

Curriculum Vitae

Name: Changhong Zhan

Title: Dr., Prof.

Affiliation: Department of Architecture, Research Center of Building Science and Engineering for Cold Region, School of Architecture, Harbin Institute of Technology China

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Research Interests

Building energy efficiency, Ecological building, Bionic building technology, Building environment performance, Building thermal performance test and diagnose, Low-carbon cooling, Data Science application in the field of building, Renewable energy technology for building

Education Background:

Name of University / Institution	Qualifications	From / To	Date awarded
HVAC & Gas Engineering, School of Municipal and Environmental Engineering, Harbin Institute of Technology/ China	PhD	SEP/1998 – JUL/2001	06/NOV/2001
HVAC & Gas Engineering, Department of Building Thermal Engineering, Harbin University of Civil Engineering and Architecture/ China	Master	SEP/1996 – JUL/1998	20/JAN/1999

City Gas Engineering, Department of Building Thermal Engineering, Harbin University of Civil Engineering and Architecture/ China	Bachelor	SEP/1992 – JUL/1996	06/JUL/1998
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Working Experience:

Name of Institution	Position	From / To
School of Architecture, Harbin Institute of Technology	Professor, PHD Student Supervisor	Feb/2011 - Present
Department of Building Environment and Energy Engineering, Northeast Forestry University China	Associate Professor, Laboratory Director	Sep/2010 - Feb/2011
School of the Built Environment and Architecture, The University of Nottingham UK	Marie Curie International Incoming Research Fellow	Sep/2008 - Sep/2010
Department of Building Environment and Energy Engineering, Northeast Forestry University China	Associate Professor, Laboratory Director, Post-Doctor	Jan/2005 - Sep/2008
Department of Research and Development, Qingdao Haier Group China	Chief Director of Engineering, Engineer	Jan/2004 - Dec/2004
Fujian Newland Science & Technology Group Ltd. China	Chief Director of Engineering, Engineer	Jul/2001 - Jan/2004

Social Organization:

- Life-time member of Marie Curie Fellow Association
- Member of World Society of Sustainable Energy Technologies
- Member of Work Group of Material Thermal Performance Test, National Technical Committee 374 on Products Test Methods of Standardization Administration of China

- Member of Evaporative Cooling Committee of China
- Member of Green Building Council of Heilongjiang Province

Courses Taught

- Thermal Design and Testing for Buildings (for MSc, Harbin Institute of Technology, 2011 - present)
- Building Thermal Engineering (for BEng, Harbin Institute of Technology, 2011 - present)
- Central Heating System Design (for BEng, Northeast Forestry University, China, 2005 - 2008)
- Heat Transfer (for BEng, Northeast Forestry University, China, 2004 - 2008)

Research Projects:

Study on dynamic identification method of exterior wall thermal resistance based on infrared thermography, No. 51778168. 600,000 CNY. JAN 2018-DEC 2021. National Natural Science Foundation of China. Principal Investigator.

Diagnose on thermal detection of building envelope based on deep learning, No. 2016HDJZ-1106. JAN 2017-DEC 2018. 50,000 CNY. Heilongjiang Key Laboratory of Cold Region Building Science. Principal Investigator.

Construction and development of on-line courses on building energy and environment in China, No. 561732-EPP-1-2015-1-FR-EPPKA2-CBHE-JP. OCT 2015-OCT 2018. 105,000 Euros. European Commission / ERASMUS+LPEB. Co-investigator.

Fast test method of heat transfer coefficient of building envelope base on infrared thermography, GZ15A505. SEP 2015-AUG 2018. 50,000 CNY. Heilongjiang Department of Science and Technology of Heilongjiang Province. Principal investigator.

Design method on energy saving for indoor electricity transformer station in severe cold region, No. SGHL0000JJJS1502073. JUL 2015-DEC 2015. 250,000 CNY. National Grid Co. Ltd. of Heilongjiang. Principal investigator.

