Phase-field study of multi-layer magnetoelectric composites

Project Description: In magnetoelectric composite materials, the control of magnetic permeability through electric fields is promised to create new voltage-tunable inductors (VTI). This project will elucidate the electric field control mechanism of soft-hard magnetic exchange coupling on magnetic permeability from the magnetic domain level through phase field modeling and computer simulation, and establish a universal theoretical model for the electric field control mechanism of exchange coupling effect on magnetic permeability of magnetoelectric composite materials. This project aims to provide the optimal design solution for highly tunable co-fired magnetoelectric VTI by exploring the mechanism of exchange coupling effect under internal stress conditions.

Job Description: We are seeking a highly skilled and motivated research fellow specializing in multiferroic materials and computer simulation. The ideal candidate will have a strong background in materials physics, especially ferroelectric and ferromagnetic theory. The research fellow will work on phase field simulations on a supercomputing platform. Collaborating closely with a diverse team, you will actively contribute to the development and submission of research papers in decent reputable journals. Throughout the experience as a Focused Research Extended Experience (FREE) research fellow, you will be able to cultivate the relevant research and practical skills in a focused and extensive manner such that enhancing your chances for advancing graduate studies or getting a long term well-paid industrial job.

The term of employment spans two years, and the contract is structured for annual renewal.

Qualifications:

- Master's or Bachelor's degree in Materials Science or Physics.
- Multiferroic functional materials, phase field simulation, ferromagnetic physics and other related background or research experience.
- Proficiency in Linux operating system and Fortran or C programming language