

DONGHUA UNIVERSITY ENGLISH-TAUGHT MASTER'S DEGREE PROGRAMS

College of Chemistry and Chemical Engineering

NAME OF THE PROGRAM

Chemistry Engineering and Technology

化学工程与技术

RESEARCH DIRECTIONS:

- Applied Chemistry 应用化学
- Chemical Technology 化学技术
- Material Chemical Engineering 材料化学工程

TYPE OF THE DEGREE: Academic Degree

DEGREE CONFERRED: Master of Engineering

SCHOOLING: 3 years

1. BRIEF INTRODUCTION
2. PROGRAM OBJECTIVES
3. CURRICULUM
4. SUPERVISOR INFORMATION

1、 BRIEF INTRODUCTION

The nationally acknowledged Chemical Engineering Master of Engineering (MChE.) at Donghua University was established in 1978. It is currently administrated by the College of Chemistry and Chemical Engineering (CCCE). The MChE program is dedicated to applied research and is especially designed to offer outstanding preparation for students pursuing careers in the industry. MChE faculty have spearheaded over 100 research projects funded by the national and provincial ministries, resulting in over 300 journal publications, nearly 200 patent applications, and numerous awards for the advancement of science and technology. We maintain a high faculty/student ratio and operate an open-door policy for faculty offices providing students with the opportunity to freely discuss their research, science, careers, or life in general. Incoming students can choose to specialize in one of three sub-disciplines: Applied Chemistry, Chemical Technology, and Material Chemical Engineering. The program has successfully graduated over 400 master students and currently, there are approximately 100 students enrolled.

The MChE program is equipped with state-of-the-art research facilities, including a Bruker Avance 400 nuclear magnetic resonance (NMR) spectrometer, a gas chromatograph mass spectrometer (GC/MS), electrospray liquid chromatography/mass spectrometers (LC/MS), high performance liquid chromatographs (HPLC), gas chromatographs (GC), Fourier Transform Infrared (FTIR) spectrometers, spectro-fluorimeters, UV/Vis spectrophotometers, rheometers, minimum temperature film forming bars and more.

2、 PROGRAM OBJECTIVES

The objective of the program is to cultivate highly skilled engineering professionals specializing in applied chemistry, chemical technology, and material chemical engineering. Graduate students are expected to possess a strong foundation in the theoretical principles of chemical engineering and technology, a comprehensive understanding of specialized knowledge, and a broad academic perspective. Furthermore, they should be acquainted with the cutting-edge developments in the field, skilled in delving into interdisciplinary research, and capable of completing research projects that span multiple disciplines. Exceptional overall qualities and competencies are also essential attributes of successful graduate students in this program.

3、 CURRICULUM

1. The 1st & 2nd semesters: courses study
2. November of the 3rd semester: thesis proposal submission and report
3. March of the 6th semester: thesis draft and Pre-defense
4. March of the 6th semester: concealed evaluation on the thesis
5. May of the 6th semester: oral defense on thesis

Main Courses

1. Introduction to Textile Chemistry 纺织化学

This course aims to provide students opportunities to obtain a fundamental understanding of the textile chemistry such as dyestuff, auxiliary, dyeing printing and finishing theory and technology. After this course, students should be able to have basic knowledge of textile chemicals and understand the basic theory of dyeing and finishing of textiles and Eco textile chemicals and their development.

This course will cover three overlapping areas: dyeing and finishing chemistry, fiber and polymer chemistry, and a newer area that intersects with materials science and involves the blending of different textile materials. This course will enable students to understand the dyestuff, auxiliary, dyeing printing and finishing theory and technology. In this course, students will be required to apply the principles of surface chemistry to processes, such as dyeing and finishing.

The teaching method will combine lectures and one or two visits to textile companies. The assessment and final mark based on the final exam, project paper, presentation, attendance and class performance.

2. Advanced Organic Chemistry 高等有机化学

Introduce key concepts and principles of modern Organic Chemistry. To apply nomenclature rules/strategies for naming organic compounds. To identify common functional groups and understand the intrinsic rules guiding the transformations among them. Understand the VB and MO theories and be able to use them to explain structure-function relationships in organic molecules. Learn about the spectroscopic techniques for structure determination (NMR, IR, UV-Vis, and MS).

3. Organometallic Chemistry 金属有机化学

The primary contents of this course are: 1) understand the basic principles of electronics, structure, and bonding in inorganic and organometallic complexes; 2) understand elementary organometallic steps in the context of catalysis; 3) design organometallic catalysts for critical organic transformations; 4) explore the use of organometallic complexes in other fields like medicine. Prerequisites: An essential background in organic chemistry and inorganic chemistry is required. Some background in physical chemistry is helpful but not required.

4. Introduction to Polymer Science 高分子化学与物理

Polymers are widely used materials today, and their dosage has long exceeded that of traditional metals and other inorganic materials by volume. This course integrates traditional polymer science subjects, with full English classroom teaching, after-school exercises, and relevant literature reading, enabling students to understand the main content of polymer science, understand the basic concepts of polymer science, and the relationship between polymer science and other disciplines and technical fields.

5. Scientific Paper Reading and Writing 科技论文阅读与写作

This course is taught in English and is intended for international postgraduates in College of Chemistry and Chemical Engineering to improve their scientific writing and presentation skills. With the focus on scientific writing of research papers, this course will be divided into four parts, including "Purpose and Audience of Writing", "Language Notes and Techniques", "Structure and Outline" and "Other Ways for Scientific Communications". Individual presentation and group discussion will be introduced into this course to give the students more practice on presenting their research findings in a more logic and scientific way.

6. Advanced Inorganic Chemistry 高等无机化学

Advanced Inorganic Chemistry is designed to give students the knowledge to explain everyday phenomena of inorganic complexes. Upon successful completion of this course, students are expected to understand: (1) the point group theory and its applications in the field of vibrational spectroscopy; (2) the structure and bonding of coordination complexes with a particular focus on Crystal-Field and Ligand-Field Theories; (3) electronic spectra of coordination complexes. This course will also cover the fundamental knowledge of organometallic chemistry, atomic cluster chemistry, bioinorganic chemistry and supramolecular chemistry. Additionally, student will discuss the most recent development of advanced inorganic materials in the fields of solar energy, electronic displays, hydrogen storage, magnetism, and batteries.

7. Introduction to Macromolecules 大分子导论

Macromolecules are ubiquitous, affecting our life and society in profound ways and they have unusual physical properties that do not occur for small molecules. The course of Introduction to Macromolecules aims to provide students with fundamental knowledge of Macromolecules, in aspects of basic definition, synthesis, characterization and properties. Selected research topics in the frontier of macromolecules, such as stimuli responsive polymer and sustainable polymers, will be introduced. Students from chemistry, chemical engineering and materials science and engineering will benefit from the course.

8. Green Chemistry 绿色化学

This course describes the science behind environmental problems, looks at real world green chemistry processes, products, and manufacturing techniques with emphasis on energy, solvents, catalysis, and bio-based materials. The course introduces the concepts, knowledge and skills required to design and synthesize safer chemicals with less impact. In addition to the environmental considerations the course discusses the economic implications of "real-world" cases. By the end of the course, the students should be familiar with the global, toxicological, and physical hazards that underlie the design and production of industrial chemicals. Students are also expected to understand how to implement the principles of green chemistry to create solutions to environmental and societal problems caused by modern chemical industry.

Requirements for Thesis Work and Publication of Academic Results

The subject selection of postgraduate thesis is under the guidance of the supervisor, and the research direction, academic significance and innovation of the subject must be considered, and the application value should be taking into account as well. The subject proposal should be submitted before the defense, and the content include literature review, the title, research background and significance, research content, research methods (or technical route), expected objectives, difficulties and existing problems, work plan, preliminary research results, etc.

The dissertation must be a systematic and complete academic thesis, which requires clear concepts, correct arguments, rigorous description, correct calculation, reliable data, clear hierarchy and standardized writing. The dissertation must have new findings on research topic, demonstrating that the author has the ability to engage in scientific research, and reflect that the author has a solid grasp of basic theory and systematic and in-depth professional knowledge in this discipline. The mid-term defense should be carried out during the research process of the dissertation in order to assess the normal implement of the research plan.

In addition to the required credits, academic achievements should be obtained before applying for the degree according to the college regulations about basic requirements for graduate students applying for the degree (see <https://ccce.dhu.edu.cn/sss/list.htm>). The college will not accept the degree application for those who fail to meet the requirements.

4、SUPERVISOR INFORMATION

Prof. Peiyi Wu 武培怡 教授

Doctor's Supervisor 博士生导师

Research direction: *Macromolecular Chemistry and Physics* 高分子化学与物理



武培怡教授 1998 年在德国 ESSEN 大学获博士学位。2000-2017 年任复旦大学高分子科学系教授，2017 年起任东华大学化学与化工学院教授、院长。2004 年获国家杰出青年基金资助，2007 年入选上海市优秀学科带头人计划，2016 年入选英国皇家化学会会士，2017 年获陶氏化学“Dow Innovation Challenge Award”，2019 年荣获上海市自然科学奖二等奖。主要研究方向包括智能仿生软材料、二维相关谱学、凝胶电解质、聚合物功能膜。

Prof. Dr. Peiyi Wu received his PhD from the University of ESSEN, Germany in 1998. He was a professor in the Department of Macromolecular Science at Fudan University from 2000 to 2017, and a professor and Dean of the College of Chemistry and Chemical Engineering at Donghua University since 2017. He was supported by the National

Science Foundation for Outstanding Young People in 2004, selected as a member of the Shanghai Outstanding Academic Leader Program in 2007, elected as a Fellow of the Royal Society of Chemistry in 2016, won the "Dow Innovation Challenge Award" of Dow Chemistry in 2017, and won the second Prize of Shanghai Natural Science Award in 2019. His research interests include intelligent biomimetic soft materials, two-dimensional correlation spectroscopy, gel electrolytes, polymer functional membranes

Research Interests (研究领域/课题) :

- 智能仿生软材料 Intelligent bionic soft materials
- 二维相关谱学 Two-dimensional correlation spectroscopy
- 凝胶电解质 Gel electrolytes
- 聚合物功能膜 Polymer functional membranes

Selected publications 代表论文:

1. Yong Cheng, Yucong Jiao*, and Peiyi Wu*. Manipulating Zn 002 deposition plane with zirconium ion crosslinked hydrogel electrolyte toward dendrite free Zn metal anodes. *Energy Environ. Sci.* **2023**, Accepted.
2. Zhen Meng, Yucong Jiao*, and Peiyi Wu*. Alleviating Side Reactions on Zn Anodes for Aqueous Batteries by a Cell Membrane Derived Phosphorylcholine Zwitterionic Protective Layer. *Angew. Chem. Int. Ed.* **2023**, e202307271.
3. Yingkun Shi, Baohu Wu, Shengtong Sun*, and Peiyi Wu*. Aqueous spinning of robust, self-healable, and crack-resistant hydrogel microfibers enabled by hydrogen bond nanoconfinement. *Nat. Commun.* **2023**, 14, 1370.
4. Haiyan Qiao, Shengtong Sun*, and Peiyi Wu*. Non-equilibrium-Growing Aesthetic Ionic Skin for Fingertip-Like Strain-Undisturbed Tactile Sensation and Texture Recognition. *Adv. Mater.* **2023**, 35, 2300593.
5. **Zhouyue Lei**, Peiyi Wu*. Short-term plasticity, multimodal memory, and logical responses mimicked in stretchable hydrogels. *Matter* **2023**, 6, 429-444.
6. Kai Gong, Lei Hou*, and Peiyi Wu*. Hydrogen-Bonding Affords Sustainable Plastics with Ultrahigh Robustness and Water-assisted Arbitrarily Shape Engineering. *Adv. Mater.* **2022**, 34, 2201065.
7. Zhenchuan Yu, and Peiyi Wu*. Underwater Communication and Optical Camouflage Ionogels. *Adv. Mater.* **2021**, 33, 1700321.
8. Zhouyue Lei, Wei Gao, and Peiyi Wu*. Double-Network Thermocells with Extraordinary Toughness and Boosted Power Density for Continuous Heat Harvesting. *Joule* **2021**, 5, 2211-2222.
9. Wei Zhang, Baohu Wu, Shengtong Sun*, and Peiyi Wu*. Skin-Like Mechanoresponsive Self-healing Ionic Elastomer from Supramolecular Zwitterionic Network. *Nat. Commun.* **2021**, 12, 4082.
10. Lijing Zheng, Miaomiao Zhu, Baohu Wu, Zhaoling Li, Shengtong Sun*, and Peiyi Wu*. Conductance-Stable Liquid Metal Sheath-Core Microfibers for Stretchy Smart Fabrics and Self-Powered Sensing. *Sci. Adv.* **2021**, 7, eabg4041.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Tao Yi, 易涛 教授

Doctor's Supervisor 博士生导师

Research direction: *Chemistry, Material Chemical Engineering* 化学、材料与化工



易涛教授，1987、1990 和 1998 年在北京大学分别获学士、硕士和博士学位，1999-2004 年分别在日本京都大学（日本学术振兴会 JSPS 博士后）、日本东京大学和法国巴黎大学（XI 校）从事研究工作，2004 年 5 月加盟复旦大学，2021 年加盟东华大学。主要从事响应型光功能材料、激活型荧光探针和诊疗一体化研究。国家杰出青年基金获得者，入选上海市浦江人才和上海市优秀学术带头人，发表研究论文 220 余篇。获教育部自然科学一等奖(2014 年)和上海市自然科学二等奖（2022 年）。

Professor Yi Tao received her Bachelor's, Master's and Doctor's degrees from Peking University in 1987, 1990 and 1998 respectively. She joined Kyoto University as a JSPS postdoctoral fellow in the period of 1999-2001 and worked as a research fellow in University of Tokyo and Paris University (XI) (CNRS) from 2002 to 2004. After that she joined Fudan University as an associate professor (2004) and became a full professor in 2007 in the department of chemistry. From 2021, she became a full professor and research leader of Donghua University. Her research interests focus on stimulus responsive functional materials, biosensors, imaging and therapy. She has authored more than 220 peer reviewed publications with more than 13000 citation. Her h-index is 64. She won the first prize of natural science of the Ministry of Education and the second prize of Shanghai Natural Science.

Research Interests (研究领域/课题) :

- 荧光探针及激活型前药控释体系的构建 Construction of fluorescence probes, activatable prodrugs and controlled release systems
- 响应型发光材料的创制和功能调控 Creation and functional regulation of responsive luminescent materials

Selected publications 代表论文:

1. Wang, C.; Zhu, J.; Wang, S.; Zhao, L.;* Wei, P.*; Tao Yi*. Self-Assembled Nano-CT Contrast Agent Leveraging Size Aggregation for Improved In Vivo Tumor CT Imaging, *Adv. Mater.* **2023**, 2309789
2. Liu, L.; Liu, F.; Liu, D.; Yuan, W.; Zhang, M.; Wei, P*.; Yi, T*. A Smart Theranostic Prodrug System Activated by Reactive Oxygen Species for Regional Chemotherapy of Metastatic Cancer. *Angew. Chem. Int. Ed.* **2022**, 61 (12), e202116807 (ESI 高被引) .
3. Li, Y.; Baryshnikov, G.; Wei, P.; Wu, H*.; Yi, T*. Vibration-Regulated Multi-State Long-Lived Emission from Star-Shaped Molecules. *Angew. Chem. Int. Ed.* **2022**, 134, e202213051.
4. Zhang, D*.; Yu, W.; Li, S.; Xia, Y.; Li, X.; Li, Y.; Yi, T*. Artificial Light-Harvesting Metallacycle System with Sequential Energy Transfer for Photochemical Catalysis, *J. Am. Chem. Soc.* **2021**, 143, 1313-1317.
5. Li, X.; Wang, J.; Xue, F.; Wu, Y.; Xu, H.; Yi, T*.; Li, Q.* An Imine-Linked Metal–Organic Framework as a Reactive Oxygen Species Generator. *Angew. Chem. Int. Ed.* **2021**, 60 , 2534-2540.
6. Liu, F.; Liu, L.; Liu, D.; Wei, P*.; Feng, W.; Yi, T*. An excipient-free “sugar-coated bullet” for the targeted treatment of orthotopic hepatocellular carcinoma. *Chem. Sci.* **2022**, 13 (36), 10815-10823.

