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EDUCATION

Ph.D. (2003) **Massachusetts Institute of Technology (MIT)**, Cambridge, MA, USA
Building Technology Program, Department of Architecture
(*Specialization*: Sustainable Building, Integrated Building Simulation, and Indoor Air Quality)

Dr.Eng. (1999) **Tsinghua University**, Beijing, China
Fluid Mechanics Program, Department of Engineering Mechanics
(*Specialization*: Computational Fluid Dynamics and Turbulence)

M.S. (1995) **Tsinghua University**, Beijing, China
Fluid Mechanics Program, Department of Engineering Mechanics
(*Specialization*: Experimental Fluid Mechanics)

B.S. (1994) **Tsinghua University**, Beijing, China
Engineering Mechanics Program, Department of Engineering Mechanics

EXPERIENCE

2015-Now **Professor**, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, CO, USA
Conduct teaching, research and service activities in the areas of integrated building systems, building energy efficiency, indoor environment quality, and sustainable building.

2014-2016 **Faculty Director** for Architectural Engineering Program, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, CO, USA
Manage and lead Architectural Engineering Freshmen and outreach program.

2011-2015 **Associate Professor**, Program of Environmental Design (Architecture), University of Colorado at Boulder, CO, USA
Help reform and develop the new architecture program as one of the few campus-appointed voting faculty members.

2010-2015 **Associate Professor**, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, CO, USA
Conduct teaching, research and service activities in the areas of integrated building systems, building energy efficiency, indoor environment quality, and sustainable building.

2010-2011 **Full-Time Senior Fellow**, Rocky Mountain Institute (RMI), Boulder, CO, USA
Manage, supervise and advise over a dozen design and consulting projects in different sectors.

2009-2015 **The "Sea-Sky Scholar" University Professor**, School of Civil Engineering, Dalian University of Technology, Dalian, China
Deliver courses and seminars, supervise graduate students, and collaborate on research projects.

2006-Now **Adjunct Professor**, School of Environmental Science and Technology, Tianjin University, Tianjin, China
Deliver seminars, supervise graduate students, and collaborate on research projects.

2003-2010 **Assistant Professor**, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, CO, USA
Conduct teaching, research and service activities in the areas of integrated building systems, building energy efficiency, indoor environment quality, and immune and sustainable building.

2003(Jun-Aug) **Research Associate**, Building Technology Program, MIT, Cambridge, MA
Optimize ventilation system designs for chemical and biological laboratories.

- 1999-2003 **Teaching and Research Assistant**, Department of Architecture, MIT, Cambridge, MA
Assist teaching a series of core courses offered by Building Technology Program, and conduct several research projects related to building energy efficiency, indoor environment quality, and integrated system design.
- 1994-1999 **Teaching and Research Assistant**, Department of Engineering Mechanics, Tsinghua University, Beijing, China
Assist teaching several experimental and computational fluid mechanics courses, develop new turbulence models, and apply CFD for solving industry problems.
- 1995 **Summer Intern – Associate Engineer**, The Mengtougou Cement Factory, Inc., Beijing, China
Automate the product lines and industrial management systems.
- 1993 **Summer Intern – Associate Engineer**, The Northern China Oil Company, Hebei, China
Perform AutoCAD design of oil exploratory driller.

HONORS AND AWARDS

- The Gold Award of New Product & Technology, The 2016 World Internet of Things (IoT) Exposition, China, 2016
- The “Changjiang (Yangtze River) Scholar” Professorship Award, the Ministry of Education, China, 2016
- The “Hundred Talents Program” Award of Hunan Province, China, 2015
- Named as Distinguished Lecturer by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), 2014.
- “High Level Entrepreneurial Innovation Talents Program” Award of Jiangsu Province, China, 2011
- Invited Participant for 2010 US Frontiers of Engineering (US FOE) Symposium and Invited Organizer for 2011 US FOE Symposium by National Academy of Engineering of US
- Research Development Award, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, May, 2010
- Distinguished Service Award (DSA) of American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), May, 2010
- William Mong Visiting Research Fellowship in Engineering, The University of Hong Kong, 2009
- 2008 Best Paper Award, International Journal of Building Simulation, 2009
- The Conference Award, The Council on Research and Creative Work (CRCW), University of Colorado at Boulder, 2008, 2012
- Sustainability Award of Green Faculty, University of Colorado at Boulder, 2008
- The Charles A. and Anne Morrow Lindbergh Foundation Project Award, 2007
- Young Researcher Award, Department of Civil, Environmental, and Architectural Engineering, University of Colorado at Boulder, 2007
- Presidential Fellowship, Massachusetts Institute of Technology, 1999–2003
- Grant-in-Aid Fellowship, American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), 2001
- Avalon Travel Grant, Massachusetts Institute of Technology, 2000
- Martin Family Society of Fellows for Sustainability, Massachusetts Institute of Technology, 2000
- Outstanding Research Assistant (A-level) Award, Tsinghua University, 1997
- Best Paper Award of Student Education and Management at Tsinghua, Tsinghua University, 1997
- Outstanding Teaching Assistant (A-level) Award, Tsinghua University, 1996
- Guanghua Scholarship (Taiwan) (First Prize), Tsinghua University, 1996
- Takada Scholarship (Japan SMC) (First Prize), Tsinghua University, 1995

THESES

- **Ph.D. Dissertation:** “Developing an Integrated Building Design Tool by Coupling Building Energy Simulation and Computational Fluid Dynamics Programs”, Massachusetts Institute of Technology, 2003.
- **Dr.Eng. Dissertation:** “Study of the Flow around Dry-Cooling Towers”, Tsinghua University, 1999.
- **M.S. Thesis:** “Model Experiment on Wind-Break Problem of Heler-Type Dry-Cooling Towers in Power Plants”, Tsinghua University, 1995.

- **B.S. Thesis:** “Numerical Simulation of Thermal Performance of Heler-Type Dry-Cooling Towers”, Tsinghua University, 1994.

