# Md Shahed Hossain Sohan

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| **Education** | **Bangladesh University of Engineering and Technology**, Dhaka, Bangladesh |

Bachelor of Science in Mechanical Engineering      Duration: March 2018 - May 2023

CGPA: **3.81/4.00 (Top 15$^{th}$ percentile among 188 students)**

**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 the expert supervision of Dr. Rahman, I worked on a molecular dynamics study of the mechanical properties of crumpled graphene at 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: "Analysis of Mechanical Properties 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, Assistant 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*
- **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**

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| 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. |

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| **Standard Test Scores** | • **TOEFL iBT Test**<br>Total: 99/120, (Listening: 25, Reading: 23, Speaking: 23, Writing: 28) |

**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 Begineers, 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

**Linguistic Proficiency**

- Bengali (Native Language)
- English (Full Working Proficiency)

**References**

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