

## Assistant Professor (Research) Yanfu Wei

Department of Environmental Science and Engineering  
Faculty of Innovation Engineering  
Macau Environmental Research Institute  
Macau University of Science and Technology



PhD Supervisor

E-mail: yfwei@must.edu.mo

Tel.: +853 62057394

### Academic Qualification

Ph.D. in Environmental Science and Engineering, South China University of Technology.

M.S. in Environmental Engineering, Kunming University of Science and Technology.

B.S. in Environmental Engineering, Kunming University of Science and Technology.

### Teaching Area

Environmental Chemistry.

### Research Area

Environmental mineralogy, Eutrophication control, Nanotechnology, Adsorption, Catalysis, Biofuels, Diatom, Carbon sequestration in the ocean

### Working Experience

- (1) Assistant Professor, Macau University of Science and Technology (Jan 2022 -).
- (2) Lecturer, Environmental School, South China Normal University (Sep 2018- Sep 2021).
- (3) Postdoc, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. (Nov 2015- Aug 2018).

### Research Grants

- (1) FDCT, Influence mechanisms of sulfate reduction on the release of iron-bound phosphorus and its speciation transformation in the sediments of the Macao estuary of the Pearl River, 2022.09.01-2025.09.01, PI.
- (2) FDCT, Research on key techniques for bimetal-solid alkali loaded nanotubular halloysite synergistic catalysis for turning waste cooking oil into green diesel without using external hydrogen, 2022.09.01-2026.01.08, PI.
- (3) NSFC, Phosphorus fixation mechanism of phosphorus-containing vivianite formation and its formation control in Dianchi Lake sediments, 2021.01~2024.12, PI.
- (4) NSFC-INSF, Study on the methods and mechanisms of design of nanotubular halloysite-bimetallic nanohybrid materials for high-efficiency catalytic synthesis of furan-based biofuels, 2022.01-2024.12, PI of sub-project 3.
- (5) NSFC, Interlayer DOM characteristics, microstructural variation and intercalation mechanisms of clay minerals in lake sediments, 2017.01~2019.12, PI.

