



莫颖慧

副研究员，硕导，工学博士（清华大学）。入选天津市“131”创新型人才培养工程第三层次。主要在水处理及回用领域开展研究，研究方向为电化学/生物电化学技术与膜分离技术的开发及其对污水中难降解有机污染物的去除。在 Environmental Science & Technology、Journal of Hazardous Materials、Desalination、Chemosphere 等环境工程领域的知名期刊上发表学术论文 20 余篇。

教育经历

2008/08-2013/07，清华大学，环境学院，获博士学位

2010/11-2011/07，美国耶鲁大学，化工与环境学院，国家公派联合培养培养博士生

2004/08-2008/07，清华大学，环境科学与工程系，获学士学位

科研经历

2015/10 至今，天津工业大学，环境学院

2019/10-2020/07，美国佐治亚理工学院，市政与环境工程学院，国家公派访问学者

2013/08-2015/10，国家海洋局天津海水淡化与综合利用研究所

承担课题

- (1) 国家自然科学基金青年项目《电催化膜-微生物燃料电池耦合技术去除难降解有机物及作用机制》（主持, 2017.1-2019.12, 已结题)
- (2) 天津市自然科学基金青年项目《好氧生物阴极-电催化膜耦合工艺的构建及其对染料的高效低耗脱色和矿化》（主持, 2019.4-2022.3)
- (3) 天津市教委科研计划项目《O₂还原生物阴极型电催化膜反应器去除高浓度难降解有机物及其化学脱毒-生物矿化机制》（主持, 2018.10-2021.10)
- (4) 环境模拟与污染控制国家重点实验室（清华大学）2016年度开放课题《无机离子对氧化石墨烯膜纳米毛细通道的破坏及膜分离性能的改变》(主持, 2016.6-2018.6, 已结题, 优秀)
- (5) 国家重点研发计划《纳米导电分离膜的制备及其化工废水深度处理应用基础研究》（子课题第二参与人, 2020.11-2025.10)
- (6) 国家自然科学基金面上项目《面向染料回收利用的高选择性中空纤维膜制备及选择分离机制研究》（第二参与人, 2019.1-2022.12)
- (7) 天津市科技计划项目《天津工业大学先进膜技术与可持续水资源中非联合研究中心建设》（第四参与人, 2018.10-2020.9)
- (8) 天津市科技计划项目《高性能复合纳滤膜构建与分离性能》（第三参与人, 2016.4-2017.9, 已结题)
- (9) 南非大学横向项目《联合研发 NIPS 和 TIPS 实验纺丝成套装备及先进水处理纳米材料》（第五参与人, 2018.12-2021.12)

