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PROFILE

Since 1986, he works in Peking University as a faculty member. Currently, he is a Professor of College of Environmental Sciences & Engineering, Peking University. He involved in many research activities on management of Halocarbons including Ozone Depleting Substances (ODS) and greenhouse gases (HFCs) under the Montreal Protocol and Kyoto Protocol and Persistent Organic Pollutants (POPs) under the Stockholm Convention. His special research areas includes source of Halocarbons and POPs, technical and economic assessment of controlling of Halocarbons and POPs, master plans for management Halocarbons and POPs. He is a member of UNEP Medicals and Chemicals Technical Options Committee and a member of POPs Review Committee under the Stockholm Convention.

Main works related ODS and HFCs

1995-2014: ODS phaseout plans and strategies

As a team leader and key expert, he contributed to drafting all plans or strategies to phaseout ODS in various sectors in China from 1996 to 2005, except for the CTC process agent sector plan which drafted by another team. Such as: Sector Plan for Phaseout CFC Production in China; Sector Plan for Phaseout CFC-11 in China Foam Sector; Strategy for ODS Substitute Development in China; Strategy for Phaseout CFCs in China Domestic Refrigeration Sector; Strategy for Phaseout CFCs in China Industrial and Commercial Refrigeration Sector; The CFC/Halon Accelerated Phaseout Plan in China; etc.

These sector plans were implemented and brought on with an elimination of 91,433 ODP-tons of production/year and 64,326 ODP-tons/year of consumption in China.

As a team leader to develop and draft the long-term strategy for management HCFCs in China, the strategy is one of the key supporting documents for the Montreal Protocol Parties to agree with the accelerated phaseout schedule of HCFCs in 2007.

He was the team leader for the project on developing China's updated country program for management of HCFCs (Chinese HPMP) funded by Multilateral fund in 2013; and drafted HCFC Production Phaseout Management Plan in China (I)

2001-2020: HFCs strategies

As a team leader finished in 2003 the environmental risk assessment report on HFC-23 produced in the production of HCFC-22 in China (project funded by Ministry of Science and Technology), the report recommends that Chinese companies producing HCFC-22 should dispose of HFC-23. He, as an expert, participated in the establishment evaluation of all 11 HFC-23-related CDM projects in China.

He was the team leader for the project (2011-2012, funded by The Energy Foundation—Beijing Office) HFC Management in China: Challenges & Opportunities. The project report finished in 2012 comprehensively evaluates the status and development of HFCs in China, and recommends that the room air-conditioning and automotive air-conditioning industries should give priority to the control of HFCs.

As a team leader for the project on analysis of social, economic and environmental impact for HFCs management in China (2014-2018, funded by MEE). This is a project to support the Chinese

government's participation in the negotiation of HFCs reduction actions (Kigali Amendment). The project also provided a decision-making technical support report for the subsequent decision of the Chinese government to accept the Kigali amendment.

As a team leader for the project on Research on China's Strategy for HFCs management in China (2019-2020, funded by MEE). The project report once again updated the basic situation of China's HFCs, estimated the baseline level of China's HFCs production and consumption, and proposed that some sectors in China could take alternative actions faster than the Kigali timetable to protect the climate. At the same time, the impact of China's exports of HFCs and HFCs in products also has been analyzed, it also proposed that China has the ability to work with countries all over the world to promote the energy efficiency of refrigeration products and replace HFCs.

2007-2021: halogenated hydrocarbons emission and fates

As a team leader for the project "Preliminary Strategic Research on the Control of Fluorine-Containing Greenhouse Gases" (2007-2010) (funded by MEE), the project was focusing on Study the atmospheric emission, observation and fate of halogenated hydrocarbons. With the support of the project, his team carried out halogenated hydrocarbon emission inventory, observation of atmospheric concentration of halogenated hydrocarbons and model simulation research. Based on research work, they have successively facilitated more than 30 Chinese and English related articles and reports.

As one of team members, he was awarded the "Special Gold Award of Ozone Layer Protection contribution Award of China" by Chinese government in 2004; and was awarded as a team member USEPA Stratospheric Ozone Protection Awards for Leadership in ODS Phaseout in Developing Countries in 2005. In 2007, he received the letter from UNEP Executive Director, Achim Steiner, and a copy of Nobel Peace Prize for IPCC for recognizing his contribution to the IPCC Nobel Peace Prize. He was awarded Outstanding Contribution Award for Eliminating POPs in 2015.

EDUCATION

1983 – 1986 M. S. Chemistry, Department of Technical Physics, Peking University, Beijing, P. R. China.

1979 – 1983 B. S. Chemistry, Department of Technical Physics, Peking University, Beijing, P. R. China.

