# **Curriculum Vitae (Xiaoming Wang)**



Name: Xiaoming Wang Title: Associate professor, Doctoral supervisor E-mail: wangxm338@mail.hzau.edu.cn

**Research field:** soil chemistry and environment, including soil mineral evolution and element cycle, pollutant interfacial process and green remediation, nutrient speciation transformation and efficient utilization.

My research interests mainly focus on the structural evolution, interfacial behaviors of contaminants and nutrients, and ecological environmental effects of soil minerals, providing scientific basis and technical support for efficient utilization of soil nutrients and soil pollution remediation. I have totally published sixty three paper in the mainstream journals of ES&T, GCA, ES-nano, SSSAJ, and so on, including twenty seven first-author and corresponding paper, which has been cited more than 1,800 times, with an H index of 24 (google scholar). I have charged two NSFC founding and one sub-project of national key research and development program, served as the youth editorial board of two international journals and won the excellent doctoral dissertation award of Hubei province in 2017.

#### **Education and professional experience**

2018.06—present, Associate professor, Huazhong Agricultural University

2015.07—2018.06,	Postdoctoral Research Fellow, Huazhong Agricultural University
2015.08—2016.10,	Postdoctoral Research Fellow, University of Wyoming
2008.09—2015.06,	Ph.D. Soil science, Huazhong Agricultural University
2014.07—2015.06,	Joint Ph.D. Soil science, University of Wyoming
2004.09—2008.06,	B.E. Environmental Engineering, Huazhong Agricultural University

## **Teaching courses**

Undergraduate students: "environmental pollution and soil health"; "air pollution control engineering"; "environmental engineering experiments"; "advances in environmental science" Graduate students: "environmental soil chemistry"; "soil mineralogy"; "environmental interface research methods"

## **Research projects funded**

- 2020.11-2024.1, subproject of National Key Research and Development Program (2020YFC1806803), Characterizations of physicochemical-biological coupling process of pollutants at the interfaces of soil multi-components, ¥620,000
- 2020.01-2023.12, National Natural Science Fundation (No. 41977021), Speciation evolution of heavy metals and phosphorus and the underlying mechanisms in moderately polluted farmland soil, ¥610,000
- 2019.01-2021.12 , Fundamental Research Funds for the Central Universities (No. 2662019QD015), Synthesis, structural characterizations, and surface adsorption-oxidation of transition metals-doped ferric green rust, ¥200,000
- 4) 2017.01-2019.12, National Natural Science Fundation (No. 41601228), Mineralogical properties of schwertmannite and its accumulation mechanisms toward As(V) and Cr(VI) in acid mine drainage system, ¥200,000
- 5) 2016.07-2018.07, China Postdoctoral Science Foundation (No. 2016M590700), Formation and Transformation of Green Rusts and Their Accumulation Mechanisms Toward Various Metal Ions in Soils, ¥80,000

#### Published first-author and corresponding author paper

- Li X., Yang P., Zhao W., Guo F., Jaisi D. P., Mi S., Ma H., Lin B., Feng X., Tan W., <u>Wang X\*.</u> Adsorption mechanisms of glyphosate on ferrihydrite: effects of Al substitution and aggregation state. *Environmental Science & Technology*, 2023, DOI: 10.1021/acs.est.3c04727.
- Zhao W., Gu C., Zhu M., Yan Y., Liu Z., Feng X., <u>Wang X.</u>\* Chemical speciation of phosphorus in farmland soils and soil aggregates around mining areas. *Geoderma*, 2023, 433: 116465.
- <u>Wang X.</u>\*, Li X., Wang L., Bruno L., Zhu M, Ying C., Liang X., Feng X. Effects of Mn or Al incorporation on the structure, composition, and As(III) adsorption of oxidized green rust. *Chemical Geology*, 2022, 611, 121124.
- Ying H., Zhao W., Feng X., Gu C., <u>Wang X.</u>\* The impacts of aging pH and time of acid mine drainage solutions on Fe mineralogy and chemical fractions of heavy metals in the sediments. *Chemosphere*, 2022, 303, 135077.
- 5) Zhao W., Gu C., Ying H., Feng X., Zhu M., Wang M., Tan W., <u>Wang X.</u>\* Fraction distribution of heavy metals and 1 its relationship with iron in polluted farmland soils around distinct mining areas. *Applied Geochemistry*, 2021, 130, 104969
- 6) Ying H., Huang K., Feng X., Yan Y., Zhu M., Wang Z., Huang Q., <u>Wang X.</u>\* As(III) adsorption-oxidation behavior and mechanisms on Cr(VI)-incorporated schwertmannite. *Environmental Science: Nano*, 2021, 7, 2385–2398
- 7) <u>Wang X.</u>\*, Ying H., Zhao W., Feng X., Tan W., Beyer K., Huang Q., Liu F., Zhu M\*. Molecular-scale Understanding of Sulfate Exchange from Schwertmannite by Chromate versus Arsenate. *Environmental Science & Technology*, 2021, 55, 5857–5867
- Ying H., Feng X., Zhu M., Lanson B., Liu F., <u>Wang X.</u>\* Formation and transformation of schwertmannite through direct Fe<sup>3+</sup> hydrolysis under various geochemical conditions. *Environmental Science: Nano*, 2020, 7, 2385-2398
- 9) Shen W. <sup>#</sup>, <u>Wang X.</u><sup>#</sup>, Jia F.\*, Tong Z., Sun H., Wang X., Song F., Ai Z.\*, Zhang L.\*, Chai B. Amorphization Enables Highly Efficient Anaerobic Thiamphenicol Reduction by Zerovalent Iron. *Applied Catalysis B: Environmental*, 2020, 264, 118550. (co first-author)
- 10) <u>Wang X.</u>, Phillips B. L., Boily J., Hu Y., Hu Z., Yang P., Feng X., Xu W., Zhu M\*. Phosphate Sorption Speciation and Precipitation Mechanisms on Amorphous Aluminum

