

QIAN, LI

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Education

- ✧ Civil and Environmental Engineering (**expected Ph.D.**), **The George Washington University** **08/2022 - present**
- ✧ Chemical and Environmental Engineering (**expected Ph.D.**), **University of California, Riverside** **09/2021 - 08/2022**
Research Focuses:
The stress response of bacterial pathogens in water by AOPs.
- ✧ Environmental Engineering (**M.S.**), **Nanjing University** **09/2016 - 07/2019**
Research Focuses:
The catalytic degradation of contaminants in aqueous environment with carbon-based materials.
- ✧ Environmental Science (**B.S.**), **Nanjing University** **09/2011 - 07/2015**

Publications

- ✧ Qian, L., Liu, P., Shao, S., Wang, M., Zhan, X., & Gao, S. (2019). An efficient graphene supported copper salen catalyst for the activation of persulfate to remove chlorophenols in aqueous solution. *Chemical Engineering Journal*, 360, 54-63.
- ✧ Gong, Z., Qian, L., Shao, S., Fan, B., Peng, J., Lu, K., & Gao, S. (2022). Effects of solvent composition on the synthesis of polydopamine Schiff base Cu complex to activate peroxymonosulfate for methyl-paraben degradation. *Chemical Engineering Journal*, 436, 135034.
- ✧ Yang, P., Qian, L., Cheng, Y., Ji, Y., Lu, J., & Kong, D. (2021). Formation of nitrophenolic byproducts in soils subjected to sulfate radical oxidation. *Chemical Engineering Journal*, 403, 126316.
- ✧ Shao, S., Qian, L., Zhan, X., Wang, M., Lu, K., Peng, J., . . . Gao, S. (2020). Transformation and toxicity evolution of amlodipine mediated by cobalt ferrite activated peroxymonosulfate: Effect of oxidant concentration. *Chemical Engineering Journal*, 382, 123005.
- ✧ Liu, P., Qian, L., Wang, H., Zhan, X., Lu, K., Gu, C., & Gao, S. (2019). New insights into the aging behavior of microplastics accelerated by advanced oxidation processes. *Environmental Science & Technology*, 53(7), 3579-3588.
- ✧ Wang, M., Shi, Q., Shi, H., Li, J., Yang, Y., Qian, L., . . . Gao, S. (2020). The promotion effect of phenolic acid compound on the photo-removal of estrogen from water under simulated sunlight irradiation. *Chemical Engineering Journal*, 387, 123999.
- ✧ Liu, P., Lu, K., Li, J., Wu, X., Qian, L., Wang, M., & Gao, S. (2020). Effect of aging on adsorption behavior of polystyrene microplastics for pharmaceuticals: Adsorption mechanism and role of aging intermediates. *Journal of Hazardous Materials*, 384, 121193.
- ✧ Miao, D., Peng, J., Zhou, X., Qian, L., Wang, M., Zhai, L., & Gao, S. (2018). Oxidative degradation of atenolol by heat-activated persulfate: kinetics, degradation pathways and distribution of transformation intermediates. *Chemosphere*, 207, 174-182.
- ✧ Wang, M., Li, J., Shi, H., Miao, D., Yang, Y., Qian, L., & Gao, S. (2018). Photolysis of atorvastatin in aquatic environment: influencing factors, products, and pathways. *Chemosphere*, 212, 467-475.

Patent

- ✧ Preparation and Application of A Catalyst to Degrade Chlorophenols [No.: CN 108212217 A | Shixiang Gao, Li Qian, Shuai Shao, June 2018]

Research Experience

- ✧ **Research interest:** Environmental health; Bacterial pathogens; Water treatment; Nano-materials; Catalytic oxidation
- ✧ **Involved Areas :**
 - a. The response of bacterial pathogens in water environment
 - b. The catalytic degradation of contaminants in aqueous environment with carbon-based materials
 - c. Toxicity assessment and investigating the transport and fate of emerging organic pollutants

Period: 09/2016 – 06/2019

- ✧ **State Key Laboratory of Pollution Control and Resource Reuse**, Nanjing University | Supervised by Prof. Shixiang Gao
- ✧ **National Environment Protection Project (No.: 201509053): Study on Pollution Characteristics and Risk Control of**

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Chemical Industrial Wastewater Treatment Sludge

① **Research Leader, Study on the Use of Schiff Base Copper Complexes for Persulfate Activation with Carbon Nanotube as A Carrier** 09/2018 - 02/2019

- **Targets:** to explore the effect of different carrier materials and Schiff base structures on catalytic activity of the dual structure catalyst of this new Nano Schiff base copper complexes

② **Core Researcher, Study on the Transformation and Toxicity Evolution of Amlodipine Mediated by Cobalt Ferrite Activated Peroxymonosulfate** 03/2018 - 12/2018

- **Targets:** To efficiently degrade Amlodipine by using CoFe_2O_4 -activated PMS and study the changes of amlodipine products toxicity during degradation

③ **Core Researcher, Study on the Aging Behavior of Microplastics Accelerated by Advanced Oxidation Processes** 01/2018 - 06/2018

- **Targets:** To simulate and accelerate the aging of microplastics in natural environment with advanced oxidation technologies like thermal activated persulfate and Fenton reaction and then study the adsorption behavior of these microplastics.

④ **Research Leader, An Efficient Graphene Supported Copper Salen Catalyst for the Activation of Persulfate to Remove Chlorophenols in Aqueous Solution** 01/2017 - 12/2017

- **Targets:** Schiff base metal complexes are effective homogeneous catalysts used in oxidation reactions in organic synthesis. However, application of these catalysts in aqueous solution is limited by their effectiveness and stability. Thus, we synthesized novel waterproof Schiff base metal complexes and extended their use in aquatic environment as catalysts for PS activating and pollutant removal.

⑤ **Researcher, Photolysis of Atorvastatin in Aquatic Environment: Influencing Factors, Products and Pathways** 04/2017 - 10/2017

- **Targets:** To study the photolysis of a typical lipid-regulating drug, Atorvastatin (ATV) in natural conditions.

⑥ **Member, Oxidative Degradation of Atenolol by Heat-Activated Persulfate: Kinetics, Degradation Pathways and Distribution of Transformation Intermediates** 10/2016 - 03/2017

- **Targets:** Taking a cardiovascular drug, ATL, as target pollutant to study the degradation of ATL with heat-activated PS

Period: 09/2021 – 08/2022

University of California, Riverside | Supervised by Prof. Yun Shen

① **Research Leader, Study on the response of bacterial pathogens in water environment** 09/2021 - 08/2022

- **Targets:** to explore the response of bacterial pathogens to different AOPs generated in water in both disinfection kinetics and transcriptomics study