Curriculum Vitae

Xiaopu Lyu, PhD

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PROFESSIONAL APPOINTMENTS

- Assistant Professor, Hong Kong Baptist University — 02/2023 – Present
- Research Assistant Professor, The Hong Kong Polytechnic University — 02/2020 – 01/2023
- Research Fellow, Postdoc Fellow, Research Associate, The Hong Kong Polytechnic University — 05/2018 – 02/2020

ACADEMIC QUALIFICATIONS

- PhD, The Hong Kong Polytechnic University — September 2018
- Mphil, Wuhan University — June 2014
- B.Eng, Zhejiang University of Technology — June 2012

RESEARCH PROJECTS

8 external grants, 6 internal grants, total fund > HK$ 8.5 million (in capacity of PC/PI/Co-PI)

External Grants

1. NSFC/General Program – Mechanistic research on coordinated control of ozone and photochemical secondary organic aerosol in the Greater Bay Area, 42577112, RMB490,000, 1/1/2026 – 31/12/2029.
2. NSFC/Young Scientists Fund – Chemical processes and impacts on ozone formation of peroxyacetyl nitrate in high-altitude background atmosphere of Central China, 42207111, HK$330,000, 1/1/2023 - 31/12/2025.
3. RGC/GRF – Rise in summertime ozone levels in South China: Impacts of long-range transport of Southeast Asia emissions, 15219621, HK$911,317, 1/1/2022 - 31/12/2024.
4. RGC/GRF – What has driven the ozone increase in Hong Kong over the past decade under stringent air pollution control? 15209223, HK$951,448, 1/1/2024 - 31/12/2026.
5. RGC/CRF (Co-PI) – Is the usual social distance sufficient to avoid airborne infection of expiratory droplets in indoor environments? C5024-21G, HK$4,703,090 (my share: HK$900,000), 30/6/2022 – 29/6/2025.
6. CEPU/PPRFS – What are the implications of COVID-19 restrictions for ozone pollution control in Hong Kong? 2023.A2.059.23C, HK$648,255, 1/4/2024 - 31/12/2025.
7. EPD/Consultancy Project – Feedback mechanism of secondary reactive gases generated in photochemical smog to ozone formation and regional photochemistry, 23-00628, HK$ 1,200,000, 9/8/2023 – 8/1/2026.

8. EPD/Consultancy Project – Exploring temperature effects on air quality in Hong Kong, 24-01978, HK$800,000, 24/9/2024 – 23/9/2026.

Internal Grants

1. **HKBU, Rising Star Research Grant, HK$1,500,000, 1/7/2025 – 30/6/2028.**
2. HKBU, Equipment Matching Fund, HK$690,700, 26/3/2024 – .
3. HKBU, Equipment Matching Fund, HK$685,168, 7/7/2022 – .
4. HKBU, Tier-1 Start-Up Fund, HK$300,000, 30/6/2023 – 29/12/2025.
5. PolyU/RAP Start-up Fund, Formation mechanisms of particle-bound hydroxyl dicarboxylic acids in subtropical Hong Kong: field observation and aging experiment, HK$250,000, 03/2021 – 02/2023.
6. PolyU/Projects of RILS, Emerging air pollution and land management under future climate, HK$100,000, 08/2022 – 07/2024.

PUBLICATIONS

80 Peer-reviewed journal papers; Total citation 4321; H-index 35 (Google Scholar, updated on 8/12/2025).

*** Corresponding author, # Co-first author**

2025 (5)

