Master’s Program in Environmental Engineering

Title/degree: Master of Environmental Engineering (M.E)
Duration: 2-3 years, full-time
Start month: September
Language of instruction: English

I. Program Description
The people who incept master's degree in this field need to master basic theories of environmental engineering (pollution control in water, air and solid waste), strategic thought of sustainable development, environmental management and planning, cleaner production, waste resource recovery, urban ecology etc. and systematical professional knowledge.

II. Why study Environmental Engineering at Donghua University?

1. Depart. Environmental Engineering (EE) of Donghua University is one of the earliest environmental disciplines established in China. It started to enroll undergraduate in 1976, and it obtained doctoral discipline of environment engineering in 2000, class-one doctoral discipline of Environmental Science and Engineering in 2005 and established post-doctoral station in 2007, which has a comprehensive system of cultivating bachelor, master, PhD and post doctorate. The subject is in the forefront of the same kind subject of colleges and universities with 211 Project, and is also with distinctive feature of textile. It is the vice president of China dyeing and Printing Industry Association as well as the vice director unit of Environmental Protection Committee of professional technical. The environment technology specialty has been approved the key subject of Shanghai in 2007, the national characteristic specialty in 2011, and have been incorporated in the national first ‘excellent engineers education training plan’ and ‘Comprehensive reform of the Education Ministry’. In 2012 ESE as the class-one discipline was included in the first-class discipline (class B) construction plan in Shanghai. Depended on this Discipline, it equips with grade A qualification certificate of National environmental impact assessment and ‘Pollution prevention and control engineering technology center of nationnal environmental protection in textile pollution’, it is an important base of the talents cultivation and the transformation of study achievements.

2. The qualified teachers of the subject are abundant with 37 professional teachers, 28 of whom are professors, including 23 doctoral supervisors and 18 associate professors. Since the subject was established, more than 1000 graduates have been educated, of which over 700 students awarded master degree and over 100 students awarded doctorate. In recent 5 years, this subject has finished more than 100 national and provincial scientific research projects, and got over 10 national and provincial scientific technological awards. It has been authorized over 50 invention patents and has got 8 outstanding teaching achievement awards of at the department and the city.

3. The Discipline of Environmental Engineering in Donghua University now includes: Environmental Engineering doctoral discipline ; Environmental Engineering master discipline and Environmental Engineering post-doctoral station.
III. Participating Professors and Junior Scientists

ACADEMIC LEADER

Prof Dr Quanyuan Chen (Doctor's Supervisor)

Research Area: chemistry of pollution control and pollution control engineering
qychen@dhu.edu.cn

Dr Chen is a professor in School of Environmental Science and Engineering, Donghua University. He received his PhD in Environmental Science and Engineering from University of Greenwich, UK in 2004. Dr Chen’s research interests focus on chemistry of pollution control and pollution control engineering.

Selected recent publications:


Prof. Dr. Yanan Liu (Doctor's Supervisor)

Research Area:
1) Non-thermal plasma application in air, water and soil pollution control;
2) Functional catalysts synthesis by Non-thermal plasma used for pollutants removal from air, water and soil.
3) Combined AOPs and biological technology for water and soil treatment
liuyanan@dhu.edu.cn

Dr. Yanan LIU got her Ph.D. in Environmental Engineering from Harbin Institute of Technology in 2005, worked in Donghua University since 2005, postdoctoral fellow in Plasma Application in LGPPTS at ENSCP-UMPC (Paris, France) from 2009 to 2011, full Professor of Environmental Engineering in Donghua since 2014. Her research Interests are: 1)
Non-thermal plasma application in air, water and soil pollution control; 2) Functional catalysts synthesis by Non-thermal plasma used for pollutants removal from air, water and soil. 3) Combined AOPs and biological technology for water and soil treatment

Main Achievements: About 50 papers have been published. 5 patents have been authored and 3 projects are being undertaken as chief investigator.

Selected recent publications:


Prof. Dr. Jinli Qiao (Doctor's Supervisor)
Research Area: Electrochemistry
qiaojl@dhu.edu.cn

As a Professor, Ph.D. Supervisor and Scientific Core-Competency Leader at Donghua University, China, she received her PhD in Electrochemistry from Yamaguchi University, Japan. Starting from 2008 to present, she carried out and has been carried out in total 12 projects funded by Chinese Government including NNSF of China. As the first/corresponding author, Dr. Qiao has published over 100 peer reviewed journal articles, 40 conference and Keynote/invited oral presentations, 4 book chapters, 3 co-edited books, more than 30 Japan/China invention patents and 12 authorized. Prof. Qiao is the Vice President of the International Academy of Electrochemical Energy Science (IAOEES) http://www.iaoees.org/, and the Board Committee Member of Electrodriving Membrane Industry Association of China, http://www.membranes.com.cn/xiehuijianjie/fenzhijigou/. She also serves as the Gust Editor for peer-reviewed journals including Electrochimica Acta,Applied Energy and International Journal of Hydrogen Energy. She has more than 20 years of scientific research experience, particularly in the area of electrochemical material development and energy storage and conversion including PEM fuel cells, metal-air batteries, supercapacitors and CO2 electroreduction.
Dr. Jianyun Liu (Doctor's Supervisor)