7. Zhou, L.; Zhuang, H.-J.; Chen, Q.; Jiang, L.-P.; Han, X.-M.; Ge, Y.-X.; Zhang, T.-W.; Liang, H.-F.; Ding, W.; Qi, M.; Dong, J.; **Yi, T***; Jiang, L.-B*. Precise targeting of osteopontin in non-small cell lung cancer spinal metastasis to promote chemosensitivity via a smart hollow nano-platform. *Chem. Eng. J.* **2022**, *436*, 132131.
8. Liu, D.; Liu, L.; Liu, F.; Zhang, M.; Wei, P*.; **Yi, T***. HOCl-Activated Aggregation of Gold Nanoparticles for Multimodality Therapy of Tumors. *Adv. Sci.* **2021**, *8* (17), 2100074.
9. Wei, P.; Liu, L.; Wen, Y.; Zhao, G.; Xue, F.; Yuan, W.; Li, R.; Zhong, Y.; Zhang, M.; **Yi, T***. Release of Amino- or Carboxy-Containing Compounds Triggered by HOCl: Application for Imaging and Drug Design. *Angew. Chem. Int. Ed.* **2019**, *58* (14), 4547-4551.
10. Wei, P.; Yuan, W.; Xue, F.; Zhou, W.; Li, R.; Zhang, D.; **Yi, T***. Deformylation reaction-based probe for in vivo imaging of HOCl. *Chem. Sci.* **2018**, *9* (2), 495-501. (ESI 高被引)

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Cai Zaisheng, Male, Professor and Doctoral supervisor of Textile Chemistry and Dyeing and Finishing Engineering, Donghua University.

● **Academic background**

Ph. D. of China Textile University, postdoctoral of Fudan University, postdoctoral of North Carolina State University, visiting research scholar of University of California.

● **Research Interests**

Functional Finishing of Textiles, Dyeing and Environment, Fiber Modification

● **Academic honors**

Shanghai Leading Talents, China Textile Academic Leaders, Jiangsu High-level Innovative and Entrepreneurial Talents, Huzhou South Taihu Elite Plan Innovative Leading Talents, Songjiang Top Talents.

Elsevier 2020, 2021, 2022 China's highly cited scholars, selected into the world's top 2% scientists list, the number of papers in the field of engineering ranks the top 1% in the world, papers have been cited by 10000 + scholars, H index ranks the top 1% in the world.

● **Academic part-time**

Deputy director of China Textile Academic Standard Committee, director of Eco-additives Standard Committee, deputy director of China Needle Association Technical Committee and consultant of Warp Editing Association;

Member of Editorial Committee of Journal of Donghua University, Industrial Textiles and International Textile Report, Expert Member of Textile Report and Knitting Industry, Expert Judge of Planning Textbooks at the 14th Five-Year Plan.

Fellow of the American Association of Textile Chemists and Colourists (AATCC) , and Member of the Society of Colourists (SDC).

● **Main Academic Achievements**

key special projects of national basic materials, the National Natural Science Foundation of China (in general). There are more than 90 international cooperation and enterprise



cooperation projects, such as the National Science and Technology Support Plan, the Key Projects of Shanghai's Imported Technology Absorption and Innovation Plan, the Key Projects of the Ministry of Education, the Doctoral Program Fund of the Ministry of Education (Priority Development and Doctoral Guidance), and with BASF, International Wool Bureau, Dow, American Cotton Company, etc.

Published more than 400 SCI papers, edited undergraduate textbooks Fiber Chemistry and Physics, Dyeing and Finishing Theory, Dyeing and Finishing Process Principle (Volume 1, Volume 3), graduate textbooks Dyeing Physical Chemistry;

2 second prizes of national technological invention, 1 first prize and 2 second prize of Shanghai technological invention, 3 first prize and 2 second prize of China Textile Industry Federation for scientific and technological progress, 1 second prize for scientific and technological inventions of the Ministry of Education, nearly 20 other provincial and ministerial awards, and the first prize of the third Dongfang Pearl innovation achievement in Shanghai.

● **Representative papers (recent)**

1. Fabrication of sandwich-structured infrared camouflaged and flexible anti-aging composite for thermal management. *Ceramics International*.49,18,30304-30311, 2023
2. Fabrication of Hydrophobic Poly(vinylidene fluoride) Membranes with Manipulated Micromorphology and Enhanced Strength. *Langmuir*. 39,25, 8629-8637,2023
3. Asymmetrical Emissivity and Wettability in Stitching Treble Weave Metafabric for Synchronous Personal Thermal-Moisture Management. *Small*. 19,29, 2300297,2023
4. Facile preparation of a high-transparency anti-fogging/frost-resisting poly (AMPS-co-AA) coating with self-healing property. *Progress in Organic Coatings*.151, 106053, 2021
5. Thermodynamically Induced Interfacial Condensation for Efficient Fog Harvesting. *Small*. 2304037,2023
6. Facile preparation of a high-transparency zwitterionic anti-fogging poly(SBMA-co-IA) coating with self-healing property. *Progress in Organic Coatings*.165, 106764,2022
7. Facile fabrication of fabric-based membrane for adjustable oil-in-water emulsion separation, suspension filtration and dye removal. *Separation and Purification Technology*.323,124467,2023
8. One-way water transport and enhanced heating and cooling for cotton fabrics. *Cellulose*.30,3351-3361,2023
9. Preparation of cationic viscose and its salt-free dyeing using reactive dye. *Coloration Technology*.138,4,378-387,2022
10. A facile and green route to fabricate fiber-reinforced membrane for removing oil from water and extracting water under slick oil. *Journal of Hazardous Materials*.416,125697,2021

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Requirements for the future international students: good health, good conduct, abide by school discipline, solid basic knowledge, hard work.

Prof. Zhao Tao 赵涛 教授 Master's and Doctoral supervisors

Research direction: Textile chemistry and dyeing and finishing, Chemical Engineering and technology

赵涛教授毕业于东华大学，获纺织化学与染整工程博士学位，美国加州大学戴维斯分校访问学者（2年），主要研究方向包括新型染料的结构设计及合成，健康防护多功能纺织化学品的合成及应用，新型纤维材料的开发及应用。在国内外重要学术期刊发表论文130余篇，授权专利20余项，获中国纺织工业联合会科技进步二等奖两项（2010年、2012年）。主编教材《染整工艺与原理》（下）获首届全国教材建设奖优秀教材二等奖（高等教育类）（2021年），获宝钢优秀教师奖（2020年）。



Professor Zhao Tao graduated from Donghua University with a Ph.D. in Textile Chemistry and Dyeing and Finishing Engineering. He is a visiting scholar at the University of California, Davis (2 years). His main research interests include the structural design and synthesis of new dyes, the synthesis and application of multifunctional textile chemicals for health protection, and the development and application of new fiber materials. Published over 130 papers in important academic journals both domestically and internationally. He granted more than 20 patents, and won two prizes for scientific and technological progress from the China Textile Industry Federation. His edited textbook "Dyeing and Finishing Technology and Principles" (Part 2) won the Second Prize of Excellent Textbook (Higher Education Category) at the First National Textbook Construction Award (2021). He won the Baosteel Outstanding Teacher Award (2020).

Research Area(研究领域)

- Theory and technology of textile dyeing and finishing, 纺织品染整理论与技术
- Novel textile chemicals, 新型纺织化学品
- Functional Textiles, 功能性纺织品
- Application of biomaterials in textile dyeing and finishing, 生物质材料在纺织染整领域的应用
- Water-free and Low-water coloration techniques for textiles, 纺织品无水/少水染色技术

Selected publications 代表论文:

1. Synthesis of novel carbene dyes and investigation of their dyeing properties and reaction mechanism for various fabrics, *Dyes and Pigments*, 2024: (221) 111784
2. Bifunctional Microcapsules with n-Octadecane/Thyme Oil Core and Polyurea Shell for High-Efficiency Thermal Energy Storage and Antibiosis. *Polymers*, 2020, 12(10): 2226
3. Functionalization of polyethylene terephthalate knitted fabric with cowpea protein and biopolymer complex: Applications for enhancing wettability and UV-Protection properties. *Journal of Colloid And Interface Science*, 2020,565(2020): 360-367
4. A Feasible Method Applied to One-Bath Process of Wool/Acrylic Blended Fabrics with Novel Heterocyclic Reactive Dyes and Application Properties of Dyed Textiles. *Polymers*, 2020. 12(2): 285.

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Students with a bachelor's or master's degree in textile chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Kongliang Xie, 谢孔良 教授 Master's Supervisor, Doctoral Supervisor

Research direction: Functional dyes, novel dyeing and finishing technologies

谢孔良教授毕业于大连理工大学，获精细化工博士学位，先后在中国纺织科学研究院、国家染整工程技术研究中心、现代纺织研究院从事研究工作，2002年加入东华大学化学与化工学院，主要从事功能染料与染整工程领域的研究工作。现任中国化工学会染料专家委员会副主任。

Prof. Xie Kongliang received his PhD in Fine Chemical Engineering from Dalian University of Technology in 1992. He has worked at the China Textile Science Research Institute, the National Dyeing and Finishing Engineering Technology Research Center, and the Modern Textile Research Institute. In 2002, he joined the College of Chemistry and Chemical Engineering at Donghua University, mainly engaging in research in the field of functional dyes and dyeing and finishing engineering. He is currently the Vice Chairman of the Dyes Committee of the Chemical Industry and Engineering Society of China.



Research Interests (研究领域/课题) :

- 先进功能纺织化学品研究与开发 advanced functional textile chemicals
- 绿色染整技术及功能纺织品 Eco-friendly dyeing and finishing technology and functional textiles
- 有机功能分子与功能材料 Organic functional molecules and functional materials

Selected publications 代表论文:

1. K. Xie, X. Zhuang, Z. Jing, X. Song, A. Hou, A. Gao*. Green Chemistry, 2023, 25, 4438.
2. W. Xu, Y. P. de Leon, Y. Bai, M. Gong, K. Xie, B. H. Park, Y. Yin. Advance Materials, 2017, 29, 1701070.
3. L. Hu, H. Chen, M. Ju, A. Hou, K. Xie, A. Gao*. Nano Letters, 2022, 22 (15), 6383-6390.
4. A. Hou, H. Chen, C. Zheng, K. Xie, A. Gao*. ACS Nano, 2020, 14 (6), 7380-7388.
5. A. Gao, H. Shen, H. Zhang, G. Feng, K. Xie*. Journal of Cleaner Production, 2017, 164: 277-287.
6. A. Gao, T. Ma, M. Li, H. Chen, M. Ju, A. Hou, K. Xie*. ACS Applied Nano Materials, 2022, 5, 15498.
7. A. Gao, H. Liu, L. Hu, H. Zhang, A. Hou, K. Xie*. Chinese Chemical Letters, 2018, 29, 1301-1304.
8. A. Gao, J. Wang, H. Chen, A. Hou, K. Xie*. Environmental Science: Nano, 2020, 7 (7), 2061.
9. A. Gao, H. Chen, A. Hou, K. Xie*. Materials Science and Engineering C, 2019, 103, 109821.
10. A. Gao, X. Luo, H. Chen, A. Hou, H. Zhang, K. Xie*. Chinese Journal of Chemical Engineering, 2023, 54, 264-271.

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Prof. Yan Luo 罗艳 教授 Master's Supervisor
Research direction: Material Chemical Engineering



Education and Work Experience 教育及工作经历

1990 - 1994 B.E., major in Textile Chemistry, college of Wuhan textile technology

1990 - 1994 纺织化学，工学学士，武汉纺织工学院

1995 - 1998 M.E., major in Chemical Fiber, Beijing institute of clothing technology

1995 - 1998 化学纤维，工学硕士，北京服装学院

1998 - 2001 Ph.D., major in Textile chemistry and dyeing engineering, Donghua University

1998 - 2001 纺织化学与染整工程，工学博士，东华大学

2009 - 2010 Visiting scholar, Department of Textiles, Clothing & Design, University of Nebraska-Lincoln

2009-2010 美国内布拉斯加大学林肯分校访问学者

2003 - Present, Faculty of College of Chemistry and Chemical engineering, Donghua University

2003- 迄今，东华大学化学与化工学院教师

Research Interests (研究领域)

- Preparation and application of fine chemicals 精细化学品制备及应用
- Research in microcapsule technology 微胶囊技术研究开发
- Development of green finishing technology and process 绿色整理技术及工艺开发

Selected Publications in last 5 years 近五年代表性成果

[1] Keneng Xu, Yan Luo. Packaging ink microcapsules with high stability and biocompatibility based on natural dye gardenia blue [J]. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2023,658,130778

[2] Jingjing He, Yan Luo*. Novel carboxylate comb-like dispersant used in disperse dyes [J]. Journal of applied polymer science. 2022; e52147. <https://doi.org/10.1002/app.5214>

[3] Jialei Huang, Jingjing He, Keneng Xu, Yali Xiang, Yan Luo*. Diclofenac degradation by activating peroxydisulfate via well-dispersed GO/Cu₂O nano-composite [J]. Environmental Science and Pollution Research, 2022, <https://doi.org/10.1007/s11356-022-18789-97>

[4] Jialei Huang and Yan Luo*. Diclofenac degradation based on shape-controlled cuprous oxide nanoparticles prepared by using ionic liquid [J]. Water Science & Technology, 2021, 84(8), 1930 doi: 10.2166/wst.2021.369

[5] Mohmadarslan Kutubuddin Sadannavar¹, Yan Luo*. Jialei Huang, Chuanzhi Cao, Chunying Fan, Rana Zafar Abbas Manj & Atta ur Rehman Khan. Antibacterial cotton functionalized with olive oil for developing medical textiles [J]. Indian Journal of Fibre & Textile Research 2021, 46: 303-310

[6] Chuanzhi Cao, Min Xiao, Yan Luo*. Preparation and Characterization of Imidazolyl Ionic Liquid-Based Shear Thickening Dispersion System [J]. Journal of applied polymer science. 2021, 138(4), 49719

[7] Dong Ni, Yan Luo*. Polyamine microcapsules featured with high storage stability used for one-component epoxy adhesive [J]. Journal of applied polymer science. 2021, 138(15), 50183.

