

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Science
Supervisors	<p><i>Please list all the names in the supervisory team. It should be consistent with the information on your approved PGRS proposal.</i></p> <p>Principal supervisor: Dr. Xuan Xue (XJTLU) Co-supervisor: Dr. Lifeng Ding (XJTLU) Co-supervisor: Prof. William A Paxton (UoL) Co-supervisor: Dr. Georgios Pollakis (UoL)</p>
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Discovery, Synthesis, and Mechanism Study of Coating Polymers Effective against Respiratory Virus Transmission
Contact	<p>Please email xuan.xue@xjtlu.edu.cn (XJTLU principal supervisor's email address) with a subject line of the PhD project title.</p> <p>The principal supervisor's profile is linked here: https://scholar.xjtlu.edu.cn/en/persons/XuanXue</p>

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in Polymer Chemistry, Organic Chemistry or Materials Science. A sound knowledge of data analysis, statistics, numerical analysis is essential. Experience in Bioinformatics, Machine Learning (including using Python, Matlab, C++, or R) is desirable.

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 99,000 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:

An important aspect of managing fomite transmission is the knowledge and development of novel virucidal polymers to eliminate the problematic cross-infections. Recently, strong virion binding polymers were discovered via experimental high-throughput screening and computational virtual screening in our group. However, we found that virus binding and their inactivation at material surfaces are not related in the simple manner.

In this research, a dual-function polymer, which we demonstrated binds virions strongly and speeds their inactivation upon contact, will be the lead. The minor structure changes will be made to create a polymer library for the virucidal screening against Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). These data will be processed with the aid of computational models to develop structure-activity relationship (SAR) for investigation of the mechanism. Finally, the polymers of interest will be scale-up synthesized for coating applications on a wide range of solid surfaces.

Summarily, this PhD project is interdisciplinary in nature, including monomer synthesis and characterizations, polymerization and characterizations, polymer microarray fabrication and characterizations, microbiology assays, machine learning and computational modelling.

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/global/entry-requirements/>

<https://www.xjtlu.edu.cn/en/admissions/global/fees-and-scholarship>

How to Apply:

Interested applicants are advised to email.....@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