

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	Principal supervisor: Professor/Dr. Meng Ding (XJTLU) Co-supervisor: Professor/Dr. Lifeng Ding (XJTLU) Co-supervisor: Professor/Dr. Andrea Vezzoli (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Three-dimensional anti-oxidative MXene composites for long-term stable performance of capacitive deionization
Contact	Please email Meng.Ding@xjtlu.edu.cn 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 material science, chemistry, chemical engineering, physics, or environmental science. 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 80,000 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:

Capacitive deionization (CDI) is an emerging electrochemical desalination technology. Traditional electrode materials in CDI have been limited by their low adsorption capacities due to co-ion expulsion. Two-dimensional (2D) transition metal carbides (MXenes) have demonstrated attractive performances in CDI as electrode materials. However, the stability and self-stacking are great concerns for MXene as they are easy to oxidize and aggregate. In this project, we aim to design an all-around design strategy to solve the bottlenecks. Antioxidized MXene nanosheets will be fabricated via the regulation of their surface environments. Then antioxidantized MXene nanosheets will be constructed into 3D structures to alleviate self-stacking. The ion adsorption and ion selectivity will be analyzed by in-situ/ex-situ characterization tools. The assembly strategy is expected to enhance long-term stability of MXene-based electrodes in CDI applications and motivate the rational construction of functional MXene composites.

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/doctoral/entry-requirement-phd/>

<https://www.xjtlu.edu.cn/en/admissions/doctoral/postgraduate-research-scholarships>

How to Apply:

Interested applicants are advised to email Meng.Ding@xjtlu.edu.cn with 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. Meng Ding (Meng.Ding@xjtlu.edu.cn), whose personal profile is linked below, <https://www.xjtlu.edu.cn/zh/departments/academic-departments/chemistry/staff/meng-ding>