## Representative publications (Complete publication refer to my webpage)

- (1) **Wei Yanfu\***, Yuan Peng\*, Zhou Junming, Liu Jing, Losic Dusan, Wu Honghai, Bu Hongling, Tan Xinjie, Li Zheng. Direct Atomic-Scale Insight into the Precipitation Formation at the Lanthanum Hydroxide Nanoparticle/Solution Interface. *The Journal of Physical Chemistry Letters*, 2023, 14: 3995-4003. (Nature Index Journal)
- (2) Bu Honglin, **Wei Yanfu**, Liu Chengshua, Liu Dong, Tan Daoyong & Liu Hongmei, Effects of illite smectite clay minerals on the thermal evolution of aliphatic organic matter-clay complexes: a study with thermogravimetry coupled with Fourier transform infrared spectroscopy (TG-FTIR). *Journal of Thermal Analysis and Calorimetry*, 2023 148, 741-752. (Co-first author)
- (3) Wei Yanfu \*, Yuan Peng\*, Liu Dong, Liu Mingxian, Dusan Losic, Ma Xiaomin, Jiang Ran, Wu Nanchun, Yang Fang, Zhang Junxiong. Converting chrysotile nanotubes into magnesium oxide and hydroxide using lanthanum oxycarbonate hybridization and alkaline treatment for efficient phosphate adsorption, *Inorganic Chemistry*, 2022, 61(37), 14684-14694. (Nature Index Journal)
- (4) Zhong Xue Min, Yuan Peng\*, **Wei Yanfu\***, Liu Dong, Losic Dusan, Li Mengyuan, Coupling Natural Halloysite Nanotubes and Bimetallic Pt-Au Alloy Nanoparticles for Highly Efficient and Selective Oxidation of 5-Hydroxymethylfurfural to 2,5-Furandicarboxylic Acid. *ACS Applied Materials & Interfaces*, 2022, 14, 3, 3949-3960. (JCR Q1)
- (5) **Wei Yanfu\***, Guo Kexin, Wu Honghai\*, Yuan Peng, Liu Dong, Du Peixin, Chen Pengcheng, Wei Longmeng, Chen Wei. Highly regenerative and efficient adsorption of phosphate by restructuring natural palygorskite clay via alkaline activation and co-calcination. *Chemical Communications*, 2021, 57(13):1639-1642. (Nature Index Journal)
- (6) Lu Pengcheng, Wu Honghai\*, Liang Changjin, **Wei Yanfu\***, Song Zhenhao, New design for titanium-pillared montmorillonite composites as efficient heterogeneous catalysts to enhance Fe (II) reductivity for 2-nitrophenol removal. *Applied Clay Science*, 2021, 205, 106052. (JCR Q1)
- (7) **Wei Yanfu\*** Liang Xujun, Wu Honghai, Cen Jiemin, Ji Yangmei, Efficient phosphate removal by dendrite-like halloysite-zinc oxide nanocomposites prepared via noncovalent hybridization. *Applied Clay Science*, 2021, 213, 106232. (JCR Q1)
- (8) Wei Longmeng, Bu Hongling, **Wei Yanfu\***, Wang Gehui, Chen Pengcheng, Li Hongmei, Fractionation of natural algal organic matter and its preservation on the surfaces of clay minerals. *Applied Clay Science*, 2021, 213, 106235. (JCR Q1)
- (9) **Wei Yanfu\***, Song Zhenhao, Wu Honghai\*, Titanium-pillared montmorillonite composite as an efficient catalyst for 2-nitrophenol reductive transformation by Fe(II): The effects of aqueous chemistry and mechanistic insights. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2021, 627, 127243.
- (10) Chen Pengcheng, **Wei Yanfu\***, Wei Longmeng, Wu Honghai, Bu Hongling, Wang Gehui, Wang Shihan. Quantitative assessments of organic matter uncoupling from clay surfaces in presence of salinity, *Applied Clay Science*, 2020, 188: 105532. (JCR Q1)
- (11) **Wei Yanfu**, Yuan Peng\*, Liu Dong, Losic Dusan, Tan Daoyong, Chen Fanrong, Liu Hongchang, Zhou Junming, Du Peixin, Song Yaran. Activation of natural halloysite nanotubes by introducing lanthanum oxycarbonate nanoparticles via co-calcination for outstanding phosphate removal, *Chemical Communications*, 2019, 55(14): 2110-2113. (Nature Index Journal)
- (12) **Wei Yanfu**, Yuan Peng\*, Song Yaran, Liu Dong, Losic Dusan, Tan Daoyong, Chen Fanrong, Liu Hongchang, Du Peixin, Zhou Junming. Activating 2D nano-kaolinite using hybrid nanoparticles for enhanced phosphate capture, *Chemical Communications*, 2018, 54(82): 11649-11652. (Nature Index Journal)
- (13) **Wei Yanfu**, Liang Xujun, Guo Chuling\*, Dang Zhi\*, Competitive partitioning of phenanthrene in carbon nanomaterials and anionic and nonionic micelles. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2018, 553: 612-617.
- (14) **Wei Yanfu**, Liang Xujun, Lin Weijia, Guo Chuling\*, Dang Zhi\*. Clay mineral dependent desorption of pyrene from soils by single and mixed anionic nonionic surfactants, *Chemical Engineering Journal*, 2015, 264:807-814. (JCR Q1)
- (15) **Wei Yanfu**, Liang Xujun, Tong Le, Guo Chuling, Dang Zhi, Enhanced solubilization and desorption of pyrene from soils by saline anionic nonionic surfactant systems. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2015, 468:211-218.
- (16) Huang Xiaofeng, Zhou Tao, Qin Yangsong, Gao Kunyang, **Wei Yanfu\***. Synthesis of tetrakis (hydroxymethyl) phosphonium chloride by high-concentration phosphine in industrial off-gas, *Water Science and Technology*, 2013, 68(2):342-347.
- (17) Mai Zitian, **Wei Yanfu\***, Progress of metal oxides and their hydroxides in removing phosphorus from water. *Guangzhou Chemical Industry*, 2021, 14(49):20-21. (In Chinese)
- (18) **Wei Yanfu**, Huang Xiaofeng, Tan Juan, Wang Xiaoni, Gao Kunyang, Zhou Tao, Qin Yangsong, Research progress of phosphine in industrial waste gas. *Materials Reports*, 2011, (S2):415-417+428. (In Chinese)
- (19) Zhao Ning, Ma Qiyi, **Wei Yanfu**, Wang Shun, Zhong Xuemin, Zhuang Guanzheng, Yuan Peng,  $\text{Co}_3\text{O}_4$

