

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Chemistry
Supervisors	Principle supervisor: Dr Graham Dawson (XJTLU, Department of Chemistry) Co-supervisor: Professor Kim lau (XJTLU, Department of Chemistry) Co-supervisor: Dr Frederic Blanc (UoL, Department of Chemistry)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Nanomaterial composite synthesis to achieve and investigate visible light active photo and electro catalysts
Contact	Please email graham.dawson@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 Chemistry. 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. A good level of spoken Chinese will be required for the collaborative aspects of the project. Evidence of Chinese language skill is required for non-native speakers.

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 3500 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 three months, if this is required by the project.

Project Description:

The objectives of this research are to prepare TiO₂ nanotubes by anodization, and tailor their optical properties through doping to prepare a visible light active photocatalyst for water splitting and investigate the photoelectrochemical properties of the composites. The TiO₂ nanotube arrays will be fabricated by a low cost anodization method and composites with other semiconductor, organic modifiers or noble metal nanoparticles formed to achieve highly efficient water splitting photoelectrodes. We aim to systematically investigate Au particle size and synergistic effects with MoS₂, due to its properties as a good photocatalyst and electrocatalyst with very low overpotential for hydrogen evolution. The nanotube system will also be concurrently doped with enediol small molecules to investigate the effects. Once this specific system has been investigated, evaluated and tested by cutting edge spectroscopic methods, specifically scanning electrochemical microscope system and a photoelectrochemical workstation, new insights into the processes occurring are expected to be found. This can then be adapted to other semiconductor noble metal systems for investigation.

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

<http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements>

<http://www.xjtlu.edu.cn/en/admissions/phd/feescholarships.html>

How to Apply:

Interested applicants are advised to email graham.dawson@xjtlu.edu.cn 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)

Informal enquiries may be addressed to Dr. Graham Dawson (graham.dawson@xjtlu.edu.cn), whose personal profile is linked below,

<http://www.xjtlu.edu.cn/en/departments/academic-departments/chemistry/staff/graham-dawson>