

Lixiang Zhou

Professor of Environmental Engineering

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Education:

- Ph.D., Nanjing Agricultural University; Waste Management, 1995
- MSc, Nanjing Agricultural University, Waste Management, 1990
- B.A., Hunan Agricultural University; Soil Science and Plant Nutrition, 1985

Research interests and expertise:

- Disposal and reutilization of organic solid wastes such as sewage sludge, restaurant food waste, and animal waste.
- Sludge bioleaching for heavy metal removal and advanced dewatering and bioleached sludge composting in commercial scale.
- Purification of organic wastewater of high concentration of COD, NH₃-N, and SS by the combined biological and chemical approaches. These wastewaters include anaerobically digested livestock slurry and refuse leachate.
- Treatment of acid mine drainage (AMD) and recovery of valuable metal from AMD by biomineralization.
- The role of biogenic Fe-base minerals in advanced oxidation process of organic pollutant and in the removal of As in groundwater.
- Soil contamination and remediation

Current projects:

- NSFC 21637003, The principal of treating toxic metal-containing acidic mine drainage by biomineralization, 2017-2021, RMB 3470,000
- NKRDPC 2018YFD0800702, The treatment and control of lead and cadmium in AMD and soil around the mine in Southern China, 2018-2020, RMB 540,000

Current teaching:

- Treatment and Disposal of Solid Wastes MB 301 (Autumn term)
- Seminar on Environmental Engineering TB B223 (Autumn term)

Selected publications:

- Guanyu Zheng, Zhenyu Wang, Dianzhan Wang, Lixiang Zhou*. Enhancement of sludge dewaterability by sequential inoculation of filamentous fungus *Mucor circinelloides* ZG-3 and *Acidithiobacillus ferrooxidans* LX5. *Chemical Engineering Journal*, 2016,284:216-223
- Weitong Hu, Guanyu Zheng, Di Fang, Chunhong Cui, Jianru Liang, Lixiang Zhou*. Bioleached sludge composting drastically reducing ammonia volatilization as well as decreasing bulking agent dosage and improving compost quality: A case study. *Waste Management*, 2015,44:55-62
- Huo Mingbo, Zheng Guanyu, Zhou Lixiang*. Enhancement of the dewaterability of sludge during bioleaching mainly controlled by microbial quantity change and the decrease of slime extracellular polymeric substances content. *Bioresource Technology*, 2014,168:190-197
- Yuehua Liao, Lixiang Zhou*, Shuangyou Bai, Jianru Liang, Shimei Wang. Occurrence of biogenic schwertmannite in sludge bioleaching environments and its adverse effect on solubilization of sludge-borne metals. *Applied Geochemistry*, 2009 , 24 : 1739-1746
- Guanyu Zheng, Lixiang Zhou*, Shimei Wang. An acid-tolerant heterotrophic microorganism role in improving tannery sludge bioleaching conducted in successive multi-batch reaction systems. *Environmental Science and Technology*, 2009, 43(11): 4151–4156

Prizes, awards, honors:

- 2017, First prize of Science and Technology Invention Award of Ministry of Education, China
- 2012, Second prize of Science and Technology Award of Ministry of Ecology and Environment, China