

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Dr. Yue Li (XJTLU) Co-supervisor: Professor Weihua Pei (JITRI) Co-supervisor: Professor Hai-Ning Liang (XJTLU) Co-supervisor: Dr. Heba Lakany (UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project
Project Title	Fabrication of High-Performance Neural Sensors for Signal Acquisition of Non-Invasive Brain-Computer Interface (BCI) 高性能无创脑机接口信号采集传感器制备研究
Contact	Please email yue.li@xjtlu.edu.cn (XJTLU principal supervisor's email address) or peiwh@semi.ac.cn (JITRI supervisor's email) with a subject line of the PhD project title

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification) in **electronic science and technology, materials science and engineering** and other related majors;

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.

Please note that the joint PhD project is industry-based and the candidate is expected to undertake part of the research at the partner organization in China.

Degree:

The student will be awarded a PhD degree from the University of Liverpool (UK) upon successful completion of the program.

Funding:

This PhD project is a collaborative research project between XJTLU (<http://www.xjtlu.edu.cn>) in SIP, Suzhou and JITRI (Jiangsu Industrial Technology Research Institute) Brain Machine Fusion Intelligence Institute Co., Ltd. (JITRI BMF) in Xiangcheng, Suzhou. The student will be registered as an XJTLU PhD student but is expected to carry out the major part of his or her research at the Institute.

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 80,000 per annum). In addition, during the period of undertaking main research at institute in Suzhou, the PhD candidate will be provided with monthly living allowance at a standard **RMB 5000** per month by Jiangsu JITRI BMF.

Project Description:

Electroencephalography (EEG) has been extensively studied in clinical medicine and brain-computer interfaces due to its non-invasive characteristic. In this system, the EEG sensors which used to extract EEG signals are the key components of neural feedback and BCI. This project will dedicate to the fabrication of high-performance EEG sensors based on the materials design and structure optimization. It is our great vision to achieve non-invasive EEG signal acquisition with both low interface impedance and high comfort, thus contributing to the commercial application of BCI.

脑电图（EEG）由于其非侵入性的特点，在临床医学和脑机接口中得到了广泛的研究。其中，用于提取脑电信号的脑电传感器是神经反馈和脑机接口的关键元件。本课题将从材料设计与结构优化出发，致力于高性能脑电信号传感器的开发研究，以期实现低界面阻抗和高舒适性兼具的无创脑电信号采集，促进无创脑机接口系统的商业化推广应用。

For more information about doctoral scholarship and PhD programme at Xi'an Jiaotong-Liverpool University (XJTLU): Please visit

<http://www.xjtlu.edu.cn/en/study-with-us/admissions/entry-requirements>

<http://www.xjtlu.edu.cn/en/admissions/phd/feesscholarships.html>

Supervisor Profile:**Principal Supervisor:**

Dr. Yue Li is an Assistant Professor at the Department of Computing, Xi'an Jiaotong-Liverpool University. Dr Li's research interest is in the field of Human Computer Interaction (HCI), with particular emphasis on Virtual Reality (VR), Augmented Reality (AR) technologies, and Brain-Computer Interface (BCI).

<https://www.xjtlu.edu.cn/en/departments/academic-departments/computer-science-and-software-engineering/staff/yue-li>

JITRI co-supervisor:

Dr. Weihua Pei is a professor of University of Chinese Academy of Sciences, and senior member of Neural Engineering Branch of Chinese Society of Biomedical Engineering. His main research direction is neural interface, which includes the neural electrode, photo-electrode and EEG sensor with high sensitivity and high signal-to-noise ratio. A variety of sensor technologies developed by him have been transformed into products and go to sale. Part of the products have been selected into the list of independent scientific research instruments of the CAS. He has published more than 100 papers and obtained 11 authorized patents.

裴为华博士，中国科学院大学岗位教授，博士生导师，中国生物医学工程学会神经工程分会高级会员。主要研究高灵敏、高信噪比的神经电极、光电极及脑电电极器件。他主持研制的多种传感器技术已实现落地转化和市场销售，部分产品入选科学院自主研制科研仪器名单。在国内期刊外发表相关论文 100 余篇，获得授权发明专利 11 项。

<https://www.xjtlu.edu.cn/zh/departments/academic-departments/jitri/staff/weihua-pei>

XJTLU co-supervisor:

Dr. Hai-Ning Liang is Professor of Computing at Xi'an Jiaotong-Liverpool University (XJTLU) at the Department of Computing. He is serving as Head of Department. He is also the deputy director of the Suzhou Key Lab for Virtual Reality Technologies and also the XJTLU Virtual Engineering Center. Dr. Liang completed his PhD in computer science from Western University. Dr. Liang's main research interests fall in the broad area of human-computer interaction, with a focus on virtual/augmented reality, visualization, and gaming technologies.

<https://www.xjtlu.edu.cn/en/departments/academic-departments/school-of-advanced-technology/staff/haining-liang>

UoL co-supervisor:

Dr. Heba Lakany has a PhD from the University of Edinburgh in artificial intelligence and is a senior member of the IEEE. She joined the University of Liverpool in October 2019 as a Reader in the Department of Electrical Engineering and Electronics. Her research interests focus on human movement and development of technologies for assistance, augmentation and rehabilitation of human movement. For this she collaborates nationally and internationally with clinicians and industry. Dr Lakany has an extensive publication record in developing artificial intelligent and machine learning methods and technologies in medicine and engineering.

<https://www.liverpool.ac.uk/electrical-engineering-and-electronics/staff/heba-lakany/>

How to Apply:

Interested applicants are advised to email yue.li@xjtlu.edu.cn (XJTLU principal supervisor's email address) or peiwh@semi.ac.cn (JITRI supervisor's email) the following documents for initial review and assessment (please put the project title in the subject line).

- CV
- Two reference letters with company/university letterhead
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of 6.5 or above)
- Verified school 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