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Deputy Director, State Key Joint Laboratory of Environment Simulation and Pollution Control
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Education

2008	Ph.D.	Energy, Environmental & Chemical Engineering	Washington University in St. Louis
		Advisor: Prof. Pratim Biswas	
2004	M.S.	Environmental Science and Engineering	Tsinghua University
		Advisor: Prof. Jiming Hao	
2002	B.S.	Environmental Science and Engineering	Tsinghua University
		(with honor)	

Professional Experience

2020-2023	Vice Dean, School of Environment	Tsinghua University
2017- present	Professor	Tsinghua University
2010 - 2016	Associate Professor	Tsinghua University
2008 - 2010	Postdoctoral Research Associate	University of Minnesota
	Advisor: Prof. Peter McMurry	

Summary of Research Activities

Aerosol formation in atmospheric environment and combustion systems; Air quality management; Aerosol instrumentation; Metagenomics of airborne microorganism; Aerosol nanotoxicology

Selected Awards and Honors

ES&T Letters Excellence in Review Award, 2020
Faculty Teaching Award, Tsinghua University, 2016, 2017, 2018, 2019
Smoluchowski Award, Gesellschaft für Aerosolforschung, 2018
Asian Young Aerosol Scientist Award, Asian Aerosol Research Assembly, 2015
Doctoral Dissertation Award, Air and Waste Management Association, 2009

Selected Journal and Society services

Editorial Board, Results in Engineering, 2021-present
Editorial Board, Environmental Science & Technology Letters, 2020-present
Editorial Board, Environmental Research, 2019-present
Editor, Aerosol Science & Technology, 2016-present

Fissan-Pui-TSI Award Committee, International Aerosol Research Assembly, 2018
Technical Program Committee, 2018 International Aerosol Conference
Guest Editor, Atmospheric Chemistry and Physics, 2017-2020
Editorial Board, Journal of Aerosol Science, 2016-2019

Teaching at Tsinghua

Theory and Practice: Air, course for undergraduate student, 2021-present
Air Quality Management, course for undergraduate student, 2013-present
Aerosol Mechanics, course for graduate student, 2011-present
Aerosol Measurement, course for graduate student, 2012-2016