1. Liu, S., **Lyu, X.***, Yang, F., Shi, Z., Huang, X., Liu, T., ... & Wang, N.* (2025). Deciphering Isoprene Variability Across Dozen of Chinese and Overseas Cities Using Deep Transfer Learning. EGUsphere, 2025, 1-27.
2. Yang, J., Zeren, Y., Guo, H., Wang, Y., **Lyu, X.**, Zeng, L., ... & Wang, F. (2025). Atmospheric formaldehyde, acetaldehyde, and acetone in five major Chinese cities: photochemical characteristics, sources, and joint ozone-carbonyl control strategies. Journal of Hazardous Materials, doi:10.1016/j.jhazmat.2025.140600.
3. Li, K., Tan, R., Qiao, W., Lee, T., Wang, Y., Zhang, D., Tang, M., Zhao, W., Gu, Y., Fan, S., Zhang, J., **Lyu, X.**, Xue, L., Xu, J., Ma, Z., Latif, M. T., Amnuaylojaroen, T., Gil, J., Lee, M.-H., Bak, J., Kim, J., Liao, H., Kanaya, Y., Lu, X., Nagashima, T., & Koo, J.-H. (2025). Surface and tropospheric ozone over East Asia and Southeast Asia from observations: distributions, trends, and variability. Atmospheric Chemistry and Physics, 25(19), 11575–11596.
4. Qin, C., Li, X., Guo, H. and **Lyu, X.***, 2025. Evaluating and mitigating the individual-to-individual transmission of breathing-released aerosol in a densely occupied classroom with impinging jet supply. Journal of Building Engineering. doi:10.1016/j.jobe.2025.113715.
5. Li, H., **Lyu, X.***, Xue, L.*, Huo, Y., Chen, T., Yao, D., Lu, H., Zhou, B. and Guo, H.*, 2025. Hydroxyl Dicarboxylic Acids at a Mountainous Site in Hong Kong: Formation Mechanisms and Implications for Particle Growth. ACS Environmental Au. doi:10.1021/acsenvironau.4c00119.

2024 (9)

1. **Lyu, X.***, Li, H., Lee, S.C., Xiong, E., Guo, H., Wang, T. and de Gouw, J., 2024. Significant Biogenic Source of Oxygenated Volatile Organic Compounds and the Impacts on Photochemistry

at a Regional Background Site in South China. Environmental Science & Technology, 58(45), 20081-20090. **[Nature-index journal; IF: 11.3]**

2. Yang, J., Zeren, Y., Guo, H., Wang, Y., **Lyu, X.**, Zhou, B., Gao, H., Yao, D., Wang, Z., Zhao, S. and Li, J., 2024. Wintertime ozone surges: The critical role of alkene ozonolysis. Environmental Science and Ecotechnology, 22, doi:10.1016/j.ese.2024.100477.
3. Qin, C., Cai, S.S., **Lyu, X.*** and Lu, W.Z.*, 2024. Cross transmission of normal breathing-released contaminants in a general hospital ward with impinging jet supply: A numerical study. Journal of Building Engineering, 92, doi:10.1016/j.jobe.2024.109766.
4. Zheng, S., Jiang, F., Feng, S., Liu, H., Wang, X., Tian, X., Ying, C., Jia, M., Shen, Y., **Lyu, X.** and Guo, H., 2024. Impact of marine shipping emissions on ozone pollution during the warm seasons in China. Journal of Geophysical Research: Atmospheres, 129(14), doi:10.1029/2024JD040864.
5. Li, H., **Lyu, X.***, Xue, L.*, Huo, Y., Yao, D., Lu, H. and Guo, H.*, 2024. In situ measurement of organic aerosol molecular markers in urban Hong Kong during a summer period: temporal variations and source apportionment. Atmospheric Chemistry and Physics, 24(12), 7085-7100.
6. Huo, Y., **Lyu, X.***, Yao, D., Zhou, B., Yuan, Q., Lee, S.C. and Guo, H.*, 2024. Exploring the formation of high levels of hydroxyl dicarboxylic acids at an urban background site in South China. Journal of Geophysical Research: Atmospheres, 129(6), doi:10.1029/2023JD040096. **[Nature-index journal]**
7. Zheng, Y., Jiang, F., Feng, S., Shen, Y., Liu, H., Guo, H., **Lyu, X.**, Jia, M. and Lou, C., 2024. Large-scale land-sea interactions extend ozone pollution duration in coastal cities along northern China. Environmental Science and Ecotechnology, 18, doi:10.1016/j.ese.2023.100322.
8. Wang, N., Wang, H., Huang, X., Chen, X., Zou, Y., Deng, T., Li, T., **Lyu, X.*** and Yang, F.*, 2024. Extreme weather exacerbates ozone pollution in the Pearl River Delta, China: role of natural processes. Atmospheric Chemistry and Physics, 24(2), 1559-1570.
9. She, Y., Li, J., **Lyu, X.**, Guo, H., Qin, M., Xie, X., Gong, K., Ye, F., Mao, J., Huang, L. and Hu, J., 2024. Current status of model predictions of volatile organic compounds and impacts on surface ozone predictions during summer in China. Atmospheric Chemistry and Physics, 24(1), 219-233.

