

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Chemistry
Supervisors	Principle supervisor: Dr. Elena Yu. Konyshева (Xi'an Jiaotong-Liverpool University) Co-supervisor: Dr. George Darling (University of Liverpool, UK)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	“Comparative analysis of chromium poisoning in solid oxide fuel /electrolysis cells (SOFC/SOEC)”; 对比分析铬在固体氧化物燃料电池和固体氧化物电解池中的毒化研究 (SOFC/SOEC) .
Contact	Please email elena.konysheva@xjtlu.edu.cn and copy doctoralstudies@xjtlu.edu.cn with a subject line of the PhD project title

Requirements:

Successful applicant should be highly motivated and have either a BSc/BEng (First Class or 2:1 honours degree) or expected to have MRes or MSc in Chemistry, Material Science, Electrochemistry or Chemical Engineering. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, or an equivalent qualification, if the first language is not English. It is also essential to have good team working skills and ability to carry out research in a multidisciplinary environment across the University and where necessary, deal with external parties in questions associated with analysis of the developed materials. 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 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:

Nowadays development of green approaches for power generation is one of the priority tasks. Fuel cell technology demonstrates noticeable progress and remarkable achievements. Efficiency of solid oxide fuel cells (SOFC) can exceed 60%. A solid oxide electrolysis cell (SOEC) can be used for water and/or CO₂ electrolysis to produce pure hydrogen and/or syngas. Electrochemical performance of SOFC and SOEC devices suffers from Cr-deposition within the electrodes. The project will focus on the identification of Cr-poisoning mechanisms in SOFC and SOEC systems. New materials suitable for application in SOFC and SOEC devices with high tolerance to chromium poisoning will be developed. Previous experience in using the following techniques will be beneficial: fabrication of half-cells and fuel cells with screen-printing and spin-coating techniques; Impedance spectroscopy; X-ray powder diffraction, thermogravimetric analysis (TGA), Transmission and Scanning electron microscopy, X-ray photoelectron spectroscopy, IR- and Raman spectroscopy as well as ability to perform DFT calculations. It will be required to provide qualitative and quantitative analysis of obtained data as well as generate suggestions for further development of the project. It is expected that the candidate will present research findings at the national/international workshops and conferences; write reports and drafts of papers for publication, and provide support to less experience colleagues (master and undergraduate students).

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

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

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

How to Apply:

Interested applicants are advised to email elena.konysheva@xjtlu.edu.cn (principle supervisor's email address) the following documents and copy doctoralstudies@xjtlu.edu.cn (please put the project title in the subject line).

- CV
- Two reference letters
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of above 6.5 or equivalent is required)
- 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. Elena Yu. Konysheva (elena.konysheva@xjtlu.edu.cn), whose personal profile is linked below, <http://academic.xjtlu.edu.cn/chem/Staff/elena-konysheva>