Jinhan Mo

Current position:

Associate Professor (tenured)
Deputy Director, Department of Building Science, Tsinghua University
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Research interests: mass transfer of gaseous or solid-phase contaminants on indoor surfaces; advanced indoor air separation/purification technologies; air pollution sampling and analysis; risk assessment of air pollution for public health; solar energy harvesting.

1. VITA

Dr. Jinhan Mo was born in Dongguan City, Guangdong Province. He is fluent in Cantonese, Mandarin and English. He is now a tenured associate professor in the Department of Building Science, School of Architecture at Tsinghua University. He received his B.Eng. degree (2003), and Ph.D. degree (2009) in Heating, Ventilation and Air Conditioning (HVAC) from Tsinghua University, China. He was a visiting Ph.D. student at the Technical University of Denmark (2005-2006). He joined the faculty at the Department of Building Science of Tsinghua University in 2012. He has an interdisciplinary research background in building science, environmental engineering, materials science, and public health. He had significant contributions to and made an impact on his field specialization. He has authored more than 80 journal papers, including *JAMA Inter Med., JAMA Pediatrics, Applied Catalysis B-Environmental, Angewandte Chemie, Small, J. Hazardous Materials, Environmental Science & Technology, Environ. Health Persp., ACS Applied Materials & Interfaces, Building and Environment, Indoor Air*, with more than 2700 citations (WoS without self-citation). Besides, he has authored 9 book chapters, and more than 20 patents (11 authorized).

He is the recipient of some awards and honors, including the Yaglou Award (2016) from the International Society of Indoor Air Quality and Climate (ISIAQ) for being the most promising young (under the age of 37) researcher in the field of indoor air science, National Science Fund for Excellent Young Scholar (2017) of National Natural Science Foundation of China (NSFC), First Prize of Beijing Science and Technology Award (Ranking 3/15), Natural Science Award (first class, ranking 5/5) by China Ministry of Education (2010), Prof. He Xinzhou Award for academic excellence from the Chinese Society for Environmental Sciences (2017), Prof. Xia Anshi Award

for academic excellence in the field of HVAC&R in China.

He serves as the Subject Editor of *Building Simulation*; Editorial Board Member of *Scientific Reports, Atmosphere, Energy and Built Environment, Journal of HV&AC (in Chinese), and Journal of Appliance Science & Technology (in Chinese)*. He has been elected as the Fellow of the International Society of Indoor Air Quality and Climate (FISIAQ). He is the vice-secretary (2017-present) of Indoor Environment and Health Branch of the Chinese Society for Environmental Science, and president (2017-2019) of the Youth Committee of Indoor Environment and Health Branch of the Chinese Society for Environmental Science.

2. Education

Institution	Degree	Years	Field of study
Department of Building Science, Tsinghua University	Ph.D.	Sept. 2003 – Jul. 2009	Photocatalytic oxidation for indoor purification
International Centre for Indoor Environment and Energy, Technical University of Denmark	Visiting Ph.D.	Oct. 2005 – Nov. 2006	Indoor air quality, indoor air cleaning
Department of Building Science, Tsinghua University	B.Eng.	Sept. 1999 – Jul. 2003	HVAC (Heating, Ventilation and Air Conditioning)

3. Academic and Professional Experience

Associate Professor (tenured)	Department of Building Science, Tsinghua University	Jun. 2019 – Present
Associate Professor (tenure-track)	Department of Building Science, Tsinghua University	Aug. 2017 – Jun. 2019
Associate Research Fellow	Department of Building Science, Tsinghua University	Aug. 2016 – Jul. 2017
Associate Professor	Department of Building Science, Tsinghua University	Jan. 2015 – Aug. 2016
Assistant Professor	Department of Building Science, Tsinghua University	Aug. 2012 – Dec. 2014
Project Engineer	Tongheng Urban Planning & Design Institute, Beijing, China	Jul. 2011 – Aug. 2012
Postdoctoral	Department of Chemistry, Tsinghua University	Jul. 2009 – Jul. 2011

4. Academic Awards and Honors

- **Fellow** of the International Society of Indoor Air Quality and Climate (FISIAQ) (2022)
- **First Prize of Beijing Science and Technology Award**, China (Ranking 3/15) (2020)
- **Yaglou Award** from the International Society of Indoor Air Quality and Climate (ISIAQ)

for being the most promising young researcher (under age of 37) in the indoor air sciences. Dr. Mo is the eighth recipient to receive this worldwide award since the award began in 1999. (2016)

- **National Science Fund for Outstanding Young Scholars**, China (2017)
- **Prof. Xingzhou He Award** for academic excellence from Indoor Environment and Health Branch of Chinese Society for Environmental Science (2017)
- **Best Student Paper Award** received by Dr. Mo's student Enze Tian at the 15th International Conference on Indoor Air Quality and Climate, Philadelphia, USA, for the paper entitled "A washable electrostatically assisted coarse filter with high filtration efficiency for ambient particles and low pressure drop" (2018)
- **Best Poster Award** received by Dr. Mo's student Enze Tian at the 16th Conference of the International Society of Indoor Air Quality and Climate, Seoul, Korea, for the paper entitled "TiO2-coated PU sponges with ultra-low pressure drop for efficient electrostatic multifunctional air filtration: PM and formaldehyde." (2020)
- **Best Poster Award** received by Dr. Mo's student Enze Tian at the 9th International Conference on Indoor Air Quality, Ventilation & Energy Conservation in Buildings (IAQVEC), Incheon, Korea, for the paper entitled "Enhancement of indoor submicron particle removal by electrical agglomeration." (2016)
- **Excellent Reviewer** for *Building and Environment* Journal (2013)
- **Youth Science and Technology Advancement Award** from the Chinese Society for Environmental Sciences (2012)
- **National Natural Science Award** (First Class, Ranking 5/5), Ministry of Education, China (2010)
- **Prof. Xia Anshi Award** for academic excellence in the field of HVAC&R in China (totally 4 Ph.Ds got this award in 2009), Shanghai Jiaotong University (2009)
- **Distinguished PhD's Degree Thesis with Honor**, Tsinghua University (2009)
- **Academic Rising Award** of School of Architecture, Tsinghua University (2008)
- **Contribution Award of Laboratory Construction** (First class), Tsinghua University, (2008)
- **Best Student Paper Award** received by Jinhan Mo at the 10th International Conference on Indoor Air Quality and Climate, Beijing, China (2005)

