

OBJECTIVE

Seeking a full-time or internship position that utilizes my expertise in thermal-fluid science to help the design and optimization of HVAC&R components and systems.

EDUCATION

Ph. D Mechanical Engineering, University of Illinois at Urbana Champaign, USA	May.2012-Aug.2016
M.S. Mechanical Engineering, University of Illinois at Urbana Champaign, USA	Aug.2010-May.2012
B.S. School of Energy and Power Engineering, Xi'an Jiaotong University, China	Sep.2006-Jul.2010

RELEVANT COURSE WORK

Fluid Mechanics	Convective Heat Transfer
Heat Transfer	Multiphase Systems and Processes
Numerical Thermal-Fluid Mechanics (CFD)	Refrigeration and cryogenics
Thermodynamics	Thermal System Design

WORKING EXPERIENCE

Research

Thermal simulation of a geological site (Collaboration with Civil Engineering) Sept. 2015-Present

- Developed 3D transient model of the heat transfer problem using ANSYS
- Modeled transient heat transfer and validation by field data

Aluminum surface modification for HVAC&R applications (an Air-Conditioning Refrigeration Center project) Aug.2012-Present

- Designed **experimental tools** for the project and potential future research
- Applied surface science to **improve heat transfer** in multiphase processes
- Developed lab **test plans** to evaluate parameters for design optimization
- Explored the manufacturability and possible cost reduction approach

Hybrid water/air-cooled heat exchangers (a DOE project, collaboration with UTRC) Aug.2010-May.2012

- Doubled heat exchanger capacity by **evaporative cooling** technique
- Validated heat & mass transfer **simulation** by test **data analysis**
- Evaluated the thermal-hydraulic performance of wetted **heat exchanger**
- Conducted **wind tunnel test** with an automotive evaporator

Numerical Simulation gas flow in micro/nano scale channels Mar.2010 -Jun.2010

- Modeled fluid transportation phenomenon by FORTRAN coding
- Solved the physical problem by method of moment

Two-phase flow in a plate-fin heat exchanger Nov.2009 -Mar.2010

- Investigated water-air two-phase flow by experiment
- Flow visualization and distribution analysis

Internship

Harbin turbine company June-August 2009

Teaching

Instructor of Fundamentals of Fluid Mechanics Laboratory	Jan. 2015-May 2015
Instructor of Fundamentals of Heat Transfer Laboratory	Aug. 2014-Dec. 2014

- Evaluated student performance
- Guide group projects and team experiments
- Taught experimental method and introduced lab tools

SKILLS

Experimental

- Evaluate heat transfer components and refrigeration system performance
- Design experimental strategy and tools for new HVAC and refrigeration component design
- Develop LabVIEW tools to manage test control and data acquisition
- Perform data analysis and documentation to guide problem solving

Modeling and designing

- Modeling/simulation skills: **ANSYS (Fluent, Mechanical), EES, C++, FORTRAN, Matlab and Simulink**
- Wolfram Mathematica for solving differential equations
- Mechanical design with CAD software: **AutoCAD, ProE/Creo, SolidWorks**

ACTIVITIES & AWARDS

President of ASHRAE student at UIUC	Aug. 2014-Aug. 2015
<ul style="list-style-type: none">➤ Organized exhibitions and seminars➤ Lead executive board meetings and annual field trips➤ Obtained funding by competing with other organizations	
Secretary of Mechanical Engineering Graduate Women	Aug. 2012-May 2013
David Hinde Award	2015
ASHRAE Graduate Student Grand	2011
ASHRAE student member	2011-present
ASME student member	2014-Present

PUBLICATIONS

- 1) **Feini Zhang**, Anthony M. Jacobi: Aluminum surface wettability change by nanofluid boiling, *Applied Physics Letters*, *Applied Physics Letters*, manuscript under revision.
 - 2) Lei Wang, Yuan Ma, **Feini Zhang**, Yanzhong Li, Performance analysis of no-vent fill process for liquid hydrogen tank in terrestrial and on-orbit environments, *Cryogenics* 72 (2015) pp:161-171.
 - 3) **Feini Zhang**, Shuqi Lai, Anthony M. Jacobi, Paul Braun, Thermal-responsive polymer grafted aluminum surface to actively modulate water wettability, ASME SMASIS2015, Denver, September 2015.
 - 4) **Feini Zhang**, Anthony M. Jacobi, Metal Surface Wettability manipulation by nanoparticle deposition during nanofluid Boiling, ASME Conference InterPACK & ICNMM, July 2015.
 - 5) **Feini Zhang**, Anthony M. Jacobi, Nanoparticle Deposition by Boiling on Aluminum Surfaces to Enhance Wettability, International Refrigeration and Air Conditioning Conference at Purdue, July 2014.
 - 6) **Feini Zhang**, Jessica Bock, Anthony M. Jacobi, Hailing Wu, Simultaneous heat and mass transfer to air from a compact heat exchanger with water spray precooling and surface deluge cooling, *Applied Thermal Engineering*, 63 (2014) pp. 528-540.
 - 7) **Feini Zhang**, Jessica Bock, Anthony M. Jacobi, Hailing Wu, Simultaneous heat and mass transfer in a wetted heat exchanger, part I: experiments, International Refrigeration and Air Conditioning Conference at Purdue, July 2012.
 - 8) Jessica Bock, **Feini Zhang**, Anthony M. Jacobi, Hailing Wu, Simultaneous heat and mass transfer in a wetted heat exchanger, part II: modeling, International Refrigeration and Air Conditioning Conference at Purdue, July 2012.
 - 9) Pei Yuan, Guobao Jiang, **Feini Zhang**, Yaling He, Minbang Tan, Wenquan Tao, Two-phase distributor in plate fin heat exchanger, *CIESC Journal*, 62 (2011) pp.31-36.
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