Master's Program in Chemical Engineering & Technology

(offered by CCCEB)

Title/degree: Master of Chemical Engineering

Duration: 2-3 years, full-time

Start month: September

Language of instruction: English

I. Program Description

The Chemical Engineering Master of Engineering (MChE.) Program at Donghua University provides industry-oriented training with accent of textiles and related fiber-based materials as well as biomaterials and related bio-based materials.

II. Why study Chemical Engineering & Technology at Donghua University?

1. *We offer versatile options covering Fine Chemical Engineering, Textile Chemistry & Engineering, and Biological Engineering.*
2. *Our program emphasizes both the fundamental principles and the applications of cutting-edge technologies.*
3. *Our program is highly relevant to many of the chemical, retail and textile industries, as well as environmental, medical and material science.*
4. *Graduates of MChE are recruited by a broad range of companies, including major textile producers, pharmaceutical enterprises, certification services, and top brands.*
5. *Currently, we have more than 600 enrolled master students, who enjoy the advantages:*
   - *Over 90 advisors from a broad spectrum of backgrounds, who have taken charge of over 100 research projects funded by the national and provincial ministries, which resulted in over 300 journal publications, almost 200 patent applications, and numerous awards for the advancement of science and technology.*
   - *An open-door policy for faculty offices whereby students are free to stop in to discuss their research, science, careers or life in general.*
   - *An inventory of state-of-the-art research equipment and instrumentation.*
   - *The opportunity to pursue a doctorate degree through master-doctoral continuous program.*

III. Participating Professors and Junior Scientists

ACADEMIC LEADER

Prof. Dr. 武培怡 Wu, Peiyi *Dr. Wu is the Dean of CCCEB. He is also Fellow of the Royal Society of Chemistry. Dr. Wu was a recipient of the National Outstanding Young Investigator Award (2004) and was supported by the New Century Outstanding Talents Program (2005).*

Research Area: *Dr. Wu's research revolves around constructing of smart (responsive) polymers, biomimetic materials, 2-D Polymer materials, and the application of 2D correlation spectroscopy.*

E-mail: wupeiyi@dhu.edu.cn

PARTICIPATING PROFESSORS AND JUNIOR SCIENTISTS:

Prof. Dr. 赵涛 Zhao, Tao *Dr. Zhao is the vice dean of CCCEB. He was a visiting scholar in University of California, Davis. He is associated with the department of Textile Chemistry and Engineering.*

Research Area: *Dr. Zhao's research interests focus on theory and technology of textile dyeing and finishing, Novel textile chemicals, Functional Textiles, and Application of biomaterials in textile dyeing and finishing.*

E-mail: tzhao@dhu.edu.cn

Prof. Dr. 史向阳 Shi, Xiangyang *Dr. Shi is vice dean of CCCEB and is associated with the Department of Biological Science. He received his Ph.D. of organic chemistry from Institute of Photographic Chemistry, the Chinese Academy of Sciences in 1998. From 2002-2008, he worked as a Research Fellow, Research Associate II, Research Investigator, and Research Assistant Professor at the University of Michigan, Ann Arbor. He then became a professor of special appointment both in Donghua University and in Shanghai Institutions of High Learning (Eastern Scholar) since 2008. Since 2010 he has been also appointed as an "Invited Chair in Nanotechnology" at University of Madeira, Portugal.*

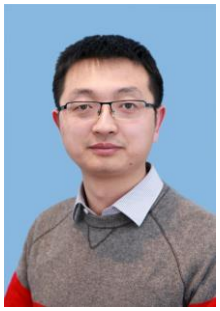
Research Area: *Dr. Shi's research expertise includes dendrimer chemistry and related nanomedicinal applications, in particular cancer diagnosis and therapy. He is also developing nanofiber-based technology with an emphasis on the synthesis and fabrication of bioscaffolding materials in tissue engineering applications and the immobilization of reactive nanoparticles within nanofibrous mats for environmental applications.*

E-mail: xshi@dhu.edu.cn

Prof. Dr. 胥波 Xu, Bo *Dr. Xu was the recipient of Thousand Young Talents Program (2013). He's associated with the Department of Chemistry. Dr. Xu received his PhD from University of Louisville in 2008. Before he returned to China, he was a research assistant professor in University of Louisville (2008-2014).*

