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PERSONAL DATA:

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EDUCATION:

- 1) September 2013-June 2019 Ph.D. Soil Science, College of Resources and Environment, HZAU.
- 2) September 2009-June 2013 B.S. Agricultural Resources and Environment, College of Resources and Environment, HZAU
- 3) February 2013-June 2013 Exchange Student, National Chung Hsing University, Taiwan.

PROFESSIONAL EXPERIENCE:

- 1) 2022-Present: Associate Professor of College of Resources and Environment, HZAU
- 2) 2019-2022 Postdoctoral Fellow of College of Life Sciences & Technology, HZAU
- 3) December 2018-March 2019 Visiting Scholar, Griffith University, Australia
- 4) January 2018-March 2018 Visiting Scholar, University of Leeds, UK

RESEARCH PROJECTS:

1. 2021-2023 The mechanistic and modeling study of soil organic matter adsorption onto different iron oxides. National Natural Science Foundation of China. (PI, RMB 240,000)
2. 2020-2021 Cd Speciation and Transformation in Contaminated Farmland after Bio-organic Fertilizer Application and Water Management. China Postdoctoral Science Foundation. (PI, RMB 80,000)
3. 2020-2021 Postdoctoral Science and Technology Funds Prior Sci-tech Programs. Science and Technology Department of Hubei Province. (PI, RMB 30,000)

PUBLICATIONS:

1. Chen, J., **Qu, C.***, Lu, M., Zhang, M.*, Wu, Y., Gao, C., Huang, Q., Cai, P., 2023. Extracellular polymeric substances and mineral interfacial reactions control the simultaneous immobilization and reduction of arsenic (As(V)). **Journal of Hazardous Materials**, 456, 131651.
2. Hu, X.#, **Qu, C.#**, Shi, H., Cai, P., Chen, W., Huang, Q., 2023. Mineral-organic interactions drive the aging and stabilization of exogenous Pb in soils. **Geoderma**, 437, 116588.
3. **Qu, C.**, Yang, S., Mortimer, M., Zhang, M., Chen, J., Wu, Y., Chen, W., Cai, P.*, Huang, Q., 2022. Functional group diversity for the adsorption of lead(Pb) to bacterial cells and extracellular polymeric substances. **Environmental Pollution**, 295, 118651.
4. 渠晨晨, 蔡鹏*, 史凯祥, 陈雯莉, 陈今朝, 高春辉, 吴一超, 黄巧云*. 2022. 生物大分子与重金属互作研究方法 with 微观机制. 科学通报, 67, 4192-4205. **Qu, C.**, Cai, P.*, Shi, K., Chen, W., Chen, J., Gao, C., Wu, Y., Huang, Q.*, 2022. Methods and mechanisms of the interactions between biomacromolecules and heavy metals (in Chinese). **Science China Bulletin**, 67, 4192–4205
5. **Qu, C.**, Chen, J., Mortimer, M., Wu, Y., Cai, P.*, Huang, Q., 2022. Humic acids restrict the transformation and the stabilization of Cd by iron (hydr)oxides. **Journal of Hazardous Materials**, 128365.
6. 渠晨晨; 任稳燕; 李秀秀; 蔡鹏; 陈雯莉; 黄巧云*, 2022. 重新认识土壤有机质, 科学通报, 67, 913-923. **Qu, C.**, Ren, W., Li, X., Cai, P., Chen, W., Huang, Q.*, 2022. Revisit soil organic matter (In Chinese). **Science China Bulletin**, 2021, 67, 913-923.
7. **Qu, C.**, Fein, J.B., Chen, W.*, Ma, M., Cai, P., Huang, Q.*, 2021. Mechanistic investigation and modeling of Cd immobilization by iron (hydr)oxide-humic acid coprecipitates. **Journal of Hazardous Materials**. 420, 126603.
8. **Qu, C.**, Chen, W., Fein, J.B., Cai, P., Huang, Q.*, 2020. The role of interfacial reactions in controlling the distribution of Cd within goethite-humic acid-bacteria composites. **Journal of Hazardous Materials**. 124081-124081.
9. **Qu, C.**, Chen, W.*, Hu, X., Cai, P., Chen, C., Yu, X.-Y., Huang, Q.*, 2019. Heavy metal behaviour at mineral-organo interfaces: Mechanisms, modelling and influence factors. **Environment International**. 131, 104995-104995.
10. **Qu, C.**, Qian, S., Chen, L., Guan, Y., Zheng, L., Liu, S., Chen, W.*, Cai, P., Huang, Q.*, 2019. Size-Dependent Bacterial Toxicity of Hematite Particles. **Environmental Science & Technology**. 53, 8147-8156.
11. **Qu, C.**, Ma, M., Chen, W.*, Cai, P., Yu, X.-Y., Feng, X., Huang, Q.*, 2018. Modeling of Cd adsorption to goethite-bacteria composites. **Chemosphere**. 193, 943-950.

