

PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor/Dr. Ye Wu Co-supervisor: Professor/Dr. Chun Zhao Co-supervisor: Professor/Dr. Jiafeng Zhou(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Machine learning assisted modeling framework for DTCCO
Contact	Please email ye.wu@xjtlu.edu.cn with a subject line of the PhD project title. The principal supervisor's profile is linked here: https://www.xjtlu.edu.cn/en/staff-details/staff/ye-wu

Requirements:

The candidate should have a first class or upper second class honours degree, or a master's degree (or equivalent qualification), in various engineering disciplines such as electrical and electronics engineering, material science and engineering, integrated circuit engineering, Physics.

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 80,000 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:

The existing DTCO flow, which encompasses the device-to-circuit approach, is a well-established methodology that is known to be both time-consuming and expensive. As the CMOS process continues to scale down, device simulation heavily relies on physics-based models. However, implementing these models using programming is a challenging and error-prone task. Additionally, evaluating the device model parameters for extraction software is a time-consuming process, which significantly increases the turn-around time for the current DTCO flow. In light of these challenges, the objective of this research is to propose a machine-learning-assisted modeling framework within the DTCO flow to enhance computational efficiency and reduce turn-around time in a scientifically rigorous manner. This framework is designed to be fully compatible with the DTCO process and will be initially demonstrated and verified on MOSFET before being extended to FinFET and GAA. With this new framework, circuit simulators will be able to evaluate technology-independent PPA and early-stage DTCO for new emerging devices.

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 ye.wu@xjtlu.edu.cn 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