Research Area: *Dr. Xu's research interests include organic synthesis method development, study of reaction mechanism, medicinal chemistry, and organic synthesis automation.*

E-mail: Bo.xu@dhu.edu.cn

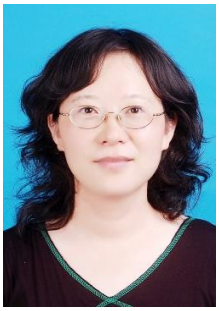


Prof. Dr. 隋晓锋 Sui, Xiaofeng *Dr.Sui was the recipient of Thousand Young Talents Program (2015). He's associated with the department of Textile Chemistry and Engineering. Dr. Sui obtained his B.S. in Chemistry (2006) and M.S. in Polymer Chemistry & Physics (2008) from Tsinghua University. In 2012, he received his PhD in Materials Science from University of Twente. He was a researcher in Akzonobel (2012-2013) and a postdoc in Radboud University (2014) and joined the faculty of CCCEB at Donghua University. Thereafter.*

Research Area: *Dr. Sui's research centered around preparing natural polymer related functional materials as building blocks for addressable structures (coatings, hydrogels and aerogels) and applications on finishing of textiles.*

E-mail: suixf@dhu.edu.cn

	***Prof. Dr. 毛志平 Mao, Zhiping*** *Dr. Mao is the director of the Key Lab of Science and Technology of Eco-textile, Ministry of Education. He is associated with the Department of Textile Chemistry.* ***Research Area：*** *Dr. Mao's research interests focus on developing greener and sustainable chemicals and surface modification processes for advancing Textile Dyeing and Finishing. He's also interested in constructing flexible composite materials for Smart Textiles.* *E-mail: zpmao@dhu.edu.cn*
	***Prof. Dr.何瑾馨 He, Jinxin*** *Dr. He is associated with the Department of Textile Chemistry and Engineering.* ***Research Area：*** *Dr. He's research interests revolve around Eco-friendly Dyeing & Finishing Technology and Novel Textile Chemicals and their Applications.* *E-mail: jxhe@dhu.edu.cn*
	***Prof. Dr. 王炜 Wang, Wei*** *Dr. Wang is associated with the Department of Textile Chemistry and Engineering. Dr. Wang has over 12 years of industrial experiences and has strong industrial connections with leading Textile Companies. He is also a member of the National Standard organization of Auxiliary and the Dyeing & Finishing Special Committee of Zhejiang Textile Engineering Society. He serves as reviewer for top textile journals including Textile Research Journal (TRJ) and Fiber & Polymer.* ***Research Area:*** *Dr. Wang's research interests revolve around coloration and functional finishing of textiles, spanning from the development of functional dyes to flexible industrial electromagnetic shielding materials.* *E-mail: wangv@dhu.edu.cn*
	***Prof. Dr. 徐红 Xu, Hong*** *Dr. Xu is associated with the Department of Textile Chemistry and Engineering. She was a visiting scholar at University of Twente (Netherlands) She works in collaboration with Prof. Mao Zhiping.* ***Research Area：*** *Dr. Xu's research interests focusing on design & construction of bio-degradable polymers and their composites. She's also working on surface modification of functionalization of PET fabrics and P/C blends.* *E-mail: hxu@dhu.edu.cn*
	***Prof. Dr. h 侯爱芹 Hou, Aiqin*** *Dr. Hou is associated with the Department of Textile Chemistry and Engineering. She received her PhD degree from Donghua University and was a visiting scholar at University of California, Davis from 2012 to 2013. Dr. Hou is on the editorial board of Dyesuffs and Coloration.* ***Research Area:*** *Dr, Hou's major researches include functional materials, textile chemicals, new technique of dyeing and finishing.* *E-mail: aiqinhou@dhu.edu.cn*

