MIAH ABDULLAH SAHRIAR

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EDUCATION

Bangladesh University of Engineering and Technology *Dhaka, Bangladesh*
BSc in Materials and Metallurgical Engineering *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

RESERACH INTERESTS

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

PUBLICATIONS

Journal Articles

- 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 $MoTe_2/Ti_2CO_2$: A two-dimensional direct Z scheme heterostructure. ***International Journal of Hydrogen Energy***. https://doi.org/10.1016/j.ijhydene.2023.06.107

Accepted Manuscripts

- 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***.

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/KQTDFV6D2WTY
- **Course : Introduction to Programming with MATLAB**
  Offered by: Vanderbilt University
  Platform: Coursera
  Certificate ID: coursera.org/verify/V4LM84J32GNL

REFERENCES

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