- [8]Chunying Fan, Hongli Ana, Juan Du, Yan Luo*. High-performance Printable Paper-like Composites Derived from Plastic Flexible Film Wastes [J]. Polymer international, 2020, 69: 184-191.
- [9] Ming Huang, Yan Luo*, Yi Zhong, Min Xiao, Jiancan Hu, Preparation and Characterization of Microencapsulated Phase Change Materials with Binary Cores and Poly (allyl methacrylate) (PALMA) Shells Used for Thermo - regulated Fibers, Thermochimica Acta, 2017 (655): 262-268
- [10] Feiyu Chen, Mengsu Liu, Juan Du, Yan Luo*, Preparation and properties of novel asymmetric Gemini alkyl polyglycosides, Tenside surfactants detergents, 2017, (1): 71-79

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Ai Qin Hou, 侯爱芹 教授

Master's Supervisor, Doctoral Supervisor

Research direction: Biological functional materials, novel dyeing and finishing technologies
生物功能材料、新型染整技术

侯爱芹教授 2003 年毕业于东华大学，获纺织化学与染整工程学科博士学位，2003 年入职东华大学化学与化工学院，2012-2013 年在美国加州大学戴维斯分校（University of California, Davis）作高级研究学者。主要从事生物功能材料、绿色染整新技术方面的研究工作。主讲研究生课程《生态纺织品检测技术》。

Prof. Hou, Ai Qin received her PhD in textile chemistry and dyeing and finishing engineering from Donghua University in 2003, and then she joined the College of Chemistry and Chemical Engineering at Donghua University.

From 2012 to 2013, she was a senior research scholar at the University of California, Davis, in the United States. Her main research areas include biological functional materials and green dyeing and finishing technologies. She teaches the graduate course "Ecological Textile Testing Technology."

Research Interests (研究领域/课题) :

- 先进功能纺织品研究与开发 advanced functional textiles
- 绿色染整技术 Eco-friendly dyeing and finishing technology
- 生物功能材料 biological functional materials

Selected publications 代表论文:

1. **A. Hou**, H. Chen, C. Zheng, K. Xie, A. Gao*. ACS Nano, 2020, 14 (6), 7380-7388.
2. **A. Hou**, H. Chen, X. Song, X. Yang, Y. Zhang, K. Xie, A. Gao*. Journal of Cleaner Production, 2020, 274, 122935.
3. L. Hu, H. Han, Z. Xu, K. Xie, K. Song, **A. Hou***, Dyes and Pigments, 2023, 218, 111496.
4. L. Hu, H. Chen, M. Ju, **A. Hou**, K. Xie, A. Gao*. Nano Letters, 2022, 22 (15), 6383-6390.
5. H. Chen, L. Hu, M. Ju, K. Xie, A. Gao, C. Zheng, **A. Hou ***. Applied Materials Today, 2022, 29, 101654.
6. L. Hu, M. Ju, A. Gao, H. Chen, **A. Hou***, Dyes and Pigments, 2022, 200, 110164.
7. L. Hu, X. Song, M. Li, K. Xie, **A. Hou***, Cellulose, 2023, 30, 4683-4696.



8. L. Hu, K. Xie, A. Gao, Y. Hu, **A. Hou***, *Dyes and Pigments*, 2022, 199, 110048.
9. **A. Hou**, L. Hu, C. Zheng, K. Xie, A. Gao*. *Progress in Organic Coatings*, 2020, 149, 105940.
10. A. Gao, H. Chen, J. Tang, K. Xie, **A. Hou***. *Industrial Crops and Products*, 2020, 152, 112524

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Dr. Sheng-Yin Zhao, 赵圣印 教授 Docroral's Supervisor 博士生导师
Research Direction: Orangic Chemistry; Material Chemical Engineering

赵圣印, 男, 1972年6月生, 博士, 教授, 博士生导师。本科和硕士毕业于沈阳药科大学, 2000年7月于中国药科大学获药物化学专业博士学位, 而后分别在中国科学院上海有机化学研究所和美国 Case Western Reserve University 化学系从事博士后研究, 2006年5月进入东华大学工作。目前研究兴趣主要集中在天然产物的结构修饰和生物活性研究, 马来酰亚胺的官能化反应构建含氮杂环化合物和药物合成工艺与新药申报等领域。



Dr. Zhao was born in Tianjin in 1972. He grew up in Tianjin and graduated with B. S. (1994) and M. S. (1997) from Shenyang Pharmaceutical University. He then joined China Pharmaceutical University for a Ph. D. degree in Medicinal Chemistry. His dissertation topic of study during his graduate work involved in the development of benzopyran derivatives as potassium channel openers. Upon graduating he moved to Shanghai Institute of Organic Chemistry and Case Western Reserve University for further training as a post-doctoral fellow (2000-2006) in natural product synthesis and mechanistic enzymology. He was appointed as an associate professor at Department of Chemistry at Donghua University in 2006. Now, he serves as a fulltime professor in Organic Chemistry and published more than 70 papers. Dr. Zhao's research focuses on the synthesis, structural modification and biological activity of natural alkaloids, difunctionalization of maleimides to construct nitrogen-containing heterocycles, and pharmaceutical chemistry.

Research Interests (研究领域/课题)

Synthetic Organic chemistry 合成有机化学

Pharmaceutical Chemistry 制药化学

Selected publications 代表论文:

[1] Hong-Li Ruan, Wen Zhang, Xiao-Han Rao, Zhi-Jia Zhu, Sheng-Yin Zhao. KI-Facilitated trifunctionalization of maleimides in water: access to disulfonylated diazosuccinimide derivatives and their synthetic applications. *Advanced Synthesis & Catalysis*, **2023**, 365(22):4008-4013.

[2] Wen-Kang Wang, Fei-Yun Bao, Si-Tian Wang, Sheng-Yin Zhao. Access to 3-Aminomethylated maleimides via a phosphine-catalyzed Aza-Morita-Baylis-Hillman type coupling. *The Journal of Organic Chemistry*, **2023**, 88(11):7489-7497.

[3] Wen-Kang Wang, Hong-Ru Tan, Ning-Ning Wang; Hong-Li Ruan, Sheng-Yin Zhao. Copper(I)-catalyzed direct oxidative annulation of 1,3-dicarbonyl compounds with

maleimides: access to polysubstituted dihydrofuran derivatives. *The Journal of Organic Chemistry*, **2022**, 87(5):2711-2720.

[4] Hongli Ruan, Yi-Lin Ma, Ke-Xin Man, Sheng-Yin Zhao, Transition-Metal-Free Radical-triggered hydrosulfonylation and disulfonylation reaction of substituted maleimides with sulfonyl hydrazides. *Journal of Organic Chemistry*, **2022**, 87(5):

[5] Jing Li, Hong-Ru Tan, Yu-Long An, Zhi-Yu Shao, Sheng-Yin Zhao. Synthesis and DABCO-induced demethylation of 3-cyano-4-methoxy-2-pyridone derivatives. *Journal of Heterocyclic Chemistry*, **2020**, 57(1):486-496.

[6] Jia-Nan Zhu, Wen-Kang Wang, Ze-Hui Jin, Qian-Kun Wang, Sheng-Yin Zhao. Pyrrolo[3,4-c]pyrazole synthesis via copper(I) chloride-catalyzed oxidative coupling of hydrazones to maleimides. *Organic Letters*, **2019**, 21(13):5046-5050.

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Students with a bachelor's degree in Organic Chemistry, Medicinal Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Weiping Liu, 刘为萍 特聘研究员

PhD's Supervisor 博士生导师

Research direction: Organic Synthesis and Homophonous Catalysis 有机合成与均相催化



刘为萍 博士，特聘研究员，博士生导师，入选上海市海外高层次人才计划。2009 年进入中国人民大学李志平教授课题组从事自由基的烯炔双官能团化反应研究，2012 年获得硕士学位。随后在国家公派奖学金资助下，加入德国哥廷根大学化学系 Lutz Ackermann 教授课题组从事碳氢键官能团化反应研究，于 2016 年获得博士学位，接着在该课题组从事博士后研究至 2017 年 4 月。随后加入德国莱布尼茨催化研究所 Matthias Beller 教授课题组从事过渡金属催化氢化反应研究。2019 年 8 月加入东华大学化学与化工学院开展独立研究工作，主要研究方向为廉价金属催化剂的设计、合成及其在有机合成化学中的应用。

Prof. Dr. Liu received his M.Sc degree in 2012 under the supervision of Prof. Dr. Zhiping Li from Renmin University of China. In June 2016, he obtained his PhD degree from the Georg-August-University Goettingen (Germany) under the supervision of Prof. Dr. Lutz Ackermann. After a short postdoctoral stay at the same group, he then moved from Goettingen to Rostock to join the group of Prof. Dr. Matthias Beller (LIKAT Rostock, Germany) as a postdoctoral research fellow in May 2017. Since August 2019, he has been appointed as a full professor and initiated his independent research career at Donghua University. His current research interests include homogeneous catalysis, synthetic methodology, asymmetric catalysis, as well as catalytic depolymerization of plastic waste.

代表性论文 (Selected publications):

1. Feixiang Sun, Xin Chen, Siyi Wang, Fan Sun, Sheng-Yin Zhao and **Weiping Liu***, Borrowing Hydrogen β -Phosphinomethylation of Alcohols Using Methanol as C1 Source by Pincer Manganese Complex. *J. Am. Chem. Soc.*, **2023**, doi.org/10.1021/jacs.3c10484.
2. Feixiang Sun, Jiamin Huang, Zhihong Wei, Conghui Tang*, **Weiping Liu***, Divergent

Synthesis of Alcohols and Ketones via Cross-Coupling of Secondary Alcohols under Manganese Catalysis. *Angew. Chem. Int. Ed.*, **2023**, 62, e202303433.

3. Jun Tang, Jingxi He, Sheng-Yin Zhao*, and **Weiping Liu***, Manganese-Catalyzed Chemoselective Coupling of Secondary Alcohols, Primary Alcohols and Methanol. *Angew. Chem. Int. Ed.*, **2023**, 62, e202215882.
4. **Weiping Liu**,[†] Thomas Leischner,[†] Wu Li, Kathrin Junge and Matthias Beller*, A General Regioselective Synthesis of Alcohols by Cobalt-Catalyzed Hydrogenation of Epoxides. *Angew. Chem. Int. Ed.*, **2020**, 59, 11321–11324. ([†]Contributed equally)
5. **Weiping Liu**, Wu Li, Kathrin Junge and Matthias Beller*, Iron-Catalyzed Regioselective Hydrogenation of Terminal Epoxides to Alcohols under Mild Conditions. *Nat. Catal.* **2019**, 2, 523-528.
6. **Weiping Liu**, Basudev Sahoo, Anke Spannenberg, Kathrin Junge, and Matthias Beller*, Tailored Cobalt-Catalysts for Reductive Alkylation of Anilines with Carboxylic Acids under Mild Conditions. *Angew. Chem. Int. Ed.* **2018**, 57, 11673-11677.
7. **Weiping Liu**, Sven C. Richter, Yujiao Zhang, and Lutz Ackermann*, Manganese(I)-Catalyzed Substitutive C–H Allylation. *Angew. Chem. Int. Ed.* **2016**, 55, 7747-7750.
8. **Weiping Liu**, Jonas Bang, Yujiao Zhang, and Lutz Ackermann*, Manganese(I)-Catalyzed C–H Aminocarbonylation of Heteroarenes. *Angew. Chem. Int. Ed.* **2015**, 54, 14137-14140. (Highlighted in *Synfacts* **2015**, 1253)
9. **Weiping Liu**, Daniel Zell, Michael John, and Lutz Ackermann*, *Manganese-Catalyzed Synthesis of cis-β-Amino Acid Esters through Organometallic C–H Activation of Ketimines.* *Angew. Chem. Int. Ed.* **2015**, 54, 4092-4096.
10. **Weiping Liu**, Yuanming Li, Kaisheng Liu, Zhiping Li*, Iron-Catalyzed Carbonylation-Peroxidation of Alkenes with Aldehydes and Hydroperoxides. *J. Am. Chem. Soc.* **2011**, 133, 10756-10759.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Qianjin Chen 陈前进 特聘研究员

PhD's Supervisor 博士生导师

一、教育与工作经历(Education and Professional Experience):

2004-2008 四川大学高分子科学与工程学院, 工学学士

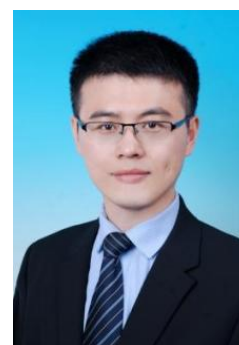
2004-2008 Sichuan University, B. Eng. in Polymer Science and Engineering

2008-2013 香港中文大学化学系, 理学博士, 导师: 吴奇 院士

2008-2013 The Chinese University of Hong Kong, Ph.D. in Polymer Physical Chemistry (Advisor: Prof. Chi Wu)

2014-2016 美国犹他大学化学系, 博士后, 导师: Henry White (美国艺术与科学院院士)

2014-2016 The University of Utah, Post-Doc in Electrochemistry (Advisor: Prof. Henry S White)



2016-2017 美国德克萨斯大学奥斯汀分校化学系, 博士后, 导师: Allen Bard (美国科学院院士)

2016-2017 The University of Texas at Austin, Post-Doc in Electrochemistry (Advisor: Prof. Allen J Bard)

2017.12-至今 东华大学化学与化工学院, 特聘研究员/博导

2017.12-Now Donghua University, College of Chemistry and Chemical Engineering

二、研究方向 (Research Areas) :

1. 单颗粒分析
2. 纳米电分析化学
3. 电化学扫描成像 (SECM、SECCM)
4. 材料与器件界面设计及微观机理研究

We are interested in developing new electrochemical methodologies and exploring electrochemical process at the micro/nanoscale to elucidate fundamental scientific questions at interfaces. The systems include, but are not limited to:

1. Fundamental electrochemistry;
2. Electrocatalysis and energy conversion
3. Novel interfacial phenomenon;

三、近年来承担的主要科研项目 (Recent Funding):

1. National Ten Thousand Talent Program for Young Top-Notch Talent Program, 国家高层次人才青年人才计划, 2024.1-2026.12
2. NSFC-Normal Program, 国家自然科学基金面上项目, 单个纳米晶超晶格材料的催化活性电化学测量与成像, No. 22274019, 2023.1-2026.12
3. NSF-Shanghai Normal Program, 上海市自然科学基金 (面上项目), 基于 SECCM 的单颗粒二氧化碳电催化研究, 23ZR1400200, 2023.4-2026.3
4. NSFC-Young Program, 国家自然科学基金青年项目, 单纳米气泡及相关三相界面的电化学研究, No. 21804018, 2019.1-2021.12
5. NSF-Shanghai Exploration Program, 上海市自然科学基金 (探索类), 扫描电化学显微镜用于二维镍基氢氧化物电催化析氧研究, No.19ZR1470800, 2019.7-2022.6
6. Open Project of PCOSS, Xiamen University, 厦门大学固体表面物理化学国家重点实验室开放课题, No. 201906, 2020.1-2021.12
7. 东华大学中央高校基本科研业务费学科交叉重点计划项目, 2232020A-09, 2020.1-2022.12
8. Donghua University Start-up Fund, 东华大学高层次人才项目专项基金, 2017.12-2020.12

四、近年来发表的学术论文 (Recent Selected Publications):

