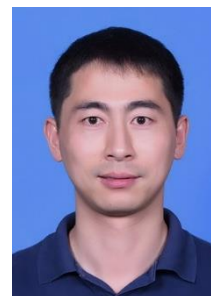


Dr Mengxia Xu



Personal Details

Assistant Professor in Environmental Engineering, Department of Chemical and Environmental Engineering

Qualifications

PhD in Energy and Environmental Engineering, Zhejiang University
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Biography

Dr. Xu's career path follows a series of "Zhou", which means "State" in English. He was born in Mingzhou (the ancient name for Ningbo), gained his BAG in Guangzhou and received his PhD in Hangzhou. His dissertation initiated the systematic environmental impact study of dioxin emissions from the municipal solid waste incinerator in Mainland China. Upon graduation, he entered a government sponsored institute in Mingzhou. As the PI, he established a cost-effective technique for monitoring atmospheric persistent organic pollutants. Later, he took on a postdoc position at Louisiana State University for more than two years, where he extended his expertise from environmental chemistry to energy & fuels. He returned to his hometown in 2016 and joined the UNNC as the Assistant Professor in Environmental Engineering. So far, he has over 10 publications in international journals with a Google Scholar total citation of over 200. As the PI, he has attracted a cumulative RMB 1 million grant from multiple funding agencies, including the National Natural Science Foundation of China. In addition, he holds two invention patents and is the reviewer of a few prestigious international journals, such as *Environmental Science & Technology*, *Journal of Hazardous Materials* and *Journal of Chromatography A*.

Teaching

- Separation Processes Fundamentals (H81SPF)
- Separation Processes 1 (H82SP1)
- Process Engineering Laboratories (H83PEL)
- Advanced Transport Phenomena (H83TPH)

Research Interests

- Environmental fate of toxic combustion by-products (CBPs), e.g., persistent organic pollutants (POPs), environmentally persistent free radicals (EPFRs)
- Development of environmental catalysts/adsorbents for the simultaneous removal of multi-pollutants (Hg⁰, NO_x, SO_x, and CO₂)
- Reaction kinetics of pyrolysis of lignocellulosic biomass for liquid fuels

Major Research Grants

- [1] The design and controllable synthesis of coal-fired flue gas Hg⁰ and SO_x transfer catalyst and its mechanism study. National Natural Science Foundation of China, Reference: 51706114, 2018 – 2020, RMB 240 K. **Co-I**.
- [2] Pyrolysis of Lignin for Bio-Oil Under CO₂ Laser Irradiation in the "Wall-Less" Reactor. National Science Foundation, Reference: 1330311, 2013 – 2016, \$ 353 K. **Co-I**.
- [3] Study on the Novel Technique and its Application for Monitoring Atmospheric Persistent Organic Pollutants based on the PM Analyzer Filter of the Air Quality Monitoring Station and Gas-Particle Partitioning Model. National Natural Science Foundation of China, Reference: 21207072, 2013 – 2015, RMB 240 K. **PI**.
- [4] Development of Novel Atmospheric PCDD/F Sampling Techniques and their Application in the Investigation of Atmospheric PCDD/Fs in the Typical Areas of Ningbo City. Ningbo Science & Technology Bureau of China, Reference: 2011C50019, 2011-2012, RMB 150 K. **PI**.

Selected Publications

- [1] **XU, M.X.**, KHACHATRYAN, L., KIBET, J., Lomnicki, S., 2017. [Lumped kinetic modeling of isothermal degradation of lignin under conventional pyrolytic and oxidative conditions](#): JOURNAL OF ANALYTICAL AND APPLIED PYROLYSIS. 127, 377-384.
- [2] **XU, M.X.**, KHACHATRYAN, L., BAEV, A., ASATRYAN, R., 2016. [Radicals from the gas-phase pyrolysis of lignin model compounds : p-coumaryl alcohol](#): RSC ADVANCES, 6, 62399-62405.
- [3] **XU, M.X.**, YAN, J.H., LU, S.Y., LI, X.D., CHEN, T., NI, M.J., DAI, H.F., WANG, F., CEN, K.F., 2009. [Concentrations, profiles and sources of atmospheric PCDD/Fs near a municipal solid waste incinerator in Eastern China](#): ENVIRONMENTAL SCIENCE & TECHNOLOGY. 43, 1023-1029.
- [4] **XU, M.X.**, YAN, J.H., LU, S.Y., LI, X.D., CHEN, T., NI, M.J., DAI, H.F., WANG, F., CEN, K.F., 2009. [Agricultural soil monitoring of PCDD/Fs in the vicinity of a solid waste incinerator in Eastern China: Temporal variations and possible sources](#): JOURNAL OF HAZARDOUS MATERIALS. 166, 628-634.
- [5] **XU, M.X.**, YAN, J.H., LU, S.Y., LI, X.D., CHEN, T., NI, M.J., DAI, H.F., WANG, F., CEN, K.F., 2009. [Gas/particle partitioning of atmospheric PCDD/Fs in a satellite town in Eastern China](#): CHEMOSPHERE. 76, 1540-1549.
- [6] **XU, M.X.**, YAN, J.H., LU, S.Y., LI, X.D., CHEN, T., NI, M.J., DAI, H.F., CEN, K.F., 2008. [Application of the ISCST3 model for predicting PCDD/F concentrations in agricultural soil in the vicinity of a MSWI plant in China](#): JOURNAL OF ZHEJIANG UNIVERSITY SCIENCE A. 9, 373-380.

Full list of publications: RESEARCHERID ([G-4403-2010](#))

Patents

- [1] **XU, M.X.**, XU, N.B., FAN, Y.G., YANG, B.J., LI, S.J., ZHU, L.B., XU, G.J., YU, J., WANG, W.F., XU, D.D. A Monitoring Method for Atmospheric Particle-bound POPs based on a Continuous Ambient Particulate Monitor. China Patent No. ZL201310656971.7.
- [2] XU, N.B., ZHU, L.B., LI, S.J., YANG, B.J., **XU, M.X.** A Simultaneous Pretreatment Method for Purification of Multiple Classes of POPs in the Environmental Media. China Patent No. ZL201310742398.1.