*Research Area:* sensor development for water contaminate analysis, supercapacitor deionization (CDI) for salt removal in seawater and brackish water, Carbon nanomaterials for supercapacitor device and development of catalyst materials for recalcitrant COD removal

jianyun.liu@dhu.edu.cn

Dr. Liu is a professor in College of Environmental Science and Engineering, Donghua University. She received her PhD degree of analytical chemistry from Changchun Institute of Applied Chemistry, Chinese Academy of Science in 2001. She worked at the Max-Planck Institute of Polymer Research in Mainz, Germany as a postdoc research fellow (2002 to 2005). And then she moved to Global Research (Shanghai) Center of General Electronic (GE) Company as a Lead scientist for water treatment and water monitoring research (2006-2010). Her research interests focus on sensor development for water contaminate analysis, supercapacitor deionization (CDI) for salt removal in seawater and brackish water, Carbon nanomaterials for supercapacitor device and development of catalyst materials for recalcitrant COD removal. Her current research projects include the NSFC, product-oriented projects and foundation of the state key lab of electroanalytical chemistry. She has published more than 60 papers in peer-reviewed international journals with the h-index of 21, and has issued 16 patents with 6 authorized patents and 1 US patent. She was awarded outstanding postgraduate prize of president fellowship, the first prize of science and technology progress in Jinlin province and GE Global Research innovation prize.

**Selected recent publications:**


Dr. Wolfgang Sand

**Research Area:** Biochemistry and ecology of sulfur/iron/manganese/nitrogen compound metabolism /degraders, bioleaching and biocorrosion of metals, biodeterioration mechanisms, biofilm /biofouling ecology and chemistry

Professor of the Aquatische Biotechnologie im Biofilm Centre / Aquatic Biotechnology in the Biofilm Centre. He received a doctor degree in Biologe / Diploma in Biology, University Hamburg German, in 1981. And he worked in University Hamburg as scientific employee, 1977-2004. Dr. Sand worked as a full professor at University Duisburg-Essen of German from 2004-2016. His research interests focus on Biochemistry and ecology of sulfur/iron/manganese/nitrogen compound metabolism /degraders, bioleaching and biocorrosion of metals, biodeterioration mechanisms, biofilm /biofouling ecology and chemistry. More than 230 research papers have been published in peer-reviewed international journals.

Dr. Xianying Li (Master’s Supervisor)

**Research Area:** preparation and application of Nano-eco-material, and design and controllable self-assembly of the functional supramolecular polymers

Dr. Li is an associate professor in College of Environmental Science and Engineering, Donghua University. She received a doctor degree in Engineering from Kyushu University, Japan in 2002. And she worked in National Institute of Advanced Industrial Science and Technology (AIST), Japan in 2002-2006. Dr. Li taught at Institute of Material Science and Engineering, Ocean University of China from 2006-2009. Her research interests focus on the preparation and application of Nano-eco-material, and design and controllable self-assembly of the functional supramolecular polymers. The main research findings are published in Advanced Materials, Chem. Commun., Langmuir, Tetrahedron, RSC Advances.

**Selected recent publications:**


2. Yunjie Xiang, Wenjing Li, Yuxi Fang, Dengqing Zhang, Xianying Li*, and Wusong Jin*, Construction and luminescence property of a highly ordered 2D self-assembled amphiphilic bidentate organoplatinum(II) complex, RSC Adv., 2016, 6, 27360


5. Dengqing Zhang, Gang Wang, a Rong Li, Xianying Li*, Yunjie Xiang, Zhen Zhang and Wusong Jin*, Synthesis and characterization of pyrimidinecontaining hexaarylbenzene derivatives, RSC Adv., 2015, 5, 99688
Dr. Qunshan Wei (Master's Supervisor)

Research Area: the fate and transport of some of POPs (e.g. Antibiotics) in aquatic environment including their relationships and reactions with DOM

qswei@dhu.edu.cn

Dr. Qunshan Wei is an Associate Professor, College of Environmental Science and Engineering, Donghua University and an Adjunct Associate Professor in the Institute of Urban Environment (IUE), Chinese Academy of Sciences (CAS). He has over 10 years experience in environmental science & engineering and aquatic chemistry including 8 years experience in drinking water treatment and analytical chemistry. Since joined IUE in 2007, he has been involved in a number of major water treatment related research projects. His experience included, dissolved organic matter (DOM), disinfection by-products (DBPs) control, removal of algae by coagulation, optimization of water treatment processes (conventional water treatment, membrane filtration, Ultrafiltration, coagulation, MIEX, carbon adsorption, advanced oxidation), recycled water, storm runoff quality & assessment and various analytical techniques related to water quality investigation and process optimization. Recently, one of his research interests is focusing on the fate and transport of some of POPs (e.g. Antibiotics) in aquatic environment including their relationships and reactions with DOM.

