

PhD studentship (Full-time)



Institution	Xi'an Jiaotong-Liverpool University, China
Department	Department of Applied Mathematics
Supervisors	Principal supervisor: Hui Zhang (XJTLU, Department of Applied Mathematics) Co-supervisor: Dr Arnold Abramov (JITRI, Institute of Deep Perception) Co-supervisor: Professor Yi Huang (UoL, Department of Electrical Engineering and Electronics)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Near-field interaction of electromagnetic field and heterogeneous structures and its application in tunable radar antennas
Contact	Please email hui.zhang@xjtlu.edu.cn (XJTLU principal supervisor's email address) or arnoldabramov@dpi-jitri.com (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 Electrical Engineering and Electronics or related disciplines, e.g., Physics, Applied Mathematics, Computational Sciences. Specialized experience in Optics, Photonics, Electrodynamics or Electronics is preferred. Ability of computer code development in MATLAB, FORTRAN, C or/and CST, COMSOL is desired.

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>) in Suzhou and JITRI (Jiangsu Industrial Technology Research Institute) Institute of Deep Perception (<http://www.idpt.org/>) in Wuxi. 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 in Wuxi. 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 an annually stipend at a standard around 60,000 RMB as a contribution to living, meal and accommodation allowance.

Project Description:

The Project is devoted to study of novel heterogeneous structures which allow getting desirable distribution and propagation features of electromagnetic field. This field inside and in vicinity of the structures called near field. It determines functional characteristics and properties of the far field. That is why its study is important and crucial for radar applications. Radar engineering as well as Wireless communications technology needs the high-performance heterogeneous structures with prescribed characteristics issues. That leads to the necessity of extending the capabilities of their modeling and improvement of methods of their production. The purpose of the project is to study the optical and electromagnetic characteristics of the proposed heterogeneous structures, as well as the possibility of their practical application as light sources and (or) receivers of electromagnetic waves. Basically, we assume the study of real models of structures (often, to simplify the calculations, one uses dimensionality reduction, non-physical data, etc.). For this purpose, in addition to standard methods, semi-analytical methods for calculating Maxwell equations will be developed that will increase efficiency and reduce calculation errors.

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:

Link of Profile: <https://www.xjtlu.edu.cn/en/departments/academic-departments/mathematical-sciences/staff/hui-zhang>

JITRI co-supervisor:

Link of Profile: https://www.researchgate.net/profile/Arnold_Abramov2 <https://orcid.org/0000-0003-2874-1874>

Dr. Arnold Abramov had his PhD in Physics. He was a senior researcher at Kuang-Chi Institute of Advanced Technology from 2011 to 2017 and at Yinuo Radar Technology Company in 2018. Since 2019, he has been the deputy director of radar artificial intelligence innovation center at Institute of Deep Perception Technology affiliated to JITRI. His research interests consist of semiconductor nano-structures, scattering and

propagation of electromagnetic waves, photonic crystals and metamaterials and developing devices model operating in microwave range. For his publications, see the above links.

How to Apply:

Interested applicants are advised to email hui.zhang@xjtlu.edu.cn (XJTLU principal supervisor's email address) or arnoldabramov@dpi-jitri.com (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