发表论文

1	Yinghui Mo* , Manman Du, Shuai Cui, Hong Wang, Xin Zhao, Ming Zhang, Jianxin Li, Simultaneously enhancing degradation of refractory organics and achieving nitrogen removal by coupling denitrifying biocathode with MnO _x /Ti anode, <i>Journal of Hazardous Materials</i> , 2021, 402: 123467
2	Han Li, Yimei Tian, Xin Zhao*, Yinghui Mo , Huabiao Qi, Competition of co-existing cations to eliminate negative effect of Na ⁺ on graphene oxide membrane structure and stabilize the separation performance, <i>Separation and Purification Technology</i> , 2021, 258: 118020
3	Yinghui Mo* , Manman Du, Tingting Yuan, Mengxin Liu, Hong Wang, Benqiao He, Jianxin Li*, Xin Zhao, Enhanced anodic oxidation and energy saving for dye removal by integrating O ₂ – reducing biocathode into electrocatalytic reactor, <i>Chemosphere</i> , 2020, 252: 126460
4	Yinghui Mo* , Tingting Yuan, Mengxin Liu, Manman Du, Hong Wang, Benqiao He, Jianxin Li*, Integrating biocathode into an electrocatalytic reactor to reduce applied voltage to generate hydroxyl radicals for advanced oxidation, <i>Journal of Chemical Technology and Biotechnology</i> , 2019, 94 (8): 2487-2496
5	Xianhui Li*, Yinghui Mo , Weihua Qing, Senlin Shao, Chuyang Tang, Jianxin Li*, Membrane-based technologies for lithium recovery from water lithium resources: A review, <i>Journal of Membrane Science</i> , 2019, 591: 117317
6	Kang Xiao, Yinghui Mo , Jianyu Sun, Mingyu Wang, Shuai Liang, Xiaomao Wang*, Xia Huang*, T. David Waite. An extended standard blocking filtration law for exploring membrane pore internal fouling due to rate-determining adsorption, <i>Separation and Purification Technology</i> , 2019, 212: 974-979
7	Hongsen Hui, Hong Wang*, Yinghui Mo , Le Li, Zhen Yin, Jianxin Li*, Tonghua Wang, A three-stage fixed-bed electrochemical reactor for biologically treated landfill leachate treatment, <i>Chemical Engineering Journal</i> , 2019, 376: 121026
8	Yinghui Mo , Xin Zhao*, Tingting Yuan, Benqiao He. Factors affecting the separation performance of graphene oxide membranes: mechanical support, properties of graphene oxide, and exotic species, <i>Journal of Chemical Technology and Biotechnology</i> , 2018, 93: 1399-1393
9	Hongsen Hui, Hong Wang*, Yinghui Mo , Zhen Yin, Jianxin Li*, Optimal design and evaluation of electrocatalytic reactors with nano-MnO _x /Ti membrane electrode for wastewater treatment, <i>Chemical Engineering Journal</i> , 2019, 376: 120190
10	Hongsen Hui, Hong Wang, Yinghui Mo , Zhen Yin, Jianxin Li*, Tonghua Wang, A fixed-bed electrochemical reactor with nano-TiO ₂ loading flat-sheet carbon membrane as anode for phenolic wastewater treatment. <i>Desalination and Water Treatment</i> . 2018, 118: 113-119.
11	Xianhui Li, Yinghui Mo , Jianxin Li*, WenshanGu, Huu Hao Ngo, In-situ monitoring techniques for membrane fouling and local filtration characteristics in hollow fiber membrane processes: a critical review, <i>Journal of Membrane Science</i> , 2017, 528: 187-200.

