

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of EEE
Supervisors	Principle supervisor: Dr. Huiqing Wen (Xi'an Jiaotong-Liverpool University) Co-supervisor: Dr. Lin Jiang (University of Liverpool, UK); Dr. Yihua Hu (University of Liverpool, UK);
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	High-frequency-link DC Solid State Transformer For Flexible DC Distribution
Contact	Please email Huiqing.Wen@xjtlu.edu.cn (principal supervisor's email address) and copy doctoralstudies@xjtlu.edu.cn 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 **power electronics and renewable energy**. Evidence of good spoken and written English is essential. The candidate should have an IELTS score of 6.5 or above, or an equivalent qualification, 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 80,000 per annum) and provides a monthly stipend of 3500 RMB as a contribution to living expenses. It also provides up to RMB 16,500 to allow participation at international conferences during the period of the award. It is a condition of the award that holders of XJTLU PhD scholarships carry out 300-500 hours of teaching assistance work per year. 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 of up to three months, if this is required by the project.

Project Description:

Due to high efficiency and easy integration of energy storage devices and renewable energy sources (PV and Wind), flexible DC power distribution system has been widely used. As one key component, the DC solid state transformer (SST) with high efficiency for a wide operating range is essential. However, with the traditional phase shift control, high backflow power and current stress will significantly affect the conversion efficiency. In this project, the backflow power characteristics in both sides of SST converters will be comprehensively analyzed. On this basis, complete transmission power, backflow power and peak current mathematical models will be established. Various phase shift modulation (PSM) schemes, consist of the single phase shift (SPSM), symmetric double side phase shift (SDSPSM) and the optimized asymmetric double side phase shift (ODSPSM), are opted for a more in-depth analysis. A 1kW SST converter prototype will be developed with experimental results to verify the analysis.

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

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

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

How to Apply:

Interested applicants are advised to email Huiqing.Wen@xjtlu.edu.cn (principal supervisor's email address) the following documents and copy doctoralstudies@xjtlu.edu.cn (please put the project title in the subject line).

- CV
- Two reference letters
- Personal statement outlining your interest in the position
- Proof of English language proficiency (an IELTS score of above 6.5 or equivalent is required)
- 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)

Informal enquiries may be addressed to Dr. Huiqing Wen (Huiqing.Wen@xjtlu.edu.cn), whose personal profile is linked below,

<http://www.xjtlu.edu.cn/zh/departments/academic-departments/electrical-and-electronic-engineering/staff/huiqing-wen>