2023 (4)

1. Zeng, L., Li, K., Guo, H., Zhou, B., **Lyu, X.**, Huo, Y., Uhde, E., Yang, J., Zeren, Y., Lu, H. and Yao, D., 2023. Contributions of indoor household activities to inhalation health risks induced by gaseous air pollutants in Hong Kong home. Aerosol and Air Quality Research, 23(9), doi:10.4209/aaqr.230063.
2. **Lyu, X.**, Li, K., Guo, H., Morawska, L., Zhou, B., Zeren, Y., Jiang, F., Chen, C., Goldstein, A.H., Xu, X. and Wang, T., 2023. A synergistic ozone-climate control to address emerging ozone pollution challenges. One Earth, 6(8), 964-977. **[Cell sister journal; IF: 15.3; ESI Highly Cited Paper]**
3. Zhou, B., Guo, H., Zeren, Y., Wang, Y., **Lyu, X.**, Wang, B. and Wang, H., 2023. An observational constraint of VOC emissions for air quality modeling study in the pearl river delta region. Journal of Geophysical Research: Atmospheres, 128(11), doi:10.1029/2022JD038122.
4. Shen, Y., Jiang, F., Feng, S., Xia, Z., Zheng, Y., **Lyu, X.**, Zhang, L. and Lou, C., 2023. Increased diurnal difference of NO_2 concentrations and its impact on recent ozone pollution in eastern China in summer. Science of the Total Environment, 858, doi:10.1016/j.scitotenv.2022.159767.

2022 (9)

1. **Lyu, X.**, Guo, H., Zou, Q., Li, K., Xiong, E., Zhou, B., Guo, P., Jiang, F. and Tian, X., 2022. Evidence for reducing volatile organic compounds to improve air quality from concurrent observations and in situ simulations at 10 stations in eastern China. Environmental Science & Technology, 56(22), 15356-15364. **[Nature-index journal; IF: 11.3]**
2. Zeren, Y., Zhou, B., Zheng, Y., Jiang, F., **Lyu, X.**, Xue, L., Wang, H., Liu, X. and Guo, H., 2022. Does ozone pollution share the same formation mechanisms in the bay areas of China?. Environmental Science & Technology, 56(20), 14326-14337.
3. Yao, D., Guo, H., **Lyu, X.**, Lu, H. and Huo, Y., 2022. Secondary organic aerosol formation at an urban background site on the coastline of South China: Precursors and aging processes. Environmental Pollution, 309, doi:10.1016/j.envpol.2022.119778.
4. Zeng, L., Yang, J., Guo, H. and **Lyu, X.**, 2022. Impact of NO_x reduction on long-term surface ozone pollution in roadside and suburban Hong Kong: field measurements and model simulations. Chemosphere, 302, doi:10.1016/j.chemosphere.2022.134816.
5. Zeren, Y., Guo, H., **Lyu, X.**, Zhou, B., Liu, X., Yang, L., Yuan, Z. and Wang, Y., 2022. Remarkable spring increase overwhelmed hard-earned autumn decrease in ozone pollution from 2005 to 2017 at a suburban site in Hong Kong, South China. Science of The Total Environment, 831, doi:10.1016/j.scitotenv.2022.154788.
6. Huo, Y., Guo, H.*, **Lyu, X.*** and Yao, D., 2022. Emission characteristics, sources, and airborne fate of speciated organics in particulate matters in a Hong Kong residence. Indoor air, 32(3), doi:10.1111/ina.13017.
7. Peng, X., Wang, T., Wang, W., Ravishankara, A.R., George, C., Xia, M., Cai, M., Li, Q., Salvador, C.M., Lau, C. and **Lyu, X.**, 2022. Photodissociation of particulate nitrate as a source of daytime tropospheric Cl_2. Nature Communications, 13(1), doi:10.1038/s41467-022-28383-9.
8. Shek, K.Y., Zeren, Y., Guo, H., Li, M., Liu, M., Huang, B. and **Lyu, X.***, 2022. Insights on in-situ photochemistry associated with ozone reduction in Guangzhou during the COVID-19 lockdown. Atmosphere, 13(2), doi:10.3390/atmos13020212. [Invited paper]
9. Xu, J., Guo, H., Zhang, Y. and **Lyu, X.**, 2022. Effectiveness of personalized air curtain in reducing exposure to airborne cough droplets. Building and Environment, 208, doi:10.1016/j.buildenv.2021.108586.

