

MIAH ABDULLAH SAHRIAR

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EDUCATION

Bangladesh University of Engineering and Technology

BSC IN MATERIALS AND METALLURGICAL ENGINEERING

Dhaka, Bangladesh

Mar. 2018–May 2023

- *CGPA*: 3.52/4.00 ; 3.73/4.00 (Last 4 semesters)
- *Thesis title*: Synthesis and Characterization of MXene-Reinforced ZnO Nanocomposite as Potential Photocatalyst
- *Supervisor*: Prof. Dr. Kazi Md. Shorowordi

RESEARCH INTERESTS

- Semiconductor materials
- Density functional theory
- Molecular dynamics simulation
- Battery and energy storage devices
- Machine learning for materials design
- Materials characterization using deep learning

PUBLICATIONS

JOURNAL ARTICLES

- Rumman A.H.*, **Sahriar, M.A.***, Islam, M. T.*, Shorowordi, K. M., Carbonara, J., Broderick, S., Ahmed, S. Data-Driven Design for Enhanced Efficiency of Sn-based Perovskite Solar Cells Using Machine Learning. *APL Machine Learning*. <https://doi.org/10.1063/5.0177271>
- Ahsan Dipon, M. N.*, **Sahriar, M.A.***, Sarker, S.*, Rauf, A., Abed, M. R. H., Nirjhar, A. R., Tan-Ema, S. J., Shorowordi, K. M., Ahmed, S. A Comprehensive Study of Mechanically Stacked Tandem Photovoltaic Devices: Materials Selection and Efficiency Analysis using SCAPS. *Energy Conversion and Management*. <https://doi.org/10.1016/j.enconman.2023.117904>
- Rodriguez, A. C., Qiu, G., Nirjhar, A. R., Islam, M. T., Laughlin, J., **Sahriar, M. A.**, Nishat, S. S., Mullick, K., Poyraz, A. S., Ahmed, S., Biswas, S. (2023). Unconventional Rapid Synthesis of Layered Manganese Dioxide Nanostructures for Selective Oxidation of 5-Hydroxymethylfurfural to 2,5-Diformylfuran. *ACS Applied Nano Materials*. <https://doi.org/10.1021/acsanm.3c02858>
- **Sahriar, M. A.***, Abed, M. R. H., Nirjhar, A. R., Dipon, N. A., Tan-Ema, S. J., Somphonsane, R., Buapan, K., Wei, Y., Ramamoorthy, H., Jang, H., Nam, C.-Y., Ahmed, S. (2023). Versatile recognition of graphene layers from optical images under controlled illumination through green channel correlation method. *Nanotechnology*, 34(44), 445704. <https://doi.org/10.1088/1361-6528/ace979>
- Nirjhar, A. R., Tan-Ema, S. J., **Sahriar, M. A.**, Ahsan Dipon, M. N., Hasan Abed, M. R., Gainza, D. B., Koneru, A., Nishat, S. S., Shorowordi, K. M., Ahmed, S. (2023). Vacancy-induced spontaneous H₂ evolution by overall water splitting on MoTe₂/Ti₂CO₂: A two-dimensional direct Z scheme heterostructure. *International Journal of Hydrogen Energy*. <https://doi.org/10.1016/j.ijhydene.2023.06.107>

UNDER REVIEW

- Tan-Ema, S. J.*, Nirjhar, A. R.*, **Sahriar, M.A.**, Ahsan Dipon, M. N., Abed, M. R. H., Shorowordi, K. M., Ahmed, S. Halogen-functionalized chromium-based MBenes as potential anode material for alkali-ion batteries with high charge storage capacity. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*.

CONFERENCE PRESENTATION

- Comparative Analysis of MXene Synthesis Methods: Evaluating the Effectiveness of HF Etching and Lewis Acid Etching Approaches for High-Quality MXene Materials. *1st IUT International Conference on Mechanical, Materials and Production Engineering (IUT-ICMMPE) 2023*.

PROGRAMMING AND COMPUTING SKILLS

Programming Languages	Python, MATLAB, C++
Modeling and Analysis	Machine Learning, Molecular Dynamics with LAMMPS, DFT with VASP
Software	Origin, High Score Plus, MS Office
Operating System	Windows, Ubuntu

WORK EXPERIENCE

Ahmedlab Research Group *SUNY Buffalo, USA*
Undergraduate Researcher *Feb. 2022-Present*

Project: Optical characterization of graphene layer count using low-cost methods.

Virtually worked and developed a low-compute methodology to identify number of graphene flake layers on SiO_2 substrate from optical images, which has been published in a journal. Currently refining this methodology and enhancing its adaptability by introducing adjustable thresholds.

HONORS AND SCHOLARSHIP

RISE-BUET Research Grant for Undergraduate Thesis 2022
Government Board Scholarship 2009-2017

TEST SCORES

- **IELTS Academic Test Result:** Overall Band Score 8.0 (S - 7.0, L - 8.5, R - 9.0, W - 6.5) Oct 2023

EXTRACURRICULAR ACTIVITIES

- **Bangladesh Math Olympiad** 2009-2016
Regional champion

RELEVANT CERTIFICATON

- **Course : Material Processing**
Offered by: Georgia Institute of Technology
Platform: Coursera
Certificate ID: coursera.org/verify/KQTFV6D2WTY
- **Course : Introduction to Programming with MATLAB**
Offered by: Vanderbilt University
Platform: Coursera
Certificate ID: coursera.org/verify/V4LM84J32GNL

REFERENCES

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