

ROBIUL HOSSEN

+880 1860 670763 | robiul.ac.cu@gmail.com | [LinkedIn](#) | [ResearchGate](#) | www.robiulhossen.com

RESEARCH INTERESTS

**Nanocomposites | Fiber-Reinforced Composite Materials | Materials Characterization |
Energy Materials | Advanced Materials**

EDUCATION

B.Sc. in Mechanical Engineering — City University, Savar, Bangladesh **Jan 2020 – Jul 2025**

- CGPA: 3.27/4.00 | Thesis: Effect of magnesium oxide on mechanical behavior of jute fiber reinforced epoxy bio nanocomposite — published in *Scientific Reports* (Springer Nature).

Academic Interruption — COVID-19 University Closures **2021**

- Worked remotely as a graphic designer and taught graphic design at a local training institute; completed self-directed CAD training (SolidWorks, AutoCAD) in preparation for core engineering coursework. Resumed studies in Spring 2022.

Diploma in Power Engineering — Cumilla Polytechnic Institute, Bangladesh **2014 – 2018**

- CGPA: 3.35/4.00

RESEARCH EXPERIENCE

Research Assistant - [Nayem's Association for Research & Publication \(NARP\)](#) **Nov 2024 – Present**

Lab of Assoc. Prof. Dr. Nayem Hossain, Dept. of Mechanical Engineering, IUBAT, Bangladesh

- Investigated germanium-assisted bandgap tailoring of multi-heteroatom-doped graphene through electrochemical exfoliation of sintered fertiliser-derived precursors (Manuscript in Preparation).
- Performed FEA-based structural optimization of naval UNREP/RAS stations using genetic algorithms, surrogate modeling, and perturbation load analysis, achieving ~10% structural weight reduction while keeping peak von Mises stress within allowable limits and maintaining SOLAS II-1 stability compliance (published in *Arabian Journal for Science and Engineering*).
- Fabricated recycled denim-epoxy and jute-denim hybrid fiber-reinforced composites; conducted mechanical and thermal characterization (TGA/DSC) with SEM-based fracture-surface analysis (manuscript under review in *Results in Engineering*).

Research Assistant - Dept. of Mechanical Engineering, City University **Jul 2023 – Dec 2023**

- Funded project (BMTF, Bangladesh - USD 2,000): pyrometallurgical liquation refining of zinc from galvanizing waste to 99.54% purity; characterized phases and mechanical properties via XRF, XRD, OES, tensile, hardness, and impact testing.

PUBLICATIONS

1. Abdullah, M., Parvez, M. M. H., **Hossen, R.**, Kumar, S. S., Tuhin, N. A., & Anam, A. D. (2026). Effect of magnesium oxide on mechanical behavior of jute fiber reinforced epoxy bio-nanocomposite. *Scientific Reports*. <https://doi.org/10.1038/s41598-025-34078-0>
2. Abdullah, M., Anam, A. D., & **Hossen, R.** (2025). Optimized structural design and stability validation of naval UNREP/RAS stations: a finite element and stability integration study. *Arabian Journal for Science and Engineering*. <https://doi.org/10.1007/s13369-025-10667-z>
3. **Hossen, R.** (corresponding author), Apu, M. U., Neha, T. R., Ahasan, E., Islam, M. R., & Khan, M. I. Effect of jute fiber incorporation on the properties of recycled denim-epoxy hybrid composites. Under review at *Results in Engineering*. <https://dx.doi.org/10.2139/ssrn.6960162>
4. **Hossen, R.**, Yunus, M., Hasan, R., Mondal, H., & Khan, M. I. Extraction of pure zinc from bottom zinc dross as galvanizing waste using a pyrometallurgical route. (Manuscript in preparation)

INDUSTRY EXPERIENCE

QC In-Charge - Sajan International Pvt. Ltd. (Sajan Group)

Aug 2018 – Dec 2019

- Led mechanical characterization of CPVC/UPVC polymer products: tensile, compression, and bending tests on UTM; drop, Izod, and Charpy impact testing to evaluate strength and fracture behavior.
- Performed density, Vicat Softening Temperature (VST), and cold-water hydrostatic pressure tests to verify structural integrity under sustained internal pressure and supervised specimen preparation, test records, and the QC team.

Engineering Intern - Nassa Spinning Ltd. (Nassa Group)

Mar 2018 (3 months)

- Assisted in operation and monitoring of generators, boilers, and compressors with exposure to load management, preventive maintenance, and industrial safety procedures.

TECHNICAL SKILLS

- **Simulation & Analysis:** Ansys
- **CAD & Engineering Tools:** SolidWorks, AutoCAD
- **Programming & Data Analysis:** Python, OriginPro, ImageJ
- **Materials Characterization:** UTM testing (ASTM), Izod/Charpy impact, SEM, FTIR, TGA/DSC, XRD, XRF
- **Design & Visualization:** Adobe Photoshop, Illustrator, InDesign (professional experience, 2021)

RELEVANT COURSEWORK

Mechanics of Solids | Fluid Mechanics | Engineering Thermodynamics | Heat Transfer | Machine Design | Metallic Materials | Application of CAD to Materials Processing | Computer Programming | Measurement and Instrumentation | Manufacturing Processes & Technology | Measurement Techniques and Quality Control

AWARDS & HONORS

- **Research Mentorship Award** : Nayem's Association for Research and Publication (NARP)
- **Best Presentation Award** : Undergraduate Research Symposium, City University, 2024
- **Best Poster Presentation (1st Position)** : Hydrogen Fuel as a Sustainable Energy Source

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

- **Student Research Mentor** : NARP Lab, guided undergraduate students in composites research methodology and academic writing.
- **Captain** : ME Cricket Team, City University (Inter-Department Champions, 2023)
- **Executive Member** : City University Debating Club (2023–2024)
- **Treasurer** : Apex Club of Dhaka City (2025–Present)
- **Volunteer** : Bangladesh Red Crescent Society (2024–Present)
- **Founder** : Prolifter Limited, engineering and machinery solutions firm for warehouse and material-handling systems.

ENGLISH PROFICIENCY

IELTS Academic: 7.5 overall (Listening 8.5, Reading 8.0, Speaking 6.5, Writing 6.0)

REFERENCES

Dr. Nayem Hossain

Assoc. Professor, Dept. of ME
IUBAT, Dhaka, Bangladesh
nayem.hossain@iubat.edu
+880 1913 132770

Md. Abdullah

Coordinator, Dept. of ME
City University, Savar, Bangladesh
abdullah.me@cityuniversity.ac.bd
+880 1322 917653

Dr.-Ing. Irfan Ahmed

Assoc. Professor, Dept. of ME
City University, Savar, Bangladesh
irfan_ahmed@cityuniversity.ac.bd
+880 1315 214907