Peer-reviewed Journal Publications

1. Zhang, Y.; Li, D.; He, X. C.; Nie, W.; Deng, C.; Cai, R.; Liu, Y.; Guo, Y.; Liu, C.; Li, Y.; Chen, L.; Li, Y.; Hua, C.; Liu, T.; Wang, Z.; Xie, J.; Wang, L.; Petäjä, T.; Bianchi, F.; Qi, X.; Chi, X.; Paasonen, P.; Liu, Y.; Yan, C.; **Jiang, J.**; Ding, A.; Kulmala, M., Iodine oxoacids and their roles in sub-3nm particle growth in polluted urban environments. *Atmos. Chem. Phys.*, 2024. **24** (3): 1873-1893.
2. Li, Z.; Zhao, B.; Yin, D.; Wang, S.; Qiao, X.; **Jiang, J.**; Li, Y.; Shen, J.; He, Y.; Chang, X.; Li, X.; Liu, Y.; Li, Y.; Liu, C.; Qi, X.; Chen, L.; Chi, X.; Jiang, Y.; Li, Y.; Wu, J.; Nie, W.; Ding, A., Modeling the Formation of Organic Compounds across Full Volatility Ranges and Their Contribution to Nanoparticle Growth in a Polluted Atmosphere. *Environmental Science & Technology*, 2024. **58** (2): 1223-1235.
3. Yin, R.; Li, X.; Yan, C.; Cai, R.; Zhou, Y.; Kangasluoma, J.; Sarnela, N.; Lampilahti, J.; Petäjä, T.; Kerminen, V. M.; Bianchi, F.; Kulmala, M.; **Jiang*, J.**, Revealing the sources and sinks of negative cluster ions in an urban environment through quantitative analysis. *Atmos. Chem. Phys.*, 2023. **23** (9): 5279-5296.
4. Zhang, C.; Hai, S.; Gao, Y.; Wang, Y.; Zhang, S.; Sheng, L.; Zhao, B.; Wang, S.; **Jiang, J.**; Huang, X.; Shen, X.; Sun, J.; Lupascu, A.; Shrivastava, M.; Fast, J. D.; Cheng, W.; Guo, X.; Chu, M.; Ma, N.; Hong, J.; Wang, Q.; Yao, X.; Gao, H., Substantially positive contributions of new particle formation to cloud condensation nuclei under low supersaturation in China based on numerical model improvements. *Atmos. Chem. Phys.*, 2023. **23**(18): 10713-10730.
5. Yan, C.; Tham, Y. J.; Nie, W.; Xia, M.; Wang, H.; Guo, Y.; Ma, W.; Zhan, J.; Hua, C.; Li, Y.; Deng, C.; Li, Y.; Zheng, F.; Chen, X.; Li, Q.; Zhang, G.; Mahajan, A. S.; Cuevas, C. A.; Huang, D. D.; Wang, Z.; Sun, Y.; Saiz-Lopez, A.; Bianchi, F.; Kerminen, V.-M.; Worsnop, D. R.; Donahue, N. M.; **Jiang, J.**; Liu, Y.; Ding, A.; Kulmala, M., Increasing contribution of nighttime nitrogen chemistry to wintertime haze f, Y.; Yaion in Beijing observed during COVID 19 lockdowns. *Nature Geoscience* ,2023. **16** (11): 975-981.
6. Xiang, S.; Zhang, S.; Yu, Y. T.; Wang, H.; Shen, Y.; Zhang, Q.; Wang, Z.; Wang, D.; Tian, M.; Wang, J.; Yin, H.; **Jiang, J.**; Wu, Y., Evaluation of the Relationship between Meteorological Variables and NOx Emission Factors Based on Plume-Chasing Measurements. *ACS ES&T Engineering*, 2023. **3** (3): 417-426.
7. Wu, D.; Zheng, H.; Li, Q.; Wang, S.; Zhao, B.; Jin, L.; Lyu, R.; Li, S.; Liu, Y.; Chen, X.; Zhang, F.; Wu, Q.; Liu, T.; **Jiang, J.**; Wang, L.; Li, X.; Chen, J.; Hao, J., Achieving health-

