MD MARUF BILLAH

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Education

August 2019 to December 2021	**M.Sc.** in Mechanical Engineering Chittagong University of Engineering and Technology (CUET) Summa Cum Laude **Thesis title:** Mechanical properties characterization of injection molded rattan fiber reinforced polypropylene composite materials (Supervised by Dr. Md. Sanaul Rabbi)
July 2014 to October 2018	**B.Sc.** in Mechanical Engineering Bangladesh University of Engineering and Technology (BUET) Awarded with HONOURS **Thesis title:** Strain rate and temperature effects on mechanical properties of SAC-intermetallic compounds: A molecular dynamics study (Supervised by Dr. Mohammad A. Motalab)

Employments

July 2019 to Present	**Assistant Professor**, Department of Mechanical Engineering, Chittagong University of Engineering and Technology (CUET) **Offered courses:** Engineering Dynamics, Machine Design, Mechanics of Machinery and Vibrations, and Mechanical Engineering Drawing. **Thesis supervision:** Dependency of tensile behaviors of Ag_3Sn and Cu_3Sn on crystal size and direction: A molecular dynamics study. Effect of medium's density on efficiency of hydrocyclone separator in sorting of waste plastics for recycling.
May 2019 to July 2019	**Lecturer**, Department of Textile Engineering, Green University of Bangladesh **Offered courses:** Fundamental of Mechanical Engineering

Research Interests

- Computational Mechanics
- Molecular Dynamics
- Computational Materials
- Advanced Composite Materials
- Machine Learning and Data Science
- Computer-aided Design & Manufacturing

Publications (Journal)

November 2022	**M. M. Billah**, A. Aad, S. Das and R. Paul, "Dependence of mechanical and thermal deformation behaviors on crystal size and direction of Cu_3Sn intermetallic: A molecular dynamics study", ***Alexandria Engineering Journal***. (doi.org/10.1016/j.aej.2022.11.025)
August 2022	**M. M. Billah**, S. Das, A. Aad and R. Paul, "Tensile properties dependency on crystal size and direction of single crystal Ag_3Sn intermetallic compound: A molecular dynamics study", ***Journal of Materials Research and Technology***. (doi.org/10.1016/j.jmrt.2022.07.188)
April 2022	**M. M. Billah**, R. I. Siddiquee, M. Motalab, R. Paul and M. S. Rabbi, "Effects of temperature and strain rate on tensile properties of (Ag,Cu)-Sn intermetallic compounds: A molecular dynamics study", ***Journal of Materials Research and Technology***. (doi.org/10.1016/j.jmrt.2022.03.141)
February 2022	**M. M. Billah**, M. S. Rabbi, and A. Hasan, "Injection molded discontinuous and continuous rattan fiber reinforced polypropylene composite: Development, experimental and analytical investigations", ***Results in Materials***. (doi.org/10.1016/j.rinma.2022.100261)
February 2021	**M. M. Billah**, M. S. Rabbi, and A. Hasan, "A review on developments in manufacturing process and mechanical properties of natural fiber composites", ***Journal of Engineering Advancements***. (doi.org/10.38032/jea.2021.01.003)
November 2022	A. Hasan, M. S. Rabbi, **M. M. Billah** and M. A. Hasib, "Effect of Chemical Treatments on Properties of Injection Molded Nypa Fruticans Fiber Reinforced Polypropylene Composite", ***Heliyon***. (doi.org/10.1016/j.heliyon.2022.e11967)
Marh 2022	A. Hasan, M. S. Rabbi, and **M. M. Billah**, "Making the lignocellulosic fibers chemically compatible for composite: A comprehensive review", ***Cleaner Materials***. (doi.org/10.1016/j.clema.2022.100078)

Publication (Conference)

July 2019 **M. M. Billah**, R. I. Siddiquee, and M. Motalab, "Temperature dependent mechanical properties of inter-metallic compounds in nano-solder joints", ***AIP Conference Proceedings***. (doi.org/10.1063/1.5115965)

Awards and Achievements

- **Scholarship of University Merit 2016** (For achieving CGPA of 3.95 or above in Level 3)
- **Scholarship of University Stipend 2015 and 2017** (For achieving GPA of 3.95 or above in Term I and II of Level 3)
- **Scholarship of Dean List 2017 and 2018** (For achieving CGPA of 3.75 or above in Level 3 and 4)
- **Higher Secondary Scholarship** (Given by Dinajpur Education Board)
- **1st Runner-up in CAD Contest 2018** (Organized by Association of IPE, BUET)
- **1st Place in First-round of CAD Contest 2017** (Organized by Association of IPE, BUET)
- **2nd Runner-up (Senior) in Mechanical Engineering Olympiad 2018** (Organized by ME Association, BUET)

Reviewer

- Advances in Nano Research, An International Journal
- Journal of Materials Research and Technology
- International Conference on Mechanical Engineering and Renewable Energy (ICMERE)

Software Skills

- **SOLIDWORKS**- Computer-aided Design Platform
- **LAMMPS**- Molecular Dynamics Simulator
- **OVITO**- Visualization Tool
- **C, MATLAB, Python**- Programming Language
- **Microsoft-** Excel, Word, and PowerPoint
- **Proteus**- PCB Design and Circuit Simulator Software

Presentations

- A **Conference Paper** on 8th BSME International Conference on Thermal Engineering, Dhaka
- An **Invited Speaker** of International Conference on Nanotechnology & Materials Science, Barcelona

Trainings

- **Foundation Training for Teacher,** A training program by IQAC, CUET (2020)
- **Workshop on Research Methodology**, A training program by CRHLSR, CUET (2020)
- **SQUARE Pharmaceuticals Limited**, Industrial Training in Dhaka Unit, Kaliakoir, Gazipur (2018)
- **Nuclear Technology Workshop,** A joint training program between MEPhI and BUET (2018)

Extracurricular Activities

- **Chief Moderator**, Rangpur Division Association, CUET (2021-Present)
- **Coordinator,** Level 1 Students of Mechanical Engineering Department, CUET (2021-Present)
- **Vice President**, Greater Rangpur Students' Welfare Association-GRSWA, BUET (2017-2018)
- **Volunteer and Blood Doner**, BADHAN, BUET Zone (2014-2018)
- **Mess Manager**, Titumir Hall Dining, BUET (2017)

Memberships

- **Member**, Bureau of Research Testing and Consultancy (BRTC), CUET
- **Member**, Academic Committee of Undergraduate Studies, CUET
- **Member**, Organizing Committee of 5th and 6th International Conference on Mechanical Engineering and Renewable Energy (ICMERE)