



Profile

Zhengqing CAI is working as associate (research) professor of Department of Environmental Engineering, East China University of Science and Technology, Shanghai, P.R. China starting from 2018. He worked as postdoctoral researcher in Department of Environmental Science and Engineering, Fudan University, Shanghai, P.R. China after obtained his Ph.D degree in Auburn University, the United States in 2016. He has published over 20 papers in international journals and had 1 patent. He has hosted and participated in several National Natural Science Foundations and Postdoctoral Foundations.

Research Field

Water and wastewater treatment

Research results and selected published papers

1. Zhengqing Cai, Xiaodi Hao, Xianbo Sun, Penghui Du, Wen Liu*, Jie Fu*. (2019) "Highly Active WO₃@anatase-SiO₂ Aerogel for Solar-light-driven Phenanthrene Degradation: Mechanism Insight and Toxicity Assessment." *Water Research*, 162: 369-382.
2. Kaiyu Cheng, Zhengqing Cai*, Jie Fu, Xianbo Sun, Weiliang Sun, Long Chen, Dandan Zhang, Wen Liu*. (2019) "Synergistic Adsorption of Cu(II) and Photocatalytic Degradation of Phenanthrene by a Jaboticaba-like TiO₂/titanate Nanotube Composite: An Experimental and Theoretical Study." *Chemical Engineering Journal*. 358: 1155-1165.
3. Zhengqing Cai, Jie Fu, Penghui Du, Xiao Zhao, Xiaodi Hao, Wen Liu*, and Dongye Zhao*. (2018) "Reduction of Nitrobenzene in Aqueous and Soil Phases using Carboxymethyl Cellulose Stabilized Zero-valent Iron Nanoparticles." *Chemical Engineering Journal*. 332: 227-236.
4. Zhengqing Cai, Amarendra Dhar Dwivedi, Wan-Ning Lee, Xiao Zhao, Wen Liu*, Mika Sillanpää, Dongye Zhao, Ching-Hua Huang, and Jie Fu*. (2017) "Application of Nanotechnologies for Removing Pharmaceutically Active Compounds in Water: Development and Future Trends." *Environmental Science: Nano*. 5(1): 27-47.
5. Zhengqing Cai, Youmin Sun, Wen Liu*, Fei Pan, Peizhe Sun, and Jie Fu*. (2017) "An Overview of Nanomaterials Applied for Removing Dyes from Wastewater." *Environmental Science and Pollution Research*. 24(19): 15882-15904.
6. Zhengqing Cai, Wen Liu, Jie Fu, SE O' Reilly, and Dongye Zhao*. (2017) "Effects of Oil Dispersants on the Photodegradation of Parent and Alkylated PAHs." *Environmental Pollution* 229: 272-280.
7. Zhengqing Cai, Xiao Zhao, Ting Wang, Wen Liu*, and Dongye Zhao*. (2017) "Reusable Platinum-Deposited Anatase/Hexa-Titanate Nanotubes: Roles of Reduced and Oxidized Platinum on Enhanced Solar-Light-Driven Photocatalytic Activity." *ACS Sustainable Chemistry & Engineering* 5 (1): 547-555.
8. Zhengqing Cai, Jie Fu, Wen Liu, Kunming Fu, SE O' Reilly, and Dongye Zhao*. (2016) "Effects of Oil Dispersants on Settling of Marine Sediment Particles and Particle-facilitated Distribution and Transport of Oil Components" *Marine Pollution Bulletin* 114(1): 408-418.
9. Zhengqing Cai, Yanyan Gong, Wen Liu, Jie Fu, SE O' Reilly, Xiaodi Hao, and Dongye Zhao*. (2016) "A Surface Tension Based Method for Measuring Oil Dispersant Concentration in Seawater." *Marine Pollution Bulletin* 109(1): 49-54.
10. Xiaodi Hao (Advisor), Zhengqing Cai, Kunming Fu, and Dongye Zhao. (2012) "Distinguishing Activity Decay and Cell Death from Bacterial Decay for Two Types of Methanogens." *Water Research* 46 (4): 1251-1259.
11. Qun Lu (equal contribution), Zhengqing Cai (equal contribution), Jie Fu, Siyi Luo, Chunsheng Liu, Xiaolin Li, and Dongye Zhao. (2014) "Molecular Docking and Molecular Dynamics Studies on the Interactions of Hydroxylated Polybrominated Diphenyl Ethers to Estrogen Receptor Alpha." *Ecotoxicology and Environmental Safety* 101: 83-89.
12. Hongfang Liu (equal contribution), Zhengqing Cai (equal contribution), Xiao Zhao, Dongye Zhao, Tianwei Qian, Michael Bozack, and Mingang Zhang. (2016) "Reductive Removal of Selenate in Water Using Stabilized Zero-Valent Iron Nanoparticles." *Water Environment Research* 88(8): 694-703.