5. Editor or Editorial Board Member of Journals

- Subject Editor, *Building Simulation*, 2021 – present
- Guest Editor, *Atmosphere*, Special Issue "Aerosols in Residential, School, and Vehicle Environments", 2022
- Editorial Board Member, *Atmosphere*, 2021 – present
- Editorial Board Member, *Scientific Reports*, 2021 – present
- Guest Editor, *Sustainability*, Special Issue "Sustainable Building and Sustainable Indoor Environment", 2020
- Editorial Board Member, *Energy and Built Environment*, 2019 – present
- Editorial Board Member, *Journal of HV&AC* (in Chinese), 2021 – present

- Editorial Board Member, *Journal of Appliance Science & Technology* (in Chinese), 2019 – present

6. Memberships in Professional and Honorary Societies

- Member, International Society of Indoor Air Quality and Climate (ISIAQ), 2009 – present
- Member, ISIAQ Scientific and Technical Committee: Air cleaning (STC 22), 2011 – present
    - Helping Prof. Alireza Afshari, the chairman of SCT 22, to organize workshops on air cleaning in Indoor Air 2020, 2016, 2014; Healthy Buildings 2019, 2015; ISHVAC 2017
    - Executive secretary of STC 22, 2011-2013
- Member, Indoor Environment and Health Branch of Chinese Society for Environmental Science, 2009 – present

7. Professional Society and Major Governmental Committees

National Natural Science Foundation of China (NSFC):

- Project Director (fixed-term), Division of Architecture and Civil Engineering, Department of Engineering and Material Science, NSFC, 2022.3 – present
- Secondments, Division of Architecture and Civil Engineering, Department of Engineering and Material Science, NSFC, 2021.3 – 2021.7

Academic/Professional Committees/Groups:

- Vice-secretary of Indoor Environment and Health Branch (IEHB) of Chinese Society for Environmental Science, 2017.7 – present
- President of Youth Committee of Indoor Environment and Health Branch (IEHB) of Chinese Society for Environmental Science, 2017.7 – 2019.6
- Vice-president of Youth Committee of Indoor Environment and Health Branch (IEHB) of the Chinese Society for Environmental Science, 2012 – 2017.6
- Committee member, Ventilation Committee of the National HVAC Society, 2017 – present

International Conferences:

- Scientific Committees:
    - International Scientific Committee, Indoor Air, 2020, Seoul, Korea
    - Chair of Young Scientific Committee, Healthy Buildings 2019, Asia, Changsha, China
    - International Scientific Advisory Committee, Indoor Air, 2018, Philadelphia, USA
    - Healthy Buildings 2017 Asia, Tainan, Taiwan, China
- Organizing Committees:
    - The 8th Annual Conference of the Indoor Environment and Health Branch, Chinese Society of Environmental Science (IEHB2017) and the 8th International Conference on Sustainable Development in Building and Environment (SuDBE2017), Chongqing, China (2017)

- The 11th International Conference on Industrial Ventilation, Shanghai, China (2015)
- The 1st International Symposium on Semi-Volatile Organic Compound Exposures, Beijing, China (2010)
- The 6th Annual Conference of the Indoor Environment and Health Branch of the China Environmental Science Society (IEHB2014), Shanghai, China (2014)
- The 5th International Workshop on Energy and Environment of Residential Buildings and the 3rd International Conference on Built Environment and Public Health, Guilin, China (2009)

- Conference Session Chair/Co-Chair:
  - Indoor Air 2020, Seoul, Korea. Organized a workshop entitled "What are the future filtration technologies of particulate matter or infectious aerosols?"
  - Healthy Buildings 2019 Asia, Changsha, China. Organized a workshop entitled: “Indoor air cleaning: new progress.”
  - The 11th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC), Harbin, China (2019). Organized a workshop entitled: “Research Progresses, Challenges and Future Perspectives on Indoor Air Cleaning Materials and Technologies.”
  - The 14th International Conference on Indoor Air Quality and Climate, Ghent, Belgium, (2016)
  - The 9th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC) and the 3rd International Conference on Building Energy and Environment (COBEE), Tianjin, China (2015)
  - The 11th International Conference on Industrial Ventilation, Shanghai, China (2015)
  - The 13th International Conference on Indoor Air Quality and Climate, Hong Kong, China (2014)

Journal Reviewer:

ACS Applied Materials & Interfaces	2019 – present
ACS Sustainable Chemistry & Engineering	2020 – present
Aerosol and Air Quality Research	2016 – present
Air Quality Atmosphere and Health	2016 – present
Applied Catalysis B-Environmental	2009 – present
Applied Energy	2019 – present
Atmosphere	2015 – present
Atmospheric Environment	2008 – present
Atmospheric Pollution Research	2017 – present
Building and Environment	2009 – present
Building Simulation	2012 – present