PUBLICATIONS

(* denotes my student and post-doc co-authors)

Contribution to Books

1. Miller SL and **Zhai Z** (Editors). 2015. *Proceedings of the Healthy Building 2015 America Conference*.
2. **Zhai Z**. 2014. Computational Fluid Dynamics Applications in Green Building Design. *Computational Fluid Dynamics Applications in Green Design (Book)*, pp.1-22, Edited by Maher A.R. Sadiq Al-Baghdadi, International Energy and Environment Foundation (IEEF). ISBN-13: 978-1494875756, ISBN-10: 1494875756.
3. **Zhai Z** and Liu J (Editors). 2014. Special Issue for 2012 International Conference on Building Energy and Environment (COBEE). *Energy and Buildings*, Volume 68, Part B: 633-720.
4. **Zhai Z** (Editor). 2014. Topical Issue for 2012 International Conference on Building Energy and Environment (COBEE). *Building Simulation: An International Journal*, 7(2): 107-204.
5. **Zhai Z**, Watch D, and Vernon W (Editors). 2013. Special Issue on Technological Advancements that Improve or Enhance Energy Efficiency in Healthcare and Biomedical Research Facilities. *The World Review of Science, Technology and Sustainable Development*, 10(1/2/3): 1-161.
6. **Zhai Z**, Li X*, and Wang H* (Editors). 2012. *Proceedings of the 2nd International Conference on Building Energy and Environment (COBEE2012)*. ISBN: 978-0-9816881-9-0; 0-9816881-9-5. 1314 pages.
7. Liu J, Zhang T and **Zhai Z** (Editors). 2010. Special Issue for 2008 International Conference on Building Energy and Environment (COBEE). *Energy and Buildings*, 42(1): 1-146.
8. **Zhai Z**, Liu J, and Zhang T (Editors). 2009. Special Issue for 2008 International Conference on Building Energy and Environment (COBEE). *Building and Environment*, 44(11): 2201-2318.
9. Liu J, Zhang T, and **Zhai Z** (Editors). 2008. *Proceedings of the First International Conference on Building Energy and Environment (COBEE2008)*, Volume I, II, III, 2365 Pages. ISBN 978-0-9816881-6-9, 978-0-9816881-7-6, 978-0-9816881-8-3, and 978-0-9816881-5-2 (CD).
10. Chen Q and **Zhai Z**. 2004. The Use of CFD Tools for Indoor Environmental Design. *Advanced Building Simulation (Book)*, pp.119-140, Edited by A. Malkawi and G. Augenbroe, Spon Press, New York.

Papers in Peer-Reviewed Journals

1. Youssef AMA*, Reffat RM, **Zhai Z**, Abd-ElsamieEid M. 2016. Comparative Analysis of Simulation and Optimization Tools for Building Integrated Photovoltaics (BIPV). *Journal of Engineering Sciences (Assiut University)*, 44(4): 363 – 377.
2. **Zhai Z** and Liu X*. 2016. Sensitivity Analysis of the Probability-Based Inverse Modeling Method for Indoor Contaminant Tracking. *International Journal of Low-Carbon Technologies*, DOI: 10.1093/ijlct/ctw019.
3. Wang H* and **Zhai Z**. 2016. Advances in Building Simulation and Computational Techniques: A Review between 1987 and 2014. *Energy and Buildings*, 128: 319–335.
4. **Zhai Z**, Johnson MH*, Mankibi ME*, Stathopoulos N. 2016. Review of natural ventilation models. *International Journal of Ventilation*, 15(3-4): 186-204.
5. **Zhai Z**. 2016. Breathing Wall: Concept and Thermal Performance. *Cityscape: A Journal of Policy Development and Research*, 18(2): 203-208.
6. Tong Y*, **Zhai Z**, Wang C, Zhou B, Niu X. 2016. Possibility of Using Roof Openings for Natural Ventilation in a Shallow Urban Road Tunnel. *Tunnelling and Underground Space Technology*, 54: 92-101.
7. Xue Y*, Liu W, **Zhai Z**. 2016. New Semi-Lagrangian-Based PISO Method for Fast and Accurate Indoor Environment Modeling. *Building and Environment*, 105: 236–244.
8. Chang Y, Zhang Q*, **Zhai Z**. 2016. Numerical Simulation of the Filtration Process in Fibrous Filters Using CFD-DEM Method. *Journal of Aerosol Science*, 101: 174–187.
9. Youssef AMA*, **Zhai Z**, Reffat RM. 2016. Genetic Algorithm Based Optimization for Photovoltaics Integrated Building Envelope. *Energy and Buildings*, 127: 627–636.
10. Feng Qi*, **Zhai Z**, Dang G. 2016. Building Height Estimation Using Google Earth. *Energy and Buildings*, 118: 123–132.
11. Chen X, Zhang Q*, **Zhai Z**. 2016. Energy Saving Potential of a Ventilation System with a Latent Heat Thermal Energy Storage Unit under Different Climatic Conditions. *Energy and Buildings*, 118: 339–349.

