

## PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Intelligent Manufacturing Ecosystem
Supervisors	Principal supervisor: Dr Long Huang (XJTLU) Co-supervisor: Dr Yi Chen (XJTLU) Co-supervisor: Dr Joseph Camm (UoL) Co-supervisor: Dr Volfango Bertola (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Intelligent Flow Control for Liquid-Gas Two-Phase Flow Distribution
Contact	Please email <a href="mailto:long.huang@xjtlu.edu.cn">long.huang@xjtlu.edu.cn</a> (XJTLU principal supervisor's email address) with a subject line of the PhD project title.  The principal supervisor's profile is linked here: <a href="https://www.xjtlu.edu.cn/en/departments/academic-departments/entrepreneur-college-taicang/staff/long-huang">https://www.xjtlu.edu.cn/en/departments/academic-departments/entrepreneur-college-taicang/staff/long-huang</a>

### **Requirements:**

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Mechanical Engineering, Energy and Power Engineering, Applied Mathematics, Computer Science and other relevant fields. 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:**

To address the issue of enhancing the overall operational efficiency of multi-channel heat exchangers under various operating conditions, the current bottleneck lies in the inability to reflect the impact of microscale flow and heat transfer characteristics on the overall efficiency through mathematical modeling. Furthermore, the macro-level system operation control mechanism cannot be associated with local performance fluctuations in the heat exchanger. To further explore the potential for improving the efficiency of heat exchangers, it is necessary to determine the correlation between various internal parameters of the heat exchanger and control parameters at the system interaction level. Solving this problem can reveal the matching rules between the geometric design of the heat exchanger and the flow control at the system interaction level. By integrating fan speed and multi-circuit solenoid valve opening combinations under the innovative concept of non-uniform structures, the overall energy efficiency of heat exchangers under various operating conditions can be further enhanced.

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 long.huang@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