姚兰 博士

2007.09–2011.06，陕西师范大学，环境科学，理学学士

2011.09 –2016.06，山东大学，环境科学，工学博士

2012.10 – 2012.12，日本熊本大学，短期交流

2015.08 – 2016.02，香港理工大学，研究助理

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工作经历

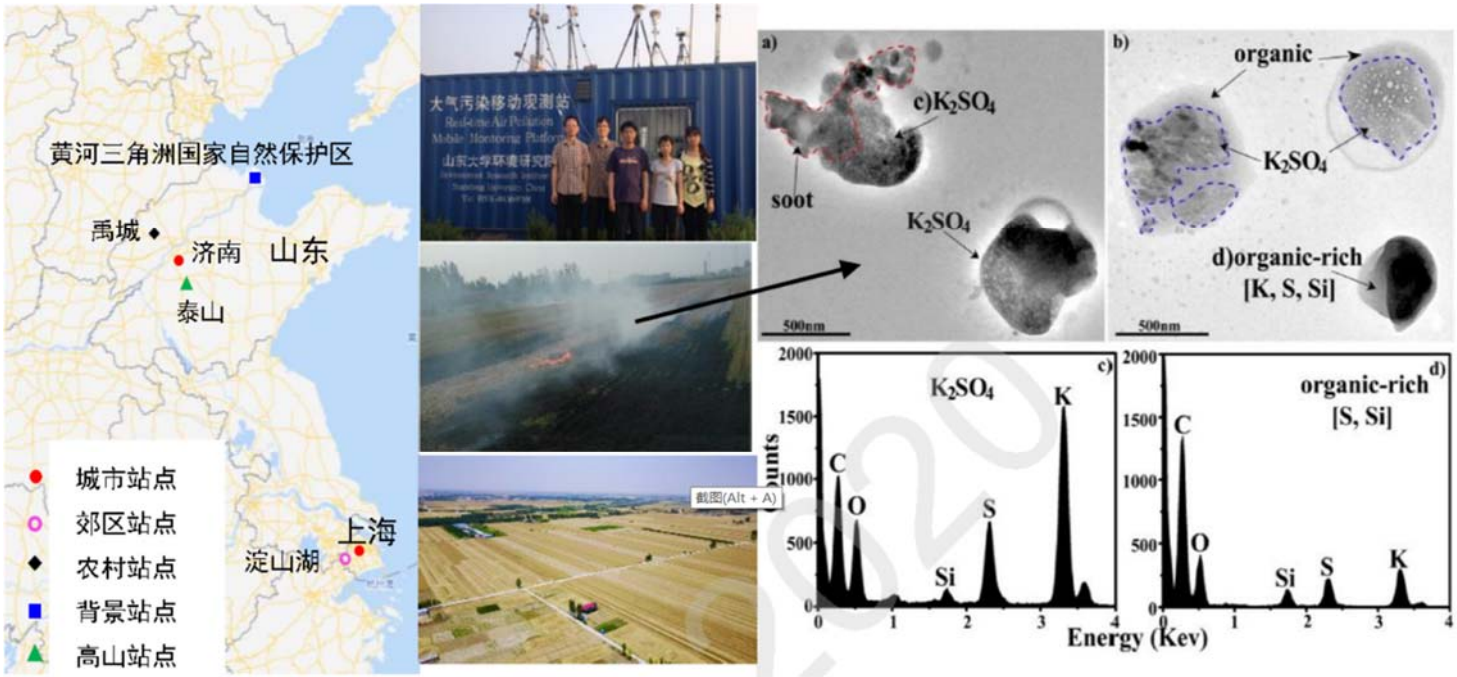
2016.07-2019.09，复旦大学　环境科学与工程系，博士后，合作导师：陈建民教授

2019.10-至今,上海师范大学，环境与地理科学学院，讲师

研究方向

本人从事大气污染化学相关研究，主要通过外场观测对我国典型污染地区华北地区和长三角地区城市、农村、高山背景站等不同类型地区大气污染特征进行了较为深入的研究，具体研究内容包括：

