PhD Studentship

Dr Mark Senn

**PhD project:** High pressure studies of functional materials  
**Supervisor:** Dr Mark Senn  
**Funding availability:** A fully funded stipend with UK fees for 3.5 years is available. Applicants that are not from the UK are welcome to apply, but they will need to find additional funding for the full Band 2 Postgraduate Research fees (https://warwick.ac.uk/services/academicoffice/finance/fees/pgr/).  
**Deadline:** 31st March 2021

**Project description:**
The project will exploit high pressure to understand how the functional properties of electronic materials can be tuned. You will first use high-pressure techniques to synthesise novel ceramic materials. Then you will characterise the structure and properties of these materials using state-of-the-art central facilities, including the UK and European synchrotron and neutron spallation sources, as well as becoming an expert at using our ever growing suite of in-house equipment. A particular emphasis of the project will be studying how the structures of these materials change under pressure towards application in technologies such as magnetic levitation and novel data storage devices. You will learn advanced techniques, including *in situ* diffraction experiments using diamond anvil cells that can reach pressures approaching that of the earth’s lower mantle. As part of your research project you will spend time working with collaborators in Taiwan and France, and have multiple opportunities to present your work at international conferences. You will join a lively team of 6 other PhD students as we seek to understand the fundamental mechanisms behind phenomena as varied as magnetism, negative thermal expansion, ferroelectricity, oxidative addition and superconductivity. More details of our research can be found at www.senngroup.com.

**Requirements:**
Applicants should have an honours degree (at least II.1 or equivalent) in chemistry, physics, or material sciences.

**How to apply:**
Interested applicants should contact Dr Mark Senn (m.senn@warwick.ac.uk) with a CV at the earliest possible instance.