PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Mathematics and Physics
Supervisors	*Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.* Principal supervisor: Dr Jie Chen (XJTLU) Co-supervisor: Professor Fei Ma (XJTLU) Co-supervisor: Professor Alexander Movchan (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Generalized Multiscale Methods Based on the Projection Embedded Discrete Fracture Model and Its Application in Unconventional Reservoir Simulation
Contact	Please email Jie.Chen01@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://www.xjtlu.edu.cn/zh/staff-details/staff/jie-chen01

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Mathematics, or Computer Science, or petroleum engineering.

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). It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. 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 up to six months, if this is required by the project.

Project Description:

Fractured porous media flow widely exists in the field of underground engineering and has critical applications. While for real-field problems on the large scale, fractures have diverse forms and complex spatial distributions, and their permeabilities are higher or lower than the surrounding matrix permeability, with typically multiscale features. Moreover, in general, the geological formations are complicated and the porous media have anisotropic characteristics. All these pose challenges to the numerical simulation of flow in fractured porous media. Therefore, in this project, we explore constructing the generalized multiscale methods based on the projection embedded discrete fracture model, for improving the computational efficiency and at the same time keeping the solution accuracy. The implementation of this project is of great significance to develop and complement the model reduction theories and methods of fractured porous media flow.

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 Jie.Chen01@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 formal reference letters
- Personal statement outlining your interest in the position
- Certificates of English language qualifications (IELTS or equivalent)
- Full academic 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