

Nanyang Environment and Water Research Institute (NEWRI)

List of Supervisors & Research Areas of Possible PhD Studies

S/N	Supervisor	Appointment	Email	Research Areas of Possible PhD Studies
1	Adrian Law Wing-Keung	Associate Professor	CWKLAW@ntu.edu.sg	Research in environmental fluid mechanics with special emphasis on wastewater disposal and impact, environmental hydraulics in wastewater treatment processes, pollutant transport in coastal environment, and advanced laser imaging techniques for measurements.
2	Bae Tae-Hyun	Assistant Professor	THBae@ntu.edu.sg	<ol style="list-style-type: none"> 1. Chemistry of materials <ul style="list-style-type: none"> - nanoporous materials including zeolites, mesoporous materials and metal-organic frameworks - thin films and nanocomposite membranes 2. Environmental technology <ul style="list-style-type: none"> - CO₂ capture - water treatment 3. Molecular separations in chemical processes <ul style="list-style-type: none"> - hydrocarbon separations - gas separations
3	Cao Bin	Assistant Professor	BinCao@ntu.edu.sg	<ol style="list-style-type: none"> 1. Microbial biofilms in natural and engineered systems 2. Extracellular polymeric substances (EPS) 3. Interactions of biofilms and EPS with environmental contaminants 4. Biological treatment of waste/wastewater 5. Biodegradation, bioremediation, waste-to-energy (or value-added products) bioconversion
4	Chen Zhong	Professor	ASZChen@ntu.edu.sg	<ol style="list-style-type: none"> 1. Thin Films & Low-dimensional Materials: Thin films & nano-materials for clean energy and environmental applications; Microelectronic thin films; Protective and functional surface

				<p>coatings.</p> <ol style="list-style-type: none"> 2. Mechanical Behavior of Materials: Fracture, fatigue, and creep of bulk monolithic & composite materials, thin films and multi-layers; Experimental and computational mechanics.
5	William Chen Wei Ning	Professor	WNChen@ntu.edu.sg	<ol style="list-style-type: none"> 1. Biomolecular Engineering for Environment-Host Interactions 2. Proteomics Platform for Clinical Biomarkers 3. Metabolic and Microbial Engineering for Valuable Chemicals 4. Environmental Engineering for Resource Recovery 5. Sustainable Production of Food Ingredients
6	Chew Jia Wei	Assistant Professor	JChew@ntu.edu.sg	Membrane and particle technology.
7	Chong Tzyy Haur	Assistant Professor	THChong@ntu.edu.sg	<p>Membrane science and technology:</p> <ul style="list-style-type: none"> - Water and wastewater treatment, seawater desalination and water reclamation, food application - Membrane fouling and cleaning; sensors for membrane processes - Module design and hydrodynamics - Energy related to membrane processes
8	Chua Chee Kai	Professor	mckchua@ntu.edu.sg	<ol style="list-style-type: none"> 1. Geometric modelling 2. Rapid prototyping 3. Additive manufacturing 4. 3D printing 5. Reverse engineering 6. Biomedical engineering 7. Design tissue engineering
9	Dong Zhili	Associate Professor	zldong@ntu.edu.sg	Polyoxometalates functionalised ceramic membranes for catalytic treatment of wastewater
10	Duan Hongwei	Associate Professor	hduan@ntu.edu.sg	<ol style="list-style-type: none"> 1. Nanomaterials for water treatment and catalysis 2. Nano-sensors for contaminants and pathogens
11	Fan Zheng, David		ZFAN@ntu.edu.sg	<ol style="list-style-type: none"> 1. Non-destructive testing 2. Structure health monitoring 3. Acoustic and ultrasonic

				<p>applications</p> <p>4. Materials characterisation</p>
12	Grzegorz Lisak	Assistant Professor	g.lisak@ntu.edu.sg	<ol style="list-style-type: none"> 1. New functional materials 2. Sensors and analytical protocols for environmental protection 3. Environmental remediation of soil and water 4. Conducting polymers 5. Electrochemistry 6. Electro stimulated transport of ions 7. Electrocatalysis 8. Biofouling
13	Harianto Rahardjo	Professor	chrahardjo@ntu.edu.sg	<ol style="list-style-type: none"> 1. Unsaturated soil mechanics: theoretical development, Laboratory measurements and numerical analyses 2. Characterisation of tropical residual soils 3. Rainfall-induced slope failures: mechanisms, analyses and slope instrumentation 4. Capillary barrier and geo barrier systems for slope stability 5. Soil improvements for tree stability 6. Effects of climate change on slope stability and tree stability
14	Hu Xiao	Professor	ASXHU@ntu.edu.sg	<ol style="list-style-type: none"> 1. Functional Polymers 2. Composites and Nanocomposites 3. Nanoparticles and Organic-inorganic Hybrid Materials 4. Materials for Environment and Sustainability
15	IRVINE Kim Neil	Associate Professor	kim.irvine@nie.edu.sg	<ol style="list-style-type: none"> 1. Urban hydrology 2. Water resource management 3. Water quality 4. Applied urban drainage modelling
16	Li Mo	Assistant Professor	limo@ntu.edu.sg	<ol style="list-style-type: none"> 1. Internet-of-Things for environment sustainability 2. Smartphone based crowd sensing 3. Urban informatics
17	Lim Teik Thye	Associate Professor	cttlim@ntu.edu.sg	<ol style="list-style-type: none"> 1. Catalytic oxidation of xenobiotic pollutants

