PhD studentship (Full-time)

Institution	Xi'an Jiaotong-Liverpool University, China
School	School of Advanced Technology
Supervisors	Principal supervisor: Professor/Dr Jie Sun (XJTLU) Co-supervisor: Professor/Dr Yongyou Li...(JITRI) Co-supervisor: Professor/Dr Akhtar, Riaz ..(UoL)
Application Deadline	Open until the position is filled
Funding Availability	Funded PhD project (world-wide students)
Project Title	Study on Treatment of onychomycosis with soluble microneedles loaded with Terbinafine nanogels
Contact	Please email jie.sun@xjtlu.edu.cn (XJTLU principal supervisor's email address) or (yongyong_li@tongji.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… pharmaceutics and biomaterial. 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) JITRI functional materials Institute in Suzhou. The student will be registered as an XJLTU PhD student but is expected to carry out the major part of his or her research at the Institute in Suzhou.

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). In addition, during the period of undertaking main research

at institute in Suzhou, the PhD candidate will be provided with monthly living allowance at a standard RMB 4200-5500 by JITRI functional materials Institute.

Project Description:

Onychomycosis is difficult to treat, which is one of the difficulties and hotspots in dermatology. The difficulty of transdermal penetration is an important bottleneck limiting the local drug treatment of onychomycosis, which often leads to the choice of systemic drug delivery methods with low bioavailability, high side effects and easy to cause drug resistance. Due to the high effective exploration on the local medication for onychomycosis in the early stage, it was confirmed that the local administration through the nail groove is feasible. As a minimally invasive and painless method, soluble microneedles can break through the epidermal barrier and make drugs enter the nail groove. In order to achieve the maximum local therapeutic effect, it is still necessary to solve the retention and slow release of drugs in the nail groove in order to achieve continuous antibacterial. This project will combine sustained and controlled release technology of nanogels and soluble microneedles to achieve the purpose of percutaneous and transdermal administration of antifungal drugs and controlled release of drugs retained in nail matrix. More specifically, This project will design hyaluronic acid microneedles combined with nanogels loaded with Terbinafine. Two step casting method will be used to prepare the transdermal drug delivery system. Its antibacterial activity will be determined by drug sensitivity test in vitro. To verify the clinical effect and safety of terbinafine hyaluronic acid microneedle by administering it to the methyl part of patients with onychomycosis.

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:

Dr Sun is currently the Senior Associate Professor of Department of Mechatronics and Robotics. She has broad academic working experience in China and Singapore for more than 20 years.

She has extensive research experience in 3D Printing for Healthcare Product Design, 3D Customized Food Printing, Biomimetic Scaffold Fabrication, Intelligent Process Monitoring, and Mechatronics & Instrumentation. Along with nearly 15 research projects sponsored by Singapore and China government agencies, and industries.

JITRI co-supervisor:

Dr.Yongyong Li is currently a full Professor of School of Medicine, Tongji Univ. Dr. Li's group studies controlled drug delivery, bio-inspired materials and nanobiotechnology, especially for

cancer and skin diseases. Beyond the basic research, Dr Li's current interest and effort are highly devoted to how to advance those frontier delivery platforms particularly microneedle and nano/hydro-gel into clinic stage, in collaboration with engineers and hospitals. Dr. Li has published 80+ peer-reviewed journal papers including top journals in Advanced Materials, ACS Nano, Biomaterials, and Small with a Scholar h-index of 32. He serves as an Editorial Board for Chinese Journal of Biomedical Engineering. Dr. Li is the recipient of the Shanghai Rising Star in Science and technology and the 100 Talents Plan of Tongji Univ for Young Talents. Dr. Li has coauthored several books including Methods in Molecular biology-siRNA delivery methods, Nanomaterials for Tumor Targeting Theranostics, Molecular Biopharmaceutics.

How to Apply:

Interested applicants are advised to email jie.sun@xjtlu.edu.cn (XJTLU principal supervisor's email address) or (yongyong_li@tongji.edu.cn) 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