- oriented air pollution control requires integrating unequal toxicities of industrial particles. *Nature Communications*, 2023. **14**(1): 6491.
8. William, J. L.; Wenwen, L.; Xiaozhou, H.; Peipei, L.; Qihui, W.; Zhiqiang, W.; Yun, T.; Shuhui, S.; Gary, W.; Jian, L.; **Jingkun, J.**; Qiang, W.; Mingkun, L.; Juncai, M.; Xiaozhong, P.; Yixue, L.; Baoxu, H.; Yigang, T.; Jun, H.; Guizhen, W., Back to Science in Searching for SARS-CoV-2 Origins. *China CDC Weekly*, 2023. **5**,(14): 315-317.
 9. Wang, Y.; Ma, Y.; Yan, C.; Yao, L.; Cai, R.; Li, S.; Lin, Z.; Zhao, X.; Yin, R.; Deng, C.; Kangasluoma, J.; He, X.-C.; Hakala, S.; Fan, X.; Chen, S.; Ma, Q.; Kerminen, V.-M.; Petäjä, T.; Xin, J.; Wang, L.; Liu, B.; Wang, W.; Ge, M.; **Jiang, J.**; Liu, Y.; Bianchi, F.; Chu, B.; Donahue, N. M.; Martin, S. T.; He, H.; Kulmala, M., Sulfur Dioxide Transported From the Residual Layer Drives Atmospheric Nucleation During Haze Periods in Beijing. *Geophysical Research Letters*, 2023. **50** (6): e2022GL100514.
 10. Wang, J.; Wang, J.; Cai, R.; Liu, C.; **Jiang, J.**; Nie, W.; Wang, J.; Moteki, N.; Zaveri, R. A.; Huang, X.; Ma, N.; Chen, G.; Wang, Z.; Jin, Y.; Cai, J.; Zhang, Y.; Chi, X.; Holanda, B. A.; Xing, J.; Liu, T.; Qi, X.; Wang, Q.; Pöhlker, C.; Su, H.; Cheng, Y.; Wang, S.; Hao, J.; Andreae, M. O.; Ding, A., Unified theoretical framework for black carbon mixing state allows greater accuracy of climate effect estimation. *Nature Communications*, 2023. **14**(1): 2703.
 11. Qiao, X.; Li, X.; Yan, C.; Sarnela, N.; Yin, R.; Guo, Y.; Yao, L.; Nie, W.; Huang, D.; Wang, Z.; Bianchi, F.; Liu, Y.; Donahue, N. M.; Kulmala, M.; **Jiang*, J.**, Precursor apportionment of atmospheric oxygenated organic molecules using a machine learning method. *Environmental Science: Atmospheres*, 2023. **3** (1): 230-237.
 12. Peng, C.; Deng, C.; Lei, T.; Zheng, J.; Zhao, J.; Wang, D.; Wu, Z.; Wang, L.; Chen, Y.; Liu, M.; **Jiang, J.**; Ye, A.; Ge, M.; Wang, W., Measurement of atmospheric nanoparticles: Bridging the gap between gas-phase molecules and larger particles. *Journal of Environmental Sciences*, 2023. **123**: 183-202.
 13. Liu, H.; Wu, L.; Liu, B.; Xu, K.; Lei, W.; Deng, J.; Rong, X.; Du, P.; Wang, L.; Wang, D.; Zhang, X.; Su, C.; Bi, Y.; Chen, H.; Liu, W. J.; Qi, J.; Cui, Q.; Qi, S.; Fan*, R.; **Jiang*, J.**; Wu*, G.; Gao*, G. F.; Wang*, Q., Two pan-SARS-CoV-2 nanobodies and their multivalent derivatives effectively prevent Omicron infections in mice. *Cell Reports Medicine*, 2023. **4** (2): 100918.
 14. Lin, Y.; He, X.; Lei, W.; Jia, Z.; Liu, J.; Huang, C.; **Jiang, J.**; Wang, Q.; Li, F.; Ma, W.; Liu, M.; Gao, G. F.; Wu, G.; Liu, J., Cold-chain-based epidemiology: Scientific evidence and logic in introduction and transmission of SARS-CoV-2. *Global Transitions*, 2023. **5**: 170-181.
 15. Liang, C.; Wang, S.; Hu, R.; Huang, G.; Xie, J.; Zhao, B.; Li, Y.; Zhu, W.; Guo, S.; **Jiang, J.**; Hao, J., Molecular tracers, mass spectral tracers and oxidation of organic aerosols emitted from cooking and fossil fuel burning sources. *Sci Total Environ.*, 2023. **868**: 161635.
 16. Li*, Z.; Tian, E.; Wang, S.; Ye, M.; Li, S.; Wang, Z.; Ma, Z.; Jiang, G.; Tang, C.; Liu, K.; **Jiang*, J.**, Single-atom catalysts: promoters of highly sensitive and selective sensors. *Chemical Society Reviews*, 2023. **52** (15): 5088-5134.
 17. Li, Y.; Shen, J.; Zhao*, B.; Cai, R.; Wang, S.; Gao, Y.; Shrivastava, M.; Gao, D.; Zheng, J.; Kulmala, M.; **Jiang*, J.**, A dynamic parameterization of sulfuric acid dimethylamine nucleation and its application in three-dimensional modeling. *Atmos. Chem. Phys.*, 2023. **23** (15): 8789-8804.