				<ol style="list-style-type: none"> 2. Removal of recalcitrant micropollutants during water reclamation 3. Nanohybrids for water treatment 4. Nanomaterials for disinfection 5. Phase-separation technologies for environmental remediation
18	Liu Bin	Assistant Professor	liubin@ntu.edu.sg	<ol style="list-style-type: none"> 1. Renewable energy 2. Water treatment 3. Gas separation 4. Electrocatalysis
19	Liu Erjia	Associate Professor	mejliu@ntu.edu.sg	<ol style="list-style-type: none"> 1. Thin films 2. Coatings 3. Carbon materials 4. Nanocomposites 5. Electrochemistry 6. Corrosion 7. Nanotribology 8. Micro/nanofabrication 9. Additive manufacturing
20	Liu Yu	Professor	CYLiu@ntu.edu.sg	<ol style="list-style-type: none"> 1. Environmental biotechnology and microbiology 2. Wastewater Reclamation-Energy- Resource Nexus 3. Biological nutrient removal, and biofilm technology 4. Membrane bioreactor 5. Enhanced anaerobic process for municipal wastewater treatment 6. Integrated A-B process for energy-neutral wastewater reclamation
21	Lo Yat-Man, Edmond	Associate Professor	cymlo@ntu.edu.sg	Application of hydrodynamics to coastal and inland water flows with emphasis on wave mechanics, transport processes and implications on water quality.
22	Marcos	Assistant Professor	marcos@ntu.edu.sg	<ol style="list-style-type: none"> 1. Small scale fluid dynamics, microfluidics, swimming in non-Newtonian fluids 2. Bio-locomotion
23	Miao Yansong	Assistant Professor	yansongm@ntu.edu.sg	<ol style="list-style-type: none"> 1. Sustainable Earth (food and plant) 2. Plant pathology 3. Plant and Agriculture 4. Interkingdom species communication

				<ul style="list-style-type: none"> 5. Cellular Aging 6. Fungal Development
24	Ng Kee Woei	Associate Professor	KWNG@ntu.edu.sg	<ul style="list-style-type: none"> 1. Tissue engineering and the use of various synthetic and natural biomaterials for biomedical applications. 2. Development of functional materials based on human hair keratins. 3. Understanding the physiological and toxicological effects of nanomaterials and the underlying mechanisms.
25	Ng Wun Jern	Professor	WJNg@ntu.edu.sg	Water and wastewater management focusing on water quality investigations, treatment science, development of treatment technologies, and treatment system design and engineering.
26	Oh Seungdae	Assistant Professor	sdoh@ntu.edu.sg	<ul style="list-style-type: none"> 1. Applied microbial genomics and molecular techniques in environmental biotechnology 2. Fate and effect of emerging contaminants 3. Bioenergy and resource recovery from waste streams 4. Biological treatment and microbial quality of drinking water 5. Metagenomics and Metatranscriptomics 6. Microbial ecology in natural Ecosystems
27	Qin Xiaosheng	Associate Professor	XSQIN@ntu.edu.sg	<ul style="list-style-type: none"> 1. Water resources and flood risk management 2. Surface water quality modelling and control 3. Climate change impact assessment and adaptation planning 4. Groundwater modelling, risk assessment and site remediation 5. Air quality control and solid waste management
28	Richard Webster	Associate Professor	Webster@ntu.edu.sg	<ul style="list-style-type: none"> 1. Molecular Electrochemistry 2. Environmental Chemistry

