

# Chen Zhao

Email: [czhaobk@connect.ust.hk](mailto:czhaobk@connect.ust.hk)

Department of Ocean Science, HKUST

## EDUCATION

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<b>Ph.D.</b> , Marine Environmental Science Hong Kong University of Science and Technology, Hong Kong, China	2026
<b>M.S.</b> , Geochemistry Zhejiang University, Hangzhou, China	2022
<b>B.S.</b> , Geology China University of Geosciences, Wuhan, China	2019

## SELECTED PUBLICATIONS

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- (14) **Zhao, C.**, Tian, Z., Zhang, Q., Wang, Y., Zhang, P., Sun, G., Yang, Y., He, D., Tu, S., Wang, J. (2024). Unraveling the distribution of black carbon in Chinese forest soils using machine learning approaches. *Geophysical Research Letters*, 51, e2024GL110618.
- (13) **Zhao, C.**, Wang, K., Jiao, Q., Xu, X., Yi, Y., Li, P., Merder, J., He, D. (2024). Machine learning models for evaluating biological reactivity within molecular fingerprints of dissolved organic matter over time. *Geophysical Research Letters*, 51, e2024GL108794.
- (12) **Zhao, C.**, Hou, Y., Wang, Y., Li, P., He, C., Shi, Q., Yi, Y., He, D. (2023). Unraveling the photochemical reactivity of dissolved organic matter in the Yangtze River Estuary: Integrating incubations with field observations. *Water Research*, 245, 120638.
- (11) **Zhao, C.**, Xu, X., Chen, H., Wang, F., Li, P., He, C., Shi, Q., Yi, Y., Li, X., Li, S., He, D. (2023). Exploring the complexities of dissolved organic matter photochemistry from the molecular level by using machine learning approaches. *Environmental Science & Technology*, 57(46), 17889-17899.
- (10) **Zhao, C.**, Zhou, Y., Wang, Y., Huang, W., He, C., Shi, Q., He, D. (2023). Seasonal variations in dissolved organic matter chemistry in a eutrophic, semi-enclosed bay in Southeastern China: Implications for carbon cycling. *Journal of Hydrology*, 622, 129679.
- (9) **Zhao, C.**, Zhang, H., Li, P., Yi, Y., Zhou, Y., Wang, Y., He, C., Shi, Q., He, D. (2023). Dissolved organic matter cycling revealed from the molecular level in three coastal bays in China. *Science of the total Environment*, 904, 166843.
- (8) Liu, T., Yi, Y., **Zhao, C.**, Zhang, Z., Merder, J., Tanentzap, A. J., Yan, Z., Zhang, F., Feng, H., Yang, C., He, D. (2026). Graph-based understanding of isomeric diversity in complex dissolved organic matter. *Communications Chemistry*, accepted.
- (7) Zhang, Z. X., Sachs, J. P., Chen, Z. L., Yuan, M., Zhang, Z., **Zhao, C.**, Yi, Y., Li, J., He, D. (2026). Exploring biogeochemical processes through untargeted screening of solvent-extracted molecular signatures. *Chemical Geology*, 709, 123361.
- (6) Zhang, Z. X., Sachs, J. P., **Zhao, C.**, Huguet, A., Chen, Z. L., Li, J., He, D. (2026). Development and validation of untargeted screening approaches to determine the source and fate of organic matter in coastal sediments. *Geochimica et Cosmochimica Acta*, 419, 1-14.
- (5) Zhang, Z., Yao, P., Zhao, B., Yi, Y., Chen, Z., **Zhao, C.**, Cai, R., Liang, W., Wang, C., He, D. (2026). Dissolved organic matter in surface sediments along a river-to-ocean continuum: Molecular characteristics and sediment-water exchange dynamics. *Water Research*, 292, 125238.