- 大气细颗粒物的污染特征、化学组成和来源解析
- 雾霾的生成机制和健康效应
- 黑碳气溶胶的理化特性、混合状态及其光吸收增强效应



科研活动

科研项目：

国家自然科学基金，青年项目，42005089，上海不同来源黑碳气溶胶的理化特性和混合状态对其光吸收增强效应的影响，2021/01-2023/12，24 万，主持

上海师范大学一般科研项目，SK202012，长三角一体化示范区碳质气溶胶污染特征、来源及区域传输的影响，2020/01-2021/12，5 万，主持

上海市大气颗粒物污染防治重点实验室开放项目，FDLAP20007，长三角典型地区气溶胶单颗粒在大气传输过程中的老化机制，2020/11-2022/10，3 万，主持

国家自然科学基金委员会，重点项目，91743202，长三角代表性城市大气细颗粒样品的采集及其表征与解析，2018/01-2021/12，320 万元，参加

国家自然科学基金委员会，重点项目，91744205，重污染天气细颗粒物表/界多相反应与老化机制，2018/01-2021/12，309 万元，参加

国家自然科学基金委员会，面上项目，21777025，海洋表面二次有机气溶胶光化学形成机制研究，2018/01-2021/12，65 万元， 参加

国家自然科学基金委员会，面上项目，41575116，大气背景点灰霾单颗粒的混合状态与吸湿性研究，2016/01-2019/12，80 万元，参加

国家自然科学基金委员会，青年项目，21507070，实验室模拟大气中羰基化合物与硫酸铵/胺液相反应形成 SOA 的研究， 2016/01-2018/12，20 万元，参加

国家自然科学基金委员会，青年项目，21307074，山东地区大气 PM2.5 和 PM1.0 化学组成、混合状态及光学特性研究，2014/01-2016/12，24 万元，参加

国际学术会议报告：

1. MAIRS Open Science Conference 2014：Future Earth in Asia, 7-10 April, 2014, Beijing, China.

2. The 13th international conference on Atmospheric Sciences and Application to Air Quality (ASAAQ13)，11-13 November 2015, Kobe, Japan.

3. AOGS2017 - 14th Annual Meeting of the Asia Oceania Geosciences Society. 06–11 August 2017，Singapore.

4. Third Sino-European School on Atmospheric Chemistry, SESAC 3, 21– 30 November, 2017 Shanghai, China.

论文发表

以第一作者或通讯作者发表 SCI 文章情况：

1. **Lan Yao***, Juntao Huo, Dongfang Wang, Qingyan Fu*, Wenwen Sun, Qing Li, Jianmin Chen. Online measurement of carbonaceous aerosols in suburban Shanghai during winter over a three-year period: Temporal variations, meteorological effects, and sources. **Atmospheric Environment (SCI 二区 TOP)**, 2020, 226, 117408.

2. **Lan Yao**, Bixin Zhan, Aiyong Xian, Wenwen Sun, Qing Li, Jianmin Chen*. Contribution of transregional transport to particle pollution and health effects in Shanghai during 2013–2017. **Science of the Total Environment (SCI 二区 TOP)**, 2019, 677: 564-570.

3. **Lan Yao**, Dongfang Wang, Qingyan Fu*, Liping Qiao, Hongli Wang, Li Li, Wenwen Sun, Qing Li, Lin Wang, Xin Yang, Zhuohui Zhao, Haidong Kan, Aiyong Xian, Gehui Wang, Hang Xiao, Jianmin Chen*. The effects of firework regulation on air quality and public health during the Chinese Spring Festival from 2013 to 2017 in a Chinese megacity. **Environment International** (**SCI** 一区 TOP), 2019, 126: 96–106.

4. Ting Han, **Lan Yao***, Li Liu, Aiyong Xian, Hui Chen, Wenbo Dong, Jianmin Chen*. Baosteel emission control significantly benefited air quality in Shanghai. **Journal of Environmental Sciences (SCI 二区)**, 2018, 71, 127–135.

