

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Electrical and Electronic Engineering
Supervisors	Principle supervisor: Prof. Cezhou Zhao (Xi'an Jiaotong-Liverpool University) Co-supervisor: Dr. Ivona Mitrovic (University of Liverpool, UK); Dr. Chun Zhao (Xi'an Jiaotong-Liverpool University) Prof. Mingxiang Wang (Soochow University, China)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Thin film transistors based on in-plane Si nanowires 基于平面生长晶硅纳米线的薄膜晶体管研究
Contact	Please email cezhou.zhao@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 Electronic Science & Technology. 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:

Silicon is the most important semiconductor material. Si nanowires, with the unique features of the materials at the nanoscale, are highly desirable for new generation of electronic and photonic devices. However, at present it is still difficult to fabricate Si nanowires in a well-controlled manner, if without using the expensive E-beam lithography. The major challenge is to achieve the in-plane control of the diameter and position of the nanowires. In this project, Si nanowires will be formed by a novel in-plane solid-liquid-solid (IPSL) growth method from the interaction between Indium droplet and a-Si precursor during a thermal annealing. The process is fully compatible with the conventional large area electronic manufacturing with a temperature lower than 400°C. The methodology to control the position and diameter of the Si nanowires will be explored. Then, thin film transistors (TFTs) will be designed and fabricated based on the Si nanowires. Properties of such kind of Si nanowire TFTs will be investigated. The outcome of this project should provide a strategy to form the Si nanowires in a controlled manner and to fabricate TFTs based on them.

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/entry-requirements.html>

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

How to Apply:

Interested applicants are advised to email cezhou.zhao@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 with company/university letterhead
- 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 Prof. Cezhou Zhao (cezhou.zhao@xjtlu.edu.cn), whose personal profile is linked below, <http://www.xjtlu.edu.cn/zh/departments/academic-departments/electrical-and-electronic-engineering/staff/cezhou-zhao>