

Tahmid Hasan Oni

+8801616820068 oni144b@gmail.com [LinkedIn](#)

Education

Bangladesh University of Engineering and Technology (BUET)

Dhaka, Bangladesh

Bachelor of Science(B.Sc.) in Mechanical Engineering

March 2018 - May 2023

Relevant Courses: Heat Transfer, Fluid Mechanics, Refrigeration and HVAC Systems, Nuclear Engineering, Control Engineering, Advanced Thermodynamics, Internal Combustion Engines, Theory of Structures, Production Process, Machine Design, Electro-mechanical System Design.

Standardized Test Scores

- **GRE Overall 316** (Quant- 163 , Verbal-153, Analytical Writing- 3.5/6)
- **IELTS Overall- 7.5** (Listening- 7.5, Reading-8.5, Writing-7, Speaking-7.5)

Research Interests

- Fluid Mechanics • Fluid-Structure Interaction • CFD • Transport Phenomena • Aerodynamics
- Hydrodynamics • Heat Transfer • Combustion • Materials • Additive Manufacturing • Energy

Research Experience

- **Undergraduate Thesis** *May 2022 -May 2023*
Supervisor: Prof. Dr. Mohammad Arif Hasan Mamun, Dept. of Mechanical Engineering, BUET
Topic : Study of the thermal performance of a convergence-divergence microchannel heat sink with triangular ribs.
 - Numerical simulations were performed for a proposed physical model of microchannel with the target of heat transfer augmentation in microchannel heat sink (MCHS)
 - Investigated multiple parameters, including convergence-divergence angles, channel and rib aspect ratios, and Reynolds numbers while highlighting the interplay between parameters in optimizing heat transfer, recognizing the trade-off that exists between thermal and hydraulic efficiency.
- **Term Thesis of Control Engineering** *Nov 2022 -May 2023*
Supervisor: Prof. Dr. Sumon Saha, Dept. of Mechanical Engineering, BUET
Topic: Designing of the Temperature Control System of a Residential Geyser using P, PI & PID controller.
 - This paper Investigated and analyzed control systems for residential water geysers, utilizing P, PI, and PID controllers in order to maintain geyser temperature at a particular set point.
 - Evaluated controller performance in terms of temperature control, stability, and response time, with MATLAB/Simulink simulations. Contributed to research in the field of control systems for residential geysers, emphasizing the importance of selecting the appropriate controller for specific applications.

Publications

Conference Proceeding

Dec 2023

Supervisor: Prof. Dr. Mohammad Arif Hasan Mamun, Dept. of Mechanical Engineering, BUET

Conference: 14th International Conference on Mechanical Engineering(ICME 2023)

Title: "A Study of the Thermal Performance of a Converging-Diverging Microchannel Heat Sink with Triangular Ribs"

Professional Experience

- **National Polymer Industries Ltd.** Dhaka, Bangladesh
Industrial Trainee *Oct 2022-Nov 2022*
 - Got hands-on experience on manufacturing processes in the production facilities of Bangladesh's leading plastic industry.
 - Explored the working principles, operation procedure of production facilities in detail.
 - Assisted in conducting routine inspections and monitoring power generation equipment, heat recovery steam generator, etc.

Projects

- **Thermo-Fluid Equipment Design (Marine Engine Oil Cooler):** Used Solidworks for design and HTRI for optimizing design parameters according to system demand. Analyzed and calculated the design parameters of a heat exchanger (STHX) for manufacturing.
- **Air-Conditioning System Design for a Home:** Performed comprehensive cooling load calculation and recommended an air-conditioning system for a residential building by utilizing ASHRAE guidelines and databook.
- **Solar Tracker:** Used SolidWorks, Proteus, Arduino Uno, Photo resistive Sensor, and Solar panel, in order to develop an electro-mechanical system that can track the sun's position in order to face the solar panel directly towards it for maximum solar efficiency.
- **Line Following Robot(LFR):** Used SolidWorks, Arduino Uno, Arduino IDE, Sonar sensor, Motor driver, IR Sensors in order to develop a robot which can navigate in a predefined path autonomously while avoiding obstacles.
- **Remotely Controlled Fury Car:** Used SolidWorks, Arduino Uno, Arduino IDE, Sonar sensor, and Motor driver, in order to develop a car which can race through challenging terrains and adverse environmental conditions, including rugged road surfaces.

Skills Summary

- **CAD Softwares:** SolidWorks, Autocad
- **Simulation Softwares:** Ansys Workbench, Comsol Multiphysics, SolidWorks Simulation, Matlab
- **Programming Languages:** Python, C, Arduino
- **Office Application:** Microsoft Office Suit, LaTeX
- **Other Softwares:** Tecplot 360, Proteus, HTRI
- **Soft Skills:** Project and Time Management, Teaching, Leadership, Writing, Public Speaking

Selective Certifications

- **Python for Everybody Specialization** *May 2020*
University of Michigan / Coursera
- **Introduction to Programming with MATLAB** *June 2020*
Vanderbilt University / Coursera
- **Image Processing Onramp** *Aug 2020*
MathWorks

Reference

Dr. Mohammad Arif Hasan Mamun, Professor
Department of Mechanical Engineering
Bangladesh University of Engineering and
Technology (BUET)
Dhaka-1000, Bangladesh
Email:arifhasan@me.buet.ac.bd

Dr. Md. Nasim Hasan, Professor
Department of Mechanical Engineering
Bangladesh University of Engineering and
Technology (BUET)
Dhaka-1000, Bangladesh.
Email:nasim@me.buet.ac.bd