



个人简介

刘勇弟博士，教授，博士导师，曾任华东理工大学资源与环境工程学院院长（2002–2016），主讲本科生的水污染控制工程、硕士生的可持续发展理论与实践和博士生的污染控制工程专论等课程。主持完成了国家863计划重点项目子课题、国家自然科学基金面上项目、教育部高校博士点基金优先资助领域项目等多项重要课题及工业废水处理技术开发与工程应用项目，目前承担着国家自然科学基金等项目。发表论文200余篇，其中SCI论文80余篇；申请发明专利30项，其中授权15项；出版译著2部。曾赴美国宾州州立大学（2007.11–2008.5）和香港大学（2003.3–2003.6）访问学习。曾获中国石油与化学工业联合会技术发明奖一等奖（2014年）、教育部技术发明奖二等奖（2015年）、环保部环境保护科学技术奖二等奖（2009年）。现兼任南京大学“国家有机毒物污染控制与资源化工程技术研究中心”工程技术委员会委员、“上海市重金属污染控制与资源化工程研究中心”技术委员会主任委员；南京理工大学“江苏省化工污染控制与资源化高校重点实验室委员”学术委员会副主任。还兼任上海市环境科学学会常务理事、上海市化学化工学会常务理事；《环境工程学报》、《水处理技术》、《净水技术》、《华东理工大学学报自然科学版》编委。2016年获国务院“政府特殊津贴”。

研究方向

- (1) 有毒有害难生物降解有机废水处理理论研究与新技术开发
- (2) 城市污水和工业废水深度处理基础理论研究与回用技术开发
- (3) 环境微生物技术在工业有机废水处理中的应用研究

研究成果及主要发表文章

获得中国石油与化学工业联合会技术发明奖一等奖（2014年）、教育部技术发明奖二等奖（2015年）、上海市技术发明奖二等奖等奖励（2014年）、环保部环境保护科学技术奖二等奖（2009年）。

1. Juying Lei, Bin Chen, Weijia Lv, Liang Zhou, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*. Robust Photocatalytic H₂O₂ Production over Inverse Opal g-C₃N₄ with Carbon Vacancy under Visible Light. *ACS Sustainable Chemistry & Engineering*. <https://doi.org/10.1021/acssuschemeng.9b03678>

2. Jie Yu, Juying Lei, Lingzhi Wang, Chantal Guillard, Jinlong Zhang*, Yongdi Liu*, Masakazu Anpo. g-C₃N₄ quantum dots-modified mesoporous TiO₂-SiO₂ for enhanced photocatalysis. *Research on Chemical Intermediates*, 2019, 45(4):4237-4247

3. Juying Lei, Bin Chen, Weijia Lv, Liang Zhou, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*. An inverse opal TiO₂/g-C₃N₄ composite with a heterojunction for enhanced visible light-driven photocatalytic activity. *Dalton Transactions*, 2019, 48(10):3486-3495

4. Meng Hou, Wei Li*, Hui Li, Cheng Li, Xiao Wu, Yong-di Liu*. Performance and bacterial characteristics of aerobic granular sludge in response to alternating salinity. *International Biodeterioration & Biodegradation*, 2019, 142: 211-217. ISSN 0964-8305, <https://doi.org/10.1016/j.ibiod.2019.05.007>.

5. Xiao Wu, Wei Li, Dong Ou, Cheng Li, Meng Hou, Hui Li*, Yongdi Liu*. Enhanced adsorption of Zn²⁺ by salinity-aided aerobic granular sludge: Performance and binding mechanism. *Journal of Environmental Management*, 2019, 242: 266-271

6. Liang Zhou, Juying Lei*, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*. Highly efficient photo-Fenton degradation of methyl orange facilitated by slow light effect and hierarchical porous structure of Fe₂O₃-SiO₂ photonic crystals. *Applied Catalysis B: Environmental*, 2018, 237: 1160-1167