1. Peng Yu, Gao Cong, Deng Xiaoli, Zhao Jiao, Chen Qianjin*, Elucidating the Geometric Active Sites for Oxygen Evolution Reaction on Iron-Incorporated Cobalt Hydroxide Nanoplates, *Analytical Chemistry*, 2023, 95, 11657-11663.
2. Zhao Jiao†, Wang Menglin†, Peng Yu, Ni Jie, Hu Sunpei, Zeng Jie,* Chen Qianjin*, Exploring the Strain Effect in Single Particle Electrochemistry using Pd Nanocrystals, *Angewandte Chemie International Edition*, 2023, 62, e202304424.
3. Gao Cong, Li Yingjian, Zhao Jiao, Sun Wei, Guang Shanyi, Chen Qianjin*, Measuring the Pseudocapacitive Behavior on Individual V2O5 Particles by Scanning Electrochemical Cell Microscopy, *Analytical Chemistry*, 2023, 95, 10565-10571.
4. Chen Qianjin*, Zhao Jiao, Deng Xiaoli, Shan Yun, Peng Yu, Single-Entity Electrochemistry of Nano- and Microbubbles in Electrolytic Gas Evolution. *The Journal of Physical Chemistry Letters*, 2022, 13, 6153-6163. (invited perspective)

5. Deng Xiaoli,† Shan Yun,† Meng Xiaohui, Yu Zhaoyang, Lu Xiaoxi, Ma Yunqing, Zhao Jiao, Qiu Dong, Zhang Xianren, Liu Yuwen, Chen Qianjin*, Direct Measuring of Single Heterogeneous Bubble Nucleation Mediated by Surface Topology. *Proceedings of the National Academy of Sciences*, 2022, 119, e2205827119.
6. Shan Yun,† Deng Xiaoli,† Lu Xiaoxi, Gao Cong, Li Yingjian, Chen Qianjin*, Surface Facets Dependent Oxygen Evolution Reaction of Single Cu₂O Nanoparticles. *Chinese Chemical Letters*, 2022, 33, 5158-5161.
7. Lu Xiaoxi,† Li Mingzhong,† Peng Yu, Xi Xiangyun, Li Man, † Chen Qianjin*, Dong Angang,* Direct Probing of the Oxygen Evolution Reaction at Single NiFe₂O₄ Superparticles with Tunable Structures. *Journal of the American Chemical Society*, 2021, 143, 16925-16929.
8. Liu Yulong, Lu Xiaoxi, Peng Yu, Chen Qianjin*, Electrochemical Visualization of Gas Bubble on Superaerophobic Electrode using Scanning Electrochemical Cell Microscopy. *Analytical Chemistry*, 2021, 93, 12337-12345.
9. Liu Yulong, Jin Cheng, Liu Yuwen, Ruiz Hernandez Karla, Ren Hang, Fan Yuchi, White Henry S.*, Chen Qianjin*, Visualization and Quantification of Electrochemical H₂ Bubble Nucleation at Pt, Au and MoS₂ Substrate, *ACS Sensors*, 2021, 6, 355-363. (Highly Cited Paper)
10. Chen Qianjin*, Liu Yuwen, Edwards Martin A., Liu Yulong, White Henry S.*, Nitrogen Bubbles at Pt Nanoelectrodes in Non-aqueous Medium-Oscillating Behavior and Geometry of Critical Nuclei, *Analytical Chemistry*, 2020, 92, 6408-6412.

五、主要学术兼职(Part-Time Affiliations):

1. 中国颗粒学会微纳米气泡学术专业委员会委员
2. Chinese Chemical Letter 青年编委, Frontiers in Chemistry、Electrochemical Science Advances 纳米电化学专刊客座编辑, Exploration-Wiley 期刊学术编辑
3. 中国化学会、国际电化学协会会员
4. 担任 ACS, Wiley, RSC, Elsevier 等多个出版社 20 余种学术期刊特邀审稿人, 上海市自然科学奖评审专家

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课题组主页(group website): <https://www.x-mol.com/groups/qianjinchen2105>

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硕士生研究生: 欢迎具有化学、材料、信息等学科背景并对科研有浓厚兴趣的本科毕业生或推免生加入本课题组。

博士研究生: 欢迎具有 (a) 电分析化学、电化学(材料电化学、纳米电化学、谱学电化学等); (b) 仪器构建及表征技术(物理光学、信息等), 熟悉 matlab、labview、大数据及图像处理; (c). 无机纳米材料合成及光电催化 其中之一研究背景的硕士毕业生加入本课题组。

Prof. Weilong Xie, 谢伟龙 教授 PhD/Master Supervisor 硕博研究生导师
Research Subdiscipline: Organic Chemistry 有机化学



谢伟龙，博士，特聘研究员，上海市海外高层次人才。2005年在浙江大学主修化学专业，2009年在南开大学崔春明教授的指导下攻读博士学位，主要从事有机金属化学方面研究。2014年底加入 Sukbok Chang 教授组从事博士后工作，之后提升为高级研究员。2020年12月回国加入东华大学开展独立研究工作。目前研究兴趣主要集中于廉价金属催化体系开发与相关机制研究，具体研究内容包括有机氟化学、有机硅化学及金属有机催化剂的设计合成与应用研究。

Weilong Xie is the Principal Investigator (PI) in the School of Chemistry and Chemistry Engineering at Donghua University (DHU).

After college admission in 2005, Xie took Chemistry as his major in Zhejiang University (ZJU), where he was well-cultivated in both fundamental principles and experimental skills. In the year of 2009, he moved to Nankai University (NKU) to pursue his Ph.D. degree under the guidance of Professor Chunming Cui, where he systematically earned myriad knowledge and technology on Organometallic Chemistry. Thus after Ph.D. program, he discovered his great passion on the incorporation of Organometallic Chemistry with Modern Catalysis, and joined Professor Sukbok Chang's group as a postdoctoral fellow in late 2014, later promoted to senior researcher. In December of 2020, he returned to China, and was appointed as Professor at DHU to start his independent work. His current research interest is predominantly focused on non-precious metal catalysis, permeated with the detailed mechanistic investigations.

研究方向

- 1) 铜催化剂的设计合成与应用(Synthesis and Application of Copper-Based Catalysts);
- 2) 有机硅物质构筑方法的开发(Construction Strategies for Silicon-Based Chemistry);
- 3) 有机氟物质构建方法的开发(Methodology Development on Organicfluorine Compounds);
- 4) 大宗化学品增值化技术开发(Conversion of Commodity Chemicals to Value-Added Products)

代表性论文

- 1) Yonglei Zhou, Liping Qiu, Jian Li and Weilong Xie* "A General Copper Catalytic System for Suzuki-Miyaura Cross-Coupling of Unactivated Secondary and Primary Alkyl Halides with Arylborons". *J. Am. Chem. Soc.* **2023** (Accepted)
- 2) Weilong Xie, Dongwook Kim, and Sukbok Chang*. "Copper-Catalyzed Formal Dehydrogenative Coupling of Carbonyls with Polyfluoroarenes Leading to β -C-H Arylation". *J. Am. Chem. Soc.* **2020**, *142*, 20588–20593.
- 3) Weilong Xie, Heo Joon, Dongwook Kim, and Sukbok Chang*. "Copper-Catalyzed Direct C-H Alkylation of Polyfluoroarenes by Using Hydrocarbons as an Alkylating Source". *J. Am. Chem. Soc.* **2020**, *142*, 7487–7496.
- 4) Weilong Xie, Sung-Woo Park, Hoimin Jung, Dongwook kim, Mu-Hyun Baik*, and Sukbok Chang*. "Conjugate Addition of Perfluoroarenes to α,β -Unsaturated Carbonyls Enabled by an Alkoxide-Hydrosilane System: Implication of a Radical Pathway". *J. Am. Chem. Soc.* **2018**, *140*, 9659–9668.
- 5) Weilong Xie, Jung Hee Yoon, and Sukbok Chang*. "(NHC)Cu-Catalyzed Mild C-H Amidation of (Hetero)arenes with Deprotectable Carbamates: Scope and Mechanistic Studies". *J. Am. Chem. Soc.* **2016**, *138*, 12605–12614.

6) Weilong Xie, and Sukbok Chang*. "[Cu(NHC)]-Catalyzed C–H Allylation and Alkenylation of both Electron-Deficient and Electron-Rich (Hetero)arenes with Allyl Halides". *Angew. Chem., Int. Ed.* **2016**, *55*, 1876–1880. (selected as a VIP paper)

7) Weilong Xie, Hongfan Hu, and Chunming Cui*. "[NHC]Yb{N(SiMe₃)₂}₂]-Catalyzed Cross-Dehydrogenative Coupling of Silanes with Amines". *Angew. Chem., Int. Ed.* **2012**, *51*, 11141–11144. (selected as a Hot paper).

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Prof. Weimin Xuan, 宣为民 特聘研究员 Doctoral Supervisor
博士生导师

The National Youth Specialist, Shanghai Distinguished Expert, Professor of Special Appointment (Eastern Scholar) at Shanghai Institutions of Higher Learning 国家青年特聘专家, 上海市千人, 上海市高校特聘教授(东方学者)

Research direction: Cluster Chemistry and Material Chemistry 团簇化学及材料化学

宣为民研究员，2005年毕业于福州大学，获得化学学士学位，2008年毕业于厦门大学，获得无机化学硕士学位，2012年毕业于上海交通大学（导师：崔勇），获得应用化学博士学位。2012年至2018年，在英国格拉斯哥大学 Leroy Cronin(英国爱丁堡皇家科学院院士)课题组从事博士后研究。2018年聘为东华大学化学化工与生物工程学院特聘研究员，博士生导师，同时获得2018年上海市高校特聘教授（东方学者）、2019年上海市特聘专家、2020年国家青年特聘专家。研究方向为面向能源和催化的多酸基功能材料、手性晶态多孔材料以及高核金属氧簇合物的组装和性能研究。目前在 *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Research, Chem. Sci.*, *Chem. Soc. Rev.*等化学类高水平期刊上发表论文20余篇。

Dr. Weimin Xuan got his bachelor degree in chemistry from Fuzhou University in 2005. Then, he obtained master degree in inorganic chemistry from Xiamen University in 2008. Afterwards, he graduated from Shanghai Jiao Tong University in 2012 with a doctorate in applied chemistry under the supervision of Prof. Yong Cui. From 2012 to 2018, he pursued post-doctoral research in Prof. Leroy Cronin's group (Academician of the Royal Academy of Sciences, Edinburgh) at University of Glasgow, UK. In 2018, he joined the College of Chemistry, Chemical Engineering and Biotechnology in Donghua University as a distinguished researcher. Meanwhile he was also entitled as Professor of Special Appointment (Eastern Scholar) at Shanghai Institutions of Higher Learning in 2018, Shanghai Distinguished Expert in 2019, and The National Youth Specialist in 2020. His research interests focus on POM-based functional materials for energy and catalysis, chiral crystalline porous materials, and assembly and property study of high nuclearity metal-oxo clusters. At present, he has published more than 20 papers in high-level journals such as *J. Am. Chem. Soc.*, *Angew. Chem. Int. Ed.*, *Research, Chem. Sci.*, *Chem. Soc. Rev.*, etc.

Research Interests (研究领域/课题) :

- 面向能源和催化的多酸基功能材料 POM-based functional materials for energy and catalysis
- 手性晶态多孔材料 Chiral crystalline porous materials
- 高核金属氧簇合物的组装和性能 Assembly and property study of high nuclearity metal-oxo clusters

Selected publications 代表论文:

1. J. Wang, H. Yu*, Z. Wei, Q. Li, **W. Xuan***, and Y. Wei*. Additive-Mediated Selective Oxidation of Alcohols to Esters via Synergistic Effect Using Single Cation Cobalt Catalyst Stabilized with Inorganic Ligand. *Research*. **2020**, 2020, 3875920
2. **W. Xuan**, R. Pow, Q. Zheng, N. Watfa, D. Long, and L. Cronin*. Ligand-Directed Template Assembly for the Construction of Gigantic Molybdenum Blue Wheels. *Angew. Chem. Int. Ed.* **2019**, 58,10867-10872.
3. **W. Xuan**, R. Pow, N. Watfa, Q. Zheng, A. Surman, D. Long, and L. Cronin*. Stereoselective Assembly of Gigantic Chiral Molybdenum Blue Wheels Using Lanthanides Ions and Amino Acids. *J. Am. Chem. Soc.* **2019**, 141, 1242-1250.
4. **W. Xuan**, R. Pow, D. Long, and L. Cronin*. Exploring the Molecular Growth of Two Gigantic Half-Closed Polyoxometalate Clusters {Mo₁₈₀} and {Mo₁₃₀Ce₆}. *Angew. Chem. Int. Ed.* **2017**, 56, 9727-9731.
5. **W. Xuan**, A. Surman, Q. Zheng, D. Long, and L. Cronin*. Self-Templating and in-situ Assembly of a Cubic Cluster-of Cluster Architecture based on A{Mo₂₄Fe₁₂} Inorganic Macrocyclic. *Angew. Chem. Int. Ed.* **2016**, 55, 12703-12707.
6. **W. Xuan**, A. Surman, H. Miras, D. Long, and L. Cronin*. Controlling the Ring-Curvature, Solution Assembly, and Reactivity of Gigantic Molybdenum Blue Wheels. *J. Am. Chem. Soc.* **2014**, 136, 14114-14120.
7. **W. Xuan**, C. Ye, M. Zhang, Z. Chen and Y. Cui*. A Chiral Porous Metallosalen-Organic Framework Containing Titanium-Oxo Clusters for Enantioselective Catalytic Sulfoxidation. *Chem. Sci.* **2013**, 4, 3154-3159.
8. **W. Xuan**, M. Zhang, Y. Liu, Z. Chen and Y. Cui*. A Chiral Quadruple-Stranded Helicate Cages for Enantioselective Recognition and Separation. *J. Am. Chem. Soc.* **2012**, 134, 6904-6907.
9. **W. Xuan**, C. Zhu, Y. Liu and Y. Cui*. Mesoporous Metal-Organic Framework Materials. *Chem. Soc. Rev.* **2012**, 41, 1677-1695.

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Students with bachelor's, master's, doctor's degree and postdocs in Chemistry, Material and related majors are cordially welcome to join us. Doctoral students will have the opportunity to co-train with world-class universities in US, UK, Japan and other countries. 热诚欢迎化学和材料等方向及相关科研背景的本科生、硕士生、博士生、博士后加入本课题组，博士生将有机会与美国、英国、日本等世界一流高校合作者联合培养。

Prof. Jiefeng Shen, 申杰峰 副教授 Doctoral supervisor 博士生导师

Research direction: Chemistry and materials 化学与材料



申杰峰教授毕业于上海交通大学，获应用化学博士学位。2012-2022 年就职于上海交大药学院，先后于上海交大、Texas Tech University 从事研究工作。2022 年入职东华大学化学化工与生物工程学院。研究领域主要包括功能有机材料研究开发、绿色新工艺研究与开发、不对称催化研究与应用。在此期间，申杰峰教授先后主持、参加国家自然科学基金、重大专项以及产学研项目十余项，科研项目经费共计 4000 余万，发表 sci 论文 20 余篇，授权国内外专利 6 项。

Professor Shen Jiefeng graduated from Shanghai Jiaotong University with a doctorate in organic chemistry. He worked in the School of Pharmacy of Shanghai Jiaotong University from 2012 to 2022 and worked in Shanghai Jiaotong University and TexasTechUniversity successively. He joined the School of Chemistry, Chemical Engineering and Biological Engineering of Donghua University in 2022. The research fields mainly include the research and development of functional organic materials, the research and development of new green processes, the research and application of asymmetric catalysis. During this period, Professor Shen Jiefeng participated in many national nature funds, major projects and industry-university research projects, presided over and participated in more than 40 million scientific research projects, published more than 20 sci papers, and authorized 6 patents at home and abroad.