2021 (12)

1. Liu, X., Guo, H., Zeng, L., **Lyu, X.**, Wang, Y., Zeren, Y., Yang, J., Zhang, L., Zhao, S., Li, J. and Zhang, G., 2021. Photochemical ozone pollution in five Chinese megacities in summer 2018. Science of the Total Environment, 801, doi:10.1016/j.scitotenv.2021.149603.
2. Morawska, L., Zhu, T., Liu, N., Torkmahalleh, M.A., de Fatima Andrade, M., Barratt, B., Broomandi, P., Buonanno, G., Ceron, L.C.B., Chen, J. and Cheng, Y., 2021. The state of science on severe air pollution episodes: Quantitative and qualitative analysis. Environment international, 156, doi:10.1016/j.envint.2021.106732.
3. **Lyu, X.**, Huo, Y., Yang, J., Yao, D., Li, K., Lu, H., Zeren, Y. and Guo, H., 2021. Real-time molecular characterization of air pollutants in a Hong Kong residence: Implication of indoor source emissions and heterogeneous chemistry. Indoor Air, 31(5), 1340-1352.
4. **Lyu, X.**, Guo, H., Zhang, W., Cheng, H., Yao, D., Lu, H., Zhang, L., Zeren, Y., Liu, X., Qian, Z. and Wang, S., 2021. Ozone and its precursors in a high-elevation and highly forested region in central China: Origins, in-situ photochemistry and implications of regional transport. Atmospheric Environment, 259, p.118540.

5. Tian, L., Li, J., Zhao, S., Tang, J., Li, J., Guo, H., Liu, X., Zhong, G., Xu, Y., Lin, T. and **Lyv, X.**, 2021. DDT, Chlordane, and Hexachlorobenzene in the air of the pearl river delta revisited: a tale of source, history, and monsoon. Environmental science & technology, 55(14), pp.9740-9749.
6. Fu, X., Liu, C., Zhang, H., Xu, Y., Li, J., **Lyu, X.**, Zhang, G., Guo, H., Wang, X., Zhang, L. and Feng, X., 2021. Isotopic compositions of atmospheric total gaseous mercury in 10 Chinese cities and implications for land surface emissions. Atmospheric Chemistry and Physics, 21(9), pp.6721-6734.
7. Yao, D., **Lyu, X.**, Lu, H., Zeng, L., Liu, T., Chan, C.K. and Guo, H., 2021. Characteristics, sources and evolution processes of atmospheric organic aerosols at a roadside site in Hong Kong. Atmospheric Environment, 252, p.118298.
8. Zeng, L., Guo, H., **Lyu, X.**, Zhou, B., Ling, Z., Simpson, I.J., Meinardi, S., Barletta, B. and Blake, D.R., 2021. Long-term variations of C_1-C_5 alkyl nitrates and their sources in Hong Kong. Environmental Pollution, 270, p.116285.
9. Lei, X., Cheng, H., Peng, J., Jiang, H., **Lyu, X.**, Zeng, P., Wang, Z. and Guo, H., 2021. Impact of long-range atmospheric transport on volatile organic compounds and ozone photochemistry at a regional background site in central China. Atmospheric Environment, 246, p.118093.
10. Liu, X., Wang, N., **Lyu, X.**, Zeren, Y., Jiang, F., Wang, X., Zou, S., Ling, Z. and Guo, H., 2021. Photochemistry of ozone pollution in autumn in Pearl River Estuary, South China. Science of the Total Environment, 754, p.141812.
11. Shen, Y., Jiang, F., Feng, S., Zheng, Y., Cai, Z. and **Lyu, X.**, 2021. Impact of weather and emission changes on NO_2 concentrations in China during 2014–2019. Environmental Pollution, 269, p.116163.
12. Lu, H., **Lyu, X.** and Guo, H., 2021. A novel semi-automatic method for measuring acidic ultrafine particles in the atmosphere. Atmospheric Environment, 245, p.118044.

