XJTLU-XJTU-UoL Joint Doctoral Supervision Project (Full-time)

Reference No.	SFXJTU2617
XJTLU School	School of CHIPS
PhD Programme	Electrical and Electronic Engineering
Supervisors	XJTLU supervisor: Dr. Qifeng Lu XJTU supervisor: Prof. Liang Tian XJTLU co-supervisor: Dr. Yinchao Zhao UoL supervisor: Dr Simon Maher
Project Title	Flexible Bioelectronic sEMG Sensors for Monitoring Lumbar Muscle Health and Early Detection of Lumbar Spine Disorders 用于监测腰肌健康和腰椎疾病早期检测的柔性生物电子表面肌电信号传感器
Application Deadline	Open until the position is filled

Requirements:

A UK first-class or upper second-class honours Bachelor's degree and a UK Master's degree with Merit (or their equivalent) are required for PhD admissions. Exceptional candidates holding only a Bachelor's degree may be considered on an individual basis.

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.

For more information about entry requirements and admission procedures of PhD programme at XJTLU, please visit:

Entry Requirement - Xi'an Jiaotong-Liverpool University

How to Apply - Xi'an Jiaotong-Liverpool University

Other Requirements (if any):

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Programme Structure:

Doctoral students in the joint programme are registered with both XJTLU and the UoL. Upon successful completion of the programme, the students will be awarded a PhD degree from University of Liverpool.

During their doctoral studies at XJTLU, students are expected to conduct research at XJTU as visiting students. Additionally, students have the opportunity to apply for a three to six-month research visit to UoL.

Project Description:

Lumbar spine disorders associated with prolonged sedentary behavior have become a major global health concern. However, current clinical diagnosis mainly relies on imaging technologies after symptoms appear, which limits early intervention and preventive treatment. EMG offers a promising approach for the early detection of physiological changes related to lumbar spine disorders. Nevertheless, conventional EMG systems often suffer from insufficient interface stability and poor signal quality during long-term monitoring. This research aims to develop flexible bioelectronic sensing systems for sEMG-based monitoring of lumbar health. By integrating flexible electronic structures with conductive hydrogel, the project seeks to enhance electrode-skin interface stability and improve signal quality in long-term sEMG monitoring. The proposed research will enable reliable wearable systems for continuous monitoring of lumbar muscle activity and early detection of lumbar spine disorders.

Joint Supervisory Team:

XJTLU supervisor: Dr. Qifeng Lu

XJTU supervisor: Prof. Liang Tian

XJTLU co-supervisor: Dr. Yinchao Zhao

UoL supervisor: Dr. Simon Maher

How to Apply:

Interested applicants are advised to email Qifeng.Lu@xjtlu.edu.cn the following documents for initial review and assessment (Please include 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