

Mohammad Mehdizadeh Youshanlouei

Date of birth: 28 Dec 1995 | **Nationality:** Iranian | (+98) 9146720501 |

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EDUCATION AND TRAINING

10 SEP 2014 – 16 JUL 2018 – Band Avenue, Urmia , Iran

BACHELOR'S OF SCIENCE IN MECHANICAL ENGINEERING – Urmia University of Technology

Thesis: Numerical Simulation of FHD Micropump Using Magnetic Field of Permanent Magnet

17.29 / 20 | www.uut.ac.ir

23 SEP 2018 – 9 NOV 2020 – Band Avenue, Urmia , Iran

MASTER'S OF SCIENCE IN MECHANICAL ENGINEERING / ENERGY CONVERSION – Urmia University of Technology

Thesis: Numerical Study of Magnetic Solar Still

18.76 / 20 | www.uut.ac.ir

WORK EXPERIENCE

1 JAN 2021 – 30 MAY 2021 – Dresden, Germany

RESEARCHER – HZDR

I had a cooperation with Dr. Lucas on OpenFOAM CFD modeling for bubbly flows during the period from January until May 2021. In particular, I was involved in the setup of different test cases for the validation of the baseline model for poly-disperse bubbly flows. (OpenFOAM-dev/HZDRmultiphaseEulerFoam)

LANGUAGE SKILLS

Mother tongue(s): **AZERBAIJANI** | **PERSIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2
GERMAN	A1	A1	A1	A1	A1
TURKISH	C1	B1	B2	C1	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **DIGITAL SKILLS**

My Digital Skills

Operating Systems

Windows | Linux, user level;

Programming Skills

Programming Languages: C, C++, Python, Matlab | Arduino

Other Skills

SolidWorks | Computational Fluid Dynamics: OpenFOAM, ANSYS Fluent | EES | Gambit

● **PROJECTS**

1 DEC 2021 – CURRENT

Combination of CFD and Machine Learning

CNN is used to predict Wall Heat Flux and the inputs are Wall Pressure and Velocity gradients. (TensorFlow, DNS)

1 JUL 2020 – 1 DEC 2020

Numerically simulated heat transfer inside a corrugated helical tube.

<https://doi.org/10.1016/j.csite.2021.100948>

Pure water and Al₂O₃-water were used as working fluid. Thermal, exergy, and economic efficiencies were investigated.

(OpenFOAM 2.3.1/buoyantBoussinesqueSimpleFoam)

1 APR 2020 – 1 JUL 2020

Analyzed the cooling performance of six novel shaped solar panel towers

<https://doi.org/10.1016/j.csite.2021.101232>

The electrical efficiency of panels was also investigated

(OpenFOAM 2.3.1/buoyantBoussinesqueSimpleFoam)

1 OCT 2019 – 1 APR 2020

Numerically simulated the performance of magnetic solar still

<https://doi.org/10.1007/s11356-021-12947-1>

Total freshwater yield and thermal performance were investigated.

(OpenFOAM 2.3.1/new solver developed)

1 JAN 2020 – 1 MAY 2020

Thermomagnet

Numerically simulated the mixed convection of the magnetic nanofluid in heat exchangers in the presence of a magnetic field using Boungiorno model. Brownian motion, Thermophoresis and Magnetophoresis terms were considered.

(OpenFOAM 2.3.1/new solver developed)

1 OCT 2019 – 1 NOV 2019

Micromachined Thermal Flow Sensor

Analyzed the thermal performance of micromachined thermal flow sensors numerically/analytically.
(Matlab R2015b)

1 JUN 2019 – 1 FEB 2020

Air Water Two Phase Flow Visualization

<https://doi.org/10.1016/j.aej.2021.12.024>

Numerically and experimentally investigated the performance of non-boiling two-phase flow in a vertical helical tube. The flow visualization and pressure drop of slug flow were studied.
(OpenFOAM 2.3.1/compressibleInterFoam)

1 JUN 2019 – 1 SEP 2019

Bubble Collapsing

Numerically investigated bubble collapsing near a rigid wall.
(OpenFOAM 2.3.1/ compressibleInterFoam)

1 MAR 2017 – 1 MAR 2018

FHD Micro Pump

<https://doi.org/10.1007/s40430-019-1734-7>

Numerically simulated the pumping of magnetic nanofluid inside a microchannel using a magnetic field.
(OpenFOAM 2.3.1/new solver developed)

1 JAN 2016 – 1 APR 2016

Turbo Pulse Jet Engine

Design a fan and a turbine for model pulse jet engines used in RC airplanes.
(SolidWorks 2017)

● **PUBLICATIONS**

Experimental investigation on the thermo-hydraulic performance of air-water two-phase flow inside a horizontal circumferentially corrugated tube

<https://doi.org/10.1016/j.aej.2021.12.024> – 2022

Cooling a central processing unit by installing a mini channel and flowing nanofluid, and investigating economic efficiency

<https://doi.org/10.1016/j.csite.2021.101719> – 2022

Thermal, efficiency and power output evaluation of pyramid, hexagonal and conical forms as solar panel

<https://doi.org/10.1016/j.csite.2021.101232> – 2021

The effect of magnetic field on the performance improvement of a conventional solar still: a numerical study

<https://doi.org/10.1007/s11356-021-12947-1> – 2021

Effect of volume fraction and size of Al₂O₃ nanoparticles in thermal, frictional and economic performance of circumferential corrugated helical tube

<https://doi.org/10.1016/j.csite.2021.100948> – 2021

Thermal/Exergy and Economic efficiency analysis of circumferentially corrugated helical tube with constant wall temperature

<https://doi.org/10.1016/j.csite.2020.100803> – 2020

investigation of FHD pump for pumping the magnetic nanofluid inside the microchannel

<https://doi.org/10.1007/s40430-019-1734-7> – 2019

Numerical simulation of FHD micro pump using magnetic field of permanent magnet

2018

In Persian _ Modarres Mechanical Engineering Journal

Magnetic Solar Still

IR Application No. 139850140003010645, 2020

2020

Patent

Turbo Pulse Jet

IR Application No, 139650140003009502, International Ranking No. F23R 7/00;F23R 3/00, 2017

2017

Patent

● PROFESSIONAL SERVICES

CURRENT

Technical Paper Reviewer

Reviewed and assessed the quality for publication of technical paper based on my expertise in two-phase non-boiling air-water flows, Solar Desalination, Nanofluids, CFD, Heat Exchanger and Heat and Mass Transfer for Journals like Case Study in Thermal Engineering and Energy Storage

● HOBBIES AND INTERESTS

• Multiphase flow simulation

• Developing new solvers for OpenFOAM

• Nanofluids and solar stills

● RECOMMENDATIONS

Saber Yekani Motlagh – Associate Professor – s.yekani@mee.uut.ac.ir

Department of Renewable Energies, Urmia University of Technology

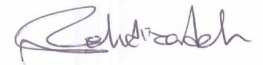
Abdolrahman Dadvand – Associate Professor – a.dadvand@mee.uut.ac.ir

Department of Mechanical Engineering, Urmia University of Technology

Dirk Lucas – Professor – d.lucas@hzdr.de

Institute of Fluid Dynamics Department of Computational Fluid Dynamics Helmholtz-Zentrum Dresden-Rossendorf

Engineer with four years of experience in research, numerical modeling and simulation software development. Creative, prolific, and results-oriented, with positive attitude and all the willingness to discover, grow and serve. Interested in Ph.D. Position and intend to make a positive contribution to science and technology by utilizing my experience and research skills



Mohammad
Mehdizadeh
Youshanlouei