2020 (4)

1. **Lyu, X.**, Guo, H., Yao, D., Lu, H., Huo, Y., Xu, W., Kreisberg, N., Goldstein, A.H., Jayne, J., Worsnop, D. and Tan, Y., 2020. In situ measurements of molecular markers facilitate understanding of dynamic sources of atmospheric organic aerosols. Environmental Science & Technology, 54(18), pp.11058-11069. **[Nature-index journal; IF: 11.3]**
2. Zeng, L., Dang, J., Guo, H., **Lyu, X.**, Simpson, I.J., Meinardi, S., Wang, Y., Zhang, L. and Blake, D.R., 2020. Long-term temporal variations and source changes of halocarbons in the Greater Pearl River Delta region, China. Atmospheric Environment, 234, p.117550.
3. **Lyu, X.**, Guo, H., Wang, Y., Zhang, F., Nie, K., Dang, J., Liang, Z., Dong, S., Zeren, Y., Zhou, B. and Gao, W., 2020. Hazardous volatile organic compounds in ambient air of China. Chemosphere, 246, p.125731. **[120 citations]**
4. Zhu, J., Cheng, H., Peng, J., Zeng, P., Wang, Z., **Lyu, X.** and Guo, H., 2020. O_3 photochemistry on O_3 episode days and non-O_3 episode days in Wuhan, Central China. Atmospheric environment, 223, p.117236.

2019 (13)

1. Zeng, L., Offor, F., Zhan, L., **Lyu, X.**, Liang, Z., Zhang, L., Wang, J., Cheng, H. and Guo, H., 2019. Comparison of $PM_{2.5}$ pollution between an African city and an Asian metropolis. Science of the Total Environment, 696, p.134069.
2. Zeren, Y., Guo, H.*, **Lyu, X.***, Jiang, F., Wang, Y., Liu, X., Zeng, L., Li, M. and Li, L., 2019. An ozone “pool” in South China: Investigations on atmospheric dynamics and photochemical

processes over the Pearl River Estuary. Journal of Geophysical Research: Atmospheres, 124(22), pp.12340-12355. **[Nature-index journal]**

3. Yang, Z., Cheng, H.R., Wang, Z.W., Peng, J., Zhu, J.X., **Lyu, X.P.** and Guo, H., 2019. Chemical characteristics of atmospheric carbonyl compounds and source identification of formaldehyde in Wuhan, Central China. Atmospheric Research, 228, pp.95-106.
4. Zeng, P., **Lyu, X.**, Guo, H., Cheng, H., Wang, Z., Liu, X. and Zhang, W., 2019. Spatial variation of sources and photochemistry of formaldehyde in Wuhan, Central China. Atmospheric Environment, 214, p.116826.
5. Zeng, P., Guo, H., Cheng, H., Wang, Z., Zeng, L., **Lyu, X.**, Zhan, L. and Yang, Z., 2019. Aromatic hydrocarbons in urban and suburban atmospheres in Central China: spatiotemporal patterns, source implications, and health risk assessment. Atmosphere, 10(10), p.565.
6. Zeng, L., Fan, G.J., **Lyu, X.**, Guo, H., Wang, J.L. and Yao, D., 2019. Atmospheric fate of peroxyacetyl nitrate in suburban Hong Kong and its impact on local ozone pollution. Environmental Pollution, 252, pp.1910-1919.
7. Wang, N., **Lyu, X.**, Deng, X., Huang, X., Jiang, F. and Ding, A., 2019. Aggravating O_3 pollution due to NO_x emission control in eastern China. Science of the Total Environment, 677, pp.732-744. (ESI Highly Cited Paper)
8. Wang, Y., Guo, H., **Lyu, X.**, Zhang, L., Zeren, Y., Zou, S. and Ling, Z., 2019. Photochemical evolution of continental air masses and their influence on ozone formation over the South China Sea. Science of the total environment, 673, pp.424-434.
9. Liu, X.#, **Lyu, X.#**, Wang, Y., Jiang, F. and Guo, H., 2019. Intercomparison of O_3 formation and radical chemistry in the past decade at a suburban site in Hong Kong. Atmospheric Chemistry and Physics, 19(7), pp.5127-5145.
10. **Lyu, X.**, Wang, N., Guo, H., Xue, L., Jiang, F., Zeren, Y., Cheng, H., Cai, Z., Han, L. and Zhou, Y., 2019. Causes of a continuous summertime O_3 pollution event in Jinan, a central city in the North China Plain. Atmospheric Chemistry and Physics, 19(5), pp.3025-3042. **[115 citations]**
11. Liu, T., Zhou, L., Liu, Q., Lee, B.P., Yao, D., Lu, H., **Lyu, X.**, Guo, H. and Chan, C.K., 2019. Secondary organic aerosol formation from urban roadside air in Hong Kong. Environmental science & technology, 53(6), pp.3001-3009.
12. Yao, D., **Lyu, X.**, Murray, F., Morawska, L., Yu, W., Wang, J. and Guo, H., 2019. Continuous effectiveness of replacing catalytic converters on liquified petroleum gas-fueled vehicles in Hong Kong. Science of the Total Environment, 648, pp.830-838.
13. Lu, H., **Lyu, X.**, Cheng, H., Ling, Z. and Guo, H., 2019. Overview on the spatial–temporal characteristics of the ozone formation regime in China. Environmental Science: Processes & Impacts, 21(6), pp.916-929.