12. Previtali JM* and **Zhai Z**. 2016. A Taxonomy of Vernacular Architecture. *Energy and Buildings*, 110: 71–78.
13. Luongo JC, Fennelly KP, Keen JA, **Zhai ZJ**, Jones BW, Miller SL. 2016. Role of Mechanical Ventilation in the Airborne Transmission of Infectious Agents in Buildings. *Indoor Air*, 26(5):666-678. doi: 10.1111/ina.12267.
14. **Zhai Z**, Yates AP*, Duanmu Lin, Wang Z*. 2015. An Evaluation and Model of the Chinese Kang System to Improve Domestic Comfort in Northeast Rural China – Part-1: Model Development. *Renewable Energy*, 84: 3-11.
15. **Zhai Z**, Yates AP*, Duanmu Lin, Wang Z*. 2015. An Evaluation and Model of the Chinese Kang System to Improve Domestic Comfort in Northeast Rural China – Part-2: Result Analysis. *Renewable Energy*, 84: 12-21.
16. EL Mankibi M*, **Zhai Z**, Al-Saadi SN*, Zoubir A. 2015. Numerical Modeling of Thermal Behaviors of Active Multi-Layer Living Wall. *Energy and Buildings*, 106: 96-110.
17. Al-Saadi SN* and **Zhai Z**. 2015. A New Validated TRNSYS Module for Simulating Latent Heat Storage Walls. *Energy and Buildings*, 109: 274-290.
18. AL Saadi SN* and **Zhai Z**. 2015. Systematic Evaluation of Mathematical Methods and Numerical Schemes for Modeling PCM-Enhanced Building Enclosure. *Energy and Buildings*, 92: 374-388.
19. Liu W, Zhang T, Xue Y*, **Zhai Z**, Wang J, Wei Y, and Chen Q. 2015. State-of-the-Art Methods for Inverse Design of an Enclosed Environment. *Building and Environment*, 91: 91-100.
20. Weatherford V* and **Zhai Z**. 2015. Affordable Solar-Assisted Biogas Digesters for Cold Climates: Model, Verification and Analysis. *Applied Energy*, 146: 209-216.
21. Youssef AMA*, **Zhai Z**, Reffat RM. 2015. Design of Optimal Building Envelopes with Integrated Photovoltaics. *Building Simulation: An International Journal*, 8(3): 353-366.
22. **Zhai Z**, Abarr M*, AL-Saadi S*, and Yate P*. 2014. Energy Storage for Residential Buildings. *Journal of Architectural Engineering*, 20(4). SPECIAL SECTION: Housing and Residential Building Construction, B4014004.
23. Tong Y*, Wang X, **Zhai Z**, Niu X, Liu L. 2014. Theoretical Predictions and Field Measurements for Potential Natural Ventilation in Urban Vehicular Tunnels with Roof Openings. *Building and Environment*, 82: 450-458.
24. **Zhai Z**, Xue Yu* and Chen Q. 2014. Inverse Design Methods for Indoor Ventilation Systems Using CFD-Based Multi-Objective Genetic Algorithm. *Building Simulation: An International Journal*, 7(6): 661-669.
25. Wang H*, **Zhai Z** and Liu X*. 2014. Feasibility of Utilizing Numerical Viscosity from Coarse Grid CFD for Fast Turbulence Modeling of Indoor Environments. *Building Simulation: An International Journal*, 7(2): 155-164.
26. Wang J*, Fu C, Yang K, Zhang X, Shi G, and **Zhai Z**. 2013. Reliability and Availability Analysis of Redundant BCHP (Building Cooling, Heating And Power) System. *ENERGY*, 61: 531-540.
27. Tong Y*, Shi M, and **Zhai Z**. 2013. Fire Smoke Distribution in Naturally-Ventilated Urban Traffic Tunnels with Multiple Shafts. *Journal of Southeast University (English Edition)*, 3: 10.3969/j.issn.1003-7985.2013.03.014.
28. Wilson E*, McNeill J*, **Zhai Z**, and Krarti M. 2013. A Parametric Study of Energy Savings from Cleaning Coils and Filters in Constant Air Volume HVAC Systems. *HVAC&R Research*, 19(5): 616-626.
29. **Zhai Z** and Osborne A*. 2013. Simulation-Based Feasibility Study of Improved Air Conditioning Systems for Hospital Operating Room. *Frontiers of Architectural Research*, 2(4): 468-475.
30. McNeill J*, Hertzberg J, and **Zhai Z**. 2013. Experimental Investigation of Operating Room Air Distribution in a Full-Scale Laboratory Chamber Using Particle Image Velocimetry and Flow Visualization. *Journal of Flow Control, Measurement & Visualization*, 1(1): 24-32.
31. Xue Y*, **Zhai Z**, and Chen Q. 2013. Inverse Prediction and Optimization of Flow Control Conditions for Confined Spaces using a CFD-Based Genetic Algorithm. *Building and Environment*, 64: 77-84.
32. AL Saadi SN* and **Zhai Z**. 2013. Modeling Phase Change Materials Embedded in Building Enclosure: A Review. *Renewable & Sustainable Energy Reviews*, 21: 659-673.
33. Duanmu L, Wang Z, Li X, and **Zhai Z**. 2013. A Simplified Method to Predict Hourly Building Cooling Load for Urban Energy Planning. *Energy and Buildings*, 58: 281-291.
34. Sleiti A, **Zhai Z**, and Idem S. 2013. Computational Fluid Dynamics to Predict Duct Fitting Losses: Challenges and Opportunities. *HVAC&R Research*, 19(1): 2-9.
35. Bendewald M* and **Zhai Z**. 2013. Using Carrying Capacity as a Baseline for Building Sustainability Assessment. *Habitat International Journal*, 37: 22-32.
36. McNeill J* and **Zhai Z**. 2013. Critical Review on Hospital Surgical Room and Mechanical System Designs. *The World Review of Science, Technology and Sustainable Development*, 10: 5-16.
37. Denkenberger D*, Brandemuehl M, Pearce J, and **Zhai Z**. 2012. Expanded Microchannel Heat Exchanger: Design, Fabrication, and Preliminary Experimental Test. *The ASME Journal of Power and Energy*, 226: 532-544.
38. McNeill J* and **Zhai Z**. 2012. Field Measurements of Thermal Conditions during Surgical Procedures for the Development of CFD Boundary Conditions. *ASHRAE Transactions*, 118(2): 596-609.

