

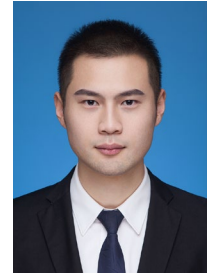


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Education Background

- 07.2020 – 06.2024 PhD. in Department of Mechanical Engineering**
University of Hong Kong, Hong Kong SAR, China
- 09.2016 – 06.2019 M.S. in Heating, Gas Supply, Ventilation and Air Conditioning Engineering**
Chongqing University, Chongqing, China
Average Score: 88.5/100 Rank: 3/77
- 09.2012 – 06.2016 B.E. in Building Environment and Facility Engineering**
Jiangsu University of Science & Technology, Zhenjiang, China
GPA: 3.54/4.0 Rank: 3/72
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Research Experience

Experiment study of energy use comparison of cool roof and green roof in office building

06.2016-06.2017 Study about cool roof mechanism of carbon reduction in Hot Summer and Cold Winter climate zone (Fundamental Research Funds for the Central Universities of China) and Adaptability of cool roofs in China (US-China Clean Energy Research Center Building Energy Efficiency Consortium)

Research Assistant, Supervised by Associate Prof. GAO Yafeng

- Conducted and debugged thermal parameters monitoring system;
- Devised and carried out experiment on cool roof and sedum-tray garden roof in whole life cycle including radiative measurement, laboratory aging and energy savings and thermal comfort effect;
- Utilized the simulation software (Designbuilder) to investigate the adaptability of cool roof and sedum-tray garden roof in different climate zones;
- Undertook life cycle assessment of white roof and sedum-tray garden roof compared with dark roof in different climate zones.

Study on the impact of natural aging on energy savings of high reflective coating flat roofs of residential buildings with hot summer

06.2017 – 06.2018 Study on indoor thermal environment control mechanism of high reflective coating flat roofs of residential buildings for hot summer and warm winter zone (National Natural Science Foundation of China No. 51878088).



Principal investigator of the research group

- Devised and carried out exposure trails of 12 roofing products in whole life cycle including solar spectrum reflectance, natural aging and energy-saving and thermal comfort effect in cities with hot summer climates;
- Analyzed the soiling, weathering and biological growth factors that contribute to aging in Chinese cities;
- Utilized the simulation software to estimate the impact of natural aging on energy savings of high reflective coating flat roofs of residential buildings.

Study on the impact of synergistic cooling of green space and blue space on the Urban Heat Island 06.2018 -05.2019 Improvement of outdoor environment of existing residential buildings (13th Five-year Plan China National Key R&D Program No. 2017YFC0702903)

Research Assistant, Supervised by Associate Prof. GAO Yafeng

- Devised and carried out the comparative on-site measurement based on synergistic dynamics including air temperature, humidity, and air circulation on littoral zone, as well as the measurements on the similar separate vegetation in contrast;
- Established an new index to evaluate the synergistic cooling effect in the littoral zone on the improvement of the thermal environment;
- Utilized the simulation software (ENVI-met coupling with Energy Plus) to investigate the cross impact for intensity of heat island and building energy saving.

Study on a pressure loss of an Oliver flowmeter

06.2015-06.2016 Study on flow control mechanism and energy savings of an Oliver flowmeter (Natural Science Foundation of Jiangsu Province)

Research Assistant, Supervised by Associate Prof. FENG Guozeng

- Designed and carried out experimental device to illustrate the pressure loss of an Oliver flowmeter, and applied for the patent;
- Utilized the simulation software (ANSYS Fluent) to investigate and compare the pressure loss and flow field of Oliver flowmeter and orifice flowmeter.

Publications

Journal Articles

- **Dachuan Shi**, Yafeng Gao, et al “Effects of Natural Soiling and Weathering on Cool Roof Energy Savings for Dormitory Buildings in Chinese Cities with Hot Summers”, **Solar Energy Materials & Solar Cells**, 200 (2019) 110016. **(IF=6.019)**
- **Dachuan Shi**, Yafeng Gao, et al “Life cycle assessment of white roof and sedum-tray garden roof for office buildings in China”, **Sustainable Cities & Society**, 46 (2019) 101390. **(IF=4.624)**



- Yafeng Gao, **Dachuan Shi (main author)**, Ronnen Levinson, et al “Thermal performance and energy savings of white and sedum-tray garden roof: A case study in a Chongqing office building”, **Energy & Buildings**, 156 (2017) 343-359. **(IF=4.495)**
- Yake Zhang, **Dachuan Shi (corresponding author)**, et al “Single image modeling (SIM) for predicting the temperature and air flows of outdoor air zones in regional planning”, **Sustainable Cities & Society**, 53 (2020) 101934. **(IF=4.624)**
- **Dachuan Shi**, Jiyun Song, et al “Synergistic Cooling Effect of Greenspace and Bluespace on the Local Urban Thermal Environment During Summer”, **Sustainable Cities and Society**, 55 (2020) 102065. **(IF=4.820)**
- Rui Guo, Yafeng Gao, **Dachuan Shi (main author)**, et al “Optimization of cool roof and night ventilation in office buildings: A case study in Xiamen, China”, **Renewable Energy**, 147 (2020) 2279-2294. **(IF=5.439)**
- Jinxin Huang, **Dachuan Shi (main author)**, et al “Impact of short-term thermal experience on thermal sensation: a case study of Chongqing, China”, **Building and Environment**, 179 (2020) 106921. **(IF=4.820)**
- Guozeng Feng, **Dachuan Shi (corresponding author)**, et al “Experimental and numerical study of the flow characteristics of a novel olive-shaped flowmeter (OSF)”, **Flow Measurement and Instrumentation**. **(IF=1.977, under review)**
- Guozeng Feng, **Dachuan Shi (corresponding author)**, et al “Optimization of air-distributor channel structural parameters based on Taguchi orthogonal design”, **Case studies of thermal engineering**, 21 (2020) 100685. **(IF=4.010)**
- Jinxin Huang, **Dachuan Shi (main author)**, et al “Assessment of energy demand in public buildings based on the combined models of STIRPAT and Input-Output”, **Sustainable Production and Consumption**. **(Under Review)**
- Jinxin Huang, **Dachuan Shi (main author)**, et al “Analysis on influential factors of China’s building energy consumption intensity based on combined model of SEM and EM-STIRPAT”, **Journal of Building Engineering**. **(IF=2.378, Under Review)**