	***Prof. Dr. 王碧佳 Wang, Bijia*** *Dr. Wang is associated with the Department of Textile Chemistry and Engineering. She received her PhD in organic chemistry from the University of Nebraska Lincoln in 2010. She joined the faculty of CCCEB in 2012 after a brief postdoc experience at UNL. She works in collaboration with Prof. Sui Xiaofeng.* ***Research Area:*** *Dr. Wang's research interests focus on preparation of multifunctional cellulosic materials from renewable feedstocks and the application of such smart materials in catalysis. She's also interested in developing greener techniques and products for textile dyeing and finishing.* *E-mail:* bwang@dhu.edu.cn
	***Prof. Dr. 鲁希华 Lu, Xihua*** *Dr. Lu was the recipient of "Shanghai Thousand Talents program" (2013) He is associated with the Department of Applied Chemistry. Dr. Lu received his Ph.D. of Materials Science and Engineering from University of North Texas in 2002. He then worked as a Research Fellow at the Northwestern University from 2003-2006. Before returning to China, he acted as the Research Fellow in the International Flavors & Fragrances Inc.* ***Research Area:*** *Dr. Lu's interests focus on the preparation and application of intelligent polymer hydrogels, nano hydrogels, and polymeric microcapsule.* *E-mail:* Luxihua@dhu.edu.cn
	***Prof. Dr. 罗艳 Luo, Yan*** *Dr. Luo is associated with the Department of Applied Chemistry. She received her PhD of textile chemistry and dyeing and finishing engineering from Donghua University in 2002. Dr. Luo was the recipient of 2008 'Youth science and technology innovation talents' of Shanghai. As a visiting scholar, she joined the research group of Dr. Yiqi Yang in the university of Nebraska-Lincoln.* ***Research Area:*** *Dr. Luo's research interests focus on the preparation and application of fine chemical, microcapsules technology, and green finishing process.* *E-mail:* luoyan@dhu.edu.cn
	***Prof. Dr. 李宏启 Li, Hongqi*** *Dr. Li is associated with the Department of Applied Chemistry.* ***Research Area:*** *Dr. Li's research revolves around developing functional dyes and fine chemicals.* *E-mail:* hongqili@dhu.edu.cn
	***Prof. Dr. 刘栋良 Liu, Dongliang*** *Dr. Liu is associated with the Department of Applied Chemistry.* ***Research Area:*** *Dr. Liu is interested in developing fine chemicals.* *E-mail:* dlliu@dhu.edu.cn

	***Prof. Dr. 莫秀梅 Mo, Xiumei*** *Dr. Mo is associated with Department of Biological Science and Engineering.* ***Research Area：*** *Dr. Mo's research interests focus on electrospin nanofiber for tissue engineering and polymer hydrogel for tissue adhesive* *E-mail:* xmm@dhu.edu.cn
	***Prof. Dr. 肖军华 Xiao, Junhua*** *Dr. Xiao is associated with the Department of Biological Science and Engineering.* ***Research Area：*** *Dr. Xiao's research interests focus on the genetics study of complex traits, esp. Mouse genetics.* *E-mail:* xiaojunhua@dhu.edu.cn
	***Prof. Dr. 陈志龙 Chen, Zhilong*** *Dr. Chen is associated with the Department of Biological Science and Engineering. He got his Ph.D. of Medicinal Chemistry from Second Military Medical University. He had worked as postdoctoral fellow in Shanghai Institute of Organic Chemistry, China; Central Queensland University (Australia); and University of Liverpool(England). Dr. Chen is vice chair of Shanghai Bio-drugs Association; Committee Member of Shanghai Association of Medicinal Chemistry; Committee Member of Chinese Association of Laser Medicine.* ***Research Area:*** *Dr. Chen is specialized in Medicinal Chemistry and Pharmacology. His research revolves around the discovery and development of new anti-tumor drugs, anti-hypertension drugs; The development of new drugs in photodynamic therapy, The discovery of new tumor targeting drug delivery system, and the mechanism of PDT.* *E-mail:* zhlchen@dhu.edu.cn
	***Prof. Dr. 洪枫 Hong, Feng*** *Dr. Hong is associated with the Department of Biological Science and Engineering. He is the Director of China-Sweden Associated Research Laboratory in Industrial Biotechnology and the Director of the Group of Microbiological Engineering and Industrial Biotechnology at CCCEB.* ***Research Area:*** *Dr. Hong's area covers Biotechnology and Bioengineering, Biomaterials. He's interested in developing bacterial nanocellulose (BNC) for potential biomedical applications, including vascular grafts and wound dressings; Low-cost production and high-value-added applications of BNC. He is also researching bioconversion of low-value biomass to value-added products including enzymes, biomaterials, and fine chemicals, biocatalysis & biotransformation in medicine, and biotechnology for the paper and textile industry.* *More information available at Dr. Hong's research website:* https://www.researchgate.net/profile/Feng_Hong2/ *E-mail:* fhong@dhu.edu.cn

