



Kamyar Maleki Bagherabadi

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Address: Trondheim, Norway

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Education

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- 2019 – Present** **PhD Candidate – Norwegian University of Science and Technology – Department of Marine Technology.** Under supervision of Professor Eilif Pedersen. Hybrid Power Systems
- 2014-2016** **Master of Mechanical Engineering, Energy Conversion.** GPA:18.02/20
Thesis: Numerical Simulation and Analysis of Active Electro-Kinetic Micro-Mixers
Supervisors: Prof. Mohammad Said Saidi, Dr. Mahdi Sani
Computational Fluid Dynamics (18/20), Advanced Numerical Analysis (18/20)
Advanced Fluid Dynamics (17.8/20), Continuum Mechanics (17.3/20), Aerosol Transport (18.2/20)
- 2010-2014** **Bachelor of Mechanical Engineering,** Iran University of Science and Technology. GPA:15.40/20
Thesis: Reinforcement of Single Lap Adhesive Joint by Implementing Metal Fibers in Adhesive Layer
Supervisor: Dr. Hadi Khoramishad
Engineering Design Method (19.3/20), Machine Element Design (17.5/20)
Fluid Mechanics (16.6/20), An Introduction to Mechatronics (18/20), Automatic Control (15.5/20)

Research Experiences

Sharif University of Technology

- Developing Fluid Structure Interaction based on Control volume by Rayan (in-house CFD code)
- Developed Algebraic Multi Grid as linear solver for Rayan (in-house CFD code) based on CRS matrix as part of master thesis by C++ (Object oriented)
- Performed Numerical simulation of active and passive electro-kinetic micro-mixers based on internal coupling of Navier-Stokes and Poisson-Nernst-Planck
- Analyzed Numerical simulation of active and passive electro-kinetic micro-mixers based on internal coupling of Navier-Stokes and Poisson-Boltzmann
- Developed Numerical Simulation of NSE cavity problem by C++ (Object oriented) as CFD course final term project
- Developed Numerical Simulation of Transport Equations (Heat Transfer) by C++ (Object oriented) as CFD course midterm project
- Calculated diffusion coefficient of particles as the Aerosol course project by MATLAB
- Performed Numerical simulation of mixers in 3D by Fluent and COMSOL

Iran University of Science and Technology

- Designed and manufactured simple fixture for adhesive single lap joints as part of bachelor thesis
- Designed and reinforced adhesive single lap joint by metal fibers and examined by experimental tensile test as bachelor thesis

Leadership/Teamwork

Iran University of Science and Technology

- Designed and manufactured Holonomic Robot as term project of Mechatronic course
- Designed and manufactured Radio Control Hovercraft as second internship in bachelor

- Designed and manufactured small scale ceiling lift with two various hanging speed as the term project of Mechanical Engineering Design 2 course
- Design and calculated proper shaft based on ASME standards as the term project of Mechanical Engineering Design 1 course

Additional Experiences

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| • Teacher assistant of Dr. Hani Sadrhosseini in Thermodynamics 1 (Bachelor course) | Spring of 2016 |
| • Participated in one day seminar of Wind Turbines presented by Prof. Durali | May 2016 |
| • Teacher assistant of Dr. Mahdi Sani in Numerical Analysis (Bachelor course) | Spring of 2015 |
| • Short lecture (15 hours) of MATLAB programming for students, Sharif University of Technology International Campus-Kish Island | April 2015 |
| • Attended in rotary course (Pump and Compressor) 40 hours | June-August 2014 |
| • Internship in Iran Khodro Industrial Group in quality control section | June-July 2012 |
| • Member of Iranian Society of Mechanical Engineers (Member No.13048) | June 2013-Present |
| • Membership of students Robocop Soccer Simulation (C++ platform) team | October 2007-February 2008 |

Technical Skills

Software

- C++ (Object Oriented) Expert, MATLAB
- Fluent
- COMSOL (Laminar Flow Coupled with Transport Species Equation)
- Gambit
- Tecplot 360 (Post Processing of Computational Fluid Dynamics)
- Abaqus (Stress and Strain Analysis, Coupled Thermal Stress Analysis)
- ADAMS (Rigid Body Motion with Optimization Modules)
- CATIA, SolidWorks
- Office: Word, Excel, PowerPoint

Language

English: Fluent in speaking and very good writing, **Norwegian:** Basic , **Germany:** Basic, **Persian:** Native

Interested Fields

Computational Fluid Dynamics
 Numerical Simulation
 Optimization Methods
 Hybrid Power Systems
 Finite Element
 Electrochemical Flows
 Parametric Design in Mechanical Engineering
 Multidisciplinary Issues Related in Mechanical Engineering

Publications

Maleki Bagherabadi, Kamyar; Mahdi Sani & Mohammad Said Saidi, “*Numerical Analysis of a Class of Active Electro-Kinetic Micro-Mixer by Applying Poisson- Nernst-Planck and Navier-Stokes (PNP-NSE) Equations*”. 25th Annual International Conference on Mechanical Engineering. 2-4 May 2017 Iran, Tehran (In English)

Maleki Bagherabadi K; Sani M; Saidi MS; “*Numerical Analysis of Some Active and Passive Electro-Kinetic Micro-Mixers by Applying Poisson-Nernst-Planck and Navier-Stokes (PNP-NSE) Equations*”. Modares Mechanical Engineering journal (ISC) (In Persian)

Maleki Bagherabadi K; Sani M; Saidi MS;” *Enhancing Active Electro-Kinetic Micro-Mixer Efficiency by Introducing Vertical Electrodes and Modifying Chamber Aspect Ratio*” Int. J. Chemical Engineering & Processing: Process Intensification

Interests

Sport: Swimming, Biking, Tennis

Art: Famous Movies, Metal Sculptures Art, Pop Music