13. Gong Cheng, Jing Lin, Jian Lu, Xi Zhao, Zhengqing Cai*, and Jie Fu*. (2015) "Advanced Treatment of Pesticide-Containing Wastewater Using Fenton Reagent Enhanced by Microwave Electrodeless Ultraviolet." *BioMed Research International* 2015: 1-8.
14. Kejia Zhang, Cong Cao, Xinyan Zhou, Feifei Zheng, Youmin Sun, Zhengqing Cai, Jie Fu. (2018) "Pilot Investigation on Formation of 2,4,6-trichloroanisole via Microbial O-methylation of 2,4,6-trichlorophenol in Drinking Water Distribution System: An Insight into Microbial Mechanism." *Water Research* 131: 11-21.
15. Jie Fu, George Kyzas, Zhengqing Cai, Eleni Deliyanni, Wen Liu, Dongye Zhao. (2018) "Photocatalytic Degradation of Phenanthrene by Graphite Oxide-TiO₂-Sr(OH)₂/SrCO₃ Nanocomposite under Solar Irradiation: Effects of Water Quality Parameters and Predictive Modeling." *Chemical Engineering Journal*. 335(1): 290-300.
16. Xiao Zhao, Penghui Du, Zhengqing Cai, Ting Wang, Jie Fu, Wen Liu. (2018) "Photocatalysis of Bisphenol A by an Easy-settling Titania/titanate Composite: Effects of Water Chemistry Factors, Degradation Pathway and Theoretical Calculation." *Environmental Pollution* 232: 580-590.
17. Fei Pan, Yang Yu, Aihua Xu, Dongsheng Xia, Youmin Sun, Zhengqing Cai, Wen Liu, Jie Fu. (2017) "Application of Magnetic OMS-2 in Sequencing Batch Reactor for Treating Dye Wastewater as a Modulator of Microbial Community." *Journal of Hazardous Materials* 340(15): 36-46.
18. Bing Han, Wen Liu, Xiao Zhao, Zhengqing Cai, Dongye Zhao. (2017) "Transport of Multi-walled Carbon Nanotubes Stabilized by Carboxymethyl Cellulose and Starch in Saturated Porous Media: Influences of Electrolyte, Clay and Humic Acid." *Science of the Total Environment* 599-600: 188-197.
19. Jie Fu, Yanyan Gong, Zhengqing Cai, Dongye Zhao. (2017) "Mechanistic Investigation into Sunlight-facilitated Photodegradation of Pyrene in Seawater with Oil Dispersants." *Marine Pollution Bulletin* 2(30): 751-758.
20. Xiao Zhao, Zhengqing Cai, Ting Wang, SE O' Reilly, Wen Liu, Dongye Zhao. (2016) "A New Type of Cobalt-Deposited Titanate Nanotubes for Enhanced Photocatalytic Degradation of Phenanthrene." *Applied Catalysis B: Environmental* 187(15): 134-143.
21. Xiao Zhao, Wen Liu, Zhengqing Cai, Bing Han, Tianwei Qian, and Dongye Zhao. (2016) "An Overview of Preparation and Applications of Stabilized Zero-valent Iron Nanoparticles for Soil and Groundwater Remediation." *Water Research* 100(1): 245-266.
22. Wen Liu, Zhengqing Cai, Xiao Zhao, Ting Wang, Fan Li, Dongye Zhao. (2016) "High-Capacity and Photo-regenerable Composite Material for Efficient Adsorption and Degradation of Phenanthrene in Water." *Environmental Science & Technology* 50(20): 11174-11183.
23. Xiao Zhao, Wen Liu., Jie Fu, Zhengqing Cai, SE O' Reilly, and Dongye Zhao. (2016) "Dispersion, Sorption and Photodegradation of Petroleum Hydrocarbons in Seawater-sediment Systems." *Marine Pollution Bulletin* 109(5): 526-538.
24. Wen Liu, Xiao Zhao, Zhengqing Cai, Bing Han, and Dongye Zhao. (2016) "Aggregation and Stabilization of Multiwalled Carbon Nanotubes in Aqueous Suspensions: Influence of Carboxymethyl Cellulose, Starch and Humic Acid." *RSC Advances* 6(71): 67260-26270.
25. Jie Fu, Zhengqing Cai, Yanyan Gong, SE O' Reilly, Xiaodi Hao, and Dongye Zhao. (2015) "A New Technique for Determining Critical Micelle Concentrations of Surfactants and Oil Dispersants via UV Absorbance of Pyrene." *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 484: 1-8.
26. Wen Liu, Jiangshui Zhang, Yinjia Jin, Xiao Zhao, and Zhengqing Cai. (2015) "Adsorption of Pb (II), Cd (II) and Zn (II) by Extracellular Polymeric Substances Extracted from Aerobic Granular Sludge: Efficiency of Protein." *Journal of Environmental Chemical Engineering* 3(2): 1223-32.
27. Yanyan Gong, Xiao Zhao, Zhengqing Cai, SE O' Reilly, Xiaodi Hao, and Dongye Zhao. (2014) "A Review of Oil, Dispersed Oil and Sediment Interactions in the Aquatic Environment: Influence on the Fate, Transport and Remediation of Oil Spills." *Marine pollution bulletin* 79 (1): 16-33.