English Name: Zuntao Hu Chinese Name :胡尊濤
PhD Student
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Education

- PhD of Computer Science and Technology (Please Modify)
  Macau University, Macau 2021.08 – present
- Master of Power Engineering,
  Shanghai Jiao Tong University,Shanghai 2018.09 – 2021.03
- Bachelor of Energy and Power Engineering,
  Shanghai Jiao Tong University,Shanghai 2014.09 – 2018.06

Publications

- [1]Ding G, Zhan F, Hu Z, Zhuang D. A non-contact measuring device for freezing amount of water in the dust on fin surface of heat exchanger [P]. Shanghai：CN111397708A, 2020-07-10.
- [2]Ding G, Hu Z, Zhan F, Zhuang D. Precise powder supply device for acceleration dust collection testing of air conditioner heat exchanger [P]. Shanghai：CN108954923B, 2020-07-10.
- [3]Ding G, Zhan F, Hu Z, Zhuang D et al. A wet and dusty air supply device and control method [P]. Shanghai： CN111366389A,2020-07-03.
- [4]Ding G Zhan F, Zhuang D, Hu Z, et al. A test device for accelerated dust deposition of air conditioning heat exchanger [P]. Shanghai：CN110455566A, 2019-11-15.
- [5]Ding G, Zhan F, Hu Z, Zhuang D, et al. An accurate supply device for dust laden airflow and its control method [P].
- Shanghai：CN111044306A, 2020-04-21
- [6]Hu Z, Zhan F, Zhuang D, et al. Test method of heat exchange attenuation rate of heat exchanger for air conditioner [J]. Journal of refrigeration, 2020(05)
- [7]Ding G, Han W, Zhuang D, Hu Z, et al. Fractal microchannel heat exchanger [P]. Jiangsu: CN209434175U, 2019-09- 24.
- [8]Ding G, Han W, Zhuang D, Hu Z, et al. Bionic fractal plate heat exchanger [P]. Jiangsu: CN209344066U, 2019-09-03.
- [9]Zhuang D, Ding G, Xu X, Yang Y, Zhang A, Hu Z. Fractal microchannel cold plate with two-way flow path [P]. Shanghai：CN108112218A, 2018-06-01.
- [10]Zhuang D, Yang Y, Ding G, Du X, Hu Z. Optimization of Microchannel Heat Sink with Rhombus Fractal-like Units for Electronic Chip Cooling[J]. International Journal of Refrigeration, 2020, 116.

Research Interests

- Reinforment Learning in energy.

Projects

Research on Vapor Permeation in the Dust Layer on the Surface of Metal Fins Jan. 2020 – May. 2021

Researcher sponsored by the Nation Science Foundation. (Advisor: Prof. Guoliang Ding in SJTU)

- Designed an autonomous device, which can measure the increasing weight of condensation water in dust porous structure on fins with heat conduction simultaneously, by Raspberry pi， servo motors, and all kinds of sensors.
- Developed the algorithm of controlling the device in Python by analyzing signals from sensors and dynamically adjusting period and speed of servomotors from different parts, to collect data preciously.
- Learned about how dust porous structure varies during condensation, by analyzing data over time with Excel.
- Applied for a patent for the innovative structure and control method of the device.

Innovative Mechanical Hands--Controlling 5 fingers by a stepping motor Jun. 2016 – Dec. 2016

Researcher in Institute of Robotics, SJTU (Advisor: Prof. Dingguo Zhang)

- Put forward a new structure of manipulator, which can control the movement of five fingers with a stepping motor independently, the key idea in this approach is to Use electromagnet to control whether the finger is connected to the power transmission shaft. The power on of electromagnet and the rotation of stepping motor are controlled by one-board computer.
- Designed the processing drawings of all parts with UG software and made the physical robot hand with a 3D printer. The demo's fingers can bend and stretch independently by code, highly praised by Prof. Zhang.

Research on Performance Attenuation of Air conditioner Heat Exchanger Jun. 2018 – Jun. 2019

Researcher sponsored by Huawei in SJTU. (Advisor: Prof. Guoliang Ding and Dr. Feilong Zhan)

- Abstracted the dominant factors to performance attenuation by breaking down the whole physical process into several simple processes, designed measuring methods of these factors, including the experiment process, control flow, and devices.
- Designed a precise powder feeding device to produce dust layers on fins of heat exchangers in minutes, which is like real multi-year dust layers, by one-chip computer, step-motor, and dust sensors.

- Designed a device that can provide the air stream containing vapor and dust of various concentration, for experiments of performance attenuation of air conditioner heat exchanger.
- Designed a test device for accelerated dust deposition of air conditioning heat exchanger and an accurate supply device for dust-laden airflow and its control method used in different stages in the experiment.
- Applied for four patents of these devices and published a paper of 'Test method of heat exchange attenuation rate of heat exchanger for air conditioner'.

Optimization of Microchannel Heat Sink for Electronic Chip Cooling May. 2018 – Jun. 2018

Researcher sponsored by the Nation Science Foundation. (Advisor: Prof. Guoliang Ding and Dr. Dawei Zhuang)

- Based on imitation the structure of blood capillary and vein of lotus leaf，invented two types of MHS, Applied for two patents of these.
- Increased heat transfer efficiency by 20%, with researching on the optimization of structural parameters of the microchannel heat sink by Fluent.
- Applied for a patent of the new structure and the parameters, and published a paper of 'Optimization of Microchannel Heat Sink with Rhombus Fractal-like Units for Electronic Chip Cooling'.
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Selected Awards & Honors

- Outstanding Graduates, Shanghai Jiao Tong University 2021

Academic Services

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