Comprehensive study on application of infrared thermograohy in building sector, No. MH20150346. JAN 2014-DEC 2015. 250,000 CNY. Beijing Zhongjian Building Science research Institute Co., Ltd.. Principal investigator.

Low-carbonized for cities and towns and passive energy saving strategies of buildings in eco-functional region of Daxiaoxingan mountain., No. E201315. JAN 2014-DEC 2016. 50,000 CNY. Natural Science Foundation of Heilongjiang. Co-investigator

Key technologies of climate adaption planning and physical environment optimization for green villages and towns in severe cold region, No. 2013BAJ12B02-1. JAN 2013-DEC 2015. 4,000,000 CNY. Ministry of Science and Technology. Co-investigator

Research and development on Low-cost and high energy efficiency heating method and facility for rural building No. 2011BAJ08B06-2. AUG 2011-DEC 2014. 850,000 CNY. . Ministry of Science and Technology. Co-investigator

Research on the Air-conditioning Technology of Dew Point Evaporative Cooling, No. AUGA9833207711. May 2011-May 2014. 200,000 CNY. Harbin Institute of Technology. Principal investigator.

A novel dew point air conditioning system, No. Notts 5. March 2009 – Feb 2010. 70,000 Pounds. ICUK (Innovation China UK). Co-investigator

Investigation of a Novel Dew Point Cooling Heat and Mass Exchanger for Air Conditioning of Buildings in Europe, No. PIIF-GA-2008-220079. Sep 2008-Sep 2010. 179,000 Euro. EU FP7 /Marie Curie Actions/International Incoming Fellowship. Investigator.

Numerical Simulation and Experiment Research on Indoor Air Quality for Public Building in Cold Areas of China, No. LRB05-323. Oct 2005 –April 2008. 80,000 CNY. Postdoctoral Fund of Heilongjiang Province, China. Principal Investigator.

Research and Development of Dynamic UVC Air disinfection/Air Conditioning System, No. 2002Y026. June 2002- June 2004. 1,100,000 CNY. Fujian Province Science Program Funds , China. Principal Investigator.

Journal Papers:

34	Gang Ren, Xudong Zhao, Changhong Zhan ,* Hong Jin and Aishen Zhou. Investigation of the Energy Performance of a Novel Modular Solar Building Envelope. <i>Energies</i> 2017, 10(7): 880; doi:10.3390/en10070880 (in English)
33	Duan, Z., Zhao, X., Zhan, C. , Dong, X., & Chen, H. Energy saving potential of a counter-flow regenerative evaporative cooler for various climates of China: Experiment-based evaluation[J]. <i>Energy & Buildings</i> . Volume 148, 1 August 2017, Pages