Selected recent publications:


Dr. Lisha Zhang (Master's Supervisor, the editor member of Scientific Report)

Research Area: design and preparation of advanced functional materials, photocatalysis technology, photoelectric conversion technology and water pollution control technology

seanlee@dhu.edu.cn

Dr. Lisha Zhang is an associate professor in College of Environmental Science and Engineering, Donghua University. She received her PhD degree in school of life science from the Chinese University of Hong Kong in 2010. Her research interests focus on the design and preparation of advanced functional materials, photocatalysis technology, photoelectric conversion technology and water pollution control technology. As first or corresponding author, she has 25 papers published in peer-reviewed scientific journals on these research field, including Chemical Society Reviews, Scientific Report, Environmental Science & Technology, Water Research, Nano Energy and etc. Among these papers, there are 8 ESI high cited papers and one hot paper. Her publications have been cited over 2575 times and have H index of 18.

Selected recent publications:


[3] Huihui Zhao, Lisha Zhang*, Xiaodong Gu, Shijie Li, Bo Li, Huanli Wang, Jianmao Yang, Jianshe Liu, Fe2O3-AgBr Nonwoven Cloth with Hierarchical Nanostructures as Efficient and Easily Recyclable Macroscale Photocatalysts, RSC Advances, 2015, 5(15): 10951-10959 (SCI, IF: 3.84)


Dr. Yuhui Wang (Master's Supervisor)

Research Area: Ecological Control on Pollutants, and Environmental modeling
yhwang@dhu.edu.cn

Dr. Wang is an associate professor in College of Environmental Science and Engineering, Donghua University. He received PhD of Environmental Science and Engineering from Donghua University in 2012. Dr. Wang’s research interests focus on the Ecological Control on Pollutants, and Environmental modeling.

Selected recent publications:


Dr. Chensi Shen (Master's Supervisor)

Research Area: water pollution control using the environmental friendly materials
shencs@dhu.edu.cn

Dr. Chensi Shen, PhD, is a teacher of the Environmental Science at Donghua University. Shen’s work is focused on water pollution control using the environmental friendly materials. She has published 17 peer-reviewed papers in Water Research, Journal of Hazardous materials, etc. Her researches about the application of chitosan-metal complex in wastewater treatment were supported by National Natural Science Foundation of China and the Shanghai Yang-Fan Program of Science and Technology Commission of Shanghai.

Selected recent publications:

[1] Sadia Rashid, Chensi Shen*, Xiaoguang Chen, Su Li, Yanhong Chen, Yuezhong Wen, Jianshe Liu*, Enhanced


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Dr. Xuehui Xie (Master's Supervisor)

*Research Area:* environmental microbial ecology, environmental toxicology, water treatment biotechnology, bioremediation of contaminated sites and so on

[xiexuehui@dhu.edu.cn](mailto:xiexuehui@dhu.edu.cn)

Dr. Xie is a lecturer in College of Environmental Science and Engineering, Donghua University. She received her PhD of Environmental Science and Engineering from Donghua University in 2010. In 2009, Dr. Xie had been to Professor Zhou Jizhong’s laboratory, US Environmental Genome Center, University of Oklahoma, for short-term study. In 2011, Dr. Xie was selected by “Shanghai Young Teachers' Training Scheme”. As a visiting scholar, 2012-2013, she joined the research group of Dr. Hongying Hu in Tsinghua University. Her research interests focus on: environmental microbial ecology, environmental toxicology, water treatment biotechnology, bioremediation of contaminated sites and so on.

**Selected recent publications:**

[1] **Xuehui Xie** (corresponding author), Na Liu, Bo Yang, Fang Yang, Jianshe Liu. Comparison of microbial community in hydrolysis acidification reactor depending on different structure dyes by Illumina MiSeq Sequencing. International Biodeterioration and Biodegradation. 2016. (Accepted)


Selected recent publications:


### IV. Modules

<table>
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<th>C/E</th>
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<td>Air pollution control engineering</td>
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**Consolidation Phase 1st Year**

One needs to obtain 22CPs from compulsory courses and 12CPs from elective courses. These 34CPs should in general be acquired in the 1st year.

**Scientific Phase**

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<td>May</td>
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During the research phase, your Master thesis should be completed.

**Application Details for international students**

To be eligible for our Master program you are required to have the research background of Environmental Engineering, Environmental Science, Chemistry, Chemical industry, Biological science and Engineering.