39. Wang H* and **Zhai Z**. 2012. Application of Coarse Grid CFD on Indoor Environment Modeling: Optimizing the Trade-off between Grid Resolution and Simulation Accuracy. *HVAC&R Research*, 18(5): 915-933.
40. **Zhai Z**, Hermansen KA* and Al-Saadi S*. 2012. The Development of Simplified Rack Boundary Conditions for Numerical Data Center Models. *ASHRAE Transactions*, 118(2): 436-449.
41. Wang H* and **Zhai Z**. 2012. Analyzing Grid-Independency and Numerical Viscosity of Computational Fluid Dynamics for Indoor Environment Applications. *Building and Environment*, 52: 107-118.
42. Wu W*, **Zhai Z**, Zhang G, Nielsen PV. 2012. Evaluation of Methods for Determining Air Exchange Rate in a Naturally Ventilated Dairy Cattle Building with Large Openings Using Computational Fluid Dynamics (CFD). *Atmospheric Environment*, 63: 179-188.
43. Johnson MH*, **Zhai Z** and Krarti M. 2012. Performance Evaluation of Network Airflow Models for Natural Ventilation. *HVAC&R Research*, 18(3): 349-365.
44. **Zhai Z**, Liu X*, Wang H*, Li Y, Liu J. 2012. Experimental Verification of Tracking Algorithm for Dynamically-Releasing Single Indoor Contaminant. *Building Simulation: An International Journal*, 5(1): 5-14.
45. **Zhai Z** and Metzger ID*. 2012. Taguchi-Method-Based CFD Study and Optimization of Personalised Ventilation Systems. *Indoor and Built Environment*, 21(5): 690-702.
46. Wang H*, **Zhai Z**, Li Y, Liu X*. 2012. Identifying Index (Source) Patient Source Location of SARS Transmission in a Hospital Ward. *HVAC&R Research*, 18(4): 616-625.
47. Wang J*, Jing Y, Zhang C, and **Zhai Z**. 2011. Performance Comparison of Combined Cooling Heating and Power System in Different Operation Modes. *Applied Energy*, 88(12): 4621-4631.
48. Wang J*, **Zhai Z**, Jing Y, Zhang X, and Zhang C. 2011. Sensitivity Analysis of Optimal Model on Building Cooling Heating and Power System. *Applied Energy*, 88(12): 5143-5152.
49. **Zhai Z**, LeClaire N, Bendewald M*. 2011. Deep Retrofit of Commercial Buildings: A Key Pathway towards Low Carbon Cities. *Carbon Management*, 2(4): 425-430.
50. **Zhai Z**, Johnson MH*, Krarti M. 2011. Assessment of Natural and Hybrid Ventilation Models in Whole-Building Energy Simulations. *Energy and Building*, 43(9):2251-2261.
51. Wang J*, **Zhai Z**, Jing Y, Zhang C. 2011. Influence Analysis of Building Types and Climate Zones on Energetic, Economic and Environmental Performances of BCHP Systems. *Applied Energy*, 88: 3097-3112.
52. Wang J*, **Zhai Z**, Jing Y, Zhang C. 2010. Particle Swarm Optimization for Redundant Building Cooling Heating and Power System. *Applied Energy*, 87(12): 3668-3679.
53. Wang J*, **Zhai Z**, Zhang C, Jing Y. 2010. Environmental Impact Analysis of BCHP System in Different Climate Zones in China. *Energy*, 35(10): 4208-4216.
54. Wang J*, **Zhai Z**, Jing Y, Zhang C. 2010. Optimization Design of BCHP System to Maximize to Save Energy and Reduce Environmental Impact. *Energy*, 35(8): 3388-3398.
55. **Zhai Z** and Previtali J*. 2010. Ancient Vernacular Architecture: Characteristics Categorization and Energy Performance Evaluation. *Energy and Buildings*, 42(3): 357-365.
56. Corbin CD* and **Zhai Z**. 2010. Experimental and Numerical Investigation on Thermal and Electrical Performance of a Building Integrated Photovoltaic-Thermal Collector System. *Energy and Buildings*, 42: 76-82.
57. Liu X* and **Zhai Z**. 2009. Protecting a Whole Building from Critical Indoor Contamination with Optimal Sensor Network Design and Source Identification Methods. *Building and Environment*, 44(11): 2276-2283.
58. Liu X* and **Zhai Z**. 2009. Prompt Tracking of Indoor Airborne Contaminant Source Location with Probability-Based Inverse Multi-Zone Modeling. *Building and Environment*, 44(6): 1135-1143.
59. Koh J* and **Zhai Z**. 2009. Energy Saving Effect and Economy Feasibility of Office Building with regard to Geometries and Orientations. *International Journal of Air-Conditioning and Refrigeration*, 17(1): 15-24.
60. Erickson BD* and **Zhai Z**. 2008. Evaluation of Ventilation Code Requirements for Building Crawl Spaces. *Building Simulation: An International Journal*, 1: 311-325.
61. Liu X* and **Zhai Z**. 2008. Location Identification for Indoor Instantaneous Point Contaminant Source by Probability-Based Inverse CFD Modeling. *Indoor Air*, 18: 2-11.
62. Koh JY*, Lee HG, and **Zhai Z**. 2008. System Performance with Variation of Outdoor Unit Layouts at Building Re-entrants. *International Journal of Air-Conditioning and Refrigeration*, 16(1): 15-21.
63. **Zhai Z** and Liu X*. 2008. Principles and Applications of Probability-Based Inverse Modeling Method for Finding Indoor Airborne Contaminant Sources. *Building Simulation: An International Journal*, 1: 64-71.
64. Pappas A* and **Zhai Z**. 2008. Numerical Investigation on Thermal Performance and Correlations of Double Skin Façade with Buoyancy-Driven Airflow. *Energy and Buildings*, 40(4): 466-475.
65. Liu X* and **Zhai Z**. 2007. Inverse Modeling Methods for Indoor Airborne Pollutant Tracking: Literature Review