Buildings	2021 – present
Catalysis Communications	2010 – present
Chemical Engineering Science	2011 – present
CLEAN-Soil Air Water	2013 – present
Energy & Fuels	2008 – present
Energy and Buildings	2016 – present
Environment International	2015 – present
Environmental Pollution	2018 – present
Environmental Research	2019 – present
Environmental Science & Technology	2011 – present
Environmental Science and Pollution Research	2015 – present
Environmental Science-Processes & Impacts	2021 – present
Environmental Technology & Innovation	2019 – present
Frontiers of Environmental Science & Engineering	2013 – present
Indoor Air	2009 – present
Indoor and Built Environment	2013 – present
Industrial & Engineering Chemistry Research	2009 – present
International Journal of Environmental Analytical Chemistry	2015 – present
International Journal of Environmental Research and Public Health	2013 – present
Journal of Cleaner Production	2018 – present
Journal of Hazardous Materials	2011 – present
Journal of Thermal Science	2018 – present
Materials	2020 – present
PLoS One	2013 – present
Powder Technology	2017 – present
Process Safety and Environmental Protection	2020 – present
Science and Technology for the Built Environment	2015 – present
Science of the Total Environment	2016 – present
Scientific Reports	2020 – present
Separation and Purification Technology	2020 – present
Sustainability	2019 – present
Sustainable Cities and Society	2019 – present

8. Publications

8.1 Peer-reviewed journal publications (*corresponding author)

Total Citations: 4175 (Google Scholar), 2749 (Web of Science without self-citations)

H-index: 33 (Google Scholar), 29 (Web of Science)

Representative publications	Impact factor	Publication number
JAMA Internal Medicine	44.409	1
JAMA Pediatrics	26.796	1
Applied Catalysis B-Environmental	24.319	2
Angewandte Chemie-International Edition	16.823	1
Small	15.153	1
Journal of Hazardous Materials	14.224	4
Environment International	13.352	5
Applied Energy	11.446	1
Environmental Science & Technology	11.357	5
Environmental Health Perspectives	11.035	1
Science of the Total Environment	10.753	1
Sustainable Cities and Society	10.696	3
ACS Applied Materials & Interfaces	10.383	2
Environmental Pollution	9.988	4
Separation and Purification Technology	9.136	2
Chemosphere	8.943	1
Applied Materials Today	8.663	1
Environmental Research	8.431	1
Energy and Buildings	7.201	1
Journal of Building Engineering	7.144	2
Building and Environment	7.093	9
Indoor Air	6.554	12

Publication list:

(1) Gao YL, Tian EZ*, **Mo JH***, Electrostatic polydopamine-interface-mediated (e-PIM) filters with tuned surface topography and electrical properties for efficient particle capture and ozone removal, **Journal of Hazardous Materials**, 2022, 129821. https://doi.org/10.1016/j.jhazmat.2022.129821

(2) Wang Y, Yu T, **Mo JH***, (2022) Prediction and validation of diffusive uptake rates for indoor volatile organic compounds in axial passive samplers, **Energy and Built Environment**, 2022, accepted. https://doi.org/10.1016/j.enbenv.2022.07.004

(3) Wang Y, Yu T, **Mo JH***, (2022) The influence of indoor environmental factors on toluene uptake rate of a tube-type diffusive sampler, **Journal of Building Engineering**, 104587. *Journal Impact Factor = 7.144.* https://doi.org/10.1016/j.jobe.2022.104587

(4) **Mo JH**, Gu Y, Tian EZ* (2022) Efficiently remove submicron particles by a novel foldable electrostatically assisted air coarse filter. **Separation and Purification Technology** 288:120631. *Journal Impact Factor = 9.136.* https://doi.org/10.1016/j.seppur.2022.120631

(5) Gao YL, Tian EZ, Zhang YP, **Mo JH*** (2022) Utilizing electrostatic effect in fibrous filters for efficient airborne particles removal: Principles, fabrication, and material properties. **Applied Materials Today** 26:101369. *Journal Impact Factor = 8.663.* https://doi.org/10.1016/j.apmt.2022.101369

(6) Chen Z, Wu QY, Xu Y, **Mo JH*** (2022) Partitioning of airborne PAEs on indoor impermeable surfaces: A microscopic view of the sorption process. **Journal of Hazardous Materials** 424:127326. *Journal Impact Factor = 14.224.* https://doi.org/10.1016/j.jhazmat.2021.127326

(7) Chen QW, Tian EZ, Luo ZY, **Mo JH*** (2022) Adsorption film with sub-milli-interface morphologies via direct ink writing for indoor formaldehyde removal. **Journal of Hazardous Materials** 427:128190. *Journal Impact Factor = 14.224.* https://doi.org/10.1016/j.jhazmat.2021.128190

(8) Tian EZ, Yu Q, Gao Y, Wang H, Wang C, Zhang Y, Li B, Zhu M, **Mo JH***, Xu GY*, Li J* (2021) Ultralow resistance two-stage electrostatically assisted air filtration by polydopamine coated pet coarse filter. **Small** 17 (33):2102051. (**Inside Back Cover Paper**) *Journal Impact Factor = 15.153.* https://doi.org/10.1002/smll.202102051