	199–210 (in English)
32	Zhang Xiang, Zhan Changhong , Wang Xuesong. Lifestyle Evolving as the Origin of Design: A case study of Japanese Architectural Concept Competitions. <i>Architectural Journal</i> , Vol. 63, No.S2, 2016:119-124. <i>(In Chinese)</i>
31	Duan Zhiyin, Zhan Changhong , Zhao Xudong, Xuelin Dong. Experimental study of a counter-flow regenerative evaporative cooler. <i>Building and Environment</i> . Volume 104, 1 August 2016, Pages 47–58 (in English)
30	Fangfang Liu, Changhong Zhan , Jian Kang, Yue Wu. Integrated design of the solar roofs in cold regions based on a questionnaire survey on problems in current deices. <i>Harbin Gongye Daxue Xuebao/ Journal of Harbin Institute of Technology</i> . 48(2), FEB 2016: 163-166. <i>(In Chinese)</i>
29	Xiumu Fang, Zhonghua Wang, Yonghong Jia, Changhong Zhan , Qiang Liu. Stduy on the temperature distribution of exterior wall surface. <i>Building Science</i> . 31(12), DEC 2015: 34-40 <i>(In Chinese)</i>
28	Zhan Changhong , Huang Meng, Chen Lin. Investigation on Innovation of Experimental teaching system for Graduate Student of Building Science and Technology. <i>China Architecture Education</i> , August 2014, v8. (In press). <i>(In Chinese)</i>
27	Zhan Changhong , Wang Lei, Zhang Jianli, Zhao Xudong. A Review of M-cycle Evaporative Cooling Technology for Air-conditioning. <i>Heating, Ventilation and Air Conditioning (Special Issue - Evaporative Cooling Air-conditioning)</i> . 2014.03,No. 119:13-20 <i>(In Chinese)</i>
26	Zhiyin Duan, Changhong Zhan , Xingxing Zhang, Mahmud Mustafa, Xudong Zhao, Behrang Alimohammadisagvand, Ala Hasan. Indirect evaporative cooling: Past, present and future potentials. <i>Renewable and Sustainable Energy Reviews</i> . Volume 16, Issue 9, December 2012, Pages 6823–6850 <i>(In English)</i>
25	Changhong Zhan , Zhiyin Duan, Xudong Zhao, Stefan Smith, Hong Jin, Saffa Riffat. Comparative study of the performance of the M-cycle counter-flow and cross-flow heat exchangers for indirect evaporative cooling – paving the path toward sustainable cooling of buildings, <i>Energy</i> . V36, Issue 12, December 2011 <i>p 6790-6805 (In English)</i>
24	Changhong Zhan ; Xudong Zhao; Zhiyin Duan; S. B. Riffat. Numerical Study of a M-cycle Cross-Flow Heat Exchanger for Indirect Evaporative Cooling. <i>Building and Environment</i> . March 2011, v 46, n 3, p 657-668 <i>(In English)</i>
23	Changhong Zhan ; Xudong Zhao; Zhiyin Duan; S. B. Riffat. Numerical Study on Performance Comparison between Counterflow and Crossflow Heat Exchanger for Indirect Evaporative Cooling. <i>The International Journal of Low-Carbon Technologies</i> . , v

	6, n 2, June 2011, p 100-106,. <i>(In English)</i>
22	Hongyuan Mei, Changhong Zhan , Hong Jin. The Establishment of Heilongjiang Cold Climate Architectural Science Key Laboratory (Harbin Institute of Technology). South Architecture. 2011(5): 37-39. <i>(In Chinese)</i>
21	Xudong Zhao, Zhiyin Duan, Changhong Zhan . Dynamic performance of a novel dew point air conditioning for the UK buildings. The International Journal of Low-Carbon Technologies. VOLUME 4 NUMBER 1 MARCH 2009:P27-35 <i>(In English)</i>
20	ZHAN Chang-hong , Su Yu-chang, WANG Feng-Hu. Measurement and analysis of the application of heat recovery ventilator in a residential room in cold region of China. Journal of Harbin Institute of Technology(New Series), Vol. 14, Sup., 2007: 470-473 <i>(In English)</i>
19	LI Biao, ZHU Meng- sheng, ZHAN Chang-hong , CAI Wei-hua. Field Study on IAQ and Thermal Comfort of University Classrooms in Winter of Harbin. ENERGY CONSERVATION TECHNOLOGY. 2010, 28(4): 336-341. <i>(In Chinese)</i>
18	Yufei Tan, Changhong Zhan , Jingli Yang. Matching study between PCM wallboard and electric-heating-film system in cold area. Journal of Harbin Institute of Technology. Vol. 38, No. 9, Sep. 2006:1496-1499 <i>(In Chinese)</i>
17	Hongyu Guo, Changhong Zhan , Jinshi LI. Application of Frequency Modulation in Central Heating System. Applied Energy Technology. No. 7, 2006: 35-38 <i>(In Chinese)</i>
16	Changhong Zhan , Yufei Tan etc. <i>Simulation Studies on the Solar-Ground Source Heat Pump System for Villa in Cold Area</i> . Low Temperature Architecture Technology. No. 3, 2006:117-119 <i>(In Chinese)</i>
15	Changhong Zhan . How to Improve the Effect of Multimedia-aided Teaching. China Education and Teaching. Vol. 2, No. 12, 2005:153-154 <i>(In Chinese)</i>
14	YufeiTan, Changhong Zhan etc. <i>Gas Mixing Mechanism Taking CO₂ As Cushion Gas and Feasibility of Operation Control</i> . Natural Gas Industry. Vol. 25, No.12,2005:105-107 <i>(In Chinese)</i>
13	Changhong Zhan , Xihua Yu, Jian Chen. The application of UVGI in CC&AC system. Contamination Control & Air-conditioning Technology. No. 4, 2002: 26-29 <i>(In Chinese)</i>
12	Changhong Zhan , Wenling Jiao, Leming Lian, Mingqin Yan. <i>Underground Gas Storage Reservoir Constructed in Water-Bearing Formation</i> . Natural Gas Industry. Vol. 21, No.4,2001:88-91 <i>(In Chinese)</i>
11	Changhong Zhan , Mingqin Yan, Leming Lian. <i>Simulation of Aquifer Underground Gas Storage Reservoir with FEM</i> . Gas & Heat. Vol. 21, No. 4, 2001: 294-298 <i>(In Chinese)</i>

