



## Jin Zhu

### Project Engineer

02 8071 9874 | [j.zhu@wrl.unsw.edu.au](mailto:j.zhu@wrl.unsw.edu.au)

Dr Jin Zhu is a Project Engineer at the UNSW Water Research Laboratory. She has expertise in drinking water quality, river restoration, green remediation of soil and groundwater.

Jin has 9 years of research and project experience in water engineering, having worked on river remediation, soil and groundwater remediation, and biogenic taste and odour in drinking water supply. Before joining WRL projects team in May 2024, she completed a PhD at the Water Research Centre, School of Civil and Environmental Engineering at UNSW Sydney. Jin's PhD research on biogenic taste and odour was featured by WaterNSW and WSAA. Jin has been closely working with Australian industry collaborators from WaterNSW, Sydney Water and Melbourne Water. She is inspired to solve the real-world water problems by engaging with internal and external collaborators in water sectors.

### Qualifications and awards

PhD in Environmental Engineering, UNSW, 2024  
M.Eng. in Environmental Engineering, East China Normal University, CN, 2018  
B.Eng. in Civil Engineering, Nanjing University of Information Science and Technology, CN, 2015  
AWA Student Water Prize 2024 (An NSW finalist)

### Expertise

- Drinking water quality
- River restoration
- Soil and groundwater remediation
- Historical water quality data analysis

### Professional history

2024-Current: Project Engineer, UNSW WRL  
2024: Senior Project Officer, UNSW  
2020-2021: Research Assistant, Tsinghua University, Beijing, CN  
2019-2020: Environmental consultant, PONY Test International Group, Shanghai, CN  
2018-2019: Research Assistant, Tsinghua, CN

### Summary of relevant experience

#### River, soil and groundwater remediation

2020: Remediation techniques for PFAS contaminated sites  
2019: Modified biochar materials for benzene removal from groundwater  
2018: Review on phytoremediation of contaminated soil  
2018: Controlled release materials for benzene removal from groundwater  
2017: Mesocosm study on river sediment  
2016: River simulation system setup and operation  
2015: Review on biogeochemical cycling of nitrogen and sulphur in aquatic systems

#### Wetland restoration and drinking water quality

2025: Clybucca water quality analysis  
2025: Big Swamp monitoring  
2025: Tomago Wetlands monitoring  
2024: Hexham Swamp sea level rise  
2023: Meta-analysis of odour treatability at full-scale DWTPs  
2022: Diatom culturing and jar testing  
2021: Source-to-tap analysis of odour risks in a large Sydney supply fed by mixed water supplies  
2020: Review on source-to-tap management of biogenic taste and odour in drinking water

## Coastal monitoring and hydraulic engineering

2025: CoastSnap ongoing services  
2024: Somerset Dam Gate physical modelling  
2024: Low-level outlet literature review  
2024: CoastSnap station setup  
2024: CoastSnap shoreline mapping  
2024: Rock sorting for breakwater structures

## Analytical Skills

Characterization of synthesized materials:  
XRD, FTIR, XPS, SEM, EPR  
Detection and characterization of organic compounds:  
GC-FID, GC-MS, ICP-OES, LC-OCD  
Floc size and strength: Mastersizer and Zeta sizer  
Routine water quality: Turbidity, UV, pH and DO meter

## Publications

### Selected journal and conference papers

**Zhu, J., Stuetz, R.M., Hamilton, L., Power, K. and Tamburic, B. 2025. Meta-analysis of biogenic odour management solutions for operational drinking water treatment plants. Journal of Water Process Engineering, 70, 107099.**

**Zhu, J., Stuetz, R.M., Hamilton, L., Power, K. and Tamburic, B. 2023.** Odour management in drinking water systems fed by mixed water supplies. *Journal of Water Process Engineering*, 56, 104329.

**Zhu, J., Stuetz, R.M., Hamilton, L., Power, K., Crosbie, N.D. and Tamburic, B. 2022.** Management of biogenic taste and odour: From source water, through treatment processes and distribution systems, to consumers. *Journal of Environmental Management* 323(116225).

**Zhu, J., Song, Y., Wang, L., Zhang, Z., Gao, J., Tsang, D.C., Ok, Y.S. and Hou, D. 2022.** Green remediation of benzene contaminated groundwater using persulfate activated by biochar composite loaded with iron sulfide minerals. *Chemical Engineering Journal* 429, 132292.

Jin, Y., Wang, L., Song, Y., **Zhu, J.**, Qin, M., Wu, L., Hu, P., Li, F., Fang, L. and Chen, C. **2021.** Integrated life cycle assessment for sustainable remediation of contaminated agricultural soil in China. *Environmental Science & Technology* 55(17), 12032-12042.

Jia, X., Cao, Y., O'Connor, D., **Zhu, J.**, Tsang, D.C., Zou, B. and Hou, D. **2021.** Mapping soil pollution by using drone image recognition and machine learning at an arsenic-contaminated agricultural field. *Environmental Pollution* 270, 116281.

Sheng, H., Weng, R., **Zhu, J.**, He, Y., Cao, C. and Huang, M. **2021.** Calcium nitrate as a bio-stimulant for anaerobic ammonium oxidation process. *Science of the Total Environment* 760, 143331.

Wang, L., Hou, D., Shen, Z., **Zhu, J.**, Jia, X., Ok, Y.S., Tack, F.M. and Rinklebe, J. **2020.** Field trials of phytomining and phytoremediation: A critical review of influencing factors and effects of additives. *Critical Reviews in Environmental Science and Technology* 50(24), 2724-2774.

Jia, H., Hou, D., O'Connor, D., Pan, S., **Zhu, J.**, Bolan, N.S. and Mulder, J. **2020.** Exogenous phosphorus treatment facilitates chelation-mediated cadmium detoxification in perennial ryegrass (*Lolium perenne* L.). *Journal of Hazardous Materials* 389, 121849.

**Zhu, J.**, He, Y., Zhu, Y., Huang, M. and Zhang, Y. **2018.** Biogeochemical sulfur cycling coupling with dissimilatory nitrate reduction processes in freshwater sediments. *Environmental Reviews* 26(2), 121-132.

Wang, J., He, Y., **Zhu, J.**, Guan, H. and Huang, M. **2017.** Screening and optimizing of inhibitors for ammonia-oxidizing bacteria in sediments of malodorous river. *Applied Microbiology and Biotechnology* 101, 6193-6203.

**Zhu, J.**, He, Y., Wang, J., Qiao, Z., Wang, Y., Li, Z. and Huang, M. **2017.** Impact of aeration disturbances on endogenous phosphorus fractions and their algae growth potential from malodorous river sediment. *Environmental Science and Pollution Research* 24, 8062-8070.

## Industry engagement and placement

Nov - Dec 2023 Orchard Hills Water Filtration Plant, on-site jar test and pilot plant operation with Sydney Water

July 2023 Prospect Water Filtration Plant, training with SUEZ and Sydney Water