5. **Lan Yao**, Lingxiao Yang*, Qi Yuan, Chao Yan, Can Dong, Chuanping Meng, Xiao Sui, Fei Yang, Yaling Lu, Wenxing Wang. Sources apportionment of $PM_{2.5}$ in a background site in the North China Plain. **Science of the Total Environment (SCI 二区 TOP)**, 2016, 541: 590-598. **(ESI 高被引论文)**

6. **Lan Yao**, Lingxiao Yang*, Jianmin Chen, Xinfeng Wang, Likun Xue, Weijun Li, Xiao Sui, Liang Wen, Jianwei Chi, Yanhong Zhu, Junmei Zhang, Caihong Xu, Tong Zhu, Xinfeng Wang. Characteristics of carbonaceous aerosols: impact of biomass burning and secondary formation in summertime in a rural area of the North China Plain. **Science of the Total Environment (SCI 二区 TOP)**, 2016, 557–558: 520–530.

7. **Lan Yao**, Lingxiao Yang*, Jianmin Chen, Kei Toda, Xinfeng Wang, Junmei Zhang, Dai Yamasaki, Yukihide Nakamura, Xiao Sui, Longfei Zheng, Liang Wen, Caihong Xu, Wenxing Wang. Levels, indoor–outdoor relationships and exposure risks of airborne particle-associated perchlorate and chlorate in two urban areas in Eastern Asia. **Chemosphere** (**SCI 二区 TOP**), 2015, 135: 31-37.

以共同作者发表 SCI 情况：

1. Wei, Yaqi; Chen, Hui*; Sun, Hao; Zhang, Fei; Shang, Xiaona, **Yao, Lan,** Zheng, Hongguo; Li, Qing; Chen, Jianmin*. Nocturnal PM2.5 explosive growth dominates severe haze in the rural North China Plain. Atmospheric Research, 2020, 242: 0-UNSP 105020.

2. Sun, Hao; Chen, Hui*, **Yao, Lan,** Chen, Jiping; Zhu, Zhonghong; Wei, Yaqi; Ding, Xiang; Chen, Jianmin*.

Sources and health risks of $PM_{2.5}$-bound polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs) in a North China rural area. Journal of Environmental Sciences, 2020, 95: 240-247.

3. Wu, Di; Ding, Xiang; Li, Qing*; Sun, Jianfeng; Huang, Cheng, **Yao, Lan,** Wang, Xinming; Ye, Xingnan; Chen, Yingjun; He, Hong; Chen, Jianmin*. Pollutants emitted from typical Chinese vessels: Potential contributions to ozone and secondary organic aerosols. Journal of Cleaner Production, 2019, 238: 0-UNSP 117862.

4. Sun, Wenwen; Wang, Dongfang, **Yao, Lan,** Fu, Hongbo; Fu, Qingyan; Wang, Hongli; Li, Qing; Wang, Lin; Yang, Xin; Xian, Aiyong; Wang, Gehui; Xiao, Hang; Chen, Jianmin*. Chemistry-triggered events of PM2.5 explosive growth during late autumn and winter in Shanghai, China. Environmental Pollution, 2019, 254: 0-UNSP 112864.

5. Zong, Ruihan; Yang, Xue*; Wen, Liang; Xu, Caihong; Zhu, Yanhong; Chen, Tianshu; **Yao, Lan,** Wang, Liwei; Zhang, Junmei; Yang, Lingxiao; Wang, Xinfeng; Shao, Min; Zhu, Tong; Xue, Likun*; Wang, Wenxing. Strong ozone production at a rural site in the North China Plain: Mixed effects of urban plumes and biogenic emissions. Journal of Environmental Sciences, 2018, 71: 261-270.

6. Liwei, Wang; Xinfeng, Wang; Rongrong, Gu; Hao, Wang; **Lan, Yao;** Liang, Wen; Fanping, Zhu; Weihao, Wang; Likun, Xue; Lingxiao, Yang; Keding, Lu; Jianmin, Chen; Tao, Wang; Yuanghang, Zhang; Wenxing, Wang. Observations of fine particulate nitrated phenols in four sites in northern China: concentrations, source apportionment, and secondary formation. Atmospheric Chemistry and Physics, 2018, 18(6): 4349-4359.

7. Yang Xue; Xue Likun*; **Yao, Lan**; Li Qinyi; Wen Liang; Zhu Yanhong; Chen Tianshu; Wang Xinfeng; Yang Lingxiao; Wang Tao; Lee Shuncheng; Chen Jianmin; Wang Wenxing. Carbonyl compounds at Mount Tai in the North China Plain: Characteristics, sources, and effects on ozone formation. Atmospheric Research, 2017, 196: 53-61.

