2,3]

The project involves the design and synthesis of framework materials based on magnetic components, aiming to produce compounds that respond magnetically to external stimuli as a means of sensing guest molecules and for tracking the evolution of materials properties. Key tasks will include the synthesis of framework materials through a number of synthetic pathways, ligand synthesis, activation and manipulation of materials under various conditions and characterisation and analysis of their properties.

- [1] Keene, Kepert *et al.*, *Dalton Trans.*, 2014, **43**, 14766.
- [2] Keene, Doonan, Sumby *et al.*, *Dalton Trans.*, 2013, **42**, 7871.
- [3] Keene, Kepert *et al.*, 2012, *Inorg. Chem.*, 2012, **51**, 9192.

Applications are welcome from students from Ireland/EU with, or expecting to gain, a first class Honours degree (or equivalent) in Chemistry or a related subject. The successful candidate can start in September 2016. The position will be filled once a suitable candidate has been identified so early application is advised. Interviews will be held by Skype or in person as appropriate.

A Scholarship for up to 4 years of stipend (€15,000) and fees (EU Level) is available for the successful applicant thanks to generous funding from University College Dublin. There will be a requirement to teach up to 144 hours per year in undergraduate laboratories and tutorials as part of the scholarship.

Candidates should apply directly to Dr Tony Keene (tony.keene@ucd.ie) Applicants should send a cover letter and a CV including the names of at least two people willing to provide a reference.

UCD supports equal opportunities and does not discriminate against individuals on the basis of gender, age, race, colour, nationality, ethnic or national origin, religion, marital status, family status, sexual orientation, disability or membership of the traveller community.