7. Xiaoli Wang, Jie Yang, Hui Li*, Shu Guo, Muhammad Tariq, Haibo Chen*, Chen Wang, Yongdi Liu*. Chronic toxicity of hexabromocyclododecane(HBCD) induced by oxidative stress and cell apoptosis on nematode *Caenorhabditis elegans*. *Chemosphere*, 2018, 208:31-39

8. Jie Yu, Juying Lei*, Lingzhi Wang, Jinlong Zhang*, Yongdi Liu*. TiO₂ inverse opal photonic crystals: Synthesis, modification, and applications - A review, *Journal of Alloys and Compounds*, 2018, 769: 740-757

9. Dong Ou, Hui Li, Wei Li, Xiao Wu, Yi-qiao Wang, Yong-di Liu*. Salt-tolerance aerobic granular sludge: formation and microbial community characteristics, *Bioresource Technology*, 2018, 249:132-138

10. Chan-Juan Qian, Wei Li, Hui Li*, Dong Ou, Yang-Yang Zhu-Ge, Yong-Di Liu*. Responses of genes for the uptake of glycine betaine in *Virgibacillus halodenitrificans* PDB-F2 under NaCl stress, *International Biodeterioration & Biodegradation*, 2018, 132:192-199

11. Dong Ou, Wei Li, Hui Li*, Xiao Wu, Cheng Li, Yangyang Zhuge, Yong-di Liu*. Enhancement of the removal and settling performance for aerobic granular sludge under hypersaline stress, *Chemosphere*, 2018, 212:400-407

12. Juying Lei, Fenghui Liu, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*. A binary polymer composite of graphitic carbon nitride and poly(diphenylbutadiyne) with enhanced visible light photocatalytic activity. *RSC Advances*, 2017, 7: 27377-27383.

13. Liang Zhou, Lingzhi Wang, Jinlong Zhang, Juying Lei*, Yongdi Liu*. The preparation, and applications of g-C₃N₄/TiO₂ heterojunction catalysts-a review. *Research on Chemical Intermediates*, 2017, 43(2081-2101).

14. Hui Li, Yue-feng Qiu, Xiao-li Wang, Jie Yang, Yun-jiang Yu*, Ya-qin Chen, Yong-di Liu*. Biochar supported Ni/Fe bimetallic nanoparticles to remove 1,1,1-trichloroethane under various reaction conditions, *Chemosphere*, 2017, 169:534-541

15. Liang Zhou, Lingzhi Wang, Juying Lei*, Yongdi Liu*, Jinlong Zhang. Fabrication of TiO₂/Co-g-C₃N₄ heterojunction catalyst and its photocatalytic performance, *Catalysis Communications*, 2017, 89:125-128

16. Yang Zhou, Zhi-Yuan Sun, Hui Li*, Chan-Juan Qian, Xiao Wu, Hong-Zhi Tang, Fawad Ali, Yong-Di Liu*. Investigation of compatible solutes synthesis and transport of *Virgibacillus halodenitrificans* PDB-F2 with complete genome analysis, *International Biodeterioration & Biodegradation*, 2017, 122:165-172

17. Weijia Lv, Zhihang Liu, Jingjing Lan, Ziyu Liu, Wenxin Mi, Juying Lei*, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*. Visible-light-induced reduction of hexavalent chromium utilizing cobalt phosphate (Co-Pi) sensitized inverse opal TiO₂ as a photocatalyst. *Catal. Sci. Technol.*, 2017, 7, 5687-5693.