10	Changhong Zhan , Wenling Jiao, Yufei Tan, Leming Lian, Mingqin Yan. <i>The Construction of Aquifer Underground Gas Storage Reservoir and Numerical Modeling Research</i> . Oil & Gas Storage and Transportation. Vol. 20, No. 1, 2001: 9-11 (In Chinese)
8	Wenling Jiao, Changhong Zhan , Mingqin Yan. Study of Forecasting for Short Term Load of City Gas. Gas & Heat. Vol. 21, No. 6, 2001:483-486 (In Chinese)
7	Mingqin Yan, Wenling Jiao, Changhong Zhan . The Developing Format of China's Urban Gas in the 21st Century. Oil & Gas Storage and Transportation. Vol. 20, No. 7, 2001: 10-12 (In Chinese)
6	Mingqin Yan, Leming Lian, Wenling Jiao, Changhong Zhan . The Developing Format of China's Urban Gas in the 21st Century. Gas & Heat. Vol. 22, No. 1, 2002:12-15 (In Chinese)
5	Mingqin Yan, Leming Lian, Wenling Jiao, Yufei Tan, Changhong Zhan . Gas Load and Some Problems in Practice. Gas & Heat. Vol. 22, No. 5, 2002:400-404 (In Chinese)
4	Mingqin Yan, Leming Lian, Wenling Jiao, Yufei Tan, Changhong Zhan . Gas Load and Progression of Research Development. Gas & Heat. Vol. 22, No. 6, 2002: 490-493 (In Chinese)
3	Mingqin Yan, Leming Lian, Wenling Jiao, Yufei Tan, Changhong Zhan . Research on Gas Load and Models. Gas & Heat. Vol. 23, No. 4, 2003: 207-210 (In Chinese)
2	Mingqin Yan, Leming Lian, Wenling Jiao, Yufei Tan, Changhong Zhan . Gas Load and Forecasting Models. Gas & Heat. Vol. 23, No. 5, 2003: 259-263 (In Chinese)
1	Changgui Duan, Yanfeng Xu, Jichen Wu, Changhong Zhan . Applied Research of Genetic Algorithm on Gas Pipe Diameter Optimization. Gas & Heat. Vol. 19, No. 2, 1999: 19-22 (In Chinese)

Conference papers:

13	Fusheng Ma, Changhong Zhan , Xuxiao Yang, Yu Tang. Investigation and analysis of thermal comfort and IAQ in naturally ventilation primary school classrooms. International Conference on Civil, Architecture and Environmental Engineering (ICCAE 2016), November 4-6, 2016, China University of Technology, Taipei, Taiwan. (in English)
12	Liu, YX (Liu, Yongxin); Zhan, CH (Zhan, Changhong) ; Jin, H (Jin, Hong). Influence of Urban Buildings Layout on Contaminant Dispersion of Heating Exhaust. PROCEEDINGS OF THE 2016 7TH INTERNATIONAL CONFERENCE ON MECHATRONICS, CONTROL AND MATERIALS (ICMCM 2016). OCT 29-30, 2016; Changsha, PEOPLES R CHINA. AER-Advances in Engineering Research, Vol. 104(2016): Page 175-180. (SCI/ISTP:000391653900036) (in Chinese)

11	Lei Wang, Changhogn Zhan , Jianli Zhang, Xudong Zhao. Irreversible Thermodynamics Analysis of Indirect Evaporative Cooler. The 1st ‘The Belt and Road Initiative’ International Conference on Sustainable Refrigeration and Air Conditioning, 15 th - 18 th October, 2016, Xian, China (in English)
10	Jin Fang, Changhong Zhan , Guanghao Li, Aimin Zhang. Numerical study on improving thermal insulation performance of hollow blocks by optimizing holes configuration. International Conference on Construction and Real Estate Management, Sep. 29th-Oct. 1st, 2016, Edmonton, Canada. (in English)
9	Lin CHEN, Changhong ZHAN , Guanghao LI. Correction of the Temperatures measured by Infrared Thermography Based on Neural Network. International Conference on Construction and Real Estate Management, Sep. 29th-Oct. 1st, 2016, Edmonton, Canada. (in English)
8	Yang BAI, Changhong Zhan , Chongyi Chen, Guanghao Li. The optimization of residential block morphology in cold regions based on the solar radiation utilization ratio. International Conference on Construction and Real Estate Management, Sep. 29th-Oct. 1st, 2016, Edmonton, Canada. (in English)
7	Shijun Sun, Changhong Zhan , Gang Yang, Yanguo Yu. Research on A New Technology Integrated Low-cost, Near-zero-energy Solar Greenhouse. The International Conference on Sustainable Design, Engineering and Construction (2016), 18th to 20th May 2016 Tempe, Arizona, United States of America. Procedia Engineering, Volume 145, 2016, Pages 188-195. (in English)
6	Ma Ying, Zhan Chang-hong, Jin Hong. A Review of Research on Thermal Performance and Energy Efficiency of Rural Residential Building in Northern China. Proceedings of the Fifteenth Forum on National Building Science and Technology and International Academic Seminar of Green Building. 26-27 September 2014, Harbin China: 147-153 (<i>In Chinese</i>)
5	Ting Cao, Changhong Zhan, Enchun Zhu, Hongpeng Xu. A Review on Thermal and Energy Performance Research Progress of the Timber-frame Buildings. The Proceedings of the 2 nd Conference of Wooden Structure Green Industry. Sunfenhe China, 4 th -13 th August 2014. Page 4- 13 (<i>In Chinese</i>)
4	Amos Kalua, Changhong Zhan and Chein-Chi Chang. A REVIEW OF GREEN BUILDING ADVOCACY IN LEAST DEVELOPED COUNTRIES. Proceedings of the CIB W107 2014 International Conference, Lagos, Nigeria, 28th-30th January, 2014. page:250-258 (in English)
3	Zhao Xudong, Duan Zhiyin, Zhan Changhong , Riffat Saffa B. Performance assessment of a novel dew point air conditioning system in the UK climate conditions . UECTC'09 - Proceedings of 2009 US-EU-China Thermophysics Conference - Renewable Energy; May

