

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of ...Mathematics and Physics
Supervisors	Principal supervisor: Professor/Dr Hao Yu..... (XJTLU) Co-supervisor: Professor/Dr...Chen Xuan.....(XJTLU) Co-supervisor: Professor/Dr... Liam O'Brien.....(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Magnetic Skyrmions, Berry Phase and Topological Hall Effect
Contact	Please email hao.yu@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in ...Physics.....
Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, if the first language is not English. This position is open to all qualified candidates irrespective of nationality.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

The PhD studentship is available for three years subject to satisfactory progress by the student. The award covers tuition fees for three years (currently equivalent to RMB 99,000 per annum) and provides a monthly stipend of 5,000 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. The scholarship holder is expected to carry out the major part of his or her research at XJTLU in Suzhou, China. However, he or she is eligible for a research study visit to the University of Liverpool of up to six months, if this is required by the project.

Project Description:

The study of magnetic skyrmions has attracted a lot of attention due to their potential applications in information storage and processing. One of the interesting phenomena associated with skyrmions is the Topological Hall Effect (THE), which arises due to the presence of a Berry phase in the electronic wavefunction of the system. In this theoretical study, we will investigate the THE in magnetic skyrmions using a model based on the Landau-Lifshitz-Gilbert (LLG) equation and the Thiele's equation, as well as micromagnetic simulations. We will analyze the dependence of the THE on various parameters. Furthermore, we will explore the dynamics of skyrmions in the ferrimagnetic and antiferromagnetic systems and their potential use in data/logic devices. This study's findings will enhance the fundamental comprehension of topological Berry phase and magnetic skyrmions, along with their prospective applications in spintronics.....

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For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

<https://www.xjtlu.edu.cn/en/admissions/global/entry-requirements/>

<https://www.xjtlu.edu.cn/en/admissions/global/fees-and-scholarship>

How to Apply:

Interested applicants are advised to email hao.yu@xjtlu.edu.cn (XJTLU principal supervisor's email address) the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school transcripts in both Chinese and English (for international students, only the English version is required)
- Verified certificates of education qualifications in both Chinese and English (for international students, only the English version is required)
- PDF copy of Master Degree dissertation (or an equivalent writing sample) and examiners reports available

Informal enquiries may be addressed to Professor/Dr. (.....@xjtlu.edu.cn), whose personal profile is linked below,
<http://www.xjtlu.edu.cn/en/faculty/.....>