(9) Xia FX, Gao YL, Tian EZ, Afshari A, **Mo JH*** (2021) Fast fabricating cross-linked nanofibers into flameproof metal foam by air-drawn electrospinning for electrostatically assisted particle removal. **Separation and Purification Technology** 274:119076. *Journal Impact Factor = 9.136.* https://doi.org/10.1016/j.seppur.2021.119076

(10) Gao YL, Tian EZ, **Mo JH*** (2021) Electrically responsive coarse filters endowed by high-dielectric-constant surface coatings toward efficient removal of ultrafine particles and ozone. **ACS ES&T Engineering** 1:1449-1459. https://doi.org/10.1021/acsestengg.1c00186

(11) Chen QW, Xiao R, Lei X, Yu T, **Mo JH*** (2021) Experimental and modeling investigations on the adsorption behaviors of indoor volatile organic compounds in an in-situ thermally regenerated adsorption-board module. **Building and Environment** 203:108065. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2021.108065

(12) Chen QW, Liu F, **Mo JH*** (2021) Vertical macro-channel modification of a flexible adsorption board with in-situ thermal regeneration for indoor gas purification to increase effective adsorption capacity. **Environmental Research** 192:110218. *Journal Impact Factor = 8.431.* https://doi.org/10.1016/j.envres.2020.110218

(13) Tian EZ, Xia FX, Wu J, Zhang YP, Li J, Wang H*, **Mo JH*** (2020) Electrostatic air filtration by multifunctional dielectric heterocaking filters with ultralow pressure drop. **ACS Applied Materials & Interfaces** 12:29383-29392. *Journal Impact Factor = 10.383.* https://doi.org/10.1021/acsami.0c07447

(14) **Mo JH**, Tian EZ, Pan J* (2020) New electrostatic precipitator with dielectric coatings to efficiently and safely remove sub-micro particles in the building environment.

Sustainable Cities and Society 55:102063. *Journal Impact Factor = 10.696.* https://doi.org/10.1016/j.scs.2020.102063

(15) Gu YT, Tian EZ, Xia FX, Yu T, Afshari A, **Mo JH*** (2020) A new pin-to-plate corona discharger with clean air protection for particulate matter removal. **Energy and Built Environment** 1 (1):87-92. https://doi.org/10.1016/j.enbenv.2019.11.006

(16) Chen Z, Tian EZ, **Mo JH*** (2020) Removal of gaseous DiBP and DnBP by ionizer-assisted filtration with an external electrostatic field. **Environmental Pollution** 267:115591. *Journal Impact Factor = 9.988.* https://doi.org/10.1016/j.envpol.2020.115591

(17) Chen Z, Afshari A, **Mo JH*** (2020) A method using porous media to deliver gas-phase phthalates rapidly and at a constant concentration: Effects of temperature and media. **Environmental Pollution** 262:113823. *Journal Impact Factor = 9.988.* https://doi.org/10.1016/j.envpol.2019.113823

(18) Afshari A*, Ekberg L, Forejt L, **Mo JH***, Rahimi S, Siegel J, Chen W, Wargocki P, Zurami S, Zhang J (2020) Electrostatic precipitators as an indoor air cleaner—A literature review. **Sustainability** 12 (21):8774. *Journal Impact Factor = 3.889.* https://doi.org/10.3390/su12218774

(19) Wang LY, Xiao R, **Mo JH*** (2019) Quantitative detection method of semiquinone free radicals on particulate matters using electron spin resonance spectroscopy. **Sustainable Cities and Society** 49:101614. *Journal Impact Factor = 10.696.* https://doi.org/10.1016/j.scs.2019.101614

(20) Tian EZ, **Mo JH*** (2019) Toward energy saving and high efficiency through an optimized use of a PET coarse filter: The development of a new electrostatically assisted air filter. **Energy and Buildings** 186:276-283. *Journal Impact Factor = 7.201.* https://doi.org/10.1016/j.enbuild.2019.01.021

(21) Tian EZ, Gao YL, **Mo JH*** (2019) Electrostatically assisted air coarse filtration for energy efficient ambient particles removal: Long-term performance in real environment and influencing factors. **Building and Environment** 164:106348. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2019.106348

(22) Fang L, Norris C, Johnson K, Cui XX, Sun JQ, Teng YB, Tian EZ, Xu W, Lig Z, **Mo JH***, Schauer JJ, Black M, Bergin M, Zhang J, Zhang YP (2019) Toxic volatile organic compounds in 20 homes in Shanghai: Concentrations, inhalation health risks, and the impacts of household air cleaning. **Building and Environment** 157:309-318. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2019.04.047

(23) Chen HY, **Mo JH***, Xiao R, Tian EZ (2019) Gaseous formaldehyde removal: A laminated plate fabricated with activated carbon, polyimide, and copper foil with adjustable surface temperature and capable of in situ thermal regeneration. **Indoor Air** 29 (3):469-476. *Journal Impact Factor = 6.554.* https://doi.org/10.1111/ina.12540

(24) Xiao R, **Mo JH***, Zhang YP, Gao DW (2018) An in-situ thermally regenerated air purifier for indoor formaldehyde removal. **Indoor Air** 28 (2):266-275. *Journal Impact Factor = 6.554.* https://doi.org/10.1111/ina.12441

(25) Tian EZ, **Mo JH***, Long ZW, Luo HY, Zhang YP (2018) Experimental study of a compact electrostatically assisted air coarse filter for efficient particle removal: Synergistic particle charging and filter polarizing. **Building and Environment** 135:153-161. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2018.03.002

(26) Tian EZ, **Mo JH***, Li XF (2018) Electrostatically assisted metal foam coarse filter with small pressure drop for efficient removal of fine particles: Effect of filter medium. **Building and Environment** 144:419-426. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2018.08.026