29	Su Haibin	Associate Professor	HBSu@ntu.edu.sg	<ol style="list-style-type: none"> 1. Computational materials science. development and application of theoretical and computational materials science; 2. Quantum-mechanical, classical simulations and modelling of the electronic, structural, energetic and dynamical properties of functional materials 3. Emergent collective properties of condensed matter systems, in particular, at nanometer scales.
30	Surajit Bhattacharyya	Associate Professor	Surajit@ntu.edu.sg	<ol style="list-style-type: none"> 1. Interactions of Integrin Tails with Effector Proteins 2. Designed Peptide Antagonists against Endotoxin: A structure-based approach to develop antiseptics and antimicrobial drugs. 3. Structure and Activity of Antimicrobial and Antiendotoxic Peptides. 4. Designed functional proteins
31	Tan Choon Hong	Professor	choonhong@ntu.edu.sg	<ol style="list-style-type: none"> 1. Practical Asymmetric Synthesis: Chiral Brønsted Base Catalyst and Chiral Phase Transfer Catalyst 2. Green and Environmentally Friendly Chemistry
32	Tan Meng How	Assistant Professor	mh.tan@ntu.edu.sg	Genomics and synthetic biology approaches to environmental biosensing and bioremediation.
33	Tan Nguan Soon	Associate Professor	NSTan@ntu.edu.sg	<ol style="list-style-type: none"> 1. Proliferators- activated receptors (PPARs) signaling in metabolic diseases. 2. Wound repair - Role of immune-associated reactive oxygen species on wound healing, particularly on tissue remodeling, scar formation and fibrosis. 3. Targeting metastasis Interested in the impact of tumor microenvironment on metastasis and field cancerization

34	Tan Soon Keat	Associate Professor	CTANSK@ntu.edu.sg	<ol style="list-style-type: none"> 1. Application of geographical information system (GIS) in water resources 2. Numerical simulation of flow for hydraulics and coastal engineering applications. 3. Urban water management 4. Removal of water-borne contaminant using constructed wetlands 5. Hydrodynamics for underwater Structure
35	Wang Rong	Professor	RWang@ntu.edu.sg	<ol style="list-style-type: none"> 1. Membrane science & technology for water, energy and environmental applications; 2. Chemical and Environmental engineering processes
36	Wang Xin	Professor	WangXin@ntu.edu.sg	<p>Electrochemistry and electrocatalysis.</p> <p>Current research works focus on fuel cell, energy storage, CO₂ utilization and electrochemical reactor with co-generation of electricity and valuable chemicals.</p>
37	Wong Ka Lun	Assistant Professor	kalun.wong@nie.edu.sg	<p>Nanoporous and plant-based materials for:</p> <ol style="list-style-type: none"> (i) heterogeneous catalysis (ii) environmental remediation (iii) separation and extraction
38	Wu Mao See	Associate Professor	MMSWu@ntu.edu.sg	<ol style="list-style-type: none"> 1. Broad areas of mechanics and materials, specifically the mechanics and computational simulation of defects in nanomaterials. 2. Dislocations, disclinations and cracks in nanowires, nanofilms and nanocomposites. 3. Nonlinear mechanics of biomaterials.
39	Xu Chenjie	Assistant Professor	cjxu@ntu.edu.sg	<p>Nanomaterials for translational biomedical research including smart skin patch development, smart nanosensors for cell tracking, smart patch for water quality monitoring.</p>
40	Xu Rong	Associate Professor	RXu@ntu.edu.sg	<ol style="list-style-type: none"> 1. Photocatalysis for reduction of carbon dioxide and hydrogen production by splitting water

				<p>using visible light.</p> <ol style="list-style-type: none"> 2. Heterogeneous catalysis for environmental applications. 3. Organic-inorganic layered materials (LDHs) for pharmaceutical applications. 4. Antimicrobial membrane for water treatment (Silver in microfiltration membrane)
41	XU Zhichuan, Jason	Assistant Professor	xuzc@ntu.edu.sg	<ol style="list-style-type: none"> 1. Small molecule electrocatalysis 2. Electrochemical interfaces 3. Electrochemical sensors 4. Magnetic nanomaterials 5. Chemistry for materials recycle
42	Yang Liang	Assistant Professor	YangLiang@ntu.edu.sg	Understanding antibiotic resistance, intercellular signalling, interspecies interactions, and microbial evolution in the context of the biofilm lifestyle.
43	Yuan Junsong	Associate Professor	JSYUAN@ntu.edu.sg	Computer vision, video analytics, human computer interaction, multimedia search and data mining, biomedical image analysis.
44	Zheng Yuanjin	Assistant Professor	YJZHENG@ntu.edu.sg	<ol style="list-style-type: none"> 1. GHz RFIC and SoC design, SAW, MEMS, Acoustics 2. Bio sensor, Photoacoustic Imaging 3. Radar and UWB Communication System and Circuits 4. Adaptive Signal and Image Processing Algorithm and ASIC
45	Zhou Kun	Assistant Professor	kzhou@ntu.edu.sg	<ol style="list-style-type: none"> 1. Development and modeling of novel nanomaterials for water treatment 2. Atomistic simulations and multiscale modeling 3. 3D printing 4. Material reliability and sustainability analysis
46	Zhou Yan	Assistant Professor	zhouyan@ntu.edu.sg	<ol style="list-style-type: none"> 1. Energy efficient biological process development 2. Sludge management 3. Resources recovery 4. Water treatment and recycling