

# Mohammad Abdullah Al Mamun

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## EDUCATION

<b>Bangladesh University of Engineering and Technology (BUET)</b>	Dhaka, Bangladesh
M.Sc. in Glass and Ceramic Engineering; CGPA: 3.75/4.0	February 2020
Thesis: Role of Oxygen Vacancies on Ferromagnetism in Oxide Dilute Magnetic Semiconductor: $\text{TiO}_2$	
B.Sc. in Glass and Ceramic Engineering; CGPA: 3.54/4.0 (Last 4 semesters CGPA: 3.71/4.0)	February 2017
Thesis: Hydrothermal Synthesis and Characterization of Pure and Doped $\text{BiVO}_4$ NPs	

## RESEARCH INTERESTS

Nano-electronics and Nano-photonics: Device and Materials. Micro and Nano-fabrication of novel device architectures. Electronic transport in Strongly Correlated Materials. First – principle calculations of novel materials.

## AWARDS AND SCHOLARSHIPS

- Best Oral Presentation, 2<sup>nd</sup> Int. Conf. on Physics for Sustainable Development and Technology, 2017, Bangladesh.
- Dean's List Award, Faculty of Engineering, 2016
- University Merit Scholarship for outstanding academic results in B.Sc., 2016
- 19<sup>th</sup> at ACM – ICPC Semifinal (9<sup>th</sup> as ICPC Ranklist), Bangladesh Site, 2014.
- Honorable Mention, Inter Uni. Programming Contest at Daffodil Uni., Bangladesh, 2014
- Government Merit Scholarship for outstanding academic results in higher secondary certificate examinations, 2012

## PUBLICATIONS

- [1] Abdullah Zubair, **Abdullah Al Mamun**, Karrina McNamara, Syed AM Tofail, Fakhurul 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.
- [2] 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.
- [3] **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.
- [4] Sapan Kumar Sen, Manifa Noor, **Md Abdullah Al Mamun**, MS Manir, MA Matin, MA Hakim, Salahuddin Nur, and Supria Dutta. An investigation of  $^{60}\text{Co}$  gamma radiation-induced effects on the properties of nanostructured  $\alpha$ - $\text{Fe}_2\text{O}_3$  for the application in optoelectronic and photonic devices. *Optical and Quantum Electronics*, 51(3):82, 2019.
- [5] **Md Abdullah Al Mamun**, Manifa Noor, AKM Atique Ullah, Md Sarowar Hossain, Matin Abdul, Fakhurul Islam, and MA Hakim. Effect of  $\text{CePO}_4$  on structural, magnetic and optical properties of ceria nanoparticles. *Materials Research Express*, 6(1):016102, 2018.
- [6] Manifa Noor, **MA Al Mamun**, MA Matin, Md Fakhurul Islam, Saima Haque, Farabi Rahman, MN Hossain, and MA Hakim. Effect of pH variation on structural, optical and shape morphology of  $\text{BiVO}_4$  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 ( $\text{TiO}_2$ ,  $\text{CeO}_2$ ,  $\text{BiFeO}_3$ ,  $\text{BiVO}_4$ ) 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 ( $\text{TiO}_2$  and  $\text{CeO}_2$ ) 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,  $\text{\LaTeX}$ ; Scientific Computing Environment: MATLAB, Originpro.