Hydroxide. Soil Systems, 2019, 3, 20

- Wang X., Peng J., Liang X., Zhu M., Lanson B., Wang L., Liang X., Liu F., Tan W., Feng X\*. Effects of Mn<sup>2+</sup>, Ni<sup>2+</sup>, and Cu<sup>2+</sup> on the formation and transformation of hydrosulfate green rust: reaction processes and underlying mechanisms. *ACS Earth and Space Chemistry*, 2019, 3, 519-530
- 12) Lan S.,<sup>#</sup> Wang X.<sup>#</sup> Yang P., Qin Z., Zhu M., Zhang J., Liu F., Tan W., Huang Q., Feng X\*. The Catalytic Effect of AQDS as an Electron Shuttle on Mn(II) Oxidation to Birnessite on Ferrihydrite at Circumneutral pH. *Geochimica et Cosmochimica Acta*, 2019, 247: 175-190. (co first-author)
- 13) <u>Wang X.</u>, Wang Z., Peak D., Tang Y., Feng X., Zhu M\*. Quantification of Coexisting Innerand Outer-sphere Complexation of Sulfate on Hematite Surfaces. *ACS Earth and Space Chemistry*, 2018, 2: 387-398
- 14) <u>Wang X.</u>, Kubicki J. D., Boily J., Waychunas G., Hu Y., Feng X., Zhu M\*. Binding Geometries of Silicate Species on Ferrihydrite Surfaces. *ACS Earth and Space Chemistry*, 2018, 2: 125-134.
- 15) Wang X., Hu Y., Tang Y., Yang P., Feng X., Xu W., Zhu M\*. Phosphate and Phytate Adsorption and Precipitation on Ferrihydrite Surfaces. *Environmental Science: Nano*, 2017, 4: 2193-2204
- 16) <u>Wang X.</u>, Peng J., Xu H., Tan W., Liu F., Huang Q., Feng X.\* Influences and Mechanisms of As(V) Concentration and Environmental Factors on Hydrosulfate Green Rust Transformation. *Acta Chimica Sinica-Chinese Edition*, 2017, 75: 608-616
- 17) <u>Wang X.</u>, Li W., Koopal L. K. Zhu M., Xu W., Liu F., Zhang J., Li Q., Feng X.\* Sparks D. Effects of Crystallite Size on the Structure and Magnetism of Ferrihydrite. *Environmental Science: Nano*, 2016, 3: 190–202
- 18) <u>Wang X.</u>, Lan S., Zhu M., Ginder-vogel M., Yin H., Liu F., Tan W., Feng X.\* The Presence of Ferrihydrite Promotes Abiotic Formation of Manganese (Oxyhydr)oxides. *Soil Science Society of America Journal*, 2015, 79:1297–1305
- 19) Feng X.,\* <u>Wang X.</u>, Zhu M., Koopal L. K., Xu H., Wang Y., Liu F. Effects of Phosphate and Silicate on the Transformation of Hydroxycarbonate Green Rust to Ferric Oxyhydroxides. *Geochimica et Cosmochimica Acta*, 2015, 171: 1–14 (supervisor as first-author)
- 20) Wang X., Zhu M., Lan S., Ginder-vogel M., Liu F., Feng X.\* Formation and Secondary

Mineralization of Ferrihydrite in the Presence of Silicate and Mn(II). *Chemical Geology*, 2015, 415: 37–46

- 21) <u>Wang X.</u>, Gu C., Zhu M.\*, Feng X.\* Sulfate Local Coordination Environment in Schwertmannite. *Environmental Science & Technology*, 2015, 49: 10440–10448
- 22) <u>Wang X.</u>, Li W.,\* Harrington R., Liu F., Parise J. B., Feng X.,\* Sparks D. L. Effect of Ferrihydrite Crystallite Size on Phosphate Adsorption Reactivity. *Environmental Science & Technology*, 2013, 47: 10322-10331
- 23) <u>Wang X.</u>, Liu F., Tan W., Feng X.,\* Koopal L. K. Transformation of Hydroxycarbonate Green Rust into Crystalline Iron (oxyhydr)oxides: Influences of Reaction Conditions and Underlying Mechanisms. *Chemical Geology*, 2013, 351: 57-65
- 24) <u>Wang X.</u>, Liu F., Tan W., Li W., Feng X.,\* Sparks D. L. Characteristics of Phosphate Adsorption-Desorption onto Ferrihydrite: Comparison with Well-Crystalline Fe (Hydr)oxides. *Soil Science*, 2013, 178: 1-11
- 25) <u>Wang X.</u>, Yang K, Sun S., Xu J., Li Y., Liu F., Feng X.\* The structure and composition of ferrihydrite and its environmental geochemical behaviors. *Earth Science Frontiers*, 2011, 18(2): 339-347 (in Chinese)
- 26) <u>Wang X.</u>, Sun S., Liu F., Tan W., Hu H., Feng X.\* The P adsorption-desorption characteristics on ferrihydrite and crystalline Fe oxides suspension. *Geochimica*, 2012, 4: 89-98 (in Chinese)
- 27) <u>Wang X</u>., Ai S., Dong T., Liu F., Tan W., Qiu D., Feng X.\*. Process and Characteristics of oxidation-crystallization of synthetic GR1(CO<sub>3</sub><sup>2-</sup>). *Acta Pedologica Sinica*, 2013, 50: 77-86. (in Chinese)