AFIYA MUBASHARAH

afiamim2910@gmail.com LinkedIn ResearchGate University Profile

RESEARCH INTEREST

I am a biomedical engineering researcher focusing on nanoparticle-based drug delivery, biomaterials, and computational drug discovery using virtual screening and molecular dynamics simulations. My research interests also include machine learning for cancer detection and prediction, as well as biomedical instrumentation.

EDUCATION

04/2022 – 02/2025
Dhaka, Bangladesh

Master of Science in Biomedical Engineering
Bangladesh University of Engineering and Technology (BUET)
CGPA- **3.675** out of 4.00
Thesis: Development of Gum-based Chitosan Nanoparticle with Improved Functional Properties for Conjunctivitis Treatment.

2016 – 2020
Jashore, Bangladesh

Bachelor of Science in Biomedical Engineering
Jashore University of Science and Technology (JUST)
CGPA- **3.61** out of 4.00
Thesis: Machine Learning Approach to Detect and Predict Breast Cancer: A Multi-Algorithm Technique. (Certificate issued 2022)

PROFESSIONAL ACTIVITIES

01/2026 – Present
Kushtia, Bangladesh

Lecturer in Biomedical Engineering
Islamic University

10/2022 – 10/2024
Dhaka, Bangladesh

Teaching Assistant
Department of Biomedical Engineering, BUET

RESEARCH EXPERIENCE

2024 – 2025

National Science and Technology (NST) Fellow
Ministry of Science and Technology (MoST)
Research Topic: Development of Gum-based Chitosan Nanoparticle with Improved Functional Properties for Conjunctivitis Treatment.

04/2022 – 10/2022
Dhaka, Bangladesh

Research Assistant
Bioinnovation Research Group, Department of Biomedical Engineering, BUET

AWARDS AND HONORS

2013 — **Government Scholarship (Talent Pool)**
Secondary School Certificate (SSC) Examination

2011 — **Government Scholarship (Talent Pool)**
Junior School Certificate (JSC) Examination

2008 — **Government Scholarship (Talent Pool)**
Primary School Certificate (PSC) Examination

TOOLS & SKILLS

Microscopy and Spectroscopy
FESEM (JEOL JSM-7600F), Zeiss Stemi 305 stereomicroscope, compound microscope, ATR-FTIR (Nicolet iS5), UV-Vis spectrophotometer (Shimadzu UV-3100)

Materials and Fabrication
Electrospinning, rheometer, microtome, 3D printing

Biosignal Acquisition
40-channel EEG, EMG, ECG

Laboratory
Autoclave, multi-purpose centrifuge (NUVE NF 800R)

LANGUAGES

Bangla — Native

English — Reading, writing, speaking, listening

Hindi — Speaking, listening

Arabic — Reading, writing

PEER-REVIEWED JOURNALS

2025 **Designing potential inhibitors against RET protein tyrosine kinase domain to fight sporadic medullary thyroid carcinoma: A virtual screening and molecular dynamics simulation-based approach.**
Journal of Carcinogenesis, 24(3), 519–540.
Roy, T., Abdullah, A., **Mubasharah, A.,** Zamee, A. I., Imran, M. I. A., Talukder, M. E. K., Hosen, M. T., Kadir, M. A., Ali, M. B.

2023 **Molecular dynamics simulation and pharmacoinformatic integrated analysis of bioactive phytochemicals from Azadirachta indica (Neem) to treat diabetes mellitus.**
Journal of Chemistry, 2023, Article 4170703.
Abdullah, A., Biswas, P., Sahabuddin, M., **Mubasharah, A.,** Khan, D. A., Hossain, A., Roy, T., Rafi, N. M. R., Dey, D., Hasan, M. N., Bibi, S., Moustafa, M., Shati, A., Hassan, H., Garg, R.

BOOK CHAPTER

2025 **Nanoparticles for biomedical imaging: History to current status.**
In P. Basak, P. Das, S. Manna, & T. K. Sinha (Eds.), Applications of Nanotechnology in Biomedical Engineering (pp. 1–19). CRC Press.
Mubasharah, A., Datta, N., Arafat, M. T.

TRAINING

ICDDR,B **Ethical Use of Laboratory Animals in Biomedical Sciences**
Animal welfare, the 3Rs (Replacement, Reduction, Refinement), handling and care, and regulatory compliance

LEADERSHIP AND SERVICE

JUST **Treasurer**
BME Club, Jashore University of Science and Technology

JUST **Joint Secretary**
Debate Club (2nd Elective Committee), Jashore University of Science and Technology

BUET **Member**
ACS Student Chapter, BUET

REFERENCES

Dr. Muhammad Tarik Arafat, *Professor and Head,*
Department of Biomedical Engineering, BUET
10th floor, ECE Building, BUET, Dhaka
tarikarafat@bme.buet.ac.bd

Dr. Hassan Mohammad Al Emran, *Associate Professor,*
Department of Biomedical Engineering
Jashore University of Science and Technology (JUST)
al-emran@just.edu.bd

DECLARATION

I hereby declare that the information given above is true and correct to the best of my knowledge and belief.

