PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	Principal supervisor: Assistant Professor Dr. Qiuchen Dong (XJTLU) Co-supervisor: Professor Dr. Mathias Brust (UoL) Co-supervisor: Assistant Professor Dr. Rui Yang (XJTLU) Co-supervisor: Associate Professor Dr. Lifeng Ding (XJTLU)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students) (Fees-only: tuition coverage)
Project Title	Machine Learning-assisted Novel Chemoresistive Gas Sensor Array for the Identification and Early Diagnostics of Colorectal Cancer by Volatile Organic Compounds (VOCs) from Stool Samples
Contact	Please email qiuchen.dong@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://www.xjtlu.edu.cn/en/departments/academic-departments/chemistry/staff/qiuchen-dong

Requirements:

The candidate should have a first class or upper second-class honors degree, or a master's degree (or equivalent qualification), in Chemistry, Chemical Engineering, Material Science, Materials Science and Engineering, or other closely related major.
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). 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:

Colorectal cancer has jumped to one of the three top leading reasons for the death among men and women in the elder people. The colonoscopy and flexible sigmoidoscopy have been practically used for the diagnostic of colon cancer for a long-term. However, the invasive colonoscopy is not applicable for certain age of population and certain underline health conditions. Alternatively, the scientists have invented the non-invasive stool-based DNA tests for the identification of possible existence of a few markers in stool. However, these methods suffer from certain level of false positive. This proposal aims to identify the complete gas profiles of the headspace of the human feces sample from the diagnosed colon cancer patients and healthy ones, resulting in the differences qualitatively and quantitatively. These findings are further employed and integrated for the synthesis of metal oxides and noble metal nanostructure materials in modifying the chemoresistive interdigitated sensors. The collected chemoresisitve signals and headspace gas profiles are going to be used in the machine learning process to further improve the accuracy of the early determination of colon carcinoma.

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 to qiuchen.dong@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