

Curriculum Vitae of Xinhao Hu

Personal Information

Nationality: P. R. China

Date of birth: Oct. 25th, 1995

Gender: Female

Marital status: Unmarried

Hobby: Chinese Martial Arts, Singing, skating

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Education Background

- **Visiting student** in Built Environment, National University of Singapore, Singapore, 01/2023 - Present
- **Ph. D candidate** in Civil Engineering, Hunan University, P. R. China, 09/2020 - Present
- **Master** in Heating, Gas Supply, Ventilating and Air Conditioning Engineering, Nanjing Normal University, P. R. China, 09/2017 - 06/2020
- **Bachelor** in Mechanical Engineering & Business English in Nanjing Normal University, P. R. China, 09/2013 - 06/2017

Research experience

Research on thermal comfort of indoor occupants with personal comfort systems under solar radiation

- Solar radiation at different indoor locations were analyzed by solar radiation simulation and experimental measurement.
- The effects of cooling personal comfort system and solar radiation on human thermal comfort, thermal feeling, thermal acceptance, thermal expectation and physiological parameters in summer were analyzed.
- Human thermal comfort, thermal feeling, thermal acceptance, thermal expectation, physiological parameters, and thermal adaptation in different locations in the test room were compared.
- The potential of personal comfort systems to improve human thermal comfort throughout indoor spaces and reduce building energy consumption under solar radiation is explored.

Study on year-round performance of non-azeotropic cold storage unit

- The unit performance is improved by design the location of high-pressure receiver for improving sub-cooling degree.
- Tests were operated under 4 typical ambient temperature conditions for annual performance analysis.
- Experimental results of unit performance (e. g. cooling capacity, EER, power input) and safety (e. g. sub-cooling, super-heating and discharge temperature) were analyzed to help determine refrigerant charge range.
- The refrigerant charge solution is proposed for non-azeotropic refrigerant mixtures in the case study of R404A, R407A and R407F.

Research interests

- Human thermal comfort and energy-use behavior in shared indoor spaces under solar radiant condition.
- Combining multi-types of personal comfort systems so that improving thermal comfort

- Developing the local-overall thermal sensation model with personal comfort system under solar radiant condition based on the researches in summer and winter.

Publication

1. **Xinhao Hu**, Zhongbin Zhang*, Yuchen Yao, et al. Non-azeotropic refrigerant charge optimization for cold storage unit based on year-round performance evaluation. *Applied Thermal Engineering*. 2018, 139: 395-401. (IF=5.295)
2. **Xinhao Hu**, Zhongbin Zhang*, Dandan Cai. A Mathematical Tightening of Instantaneous Indoor and Outdoor Dry-Bulb and Wet-Bulb Temperature Tolerances[J]. *Energies*, 2020, 13(6): 1436.
3. **Xinhao Hu**, Zhongbin Zhang*, Yuchen Yao, Experimental Analysis on Refrigerant Charge Optimization for Cold Storage Unit. *Procedia Engineering*, 2017, 205: 1108-1114
4. **Xinhao Hu**, et al. Thermal comfort under indoor solar radiant with desk fan in summer, working paper, 2022.
5. Qingqing Deng, Zhongbin Zhang*, **Xinhao Hu**. Thermoeconomic and environmental analysis of an inverter cold storage unit charged R448A[J]. *Sustainable Energy Technologies and Assessments*, 2021, 45(1):101159. (IF=5.353)
6. Yuchen Yao, Zhongbin Zhang*, **Xinhao Hu**, et al. Performance Comparison of R32 and R410A in Direct Evaporative All Fresh Air Handling Unit (DEAFAHU) Under Variable Temperature Conditions. *Science and Technology for the Built Environment*. 2018, DOI:10.1080/23744731.2018.1431478. (IF=1.99)
7. Yuchen Yao, Zhongbin Zhang*, **Xinhao Hu**. Experimental Contrast on the Cooling Performance of Direct Evaporative All Fresh Air Handling Units with R32 and R410A. *Procedia Engineering*, 2017, 205: 802–809.
8. Zhongbin Zhang, Yuchen Yao, Dandan Cai, **Xinhao Hu**. An artificial environment room for performance testing, ZL201710189989.9. (Patents for inventions)

Honors & Awards

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|---|-----------------|
| ➤ Excellent Academic Degree Master's Thesis of Nanjing Normal University 2021 | 06/2021 |
| ➤ Second Prize of Youth Excellent Paper of Jiangsu Refrigeration Society | 10/2018 |
| ➤ Third Prize in the 2018 World HVAC Student Technology Competition China Selection | 09/2018 |
| ➤ First-class Scholarship of Nanjing Normal University | 09/2017-09/2019 |