18. Li, Y.; Hao, J.; **Jiang*, J.**, Improving the performance of portable aerosol size spectrometers for building dense monitoring networks. *Environmental Science: Atmospheres*, 2023. **3**(2): 338-346.
19. Li, X.; Chen, Y.; Li, Y.; Cai, R.; Li, Y.; Deng, C.; Wu, J.; Yan, C.; Cheng, H.; Liu, Y.; Kulmala, M.; Hao, J.; Smith*, J. N.; **Jiang*, J.**, Seasonal variations in composition and sources of atmospheric ultrafine particles in urban Beijing based on near-continuous measurements. *Atmos. Chem. Phys.*, 2023. **23** (23): 14801-14812.
20. Li, X.; Cai, R.; Hao, J.; Smith*, J. N.; **Jiang*, J.**, Online detection of airborne nanoparticle composition with mass spectrometry: Recent advances, challenges, and opportunities. *TrAC Trends in Analytical Chemistry*, 2023. **166**: 117195.
21. Li, C.; Zhao, Y.; Li, Z.; Liu, L.; Zhang, X.; Zheng, J.; Kerminen, V.-M.; Kulmala, M.; **Jiang, J.**; Cai, R.; Xiao, H., The dependence of new particle formation rates on the interaction between cluster growth, evaporation, and condensation sink. *Environmental Science: Atmospheres*, 2023. **3** (1): 168-181.
22. Li, C.; Li, Y.; Li, X.; Cai, R.; Fan, Y.; Qiao, X.; Yin, R.; Yan, C.; Guo, Y.; Liu, Y.; Zheng, J.; Kerminen, V. M.; Kulmala, M.; Xiao*, H.; **Jiang*, J.**, Comprehensive simulations of new particle formation events in Beijing with a cluster dynamics multicomponent sectional model. *Atmos. Chem. Phys.*, 2023. **23** (12): 6879-6896.
23. Ji, J. S.; Xia, Y.; Liu, L.; Zhou, W.; Chen, R.; Dong, G.; Hu, Q.; **Jiang, J.**; Kan, H.; Li, T.; Li, Y.; Liu, Q.; Liu, Y.; Long, Y.; Lv, Y.; Ma, J.; Ma, Y.; Pelin, K.; Shi, X.; Tong, S.; Xie, Y.; Xu, health initiatives for climate change adaptation. *The Lancet Regional Health - Western Pacific*, 2023. **40**: 100965.
24. Guo, Y.; Deng, C.; Ovaska, A.; Zheng, F.; Hua, C.; Zhan, J.; Li, Y.; Wu, J.; Wang, Z.; Xie, J.; Zhang, Y.; Liu, T.; Zhang, Y.; Song, B.; Ma, W.; Liu, Y.; Yan, C.; **Jiang, J.**; Kerminen, V. M.; Xia, M.; Nieminen, T.; Du, W.; Kokkonen, T.; Kulmala, M., Measurement report: The 4-year variability and influence of the Winter Olympics and other special events on air quality in urban Beijing during wintertime. *Atmos. Chem. Phys.*, 2023. **23**(12): 6663-6690.
25. Deng, J.; Wang, S.; Zhang, J.; Zhang, Y.; **Jiang, J.**; Gu, Y.; Han, T.; Feng, L.; Gao, J.; Duan, L., Suggestion on further strengthening ultra-low emission standards for PM emission from coal-fired power plants in China. *Journal of Environmental Sciences*, 2023. **123**: 203-211.
26. Chen, Y.; Deng, C.; Lei, T.; Li, J.; Lian, C.; Li, Y.; Zheng, J.; Zhao, J.; Wang, D.; Wu, Z.; Wang, L.; Li, L.; Li, H.; Gao, J.; **Jiang, J.**; Ge, M.; Wang, W., Size-dependent chemical composition of atmospheric nanoparticles in urban Beijing during springtime. *Atmospheric Environment*, 2023. **310**

