

## MD ASHRAFUL ISLAM

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### Motivation:

Aspiring physicist with strong interest in laser-based photonics and advanced materials, seeking to participate in KAUST Photonics Summer Camp to gain hands-on research experience and deepen knowledge in nanophotonic systems

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### Education:

M.Sc. in Physics, Bangladesh University of Engineering and Technology, 2024–Present

- CGPA: 3.58 / 4.00
- Relevant courses: Quantum Mechanics, Solid-State Physics, Electromagnetism, Optics, Pulse & Digital Electronics

B.Sc. (Honours) in Physics, University of Rajshahi, 2019–2024

- CGPA: 3.33/ 4.00
- Relevant courses: Materials Science, Nanophysics

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### Research Experience:

**M.Sc. Research – Nanotechnology Research Laboratory (NRL), BUET (2024–Present)**

- Synthesis and characterization of MXene-based 2D materials ( $\text{Ti}_2\text{CT}_x$ ,  $\text{Cr}_2\text{CT}_x$ )
- Techniques: High-temperature synthesis, Raman, UV–Vis, PL spectroscopy, electrochemical characterization techniques.
- Focus: Electrochemical charge storage and optical properties of MXenes

### Undergraduate Research

- Md. Ashraful Islam, "Synthesis, Characterization, and Biomedical Applications of NiFe<sub>2</sub>O<sub>4</sub> Nano-Crystal by Solid State Reaction Method," ResearchGate, [https://www.researchgate.net/publication/379895891\\_Synthesis\\_Characterization\\_and\\_Biomedical\\_Applications\\_of\\_NiFe2O4\\_NanoCrystal\\_by\\_Solid\\_State\\_Reaction\\_Method](https://www.researchgate.net/publication/379895891_Synthesis_Characterization_and_Biomedical_Applications_of_NiFe2O4_NanoCrystal_by_Solid_State_Reaction_Method), Online Publication

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### Technical Skills:

**M.Sc. Research – Nanotechnology Research Laboratory (NRL), BUET (2024–Present)**

- Python, Origin, Material studio
- Nanomaterial fabrication, electrochemical analysis, optical measurements