MSc by Research (MRes) opportunity in the Pike group

Funds available to cover all university fees*

*home (UK) students only

Are you finishing your 3rd year and interested in a research-based master’s year (with no fees to pay)?

The Pike group are looking for an enthusiastic undergraduate to join the research team in Oct 2023 for a 1-year research project. The Pike group study the photochemistry and reactivity of metal-oxo cluster molecules and metal oxide materials.1-3

The master’s by research course is a research only degree, without exams or taught modules. At the end of the year the student will write a research thesis on their project.

Project Outline: New Photoactive Porous Materials

Metal organic frameworks (MOFs) comprise of metal nodes connected by organic linkers. These materials are very useful as heterogenous catalysts, and in gas storage and separation, with porous MOFs finding their first industrial uses in recent years. This project will explore methods for connecting pre-made photoactive metal-oxo clusters together, targeting new materials which can harness abundant sunlight and oxygen to perform useful chemical transformations.4 This approach will allow for custom made clusters with varying shapes and optimised photoredox reactivity to be used to build new 3D porous materials. The new materials will be studied using X-ray diffraction, UV & XPS spectroscopies and solid-state NMR spectroscopy, and will be tested as photocatalysts.

Seb is a Royal Society University Research Fellow, in joining the group you will be a crucial member of the research team and will work closely with Seb. We work in the MAS building in a sociable lab (with the Brinkert group). We also regularly join other research groups for Solid-State Chemistry Group meetings. If you have any questions, please contact Seb by email at sebastian.pike@warwick.ac.uk or drop by for a chat in MAS 4.11. Find out more at https://warwick.ac.uk/pikegroup/