18. Changzheng Cui, Zhijie Li, Jiangchao Qian, Jie Shi, Ling Huang, Hongzhi Tang*, Xin Chen, Kuangfei Lin, Ping Xu, Yongdi Liu*. Complete genome of *Martelella* sp. AD-3, a moderately halophilic polycyclic aromatic hydrocarbons-degrading bacterium. *Journal of Biotechnology*, 2016, 225: 29-30

19. Ling Huang, Haiyang Hu, Hongzhi Tang*, Yongdi Liu, Ping Xu, Jie Shi, Kuangfei Lin, Qishi Luo, Changzheng Cui*. Identification and Characterization of a Novel Gentisate 1,2-Dioxigenase Gene from a Halophilic *Martelella* Strain. *Scientific Reports*, 2015, 5:14307; DOI: 10.1038/srep14307

20. Xiao-Jue Guo, Zhi-Yan Lu, Li Hui*, Zhong-Zi Huang, Kuang-Fei Lin and Yong-Di Liu*. Diversity and degradation mechanism of an anaerobic bacterial community treating phenolic wastewater with sulfate as an electron acceptor. *Environmental Science and Pollution Research*, 2015, 22(20):16121-16132

21. Zhi-Yan Lu, Xiao-Jue Guo, Li Hui*, Zhong-Zi Huang, Kuang-Fei Lin and Yong-Di Liu*. High-throughput screening for a moderately halophilic phenol-degrading strain and its salt tolerance response. *International Journal of Molecular Sciences*, 2015, 16(6): 11834-11848

22. Hui Li, Shi-yang Zhang, Xiao-li Wang, Jie Yang, Ji-dong Gu, Rui-li Zhu, Ping Wang, Kuang-fei Lin, Yong-di Liu*. Aerobic biodegradation of trichloroethylene and phenol co-contaminants in groundwater by a bacterial community using hydrogen peroxide as the sole oxygen source, *Environmental Technology*, 2015, 36(5): 667-674

23. Juying Lei, Ying Chen, Lingzhi Wang, Yongdi Liu, Jinlong Zhang*. Highly condensed g-C₃N₄-modified TiO₂ catalysts with enhanced photodegradation performance toward acid orange 7. *Journal of Materials Science*, 2015, 50(9):3467-3476

24. Juying Lei, Ying Chen, Fan Shen, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*, Surface modification of TiO₂ with g-C₃N₄ for enhanced UV and visible photocatalytic activity, *Journal of Alloys and Compounds*, 2015, 631:328-334

25. Penghua Wang, Juying Lei, Mingyang Xing, Lingzhi Wang, Yongdi Liu*, Jinlong Zhang*, Ammonium acetate and ethylenediamine-assisted synthesis of anatase nanocrystals with {010} facets and enhanced photocatalytic activity, *Journal of Environmental Chemical Engineering*, Available online, 2015, 3(2):961-968

26. Dehao Li, Yufeng Mao, Zhenghui Liu, Xudong Yin, Chunyan Lang, Yongdi Liu*. Simultaneous removal of nitrogen, phosphorus and COD in an integrated OCO reactor. *Environmental Technology*, 2014, 35(20): 2628-2633

27. Zhong-zi Huang, Ping Wang, Hui Li*, Kuang-fei Lin, Zhi-yan Lu, Xiao-jue Guo, Yong-di Liu*. Community analysis and metabolic pathway of halophilic bacteria for phenol degradation in saline environment. *International Biodeterioration & Biodegradation*, 2014, 94:115-120

28. Yu-Feng Wang, Xiao-Li Wang, Hui Li*, Kuang-Fei Lin, Ping Wang, Jie Yang, Yong-Di Liu*, Zhi-Yuan Sun, Li-Hua Fan, Zhi-Ming Wu. Treatment of high salinity phenol-laden wastewater using a sequencing batch reactor containing halophilic bacterial community. *International Biodeterioration & Biodegradation*, 2014, 93:138-144

29. Changzheng Cui, Lei Ma, Jie Shi, Kuangfei Lin, Qishi Luo, Yongdi Liu*. Metabolic pathway for degradation of anthracene by halophilic *Martelella* sp. AD-3. *International Biodeterioration & Biodegradation*, 2014, 89: 67-73

30. Hongyo Xu, Sichen Zhou, Xibiao Jin, Yongdi Liu. Monte Carlo simulation of the induction time and particle size distribution in the nucleation of calcium carbonate. *Powder Technology*, 2014, 253: 242-246