8. Zhu, Yanhong; Yang, Lingxiao*; Chen, Jianmin; Wang, Xinfeng; Xue, Likun; Sui, Xiao; Wen, Liang; Xu, Caihong; **Yao, Lan**; Zhang, Junmei; Shao, Min; Lu, Sihua; Wang, Wenxing. Characteristics of ambient volatile organic compounds and the influence of biomass burning at a rural site in Northern China during summer 2013. Atmospheric Environment, 2016, 124: 156-165.

9. Sui Xiao; Yang Ling Xiao*; Yi Haiying; Yuan Qi; Yan Chao; Dong Can; Meng Chuan Ping; **Yao, Lan**; Yang Fei; Wang Wen Xing. Influence of Seasonal Variation and Long-Range Transport of Carbonaceous Aerosols on Haze Formation at a Seaside Background Site, China. Aerosol and Air Quality Research, 2015, 15(4): 1251-1260.

10. Zhu Yanhong; Yang Lingxiao*; Meng Chuanping; Yuan Qi; Yan Chao; Dong Can; Sui Xiao; **Yao, Lan**; Yang Fei; Lu Yaling; Wang Wenxing. Indoor/outdoor relationships and diurnal/nocturnal variations in water-soluble ion and PAH concentrations in the atmospheric PM2.5 of a business office area in Jinan, a heavily

polluted city in China. Atmospheric Research, 2015, 153: 276-285.

11. Wang Liwei; Wen Liang; Xu Caihong; Chen Jianmin; Wang Xinfeng*; Yang Lingxiao; Wang Wenxing; Yang Xue; Sui Xiao; **Yao, Lan**; Zhang Qingzhu. HONO and its potential source particulate nitrite at an urban site in North China during the cold season. Science of the Total Environment, 2015, 538: 93-101.
12. Lu YaLing; Chi JianWei; **Yao, Lan**; Yang LingXiao; Li WeiJun*; Wang ZiFa; Wang WenXing. Composition and mixing state of water soluble inorganic ions during hazy days in a background region of North China. Science China Earth Sciences, 2015, 58(11): 2026-2033.
13. Wen, Liang; Chen, Jianmin; Yang, Lingxiao*; Wang, Xinfeng; Xu, Caihong; Sui, Xiao; **Yao, Lan;** Zhu, Yanhong; Zhang, Junmei; Zhu, Tong; Wang, Wenxing. Enhanced formation of fine particulate nitrate at a rural site on the North China Plain in summer: The important roles of ammonia and ozone. Atmospheric Environment, 2015, 101: 294-302.
14. Wang, Xinfeng; Chen, Jianmin*; Sun, Jianfeng; Li, Weijun; Yang, Lingxiao; Wen, Liang; Wang, Wenxing; Wang, Xinming; Collett, Jeffrey L., Jr.; Shi, Yang; Zhang, Qingzhu; Hu, Jingtian; **Yao, Lan**; Zhu, Yanhong; Sui, Xiao; Sun, Xiaomin; Mellouki, Abdelwahid. Severe haze episodes and seriously polluted fog water in Ji'nan, China. Science of the Total Environment, 2014, 493: 133-137.
15. Zhang Junmei; Chen Jianmin; Yang Lingxiao; Sui Xiao; **Yao, Lan**; Zheng Longfei*; Wen Liang; Xu Caihong; Wang Wenxing. Indoor PM2.5 and its chemical composition during a heavy haze-fog episode at Jinan, China. Atmospheric Environment, 2014, 99: 641-649.
16. Zhu Yanhong; Yang Lingxiao*; Yuan Qi; Yan Chao; Dong Can; Meng Chuanping; Sui Xiao; **Yao, Lan;** Yang Fei; Lu Yaling; Wang Wenxing. Airborne particulate polycyclic aromatic hydrocarbon (PAH) pollution in a background site in the North China Plain: Concentration, size distribution, toxicity and sources. Science of the Total Environment, 2014, 466: 357-368.
17. 穆珍珍; 赵景波; 徐娜; **姚兰;** 李雨霞; 孟静静西安市雁塔区冬季可吸入颗粒物时空变化研究.环境科学学报, 2011, (07): 1509-1516.

个人主页

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