



University of Nottingham
UK | CHINA | MALAYSIA



UNNC - IUE, CAS Doctoral Training Partnership

Available PhD Topics

PhD topic 1	Anthropogenic cycles, trade, and sustainable management of materials
IUE Supervisor	Prof Wei-Qiang Chen (https://macycle.org)
UNNC Supervisor(s)	Dr Faith Chan Prof Hing Kai Chan
Short introduction & description of PhD	<p>Anthropogenic cycles, trade, and sustainable management of materials are vitally important for current and future developments in China, extensively worldwide.</p> <p>We expect to have 1-2 doctoral students working on the following aspects:</p> <p>(1) to build a database on material flows, trade, life cycle assessment of materials including chemicals, plastics, and critical metals;</p> <p>(2) to explore patterns of materials uses among countries and over time, and the risks of materials flow in the global supply chains;</p> <p>and (3) to identify priorities and policies for sustainable management of materials.</p>
Contact points	Informal inquiries may be addressed to Dr Faith Chan (Faith.Chan@nottingham.edu.cn), Prof. Hing Kai Chan (Hingkai.chan@nottingham.edu.cn) and Prof Weiqiang Chan (wqchen@iue.ac.cn), but formal applications should follow the instructions in 'How to apply' section.
PhD topic 2	Efficient degradation of pollutants through microbial electrochemistry
IUE Supervisor	Prof Feng Zhao
UNNC Supervisor(s)	Prof Jun He
Short introduction & description of PhD	<p>Microbes are found to play important roles in geochemical cycling of metals in environments and have considerable potential for the remediation of contaminated environments via redox reactions. This project will focus on electron transfer chain of microbial extracellular respiratory and the function of redox proteins, shuttles and electrode material on pollutants degradation. The results will provide useful insights about the application of microbial electrochemistry for the bioremediation pollutants-contaminated environments.</p>
Contact points	Informal inquiries may be addressed to Prof Jun He (jun.he@nottingham.edu.cn) and Prof Feng ZHAO (fzhao@iue.ac.cn), but formal applications should follow the instructions in 'How to apply' section.

PhD topic 3	Research on the pathway of carbon peak carbon neutrality for building sector
IUE Supervisor	Prof Jianyi Lin
UNNC Supervisor(s)	Dr Wu Deng
Short introduction & description of PhD	President Xi Jinping announced to achieve carbon peaks by 2030, and strive to achieve carbon neutrality by 2060 at the United Nations General Assembly on September 22, 2020. Carbon neutrality has become an important national strategy. The visions of 2030 and 2060 provide clear goals and specific timetables for the country's energy revolution aimed at energy transition. As one of the three energy-consuming sectors of industry, transportation, and buildings, the building sector is closely related to energy consumption and carbon emissions. Energy transition and carbon neutrality will inevitably have a huge impact on the development of this sector. How to achieve carbon peaking and carbon neutrality in the construction sector is not only an urgent problem faced by relevant government departments, but also a hot topic of current research.
Contact points	Informal inquiries may be addressed to Prof Jianyi Lin (jylin@iue.ac.cn) and Dr Wu Deng (wu.deng@nottingham.edu.cn), but formal applications should follow the instructions in 'How to apply' section.
PhD topic 4	Response of soil systems to urban development in a changing environment
IUE Supervisor	Prof Yong-Guan ZHU
UNNC Supervisor(s)	Dr Tengwen LONG
Short introduction & description of PhD	Applications are invited for a PhD scholarship in the interdisciplinary field of urban environmental health. The successful applicant will have the opportunity to carry out high-impact research in reconstructing the influence of expanding urban systems on the environment, notably on the soil biogeochemical processes in urban or peri-urban environments across different timescales, past, present, and future. Possible research topics may include but are not limit to: (1) soil pollution as a result of urban development; (2) soil-crop interactions in agriculture; (3) soil microbiomes in response to climate change and human activities.
Contact points	Informal inquiries may be addressed to Dr Tengwen Long (Tengwen.Long@nottingham.edu.cn) and Prof Yong-Guan ZHU (ygzhu@iue.ac.cn), but formal applications should follow the instructions in 'How to apply' section.
PhD topic 5	Urban emerging contaminants and river ecosystem health
IUE Supervisor	Prof Yaoyang XU
UNNC Supervisor(s)	Dr Meili Feng Dr Faith Chan
Short introduction & description of PhD	Urban emerging contaminants such as microplastics, antibiotics and pharmaceuticals have increasingly been recognized as an important threat to river ecosystem health. However, there is still a lack of data-supported evidence on how river ecosystem health is threatened worldwide by urban emerging contaminants. As such, we seek candidates for the DTP program to develop a systematic workflow of data mining that can be applied

	<p>to quantify the pressure-state-response relationships between urban emerging contaminants and river ecosystem health across the world.</p> <p>Our research team is studying a wide range of research questions related to river ecosystem health by developing a set of meta-data tools and data products that are specified to freshwater biodiversity and emerging contaminants.</p> <p>Competitive candidates should be highly motivated. The ability to study both independently and collaboratively in a team environment is required.</p>
Contact points	<p>Informal inquiries may be addressed to Dr Meili FENG (meili.feng@nottingham.edu.cn), Dr Faith Chan (Faith.Chan@nottingham.edu.cn) and Prof Yaoyang Xu (yyxu@iue.ac.cn); but formal applications should follow the instructions in 'How to apply' section.</p>
PhD topic 6	Watershed flood events and urban green infrastructures
IUE Supervisor	Prof Yaoyang XU
UNNC Supervisor(s)	Dr Faith Chan Dr Meili Feng
Short introduction & description of PhD	<p>Green infrastructure is increasingly considered as a nature-based solution to address one of the urban environmental challenges associated with flood events at the watershed scale. However, there is still a lack of data-driven research to support the transformation of urban planning on green infrastructure for mitigating the environmental impacts of flood events. As such, we seek candidates for the DTP program to develop a systematic framework of flood-related data mining that can be applied to optimize urban green infrastructure.</p> <p>Our research team is studying a wide range of research questions related to urban green infrastructure by developing a set of meta-data tools and data products that are specified to urban flood events.</p> <p>Competitive candidates should be highly motivated. The ability to study both independently and collaboratively in a team environment is required.</p>
Contact points	<p>Informal inquiries may be addressed to Dr Faith Chan (Faith.Chan@nottingham.edu.cn), Dr Meili FENG (meili.feng@nottingham.edu.cn), and Prof Yaoyang Xu (yyxu@iue.ac.cn); but formal applications should follow the instructions in 'How to apply' section.</p>