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

Reference No.	SFXJTU2623
XJTLU School	School of Science
PhD Programme	Materials Engineering (MGPR)
Supervisors	XJTLU supervisor: Professor/Dr. Huifeng Wang XJTLU Co-supervisor: Professor/Dr. Yi Lin XJTU supervisor: Professor/Dr. Yu Zhou UoL supervisor: Professor/Dr. William Sharratt
Project Title	Multifunctional Ion-Responsive Self-Assembled Peptide-Polymer/MXene Hybrid Hydrogel for Diabetic Wound Healing 多功能离子响应性自组装肽-聚合物/MXene 复合水凝胶及其在糖尿病创面修复中的应用
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):

Applicants should meet the following requirements:

A Bachelor's or Master's degree in Materials Science, Biomedical Engineering, Chemistry, Polymer Science, Chemical Engineering, Biotechnology, or a closely related discipline.
A strong interest in biomaterials, tissue engineering, regenerative medicine, and interdisciplinary biomedical research.
Excellent laboratory skills, strong analytical thinking, and a high level of scientific curiosity.
Good written and spoken English, with effective scientific communication skills.
The ability to work both independently and collaboratively in a multidisciplinary research environment.

A proactive attitude, strong motivation, and excellent organizational and problem-solving skills.
A willingness to learn new experimental techniques and contribute to innovative research.

Desirable qualifications (not essential):

Previous research experience in one or more of the following areas: biomaterials, hydrogels, polymers, peptide engineering, nanomaterials, cell culture, tissue engineering, or related fields.
Experience with materials characterization techniques (e.g., SEM, FTIR, XRD, rheology, mechanical testing) and/or biological assays will be considered an advantage.
Prior experience in scientific writing or publications is desirable but not required.

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:

Chronic diabetic wounds remain a major clinical challenge due to persistent inflammation, excessive oxidative stress, impaired angiogenesis, bacterial infection, and delayed tissue regeneration. Developing biomaterials capable of actively regulating the wound microenvironment represents a promising strategy to improve healing outcomes.

This PhD project aims to develop a multifunctional ion-responsive self-assembled peptide-polymer/MXene hybrid hydrogel as a next-generation therapeutic platform for diabetic wound healing. By integrating bioactive self-assembling peptides, functional polymers, MXene nanomaterials, and ion-responsive crosslinking strategies, the project seeks to create an extracellular matrix (ECM)-mimicking hydrogel with tunable mechanical properties and multiple biological functions.

The successful candidate will participate in the rational design and fabrication of the hydrogel, investigate its physicochemical and biological properties, and evaluate its therapeutic performance through in vitro and in vivo studies. The project will involve biomaterial synthesis, materials characterization, cell culture, molecular and cellular biology, and animal models of diabetic wound healing.

This interdisciplinary research provides an excellent opportunity to gain expertise at the interface of materials science, biomedical engineering, nanotechnology, and regenerative medicine, while contributing to the development of innovative biomaterials for translational healthcare applications.

Joint Supervisory Team:

XJTLU supervisor: Professor/Dr. Huifeng Wang

XJTLU Co-supervisor: Professor/Dr. Yi Lin

XJTU supervisor: Professor/Dr. Yu Zhou

UoL supervisor: Professor/Dr. William Sharratt

How to Apply:

Interested applicants are advised to email Huifeng.Wang@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