多层磁电复合材料的相场研究

【项目描述】：在磁电复合材料中，通过电场对磁导率的调控可望创造出新型电压可调电感器（VTI）。本项目将通过相场方法建模和计算机模拟，从磁畴层次上阐明软磁-硬磁交换耦合对磁导率的电场调控机制，并建立交换耦合效应对磁电复合材料磁导率的电场调控机制的普适理论模型。本项目旨在通过探究在内应力条件下交换耦合效应的作用机制，为高可调性共烧磁电 VTI 提供最优设计方案。

【职位概述】：我们正在寻求一位基础扎实、自我驱动，对多铁性材料和计算机模拟感兴趣，且愿意开展研究工作的科研助理。理想的候选人应具有材料物理，尤其是铁电、铁磁理论方面的相关背景知识。候选人将在超算平台进行相场模拟来开展工作，通过与团队成员的密切合作，在知名期刊上发表相关学术论文。通过聚焦性科研延展项目（FREE），候选人将有机会获取开展研究工作所需的专业技能和实操技能，从而增加申请博士或硕士研究生项目获批的可能性以及获得工业界长期工作的机会。

【职位要求】：

- 材料学、物理学等相关专业的学士及以上学历。
- 多铁性功能材料、相场模拟、铁磁物理等相关背景或科研经历。
- 熟悉 Linux 操作系统及 Fortran 或 C 编程语言。

有关此职位的问题，请联系耿立威博士，电子邮件：liwei.geng@scupi.cn。

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.

This position commences in or after early 2024, with individuals anticipated to initiate their responsibilities no later than Spring 2024. 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

For questions regarding this position, please contact Dr. Liwei Geng, @ liwei.geng@scupi.cn.