Research Interests (研究领域/课题) :

- 不对称催化 asymmetric catalysis
- 功能有机材料 functional organic materials
- 天然产物 natural products

Selected publications 代表论文:

1. K Xu, Jianxun Ye, Hao Liu, Jiefeng Shen*, Delong Liu*, Wanbin Zhang. Pd-Catalyzed Asymmetric Allylic Substitution Annulation Using Enolizable Ketimines as Nucleophiles: An Alternative Approach to Chiral Tetrahydroindoles. *Adv. Synth. Catal.* **2020**, *362*, 2059-2069.
2. Jing Li, Yufei Lu, Yue Zhu, Yu Nie, Jiefeng Shen*, Yangang Liu, Delong Liu*, and Wanbin Zhang. Selective Asymmetric Hydrogenation of Four-Membered Exo-alpha,beta-Unsaturated Cyclobutanones Using RuPHOX-Ru as a Catalyst. *Org. Lett.* **2019**, *21*, 4331-4335.
3. K Xu, Hao Liu, Yanlin Hou, Jiefeng Shen*, Delong Liu*, Wanbin Zhang. A Pd-catalyzed asymmetric allylic substitution cascade via an asymmetric desymmetrization for the synthesis of bicyclic dihydrofurans. *Chem. Commun.* **2019**, *88*, 13295-13298.
4. Yufei Lu, Jing Li, Yue Zhu, Jiefeng Sheng*, Delong Liu*, Wanbin Zhang. Synthesis of chiral gamma-lactones via a RuPHOX-Ru catalyzed asymmetric hydrogenation of aroylacrylic acids. *Tetrahedron*, **2019**, *75*, 3643-3649.
5. Chenghao Ye, Xuezhen Kou, Guoqiang Yang, Jiefeng Shen*, and Wanbin Zhang*. PhI(OAc)₂-mediated alkoxyoxygenation of beta,gamma-unsaturated ketoximes: Preparation of isoxazolines bearing two contiguous tetrasubstituted carbons. *Tetrahedron Lett.* **2019**, *60*, 1148-1152.
6. Kai Xu, Hao Liu, Delong Liu, Cheng Sheng, Jiefeng Shen*, and Wanbin Zhang*. Synthesis of (+)-salvianolic acid A from sodium Danshensu. *Tetrahedron*, **2018**, *74*, 996-6002.

7. Jiangyan Jing, Xiaohong Huo, Jiefeng Shen*, Jingke Fu, Qinghua Meng, and Wanbin Zhang*. Direct use of allylic alcohols and allylic amines in palladium-catalyzed allylic amination. *Chem. Commun.* **2017**, 53, 5151-5154.

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Prof. Yangen Huang, 黄焰根 副教授 Master's Supervisor 硕士生导师

Research direction: Organic Chemistry 有机化学



黄焰根副教授 1999年毕业于江西师范大学化学教育专业获理学学士学位，2004年毕业于中科院上海有机化学研究所有机化学专业获理学博士学位。先后在澳大利亚新南威尔士大学、美国爱达荷大学从事博士后研究。2008年入职东华大学，目前任化学与化工学院本科教学副院长，从事有机化学教学15年。主要研究方向为有机含氟化合物合成方法和含氟功能材料，以第一作者或通讯作者在 *J. Am. Chem. Soc.* 等国际期刊发表学术论文50余篇，入选上海市“浦江人才”计划（2009年），获上海高校优秀青年教师基金项目资助（2010年）。“有机化学”--上海市精品课程负责人，获桑麻奖教金（2016年）、东华大学“易班优秀教学改革奖”（2015年）；东华大学“我心目中的好老师”（2018年）、东华大学“优秀教学管理个人奖”（2021年）、东华大学“优秀育人奖”（2023年）等。

Prof. Dr. Huang Yangen received his BS in Chemical education from Jiangxi Normal University in 1999, and PhD in Organic Chemistry from Shanghai Institute of Organic Chemistry (CAS) in 2004. He has been engaged in postdoctoral research at the University of New South Wales in Australia and the University of Idaho in the United States. He joined Donghua University in 2008 and is currently the deputy Dean of undergraduate teaching in the College of Chemistry and Chemical Engineering. He has been engaged in organic chemistry teaching for 15 years. His main research interests are the development of synthetic methodology for organic fluorinated compounds, and fluorinated functional materials. He has published more than 50 academic papers in journals including *J. Am. Chem. Soc.* etc. He was selected into the Shanghai Pujiang program (2009). He has won the *Sangma Teaching Award* (2016), *Donghua University Great Teacher in my Eyes* (2018), *Excellent Teaching Management Individual Award* (2021) and *Excellent Education Award* (2023).

Research Interests (研究领域/课题) :

- Organofluorine Chemistry 有机氟化学
- Fluorinated functional materials 含氟功能材料

Selected publications 代表论文:

1. Liu, C.; Qing, F.-L.; **Huang, Y.***, Transparent and anti-fouling perfluoropolyether coating with superior wear resistance. *Appl. Surf. Sci.* **2023**, 620, 156813.
2. Zhu, Y.-Y.; Liu, S.; **Huang, Y.***; Qing, F.-L.; Xu, X.-H.*, Photoredox catalyzed difluoro(phenylthio)methylation of 2,3-allenoic acids with {difluoro(phenylthio)methyl}triphenylphosphonium triflate. *J. Fluorine Chem.* **2022**, 257-258, 109969.

- Wang, J.; Liu, S.; **Huang, Y.**; Xu, X.-H.*; Qing, F.-L.*, Photoredox catalyzed C-H trifluoroethylamination of heteroarenes. *Chem. Commun.* **2022**, *58(9)*, 1346-1349.
- Liu, S.; **Huang, Y.***; Wang, J.; Qing, F.-L.; Xu, X.-H.*, General synthesis of n-trifluoromethyl compounds with *N*-trifluoromethyl hydroxylamine reagents. *J. Am. Chem. Soc.* **2022**, *144(4)*, 1962-1970.
- Yang, X.; Meng, W.-D.; Xu, X.-H.; **Huang, Y.***, Photoredox-catalyzed 2,2,2-trifluoroethylation and 2,2-difluoroethylation of alkenes with concomitant introduction of a quinoxalin-2(1*H*)-one moiety. *Org. Chem. Front.* **2021**, *8(23)*, 6597-6602.
- Wang, L.; Wang, H.; Meng, W.; Xu, X.-H.; **Huang, Y.***, Facile syntheses of 3-trifluoromethylthio substituted thioflavones and benzothiophenes via the radical cyclization. *Chin. Chem. Lett.* **2021**, *32(1)*, 389-392.
- Liu, Y.-L.; Zhu, X.-L.; **Huang, Y.***; Qing, F.-L.; Xu, X.-H.*, Radical coupling of arylthiodifluoroacetic acids and ethynylbenziodoxolone (EBX) reagents to access arylthiodifluoromethylated alkynes. *J. Fluorine Chem.* **2021**, *242*, 109715.
- Zhu, X.-L.; **Huang, Y.**; Xu, X.-H.; Qing, F.-L.*, Silver-Catalyzed C-H Aryloxydifluoromethylation and Arylthiodifluoromethylation of Heteroarenes. *Org. Lett.* **2020**, *22(14)*, 5451-5455.
- Xiao, H.; Meng, W.; Xu, X.-H.; **Huang, Y.***, Trifluoromethylthiolation and trifluoromethanesulfonylation of β,γ -unsaturated hydrazones. *Tetrahedron Lett.* **2020**, *61(23)*, 151927.
- Su, H.-Y.; Zhu, X.-L.; Huang, Y.*; Xu, X.-H.*; Qing, F.-L., Copper-catalyzed chemoselective C-H functionalization of quinoxalin-2(1*H*)-ones with hexafluoroisopropanol. *Chem. Commun.* **2020**, *56(84)*, 12805-12808.

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Prof. Hongqi Li **Master's Supervisor**

Research direction: Material Chemical Engineering 材料与化工



Prof. Dr. Hongqi Li obtained his Ph.D. degree (1997) from Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences. He was a guest researcher in Kyoto University (1999–2001), Ehime University (2002–2003) and CNRS-University of Aix-Marseille I & III (2003–2004). His research work is focused on organic functional dyes and fluorescent sensors.

Selected publications:

- [1] **H. Li**, J. Li, Z. Pan, T. Zheng, Y. Song, J. Zhang, Z. Xiao, Highly selective and sensitive detection of Hg^{2+} by a novel fluorescent probe with dual recognition sites, *Spectrochim. Acta A*, 2023, 291, 122379
- [2] Y. Song, X. Xia, Z. Xiao, Y. Zhao, M. Yan, J. Li, **H. Li**, X. Liu, Synthesis of N,S co-doped carbon

- dots for fluorescence turn-on detection of Fe^{2+} and Al^{3+} in a wide pH range, *J. Mol. Liq.*, 2022, 368, 120663
- [3] L. Jiang, T. Zheng, Z. Xu, J. Li, **H. Li**, J. Tang, S. Liu, Y. Wang, New NIR spectroscopic probe with a large Stokes shift for Hg^{2+} and Ag^+ detection and living cells imaging, *Spectrochim. Acta A*, 2022, 271, 120916
- [4] Y. Qi, J. Fan, Y. Chang, Y. Li, B. Bao, B. Yan, **H. Li**, P. Cong, Smart photochromic fabric prepared via thiol-ene click chemistry for image information storage applications, *Dyes Pigm.*, 2021, 193, 109507
- [5] J. Fan, B. Bao, Z. Wang, **H. Li**, Y. Wang, Y. Chen, W. Wang, D. Yu, Flexible, switchable and wearable image storage device based on light responsive textiles, *Chem. Eng. J.*, 2021, 404, 126488
- [6] X. Luo, D. Chen, Z. Xu, Y. Song, **H. Li**, C. Xian, Study on a fluorescent probe based on a spiropyran for sensitive detection of Ce^{3+} ion, *J. Rare Earths*, 2020, 38, 445
- [7] **H. Li**, X. Sun, T. Zheng, Z. Xu, Y. Song, X. Gu, Coumarin-based multifunctional chemosensor for arginine/lysine and $\text{Cu}^{2+}/\text{Al}^{3+}$ ions and its Cu^{2+} complex as colorimetric and fluorescent sensor for biothiols, *Sens. Actuators B* 2019, 279, 400
- [8] L. Gu, T. Zheng, Z. Xu, Y. Song, **H. Li**, S. Xia, L. Shen, A novel bifunctional fluorescent and colorimetric probe for detection of mercury and fluoride ions, *Spectrochim. Acta A*, 2019, 207, 88
- [9] T. Zheng, Z. Xu, Y. Zhao, **H. Li**, R. Jian, C. Lu, Multiresponsive polysiloxane bearing photochromic spirobenzopyran for sensing pH changes and Fe^{3+} ions and sequential sensing of Ag^+ and Hg^{2+} ions, *Sens. Actuators B*, 2018, 255, 3305
- [10] M. Liu, Z. Xu, Y. Song, **H. Li**, C. Xian, A novel coumarin-based chemosensor for colorimetric detection of Ag(I) ion and fluorogenic sensing of Ce(III) ion, *J. Lumin.*, 2018, 198, 337

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Students with a bachelor's degree in Chemistry and related majors are welcome to join us.

Prof. Shaowei Bian, 边绍伟 副教授 Master's Supervisor 硕士生导师
Research direction: Chemistry and Chemical Engineering 化学与化工



边绍伟副教授 2009年毕业于中国科学院化学研究所，获物理化学博士学位。2009-2012年在美国爱荷华大学和新加坡南洋理工大学从事博士后研究。2012年入职东华大学化学与化工学院，主要从事催化、吸附与电化学储能研究。主讲本課生和研究生课程《物理化学》、《物理化学实验》和《催化化学》等。

Prof. Dr. Shaowei Bian obtained his PhD in physical chemistry from the Institute of Chemistry, Chinese Academy of Sciences (ICCAS) in 2009.

He was a postdoctoral associate in University of Iowa, US and Nanyang Technical University, Singapore, from 2009 to 2012. He joined Donghua University in 2012 and started his teaching and research in physical chemistry. His research interest focus on catalysis, adsorption and electrochemical energy storage. He teaches undergraduate and

postgraduate courses including Physical Chemistry, Physical Chemistry Experiment and Catalytical Chemistry.

Research Interests (研究领域/课题) :

- 多孔材料的设计构筑及催化、吸附应用 Design and Construction of Porous Materials for Catalysis and Adsorption
- 电极材料设计与电化学储能应用 Design and Preparation of Electrode Materials for Electrochemical Energy Storage

Selected publications 代表论文:

- (1) Ya-Li Huang, **Shao-Wei Bian***. Vacuum-filtration assisted layer-by-layer strategy to design MXene/carbon nanotube@MnO₂ all-in-one supercapacitors. *J. Mater. Chem. A*, 2021, 9, 21347-21356.
- (2) Yi-Fan Wang, Hai-Tao Wang, Shi-Yi Yang, Yuan Yue, **Shao-Wei Bian***. Hierarchical NiCo₂S₄@Nickel-Cobalt Layered Double Hydroxide Nanotube Arrays on Metallic Cotton Yarns for Flexible Supercapacitors. *ACS Appl. Mater. Interfaces*, 2019, 11, 30384-30390.
- (3) Ya-Nan Liu, Jia-Nan Zhang, Hai-Tao Wang, Xiao-Hui Kang, **Shao-Wei Bian***. Boosting the electrochemical performance of carbon cloth negative electrodes by constructing hierarchically porous nitrogen-doped carbon nanofiber layers for all-solid-state asymmetric supercapacitors. *Mater. Chem. Front.*, 2019, 3, 25-31.
- (4) Ya-Nan Liu, Hai-Tao Wang, Xiao-Hui Kang, Yi-Fan Wang, Shi-Yi Yang, **Shao-Wei Bian***. Cotton fabric and zeolitic imidazolate framework (ZIF-8) derived hierarchical nitrogen-doped porous carbon nanotubes/carbon fabric electrodes for all-solid-state supercapacitors. *J. Power Sources*, 2018, 402, 413-421.
- (5) Hai-Tao Wang, Chun Jin, Ping Liu, Jia-Nan Zhang, Li-Na Jin, **Shao-Wei Bian***, Quan Zhu. Cotton yarns modified with three-dimensional metallic Ni conductive network and pseudocapactive Co-Ni layered double hydroxide nanosheet array as electrode materials for flexible yarn supercapacitors. *Electrochim. Acta*, 2018, 283, 1789-1797.
- (6) Chun Jin, Ping Liu, Jia-Nan Zhang, Li-Na Jin, **Shao-Wei Bian***, Quan Zhu. High-performance yarn electrode materials enhanced by surface modifications of cotton fibers with graphene sheets and polyaniline nanowire arrays for flexible all-solid-state supercapacitors. *Electrochim. Acta*, 2018, 270, 205-214.
- (7) Ya-Nan Liu, Li-Na Jin, Hai-Tao Wang, Xiao-Hui Kang, **Shao-Wei Bian***. Fabrication of three-dimensional composite textile electrodes by metal-organic framework, zinc oxide, graphene and polyaniline for all-solid-state supercapacitors. *J. Colloid Interface Sci.*, 2018, 530, 29-36.
- (8) Hai-Tao Wang, Chun Jin, Ping Liu, Jia-Nan Zhang, Li-Na Jin, **Shao-Wei Bian***, Quan Zhu. Cotton yarns modified with three-dimensional metallic Ni conductive network and pseudocapactive Co-Ni layered double hydroxide nanosheet array as electrode materials for flexible yarn supercapacitors. *Electrochim. Acta*, 2018, 283, 1789-1797.
- (9) Xiao-Hui Kang, Ya-Nan Liu, Hai-Tao Wang, **Shao-Wei Bian***. Graphene oxide-assisted synthesis of core-shell structured ZSM-5 zeolites and their catalyst texture effect on the catalytic performance in the acid-catalyzed o-methylation of cyclohexanone with methanol. *CrystEngComm*, 2018, 20, 3898-3904.
- (10) Ping Liu, Li-Na Jin, Chun Jin, Jia-Nan Zhang, **Shao-Wei Bian***. Synthesis of hierarchically porous silicate-1 and ZSM-5 by hydrothermal transformation of SiO₂ colloid crystal/carbon composites. *Microporous Mesoporous Mater.*, 2018, 262, 217-226.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Dengqing Zhang, 张灯青 副教授 Master's Supervisor 硕士生导师
Research direction: Supramolecular Chemistry 超分子化学



张灯青副教授 2007 年毕业于复旦大学，获无机化学博士学位，博士阶段主要从事荧光探针的设计合成及应用研究。2007 年入职东华大学化学与化工学院工作至今，2014-2015 年赴美国犹他大学访学，合作导师：Peter J. Stang 教授。目前主要从事超分子自组装、功能材料设计合成及自组装、荧光/磷光探针方面的研究工作。主讲本科生课程《有机化学》、《有机化学实验》、《合成化学》，研究生课程《科学素养概论》实验室安全部分。

Prof. Dr. Zhang, Dengqing received his PhD in inorganic chemistry from Fudan University in 2007. He joined the College of Chemistry and Chemical Engineering at Donghua University in 2007. He came to the University of Utah as a visiting scholar in 2014-2015, supervisor: Peter J. Stang. He is the instructor of undergraduate-level courses in *Organic Chemistry, Synthetic Chemistry, Organic Chemistry Experiments*, and graduate-level course in *Introduction to Scientific Literacy*.