(27) Di YW, **Mo JH***, Zhang YP, Deng JW (2017) Ozone deposition velocities on cotton clothing surface determined by the field and laboratory emission cell. **Indoor and Built Environment** 26 (5):631-641. *Journal Impact Factor = 3.067.* https://doi.org/10.1177/1420326X16628315

(28) Xiang JB, Weschler CJ, **Mo JH***, Day D, Zhang J, Zhang YP (2016) Ozone, electrostatic precipitators, and particle number concentrations: Correlations observed in a real office during working hours. **Environmental Science & Technology** 50 (18):10236-10244. *Journal Impact Factor = 11.357.* https://doi.org/10.1021/acs.est.6b03069

(29) Du ZJ, **Mo JH***, Zhang YP (2014) Risk assessment of population inhalation exposure to volatile organic compounds and carbonyls in urban China. **Environment International** 73:33-45. *Journal Impact Factor = 13.352.* https://doi.org/10.1016/j.envint.2014.06.014

(30) Du Z, **Mo JH***, Zhang YP, Xu QJ (2014) Benzene, toluene and xylenes in newly renovated homes and associated health risk in Guangzhou, China. **Building and Environment** 72 (0):75-81. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2013.10.013

(31) **Mo JH**, Zhang YP*, Xu QJ (2013) Effect of water vapor on the by-products and decomposition rate of ppb-level toluene by photocatalytic oxidation. **Applied Catalysis B-Environmental** 132:212-218. *Journal Impact Factor = 24.319.* https://doi.org/10.1016/j.apcatb.2012.12.001

(32) Mo JH, Zhang YP*, Xu QJ, Zhu YF, Lamson JJ, Zhao RY (2009) Determination and risk assessment of by-products resulting from photocatalytic oxidation of toluene. **Applied Catalysis B-Environmental** 89 (3-4):570-576. *Journal Impact Factor = 24.319.* https://doi.org/10.1016/j.apcatb.2009.01.015

(33) **Mo JH**, Zhang YP*, Xu QJ, Yang R (2009) Effect of TiO2/adsorbent hybrid photocatalysts for toluene decomposition in gas phase. **Journal of Hazardous**

Materials 168 (1):276-281. *Journal Impact Factor = 14.224.* https://doi.org/10.1016/j.jhazmat.2009.02.033

(34) **Mo JH**, Zhang YP*, Xu QJ, Lamson JJ, Zhao RY (2009) Photocatalytic purification of volatile organic compounds in indoor air: A literature review. **Atmospheric Environment** 43 (14):2229-2246. *Journal Impact Factor = 5.755.* https://doi.org/10.1016/j.atmosenv.2009.01.034

(35) **Mo JH**, Zhang YP*, Yang R, Xu QJ (2008) Influence of fins on formaldehyde removal in annular photocatalytic reactors. **Building and Environment** 43 (3):238-245. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2005.12.027

(36) **Mo JH**, Zhang YP*, Yang R (2005) Novel insight into VOC removal performance of photocatalytic oxidation reactors. **Indoor Air** 15 (4):291-300. *Journal Impact Factor = 6.554.* https://doi.org/10.1111/j.1600-0668.2005.00374.x

Peer-reviewed journal publications (Co-author)

(37) Liu NR, et al., Indoor exposure levels and risk assessment of volatile organic compounds (VOCs) in residences, schools and offices in China from 2000 to 2021: a systematic review, **Indoor Air**, accepted

(38) Kou FC, Shi SH, Zhu N, Song YH, Zou Y, **Mo JH**, Wang X (2022) Improving the indoor thermal environment in lightweight buildings in winter by passive solar heating: An experimental study, **Indoor and Built Environment**, 0(0), 1420326X221091448. *Journal Impact Factor = 3.067.* https://doi.org/10.1177%2F1420326X221091448

(39) Afshari A, Mo JH, Tian EZ, Seppanen O, Testing Portable Air Cleaning Units –Test Methods and Standards: A Critical Review, **REHVA Journal**, 2022, 59(3): 35-46.

(40) Niu ZL, Xiao C, **Mo JH**, Zhang L, Chen C* (2022) Investigating the influence of metal-organic framework loading on the filtration performance of electrospun nanofiber air filters, **ACS Applied Materials & Interfaces**, 14(23), 27096-27106. *Journal Impact Factor = 10.383.* https://doi/10.1021/acsami.2c06808

(41) Liu NR, Bu ZM, Liu W, Kan HD, Zhao ZH, Deng FR, Huang C, Zhao B, Zeng XG, Sun YX, Qian H, **Mo JH**, Sun CJ, Guo JG, Zheng XH, Weschler LB, Zhang YP* (2022) Health effects of exposure to indoor volatile organic compounds from 1980 to 2017: A systematic review and meta-analysis, Indoor Air, 32(5): e13038. *Journal Impact Factor = 6.554.* https://doi.org/10.1111/ina.13038

(42) Su C, Pan M, Zhang Y, Kan H, Zhao Z, Deng F, Zhao B, Qian H, Zeng X, Sun Y, Liu W, **Mo JH**, Guo J, Zheng X, Sun C, Zou Z, Li H, Huang C (2022) Indoor exposure levels of radon in dwellings, schools, and offices in China from 2000 to 2020: A systematic review. **Indoor Air**. 32(1): e12920. *Journal Impact Factor = 6.554.* https://doi.org/10.1111/ina.12920