2018 (7)

1. Yang, Z., Lin, T., Cheng, H., Wang, Z., Cheng, Z., **Lyu, X.**, Zhan, L. and Zhang, G., 2018. Concentration and seasonal variation of halogenated flame retardants at a CAWNET background site in Central China. Aerosol and Air Quality Research, 18(12), pp.3068-3080.
2. Zeng, P., **Lyu, X.P.**, Guo, H., Cheng, H.R., Jiang, F., Pan, W.Z., Wang, Z.W., Liang, S.W. and Hu, Y.Q., 2018. Causes of ozone pollution in summer in Wuhan, Central China. Environmental Pollution, 241, pp.852-861.
3. Wang, N., Ling, Z., Deng, X., Deng, T., **Lyu, X.**, Li, T., Gao, X. and Chen, X., 2018. Source contributions to $PM_{2.5}$ under unfavorable weather conditions in Guangzhou City, China. Advances in Atmospheric Sciences, 35, pp.1145-1159.

4. Zeng, L., **Lyu, X.**, Guo, H., Zou, S. and Ling, Z., 2018. Photochemical formation of C_1-C_5 alkyl nitrates in suburban Hong Kong and over the South China Sea. Environmental science & technology, 52(10), pp.5581-5589.
5. Wang, H.#, **Lyu, X.#**, Guo, H., Wang, Y., Zou, S., Ling, Z., Wang, X., Jiang, F., Zeren, Y., Pan, W. And Huang, X., 2018. Ozone pollution around a coastal region of South China Sea: interaction between marine and continental air. Atmospheric Chemistry and Physics, 18(6), pp.4277-4295. **[112 citations]**
6. Wang, Y., Guo, H., Zou, S., **Lyu, X.**, Ling, Z., Cheng, H. And Zeren, Y., 2018. Surface O3 photochemistry over the South China Sea: Application of a near-explicit chemical mechanism box model. Environmental Pollution, 234, pp.155-166.
7. **Lyu, X.P.**, Guo, H., Cheng, H.R. and Wang, D.W., 2018. New particle formation and growth at a suburban site and a background site in Hong Kong. Chemosphere, 193, pp.664-674.

2017 (6)

