MD NURUL ISLAM

Dhaka, Bangladesh
mdnurul.buet@gmail.com — +880-1974183992
linkedin.com/in/mdnurul-buet

Education

B.Sc. in Mechanical Engineering
Bangladesh University of Engineering and Technology (BUET)
March 2025 CGPA: 3.58 / 4.00
Relevant Courses: Mechanics of Solids, Structure of Materials, Composite Materials, Thermodynamics, Heat Transfer, Power Plant Engineering, Refrigeration and Air Conditioning, Machine Design

Undergraduate Thesis

Improvement of Isothermal Aging Effect on Lead-Free Solders at the Nanoscale
Supervisor: Dr. Mohammad Motalab

- Investigated the impact of isothermal aging on the mechanical behavior of lead-free solder alloys at the nanoscale using molecular dynamics (MD) simulation.
- Explored how Zn doping and atomic clustering influence stress-strain response, atomic structure, and mechanical stability under aging.
- Carried out comprehensive analysis using tools such as LAMMPS, Python, MATLAB, TecPlot, Ovito, and Atomsk.
- Research outcomes are being prepared for journal submission.

Research Interests

- Molecular Dynamics & Materials Simulation
- Thermo-Mechanical Behavior of Alloys
- Computational Modeling in Mechanical Design
- Heat Transfer and Energy Systems

Projects

Design and Fabrication of Plate and Shell Heat Exchanger
ME 310 Course Project SolidWorks, MATLAB

- Solely designed and simulated the exchanger using SolidWorks.
- Collaborated with team to fabricate the final prototype.
- Validated thermal performance using MATLAB.

Agricultural Spray Drone – Precision Crop Spraying UAV
ME 309 Project SolidWorks, Arduino

- Led a 4-member team to design and build a UAV spray system.
- Oversaw system integration with motors, flight controller, and sprayer.
- Resolved technical challenges including ESC failure and calibration issues.

Industrial Experience

Industrial Trainee – Mechanical (Utility)
Akij Food and Beverage Ltd. Mar–Apr 2024

- Completed 14-day training across utility systems and plants.
- Observed compressors, boilers, chillers, water treatment, and more.
- Gained hands-on exposure to energy systems and process optimization.

Industrial Visit Participant
Elite Hitech Industries Ltd. June 2023

- Observed AC parts manufacturing and assembly processes.
- Learned about quality control and production coordination.

Technical Skills

- **Simulation Tools:** LAMMPS, Ovito
- **CAD:** SolidWorks, AutoCAD
- **Programming:** MATLAB, Python
- **Others:** Microsoft Word, Excel, PowerPoint

Presentations

- Industrial Attachment at AFBL – ME 370 Course
- Heat Exchanger Design Project – ME 310

Achievements

- Received departmental funding for final year thesis
- CGPA 3.77 in final semester (Dean's List status pending)

Languages

- Bengali (Native)
- English (Fluent – Academic & Technical)