WORK EXPERIENCE

1986 – Present Assistant Professor\Associate Professor\Professor, College for Environmental Sciences & Engineering, Peking University, Beijing, P. R. China

1993 – 1995 Visiting Scholar, Dept. of Environmental Sciences and Engineering, The University of North Carolina at Chapel Hill, North Carolina, USA

OTHER ACTIVITIES

- ▶ Member of Chemical Strategy Advisory Group of GEF-4 and GEF-5 in 2006 and 2010
- ▶ Member of UNEP Persistent Organic Pollutants Review Committee under the Stockholm Convention during 2005-2014, 2016-2024
- ▶ Member of UNEP Medicals and Chemicals Technical Options Committee under the Montreal Protocol since 2005

- ▶ Lead author for IPCC/TEAP special report on safeguarding the ozone layer and the global climates system during 2003-2005
- ▶ Member of UNEP Solvents, Coating and Adhesives Technical Options Committee under the Montreal Protocol during 1997-2004

Publications in last ten years

1. Xue-Ying XIANG, , Jianxin Hu; Scenario analysis of hydrofluorocarbons emission reduction in China's mobile air-conditioning sector, *Advances in Climate Change Research*. 2022, 13 (4), 578-586
2. Minde An, , Jianxin Hu and etc. Rapid increase in dichloromethane emissions from China inferred through atmospheric observations, *Nat Commun* 12, 7279 (2021). <https://doi.org/10.1038/s41467-021-27592-y>
3. Liying Yi, , Jianxin Hu; The atmospheric concentrations and emissions of major halocarbons in China during 2009–2019, *Environmental Pollution*. 2021, 284, 117190
4. Wu J, Hu J. Atmospheric perfluoroalkyl acid occurrence and isomer profiles in Beijing, China. *Environmental Pollution*. 2019;255:113-129.
5. Li Y-X, Hu J. The estimated schedule and mitigation potential for hydrofluorocarbons phase-down in China. *Advances in Climate Change Research* [Internet]. 2019;10(3):174-180
6. Wang Z, Wang Y, Li J, Henne S, Zhang B, Hu J, Zhang J. Impacts of the degradation of 2,3,3,3-tetrafluoropropene into trifluoroacetic acid from its application in automobile air conditioners in China, the United States and Europe. *Environmental Science & Technology*. 2018;52(5)
7. Fang X, Ravishankara AR, Velders GJM, Molina MJ, Su S, Zhang J, Hu J, Prinn RG. Changes in emissions of ozone-depleting substances from China due to implementation of the Montreal Protocol. *Environmental Science & Technology* [Internet]. 2018;52(19):11359-11366
8. Li L, Liu J, Hu J, Wania F. The degradation of fluorotelomer-based polymers contributes to the global occurrence of fluorotelomer alcohol and perfluoroalkyl carboxylates: A combined dynamic substance flow and environmental fate modelling analysis. *Environmental Science & Technology*. 2017
9. Bie P, Fang X, Li Z, Wang Z, Hu J. Emissions estimates of carbon tetrachloride for 1992-2014 in China. *Environmental Pollution*. 2017;224.
10. Xuekun Fang, Guus J. M. Velders, A. R. Ravishankara, Mario J. Molina, Jianxin Hu, and Ronald G. Prinn‡ Hydrofluorocarbon (HFC) Emissions in China: An Inventory for 2005– 2013 and Projections to 2050, *Environ. Sci. Technol.*, (2016)
11. Zhifang Li, Pengju Bie, Ziyuan Wang, Zhaoyang Zhang, Hanyu Jiang, Weiguang Xu, Jianbo Zhang, Jianxin Hu, Estimated HCFC-22 emissions in China through 2050 and increasing contribution to the global emissions, *Atmospheric Environment* (2016)
12. Li Li, Jianguo Liu, and Jianxin Hu, Global Inventory, Long-Range Transport and Environmental Distribution of Dicofof, *Environ. Sci. Technol.*, (2015)
13. Shenshen Su, Xuekun Fang, Li Li, Jing Wu, Jianbo Zhang, Weiguang Xu, Jianxin Hu; HFC-134a emissions from mobile air conditioning in China from 1995 to 2030, *Atmospheric Environment* 102 (2015) 122-129
14. Li Li, Qiang Wang, Xinghua Qiu, Yian Dong, Shenglan Jia, Jianxin Hu, Field determination and QSPR prediction of equilibrium-status soil/vegetation partition coefficient of PCDD/Fs, *Journal of Hazardous Materials* 276 (2014) 278–286
15. Li Li, Jianhua Xu, Jianxin Hu, and Jiarui Han; Reducing nitrous oxide emissions to mitigate climate change and protect the ozone layer; *Environ. Sci. Technol.*, (2014)
16. Jiarui Han, Li Li, Shenshen Su, Jing Wu, Xuekun Fang, Shenglan Jia, Jianbo Zhang, Jianxin Hu; Estimated HCFC-142b emissions in China: 2000–2050; *Chin. Sci. Bull.* (2014)
17. Xuekun Fang, Benjamin R. Miller, Shenshen Su, Jing Wu, Jianbo Zhang, and Jianxin Hu, Historical emissions