1. **Lyu, X.P.**, Guo, H., Cheng, H.R., Wang, X.M., Ding, X., Lu, H.X., Yao, D.W. and Xu, C., 2017. Observation of SOA tracers at a mountainous site in Hong Kong: Chemical characteristics, origins and implication on particle growth. Science of The Total Environment, 605, pp.180-189.
2. Zhan, L., Lin, T., Wang, Z., Cheng, Z., Zhang, G., **Lyu, X.** and Cheng, H., 2017. Occurrence and air-soil exchange of organochlorine pesticides and polychlorinated biphenyls at a CAWNET background site in central China: implications for influencing factors and fate. Chemosphere, 186, pp.475-487.
3. **Lyu, X.P.**, Guo, H., Wang, N., Simpson, I.J., Cheng, H.R., Zeng, L.W., Saunders, S.M., Lam, S.H.M., Meinardi, S. and Blake, D.R., 2017. Modeling C_1-C_4 alkyl nitrate photochemistry and their impacts on O_3 production in urban and suburban environments of Hong Kong. Journal of Geophysical Research: Atmospheres, 122(19), pp.10-539. **[Nature-index journal]**
4. Wang, Y., Wang, H., Guo, H., **Lyu, X.**, Cheng, H., Ling, Z., Louie, P.K., Simpson, I.J., Meinardi, S. and Blake, D.R., 2017. Long-term O_3-precursor relationships in Hong Kong: field observation and model simulation. Atmospheric Chemistry and Physics, 17(18), pp.10919-10935.
5. **Lyu, X.P.**, Zeng, L.W., Guo, H., Simpson, I.J., Ling, Z.H., Wang, Y., Murray, F., Louie, P.K.K., Saunders, S.M., Lam, S.H.M. and Blake, D.R., 2017. Evaluation of the effectiveness of air pollution control measures in Hong Kong. Environmental pollution, 220, pp.87-94.
6. Guo, H., Ling, Z.H., Cheng, H.R., Simpson, I.J., **Lyu, X.P.**, Wang, X.M., Shao, M., Lu, H.X., Ayoko, G., Zhang, Y.L. and Saunders, S.M., 2017. Tropospheric volatile organic compounds in China. Science of The Total Environment, 574, pp.1021-1043.

2016 (6)

1. Wang, N., **Lyu, X.P.**, Deng, X.J., Guo, H., Deng, T., Li, Y., Yin, C.Q., Li, F. and Wang, S.Q., 2016. Assessment of regional air quality resulting from emission control in the Pearl River Delta region, southern China. Science of the total environment, 573, pp.1554-1565.
2. **Lyu, X.P.**, Liu, M., Guo, H., Ling, Z.H., Wang, Y., Louie, P.K.K. and Luk, C.W.Y., 2016. Spatiotemporal variation of ozone precursors and ozone formation in Hong Kong: Grid field measurement and modelling study. Science of the Total Environment, 569, pp.1341-1349.
3. **Lyu, X.**, Chen, N., Guo, H., Zeng, L., Zhang, W., Shen, F., Quan, J. and Wang, N., 2016. Chemical characteristics and causes of airborne particulate pollution in warm seasons in Wuhan, central China. Atmospheric chemistry and physics, 16(16), pp.10671-10687.

4. Ling, Z., Guo, H., Simpson, I.J., Saunders, S.M., Lam, S.H.M., **Lyu, X.** and Blake, D.R., 2016. New insight into the spatiotemporal variability and source apportionments of C_1-C_4 alkyl nitrates in Hong Kong. Atmospheric Chemistry and Physics, 16(13), pp.8141-8156.
5. **Lyu, X.**, Guo, H., Simpson, I.J., Meinardi, S., Louie, P.K., Ling, Z., Wang, Y., Liu, M., Luk, C.W., Wang, N. and Blake, D.R., 2016. Effectiveness of replacing catalytic converters in LPG-fueled vehicles in Hong Kong. Atmospheric Chemistry and Physics, 16(10), 6609-6626. **[HKIE Champion of 2019 Environmental Paper Award]**
6. **Lyu, X.P.**, Chen, N., Guo, H., Zhang, W.H., Wang, N., Wang, Y. and Liu, M., 2016. Ambient volatile organic compounds and their effect on ozone production in Wuhan, central China. Science of the total environment, 541, pp.200-209. **[279 citations]**

2015 (3)

1. **Lyu, X.P.**, Ling, Z.H., Guo, H., Saunders, S.M., Lam, S.H.M., Wang, N., Wang, Y., Liu, M. and Wang, T., 2015. Re-examination of C_1-C_5 alkyl nitrates in Hong Kong using an observation-based model. Atmospheric Environment, 120, 28-37.
2. **Lyu, X.P.**, Wang, Z.W., Cheng, H.R., Zhang, F., Zhang, G., Wang, X.M., Ling, Z.H. and Wang, N., 2015. Chemical characteristics of submicron particulates (PM1.0) in Wuhan, Central China. Atmospheric Research, 161, 169-178.
3. Zhang, F., Wang, Z.W., Cheng, H.R., **Lv, X.P.**, Gong, W., Wang, X.M. and Zhang, G., 2015. Seasonal variations and chemical characteristics of PM2. 5 in Wuhan, central China. Science of the Total Environment, 518, 97-105.