12. **Qu, C.**, Du, H., Ma, M., Chen, W.*, Cai, P., Huang, Q.*, 2018. Pb sorption on montmorillonite-bacteria composites: A combination study by XAFS, ITC and SCM. **Chemosphere**. 200, 427-436.
13. Du, H.#, **Qu, C.#**, Liu, J., Chen, W.*, Cai, P., Shi, Z., Yu, X.-Y., Huang, Q.*, 2017. Molecular investigation on the binding of Cd(II) by the binary mixtures of montmorillonite with two bacterial species. **Environmental Pollution**. 229, 871-878.
14. **Qu, C.**, Ma, M., Chen, W.*, Cai, P., Huang, Q.*, 2017. Surface complexation modeling of Cu(II) sorption to montmorillonite–bacteria composites. **Science of The Total Environment**. 607, 1408-1418.
15. Sun, P., **Qu, C.**, Xiong, Z., Han, Y., Ma, F., Cai, P., Chen, W., Huang, Q.*, 2023. Organic fertilization integrated with water management to remediate As and Cd contamination in a paddy soil. **Science of the Total Environment**, 886, 163992.
16. Hu, X., **Qu, C.**, Han, Y., Sun, P., Cai, P., Chen, W., Huang, Q.*, 2023. Elevated temperature induces contrasting transformation of exogenous copper to soil solution and solid phases in an arable soil. **Ecotoxicology and Environmental Safety**, 255, 114744.
17. Hu, X., **Qu, C.**, Han, Y., Chen, W., Huang, Q.*, 2022. Elevated temperature altered the binding sequence of Cd with DOM in arable soils. **Chemosphere**, 288: 132572.
18. Han, Y., **Qu, C.**, Hu, X., Wang, P., Wan, D., Cai, P., Rong, X., Chen, W., Huang, Q.*, 2022. Warming and humidification mediated changes of DOM composition in an Alfisol. **Science of The Total Environment**, 805, 150198.
19. Li, X., Huang, J., **Qu, C.**, Chen, W., Chen, C., Cai, P., Huang, Q.*, 2022. Diverse regulations on the accumulation of fungal and bacterial necromass in cropland soils. **Geoderma**, 410, 115675.
20. Wang, W., Zhang, W., Fan, Y., **Qu, C.**, Ren, W., Huang, X., Hong, M., Liu, F., Yin, H.*, 2022. Facet-dependent adsorption of aluminum(III) on hematite nanocrystals and the influence on mineral transformation. **Environmental Science: Nano**, 9(6), 2073-2085.
21. Xu, Z., Liu, X., Peng, J., **Qu, C.**, Chen, Y., Zhang, M., Liang, D., Lei, Ming., Tie, B., Du, H.*, 2022. Tungsten–humic substances complexation. **Carbon Research**, 1(1), 11.
22. Huang, Q., Zhu, J., **Qu, C.**, Wang, Y., Hao, X., Chen, W.*, Cai, P., Huang, Q.*, 2022. Dichotomous Role of Humic Substances in Modulating Transformation of Antibiotic Resistance Genes in Mineral Systems. **Environmental science & technology**, 57(1), 790-800.
23. Jing, X., Wu, Y.*, Wang, D., **Qu, C.**, Liu, J., Gao, C., Mohamed, A., Huang, Q., Cai, P.*, Ashry, N.M., 2022. Ionic Strength-Dependent Attachment of Pseudomonas

- aeruginosa PAO1 on Graphene Oxide Surfaces. **Environmental science & technology**, 56(23), 16707-16715.
24. Zou, M., Wu, Y.*, **Qu, C.**, Wang, D., Liu, J., Huang, Q., Cai, P. 2022. Molecular composition determines the adsorption behaviors of loosely- and tightly-bound extracellular polymeric substances (EPS) from *Shewanella oneidensis* MR-1 on hematite nanoparticles. **Environmental Science: Nano**, 9(12), 4459-4467.
 25. Yang, S., **Qu, C.**, Mukherjee, M., Wu, Y., Huang, Q., Cai, P.*, 2021. Soil phyllosilicate and iron oxide inhibit the quorum sensing of *Chromobacterium violaceum*. **Soil Ecology Letters**. 3, 22-31.
 26. Yang, S., Wu, Y., **Qu, C.**, Fein, J.B., He, Y., Huang, Q., Cai, P.*, 2021. Quantitative analysis of the surficial and adhesion properties of the Gram-negative bacterial species *Comamonas testosteroni* modulated by c-di-GMP. **Colloids and Surfaces B: Biointerfaces**. 198, 111497.
 27. Xiong, J., Zhou, M., **Qu, C.**, Yu, D., Chen, C., Wang, M., Tan, W.*, 2021. Quantitative analysis of Pb adsorption on sulfhydryl-modified biochar. **Biochar**. 3, 37-49.
 28. Zhang, M., Peacock, C. L., Cai, P.*, Xiao, K.-Q., **Qu, C.**, Wu, Y., & Huang, Q., 2021. Selective retention of extracellular polymeric substances induced by adsorption to and coprecipitation with ferrihydrite. **Geochimica et Cosmochimica Acta**, 299: 15-34.
 29. Du, H.*, **Qu, C.**, Ma, M., Lei, M., Tie, B., Liu, X., Wei, X., Yang, Y., 2019. Insights into Pb(II) binding by Fe/Al hydroxide–microbe composite: XAFS spectroscopy and isothermal titration calorimetry study. **Chemical Geology**. 510, 84-90.
 30. Liang, X., Wei, G., Xiong, J., Tan, F., He, H.*, **Qu, C.**, Yin, H., Zhu, J., Zhu, R., Qin, Z., Qin, Z., 2017. Adsorption isotherm, mechanism, and geometry of Pb(II) on magnetites substituted with transition metals. **Chemical Geology**. 470, 132–140.
 31. Li, F., Xie, G., Huang, J., Zhang, R., Li, Y., Zhang, M., Wang, Y., Li, A., Li, X., Xia, Tao., **Qu, C.**, Hu, Fan., Ragauskas, A., Peng, L., 2017. OsCESA9 conserved-site mutation leads to largely enhanced plant lodging resistance and biomass enzymatic saccharification by reducing cellulose DP and crystallinity in rice. **Plant Biotechnology Journal**, 15(9), 1093-1104.