

XIN WANG

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EDUCATION

University of Illinois at Urbana-Champaign	<i>September 2019 - June 2024</i>
Doctor of Philosophy (PhD) in Mechanical Engineering	GPA:3.85/4.00
Zhejiang University	<i>September 2016 - June 2020</i>
Bachelor of Science in Mechanical Engineering	GPA:3.74/4.00

TECHNICAL STRENGTHS

Computer Languages	C/MATLAB/Python/MongoDB/MySQL/Neo4j/JavaScript
Software & Tools	AutoCAD, Solidworks, Origin, MATLAB, Fluent, ANSYS, EES

RELEVANT COURSES

Refrigeration and Cryogenics	Finite Element Analysis
Engineering of Thermodynamics	Numerical Thermo-Fluid Mechanics
Heat and Mass Transfer	Foundation of Combustion

RESEARCH

Air Conditioning and Refrigeration Center Project(ACRC)445: Transient Migration of Oil at Compressor Discharge August 2020-Present

- Explored and quantified the transient effects in oil migration at startup and shutdown of the compressor with flow visualization and sampling method
- Studied the main reason of sudden oil flow rate increase at startup and oil foam phenomena
- Built transient model for oil flow in horizontal tube at startup and shutdown to quantify oil retention and oil circulation ratio
- Reduced the oil migration into the system by further improving oil separation in the compressor

Numerical Calculation of Flow in Heat Sink with Elliptical Fibers February 2020-June 2020

- Simulated flow in heat sink with elliptical cross-section fibers for in-line and staggered arrangement
- Analysed performance of heat sink to optimize the pressure penalty and heat transfer performance
- Described the heat transfer performance with simulation figures to design reasonable heat sink

Design of Core-shell Structure Capacitor for Smart Fabric Material October 2019-July 2020

- Designed, fabricated and tested the core-shell structure capacitor with ability of experimental operation,
- Realized simulation in MATLAB in smart fabric material in sensing application

Heat and Mass Transfer Numerical Calculation October 2018 - December 2018

- Calculated temperature distribution in boiler water wall with energy equation development and finite element analysis with MATLAB and ANSYS

EXPERIENCE

Graduate Research Assistant, MechSE August 2020-Present

- Studying transient effect on compressor and discharge during startup and shutdown
- Exploring oil viscosity and refrigerant solubility variations with temperature and pressure change

- Investigating causes of oil foam at oil sump and discharge of compressor during startup

Teaching Assistant, MechSE

August 2020-Present

- Course instructed: ME432: Fundamentals of Photovoltaics (Fall 2021)
- Developed a fundamental understanding on solar cell working principal, performance evaluation and cutting-edge technology
- Course instructed: ME501: Combustion Fundamentals (Spring 2021)
- Developed understanding of fundamentals of kinetic theory, transport phenomena, chemical equilibria, and reaction kinetics; flames, their gross properties, structure, and gas dynamics including oscillatory and turbulent burning
- Course instructed: ME320: Heat Transfer (Fall 2020)
- Assisted on lab section about principles and application of heat transfer by conduction, convection, and thermal radiation

Guodian Yuci Thermoelectricity co., LTD. Internship

July 2019 - August 2019

- Worked on simulation system of power plant to ensure safe operation and maintenance
- Analyzed power plant flue gas purification equipment and tested flue gas composition after different purification operation

UNDERGRADUARE THESIS

Numerical Calculation and Simulation of Laminar Flow in Heat Sink with Elliptical Cross-section Fibers

July 2019 - June 2020

Built simulation analysis on laminar flow velocity, temperature distribution and heat transfer through in-line and staggered arranged fiber heat sink with elliptical cross-section