- anchored on sepiolite surface grooves for superior adsorption of tetracycline from wastewater. *Separation and Purification Technology*, 2023, 124367.
- (20) Zhao Ning, Ma Qiyi, Zhang Baifa, **Wei Yanfu**, Liu Dong, Li Mengyuan, Li Haoyu, Yuan Peng, Intensive adsorption of tetracycline by cobalt oxide quantum dots-loaded mineral carbon, *Bioresource Technology*. 2023: 129373.
  - (21) Zhong Xuemin, **Wei Yanfu**, Sadjadi Samahe, Liu Dong, Li Mengyuan, Yu Ting, Zhuang Guanzheng Yuan Peng Base-free oxidation of 5-hydroxymethylfurfural to 2, 5-furandicarboxylic acid over palygorskite-supported bimetallic Pt Pd catalyst. *Applied Clay Science*, 2022, 226, 106574.
  - (22) Liu Hongchang, Yuan Peng, Liu Dong Zhang Weiwei, Tian Qian, Bu Hongling, **Wei Yanfu**, Xia Jinlan, Wang Yinchu, Zhou Junming. Insight into cyanobacterial preservation in shallow marine environments from experimental simulation of cyanobacteria-clay co-aggregation. *Chemical Geology*, 2021, 577, 120285.
  - (23) Shi Jingchun, Li Xiang, Hemi Luan, **Wei Yanfu**, Helong Ren, Pengcheng Chen\*, The health concern of polychlorinated biphenyls (PCBs) in a notorious e-waste recycling site. *Ecotoxicology and Environmental Safety*, 2019, 186, 109817.
  - (24) Song Yaran, Yuan Peng \*, **Wei Yanfu**, Liu Dong, Tian Qian, Zhou Junming, Du Peixin, Deng Liangliang, Chen Fanrong, Wu Honghai, Constructing Hierarchically Porous Nestlike Al<sub>2</sub>O<sub>3</sub> MnO<sub>2</sub>@Diatomite Composite with High Specific Surface Area for Efficient Phosphate Removal. *Industrial & Engineering Chemistry Research*, 2019, 58(51), 23166 23174.
  - (25) Song Yaran, Yuan Peng\*, Du Peixin, Deng Liangliang, **Wei Yanfu**, Liu Dong, Zhong Xuemin, Zhou Junming, A novel halloysite CeOx nanohybrid for efficient arsenic removal. *Applied Clay Science*, 2020, 186, 105450.
  - (26) Deng Liangliang, Yuan Peng \*, Liu Dong, Du Peixin, Zhou Junming, **Wei Yanfu**, Yaran Song, Yaqi Liu, Effect of calcination and acid treatment on improving benzene adsorption performance of halloysite. *Applied Clay Science*, 2019, 181, 105240.
  - (27) Liang Xujun, Guo Chuling, Liu Shasha, Dang Zhi, **Wei Yanfu**, Yi Xiaoyun, Stéphane Abele\*. Cosolubilization of phenanthrene and pyrene in surfactant micelles: Experimental and atomistic simulations studies. *Journal of Molecular Liquids*, 2018, 263, 1 9.
  - (28) Tong Le, Liu Weiting, Lin Weijia, Guo Chuling\*, Yang Jing, **Wei Yanfu**, Xie Yingying, Shasha Liu, Zhi Dang\*. Biosurfactant rhamnolipid enhanced modification of corn stalk and its application for sorption of phenanthrene, *Water Science & Technology*, 2017, 76(5), 1167 1176.
  - (29) Weijia Lin, Guo Chuling\*, Hui Zhang, Xujun Liang, **Wei Yanfu**, Guining Lu, Zhi Dang, Electrokinetic-Enhanced Remediation of Phenanthrene-Contaminated Soil Combined with *Sphingomonas* sp GY2B and Biosurfactant. *Applied Biochemistry and Biotechnology*, 2016, 178(7), 1325 1338.
  - (30) Xujun Liang, Guo Chuling\*, **Wei Yanfu**, Weijia Lin, Xiaoyun Yi, Guining Lu, Zhi Dang\*, Cosolubilization synergism occurrence in codesorption of PAH mixtures during surfactant-enhanced remediation of contaminated soil. *Chemosphere*, 2016, 144, 583 590.

