

MOHAMMAD ABDULLAH AL MAMUN

CONTACT INFORMATION	Old Academic Building, Dept. of GCE Bangladesh University Of Engineering & Technology Dhaka – 1000, Bangladesh	Skype: +8801954611668 Email: mamun.mme@gmail.com Web: https://mamunia.github.io/site/
RESEARCH INTERESTS	Strongly correlated materials, Novel topological states of matter, Spintronics Thin film deposition & growth techniques, First – principle calculations of novel materials.	
EDUCATION	Bangladesh University of Engineering & Technology (BUET) <ul style="list-style-type: none">M.Sc. in Glass & Ceramic Engineering February, 2020 CGPA: 3.75/4.0 Supervisor: Prof. Md. Fakhurul Islam Thesis: “Role of Oxygen Vacancies on Ferromagnetism in Oxide Dilute Magnetic Semiconductor: TiO_2”B.Sc. in Materials & Metallurgical Engineering February, 2017 CGPA: 3.54/4.0 (Last 4 semesters CGPA: 3.71/4.00) Thesis: “Hydrothermal Synthesis & Characterization of Pure & Doped $BiVO_4$ NPs” [PDF] [Presentation]	
RESEARCH EXPERIENCES	Oxide based Dilute Magnetic Semiconductors PIs: Prof. Md. Fakhurul Islam <ul style="list-style-type: none">$Ti_{1-x}M_xO_2$ & $Ce_{1-x}M_xO_2$ nanoparticles (NPs) have been synthesized using sol – gel and hydrothermal chemical routes.Effect of heat treatment and doping of Transition and Rare Earth Metal ions on oxygen vacancy concentration in $Ti_{1-x}M_xO_2$ & $Ce_{1-x}M_xO_2$ have been investigated.Structural properties were investigated using XRD, Raman, HR – TEM and XPS analysis. Optical and Magnetic properties were investigated using UV – Vis and VSM analysis. Multifunctional Materials for Photocatalytic and Antibacterial Applications PIs: Prof. Md. Abdul Matin & Prof. M. A. Hakim <ul style="list-style-type: none">$BiV_{1-x}M_xO_4$ & $CeO_2 - CePO_4$ NPs have been synthesized using hydrothermal and green synthesis routes (using leaf extracts) respectively.Effect of Transition Metal ion doping in $BiV_{1-x}M_xO_4$ NPs is currently under investigation	
JOURNAL PUBLICATIONS	<ol style="list-style-type: none">Md. Abdullah Al Mamun*, Manifa Noor*, A.K.M Atique Ullah, Md. Sarowar Hossain, Matin Md. Abdul, Md. Fakhurul Islam, M.A Hakim. <i>"Effect of $CePO_4$ on Structural, Magnetic and Optical Properties of Ceria Nanoparticles"</i> Materials Research Express (2018). (* for equal contribution of authors). [PDF]Md. Abdullah Al Mamun, Manifa Noor, Muhammad Hasanuzzaman, Saleem Hashmi. <i>"Nano-Porous Materials for Use in Solar Cells and Fuel Cells"</i> Reference Module in Materials Science and Materials Engineering, Elsevier. (2019) [PDF]S.K Sen, Manifa Noor, Md. Abdullah Al Mamun, M.S. Manir, M.A. Matin, M.A. Hakim, S. Nur, Supria Dutta. <i>"An investigation of ^{60}Co gamma radiation-induced effects on the properties of nanostructured $\alpha-MoO_3$ for the application in optoelectronic and photonic devices"</i>. Optical and Quantum Electronics, Springer (2019) [PDF]Abdullah Zubair, Md. Abdullah Al Mamun, Karrina McNamara, SAM Tofail, Md. Fakhurul Islam, Vasily Lebedev. <i>"Amorphous interface oxide formed due to high amount of Sm doping (5-20 mol%) stabilizes finer size anatase and lowers indirect band gap"</i> (under review in Applied Surface Science)	