29. Yang, D.; Zhu, S.; Ma, Y.; Zhou, L.; Zheng, F.; Wang, L.; **Jiang, J.**; Zheng, J., Emissions of Ammonia and Other Nitrogen-Containing Volatile Organic Compounds from Motor Vehicles under Low-Speed Driving Conditions. *Environmental Science & Technology*, 2022. **56** (9): 5440-5447.
30. Yan, C.; Shen, Y.; Stolzenburg, D.; Dada, L.; Qi, X.; Hakala, S.; Sundström, A. M.; Guo, Y.; Lipponen, A.; Kokkonen, T. V.; Kontkanen, J.; Cai, R.; Cai, J.; Chan, T.; Chen, L.; Chu, B.; Deng, C.; Du, W.; Fan, X.; He, X. C.; Kangasluoma, J.; Kujansuu, J.; Kurppa, M.; Li, C.; Li, Y.; Lin, Z.; Liu, Y.; Liu, Y.; Lu, Y.; Nie, W.; Pulliainen, J.; Qiao, X.; Wang, Y.; Wen, Y.; Wu, Y.; Yang, G.; Yao, L.; Yin, R.; Zhang, G.; Zhang, S.; Zheng, F.; Zhou, Y.; Arola, A.; Tamminen, J.; Paasonen, P.; Sun, Y.; Wang, L.; Donahue, N. M.; Liu, Y.; Bianchi, F.; Daellenbach, K. R.; Worsnop, D. R.; Kerminen, V. M.; Petäjä, T.; Ding*, A.; **Jiang*, J.**; Kulmala*, M., The effect of COVID-19 restrictions on atmospheric new particle formation in Beijing. *Atmos. Chem. Phys.*, 2022. **22** (18): 12207-12220.
31. Wang, J.; Xing, J.; Wang, S.; Mathur, R.; Wang, J.; Zhang, Y.; Liu, C.; Pleim, J.; Ding, D.; Chang, X.; **Jiang, J.**; Zhao, P.; Sahu, S. K.; Jin, Y.; Wong, D. C.; Hao, J., The pathway of impacts of aerosol direct effects on secondary inorganic aerosol formation. *Atmos. Chem. Phys.*, 2022. **22** (8): 5147-5156.
32. Tuovinen, S.; Cai, R.; Kerminen, V. M.; **Jiang, J.**; Yan, C.; Kulmala, M.; Kontkanen, J., Survival probabilities of atmospheric particles: comparison based on theory, cluster population simulations, and observations in Beijing. *Atmos. Chem. Phys.*, 2022. **22** (22): 15071-15091.
33. Nie, W.; Yan, C.; Huang, D. D.; Wang, Z.; Liu, Y.; Qiao, X.; Guo, Y.; Tian, L.; Zheng, P.; Xu, Z.; Li, Y.; Xu, Z.; Qi, X.; Sun, P.; Wang, J.; Zheng, F.; Li, X.; Yin, R.; Dallenbach, K. R.; Bianchi, F.; Petäjä, T.; Zhang, Y.; Wang, M.; Schervish, M.; Wang, S.; Qiao, L.; Wang, Q.; Zhou, M.; Wang, H.; Yu, C.; Yao, D.; Guo, H.; Ye, P.; Lee, S.; Li, Y. J.; Liu, Y.; Chi, X.; Kerminen, V.-M.; Ehn, M.; Donahue, N. M.; Wang, T.; Huang, C.; Kulmala, M.; Worsnop, D.; **Jiang*, J.**; Ding*, A., Secondary organic aerosol formed by condensing anthropogenic vapours. *Nature Geoscience*, 2022. **15**(4): 255-261.
34. Ma, L.; Zhang, Y.; Lin, Z.; Zhou, Y.; Yan, C.; Zhang, Y.; Zhou, W.; Ma, W.; Hua, C.; Li, X.; Deng, C.; Qi, Y.; Dada, L.; Li, H.; Bianchi, F.; Petäjä, T.; Kangasluoma, J.; **Jiang, J.**; Liu, S.; Hussein, T.; Kulmala, M.; Liu, Y., Deposition potential of 0.003–10 µm ambient particles in the humidified human respiratory tract: Contribution of new particle formation events in Beijing. *Ecotoxicology and Environmental Safety*, 2022. **243**: 114023.
35. Li, Y.; Chen, X.; **Jiang*, J.**, Measuring size distributions of atmospheric aerosols using natural air ions. *Aerosol Science and Technology*, 2022. **56** (7): 655-664.
36. Li, X.; Li, Y.; Cai, R.; Yan, C.; Qiao, X.; Guo, Y.; Deng, C.; Yin, R.; Chen, Y.; Li, Y.; Yao, L.; Sarnela, N.; Zhang, Y.; Petäjä, T.; Bianchi, F.; Liu, Y.; Kulmala, M.; Hao, J.; Smith*, J. N.; **Jiang*, J.**, Insufficient Condensable Organic Vapors Lead to Slow Growth of New Particles in an Urban Environment. *Environmental Science & Technology*, 2022. **56** (14): 9936-9946.
37. Li, M.; Yu, S.; Chen, X.; Li, Z.; Zhang, Y.; Song, Z.; Liu, W.; Li, P.; Zhang, X.; Zhang, M.; Sun, Y.; Liu, Z.; Sun, C.; **Jiang, J.**; Wang, S.; Murphy, B. N.; Alapaty, K.; Mathur, R.; Rosenfeld, D.; Seinfeld, J. H., Impacts of condensable particulate matter on atmospheric organic aerosols and fine particulate matter (PM_{2.5}) in China. *Atmos. Chem. Phys.*, 2022. **22** (17): 11845-11866.