12	Lei Zhang, Zhenyu Cui, Mengyang Hu, Yinghui Mo , Shiwen Li, Benqiao He, Jianxin Li*, Preparation of PES/SPSf blend ultrafiltration membranes with high performance via H ₂ O-induced gelation phase separation, <i>Journal of Membrane Science</i> , 2017, 540: 136-145.
13	Yinghui Mo *, Xin Zhao, Yuexiao Shen, Cation-dependent structural instability of graphene oxide membranes and its effect on membrane separation performance, <i>Desalination</i> , 2016, 399:40-46.
14	Yinghui Mo , Kang Xiao, Peng Liang, Xia Huang*, Effect of nanofiltration membrane surface fouling on organic micro-pollutants rejection: the roles of aqueous transport and solid transport, <i>Desalination</i> , 2015, 367:103-111.
15	Kang Xiao, Jianyu Sun, Yinghui Mo , Zhou Fang, Xia Huang*, Jianbo Ma, Bingrong Ma, Effect of membrane pore morphology on microfiltration organic fouling: PTFE/PVDF blend membranes compared with PVDF membranes, <i>Desalination</i> , 2014, 343:217-225.
16	Jianyu Sun, Kang Xiao, Yinghui Mo , Peng Liang*, Yuexiao Shen, Ningwei Zhu, Xia Huang*, Seasonal characteristics of supernatant organics and its effect on membrane fouling in a full-scale membrane bioreactor, <i>Journal of Membrane Science</i> , 2014, 453:168-174.
17	Yinghui Mo , Tiraferri Alberto, Yip Ngai Yin, Adout Atar, Xia Huang*, Elimelech Menachem*, Improved antifouling properties of polyamide nanofiltration membranes by reducing the density of surface carboxyl groups, <i>Environmental Science & Technology</i> , 2012, 46,:13253–13261.
18	Shuai Liang, Kang Xiao, Yinghui Mo , Xia Huang*, A novel ZnO nanoparticle blended polyvinylidene fluoride membrane for anti-irreversible fouling, <i>Journal of Membrane Science</i> , 2012, 394:184-192.
19	Xi Luo, Xiaoxin Cao, Yinghui Mo , Kang Xiao, Xiaoyuan Zhang, Peng Liang*, Xia Huang*, Power generation by coupling reverse electrodialysis and ammonium bicarbonate: Implication for recovery of waste heat, <i>Electrochemistry Communications</i> , 2012, 19:25-28.
20	Yinghui Mo , Kang Xiao, Yuexiao Shen, Xia Huang*, A new perspective on the effect of complexation between calcium and alginate on fouling during nanofiltration. <i>Separation and Purification Technology</i> , 2011, 82:121-127.
21	Peng Liang, Huiyong Wang, Xue Xia, Xia Huang*, Yinghui Mo , Xiaoxin Cao, Mingzhi Fan, Carbon nanotube powders as electrode modifier to enhance the activity of anodic biofilm in microbial fuel cells, <i>Biosensors & Bioelectronics</i> , 2011, 26:3000-3004.
22	Yinghui Mo , Jianhua Chen, Wenchao Xue, Xia Huang*, Chemical cleaning of nanofiltration membrane filtrating the effluent from a membrane bioreactor, <i>Separation and Purification Technology</i> , 2010, 75:407-414.
23	Yinghui Mo , Peng Liang, Xia Huang*, Huiyong Wang, Xiaoxin Cao, Enhancing the stability of power generation of single-chamber microbial fuel cells using an anion exchange membrane, <i>Journal of Chemical Technology and Biotechnology</i> , 2009, 84:1767-1772.

申请专利

1	莫颖慧;孙丽萍;李建新. 用于偶氮废水处理的厌氧生物阴极-电催化膜串联反应器. 申请号 CN202010482761.0. 申请日 20200604.
2	莫颖慧;孙丽萍;李建新. 用于难降解废水处理的电催化膜-生物阴极串联反应器. 申请号 CN202010465789.3. 公开号 CN111675309A. 申请日 20200528. 公开日 20200918.
3	莫颖慧;杜漫漫;李建新;王虹. 用于废水脱氮除碳的反硝化生物阴极-电催化膜反应器. 申请号 CN201911219789.9. 公开号 CN110776097A. 申请日 20191128. 公开日 20200211.
4	莫颖慧, 李建新, 原婷婷, 王虹, 用于废水处理的 O ₂ 还原生物阴极-电催化膜耦合反应器, 申请日 2018.09, 中国, 申请号 CN201811024151.5. 公开号 CN109205796A. 申请日 20180904. 公开日 20190115.

会议报告

1	莫颖慧; 原婷婷; 刘梦心; 杜漫漫; O ₂ 还原生物阴极耦合促进阳极氧化产生羟基自由基的研究, 第十届全国环境化学大会, 天津, 2019.
2	莫颖慧; 生物-电催化膜反应器处理难降解有机废水, 第四届全国膜技术研究与应用青年科学家论坛, 武汉, 2018.
3	Hong Wang, Jianxin Li, Yinghui Mo (speaker) . ECMR-based Integrated Processes for the Treatment of Landfill Leachate. International Symposium on Advanced Membrane Bioreactors for Environment Sustainability (IBA-AMBRES 2018), Tianjin, China, 2018.
4	Yinghui Mo (speaker) , The variation of 2-dimentional nanocapillaries and separation performance of GO membranes affected by inorganic ions, 5 th International Conference on Environmental Simulation and Pollution Control, Beijing, China, 2017.