- and Fundamentals. *Indoor Air*, 17: 419-438.
66. Zhang Z, Zhang W, **Zhai Z**, and Chen Q. 2007. Evaluation of Various Turbulence Models in Predicting Airflow and Turbulence in Enclosed Environments by CFD: Part-2: Comparison with Experimental Data from Literature. *HVAC&R Research*, 13(6): 871-886.
 67. **Zhai Z**, Zhang Z, Zhang W, and Chen Q. 2007. Evaluation of Various Turbulence Models in Predicting Airflow and Turbulence in Enclosed Environments by CFD: Part-1: Summary of Prevalent Turbulence Models. *HVAC&R Research*, 13(6): 853-870.
 68. Liu X* and **Zhai Z**. 2007. Identification of Appropriate CFD Models for Simulating Aerosol Particle and Droplet Indoor Transport. *Indoor and Built Environment*, 16(4): 322-330.
 69. Chen Q, **Zhai Z**, and Wang L. 2007. Computer Modeling of Multiscale Fluid Flow and Heat and Mass Transfer in Engineered Spaces. *Journal of Chemical Engineering Science*, 62(13): 3580-3588.
 70. Liu X*, **Zhai Z**, Facciola NA, and Miller SL. 2007. Study of Penetration of Outdoor Fine Particles into a Nonresidential Building with Multi-Zone Simulation. *ASHRAE Transactions*, 113(2): 163-171.
 71. Liu J, **Zhai Z**, Pei J, and Li Y. 2007. Measurement and Assessment of VOC and Formaldehyde Contamination During Construction Period of a New Museum in China. *ASHRAE Transactions*, 113(2): 355-361.
 72. **Zhai Z** and Liu J. 2007. Influences of Building Outdoor Landscaping and Indoor Layout on Natural Ventilation Design. *Journal of Harbin Institute of Technology*, 14(Sup): 318-321.
 73. **Zhai Z**. 2006. Applications of CFD in Building Design: Aspects and Trends. *Indoor and Built Environment*, 15(4): 305-313.
 74. Jeong K*, **Zhai Z**, and Krarti M. 2006. Experimental and Numerical Investigation on Cooling Characteristics of Partition Air Supply System. *ASHRAE Transactions*, 112(2): 546-552.
 75. **Zhai Z** and Fu S. 2006. Improving Cooling Efficiency of Dry-Cooling Towers under Cross-Wind Conditions by Using Wind-Break Methods. *Applied Thermal Engineering*, 26(10): 1008-1017.
 76. **Zhai Z** and Chen Q. 2006. Sensitivity Analysis and Application Guides for Integrated Building Energy and CFD Simulation. *Energy and Building*, 38(9): 1060-1068.
 77. Yi C, Monson RK, **Zhai Z**, et al. 2005. Modeling and Measuring the Nighttime Drainage Flow in a High-Elevation, Subalpine Forest with Complex Terrain. *Journal of Geophysical Research*, 110(D22): D22303.1-D22303.13.
 78. **Zhai Z** and Chen Q. 2005. Performance of Coupled Building Energy and CFD Simulations. *Energy and Buildings*, 37(4): 333-344.
 79. **Zhai Z** and Chen Q. 2004. Numerical Determination and Treatment of Convective Heat Transfer Coefficient in the Coupled Building Energy and CFD Simulation. *Building and Environment*, 39(8): 1001-1009.
 80. **Zhai Z**, Srebric J, and Chen Q. 2003. Application of CFD to Predict and Control Chemical and Biological Agent Dispersion in Buildings. *International Journal of Ventilation*, 2(3): 251-264.
 81. **Zhai Z** and Chen Q. 2003. Solution Characters of Iterative Coupling between Energy Simulation and CFD Programs. *Energy and Building*, 35(5): 493-505.
 82. **Zhai Z**, Chen Q, Haves P, and Klems JH. 2002. On Approaches to Couple Energy Simulation and Computational Fluid Dynamics Programs. *Building and Environment*, 37(8-9): 857-864.
 83. **Zhai Z**, Chen Q, and Scanlon PW. 2002. Design of Ventilation System for An Indoor Auto Racing Complex. *ASHRAE Transactions*, 108(1): 989-998.
 84. Fu S and **Zhai Z**. 2002. Application of Multi Block Technique in 3D Complex Turbulent Flow with Multiply-Connected Domain. *Chinese Journal of Computational Mechanics*, 19(1): 20-25.
 85. Fu S and **Zhai Z**. 2001. Numerical Investigation of the Adverse Effect of Wind on the Heat Transfer Performance of Two Natural Draft Cooling Towers in Tandem Arrangement. *ACTA MECHANICA SINICA*, 17(1): 24-34.
 86. **Zhai Z**, Fu S, and Zhu K. 1999. Comparison of Flow Characteristics & Improving-Techniques in Single & Double Dry-Cooling Towers under Cross-Wind. *ACTA AERODYNAMICA SINICA*, 1999(1).
 87. **Zhai Z**, Zhu K, and Fu S. 1998. Experimental Study of Effects of Cross Wind on Flow in Natural-Draft Dry-Cooling Towers. *Tsinghua Science and Technology*, 3(2).
 88. **Zhai Z** and Fu S. 1997. Numerical Simulation of 3-D Flowfield over Surface-mounted Cube. *Chinese Journal of Computational Mechanics*.
 89. **Zhai Z**, Tang G, Fu S, and Zhu K. 1997. The Experiment and Numerical Study of the Influence of Cross-Wind on the Performance of Natural Dry-Cooling Tower. *Thermal Power Generation*.
 90. **Zhai Z**, Zhu K, and Fu S. 1997. Model Experiment for the Influence of Cross-Wind on the Air Flow Field in Natural Draft Dry-Cooling Tower. *Journal of Experimental Mechanics*.
 91. **Zhai Z** and Fu S. 1996. Numerical Study of Natural Convection of Natural Draft Dry-cooling Tower. *Journal of*

Papers in Peer-Reviewed Conference Proceedings (with Presentations)

1. **Zhai Z** and Preechawuttidet P*. 2016. Simulation and Analysis of Standard and Advanced Ventilation Systems in Hospital Operating Rooms. *IAQVEC2016*, Oct 23-26, Incheon Songdo, South Korea.
2. **Zhai Z** and Metzger ID*. 2016. Personalized Ventilation Systems: Categorization and Comparison. *IAQVEC2016*, Oct 23-26, Incheon Songdo, South Korea.
3. Wang H*, Lu S, **Zhai Z**, Liu X*. 2016. Identification of Indoor Instantaneous Airborne Contaminant Source under Dynamic Indoor Airflow. *The 14th international conference of Indoor Air Quality and Climate (Indoor Air 2016)*, July 3-8, Ghent, Belgium.
4. **Zhai Z** and Brannon B*. 2015. Performance Comparison of Destratification Fans for Large Spaces. *The 8th International Cold Climate HVAC Conference*, Oct 20-23, Dalian, Liaoning, China. [Procedia Engineering, 2016, 146: 40–46].
5. **Zhai Z**, McNeill J*, and Hertzberg J. 2015. Experimental and CFD Investigation of Hospital Operating Room Air Distribution. *Healthy Buildings 2015 America*, July 19-22, Boulder, CO, US.
6. Qi F*, **Zhai Z**, Zhang Z, and Chen Z. 2015. Estimation on Representative Plane Dimension of Rural Residential Buildings at Region Scale. *The 9th International Symposium on Heating, Ventilation and Air Conditioning, and The 2nd International Conference on Building Energy and Environment*, July 12-15, Tianjin, China.
7. Xue Y*, **Zhai Z**, and Liu W. 2015. Semi-Lagrangian Method Based PISO Solver for Rapid Computational Simulation and Analysis of Building Indoor Environments. *The 9th International Symposium on Heating, Ventilation and Air Conditioning, and The 2nd International Conference on Building Energy and Environment*, July 12-15, Tianjin, China.
8. Xue Y* and **Zhai Z**. 2015. Tracking Algorithm for Multiple Constantly Releasing Outdoor Pollutant Sources. *The 9th International Symposium on Heating, Ventilation and Air Conditioning, and The 2nd International Conference on Building Energy and Environment*, July 12-15, Tianjin, China.
9. **Zhai Z**, El Mankibi M*, Zoubir A. 2015. Review of Natural Ventilation Models. *The 6th International Building Physics Conference (IBPC 2015)*, June 14-17, Torino, Italy.
10. Weber J, Gao W, Kou X, and **Zhai Z**. 2015. Small Scale Mobile Hybrid Integrated Renewable Energy System (HI-RES) for Rapid Recovery and Emergency Response, *The Seventh Annual IEEE Green Technologies Conference*, April 15 - 17, New Orleans, LA, USA.
11. Xue Y*, **Zhai Z**, and Chen Q. 2014. Comparison and Integration of Generic Algorithm and Adjoint Algorithm for Optimizing Indoor Environments. *The 13th International Conference on Indoor Air Quality and Climate (Indoor Air 2014)*, July 7-12, Hong Kong, China.
12. **Zhai Z**, Abarr M*, AL-Saadi S*, and Yate P*. 2013. Energy Storage for Residential Buildings: Review and Advances (keynote). *The APEC Conference on Low Carbon Town and Physical Energy Storage*, May 25-26, Changsha, Hunan, China.
13. **Zhai Z** and Slowinski R*. 2013. Investigation on Thermal Performance of Ventilated Wall in Winter Conditions. *International Symposium on Green Manufacturing and Applications (ISGMA 2013)*, June 25-29, Honolulu, HI, US.
14. Xue Y*, **Zhai Z**, and Chen Q. 2013. Fundamentals and Implementation of Coupling CFD with Genetic Algorithm for Indoor Environment Applications. *The CLIMA 2013 Congress*, June 16-19, Prague, Czech Republic.
15. Weber J, Gao W, and **Zhai Z**. 2013. Case Study: Small-Scale Hybrid Integrated Renewable Energy System (HI-RES) - Emergency Mobile Backup Power Generation Station. *The IEEE Fifth Annual Green Technologies Conference*, April 4-5, Denver, Colorado, USA. DOI 10.1109/GreenTech.2013.15.
16. Herrmann LA*, **Zhai Z**, and Deru M. 2012. Investigating the Energy Saving Potential of Chinese Commercial Building Benchmark Models for Extreme Climate Regions. *The Second International Conference on Building Energy and Environment (COBEE12)*, Aug 1-4, Boulder, Colorado, US.
17. Wilson E*, McNeil J*, **Zhai Z**, and Krarti M. 2012. Energy Savings from Cleaning Constant Air Volume HVAC Systems. *The Second International Conference on Building Energy and Environment (COBEE12)*, Aug 1-4, Boulder, Colorado, US.
18. Tong Y*, **Zhai Z**, Li X*, and Su R. 2012. Theoretical and Experimental Studies on Natural Ventilation in Urban Road Tunnels with Multi-Roof Openings. *The Second International Conference on Building Energy and Environment (COBEE12)*, Aug 1-4, Boulder, Colorado, US.
19. Wang H*, **Zhai Z** and Liu X*. 2012. Simplify Turbulence Modeling in Indoor Environment Study by Using Coarse Grid. *The Second International Conference on Building Energy and Environment (COBEE12)*, Aug 1-4, Boulder,