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42. Deng, C.; Li, Y.; Yan, C.; Wu, J.; Cai, R.; Wang, D.; Liu, Y.; Kangasluoma, J.; Kerminen, V. M.; Kulmala, M.; **Jiang*, J.**, Measurement report: Size distributions of urban aerosols down to 1nm from long-term measurements. *Atmos. Chem. Phys.*, 2022. **22** (20): 13569-13580.
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45. Cai, R.; Deng, C.; Stolzenburg, D.; Li, C.; Guo, J.; Kerminen, V. M.; **Jiang, J.**; Kulmala, M.; Kangasluoma, J., Survival probability of new atmospheric particles: closure between theory and measurements from 1.4 to 100nm. *Atmos. Chem. Phys.*, 2022. **22**(22): 14571-14587.
46. An, Z.; Li, X.; Yuan, Y.; Duan, F.; **Jiang*, J.**, Large contribution of non-priority PAHs in atmospheric fine particles: Insights from time-resolved measurement and nontarget analysis. *Environment International*, 2022. **163**: 107193.
47. Hakala, S., V. Vakkari, F. Bianchi, L. Dada, C. Deng, K. R. Dällenbach, Y. Fu, **J. Jiang, J.** Kangasluoma, J. Kujansuu, Y. Liu, T. Petäjä, L. Wang, C. Yan, M. Kulmala and P. Paasonen. Observed coupling between air mass history, secondary growth of nucleation mode particles and aerosol pollution levels in Beijing. *Environmental Science: Atmospheres*, 2022, **2**: 146-164.
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49. Zhang, D., Y. Yang, M. Li, Y. Lu, Y. Liu, **J. Jiang**, R. Liu, J. Liu, X. Huang, G. Li and J. Qu. Ecological Barrier Deterioration Driven by Human Activities Poses Fatal Threats to Public Health due to Emerging Infectious Diseases. *Engineering*, 2022. **10**: 155-166.

50. Wu, D., H. Zheng, Q. Li, L. Jin, R. Lyu, X. Ding, Y. Huo, B. Zhao, **J. Jiang**, J. Chen, X. Li and S. Wang. "Toxic potency-adjusted control of air pollution for solid fuel combustion." *Nature Energy*, 2022. **7**: 194-202.
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53. Liu, A., J. Yi, X. Ding, J. Deng, D. Wu, Y. Huo, **J. Jiang**, Q. Li and J. Chen. An online technology for effectively monitoring inorganic condensable particulate matter emitted from industrial plants. *Journal of Hazardous Materials*, 2022. **428**: 128221.
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59. Zhang, J., X. Sun, J. Deng, G. Li, Z. Li, **J. Jiang**, Q. Wu and L. Duan. Emission characteristics of heavy metals from a typical copper smelting plant. *Journal of Hazardous Materials*, 2022, **424**: 127311.

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