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

Reference No.	SFXJTU2612
XJTLU School	School of … School of Advanced Technology ……
PhD Programme	……..
Supervisors	XJTLU supervisor: Professor/Dr…Wen Liu… XJTU supervisor: Professor/Dr Guohe Zhang……... UoL supervisor: Professor/Dr…Joseph Yan…...
Project Title	Self-Powered Flexible Photodetectors Enabled by Coupled Piezo-Pyro Effects 基于压电-热释电耦合效应的自供电柔性光电探测器
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:

..... This project aims to develop a novel self-powered flexible photodetector based on ZnO/perovskite/ZnO heterojunction bipolar phototransistors (HBPTs). By integrating piezoelectric and pyroelectric effects, the device can operate without an external power source, making it particularly suitable for wearable health monitoring, low-power IoT environmental sensing, and next-generation human-machine interactive interfaces. The research will focus on understanding the coupling mechanism between piezoelectric and pyroelectric polarization, optimizing interface and band structures, and demonstrating a flexible device with significantly improved responsivity and detectivity. This work seeks to provide an energy-efficient and adaptable sensing solution for daily-life applications, promoting the development of sustainable and user-friendly optoelectronic systems.

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Joint Supervisory Team:

XJTLU supervisor: Professor/Dr… Wen Liu …

XJTU supervisor: Professor/Dr……Guohe Zhang

UoL supervisor: Professor/Dr…Joseph Yan…...

How to Apply:

Interested applicants are advised to email zhangguohe@xjtu.edu.cn or wen.liu@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