Colorado, US.

20. McNeill J*, Hertzberg J, **Zhai Z**. 2011. Buoyancy Driven Acceleration in a Hospital Operating Room Indoor Environment. *The DFD11 Meeting of the American Physical Society*, Nov 20-22, Baltimore, MD, US.
21. Herrmann LA*, **Zhai Z**, Deru M, and Chen Z*. 2010, Evaluating Energy Performance and Improvement Potential of China Office Buildings in the Hot Humid Climate against US Benchmarks. *2010 Purdue Compressor Engineering, Refrigeration and Air Conditioning and High Performance Buildings Conferences*, July 12-15, 2010.
22. Wang H*, **Zhai Z**, Li Y, and Liu X*. 2010. Identifying Sources of SARS Transmission in a Hospital Ward. *IAQ2010*, Nov 10-12, Kuala Lumpur, Malaysia.
23. Chen Z*, Krarti M, **Zhai Z**, Meng Q, Zhao L. 2009. Sensitive Analysis of Landscaping Effects on Outdoor Thermal Environment in a Residential Community of Hot-Humid Area in China. *The Seventh International Conference on Urban Climate*, 29 June - 3 July, Yokohama, Japan.
24. Koh J*, **Zhai Z**, and Rivas JA*. 2009. Comparative Energy Analysis of VRF and VAV Systems under Cooling Mode. *The 3rd International Conference on Energy Sustainability (ES2009)*, July 19-23, San Francisco, California, USA.
25. **Zhai Z** and Previtali J*. 2009. Energy Performance Assessment of Vernacular Architecture Characteristics. *The 5th International Workshop on Energy and Environment of Residential Buildings and the 3rd International Conference on Built Environment and Public Health (EERB-BEPH 2009)*, May 29-31, Guilin, Guangxi Province, China.
26. Jeong K*, Choi SG and **Zhai Z**. 2009. Analysis of Air Sterilization Systems in the Office. *The 11th Roomvent 2009 Conference*, May 24-27, Busan, South Korea.
27. Corbin CD* and **Zhai Z**. 2008. Numerical Analysis of Performance of A Building Integrated Photovoltaic-Thermal Collector System. *The 1st International Conference on Building Energy and Environment (COBEE2008)*, July 13-16, Dalian, China.
28. Liu X* and **Zhai Z**. 2008. An Approach to Interpreting Critical Indoor Pollution Scenes of A Whole Building with Limited Sensor Outputs. *The 1st International Conference on Building Energy and Environment (COBEE2008)*, July 13-16, Dalian, China.
29. Chen Z*, Meng Q, Zhao L, Krarti M, **Zhai Z**. 2008. Experimental Investigation on Outdoor Thermal Comfort in a Residential Community in the Hot-humid Climate of South China. *The 1st International Conference on Building Energy and Environment (COBEE2008)*, July 13-16, Dalian, China.
30. Yi C, Monson RK, Anderson DE, Lamb B, Turnipseed AA, Burns SP, **Zhai Z**, Sparks JP, Stannard DI, Allwine G. 2008. Measuring and Modeling NEE over Complex Terrain. *International Symposium on CO₂ Flux Monitoring*, December 15-19, Sitou, Taiwan.
31. Liu X* and **Zhai Z**. 2007. Probability-Based Inverse Multi-Zone Modeling for Indoor Contaminant Location Identification. *The 10th International Conference on Air Distribution in Rooms - Roomvent 2007*, June, Helsinki, Finland.
32. Zhang Z, **Zhai Z**, and Chen Q. 2007. Evaluation of Various CFD Models in Predicting Room Airflow and Turbulence. *The 10th International Conference on Air Distribution in Rooms - Roomvent 2007*, June, Helsinki, Finland.
33. Fedrigo C*, Manzan M, and **Zhai Z**. 2007. Structural and Environmental Fire Safety in Atria Design. *The 10th International Conference on Air Distribution in Rooms - Roomvent 2007*, June, Helsinki, Finland.
34. Spencer J* and **Zhai Z**. 2007. Fast Evaluation of Sustainable Heating and Cooling Strategies for Solar Homes with Integrated Energy and CFD Modeling. *The 10th International Building Performance Simulation Association Conference and Exhibition - Building Simulation 2007*, Sept, Beijing, China.
35. Liu X* and **Zhai Z**. 2007. Probability-Based Inverse Modeling Algorithm for Indoor Pollutant Source Tracking. *The 10th International Building Performance Simulation Association Conference and Exhibition - Building Simulation 2007*, Sept, Beijing, China.
36. Fedrigo C*, Manzan M, and **Zhai Z**. 2007. Structural and Environmental Fire Safety in Atria Design. *Proceedings of XXV Congresso Nazionale UIT sulla Trasmissione del Calore (25th UIT National Heat Transfer Conference)*, June 18-20, Trieste, Italy.
37. Pappas A* and **Zhai Z**. 2006. Energy Simulation of a Double Skin Facade: A Process Using CFD and EnergyPlus. *The IBPSA-USA Second National Conference - SimBuild 2006*, August, Cambridge, MA.
38. **Zhai Z**. 2006. Numerical Study of Optimal Building Scales with Low Cooling Load in both Hot and Mild Climatic Regions. *The ASME International Solar Energy Conference - SOLAR 2006*, July, Denver CO.
39. Jeong K*, Krarti M, and **Zhai Z**. 2006. CFD-Based Parametric Study for Personalized Partition Air Distribution System. *The ASME International Solar Energy Conference - SOLAR 2006*, July, Denver CO.
40. **Zhai Z**. 2005. Simulation-Based Ventilation System Study for Chemical Laboratory. *The 10th International Conference on Indoor Air Quality and Climate - Indoor Air 2005*, Sept. 4-9, Beijing, China.

