Mahmoud Alzoubi, Ph.D.

Mechanical Engineer

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WORK EXPERIENCE

Postdoctoral Researcher

Université de Sherbrooke

JUN 2019 – Ongoing Sherbrooke, Canada

- Developing a numerical model at system-level and mechanistic-level of an innovative, renewable cooling technology to improve the power utilization effectiveness of servers and data centers
- Constructing a thermal storage system consisting of an engineered porous metal structure filled with phase-change material as an integrated part of novel cooling technology for server platforms and data centers
- Conceiving a numerical tool to predict actual performances and behaviors of ejector-based supercritical CO_2 cooling systems
- Implementing a computational model that predicts the mixing performance of T-shape micromixers equipped with 3D printed Gyroid matrices
- Research mentor for four doctorate students in HVAC systems, phase-change processes, transport phenomena in porous medium, and multi-phase mixing for industrial applications

Research Engineer

McGill University

JAN 2019 – MAY 2019 Montreal, Canada

- Developed a hybrid artificial ground freezing as a sustainable solution for maintaining permafrost in Northern Canada
- Successfully fulfilled previous research projects in the fields of artificial ground freezing
- Research advisor for five master's students in artificial ground freezing, thermal energy storage, and wastewater treatment for deep mines

Research Assistant

McGill University

JAN 2015 – DEC 2018 Montreal, Canada

- Led a project of conceiving and developing a thermally-controlled lab-scale experimental setup that mimics the artificial ground freezing process
- Derived and validated a conjugate numerical model that effectively incorporates the multi-physics, multi-scale transport phenomena in artificial ground freezing

Research Assistant

Masdar Institute

SEP 2012 – DEC 2014 Abu Dhabi, UAE

- Designed and built an innovative test-bed of a compact, high-performance recuperator-based vapor compression cycle using environmentally-friendly refrigerants
- Developed comprehensive, components and cycle-level, numerical models of the vapor compression cycle

EDUCATION

Ph.D. in Mining and Materials Engineering

McGill University

JAN 2015 – DEC 2018

Dissertation: Experimental and Numerical Investigation of Thermal and Hydraulic Characteristics in Artificial Ground Freezing.

GPA: 4.0/4.0

M.Sc. in Mechanical Engineering

Masdar Institute (In collaboration with MIT)

SEP 2012 – JUN 2014

Thesis: Development of a High-Performance Compact Refrigeration Cooling Prototype.

GPA: 4.0/4.0

B.Sc. in Biosystems Engineering

Jordan University of Science and Technology

SEP 2000 – FEB 2005

First rank student in my class.

RELEVANT SKILLS

Numerical Modeling

CFD Software Packages
HPC Computing
Cloud Computing

System-Level Analysis

Dymola - Modelica libraries
TIL Suite - Thermal Analysis

Programming Languages

Python
MATLAB
Mathematica

Statistics Software

Minitab
JMP Pro