(43) Gong Q, Kou F, Sun X, Zou Y, **Mo JH**, Wang X (2022) Towards zero energy buildings: A novel passive solar house integrated with flat gravity-assisted heat pipes. **Applied**

Energy 306:117981. *Journal Impact Factor = 11.446.* https://doi.org/10.1016/j.apenergy.2021.117981

(44) Zhang A, Liu Y, Zhao B, Zhang Y, Kan H, Zhao Z, Deng F, Huang C, Zeng X, Sun Y, Qian H, Liu W, **Mo JH**, Sun C, Zheng X (2021) Indoor PM2.5 concentrations in China: A concise review of the literature published in the past 40 years. **Building and Environment** 198:107898. *Journal Impact Factor = 7.093.* https://doi.org/10.1016/j.buildenv.2021.107898

(45) Xiang J, Seto E, **Mo JH**, Zhang J, Zhang Y (2021) Impacts of implementing Healthy Building guidelines for daily PM2.5 limit on premature deaths and economic losses in urban China: A population-based modeling study. **Environment International** 147:106342. *Journal Impact Factor = 13.352.* https://doi.org/10.1016/j.envint.2020.106342

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8.2 Conference Papers (*corresponding author)

(1) Tian EZ, Gao YL, Wang C, Li J*, Mo JH*. TiO2-coated PU sponges with ultra-low pressure drop for efficient electrostatic multifunctional air filtration: PM and formaldehyde. Paper 0212. The 16th Conference of the International Society of Indoor Air Quality & Climate (Indoor Air 2020), November 1-4, Seoul, Korea. 2016YFC0207103, 51722807, 51521005, CSC 201906210128.?Best Poster Award (10 winners in all).

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(3) Chen Z, Tian EZ, Mo JH*. Interfacial adsorption of gaseous PAEs on micro polyurethane fiber with activated carbon coating: Enhancement by electrostatic

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(4) Gu YT, Mo JH*, Development of electrostatically assisted air coarse filter module: Optimizing discharge and automatic replacement. Paper 1390458. Healthy Buildings 2019 Asia, October 22-25, 2019, Changsha, China. 2016YFE0102300-03, 51722807, 51521005.

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(11) Chen Z, Mo JH*, A porous media based method to generate stable and constant gaseous concentrations of semi-volatile organic compounds. Paper 627. The 11th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC 2019), July 12-15, 2019, Harbin, China. 2016YFC0207103, 51722807, 51521005.

(12) Tian EZ, Mo JH*, A washable electrostatically assisted coarse filter with high filtration efficiency for ambient particles and low pressure drop, Indoor Air 2018, paper 594, (2016YFC0207103,51722807, 51478235 and 51521005) Best paper award

(13) Tian EZ, Mo JH*, Using metal foams as collecting electrodes in electrostatic precipitator for efficient removal of ambient particles, Indoor Air 2018, paper 590, 2016YFE0102300, 51722807, 51478235, and 51521005

(14) Tian EZ, Mo JH*, Experimental study of a new hetero-caking filter with low pressure drop for efficient electrostatic filtration of ambient particulate matter, Indoor Air 2018, paper 597 (2016YFC0207103)

(15) Chen HY, Mo JH, Xiao R, Effective removal of indoor formaldehyde: an electric-thermally regenerated slice coated with activated carbon, Indoor Air 2018, paper 644 (2016YFC0207103)

(16) Xiang JB, Mo JH*, et al., Tightening Standards for Indoor Levels of PM2.5: A Promising Approach for Reducing PM2.5 Associated Mortalities in Urban China, Indoor Air 2018, paper 164

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(21) Xiao R, Mo JH*. Long-term performance evaluation of three noble/transition-metal based room-temperature catalysts for indoor formaldehyde removal. International symposium on Heating, Ventilation and Air Conditioning 2017, October 19-22, China.

(22) Xiao R, Mo J H*, A new Thermal-Regenerative Air Purifier(TRAP) for indoor formaldehyde removal, Paper: 1296, IAQVEC 2016, Incheon, Korea

(23) Tian E Z, Mo J H*, Enhancement of indoor submicron particle removal by electrostatic-assisted air (EAA) filter., Paper: 1196, IAQVEC 2016, Incheon, Korea. Best poster award (ranking top 1 of all 5 winners)

(24) Pan J, Tian E Z, Mo J H*, Wu X, Wang X, An air filtration system integrated with building envelope to reduce indoor particles, Paper: 1166, IAQVEC 2016, Incheon, Korea.

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(28) Di Y W, Mo J H*, Zhang Y P, Deng J W. Determination of kinetic parameters of ozone initiated reactions with cloth-ing by using Field and Laboratory Emission Cell (FLEC), ISHVAC-COBEE 2015, Tianjin, China.

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8.2 Book or chapter

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(2) **Mo JH***, Liu YJ, 2021. Sampling and Analysis of VVOCs and VOCs in Indoor Air, in: Zhang, Y., Hopke, P.K., Mandin, C. (Eds.), Handbook of Indoor Air Quality. Springer Nature Singapore, Singapore, pp. 1-12.

(3) Liu YJ, **Mo JH**, 2021. Real-Time Monitoring of Indoor Organic Compounds, in: Zhang, Y., Hopke, P.K., Mandin, C. (Eds.), Handbook of Indoor Air Quality. Springer Singapore, Singapore, pp. 1-24.

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9. Invited Speech in International Conferences/Workshop

(1) Jinhan Mo, Novel air filtration technologies for building ventilation systems: high efficiency, low air resistance and long service time, The 10th International Conference on Sustainable Development in the Building and Environment (SuDBE2021), Chongqing, China, December 10-12, 2021.

