



UNIVERSITY OF  
CAMBRIDGE

Department of Earth  
Sciences

## Post-doctoral Research Associate positions in Ferroelectric, ferroelastic and multiferroic materials

We are seeking applications for two postdoctoral research position in the University of Cambridge to work on an EPSRC funded project in a collaborative venture with colleagues from Queen's University, Belfast, the University of Warwick and the University of St. Andrews on "Ferroelectric, ferroelastic and multiferroic domain walls: a new horizon in nanoscale functional materials".

*One position is for a theoretician to work with Prof. Ekhard Salje* to determine the role of elastic strain and microstructure dynamics in controlling the structural evolution, magnetic, dielectric, electrical and electronic properties of ferroic and multiferroic materials. Previous work was undertaken using several simulation methods, in this project we will first focus on Molecular Dynamics (MD) simulations, probably using the LAMMPS code. It is expected that applicants will have previous experience with MD simulations and some knowledge of Monte Carlo approaches. If the candidate has done mainly DFT work, additional connections with MD will be required during the course of the project.

*The second position is for an experimentalist to work with Prof. Michael Carpenter.* The experimental part of this project in Cambridge involves investigation of the elastic properties of small samples as simultaneous functions of temperature and magnetic field, primarily using unique facilities for Resonant Ultrasound Spectroscopy (RUS). The RUS technique allows elastic and anelastic properties of single crystal and ceramic samples to be determined over wide temperature intervals and in a magnetic field up to 14 Teslas. The scientific objectives are to investigate the role of elastic strain and strain relaxation dynamics associated with phase transitions in bulk samples and the dynamics of strain related domain walls within them.

Further particulars and information at <http://www.jobs.cam.ac.uk/job/14329/> and <http://www.jobs.cam.ac.uk/job/14328/>

The University and the Department are committed to equality and diversity, the University holds an institutional Athena-SWAN silver award and the department is a bronze award holder. Details of some of the family-friendly policies operated by the University are at: <http://www.hr.admin.cam.ac.uk/pay-benefits/cambens-employee-benefits/family-friendly..>

The closing dates are **end August, 2017.**

See also our website <http://www.esc.cam.ac.uk>

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