Conference Proceedings

- **Dachuan Shi**, Yafeng Gao, et al “Energy Savings and Thermal performance of Containered Planting Roof: A Case Study in Chongqing of China”, 4th International Conference On Building Energy, Environment, Melbourne, Australia, Feb 5-9, 2018. **(Invited to deliver a speech)**

National Patents

- Guozeng Feng, **Dachuan Shi**, et al “The design and control method of cloth dryer in marine patrol ship”, Patent number: CN106087357 B **(Invention patent, authorized)**;



- Shaozheng Sun, **Dachuan Shi**, et al “An experimental device for differential pressure flow meters”, Patent number: ZL 2015 2 0177223. 5 (**Practical patent, authorized**).
- Baowei Xu, **Dachuan Shi**, et al. “The design and control method of lighting based on tunnel piston wind”, Patent number: CN201710323488.5 (**Invention patent, published**).
- Yafeng Gao, **Dachuan Shi**, et al “A chameleon high-reflectivity evaporation roof system”, Patent number: CN201810135155.4 (**Invention patent, published**).
- Yafeng Gao., **Dachuan Shi**, et al “A technological process of chameleon light permeable brick”. Patent number: CN201810460379.2 (**Invention patent, published**).

International Patent

- Guozeng Feng, **Dachuan Shi**, et al “Clothes dryer for use on ships and control method therefor”, Patent number: WO 2018/001132 A1 (**Invention patent, published**)

Internship Experience

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|---|-----------------------|------------------------|
| Jiangsu Zhaosheng Air Conditioner Co., LTD | Taizhou, China | 07.2014-09.2014 |
| <ul style="list-style-type: none">• Managed cost analyses for specific products in relation to 3D models;• Assisted to compile the flow charts of direct expansion air-conditioning of WZ-19 helicopter. | | |
| Suzhou Institute of Architectural Design Co., LTD | Suzhou, China | 06.2016-09.2016 |
| <ul style="list-style-type: none">• Involved energy efficiency (HVAC retrofit) solutions in building retrofit projects;• Undertook research project of Green Building on energy efficiency & building envelope system. | | |

School Activities

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| President of Students Union of Faculty | 09.2014-09.2015 |
| <ul style="list-style-type: none">• Established and improved rules and regulations of Students Union to serve students better and lead my team win the 'Outstanding Students Union of University' award; | |
| Monitor of Class 1, Building Environment and Equipment Engineering | 09.2012-06.2016 |
| <ul style="list-style-type: none">• Organized activities and served classmates to enhance the cohesion of class;• Guided classmates to participate in innovation activity. | |

Extracurricular and Volunteer Experience

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| 8th International Conference on Sustainable Development in Building & Environment Chongqing | 10.2017 |
| <ul style="list-style-type: none">• Organized a twenty-volunteer team to arrange airport pick up on arrival and for departure, as well as translation on daily issues for overseas professors; | |

Skills

Language Skills

- An overall score of IELTS 6.5 (L: 6.0, R: 6.5, W: 6.0, S: 6.5).

Research Skills

- Modeling and simulation software: Energy Plus; DesignBuilder; ANSYS Fluent; ENVI-met;
- 3D graphics software: Autodesk Inventor;



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- Data analysis and processing software: Origin; Matlab.

Hobbies

- Traveling; Photography; Cooking; Chinese Kung Fu.
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Research Interest

- Green building, Building energy use, Building environment, Big data & machine learning.
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Honors and Awards

- **The First Prize** of 8th National University Students Social Practice and Science Contest on Energy Saving & Emissions Reduction (Top 0.5%, Sponsored by the Ministry of Education, PRC) (2015)
- **The First Prize** of 11th National University Students Social Practice and Science Contest on Energy Saving & Emissions Reduction (Top 0.5%, Sponsored by the MOE, PRC) (2018)
- **The Third Prize** of 9th China R & AC Industry Science & Technology Contest for University Students (Top 5%, Sponsored by the China Refrigeration and Air-conditioning Industry Association) (2015).
- **The Third Prize** of 1st 'Si Yang Cup' Diesel Engine Disassembly Competition of Jiangsu Province (Top 10%, Sponsored by the Jiangsu Institution of Naval Architects) (2014).
- **China National Postgraduate Scholarship** (TOP 0.2%) (2016-2017)
- **China National Postgraduate Scholarship** (TOP 0.2%) (2017-2018)
- Excellent design award of 14th MDV Intelligent Architecture Design Competition (Top 5%, Sponsored by the Architectural Society of China and Chinese Association of Refrigeration) (2017)
- First Postgraduate Scholarship of Chongqing University (3 times) (2016-2019)
- First People's Scholarship of Jiangsu University of Science & Technology (3 times) (2012-2015)