

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Electrical-and-Electronic-Engineering (EEE)
Supervisors	Principal supervisor: Prof Cezhou Zhao (XJTLU, Department of EEE) Co-supervisor: Prof Zhengjun Yao (JITRI) Co-supervisor: Dr Li Yang (XJTLU, Department of Chemistry) Co-supervisor: Dr Harm Van Zalinge (UoL, Department of EEE)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Controllable Synthesis and Electromagnetic Loss Mechanism of Nano Metal Modified Silicon Carbide Hollow Structure
Contact	Please email: cezhou.zhao@xjtlu.edu.cn (XJTLU principal supervisor's email address) or yaozj@jitri.org or yaozj@nuaa.edu.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 Materials Science, Electronic Science and Technology, or other related fields. 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:

This PhD project is a collaborative research project between XJTLU (<http://www.xjtlu.edu.cn>) and JITRI (Jiangsu Industrial Technology Research Institute) Innovation Center for Advanced Materials and Technology (<http://www.jitri.org/>), both of which locate at Suzhou, China. 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. Tripartite agreement will be signed among student, XJTLU and institute.

The PhD scholarship 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 no less than 5000 RMB as a contribution to living expenses. Additional meal and travel allowance may be provided by the Institute.

Project Description:

The development of new microwave absorbing materials with light weight, thin thickness, wide frequency band and high efficiency is the common demand of 5G communication equipment and intelligent equipment. In this context, based on the coupling design idea, this project intends to prepare high-performance nano-metal-modified hollow silicon carbide core-shell structure microwave absorbing materials and to study its microwave loss mechanism. First of all, hollow silicon carbide with regular morphology and uniform size will be prepared by sol-gel method and carbothermal reduction method, and systematic research will be conducted on its hollow structure control and absorbing performance to establish the relationship between the hollow structure and absorbing performance. Secondly, nano-metals will be used to further construct the conductor/semiconductor double hollow structure on the surface of hollow silicon carbide, and further research on the multiple interface structure of nano-metal-modified hollow silicon carbide structure and the regulation mechanism of the absorbing performance will be carried out. On this basis, through the combination of theoretical analysis, simulation calculations and experimental work, the influence law and regulation mechanism of the introduction of nano metal on the microwave loss and absorption performance of silicon carbide will be studied on the atomic scale, and the mechanism of synergistic enhancement of microwave loss between conductor/semiconductor interface and hollow structure could be revealed.

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/feescholarships.html>

Supervisor Profile:**Principal Supervisor:**

Link of Profile:

<https://www.xjtlu.edu.cn/en/departments/academic-departments/electrical-and-electronic-engineering/staff/cezhou-zhao>

JITRI co-supervisor:

Senior Business Director, Jiangsu Industrial Technology Research Institute (JITRI)
Professor of Materials Processing Engineering, Materials, Energy and Environment
Department. Nanjing University of Aeronautics and Astronautics (NUAA)
Director, Key Laboratory of Materials Preparation and Protection for Harsh
Environment, Ministry of Industry and Information Technology
Nanjing, China

How to Apply:

Interested applicants are advised to email: cezhou.zhao@xjtlu.edu.cn (XJTLU principal supervisor's email address) or yaozj@jitri.org or yaozj@nuaa.edu.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