Research Interests (研究领域/课题) :

- 超分子体系的构筑及性能研究 Construction and study of supramolecular system
- 赶材料合成及自组装 Synthesis and self-assembly of functional materials
- 荧光/磷光探针 Fluorescence/phosphorescent probe

Selected publications 代表论文:

1. **Zhang, D.***; Li, M.; Jiang, B.; Liu, S.; Yang, J.; Yang, X.; Ma, K.; Yuan, X.; Yi, T.* Three-step cascaded artificial light-harvesting systems with tunable efficiency based on metallacycles, *J. Colloid Interf. Sci.* **2023**, *652*, 1494-1502.
2. Chen, M.; Lu, Z.; Li, M.; Jiang, B.; Liu, S.; Li, Y.; Zhang, B.; Li, X.; Yi, T.*; **Zhang, D.*** Near-Infrared Emissive Cascaded Artificial Light-Harvesting System with Enhanced Antibacterial Efficiency, *Adv. Healthcare Mater.* **2023**, *12*, 2300377.
3. Xia, Y.; Chen, M.; Li, S.; Li, M.; Li, X.; Yi, T.*; **Zhang, D.*** An Artificial Light-Harvesting System with Sequential Energy Transfer for Information Dual Encryption and Anticounterfeiting, *J. Mater. Chem. C* **2022**, *10*, 12332-12337.
4. **Zhang, D.***; Yu, W.; Li, S.; Xia, Y.; Li, X.; Li, Y.; Yi, T.* Artificial Light-Harvesting Metallacycle System with Sequential Energy Transfer for Photochemical Catalysis, *J. Am. Chem. Soc.* **2021**, *143*, 1313-1317.
5. Fan, J.; Xu, X.; Yu, W.; Wei, Z.; **Zhang, D.*** Hydrogen-Bond-Driven Supramolecular Selfassembly of Diacetylene Derivatives for Topochemical Polymerization in Solution, *Polym. Chem.* **2020**, *11*, 1947-1953.
6. Yang, L.; Xu, X.; Yu, W.; Li, X.; **Zhang, D.*** AIE-Active Shape-Persistent Macrocycles for the Efficient Discrimination of Toluene, *Dyes Pigments* **2020**, *181*, 108612.
7. Zeng, W.; Zhang, W.; Li, X.*; Jin, W.*; **Zhang, D.*** Hexabenzocoronene Graphitic Nanocoils Appended with Crown Ethers: Supramolecular Chirality Induced by Host-Guest Interaction,

Chem. Eur. J. **2019**, *25*, 16692-16698.

8. Zeng, W.; Liu, Y.; Li, X.*; Jin, W.*; **Zhang, D.*** Synthesis and Self-Assembly of Chiral Gemini-Shaped Hexabenzocoronene Amphiphiles, *Dyes Pigments* **2019**, *170*, 107624.

9. Zeng, W.; Zhang, Y.; Zhao, X.; Qin, M.; Li, X.; Jin, W.; **Zhang, D.*** One-Pot Synthesis of Conjugated Microporous Polymers Based on Extended Molecular Graphenes for Hydrogen Storage, *Polymer* **2019**, *174*, 96-100.

10. Liu, Y.; Zeng, W.; Li, X.*; Jin, W.*; **Zhang, D.*** Synthesis, Characterization and Self-Assembly of Pyridyl-Appended Gemini-Shaped Hexabenzocoronene Amphiphiles, *Dyes Pigments* **2019**, *163*, 553-558.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Bijia Wang, 王碧佳 副教授 Master's Supervisor 硕士生导师

Research direction: *Material Chemical Engineering* 材料与化工



王碧佳副教授 2010年毕业于美国内布拉斯加大学林肯分校 (University of Nebraska-Lincoln), 获有机化学博士学位, 博士阶段主要从事高碘酸盐介导的氟化反应研究。2012年入职东华大学化学与化工学院, 2016年加入毛志平教授领衔的生态染整团队, 主要从事天然高分子功能材料的构筑及相关绿色染整技术的开发。主讲研究生课程《绿色化学》, 《学术英语表达》等, 2017年以来连续多次被评为东华大学外国留学生留学生心目中的好导师“我心目中的好导师”。

Prof. Dr. Wang, Bijia received her PhD in organic chemistry from the University of Nebraska Lincoln in 2010. She had a solid background in physical organic chemistry from studying F fluorination reactions mediated by hypervalent iodonium compounds during her PhD training. She joined Donghua University in 2012 and became a core member of the Eco-Textile research group led by Professor Mao, Zhiping (Vice dean of the college) in 2016. Currently, she works in close collaboration with Prof. Feng, Xueling and Dr. Rong, Liduo on constructing multifunctional natural polymer materials (cellulose, chitin, lignin, silk fibroin, etc) from renewable feed-stocks and their applications in cleaner and more sustainable processing of textiles. She is the instructor of graduate level courses *Green Chemistry* and *Academic English for the Chemistry and Related Majors*. Since 2017, she has been awarded consecutively "Great Teacher in My Eyes" voted by Donghua International Students.

Research Interests (研究领域/课题) :

- 基于绿色溶剂体系的高强度纤维素基结构材料构筑 Construction of High-strength Cellulosic Structural Materials Based on Green Solvent System
- 基于修饰与复合的功能生物基材料 Functional natural Polymer Materials via Modification and Composition
- 生物基表面活性基 Bio-based surfactants
- 纺织品无水/少水着色技术 Water-free and Low-water coloration techniques for textiles

Selected publications 代表论文:

1. J. Li, Z. Hao, **B. Wang**, *, X. Feng, Z. Mao, X. Sui, * High-tensile chitin films regenerated from cryogenic aqueous phosphoric acid, *Carbohydrate Polymers*, **2023**, 312, 120826
2. Y. Wang, F. Wang, L. Zhao, Z. Mao, X. Feng, X. Sui,* and **B. Wang**, * Shape-stable and Fire-resistant Hybrid Phase Change Materials with Enhanced Thermoconductivity for Battery Cooling *Chemical Engineering Journal*, **2022**, 431,133983.
3. H. Su, **B. Wang***, Z. Sun, S. Wang, X. Feng, Z. Mao, X. Sui*, High-tensile Regenerated Cellulose Films Enabled by Unexpected Enhancement of Cellulose Dissolution in Cryogenic Aqueous Phosphoric Acid *Carbohydrate Polymers* **2022**, 277,118878.
4. L. Hu, X. Li, L. Ding, L. Chen, X. Zhu, Z. Mao, X. Feng, X. Sui*, **B. Wang***. Flexible Textiles with Polypyrrole Deposited Phase Change Microcapsules for Efficient Photothermal Energy Conversion and Storage. *Solar Energy Materials & Solar Cells*, **2021**, 224, 110985.
5. L. Ding, L. Chen, L. Hu, X. Feng, Z. Mao, H. Xu, **B. Wang***, X. Sui*. Self-Healing and Acidochromic Polyvinyl Alcohol Hydrogel Reinforced by Regenerated Cellulose. *Carbohydrate Polymers*, **2021**, 255, 117331.
6. Maithy, O. M., Zhu, X., Korir, S. J., Feng, X., Sui, X.*, **Wang, B.***, High-energy storage graphene oxide modified phase change microcapsules from regenerated chitin Pickering Emulsion for photothermal conversion. *Sol Energy Mat Sol C*, **2021**, 222, 110924.
7. Zhu, X., Li, X., Shen, J., **Wang, B.***, Mao, Z., Xu, H., Feng, X., Sui, X.* Stable microencapsulated phase change materials with ultrahigh payload for efficient cooling of mobile electronic devices. *Energy Convers Manage*, **2020**, 223, 113478.
8. Yang, G., **Wang, B.***, Cheng, H., Mao, Z., Xu, H., Zhong, Y., Feng, X., Yu, H.,* Sui, X.* Cellulosic scaffolds doped with boron nitride nanosheets for shape-stabilized phase change composites with enhanced thermal conductivity. *Int J Biol Macromol*, **2020**, 148: 627-634.
9. Yang G, Zhao L, Shen C, Mao, Z., Xu, H., Feng, X., **Wang, B.***, and Sui, X.* Boron nitride microsheets bridged with reduced graphene oxide as scaffolds for multifunctional shape stabilized phase change materials. *Solar Energy Materials and Solar Cells*, **2020**, 209, 110441.
10. Zhao, J., Ding, L., Sui, X.*, Mao, Z., Xu, H., Zhong, Y., Zhang, L., Chen, Z., and **Wang, B.***, Bio-based polymer colorants from nonaqueous reactive dyeing of regenerated cellulose for plastics and textiles[J]. *Carbohydrate Polymers*, **2019**: 734-741.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Dan Yu, 俞丹 副教授

Master's Supervisor 硕士生导师

Research direction: *Functional materials & finishing* 功能材料与整理



俞丹副教授 2011 年毕业于东华大学 (Donghua University), 获纺织化学与染整工程博士学位, 博士阶段主要从事电磁屏蔽功能纺织品的开发及应用, 后赴澳大利亚联邦科学与工业组织 (CSIRO) 访学。2004 年入职东华大学化学与化工学院, 2005 年加入王炜教授领衔的纺织品功能整理团队, 主要从事功能材料在纺织品功能整理及相关绿色染整技术的开发。主讲研究生课程《功能整理》, 并具有研究生培养的丰富经验。

Prof. Dr. Dan Yu received her PhD in textiles chemistry & dyeing-finishing engineering from the Donghua University in 2011. She had a solid background in textiles functional finishing during her PhD training, and went to Australia (CSIRO) study. She

joined Donghua University in 2004 and became a core member of the Textile functional finishing research group led by Professor Wei Wang in 2005. Currently, she dedicates to the develop and research of functional finishing of textiles. She is the instructor of graduate level courses Functional finishing and has rich experience in cultivation of graduate students.

Research Interests (研究领域/课题):

- 纺织品电磁屏蔽与隐身整理 Electromagnetic shielding & infrared stealth finishing
- 纺织品点击化学整理 Chemistry finishing of fabrics based on click reactions
- 柔性传感器的制备及性能研究 Preparation and sensitivity of flexible sensors

Selected publications 代表论文:

1. W. Feng, W. Li, W. Wang, Y. Chen, W. Wang, **D. Yu***, Facile and rapid synthesis of flexible PEG porous polymers as substrates for functional materials by thiol-ene click chemistry, *Chem. Eng. J.*, 2023, 470.
2. Y. Chen, X. Fu, Y. Jiang, W. Feng, **D. Yu***, W. Wang, Highly sensitive and durable MXene/SBS nanofiber-based multifunctional sensors via thiol-ene click chemistry, *Chem. Eng. J.*, 2023, 467.
3. J. Zheng, W. Wang, **D. Yu***, W. Wang, Carbon nanotubes@polydopamine/nickel foam with a wavy shape applied for efficient solar-driven seawater desalination, *Desalination*, 2023, 567.
4. J. Luo, Y. Wang, Z. Qu, W. Wang, **D. Yu***, Anisotropic, multifunctional and lightweight CNTs@CoFe₂O₄/polyimide aerogels for high efficient electromagnetic wave absorption and thermal insulation, *Chem. Eng. J.*, 2022, 442.
5. Y. Jiang, W. Feng, Y. Chen, J. Gu, W. Wang, **D. Yu***, Adhesive conductive hydrogels with wrinkled Janus surface and ultra-high sensitivity used as strain sensors, *Cellulose*, 2022, 29, 9297-9309.
6. W. Li, W. Feng, S. Wu, W. Wang, **D. Yu***, Synergy of photothermal effect in integrated 0D TiO₂ nanoparticles/1D carboxylated carbon nanotubes for multifunctional water purification, *Separation and Purification Technology*, 2022, 292.
7. Y. Wang, Q. Qi, G. Yin, W. Wang, **D. Yu*** Flexible, Ultralight, and Mechanically Robust Waterborne Polyurethane/Ti₃C₂T_x MXene/Nickel Ferrite Hybrid Aerogels for High-Performance Electromagnetic Interference Shielding, *ACS Appl. Mater. Interfaces*, 2021,13, 21831-21843.
8. J. Luo, Y. Wang, Z. Qu, W. Wang, **D. Yu***, Lightweight and robust cobalt ferrite/carbon nanotubes/waterborne polyurethane hybrid aerogels for efficient microwave absorption and thermal insulation, *J. Mater. Chem. C* 2021,9, 12201-12212.

9. Y. Wang, X. Zhong, W. Wang, **D. Yu***, Flexible cellulose/polyvinyl alcohol/PEDOT:PSS electrodes for ECG monitoring, *Cellulose*, 2021,28, 4913-4926.
10. Q. Qi, Y. Wang, W. Wang, **D. Yu***, Surface self-assembled multi-layer MWCNTs-COOH/BN-PDA/CF for flexible and efficient solar steam generator, *Journal of Cleaner Production*, 2021, 279.