2014 (2)

1. Cheng, H., Gong, W., Wang, Z., Zhang, F., Wang, X., **Lv, X.**, Liu, J., Fu, X. and Zhang, G., 2014. Ionic composition of submicron particles (PM1. 0) during the long-lasting haze period in January 2013 in Wuhan, central China. Journal of Environmental Sciences, 26(4), 810-817.
2. Zhang, F., Cheng, H.R., Wang, Z.W., **Lv, X.P.**, Zhu, Z.M., Zhang, G. and Wang, X.M., 2014. Fine particles ($PM_{2.5}$) at a CAWNET background site in Central China: Chemical compositions, seasonal variations and regional pollution events. Atmospheric environment, 86, 193-202.

SELECTED PRESENTATIONS

1. "Deep transfer learning unravels drivers of urban isoprene variations in a warming climate". **Invited Speaker**, **AGU25 Annual Meeting**, New Orleans, Louisiana, United Stated, December 2025.
2. "Biogenic emissions contributing to ozone formation: responses to warming and urban greening". **Invited Speaker**, The 3rd PhD Symposium on Atmospheric Environmental Chemistry, Guangzhou, China, August 2024.
3. "Formation mechanisms of high levels of hydroxyl dicarboxylic acids in the atmosphere of Hong Kong". **Invited Speaker**, The 10th Annual Meeting of the VOCs Pollution Prevention and Control Committee, Chinese Society for Environmental Sciences, Chongqing, China, December 2023.
4. "Paradigm Shift in Photochemical Pollution Control under the Dual Carbon Goals: Insights from an In-situ Chemical Perspective". **Invited Speaker**, The 5th Conference on Atmospheric Ozone Pollution Prevention and Control, Wuhan, China, May 2023.

HONORS & AWARDS

- **2024 Top Scholar (Environment (systems) 0.27%; Pollution 0.38%), ScholarGPS, 2025.**
- Faculty/School Performance Award 2024, Hong Kong Baptist University, 2024.
- Gold Medal & Special Merit Award at the 71st International Trade Fair for Ideas, Inventions & New Products (iENA) held in Nuremberg, Germany (3rd ranking), 2019.
- Champion of 2019 Environmental Paper Award (1st ranking), The Hong Kong Institution of Engineers (HKIE), 2019.
- National Scholarship for Postgraduates, Ministry of Education, PRC, 2013.
- Outstanding Individual, Wuhan University, 2013.

COMMUNITY SERVICES

Ongoing Services

- **Primary Convener, science session "Emerging Air Pollutants: Emissions, Chemistry, and Air Quality Impacts," AGU25, New Orleans, 15–19 Dec 2025**
- **Standing Committee Member, Ozone Pollution Control Professional Committee, Chinese Society for Environmental Sciences, Apr 2025 –**
- Member, Ozone Pollution Control Professional Committee, Chinese Society for Environmental Sciences, Apr 2024 –
- Member, Australia-China Centre for Air Quality Science and Management (ACC-AQSM), Aug 2020 –
- Reviewer for 20+ journals (NSR, ES&T, ES&T Lett, ACP, EI, JGR-A, etc.)

Completed Services

- Co-Convener, session "Emerging Air Pollutants: Emissions, Chemistry, and Air Quality Impacts," AGU24, Washington D.C., 9–13 Dec 2024
- Member, HKDSE Geography Subject Committee, Apr 2024 – March 2025
- General Secretary, The International Expert Workshop on Volatile Organic Compounds 2023, Hong Kong, 27 Nov – 3 Dec 2023
- **Primary organizer, Special Issue "Emerging air pollution: emissions, chemistry, and health and climate effects," Journal of Geophysical Research: Atmospheres (Nature-index journal), 1 Sep 2023 – 31 Aug 2025**
- Youth Editor, The Innovation (Nov 2022 – Oct 2024)
- Member, Tropospheric Ozone Assessment Report Phase II (TOAR-II), IGAC, 2020–2024
- Co-convener, session "Organic Aerosols in the Atmosphere," 16th AOGS Annual Meeting, Singapore, 28 Jul – 2 Aug 2019