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

Reference No.	SFXJTU2533
XJTLU School	School of Engineering
PhD Programme	Civil Engineering (CEPR)
Supervisors	XJTLU supervisor: Dr. Jun Xia, Dr Engui Liu XJTU supervisor: Professor Yun Gao UoL supervisor: Dr. Paul Shepley
Project Title	超高性能混凝土在常温与高温下基于语义分割的物相识别：理论、方法与应用
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:

The proposed research project aims to enhance the microscale structure-driven multiscale modeling framework for UHPC materials by incorporating advanced AI-driven image semantic segmentation technology for identifying phase composition based on digital images from microscale examinations. The proposed framework aims to support the development of sustainable UHPC materials, as well as to examine the in-service performance of UHPC materials under normal and hazardous high-temperature environments. The following objectives have been identified:

1. Develop AI-driven, deep learning based image semantic segmentation technology to identify and quantify the phase components of UHPC materials under different working conditions.
2. Utilize the phase-field method to predict the mechanical properties of UHPC materials and explore the failure mechanism under normal and high temperatures.
3. Develop sustainable UHPC material with different hybrid fibres, aiming to provide a material solution to various applications that face fire hazards.

Joint Supervisory Team:

XJTLU supervisor: Dr. Jun Xia, Dr Engui Liu

XJTU supervisor: Professor Yun Gao

UoL supervisor: Dr. Paul Shepley

How to Apply:

Interested applicants are advised to email(Jun xia@xjtlu.edu.cn, or yun.gao@xjtu.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