- (4) Liang, W., Li, P., Pan, Y., Zhang, Z., Yi, Y., Chen, Z., **Zhao, C.**, Cai, R., Zhang, Z., Lønborg, C., Gan, J., He, D. (2025). The role of dissolved organic matter in fuelling coastal hypoxia: identifying key molecules and drivers. *Water Research*, 286, 124210.
- (3) Xiao, X., Cao, Y., **Zhao, C.**, Hu, W., Yang, B., Lu, H., Zhong, G., Luo, C., Zhang, G., Cao, C., Wang, J. (2025). Distinct spatial distributions and drivers of soil black carbon and dissolved black carbon in the Xinfengjiang Watershed, South China. *ACS Earth and Space Chemistry*, 9(5), 1194-1203.
- (2) Zhang, Z. X., **Zhao, C.**, Chen, Z. L., Zhang, Z., Yi, Y., Li, P., He, D. (2024). Optical signatures as a diagnostic tool for tracking dynamics of sedimentary dissolved organic nitrogen, phosphorus, and sulfur in an anthropogenic bay. *Chemical Geology*, 672, 122508.
- (1) Liang, W., Chen, X., **Zhao, C.**, Li, L., He, D. (2023). Seasonal changes of dissolved organic matter chemistry and its linkage with greenhouse gas emissions in saltmarsh surface water and porewater interactions. *Water Research*, 245, 120582.

## SELECTED CONFERENCE PAPERS

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- (6) **Zhao, C.**, He, D. (2025) Unraveling the Organic Matter Cycling in Estuarine Environments using FT-ICR MS/MS: Algorithm Development and Biogeochemical Implications. AGU fall meeting 2025, Oral presentation (New Orleans, USA), Abstract#: 1883740.
- (5) **Zhao, C.**, He, D. (2024) Unraveling the Isomeric Diversity of Dissolved Organic Matter in Marine Environments. AGU fall meeting 2024, Poster (Washington, D. C., USA), Abstract#: 1534094.
- (4) **Zhao, C.**, Wang, K., Jiao, Q., Xu, X., Yi, Y., Li, P., Merder, J., He, D. (2024) Machine Learning Models for Evaluating Biological Reactivity in Dissolved Organic Matter over time: A case study in the Three Gorges Reservoir. China. Goldschmidt 2024, Oral presentation (Chicago, USA), Abstract#: 24121.
- (3) **Zhao, C.**, Hou, Y., Wang, Y., Li, P., He, C., Shi, Q., Yi, Y., He, D. (2023). Unraveling the photochemical reactivity of dissolved organic matter in the Yangtze River Estuary: Integrating incubations with field observations. 9<sup>th</sup> Bio-organicchemistry (BOGC) Seminar, Poster (Shenzhen, China). (*Best Poster Award*)
- (2) **Zhao, C.**, Xu, X., Chen, H., Wang, F., Li, P., He, C., Shi, Q., Yi, Y., Li, X., Li, S., He, D. (2023). Improved understanding of photochemical processing of dissolved organic matter by using machine learning approaches. Goldschmidt 2023, Oral presentation (Lyon, France), Abstract#: 15974.
- (1) **Zhao, C.**, Xu, X., Chen, H., Wang, F., Li, P., He, C., Shi, Q., Yi, Y., Li, X., Li, S., He, D. (2023). Improved understanding of photochemical processing of dissolved organic matter by using machine learning approaches. The sixth Xiamen Symposium on Marine Environmental Sciences, Poster (Xiamen, China). (*Best Poster Award*)

## SELECTED HONORS AND AWARDS

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- **Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship** 2026
- **Lo Family Postgraduate Scholarship at HKUST** 2026
- **Elsevier Research Scholarship** (Two recipients each year worldwide) [news](#) 2025
- **Steven Ying Ph.D. Research Award** (Two recipients each year at HKUST) [news](#) 2025
- **Departmental Postgraduate Research Award** (First Place) [news](#) 2025
- **Hong Kong Ph.D. Fellowship** [details](#) 2022
- **Research Travel Grant at HKUST** 2023, 2024
- **HKUST Redbird Ph.D. Award** 2022, 2023, 2024, 2025