41. **Zhai Z.** 2005. A New Building Ventilation Effectiveness Index. *The 10th International Conference on Indoor Air Quality and Climate - Indoor Air 2005*, Sept. 4-9, Beijing, China.
42. Courtney A*, Givler T*, Abarr L*, and **Zhai Z.** 2005. From Warehouse to Sustainable Art Learning Center: The Case for Simulation in Building Renovation. *The 9th International Building Performance Simulation Association Conference and Exhibition - Building Simulation 2005*, August 15-18, Montreal, Canada.
43. **Zhai Z.** 2004. Application of CFD for Design of Energy-Efficient and Comfortable Buildings. *The 5th International Bi-Annual ASME/JSME Symposium on Computational Technology for Fluid/Thermal/Chemical/Stressed Systems with Industrial Applications*, July 25-29, San Diego, CA.
44. **Zhai Z.**, Gao Y, and Chen Q. 2004. Pressure Boundary Conditions in Multi-Zone and CFD Program Coupling. *The First IBPSA-USA Conference - SimBuild 2004*, August, Boulder, CO.
45. Chen Q and **Zhai Z.** 2003. How Realistic is CFD as a Tool for Indoor Environment Design and Studies without Experiment? *Keynote paper, Proceedings of the 4th International Symposium on HVAC*, Vol. 1, pp. 62-77, Tsinghua University Press, Beijing, China.
46. **Zhai Z** and Chen Q. 2003. Impact of Determination of Convective Heat Transfer on the Coupled Energy and CFD Simulation for Buildings. *Proceedings of Building Simulation Conference 2003*, Vol. 3, pp. 1467-1474, Eindhoven, Netherlands
47. **Zhai Z** and Fu S. 2002. Modeling the Airflow around Cooling Towers with Multi-Block CFD. *The 4th International ASME/JSME/KSME Symposium*. Canada.
48. **Zhai Z.**, Chen Q, and Scanlon PW. 2002. Venting Contaminants and Fire Smoke from an Indoor Auto-Racing Complex. *Proceedings of Indoor Air 2002, the 9th International Conference on Indoor Air Quality and Climate*, pp. 830-835, Monterey, California.
49. **Zhai Z.**, Chen Q, Haves P, and Klems JH. 2001. Strategies for Coupling Energy Simulation Programs and Computational Fluid Dynamics Programs. *Proceedings of Building Simulation Conference 2001*, Vol. 1, pp. 59-66, Rio de Janeiro, Brazil.
50. **Zhai Z.**, Hamilton SD, Huang JM, et al. 2000. Integration of Indoor and Outdoor Airflow Study for Natural Ventilation Design Using CFD. *Proceedings of the 21st AIVC Annual Conference on Innovations in Ventilation Technology*, The Hague, Netherlands.
51. Chen Q, **Zhai Z.** et al. 2000. Building Natural Ventilation Design and Studies. *Proceedings of Conference on Thermal Environment of Residential Buildings*, Beijing, China.
52. Fu S and **Zhai Z.** 1999. Numerical Investigation of Flow around Two Natural Draft Cooling Towers in Tandem Arrangement. *Proceedings of 8th Asian Congress of Fluid Mechanics*, Dec. 6-10, Shenzhen, China.
53. Fu S, **Zhai Z.**, et al. 1998. Critical Assessment of Nonlinear Eddy-Viscosity Models in a Recirculating Flow Caused by Square Ribs. *The 3rd International Conference on Fluid Mechanics*, China.
54. Fu S, **Zhai Z.**, et al. 1997. Numerical Study of Flow Past a Wing-Body Junction with a Realizable Nonlinear Eddy-Viscosity Model. *The 11th Symposium on Turbulent Shear Flows*, France.

TEACHING ACTIVITIES SINCE 2003

Principal Coursework Instructor: Existing Courses

- | | |
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| AREN 2120 | Fluid Mechanics and Heat Transfer , required undergraduate course |
| AREN 3130 | Building Energy Laboratory , required undergraduate lab course |
| AREN 3010 | Mechanical Systems for Buildings , required undergraduate course |

Principal Coursework Instructor: New Courses Developed

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| AREN 2830 | Sustainable Building Practices in Developed and Developing Countries , technical elective course for freshmen and sophomores in various disciplines |
| CVEN 5830 | Building Energy Systems , required entry level graduate course |
| CVEN 5830 | Sustainable Building Design , required intermediate level graduate course |
| CVEN 5830 | Computational Fluid Dynamics Analysis for Built and Natural Environment , upper level graduate technical elective course |

Coursework Co-Instructor: Capstone Design Course

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| AREN 4317 | Architectural Engineering Design , required capstone design course for seniors |
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SERVICE ACTIVITIES SINCE 2003