	28, 2009 - May 30, 2009; Beijing, China. (in English)
2	Changhong ZHAN , Xudong ZHAO, Fenghu WANG. CFD Analyses of Energy Saving Potential for Classroom Buildings in China. SET2009 - 8th International Conference on Sustainable Energy Technologies, Aachen, Germany. August 31st to 3rd September 2009 (in English)
1	Changhong Zhan , Leming Lian, Mingqing Yan. Aquifer Underground Gas Storage Reservoir Numerical Simulation, September 10-14 2001, the 3-rd International Symposium on Energy, Environment & Economics held in Kazan, Russia, 2001 (09) (in English)

Books:

Huang Meng,Guanghao Li, **Zhan Changhong** (Translators). Design Innovation for the Built Environment: Research by Design and the Renovation of Practice (Translation from English into Chinese, Originally edited by Michael U. Hensel). Taylor & Francis Group &Harbin Institute of Technology Press, China. July 2017.

Jin Hong, Zhao Hua, Lingwei, **Zhan changhong**, etc. Design standard for energy efficiency of rural residential buildings in Heilongjiang Province, Bureau of Housing and Urban-Rural Development of Heilongjiang Province. October 2013

Yan Mingqing, **Zhan Changhong**, etc. Analysis of Gas Transportation and Distribution Engineering. Petroleum Industry Press, China. 2007,8

Zhao Hua, **Zhan Changhong**, etc. Heat Transfer -Course of Study for the Registered Public Facility Engineer(HVAC). China Architecture and Building Press. 2006,4:293~518

Yan Mingqing, **Zhan Changhong**, etc. Natural Gas Transportation Technique. Chemical Industry Press China. 2006,5:chapter 1 and chapter 4

Design Work:

Air Cleaning and disinfection System Engineering of ICU Ward for Quanzhou Children Hospital

The UV disinfection system for the Central Air Conditioning System of Beijing Great Hall of the People

Asepsis workshop for the Yunnan Province pasturage Agency

The Central Cleaning Air-Conditioning Engineering for the 3rd Qingdao Haier pharmaceutical

factory

The cleaning operating room of Qingdao Sida International center of Heart Operation

The feasibility research of the heating networks rebuilding engineering of Harbin Heating Company

the heating networks reform engineering of Fulaerji Steel Factory

the heating networks reform engineering of Qitaihe

the research of the secure space between the underground polyethylene gas pipe and the directly buried heating pipe in Zhengzhou

Patents:

ZHAN Changhong, WANG Lei, ZHANG Jianli, ZHAO Xudong. A module dew-point indirect evaporative cooler assisted with mechanical compression cooling. ZL 2017 2 0100985.4. 22th August 2017 China

ZHAN Changhong, ZHANG Zhengshuai, FANG Lei, CHEN Lin, CHEN Chongyi. Thermography Data query system for building V1.0. Patent No. 2017SR042076. 14 th February 2017 China

LIU Yongxin, HUANG Meng, JIN Hong, ZHAN Changhong etc. A Novel Stand-alone Air Heating Device for Chinese Rural House. ZL 2013 2 0438252.3, 7th May 2014
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ZHAN Changhong, HUANG Meng, JIN Hong, LIU Yongxin. A finned Heat Exchanger for Chinese Kang. ZL 2013 2 0642630.X. 26th March 2014 China

ZHAO Xudong, RIFFAT Saffa Bashir, LI Junming, ZHAN Changhong, ZHIYIN Duan. A Novel Dew Point Air Conditioning System, Pub. No.: WO/2010/034994 ; International Application No.: PCT/GB2009/002276; 01.04.2010 UK
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Zhan Changhong, Li Yongxi. A New Cleaning Air-Conditioning System. Patent Number: ZL 02 2 46305.4. Publication Date: 2003.8; China
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Zhan Changhong, Chen Jian. Mobile UVC Air Disinfector/Air Conditioner. Patent Number: ZL 02 2 35033.0. Publication Date:2003.4 China
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Honors and Awards :

Marie Curie Fellow