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Students with a bachelor's degree in dyeing & finishing and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Xia Dong, 董霞 副教授 Master's Supervisor 硕士生导师

Research direction: *Textile Chemistry and Dyeing & Finishing Engineering* 纺织化学与染整工程



董霞副教授 2010 年毕业于东华大学，获纺织化学与染整工程博士学位，博士阶段主要从事液体分散染料用高效分散剂的结构与应用性能研究。2010 年入职东华大学化学与化工学院，从事新型高性能纺织化学品和生态印染加工技术及相关理论方面的研究。现为国家染整工程技术研究中心副主任，《纺织学报》青年编委和《印染助剂》编委。主讲本科生课程《染料化学》，《高分子材料表面改性原理和技术》等。

Prof. Dr. Dong, Xia received her PhD in Textile Chemistry and Dyeing & Finishing Engineering from Donghua University in 2010. She had a solid background in the structure-performance relationship of hyperdispersant for disperse dye liquids during her PhD training. She joined Donghua University in 2010 and engaged in the research about novel high-performance textile chemicals, ecological dyeing & printing technology and related theories. She is currently the Deputy Director of the National Engineering Research Center for Dyeing & Finishing of Textiles, a youth editorial board member of Journal of Textile Research, and an editorial board member of Textile Auxiliaries. She is the instructor of undergraduate level courses *Dye Chemistry* and *Principles and Technologies about Surface Modification of Polymer Materials*.

Research Interests (研究领域/课题) :

- 生态印染加工技术及相关理论 Ecological Dyeing & Printing Technology and Related Theories
- 新型高性能纺织化学品 Novel High-performance Textile Chemicals
- 机器学习和计算模拟在纺织化学领域的应用 The Application of Machine Learning and Computational Simulation in the Field of Textile Chemistry

Selected publications 代表论文:

1. Chuang Zhang, Qiangqiang Zhao, Jie Xia, Jinxin He, Ying Chen, **Xia Dong***, Ji'an Wei. Polymer-grafted cotton fabrics with high filtration efficiency for reusable personal protective masks. *Cellulose*, 2023, 30: 9191-9205
2. Jie Xia, Chuang Zhang, Xianxi Liu, Jinxin He, **Xia Dong***. Efficient cationization of cotton fabric via oxidative pretreatment for salt-free reactive dyeing with low chemical consumption. *Green Chemistry*. 2022, 24: 9180-9190

3. Tingting Zhang, Song Zhang, Wei Qian, Jinxin He, **Xia Dong***. Reactive dyeing of cationized cotton fabric: the effect of cationization level. *ACS Sustainable Chemistry & Engineering*, 2021, 9, 36: 12355-12364
4. Song Zhang, Tingting Zhang, Jinxin He, **Xia Dong***. Effect of AgNP distribution on the cotton fiber on the durability of antibacterial cotton fabrics. *Cellulose*, 2021, 28: 9489-9504
5. Die Hu, Tingting Zhang, Song Zhang, Jinxin He, **Xia Dong***. Diffusion of polyethyleneimine with different molecular weights into cotton fibers at low concentration. *Cellulose*, 2021, 28: 3997-4008.
6. Yong Qian, Chen Meng, Jinxin He, **Xia Dong***. A lightweight 3D Zn@Cu nanosheets@activated carbon cloth as long-life anode with large capacity for flexible zinc ion batteries. *Journal of Power Sources*, 2020, 480: 228871.
7. Chen Meng, Qian Cheng, Yong Qian, Jinxin He, **Xia Dong***. Alkali cation incorporated MnO₂ cathode and carbon cloth anode for flexible aqueous supercapacitor with high wide-voltage and power density. *Electrochimica Acta*, 2020, 342: 136046.
8. Qian Cheng, Chen Meng, Yong Qian, Jinxin He, **Xia Dong***. Energy capacity enhancement of all-organic fabric supercapacitors by organic dyes: Old method for new application. *Progress in Organic Coatings*, 2020, 138: 105439.
9. **Xia Dong**, Zhijie Gu, Caiyun Hang, Gangqiang Ke, Liwen Jiang, Jinxin He*. Study on the salt-free low-alkaline reactive cotton dyeing in high concentration of ethanol in volume. *Journal of Cleaner Production*, 2019, 226: 316-323
10. Jiadeng Zhu*, Pei Zhu, Chaoyi Yan, **Xia Dong**, Xiangwu Zhang*. Recent progress in polymer materials for advanced lithium-sulfur batteries. *Progress in Polymer Science*, 2019, 90: 118-163.

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Students with a bachelor's degree in Textile Chemistry, Polymeric Material and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Bi Xu, 徐璧 副教授 Master's Supervisor 硕士生导师
Research direction: *Textile Auxiliaries and Functional Textiles*
纺织印染助剂与功能纺织品



Ph.D., Textile Chemistry, Donghua University, China, 2004-2010
 Materials Science and Engineering, Commonwealth
 Scientific and Industrial
 Research Organization, Australia, 2008-2009

B. S., Textile Dyeing and Finishing Engineering, Jiangnan University, China, 2000-2004
 2004年9月-2010年7月 东华大学 纺织化学与染整工程 博士
 2008年10月-2009年10月 澳大利亚联邦科学与工业研究组织 材料科学与工程 联合培养
 博士
 2000年9月-2004年6月 江南大学 轻化工程 学士

Donghua University

2015.9-present, Associate Professor, Textile Chemistry

2010.7-2015.8, Lecturer, Textile Chemistry

University of Pennsylvania

2018.10-2019.10, Visiting Scholar, Materials Science & Engineering

2015 年 9 月-至今, 东华大学纺织化学系 副教授

2017 年 10 月-2018 年 10 月 美国宾夕法尼亚大学 (UPenn) 材料系 访问学者

2010 年 7 月-2015 年 8 月, 东华大学纺织化学系 讲师

研究领域/课题

多功能纺织品的设计与开发 Multifunctional textile

纺织品功能整理剂 Functional Textile Auxiliary Agents

超浸润材料 Superwettability

主要发表论文

1. Xie Yao; Tu Pengpeng; Li Xiaoyan; Ren Mingsheng; Cai Zaisheng; Xu Bi*. Designing Non-Fluorinated Superhydrophobic Fabrics with Durable Stability and Photocatalytic Functionality. ACS Applied Materials & Interfaces 2023, 15 (33), 40011-40021
2. Ji Yating, Sun Yilan, Muhammad Javed, Xiao Yonghe, Li Xiaoyan, Jin Kaili, Cai Zaisheng, Xu Bi*. Skin Inspired Thermoresponsive Polymer for Constructing Self-cooling System [J]. Energy Conversion and Management, 2022, 254:115251.
3. Sun Yilan, Ji Yating, Muhammad Javed, Li Xiaoyan, Fan Zhuizhui, Wang Youquan, Cai Zaisheng, Xu Bi*. Preparation of Passive Daytime Cooling Fabric with the Synergistic Effect of Radiative Cooling and Evaporative Cooling [J]. Advanced Materials Technologies, 2022, 7:2100803.
4. Xiaoyan Li, Muhammad Javed, Yang Guo, Zaisheng Cai, Bi Xu*. Superabsorbent Fabric Based on Weft-Back Weave Structure for Efficient Evaporative Cooling [J]. Advanced Materials Interfaces, 2021, 8: 2001329.
5. Guo Yang, Yujin Sui, Jiajie Zhang, Cai Zaisheng, Xu Bi*. An All-day Solar-driven Vapor Generator via Photothermal and Joule-heating Effects [J]. Journal of Materials Chemistry A, 2020, 8: 25178-25186.
6. Dandan Hao, Yudi Yang, Bi Xu*, Zaisheng Cai. Bifunctional Fabric with Photothermal Effect and Photocatalysis for Highly Efficient Clean Water Generation [J]. ACS Sustainable Chemistry & Engineering, 2018, 6:10789-10797.

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Students majoring in Polymer, Chemistry or Textile chemistry are preferred.

Prof. Yu Hou 侯煜 副教授 Supervisor for Master degree student 硕士生导师

Research division: Chemistry 化学

2010 年毕业于在美国 Emory University, 获得博士学位。2010 年至 2012 年在 Sandia National Laboratories 做博士后研究员。2012 年至 2013 年在 Oregon State University 的 Center for Sustainable Materials Chemistry 做博士后研究员。2014 年加入东华大学。2015 年, 入选“浦江人才”计划。近年来, 在国际重要学术刊物上以第一作者以及通讯作者发表 SCI 文章 20 余篇。主讲无机化学、高等无机化学等课程。



In 2010, Dr. Yu Hou graduated from Emory University in the United States with a PhD. She was a postdoctoral researcher at Sandia National Laboratories from 2010 to 2012. After that, she received a postdoctoral fellowship from the Center for Sustainable Materials Chemistry at Oregon State University. She joined Donghua University in 2014. In 2015, she was selected into the "Shanghai Pujiang Program". In recent years, she has published more than 20 SCI articles in international academic journals as the first author or corresponding author. Dr. Hou teaches inorganic chemistry and advanced inorganic chemistry courses.

研究方向

1. 能源转化：高效光催化分解水产氢催化剂的研发
2. 多酸基复合催化材料

Research area

1. Energy conversion: developing efficient photocatalytic catalysts for water splitting to produce hydrogen
2. Polyoxometalate-based composite materials for catalysis

Selected publications:

1. Deng, P.; Xi, C.; Chen, N.; Shi, H.; Zhang, L.; Yu Hou*, In situ loading amorphous CoS_x on N-doped g-C₃N₄ through light assisted synthesis for enhanced photocatalytic hydrogen generation, *Int. J. of Hydrogen Energy*, 2023, 48 (37), 13843-13850.
2. Zhang, X.; Xi, C.; Yue, Y.; Deng, P.; Zhang, L.; Hou, Y.*, Promoted interfacial charge transfer by coral-like nickel diselenide for enhanced photocatalytic hydrogen evolution over carbon nitride nanosheet. *International Journal of Hydrogen Energy*, 2022, 47 (3), 1624-1632.
3. Xue Zhang, Zhiwei Cheng, Puhui Deng, Linping Zhang, Yu Hou*, NiSe₂/Cd_{0.5}Zn_{0.5}S as a type-II heterojunction photocatalyst for enhanced photocatalytic hydrogen evolution, *Int. J. of Hydrogen Energy*, 2021, 46 (57), 15389-15397.
4. Mengxiang Gan, Guoqing Yang, Zhihan Wang, Xiaofeng Sui*, Yu Hou*, Highly efficient oxidative desulfurization catalyzed by a polyoxometalate/carbonized cellulose nanofiber composite, *Energy Fuels*, 2020, 34 (1), 778-786.
5. Puhui Deng, Haiyan Li, Zidong Wang, Yu Hou*, Enhanced photocatalytic hydrogen evolution by carbon-doped carbon nitride synthesized via the assistance of cellulose, *Appl. Surf. Sci.*, 2020, 504, 144454.
6. Puhui Deng, Mengxiang Gan, Xue Zhang, Zhuzhu Li, Yu Hou*, Non-noble-metal Ni nanoparticles modified N-doped g-C₃N₄ for efficient photocatalytic hydrogen evolution. *Int. J. of Hydrogen Energy*, 2019, 44 (57), 30084-30092.
7. Yahui Ding, Haiyan Li, Yu Hou*, Phosphorus-doped nickel sulfides/nickel foam as electrode materials for electrocatalytic water splitting, *Int. J. Hydrogen Energy*, 2018, 43(41): 19002-19009.
8. Haiyan Li, Puhui Deng, Yu Hou*, Cobalt disulfide/graphitic carbon nitride as an efficient photocatalyst for hydrogen evolution reaction under visible light irradiation, *Mater. Lett.*, 2018, 229: 217-220.
9. Hou, Y., Zakharov, L. N., Nyman, M.*, Observing Assembly of Complex Inorganic Materials from Polyoxometalate Building Blocks, *J. Am. Chem. Soc.*, 2013, 135 (44), 16651-16657.
10. Hou, Y., Nyman, M.*, Rodriguez, M. A., Soluble Heteropolyniobates from the Bottom of Group IA, *Angew. Chem. Int. Ed.* 2011, cover article, 52, 12514-12517.

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Students with a bachelor's degree in Chemistry or Materials Chemistry majors and strong interest in scientific research are welcome to join the research group.

Prof. Bolin Ji, 纪柏林 副教授 Master's Supervisor 硕士生导师

Research Direction: Textile Chemistry and Dyeing & Finishing Engineering 纺织化学与染整工程



纪柏林副教授于 2017 年 3 月博士毕业于东华大学纺织化学与染整工程专业，曾于 2014 年 12 月至 2015 年 11 月到美国加州大学戴维斯分校学习。2017 年 12 月入职东华大学化学与化工学院，主要从事绿色纺织印染助剂、功能性纺织品技术的开发。主讲本科生课程《无机化学实验》、《分析化学实验》；担任 *Composite Structures, Cellulose, Carbohydrate Polymers, Polymers, Pigment & Resin Technology* 等期刊的审稿人。

Prof. Dr. Bolin Ji received his PhD in Textile Chemistry and Dyeing & Finishing Engineering from Donghua University in March 2017. He has been to University of California, Davis for a visiting study during

December 2014 and November 2015. He joined the College of Chemistry and Chemical Engineering, Donghua University in December 2017. Currently, the green textile auxiliary and functional textile are his study interests. He is the instructor of undergraduate courses of *Inorganic Chemistry Experiment* and *Analytical Chemistry Experiment*. Besides, he serves as a reviewer for several journals, such as *Composite Structures, Cellulose, Carbohydrate Polymers, Polymers, and Pigment & Resin Technology*.

Research Interests 研究领域/课题:

- 纺织品的低温漂白前处理技术 Low-temperature Bleaching of Textiles
- 绿色纺织印染助剂 Environmental-friendly Textile Auxiliaries
- 功能性纺织品技术 Functional Textiles

Selected Publications 代表论文:

1. Ting Liang, Kelu Yan, Tao Zhao, **Bolin Ji***. Evaluation of crosslinking effect of different polycarboxylic acids with cellulose by acid-base titration and anti-wrinkle performance. *Cellulose*, 2022, 29(7): 4229-4241.
2. Ting Liang, Kelu Yan, Tao Zhao, **Bolin Ji***. Preparation of multiple-reactive-site and flexible crosslinking agent with trans-aconitic acid and acrylic acid and its application for three-dimensional crosslinking of cellulose. *Textile Research Journal*, 2022, 92(9-10): 1643-1655.
3. **Bolin Ji**, Xiaowen Wang, Shoujia Gong, Weibing Zhong, Ruyi Xie*. Locating the reaction site of 1,2,3,4-butanetetracarboxylic acid carboxyl and cellulose hydroxyl in the esterification cross-linking. *ACS Omega*, 2021, 6(42): 28394-28402.
4. Ting Liang, Kelu Yan, Tao Zhao, Yan Liu, **Bolin Ji***. High strength retention of cellulose fibers crosslinking with synthesized low-molecular-weight copolymers of itaconic acid and acrylic acid. *Cellulose*, 2021, 28(2): 1167-1178.
5. Lei Wang, Kelu Yan, Chunyan Hu, **Bolin Ji***. Preparation and investigation of a stable hybrid inkjet printing ink of reactive dye and CHPTAC. *Dyes and Pigments*, 2020, 181: 108584-108593.
6. **Bolin Ji***, Zijing Cai, Gang Sun, Kelu Yan. Hydroxyl changing mechanism of cotton cellulose

during alkaline treatment characterized by ATR-FTIR in combination with two-dimensional correlation spectroscopy. *AATCC Journal of Research*, 2020, 7(5): 1-8.

7. Ting Liang, Kelu Yan, Tao Zhao, **Bolin Ji***. Synthesis of low-molecular weight copolymer by maleic acid and acrylic acid and its application for the functional modification of cellulose. *Cellulose*, 2020, 27(10): 5665-5675.

