



Ashraf Mahmud Rayed

Lecturer

Department of Mechanical Engineering
European University of Bangladesh (EUB)

Education:

Bachelor of Science (B.Sc.) in Mechanical Engineering, Chittagong University of Engineering & Technology (CUET)

Research Interest:

- Aerodynamics
- Fluid Mechanics
- Robotics & Mechatronics
- Advanced Manufacturing
- Mechanism Design
- Computer Vision

RESEARCH EXPERIENCE

RESEARCH ASSISTANT

June 2022 - November 2022

Project: [4IR-based Future Skills](#)

Project Grant: Aspire to Innovate (a2i) Project, UNDP, Bangladesh

Supervisor: Prof. Dr. [Sajal Chandra Banik](#), Dept. of ME, CUET, Bangladesh.

INTERNATIONAL COLLABORATIVE RESEARCH

December 2021 - April 2022

Project: [Survey on Necessity of Driving Simulator in Bangladesh](#)

Research Grant : Charles Darwin University, Australia.

Supervisor: Prof. Dr. [Mohammad Mizanur Rahman](#), Dept. of ME, CUET, Bangladesh.

International Collaborators: Dr. [Muhammad Atiq](#) & Dr. [Anne Ng](#) (Charles Darwin University, Australia)

Project: [Development of GPS-based Driving Cycle for Intra-city buses in Chattogram City](#)

Research Grant: University Grant Commission, Bangladesh.

Supervisor: Prof. Dr. Md. [Sanaul Rabbi](#), Dept. of ME, CUET, Bangladesh

UNDERGRADUATE THESIS

Thesis: [A Computational Analysis of Mechanical Bird's Structure using Scotch Yoke's Mechanism](#)

Supervisor: Prof. Dr. Md. Mahbubul Alam, Dept. of ME, CUET, Bangladesh

Computational analysis of the Scotch Yoke mechanism in mechanical birds, structural design, topology optimization, simulation-based performance assessment under various conditions and 3D printable materials (carbon fiber, PLA, ABS) via finite element analysis in ANSYS.

RESEARCH PROFILES

Google Scholar: <https://scholar.google.com/citations?user=VJKZJIMAAAAJ&hl=en>

Research Gate: https://www.researchgate.net/profile/Ashraf-Rayed?ev=hdr_xprf

Scopus Author: <https://www.scopus.com/authid/detail.uri?authorId=57239547500>

Sci Profile: <https://sciprofiles.com/profile/AshrafRayed>

Orcid Profile: <https://orcid.org/my-orcid?orcid=0000-0002-4187-1158>

SELECTED PUBLICATIONS (<https://scholar.google.com/citations?user=VJKZJIMAAAAJ&hl=en>)

Journal Articles:

- [1] **A. M. Rayed**, S. Ghosh, I. H. Nissan, S. I. Uddin, F.T.I. Tonmoy. **Alternative Ways of LNG Transportation Selection and Risk Management in Perspective of Bangladesh: A Case Study**. Journal of Environmental Science and Public Health 7 (2023): 18-24. <https://doi.org/10.26502/jesph.96120181>
- [2] **A.M. Rayed**, Tariq MAUR, Rahman M, Ng AWM, Nahid MKA, Mridul M, Islam WA, Mohiuddin M. **An Analysis of Driving Behavior of Educated Youth in Bangladesh Considering Physiological, Cultural and Socioeconomic Variables**. Sustainability. 2022; 14(9):5134. <https://doi.org/10.3390/su14095134>
- [3] **A. M. Rayed**, B.Esakki, A.Ponnambalam, S. C. Banik and K. Aly (2021); **Optimization of UAV structure and evaluation of vibrational and fatigue characteristics through simulation studies**; International Journal for Simulation and Multidisciplinary Design Optimization (IJSMDO) 12 (2021) 17 <https://doi.org/10.1051/smdo/2021020>
- [4] Amrutrao, R.Pathak and **A. M. Rayed**, (2020) **“Industry 4.0 and Developing Countries: Innovation Perspective of Ethiopia, India and Bangladesh”**, International Journal for Modern Trends in Science and Technology, Vol. 06, Issue 06, June 2020, pp.:62-70; <https://doi.org/10.46501/IJMTST060615>

Book Chapter:

- [1] **A.M. Rayed**, Haque, A., Rony, M.R., Esakki, B., Rahman, M., Shoma, S.N. (2024). **Optimization of a Sustainable Wheel for Enhanced Vehicle Maneuverability and Power Generation**. In: Janmanee, P., et al. Advanced in Creative Technology- added Value Innovations in Engineering, Materials and Manufacturing. ICCT 2023. Lecture Notes in Networks and Systems, vol 979. **Springer, Cham**. https://doi.org/10.1007/978-3-031-59164-8_5
- [2] **A.M. Rayed**, Esakki, B., Seshathiri, S. (2021). **Quantification of Groundnut Leaf Defects Using Image Processing Algorithms**. In: Kaiser, M.S., Bandyopadhyay, A., Mahmud, M., Ray, K. (eds) Proceedings of International Conference on Trends in Computational and Cognitive Engineering. Advances in Intelligent Systems and Computing, vol 1309. **Springer, Singapore**. https://doi.org/10.1007/978-981-33-4673-4_53
- [3] **A. M. Rayed**, R.Pathak & Shivom Moyade (2020); **Experimental Investigation of Waste Tyre Pyrolysis Process**; In book: Innovation for Sustainability in Engineering and Management Publisher: Woven Words Publishers OPC Private Limited

International Conference Articles:

- [1] **A. M. Rayed**, B. Esakki, S.C. Banik, A. Nahin; **Computational Modeling and Optimization of a Flapping Mechanism Based on the Scotch Yoke Principle**; (2024). 2024-01-2264). SAE Technical Paper. <https://doi.org/10.4271/2024-01-2264>
- [2] **A. M. Rayed**, S. C. Banik, B. Esakki, M. A. S. Siddiqui, S. Ghosh; **Assessment of unified quadcopter structure's buckling and vibration characteristics**. AIP Conf. Proc. 31 July 2023; 2813 (1): 020002. <https://doi.org/10.1063/5.0156841>
- [3] **A.M. Rayed** (2021). **Analysis on Plant Bioelectricity to Generate Power from Living Plants**. figshare. Conference contribution. <https://doi.org/10.6084/m9.figshare.14976825.v1>

PROFESSIONAL EXPERIENCES

TECHNICAL OFFICER

October 2024 – December 2024

Supply Chain Management, **GPH Ispat Limited**

Applied engineering knowledge to support design development, cost optimization, and process improvements across various engineering functions. Focused on implementing innovative strategies to enhance operational efficiency and align with organizational goals.

SUPPLY CHAIN INTERN

April 2023 - May 2023

Research & Development, **Unilever Bangladesh Limited**

Coordinated interdepartmental activities, supervised procurement and inventory systems, managed production timelines, and shadowed manufacturing leadership.

AWARDS

- **Technical Education Board Scholarship** [Level 1(2019), Level 2(2021), Level 3(2022) & Level 4(2023)]
- **1st Runner Up (Poster Presentation) - 1st National Research Fair (2023), CUET**
- **Champion- ASME Student Leadership Training Conference (2022), American Society for Mechanical Engineers.**
- **2nd Runner Up – CSME ANSYS Simulation Competition (2020), Canadian Society of Mechanical Engineers.**

SKILL-SET

Management/Organizational Skills:

- Microsoft Office Software
- LaTeX

Numerical and Data Analysis Packages:

- SPSS
- MS Excel
- Origin Pro
- Machine Learning

Programming Language:

- Python 3.0
- Fortran

Mechanical Modelling & Analysis Packages:

- SolidWorks
- ANSYS
- MATLAB
- COMSOL Multiphysics

LEADERSHIP EXPERIENCE

- **School Prefect (2015)**- Bangladesh Navy High-School, Chattogram, Bangladesh.
- **College Prefect (2017)**- Bangladesh Navy College, Chattogram, Bangladesh.
- **Class Representative (2019-2023)**- Dept. of ME, CUET, Bangladesh.
- **Founder (2021- Present)**- CUET Automotive and Mobility Society (CAMS)
- **Co-founder (2022-Present)**- CUET Research Society (CRS)
- **Lead of Student Organizing Committee**- Mechanical Fest 2019, Mechanical Day 2022

EXTRACURRICULAR ACTIVITIES

- International Membership
 - Institute of Electrical and Electronics Engineers (**IEEE**)
 - American Society of Mechanical Engineers (**ASME**)
 - Canadian Society for Mechanical Engineers (**CSME**)
 - Institution of Mechanical Engineers (**IMechE**)
 - Society of Automotive Engineers (**SAE**).
- Executive Committee Member (2023-2024)
 - **Joyoddhoney** (Platform for the students to do cultural activities)
 - **CUET Sports Club** (Platform for the student to play Indoor and Outdoor games)
 - **Chittagong Student Forum** (Platform for the regional people from Chittagong)
 - **CUET Debating Society** (Dedicated stage for the students to debate on campus)
 - **Green For Peace** (Dedicated for volunteering work – Blood Donation, Cleaning, Tree Plantation & Spreading Awareness)