

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

Reference No.	SFXJTU2621
XJTLU School	School of Science
PhD Programme	Environment Science
Supervisors	Principal Supervisor: Dr. Peng Zhao XJTLU Co-supervisor: Dr. Lei Han XJTU supervisor: Prof. Hongmei Xu UoL supervisor: Dr. Yuan Shi
Project Title	External and Internal Exposure Characteristics of Atmospheric Emerging Pollutants in Multiple Media and the Health Effects 多种介质中大气新污染物的内外暴露特征及其对健康的影响
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 are generally expected to have a background in environmental science and engineering, analytical chemistry, atmospheric science, toxicology, or related disciplines. Proficiency in operating instruments such as GC-MS and LC-MS/MS is highly desirable. Candidates should be skilled in data analysis using R, Python, or similar tools. Familiarity with the collection and analysis procedures for biological samples (e.g., blood, urine) is also required. Additionally, candidates should possess abilities in experimental design, and English scientific writing.

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 will focus on typical atmospheric emerging contaminants (ECs), including microplastics, phthalates (PAEs), perfluoroalkyl and polyfluoroalkyl substances (PFASs), and antibiotics. We will systematically investigate the associations among inhalation exposure, internal exposure, and related health effects of ECs. Gaseous and PM_{2.5} samples will be collected simultaneously across four seasons from three typical functional zones (commercial, industrial, and agricultural areas), to characterize the spatiotemporal distribution and inhalation exposure levels of ECs. Concurrently, long-term residents or occupationally exposed population will be recruited from these typical functional zones to collect biological samples (blood, urine) for analyzing the internal exposure levels of ECs and related biomarkers. The associations between external and internal exposure to ECs will be evaluated using correlation and multivariate regression analyses. Bayesian Kernel Machine Regression (BKMR) will be applied to characterize the dose - response relationships between pollutant exposure and health indicators. These findings aim to fill the gap regarding the link between exposure to atmospheric ECs and health effects, providing a scientific basis for the prevention and control of ECs.

Joint Supervisory Team:

Principal Supervisor: Dr. Peng Zhao

XJTLU Co-supervisor: Dr. Lei Han

XJTU supervisor: Prof. Hongmei Xu

UoL supervisor: Dr. Yuan Shi

How to Apply:

Interested applicants are advised to email peng.zhao@xjtlu.edu.cn and xuhongmei@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