31. Yuanyuan Han, Xibiao Jin*, Yuan Wang, Yongdi Liu, Xiurong Chen. Inhibitory effect of cyanide on nitrification process and its eliminating method in a suspended activated sludge process. *Environmental Science and Pollution Research*, 2014, 21(4): 2706-2713

32. Feng Wang, Xibiao Jin*, Shanshan Yang, Yongdi Liu, Xiurong Chen. A control strategy for promoting the stability of denitrifying granular sludge in upflow sludge blankets. *Environmental Technology*, 2014, 35(1): 52-59

33. Feiyue Qian, Xianbo Sun, Yongdi Liu*, Hongyong Xu. Removal and transformation of effluent organic matter (EfOM) in biotreated textile wastewater by GAC/O₃ pre-oxidation and enhanced coagulation. *Environmental Technology*, 2013, 34(12): 1513-1520

34. Yao Yin, Guangtuan Huang*, Yiran Tong, Yongdi Liu, Lehua Zhang. Electricity production and electrochemical impedance modeling of microbial fuel cells under static magnetic field. *Journal of Power Sources*, 2013, 237: 58-63

35. Hui Li, Ting-Ting Shen, Xiao-Li Wang, Kuang-Fei Lin*, Yong-Di Liu*, Shu-Guang Lu, Ji-Dong Gu, Ping Wang*, Qiang Lu, Xiao-Ming Du. Biodegradation of perchloroethylene and chlorophenol co-contamination and toxic effect on activated sludge performance. *Bioresource Technology*, 2013, 137: 286-293

36. Hui Li, Xiao-Li Wang, Bo-Zhong Mu, Ji-Dong Gu, Yong-Di Liu*, Kuang-Fei Lin*, Shu-Guang Lu, Qiang Lu, Bing-Zhi Li, Yang-Yang Li, Xiao-Ming Du*. Molecular detection, quantification and distribution of alkane-degrading bacteria in production water from low temperature oilfields. *International Biodeterioration & Biodegradation*, 2013, 76: 49-57

37. Feiyue Qian, Xianbo Sun, Yongdi Liu*. Effect of ozone on removal of dissolved organic matter and its biodegradability and adsorbability in biotreated textile effluents. *Ozone: Science & Engineering*, 2013, 35(1): 1-9

38. Feiyue Qian, Xianbo Sun, Yongdi Liu*. Removal characteristics of organics in biotreated textile wastewater reclamation by a stepwise coagulation and intermediate GAC/O₃ oxidation process. *Chemical Engineering Journal*, 2013, 214: 112-118

39. Feiyue Qian, Xianbo Sun, Yongdi Liu*. Removal characteristics of organics in biotreated textile wastewater reclamation by a stepwise coagulation and intermediate GAC/O₃ oxidation process. *Chemical Engineering Journal*, 2013, 214: 112-118

40. Shi, XL; Wei, YM; Liu, YD. Treatment of aged-landfill-leachate using aged-sludge-based bioreactor followed by advanced chemical oxidation. *Research Journal of Chemistry and Environment*, 2012, 16(4): 155-161

41. Hui Li, Qian Zhang, Xiao-Li Wang, Xing-Yuan Ma*, Kuang-Fei Lin*, Yong-Di Liu*, Ji-Dong Gu*, Shu-Guang Lu, Lei Shi, Qiang Lu, Ting-Ting Shen. Biodegradation of benzene homologues in contaminated sediment of the East China Sea. *Bioresource Technology*, 2012, 124: 129-136

42. Yunchuan Gao, Mingxing Sun, Xiaowei Wu, Yongdi Liu*, Yaqi Guo, Ji Wu. Concentration characteristics of bromine and iodine in aerosols in Shanghai, China. *Atmospheric Environment*, 2010, 44(34):4298-4302

43. Jianli Gong, Yongdi Liu*, Xianbo Sun. O₃ and UV/O₃ oxidation of organic constituents of biotreated municipal wastewater. *Water Research*, 2008, 42(4-5):1238-1244