GAO HUAN

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EDUCATION

Xi'an University of Architecture and Technology *September 2019 - June 2024*
Phd in Environmental Science and Engineering
School of Environmental and Municipal Engineering

Northwest University *September 2014 - June 2017*
Master in Environmental Science and Engineering
College of Urban and Environmental Sciences

Xi'an Polytechnic University *September 2010 - June 2014*
Bachelor in Environmental Science and Engineering
School of Environmental and Chemical Engineering

RESEARCH INTEREST

- Bioremediation of organic pollutants
- Adsorption of organic pollutants by ecological materials

PUBLICATION

- **Gao, H**, et al. Cell toxic damages during polycyclic aromatic hydrocarbons biodegradation by Pseudomonas aeruginosa G24. Journal of Water Process Engineering, 2023(54): 103992. **Q1**, Link.
- **Gao H.**, et al. Unraveling the Positive Effect of Soil Moisture on the Bioaugmentation of Petroleum - Contaminated Soil Using Bioinformatics. Microbial Ecology, 2023(86): 2436–2446. **Q1**, Link.
- **Gao H., et al**. Effect of petroleum hydrocarbon pollution levels on the soil microecosystem and ecological function. Environmental Pollution, 2022(293): 118511. **Q1**, Link.
- **Gao H., et al**.The positive effects of rhizosphere exudates on the polycyclic aromatic hydrocarbons (PAHs) in aged petroleum-contaminated soil by bioaugmentation: degradation performance, cellular ultrastructure and microbial activity . Chemical Engineering Journal, **Q1**, submitted.
- Liu, H., **Gao H**., et al. Distribution Characteristics of Bacterial Communities and Hydrocarbon Degradation Dynamics During the Remediation of Petroleum-Contaminated Soil by Enhancing Moisture Content. Microbial Ecology, 2020(80):202-211. **Q1**, Link.
- Wu, M.L., Liu, Z.L., **Gao H**., et al. Assessment of bioremediation potential of petroleum-contaminated soils from the shanbei oilfield of China revealed by qPCR and high throughput sequencing. Chemosphere, 2022(308):136446. **Q1**, Link.
- Liu, H., Wu, M.L., **Gao H**., et al. Hydrocarbon transformation pathways and soil organic carbon stability in the biostimulation of oil-contaminated soil: Implications of 13C natural abundance. Science of the Total Environment,2021(788):147580. **Q1**, Link.
- Zhang, X.H., Wu, M.L., Ting Zhang., **Gao H**., et al. Effects of biochar immobilization of Serratia sp. F4 OR414381 on bioremediation of petroleum contamination and bacterial community composition in loess soil . Journal of Hazardous Materials ,2024(470):134137. **Q1**, Link.

RESEARCH OR WORK EXPERIENCE

Xi'an University of Architecture and Technology, Xi'an *2022 - 2024*
Principal participant *the National Natural Science Foundation of China*

· Mechanism of exogenous nitrogen transformation and strengthening principle of petroleum hydrocarbon biodegradation in soil system

Xi'an University of Architecture and Technology, Xi'an *2019 - 2021*
Principal participant *the National Natural Science Foundation of China*

· Study on residual mechanism and removal method of petroleum hydrocarbon in situ remediation of petroleum contaminated soil by microorganisms

Institute of Earth Environment, Chinese Academy of Sciences, Xi'an *2017 - 2018*
Research assistant

· Research on aerosols, sediments, global climate and environmental change, with a particular focus on the relationship between black carbon and climate change

Northwest University, Xi'an *2014 - 2016*
Participant *the National Natural Science Foundation of China*

· The characteristics of sludge population of enhanced biological phosphorus removal processes (EBPR) in MBR will be identified by molecular biological methods, and then on-line control theories to optimise microbial population of EBPR will be proposed.

Northwest University, Xi'an *2014 - 2016*

· Study on removal and mechanism of pollutants in water environment by ecosorbent materials.

RESEARCH SKILLS

- **Experimental**:
  - Microbial analysis: metagenomic, metabolomics, flow cytometry, RT- PCR;
  - Characterization analysis: electron microscopy, TEM, Zeta potential, FTIR, EEM;
  - Organic Matter Analysis: GC-MS, GC-FID, Elemental Analyzer, Organic Carbon Analyzer.
- **Software**: R Language, Origin, NCBI, Adobe illustrator, LaTex, GraphPad Prism, chemDraw, etc.
- **Others**: Experience in Fund application.

SUPERVISE THESIS

Xuhong Duan *Fall 2022 - Winter 2022*

· Project — Enzyme activity and carbon and nitrogen conversion genes in petroleum polluted soil

Kexin Li *Spring 2021 - Fall 2021*

· Project — Detection of active PAHs degrading bacteria based on flow cytometry

Wuening Wang *Fall 2020 - Spring 2021*

· Projec — The diversity and key functional genes of microbial communities in oil-contaminated sites

AWARDS

- **Provincial second prize**
  Shaanxi Provincial Environmental Protection Science and Technology Award in 2024

- **University-level second-class scholarship**
  By Ministry of Xi'an University of Architecture and Technology in 2022
- **Excellent Communist Party Member of Xi'an University of Architecture and Technology**
  By Ministry of Xi'an University of Architecture and Technology in 2022