8. Zijing Cai, **Bolin Ji***, Kelu Yan, Quan Zhu. Investigation on reaction sequence and group site of citric acid with cellulose characterized by FTIR in combination with two-dimensional correlation spectroscopy. *Polymers*, 2019, 11(12): 2071-2083.

9. **Bolin Ji**, Peixin Tang, Chunyan Hu, Kelu Yan*. Catalytic and ionic cross-linking actions of L-glutamate salt for the modification of cellulose by 1,2,3,4-butanetetracarboxylic acid. *Carbohydrate Polymers*, 2019, 207: 288-296.

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Students with a bachelor's degree in Textile Chemistry and related majors, especially those who are hard-working and innovative, are welcome to join us.

Prof. Aiqin Gao, 高爱芹 副教授 Master's Supervisor 硕士生导师

Research direction: Functional dyes and functional textile 功能染料与功能纺织品

高爱芹副教授 2018 年毕业于东华大学，获纺织化学与染整工程学科博士学位，2014-2016 年在美国加州大学河滨分校（University of California, Riverside）留学，2018 年入职东华大学化学与化工学院，加入谢孔良教授研究团队，主要从事染料分子结构设计与合成、微纳米材料对纤维表面的功能化方面的研究工作。主讲本科生课程《染料化学基础》、《纺织化学品化学》。



Prof. Dr. Gao, Aiqin received her PhD in textile chemistry and dyeing and finishing engineering from Donghua University in 2018. From 2014 to 2016, she studied at the University of California, Riverside, in the United States. She joined the College of Chemistry and Chemical Engineering at Donghua University in 2018, becoming a core member of Professor Xie Kongliang's research team. Her main research areas include the design and synthesis of dye molecules and the functionalization of fiber surfaces with micro and nano materials. She teaches undergraduate courses 'Fundamentals of Dye Chemistry' and 'Chemistry of Textile Chemicals'.

Research Interests (研究领域/课题) :

- 新型染料及功能分子的设计、合成及其应用 Design, synthesis, and application of new dyes and functional molecules
- 微纳米材料对纤维表面的功能化 Functionalization of fiber surfaces with micro and nano materials
- 绿色染整工艺 Eco-friendly dyeing and finishing processes

Selected publications 代表论文:

1. **A. Gao**, W. Xu, Y. P. de Leon, Y. Bai, M. Gong, K. Xie, B. H. Park, Y. Yin. *Advance Materials*, 2017, 29, 1701070.
2. A. Hou, H. Chen, C. Zheng, K. Xie, **A. Gao***. *ACS Nano*, 2020, 14, 7380-7388.

3. A. Hou, H. Chen, X. Song, X. Yang, Y. Zhang, K. Xie, **A. Gao***. *Journal of Cleaner Production*, 2020, 274, 122935.
4. L. Hu, H. Chen, M. Ju, A. Hou, K. Xie, **A. Gao***. *Nano Letters*, 2022, 22 (15), 6383-6390.
5. K. Xie, X. Zhuang, Z. Jing, X. Song, A. Hou, **A. Gao***. *Green Chemistry*, 2023, 25, 4438.
6. H. Chen, A. Hou, C. Zheng, J. Tang, K. Xie, **A. Gao***. *ACS Applied Materials & Interfaces*, 2020, 12, 24505-24511.
7. L. Hu, A. Hou, K. Xie, **A. Gao***. *ACS Applied Materials & Interfaces*, 2019, 11, 26500-26506.
8. H. Zhang, A. Hou, K. Xie, **A. Gao***. *Sensors and Actuators, B: Chemical*, 2019, 286, 362-369.
9. **A. Gao**, H. Chen, A. Hou, K. Xie*. *Materials Science and Engineering C*, 2019, 103, 109821.
10. **A. Gao**, J. Wang, H. Chen, A. Hou, K. Xie*. *Environmental Science: Nano*, 2020, 7, 2061.

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Students with a bachelor's degree in Chemistry and related majors, especially the ones with clearly defined academic and professional goals are welcome to join us.

Prof. Lei Hou, 侯磊 副研究员 Mastor's Supervisor 硕士生导师

Research direction: *Macromolecular Chemistry and Physics* 高分子化学与物理



侯磊副研究员 2011 年在厦门大学获学士学位，2016 年在复旦大学获博士学位，2017 年入职东华大学化学与化工学院。先后入选博士后创新人才支持计划（2017 年）、上海市青年科技英才扬帆计划（2018 年），主持国家自然科学基金青年基金、博士后面资助等科研项目，主要从事二维相关光谱、智能凝胶等方向研究。

Prof. Dr. Lei Hou received his bachelor's degree from Xiamen University in 2011 and his doctorate degree from Fudan University in 2016. He joined the College of Chemistry and Chemical Engineering of Donghua University in 2017. He has been selected into the National Postdoctoral Program for Innovative (2017) and the Shanghai Sailing Program (2018). He presided over the National Natural Science Foundation Youth Fund, post-doctoral research projects. His research interests include two-dimensional correlation spectroscopy, intelligent gel.

Research Interests (研究领域/课题) :

- 二维相关谱学 Two-dimensional correlation spectroscopy
- 智能凝胶 Intelligent gel

Selected publications 代表论文:

1. Hongbo Wan, Baohu Wu, **Lei Hou***, and Peiyi Wu*. Amphibious Polymer Materials with High Strength and Superb Toughness in Various Aquatic and Atmospheric Environments. *Adv. Mater.* 2023, 35, 2307290.
2. Lei Peng, **Lei Hou***, and Peiyi Wu*. Synergetic Lithium and Hydrogen Bonds Endow Liquid-free Photonic Ionic Elastomer with Mechanical Robustness and Electrical optical Dual-output. *Adv. Mater.* 2023, 35, 2211342.
3. Kai Gong, **Lei Hou***, and Peiyi Wu*. Hydrogen-Bonding Affords Sustainable Plastics with Ultrahigh Robustness and Water-assisted Arbitrarily Shape Engineering. *Adv. Mater.* 2022, 34, 2201065.

4. Zhilong Tian#, **Lei Hou**#, Doudou Feng, Yucong Jiao*, and Peiyi Wu*. Modulating the Coordination Environment of Lithium Bonds for High Performance Polymer Electrolyte Batteries. *ACS Nano* 2023, 17, 3786-3796.
5. Yan Liu, **Lei Hou***, Yucong Jiao*, and Peiyi Wu*. Decoupling of Mechanical Strength and Ionic Conductivity in Zwitterionic Elastomer Gel Electrolyte toward Safe Batteries. *ACS Appl. Mater. Interfaces* 2021, 13, 13319-13327.
6. Lina Yan, **Lei Hou***, Shengtong Sun, and Peiyi Wu*. Dynamic Diffusion of Disperse Dye in Polyethylene Terephthalate Film from an Infrared Spectroscopic Perspective. *Ind. Eng. Chem. Res.* 2020, 16, 7398-7404.
7. **Lei Hou**, and Peiyi Wu*. Two-Dimensional Correlation Infrared Spectroscopy of Heat-Induced Esterification of Cellulose with 1,2,3,4-Butanetetracarboxylic Acid in the Presence of Sodium Hypophosphite. *Cellulose* 2019, 26, 2759-2769.
8. **Lei Hou**, and Peiyi Wu*. Exploring the Hydrogen-Bond Structures in Sodium Alginate through Two-Dimensional Correlation Infrared Spectroscopy. *Carbohydr. Polym.* 2019, 205, 420-426.
9. **Lei Hou**, and Peiyi Wu*. Microgels with Linear Thermosensitivity in a Wide Temperature Range. *Macromolecules* 2016, 49, 6095-6100.
10. **Lei Hou**, Kai Ma, Zesheng An*, and Peiyi Wu*. Exploring the Volume Phase Transition Behavior of POEGA- and PNIPAM-Based Core-Shell Nanogels from Infrared-Spectral Insights. *Macromolecules* 2014, 47, 1144-1154.

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Dr. Kai Liu, 刘凯 博士 Assistant Professor 讲师

Master's Supervisor 硕士生导师

Research direction: *Supramolecular polymeric materials design and applications in textiles* 超分子聚合物材料设计及纺织领域应用

刘凯博士，于 2013 年获得大连工业大学纺织工程学士学位和 2019 年获得东华大学纺织化学与染整工程博士学位（导师：阎克路教授），2017 年至 2018 年在加州大学戴维斯分校孙刚教授课题组访学（UC Davis）。2019 年加入上海交通大学颜徐州研究员课题组从事博士后研究，2021 年入职东华大学化学与化工学院纺化系，并加入武培怡教授领衔的智能软材料课题组，主要从事超分子聚合物材料设计及纺织领域应用方面的研究。

Dr. **Kai Liu** received bachelor degree in Textile Engineering at Dalian Polytechnic University and PhD degree in Textile Chemistry at Donghua University in 06/2013 and 04/2019, respectively. Then he joined Professor Xuzhou Yan's group as a postdoctoral fellow at Shanghai Jiao Tong University from 04/2019 to 11/2021. Now he is starting his research career as an assistant professor in Professor Peiyi Wu's group at School of Chemistry and Chemical Engineering, Donghua University. His current research interests are focused on supramolecular polymeric materials design and applications in textiles.

Research Interests (研究领域/课题) :

- 织物组织结构探讨聚合物拓扑 Investigation of Polymeric Topology Based on Macroscopic Fabric Organization Structures
- 超分子聚合物材料设计及纺织领域应用 Supramolecular Polymeric Materials Design and Applications in Textiles

Selected publications 代表论文:

1. Wan-Yu Zhu; **Kai Liu***; Xuan Zhang* A Benzimidazole-derived Fluorescent Chemosensor for Cu(ii)-Selective Turn-off and Zn(ii)-Selective Ratiometric Turn-on Detection in Aqueous Solutions. *Sens. Diagn.* 2023, 2, 665-675.
2. **Liu Kai**; Zhang Xinhai; Zhao Dong; Bai Ruixue; Wang Yongming; Yang Xue; Zhao Jun; Zhang Hao; Yu Wei; Yan Xuzhou* Stretchable Poly[2]rotaxane Elastomers. *Fundamental Res.* 2022, doi:10.1016/j.fmre.2022.04.007.
3. **Liu Kai**[#]; Cheng Lin[#]; Zhang Ningbin[#]; Pan Hui; Fan Xiwen; Li Guangfeng; Zhang Zhaoming; Zhao Dong; Zhao Jun; Yang Xue; Wang Yongming; Bai Ruixue; Liu Yuhang; Liu Zhiyuan; Wang Sheng; Gong Xinglong; Bao Zhenan; Gu Guoying*; Yu Wei*; Yan Xuzhou* Biomimetic Impact Protective Supramolecular Polymeric Materials Enabled by Quadruple H-Bonding. *J. Am. Chem. Soc.* 2021, 143, 1162-1170.
4. **Liu Kai**; Jiang Yuanwen; Bao Zhenan*; Yan Xuzhou* Skin-Inspired Electronics Enabled by Supramolecular Polymeric Materials. *CCS Chemistry* 2019, 1, 431-447. (**Cover story**)
5. **Liu Kai**; Yan Kelu*; Sun Gang* Mechanism of H₂O₂/Bleach Activators and Related Factors. *Cellulose* 2019, 26, 2743-2757.
6. **Liu Kai**; Zhang Xuan*; Yan Kelu* Development of *O*-phthalic Anhydride as a Low-temperature Activator in H₂O₂ Bleaching System for Cotton Fabric. *Cellulose* 2018, 25, 859-867.
7. **Liu Kai**; Zhang Xuan*; Yan Kelu* Bleaching of Cotton Fabric with Tetraacetylhydrazine as Bleach Activator for H₂O₂. *Carbohydr. Polym.* 2018, 188, 221-227.
8. **Liu Kai**; Zhang Xuan*; Yan Kelu* Low-temperature Bleaching of Cotton Knitting Fabric with H₂O₂/PAG System. *Cellulose* 2017, 24, 1555-1561.

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We are actively looking for self-motivated and creative students with backgrounds in Textile Chemistry and Materials Science.



Prof. Chongyu Zhu, 竺翀宇 Associate Professor 副教授

Master's Supervisor 硕士生导师

Research direction: Smart Polymers for Bio-applications 智能医用高分子合成与应用

竺翀宇 2013 年本科毕业于清华大学化学系。之后就读于英国华威大学化学系，并于 2017 年获得博士学位。之后在美国加州大学伯克利分校材料系开展博士后研究工作。回国后曾任职于复旦大学和汉高股份有限公司，并于 2023 年入职东华大学化学与化工学院，从事面向生物医用的高分子材料合成与“智能化”功能整理。主讲研究生课程《科技论文阅读与写作》。

Dr. Chongyu Zhu graduated from Department of Chemistry, Tsinghua University with a bachelor's degree in 2013. He then studied in Department of Chemistry, University of Warwick and received his PhD in 2017. After that, he carried out postdoctoral research in the Department of Materials Science & Engineering, University of California, Berkeley. After returning to China, he worked at Fudan University and Henkel Co., Ltd., and joined the College of Chemistry and Chemical Engineering at Donghua University in 2023. He is now working on the synthesis of polymer materials for biomedical use and "smart" functional finishing. He teaches *Scientific Paper Reading and Writing* for postgraduates.

Research Interests (研究领域/课题) :

- 1) 高生物相容性智能材料 Biocompatible smart materials
- 2) 医用纺织品的功能整理 Functional finishing of medical textiles
- 3) 诊疗用医用高分子 Medical polymers for diagnosis and treatment
- 4) 高分子药物递送材料 Polymeric drug delivery systems

Selected publications 代表论文:

1. J. Sun, B. Peng, Y. Lu, X. Zhang, J. Wei, C. Zhu*, Y. Yu, *Small*, 2022, 18, 2106443.
2. Y. Lu#, L. Qin#, Q. Liu, Z. Li, W. Zhang, C. Zhu*, Y. Yu*, *NPG Asia Mater.*, 2022, 14, 73.
3. T. Mao, C. Zhu*, L. Tao*, *Chinese J. Chem.*, 2021, 39, 2287-2295.
4. Y. Zeng, C. Zhu*, L. Tao*, *Macromol. Rapid Comm.*, 2021, 42, 2100022.
5. C. Zhu, Y. Lu, L. Jiang, Y. Yu*, *Adv. Funct. Mater.*, 2021, 31, 2009835.
6. C. Zhu, Y. Lu, J. Sun, Y. Yu*, *Langmuir*, 2020, 36, 6611-6625.
7. C. Zhu, E.K. Schneider, V. Nikolaou, T. Klein, J. Li, T.P. Davis, M.R. Whittaker, P. Wilson, K. Kempe, T. Velkov, D.M. Haddleton*, *Bioconjugate Chem.*, 2017, 28, 1916-1924.
8. C. Zhu, E.K. Schneider, J. Wang, K. Kempe, P. Wilson, T. Velkov, J. Li, T.P. Davis, M.R. Whittaker, D.M. Haddleton*, *J. Control. Release*, 2017, 259, 83-91.
9. C. Zhu, J. Zhao, K. Kempe, P. Wilson, J. Wang, T. Velkov*, J. Li, T.P. Davis, M.R. Whittaker, D. M. Haddleton*, *Macromol. Biosci.*, 2017, 17, 1600320.
10. C. Zhu, B. Yang, Y. Zhao, C. Fu, L. Tao*, Y. Wei*, *Polym. Chem.*, 2013, 4, 5395-5400.

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