	***Prof. Dr. 朱利民 Zhu, Limin*** *Dr. Zhu is associated with the Department of Biological Science and Engineering.* ***Research Area:*** *Dr. Zhu's research interests focus on biological functional materials and drug delivery.* *E-mail:* lzhu@dhu.edu.cn
	***Prof. Dr. 陆昌瑞Lu, Changrui*** *Dr. Lu is associated with the Department of Biological Science and Engineering. He received his B.S. in Molecular Biology from Colgate University in 2005 and his Ph.D in Biochemistry and Biophysics from Cornell University in 2011. Dr. Lu was a postdoc fellow at the Medical School of University of Michigan and joined the faculty of CCCEB in 2012.* ***Research Area:*** *Dr. Lu's research area involves Non-coding RNA regulation and biochemistry.* *E-mail: crlu@dhu.edu.cn*

Application Details for international students

To be eligible for the MChE program, the students is expected to have B.S. or B.E.in Applied Chemistry, Fine Chemical Engineering, Textile Chemistry & Engineering, Material Science, or Bioengineering. Students from closely related disciplines with strong chemistry or biotechnology-oriented curricula are also welcome to apply. Applicants will be judged competitively based on their background, qualifications, and goals.

IV. Modules:

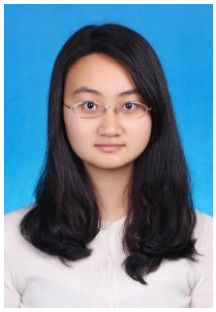
C：compulsory course E：elective course CP：credit points

Consolidation Phase 1st Year			
C/E	*MChE approved courses*	*CP*	*In addition to the **10CPs** from compulsory general education courses (Integrated Chinese and Survey of China), students are required to obtain **12CPs** from major compulsory courses and **12CPs** from the elective courses. These **34 CPs** should in general be acquired in the 1st year.*
C	*Organic Chemistry*	*3*	
C	*Molecular Biology*	*3*	
C	*Organometallic Chemistry*	*3*	
C	*Biochemistry*	*3*	
C	*Scientific Writing & Presentation*	*3*	
E	*Nanomedicine*	*3*	
E	*Green Chemistry*	*3*	
E	*Textile Chemistry*	*3*	
E	*Natural Polymers*	*3*	
E	*Advanced Materials Sci & Eng.*	*3*	

Scientific Phase			*During the research phase, students should identify a topic and start to work on a thesis early. Identification of a thesis topic should be done before the end of second semester. A thesis committee is formed at the thesis proposal that will supervise the work throughout scientific phase. Once the completed thesis is approved by the committee and an outside blind reviewer (if applicable), the student may then proceed to arrange a suitable time and place for thesis defense.* *The students are also required to publish a minimum of 1 research paper in an approved journal as 1st or 2nd author (where advisor is 1st author).*
1st & 2nd Year	*Thesis Proposal*	*By end of June (2nd Semester)*	
	Pre-defense	*By end of Dec. (3rd Semester)*	
3rd Year	*Concealed Evaluation*	*By end of Nov (5th Semester)*	
	Final Defense	*End of Dec or Early Jan. (5th Semester)*	

*In case you experience **any problems** throughout your studies, please contact our Graduate Academic Staff and secretary of foreign affairs. They are ready to help you personally for all situations you might encounter. From left to right: Ms. Xu, Ying and Ms. Zeng, Zheng.*

Graduate Academic Staff
Ms. Xu, Ying
Room 4083 #3 Academic Building
6779-2306-2, 6779-2608-2
xuying@dhu.edu.cn



Secretary of foreign affairs
Ms. Zeng, Zheng
Room 3102 #3 Academic Building
6779-2615
zz@dhu.edu.cn