Mohammad Abdullah Al Mamun

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Education

Bangladesh University of Engineering and Technology (BUET) Dhaka, Bangladesh
M.Sc. in Glass and Ceramic Engineering; CGPA: 3.75/4.0 February 2020
Theis: Role of Oxygen Vacancies on Ferromagnetism in Oxide Dilute Magnetic Semiconductors: (CeO_2/TiO_2)
B.Sc. in Materials and Metallurgical Engineering; CGPA: 3.54/4.0 (Last 4 semesters CGPA: 3.71/4.0) February 2017
Theis: Hydrothermal Synthesis and Characterization of Pure and Doped $BiVO_4$ NPs

Research Interests

Emerging phenomena in 2D Materials, Complex Oxides and Organic-Inorganic Heterostructures; Advanced Spectroscopy Techniques, Synthesis, Growth & Fabrication of Flexible and Wearable Nanoelectronics Devices.

Awards and Scholarships

- Best Oral Presentation, 2^{nd} Int. Conf. on Physics for Sustainable Development and Technology, 2017, Bangladesh.
- Dean's List Award, Faculty of Engineering for achieving $CGPA > 3.75$ in Junior Year of B.Sc., 2016
- University Merit Scholarship for outstanding academic results in junior year of B.Sc., 2016
- 19^{th} at ACM – ICPC Semifinal (9^{th} as ICPC Ranklist), Bangladesh Site, 2014.
- Honorable Mention, Inter University Programming Contest at Daffodil Uni., Bangladesh, 2014

Publications

[1] Manifa Noor*, **Abdullah Al Mamun***, A. K. M. Atique Ullah*, A Matsuda, G. Kawamura, M. A. Hakim, M. F Islam, and M. A. Matin. Physics of $ce^{3+} \leftrightarrow ce^{4+}$ electronic transition in phytosynthesized ceo_2/$cepo_4$ nanocomposites and its antibacterial activities. *(* equal contribution)* ***Journal of Physics and Chemistry of Solids***, page 109751, 2020.

[2] Abdullah Zubair, **Abdullah Al Mamun**, Karrina McNamara, Syed AM Tofail, Fakhrul Islam, and Vasily A Lebedev. Amorphous interface oxide formed due to high amount of sm doping (5-20 mol%) stabilizes finer size anatase and lowers indirect band gap. ***Applied Surface Science***, page 146967, 2020.

[3] MM Rhaman, MA Matin, **MA Al Mamun**, A Hussain, MN Hossain, BC Das, MA Hakim, and MF Islam. Enhanced electrical conductivity and multiferroic property of cobalt-doped bismuth ferrite nanoparticles. ***Journal of Materials Science: Materials in Electronics***, 31:8727–8736, 2020.

[4] **Md. Abdullah Al Mamun**, Manifa Noor, Muhammad Hasanuzzaman, and Mohamad S.J. Hashmi. Nano-porous materials for use in solar cells and fuel cells. In Saleem Hashmi and Imtiaz Ahmed Choudhury, editors, ***Encyclopedia of Renewable and Sustainable Materials***, pages 549 – 560. **Elsevier**, **Oxford**, 2020.

[5] Sapan Kumar Sen, Manifa Noor, **Md Abdullah Al Mamun**, MS Manir, MA Matin, MA Hakim, Salahuddin Nur, and Supria Dutta. An investigation of ^{60}co gamma radiation-induced effects on the properties of nanostructured α -moo_3 for the application in optoelectronic and photonic devices. ***Optical and Quantum Electronics***, 51(3):82, 2019.

[6] **Md Abdullah Al Mamun***, Manifa Noor*, AKM Atique Ullah, Md Sarowar Hossain, Matin Abdul, Fakhrul Islam, and MA. Hakim. Effect of $cepo_4$ on structural, magnetic and optical properties of ceria nanoparticles. *(* equal contribution)* ***Materials Research Express***, 6(1):016102, 2018.

[7] Manifa Noor, **MA Al Mamun**, MA Matin, Md Fakhrul Islam, Saima Haque, Farabi Rahman, MN Hossain, and MA Hakim. Effect of ph variation on structural, optical and shape morphology of $bivo_4$ photocatalysts. In *2018 10th International Conference on Electrical and Computer Engineering (ICECE)*, pages 81–84. **IEEE**, 2018.

Research Experience

- Hands on experience in synthesis of multifunctional nanoparticles (TiO_2, CeO_2, $BiFeO_3$, $BiVO_4$) using solid state and different wet chemical routes such as sol-gel, hydrothermal, co-precipitation etc.
- Hands on experience in thin film deposition using spin coater (TiO_2 and CeO_2) and thermal evaporator (ZnSe).
- Material Characterization Analysis: X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Selective Area Electron Diffraction (SAED), UV-Visible and Photoluminescence Spectroscopy, X-Ray Photoelectron Spectroscopy (XPS).
- Electrical and Magnetic Characterization Analysis: Dielectric Properties such as resistance, reactance, AC conductivity, AC resistivity; Ferroelectric Properties (P-E hysteresis); Magnetic Properties (M-H hysteresis).

Technical Skills

Programming: C, C++, Python, LaTeX; Scientific Computing Environment: MATLAB, Originpro.