

# YUPENG WANG

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1206 W. Green St., Urbana, IL

## Education

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### Ph.D. student in mechanical science and engineering

01/2020 - 07/2024 (EXP)

University of Illinois at Urbana-Champaign

Advisors: Prof. Pega Hrnjak, Prof. Hui Zhao

### M.S. in mechanical science and engineering

08/2017 - 12/2019

University of Illinois at Urbana-Champaign

Advisors: Prof. Pega Hrnjak, Prof. Hui Zhao

### B.E. in in Building Environment and Facilities Engineering

08/2012 - 07/2016

Harbin Institute of Technology, China

## Experience

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### Research assistant at Air Conditioning and Refrigeration Center, University of Illinois

08/2017 - Present

*Effects of Material Selection on MCHX External Corrosion and System Performance* (on going)

- Explore the relation between aluminum heat exchanger material selection (fins, tubes, brazing material) and the corrosion behavior of heat exchanger fin/tube braze joints
- Preparing MCHE components for controlled atmosphere brazing (CAB)
- Cut, mount, and polish MCHE sections for metallurgical analysis with optical microscopy

*External Corrosion in Microchannel Heat Exchangers: Effects and Mitigation*

- Study the effects of external corrosion and surface fouling on the corrosion behavior and thermal-hydraulic performance of aluminum MCHES, with and without external anti-corrosion coatings
- Modify, operate, and maintain salt spray corrosion testing chamber
- Operate ASTM standard accelerated corrosion tests to generate external corrosion on aluminum MCHES
- Develop and evaluated aluminum HX cleaning procedure after corrosion tests
- Operate wind tunnel to evaluate the thermal-hydraulic performance of HXs

### Undergraduate industrial trainings and design experience

Graduation design: *Designing of the Air Conditioning System of a High-rise Hotel*

02/2016 - 07/2016

Internship at Mu-Dan-Jiang Thermal Power LLC, China

02/2016 - 04/2016

- Thermal power plant operation and thermal supply network operation observation

### Internship at Sichuan Guo-Zhong Architecture LLC, China

01/2016 - 02/2016

- Central air-conditioning system design and engineering drawing

### Member and department director of Traveler's Association, Harbin Institute of Technology

07/2012 - 07/2014

- Teamwork experience in organizing tourism programs that open to the public
- Longtime leader of teams with up to 60 members in tourism activities, local and cross-province

## Software skills

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Modeling with MATLAB, EES, and Ansys Fluent, some experience with Python. Design with AutoCAD, SolidWorks, and Tangent HVAC. Control with LabVIEW and DirectSOFT

## Awards

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Honorable Mention in the 2015 COMAP's Mathematical Contest in Modeling

2015

The People's Scholarship in China granted by Harbin Institute of Technology

2014; 2015

Outstanding Director granted by Harbin Institute of Technology Traveler's Association

2013; 2014

## Publications

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Wang, Y.P., Zhao, H., & Hrnjak, P., (2022). The Effects of Corrosion Protection Methods on the Thermal-Hydraulic Performance of Aluminum Microchannel Heat Exchangers. *19<sup>th</sup> International Refrigeration and Air Conditioning Conference*, West Lafayette, IN

Wang, Y.P., Zhao, H., & Hrnjak, P., (2021). An Evaluation of the Effect of Corrosion Tests on Thermal Performance of Aluminum Heat Exchangers. *18<sup>th</sup> International Refrigeration and Air Conditioning Conference*, West Lafayette, IN

Zhao, H., Wang, Y.P., & Hrnjak, P., (2021) Corrosion Behavior of Brazed Aluminum Heat Exchangers. *2021 International Brazing and Soldering Conference*, Denver, CO

Zhao, H., Wang, Y.P., Elbel, S., & Hrnjak, P., (2021) Inspection of Brazed Aluminum Microchannel Heat Exchanger by X-ray Imaging. *2021 International Brazing and Soldering Conference*, Denver, CO

Wang, Y.P., Zhao, H., & Hrnjak, P., (2020). The effect of external corrosion on the performance of multichannel multi-louvered fin aluminum heat exchangers. (ACRC Report CR81)