- of HFC-23 (CHF₃) in China and projections upon policy options by 2050, (2014)
18. Jing Wu, Jonathan W. Martin, Zihan Zhai, Keding Lu, Li Li, Xuekun Fang, Hangbiao Jin, Jianxin Hu, and Jianbo Zhang, Airborne Trifluoroacetic Acid and Its Fraction from the Degradation of HFC-134a in Beijing, China, *Environ. Sci. Technol.*, (2014)
 19. Yian Dong, Li Li, Pengju Bie, Shenglan Jia, Qiang Wang, Zhi Huang, Xinghua Qiu, Jianbo Zhang, Jianxin Hu Polybrominated diphenyl ethers in farmland soils: Source characterization, deposition contribution and apportionment. *Science of the Total Environment* 466–467 (2014) 524–532
 20. Jing Wu, Xuekun Fang, Jonathan W. Martin, Zihan Zhai, Shenshen Su, Xia Hu, Jiarui Han, Sihua Lu, Chen Wang, Jianbo Zhang, Jianxin Hu, Estimated emissions of chlorofluorocarbons, hydrochlorofluorocarbons, and hydrofluorocarbons based on an interspecies correlation method in the Pearl River Delta region, China, *Science of the Total Environment* 470–471 (2014) 829–834
 21. Qiang Wang, Lijuan Zhao, Xuekun Fang, Jianhua Xu, Yifan Li, Yehong Shi, Jianxin Hu, Gridded usage inventories of chlordane in China, *Front. Environ. Sci. Eng.* (2013), 7(1): 10–18
 22. Jing Wu, Xuekun Fang, Wanyun Xu, Dan Wan, Yehong Shi, Shenshen Su, Jianxin Hu, Jianbo Zhang, Chlorofluorocarbons, hydrochlorofluorocarbons, and hydrofluorocarbons in the atmosphere of four Chinese cities, *Atmospheric Environment* 75 (2013) 83-91
 23. Xuekun Fang, Xia Hu, Greet Janssens-Maenhout, Jing Wu, Jiarui Han, Shenshen Su, Jianbo Zhang, and Jianxin Hu, Sulfur hexafluoride (SF₆) emission estimates for China: an inventory for 1990–2010 and a projection to 2020, *Environ. Sci. Technol.*, (2013), 47, 38483855
 24. Xuekun Fang, Jing Wu, Shenshen Su, Jiarui Han, Yusheng Wu, Yehong Shi, Dan Wan, Xuezhi Sun, Jianbo Zhang, Jianxin Hu, Estimates of major anthropogenic halocarbon emissions from China based on interspecies correlations, *Atmospheric Environment* 62 (2012) 26-33
 25. Xuekun Fang, Jing Wu, Jianhua Xu, Daikuan Huang, Yehong Shi, Dan Wan, Hai Wu, Min Shao, Jianxin Hu, Ambient mixing ratios of chlorofluorocarbons, hydrochlorofluorocarbons and hydrofluorocarbons in 46 Chinese cities, *Atmospheric Environment* 54 (2012) 387-392
 26. WANG Qiang, SHI YeHong, HU JianXin*, YAO ZiWei, FANG XueKun & DONG YiAn, Determination of dioxin-like polychlorinated biphenyls in soil and moss from Fildes Peninsula, Antarctica, *Environmental Chemistry*, (2012) Vol.57 No.9: 992-996
 27. Lai Zhang, Jianguo Liu*, Jianxin Hu, Chao Liu, Weiguang Guo, Qiang Wang, Hong Wang, The inventory of sources, environmental releases and risk assessment for perfluorooctane sulfonate in China, *Environmental Pollution* 165 (2012) 193-198

MAIN OUTPUT REPORTS OF RESEARCH ACTIVITIES in last twenty years

1. Drafted Research on China's Strategy for HFCs management in China, [As the Team leader of the project, finished in 2020]
2. Drafted the Assessment of the social environment and economic impact for HFCs management in China, [As the Team leader of the project, finished in 2016]
3. Drafted HFC Management in China: Challenges & Opportunities, [As the Team leader of the project, finished in 2012]
4. Drafted HCFC Production Phaseout Management Plan in China (I) [As the Team leader of the

national expert group (project finished in 2013)]

5. Drafted HCFC Phaseout Management Plan in China (I) [As the Team leader of the national expert group (project finished in 2012)]
6. Drafted China's National Plan for Implementation the Stockholm Convention on POPs, [As the Team leader of the national expert group (project finished in 2007)]
7. Drafted Major Issues and Policy Framework for Environmentally Sound and Strategic Management of Chemicals in China, [As the Team leader of the national expert group (project finished in 2007)]
8. Drafted The long-term management strategy for controlling HCFCs in China, [As the Team leader of the national expert group (project finished in 2007)]
9. Drafted The CFC Accelerated Phaseout Plan in China, [As the Team leader of the national expert group (project finished in 2004)]