CONFERENCES	<ul style="list-style-type: none"> • Md. Abdullah Al Mamun, Manifa Noor, Karrina McNamara, Md. Sarowar Hossain, MA Hakim, Abdullah Zubair, SAM Tofail, Md. Fakhrul Islam, Vasily Lebedev, “Structure and interface of samarium/anatase nanocomposites lead to visible light absorption and superparamagnetism” Progress in Applied Surface, Interface and Thin Film Science, 2019. Florence, Italy. [PDF] • Matin, M.A., Noor, M., Mamun, M.A.A., Hakim, M.A., Islam, M.F., Khanom, F., Rafique Ahmed, A.K.M. & Ramakrishna, S. “Green nanotechnology for effective dye-degradation of industrial effluents” Conference by Circular Economy Asia Pacific, 2019. NUS, Singapore. [PDF] • Manifa Noor, Md Abdullah Al Mamun, M.A. Matin, Md. Fakhrul Islam, Saima Haque, Farabi Rahman, Nazmul Hossain and M A Hakim “Effect of pH Variation on Structural, Optical and Shape Morphology of BiVO₄ Photocatalysts” 10th Int. Conference on Electrical & Computer Engineering (ICECE) 2018. Dhaka, Bangladesh. [PDF] • Manifa Noor, Md. Abdullah Al Mamun, A.K.M. Atique Ullah, M.A. Matin, Saima Haque, Fakhrul Islam, M.A. Hakim “Green Synthesis of CeO₂ Nanoparticles Using <i>Artocarpus heterophyllus</i> Leaf Extract for Photocatalytic Activity” 2nd Int. Conf. on Physics for Sustainable Development and Technology, 2017. Chittagong, Bangladesh. [PPT] • Md. Abdullah Al Mamun, A.F.M. Hossain, Mehedi Hasan, Md. Miftaur Rahman “Hydrothermal Synthesis & Characterization of Bismuth Vanadate Photocatalyst” Proc. International Conf. of Engineering Materials & Metallurgical Engineering (ICEMME) 2016. Dhaka, Bangladesh. [PDF]
AWARDS AND SCHOLARSHIPS	<ul style="list-style-type: none"> – Dean’s List, Faculty of Engineering, BUET, 2016. – University Merit Scholarship, Faculty of Engineering, BUET, 2015 – 2016. – 9th at ACM – ICPC Semifinal, Bangladesh Site, (BUET_Seivers), 2014. – Honorable Mention, Inter Uni. Programming Contest at Daffodil Uni., Bangladesh, 2014. – 6th BUET Intra Programming Contest (BUET_Seivers), BUET, Bangladesh, 2013.
TEACHING EXPERIENCE	<p>Teaching Assistant, Dept. of GCE, BUET</p> <ul style="list-style-type: none"> • GCE 6602: Nanoceramics (October Semester, 2017) • GCE 6402: Magnetic Ceramics (October Semester, 2018)
PROFESSIONAL EXPERIENCE	<p>Research Associate, Dept. of GCE, BUET November 2018 – Present</p> <ul style="list-style-type: none"> • Performed several Industrial and one government research investigation. • My responsibility is to assist and mentor other M.Sc. and B.Sc. students with their materials synthesis and characterization analysis.
PROGRAMMING EXPERIENCE	<ul style="list-style-type: none"> – Wrote C++ codes to analyze the randomly post processed data of LAMMPS. [Link] – Wrote an Algorithm in C++ for “Industrial Design Layout & Manufacturing Cost Estimation of Cast Iron Pot” (Senior Year Project) [Link] – Participated & won titles in several national & international programming contests arranged in Bangladesh as an algorithmic contestant of BUET Programming Teams, 2012 – 2014.
TECHNICAL SKILLS	<ul style="list-style-type: none"> – Hands on experience on operating Thermal Evaporator (Ulvac VTR-060M/ERH), XRD (Empyrean, PANalytical), UV – Vis Spectroscopy (Lambda 1050, Perkin-Elmer, USA), FE – SEM (JSM 7600F, Jeol, Japan), Spin Coater, Microwave Reactor, High Temperature Furnace, Photocatalytic Reactor, Rapid Thermal Annealing Furnace (MILA 5050) – Programming Languages: C, C++ – Scientific Computing Environment: MATLAB, Origin Plot. – Visualizing Tools: ImageJ, Vesta, Ovito. – Rietveld Refinement: Highscore Plus, Fullprof Suite.