

## PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University (XJTLU), China
School	School of Science
Supervisors	Principal supervisor: Professor/Dr Ankit Garg (XJTLU) Co-supervisor: Professor/Dr Linxi Yuan (XJTLU) Co-supervisor: Professor/Dr Guijie Sang (University of Liverpool) Co-supervisor: Professor/Dr Honghu Zhu (Nanjing University)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Biochar-Mediated Enhancement of Bioelectricity Generation and Water Retention in Plant Microbial Fuel Cells (PMFCs): An Integrated Experimental and AI Approach
Contact	Please email <a href="mailto:Ankit.Garg@xjtlu.edu.cn">Ankit.Garg@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://scholar.xjtlu.edu.cn/en/persons/AnkitGarg">https://scholar.xjtlu.edu.cn/en/persons/AnkitGarg</a>

### **Requirements:**

A Master's degree with Merit and a Bachelor's degree with first-class or upper second-class honors are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis in certain disciplines.

Evidence of good spoken and written English is essential. The candidate should have an IELTS (or equivalent) 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 holders are expected to conduct the majority of their research at XJTLU in Suzhou, China. However, they may apply for a short-term research visit to the University of Liverpool if the project requires it.

**Project Description:**

This project aims to enhance the bioelectricity generation in Plant Microbial Fuel Cells (PMFCs) through biochar amendment, integrating AI-driven optimization to maximize performance. The project explores how biochar type (feedstock/pyrolysis temperature) influences soil water retention, microbial activity, and ion transport—key factors in PMFC efficiency. Combining laboratory experiments (soil-biochar characterization, electrochemical analyses) with field monitoring (real-time sensor data), the study aims to develop predictive AI models correlating biochar properties with bioelectricity output. Outcomes will advance sustainable energy solutions, water-smart agriculture, and circular economy practices by repurposing agricultural waste into conductive biochar. The PhD candidate will gain expertise in geoenvironmental engineering, AI modeling, and renewable energy systems, with opportunities to publish in high-impact journals and collaborate with industry partners. 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 Ankit.Garg@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