(2) Jinhan Mo, Interfacial transport and separation of indoor air pollutants, International Conference on Green Building and Low Carbon Technology, Xi'an, China, November 13-14, 2021.

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(4) Jinhan Mo, Thoughts on how to enhance the filtration performance of coarse filters, 2018 Researcher Links China-UK workshop of low-carbon heating and cooling technologies, Huazhong University of Science and Technology, Wuhan, China, August 5-7, 2019.

(5) Jinhan Mo, In-situ thermally-regenerated module for VOC removal: Enhancement of interfacial mass transfer and purification, The 1st International Conference for Global Chinese Academia on Enegy and Built Environment (CEBE 2021), July 19-22, Chengdu, China

(6) Jinhan Mo, In-situ thermally-regenerated air purifier (TRAP) for indoor formaldehyde removal, The 3rd Energy & Environment (E&E) International Conference, 26-27 Oct. 2016, Korea Institute of Science and Technology, Seoul, Korea.

(7) Jinhan Mo, Photocatalytic oxidation for indoor air purification: mechanism, advantages and challenges, The 1st Energy & Environment (E&E) International Conference, 1-2 Oct. 2014, Korea Institute of Science and Technology, Seoul, Korea.

10. Grants and Contracts

Investigators	Title	Agency	Grant Total (CNY)	Mo's Share (CNY)	Grant period
PI	Airborne VOCs monitoring in confined spaces	Wuhan Second Ship Design and Research Institute	¥790,000	¥790,000	2021-2022
PI	Study on the electrostatically enhanced mechanism and ventilation filtration performance of high dielectric hetero-caking filters	National Natural Science Foundation of China (NSFC)	¥590,000	¥590,000	2021-2024
PI	Research and demonstration of in-situ adsorption and thermally-regenerated module for the VOCs emission control in furniture industries	Beijing Municipal Science & Technology Commission	¥2800,000	¥600,000	2019-2022
PI	Air pollution control in building environments	National Natural Science Foundation of China (NSFC)	¥1300,000	¥1300,000	2018-2020
PI	Electrostatically Assisted Metal Foam coarse filter (EAMF filter) - three round	Daikin Industries Co., Ltd.	¥700,000	¥700,000	2017-2018; 2018-2019; 2020-2021
PI	Formation of indoor new pollutants and their health effect	Ministry of Science and Technology, China (MOST), 13th Five-years National Key Technology R&D Program of China	¥6,730,000	¥1,860,000	2016-2019
Co-PI with Dr. Fulin Wang (at China side) and Dr. Brett Singer (at US side)	Key Technologies for "Net-zero energy buildings"	MOST, China-US Clean Energy Research Center	¥1,040,000	¥407,000	2016-2019
PI	Formation mechanism of secondary pollution from air filters in HAVC system	National Natural Science Foundation of China (NSFC)	¥800,000	¥800,000	2015-2018
PI	Degradation of indoor volatile organic pollutants by photo-thermal catalyst: assembly, couple effect	NSFC	¥200,000	¥200,000	2011-2013

	and mechanism				
Co-PI with Prof. Xianting LI	Research and development of a new hybrid air purification technologies for HVAC system: adsorption and catalysis	MOST, 12th Five-years National Key Technology R&D Program of China	¥5,950,000	¥994,000	2012-2015
PI	Intermediates of indoor volatile organic pollutants by photo-thermal catalyst	China Postdoctoral Science Foundation	¥30,000	¥30,000	2009-2010
PI	Performance evaluation of an air cleaning device with a vacuum regeneration system used in a simulated space station	China Astronaut Research and Training Center	¥4,430,000	¥4,430,000	2011-2013
PI	R &D of fresh air ventilator	China Merchants Group	¥400,000	¥400,000	2016-2017
PI	Consulting on indoor $PM_{2.5}$ control	MCC Real Estate Group Co., Ltd.	¥400,000	¥400,000	2016-2017
		TOTAL	**¥26,160,000**	**¥13,501,000**	

11. Teaching

Dr. Mo has made a substantial contribution to teaching and teaching development in indoor air chemical pollution control in the Department of Building Science at Tsinghua University. He has taught subjects including heat and mass transfer, measurement of indoor air pollutants, air purification, and environmental health. He obtained high Student Feedback Questionnaire (SFQ) in his course “Indoor Air Chemical Pollution: Measurement and Control”, which was ranked Top 5% in 543 courses at Tsinghua University in 2015 and Top 5% in 481 courses at Tsinghua University in 2018. He supervised the student research training (SRT) program, the scientific research program for undergraduate students, and the student innovation training program. The undergraduate students won the Grand Prize in the China National University Student Science Contest on Energy Saving & Emission Reduction in 2015, 2016 and 2017, respectively (Only 9 or 10 Grand Prize winners out of over 2500 participant groups in this contest every year); the first prize SRT awards for all undergraduate students at Tsinghua University in 2015, 2016 and 2017, respectively; and the ROHM Innovation Award of TECO International Contest (Taiwan) in 2016. He was also the mentor of 40 undergraduate students from 2012 to 2018. Dr. Mo received the Excellent Supervisor Award of the 33rd and 34th Challenge Cup of Tsinghua University in 2015 and 2016, respectively, and the First Class of Excellent Supervisor Awards of SRT program of Tsinghua University in 2015, 2016 and 2017. More details are reported in the document of “Statement of teaching”.