## Conference

- (1) Structural activation of clay minerals and their synergistic mechanism for the removal and recovery of phosphate from wastewater, China Materials Conference 2022-2023, Session: Resource Materials and Recycling, Shenzhen, 2023.7.7-10. Oral Presentations.
- (2) Structural activation of clay minerals and their efficient adsorption mechanism for phosphorus, the 18th Annual Meeting of Society of Chinese Mineralogy, Petrology and Geochemistry, Session: Processes at mineral interface and efficient utilization of mineral resources, Hefei, 2023.4.17-20. Oral Presentations.
- (3) Quantitative assessments of organic matter uncoupling from clay surfaces in presence of salinity, AIPEA XVII international clay conference, Session: Interaction between clay minerals and organic carbon: from natural clay-carbon compound to hybrid materials, 25 29 JULY 2022, Turkey, online. Poster.
- (4) Mechanistic study on the activation of typical 1:1 type clay mineral by lanthanide-based nanoparticles for phosphate adsorption in water, 2019 Users' Annual Academic Conference and Expert Meeting of Beijing Synchrotron Radiation Facility, Session: Diffraction, Scattering and Medium Energy Spectroscopy Society, Dongguan, 2019.8.14-16. Oral Presentations.
- (5) Phenanthrene distribution between carbon nanomaterials and an aqueous phase in the presence of surfactant, The 3rd Asian Clay Conference, Session: Clay and Environment, Guangzhou, 2016.11.18-20. Oral Presentations.
- (6) Yuan Peng, Wei Yanfu, Liu Dong, Liu Hongchang, Zhou Junming, Du Peixin, Song Yaran, Activation of Halloysite and Kaolinite by Introducing Lanthanum Oxycarbonate Nanoparticles via Co-calcination for Efficient Phosphate Removal, 2019 Euroclay Conference, Paris, 5 July 2019.
- (7) Yuan Peng, Wei Yanfu, Liu Dong, Liu Hongchang, Du Peixin, Zhou Junming, Co-calcination activation of structured aluminum in halloysite and kaolinite for adsorption reactions, The 17th Annual Meeting of the Chinese Society of Mineral and Rock Geochemistry, Hangzhou, China, 2019.4.19-22.

2022- Young council member of the Mineral Materials Committee of the Silicate Society, China

2022- Member of the expert committee of the Postgraduate Ideas Competition for Carbon Peaking and Carbon Neutrality in China.

2022- Editorial Board Member, Applied Clay Science (A JCR Q1 journal, top journal in mineralogy)

2022- Early Career Board Member, Reviews of Environmental Contamination and Toxicology (1962-, A JCR Q1 journal)

2022- Editorial board member of *Green and Sustainable Chemistry - Frontiers*.



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