- Member of
 - International Society of Indoor Air Quality and Climate (ISIAQ)
 - International Building Performance Simulation Association (IBPSA)
 - American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
 - US Green Building Council (USGBC)
 - China Green Building Council (CGBC)
- Editorial Duties
 - Associate Editor for Energy and Buildings Journal
 - Guest Editor: World Review of Science, Technology and Sustainable Development Journal
 - Guest Editor for Building and Environment
 - Guest Editor for Renewable Energy
 - Guest Editor and Editorial Board Member for Building Simulation: An International Journal
 - Editorial Board Member for Journal of Building Physics
 - Editorial Board Member for Indoor and Built Environment Journal
 - Editorial Board Member for Journal of Energy
 - Editorial Board Member for Journal AIMS Energy
- Voting member and ASHRAE Learning Institute Coordinator of ASHRAE Technical Committee 4.10 – Indoor Environmental Modeling, 2004-~
- Member of ASHRAE Technical Committee 4.10 Project Monitoring Subcommittee (PMS) for Research Project 1321-TRP, 2007-2010
- Co-Author and Voting Member, ASHRAE GPC 33: Guideline for Documenting Indoor Airflow and Contaminant Transport, The PCVM- Project Committee, 2010-2012
- Corresponding member of ASHRAE Technical Committee 5.6 – Control of Fire and Smoke; Technical Committee 4.3 – Ventilation Requirements and Infiltration; and Technical Committee 5.3 – Room Air Distribution, 2005-~
- Member of Technical Committee – Conservation and Solar Buildings of The Solar Energy Division, American Society of Mechanical Engineers (ASME), 2009-~
- Invited Panel Reviewer for National Laboratory Assessment, The US National Academies and National Research Council (NRC), 2009-2010
- Invited Member for The Committee on Protecting Occupants of DoD Buildings From Chemical or Biological Release (Immune Buildings), The US National Academies and The Defense Threat Reduction Agency (DTRA), 2006
- The Steering Committee Member of the International Virtual Environmental Control: Buildings and Energy Network (VEC-BEN), 2012-~
- Member of the IEA Energy Conservation through Energy Storage (ECES) Executive Committee – Annex 31: Energy storage with Net Zero Energy Buildings and Districts: Optimization and Automation), 2013~
- Invited Organizer for 2011 US Frontiers of Engineering Conference by National Academy of Engineering of US
- Invited Reviewer for
 - National Research Foundation, Prime Minister’s Office, Singapore
 - Qatar National Research Fund (QNRF)
 - National Office for Science and Technology Awards (NOSTA) of China
 - National Research Foundation (NRF), United Arab Emirates
 - Hong Kong Research Grants Council
 - Georgian National Science Foundation (GNSF)
 - Natural Sciences and Engineering Research Council of Canada (NSERC)
 - US National Science Foundation (NSF)
 - PSE&G Energy Technology Grant program
 - CRC Press/Taylor and Francis Group
 - King Fahd University of Petroleum & Minerals (KFUPM)
 - National Research Foundation of Korea
 - Shota Rustaveli National Science Foundation

- US Department of Energy (DOE)
- Conference Chair and Scientific Committee
 - International Scientific Review Panel (ISRP) Member of World Sustainable Built Environment Conference, 5-7 Jun 2017, Hong Kong (WSBE17 Hong Kong)
 - Program Committee Member for The 3rd ACM International Conference on Systems for Energy-Efficient Built Environments (BuildSys 2016), November 15-17, 2016, Stanford, CA, USA
 - Scientific Committee Member for Urban Transitions Global Summit 2016, Sept 5-9, 2016, Shanghai, China
 - International Scientific Committee Member for Indoor Air 2016, July 3-8, 2016, Ghent, Belgium
 - International Scientific Committee Member for the 9th International Conference on Indoor Air Quality, Ventilation and Energy Conservation in Buildings (IAQVEC 2016), October 23-26, 2016, Seoul (Songdo), Korea
 - Scientific Committee Member for International Building Physics Conference 2015 (IBPC 2015), June 14-17, 2015, Torino, Italy
 - Vice President for the 9th International Symposium on Heating, Ventilation and Air Conditioning and the 3rd International Conference on Building Energy and Environment (ISHVAC-COBEE 2015), July 12-15, 2015, Tianjin, China
 - Vice President for the Healthy Buildings 2015 North America Conference, July 19-22, 2015, Boulder, Colorado
 - Scientific Committee Member for International Building Physics Conference 2015 (IBPC 2015), June 15-18, 2015, Politecnico di Torino, Italy
 - International Scientific Committee (ISC) Member for Cold Climate HVAC 2015, Oct 20-23, 2015, Dalian, China
 - International Scientific Committee (ISC) Member for Indoor Air 2014, July 7-12, 2014, Hong Kong
 - International Scientific Committee (ISC) Member for Building Simulation 2013 Conference, Aug 25-30, 2013, Chambéry, France
 - Keynote Speaker and International Scientific Committee (ISC) Member for The APEC Conference on Low Carbon Town and Physical Energy Storage, May 25-26, 2013, Changsha, Hunan, China
 - Session Chair for International Symposium on Green Manufacturing and Applications (ISGMA 2013), June 25-29, Honolulu, HI, US
 - General Chair for the 2nd International Conference on Building Energy and Environment (COBEE2012), August 1-4, 2012, Boulder, Colorado
 - International Scientific Committee (ISC) Member for Building Simulation 2011 Conference, Nov 14-16, 2011, Sydney, Australia
 - International Scientific Committee (ISC) Member for IAQVEC2010 Conference, August, 2010 Syracuse, New York
 - Track Chair for the 4th ASME International Conference on Energy Sustainability (ES2010), May, 2010, Phoenix, AZ, USA
 - Scientific Committee Member for the 11th IBPSA Building Simulation Conference (BS2009), July, 2009, Glasgow, Scotland
 - Session Chair for the 3rd ASME International Conference on Energy Sustainability (ES2009), July, 2009, San Francisco, California, USA
 - International Scientific Committee (ISC) Member for ROOMVENT 2009 International Conference, May, 2009, Pusan, Korea
 - Session Chair for the 5th International Workshop on Energy and Environment of Residential Buildings and the 3rd International Conference on Built Environment and Public Health (EERB-BEPH 2009), May, 2009, Guilin, Guangxi Province, China
 - Chair for Seminars and Transactions at ASHRAE Winter and Summer Conferences, 2008-2009
 - Conference Co-Chair of the First International Conference on Building Energy and Environment (COBEE08), July, 2008, Dalian, China
 - Session Chair for the 10th International Building Performance Simulation Association Conference and Exhibition (BS2007), September, 2007, Beijing, China
 - Session Chair for the 10th International Conference on Indoor Air Quality and Climate (Indoor Air

- 2005), September, 2005, Beijing, China
- Session Chair for the First IBPSA-USA Conference (SimBuild2004), August, 2004, Boulder, CO
- Invited Reviewer for over 30 journals