Teaching courses:

Spring

60000012, Processing scientific research data and creating scientific figures

40000182, Design of air pollution control devices in buildings and their applications

40990181, Indoor environmental quality and health

Fall

40990162, Indoor air pollution control

12. Supervisions

Ph.D. Supervisions Completed:

Enze TIAN, Sept. 2016 – June 2021

E-mail: tianenze@sslab.org.cn, webpage: https://eztian.net/

Thesis Topic: Electrical enhanced filtration technologies for indoor sub-micron particle removal

Current position: Postdoctoral fellow, Institute of Physics, Chinese Academy of Sciences

Awards:

- Best Poster Award at IAQVEC 2016, Incheon, Korea (totally 5 papers awarded)
- Best Paper Award at IEHB 2017, Chongqing, China
- Best Student Paper at Indoor Air 2018, Philadelphia, USA (totally 4 papers awarded)
- National Scholarship for graduate students
- Tsinghua University Second Scholarship for integrated excellent students
- National Scholarship for graduate students
- Best Poster Award at Indoor Air 2020, Seoul, North Korea, online (totally 10 papers awarded)
- Distinguished PhD Candidate from Energy and Built Environment Journal (totally 3 students awarded)

M.S. Supervisions Completed:

Ru XIAO, Sept. 2016 – Jul. 2019

Thesis: in-situ thermal regeneration/catalytic air purification of indoor gaseous organic pollutants

Awards:

- International TECO Cup Creative Competition Roma Creative Award, 2016

Yuting GU, Sept. 2019 – Jul. 2022

Thesis: Optimization of electrostatically enhanced ventilation filtration structure with two-

stage particles charging

Ph.D. in Progress:

Zhuo CHEN, Sept. 2018 – Jul. 2023 (expected)

E-mail: chenzhao18@mails.tsinghua.edu.cn

Thesis Topic: Organic film formation of SVOCs on indoor surfaces.

Awards:

- Best poster award at IEHB2019, Nanjing, China.

Qiwei CHEN, Sept. 2019 – present

E-mail: qiwei_chen@foxmail.com

Thesis Topic: Fabrication of VOC adsorption materials through 3D printing

Awards:

- First Prize Award of Student Forum at the 10th International Conference on Sustainable Development in the Building and Environment (SuDBE2021), Chongqing, China.

Fanxuan XIA, Sept. 2019 – present

E-mail: xiafx19@mails.tsinghua.edu.cn

Thesis Topic: Transmission control methods and mechanism research on the antibiotic resistance bacteria (ARB) and genes (ARGs) in built environments

Yilun GAO, Sept. 2020-present

E-mail: gyl20@mails.tsinghua.edu.cn

Thesis Topic: Modification of polymer micro-fiber toward efficient electrostatically assisted air filtration

Awards:

- Best Paper Award at 10th Indoor Environment and Health Branch Conference (IEHB) (Wuhan China) 2021.

Yan WANG, Sept. 2020-present

E-mail: yan-wang20@mails.tsinghua.edu.cn

Thesis Topic: Photocatalytic oxidation for the removal of multi-organic compounds

Wuwei ZOU, Sept. 2021-present

E-mail: zouww17@mails.tsinghua.edu.cn

Thesis Topic: Solar energy and building

M.S. in Progress:

Xiao LEI, Sept. 2020 – Jul. 2023 (expected)

E-mail: lei-x20@mails.tsinghua.edu.cn

Thesis Topic: Development of thermal-swing modules for industrial VOCs emission control

Postdoctoral Fellows Supervision:

Hongyin CHEN, Sept., Aug. 2017 – Sept. 2019

Research Topic: Fabrication of air cleaning materials of indoor gaseous pollutants

Xinwei LIU, Oct. 2015 – Oct. 2017

Research Topic: Enhancement of particle drift velocity in electrostatic precipitators

Bachelor Supervisions Completed

- Wuwei Zou, July 2021, Thesis: Solar energy in Buildings
- Yilun GAO, July 2020, Thesis: Modification of polymer micro-fiber toward efficient electrostatically assisted air filtration.
- Xiao LEI, July 2020, Thesis: VOCs adsorption
- Qiwei CHEN, July 2019, Thesis: Fabrication of VOC adsorption materials
- Fanxuan XIA, July 2019, Thesis: Microbial contamination by Electrostatic enhanced filtration.
- Yuting GU, July 2019, Thesis: Electrostatic discharge
- Zhuo CHEN, July 2018, Thesis: Airborn SVOC generator
- Qianying Wu, July 2017, Thesis: SVOCs/VOCs film on indoor surfaces
  Ms. Wu got the Outstanding Undergraduate Award from Tsinghua University
- Jin Pan, July 2017, Thesis: A new electrostatic precipitator (ESP) with single-layer electrical resistance material
- Jiaqi Sun, July 2017, Thesis: The effects of filtration intervention on asthmatic children in urban Shanghai
- Xueying Jia, July 2017, Thesis: Calibration system for low-cost formaldehyde sensors
- Ru Xiao, July 2016, Thesis: Evaluation of a new thermal-regenerative air purifier for indoor formaldehyde removal
- Enze Tian, July 2016, Thesis: Electrostatic-assisted air filters: Development and evaluation
- Jiayin Chen, July 2016, Thesis: Chemical compounds on used HEPA filters from household air cleaners during haze period in Beijing
- Yiwen Di, July 2014, Thesis: Ozone deposition velocities on cotton clothing surface determined by the Field and Laboratory Emission Cell. Mr. Di received the Distinguished Undergraduate Thesis Award of Tsinghua University.