

Md Shahed Hossain Sohan

Contact Informations

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Research Interests

• Molecular Dynamics • Computational Mechanics • Energy Storage • Aerodynamics • Fluid Mechanics • Renewable Energy

Education

Bangladesh University of Engineering and Technology, Dhaka, Bangladesh
Bachelor of Science in Mechanical Engineering **March 2018 - May 2023**
CGPA: **3.81/4.00 (In the top 15th percentile)**

Relevant Courses

• Solid Mechanics • Mechanics of Machines • Machine Design • Advanced Engineering Mathematics
• Fluid Mechanics I • Fluid Mechanics II • Heat Transfer • Thermodynamics • IC Engine • Control Engineering • Nuclear Engineering • Instrumentation and Measurement •

Research Experiences

Undergraduate Thesis

Supervisor: Dr. Md. Ashiqur Rahman, Professor, Dept. of ME, BUET

Title: *Analysis of Mechanical Performance of Crumpled Graphene: A Molecular Dynamics Approach.*

- Under Dr. Rahman's supervision, worked on a molecular dynamics study of the mechanical properties of crumpled graphene with varied degrees of porosity and crumpleness. Graphene was crumpled and stabilized using LAMMPS, and features under tensile and compressive stress were then assessed for various degrees of crumpleness and porous state. The capacity of a crumpled graphene structure to withstand stress is reduced by porosity. The tendency, however, turns the other way when crumpleness increases.

CFD Research Group, BUET

Supervisor: Dr. Sumon Saha, Professor, Dept. of ME, BUET

- Worked on CFD study of MHD mixed convection in a quadrantal enclosure with heat conducting rotating cylinder under the supervision of Dr. Saha.
- Worked on assessment of electronic cooling system in a C-shaped channel using temperature dependant P, PI, PID controller under the supervision of Dr. Saha.

Publications

Journal articles [under preparation]

- **Title: "Mechanical Performance Analysis of Crumpled Graphene: A Molecular Dynamics Approach".**
- **Title: "CFD Study of MHD Mixed Convection in a Quadrantal Cavity with Heat Conducting Rotating Cylinder"**

Academic Projects

- **Accident Reduction System Design.**

Supervisor: Dr. Kazi Arafat Rahman, Professor, Dept. of ME, BUET

A gyroscope based drowsiness detection system was designed and modeled to alert and reduce vehicle speed to reduce collision.

Role: *Design and Analysis*

DOI: [10.5281/zenodo.8265893](https://doi.org/10.5281/zenodo.8265893)

• **Thermo-Fluid Equipment Design (Shell and Tube HX with Helical Baffles)**

Supervisor: Dr. A.K.M. Monjur Morshed, Professor, Dept. of ME, BUET

Softwares Used: Solidworks, ANSYS Fluent, HTRI, 3EPlus.

Role: Design and Simulation

DOI: 10.5281/zenodo.8265931

Technical Skills

Design Software:	SolidWorks, AutoCAD
Simulation Software:	LAMMPS, COMSOL Multiphysics, ANSYS Workbench, MATLAB
Programming Languages:	Python, C, Arduino
Microsoft Office:	Microsoft Office Suite, LaTeX
Operating Systems:	Unix/Linux, Windows.
Other Software:	Tecplot 360, HTRI, 3EPlus, Avogadro, OVITO
Soft Skills:	Project and Time Management, Teaching, Leadership, Writing.

Standard Test Scores

- TOEFL iBT Test
Will appear on Sep 30, 2023

Awards and Other Credentials

- **University Merit Scholarship, BUET (three times - January 2019, January 2020, January 2022)**
- Awarded to the students with academic excellence (GPA:3.90+) in a semester.
- **Dean's List Award, BUET (three times - First, Second and Fourth academic year)**
- Offered to the students obtaining an average GPA of 3.75+ in two consecutive semester of an academic year
- **University Stipend (three times – 2018, 2019, 2021)**
- **Board Scholarships: HSC (2017), SSC (2015), JSC (2012)**
- **Perfect Attendance Certificate, Notre Dame College, 2017**
- Students with 100% attendance receive this certification as a reward for their consistent commitment
- **First Runners up, HULT Prize, On Campus championship, BUET 2023**
- Introduction to MATLAB, Coursera Cr. ID: 6CQJHLXPAH44
- Excel for Beginners, Coursera Cr. ID: E3ASUG9VNET8
- Getting started with Python, Coursera Cr. ID: 3CYULTWLKJ6U

Professional Experience

- **Industrial trainee**
North-West Power Grid Company Limited Oct 2022 - Nov 2022
Khulna 225 MW Combined Cycle Powerplant
Khalishpur, Khulna, Bangladesh
- **Teaching and Mentoring**
UDVASH- Academic and Admission Care 2018 - 2020

Extracurricular Activities

- Affiliate member of the IMechE Membership ID: 80702539
- Affiliate Member of BUET Robotics Club May 2018 – May 2023
- Affiliate Member of BUET Automobile Club May 2018 – May 2023
- Member of BADHON - BUET (A Blood Donation Group) May 2018 – May 2023
- Donated blood for 6 times.
- Affiliate Member of NDC Science Club 2015 – 2017
- Affiliate Member of NDC English Club 2015 – 2017

References

Dr. Md. Ashiqur Rahman, Professor Department of Mechanical Engineering, BUET, Dhaka-1000 Bangladesh Email: ashiqurrahman@me.buet.ac.bd	Dr. Md. Ehsan, Professor Department of Mechanical Engineering, BUET, Dhaka-1000 Bangladesh Email: ehsan@me.buet.ac.bd
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