

MOHAMMAD ABDULLAH AL MAMUN

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| 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 | Light matter interaction at nanoscale, Novel topological states of matter, 2D materials, Synthesis & fabrication 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 December, 2019 CGPA: 3.5/4.0 Supervisor: Prof. Md. Fakhru Islam Thesis: “Role of Oxygen Vacancies on Ferromagnetism in Oxide based Dilute Magnetic Semiconductor”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 BiVO₄ NPs” [PDF] [Presentation] | |
| RESEARCH EXPERIENCES | Oxide based Dilute Magnetic Semiconductors PIs: Prof. Md. Fakhru Islam & Dr. Md. Abdullah Zubair <ul style="list-style-type: none">Ti_{1-x}M_xO₂ & Ce_{1-x}M_xO₂ 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_xO₂ & Ce_{1-x}M_xO₂ 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_xO₄ & CeO₂ – CePO₄ 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_xO₄ 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. Fakhru Islam, M.A Hakim. <i>"Effect of CePO₄ 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 ⁶⁰Co gamma radiation-induced effects on the properties of nanostructured α-MoO₃ for the application in optoelectronic and photonic devices"</i>. Optical and Quantum Electronics, Springer (2019) [PDF]Md. Abdullah Al Mamun, Vasily Lebedev, Karrina McNamara, Abdullah Zubair, SAM Tofail, Md. Fakhru Islam, <i>"Structure and interface of samarium/anatase nanocomposites"</i> (to be submitted soon in Applied Surface Science)Manifa Noor, Md. Abdullah Al Mamun, M. A. Hakim, Md. Fakhru Islam, M. A. Basith, Md. Abdul Matin, <i>"Enhanced Photocatalytic Dye Degradation and Water Splitting by Visible Light Driven Photocatalyst Mn: BiVO₄"</i> (in preparation) | |

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| 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. Fakhru 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. Fakhru 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, Fakhru Islam, M.A. Hakim “Green Synthesis of CeO₂ Nanoparticles Using Arthocarpus heterophyllus 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. |
| TEST SCORES | <ul style="list-style-type: none"> • GRE Score: 301 (Q – 161, V – 140, AWA – 3.5) • TOEFL Score: 96 (R – 21, L – 26, S – 22, W – 27) |
| TECHNICAL SKILLS | <ul style="list-style-type: none"> – Hands on experience on operating 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. – Programming Languages: C, C++ – Scientific Computing Environment: MATLAB, Origin Plot. – Visualizing Tools: ImageJ, Vesta, Ovito. – Rietveld Refinement: Highscore Plus, Fullprof Suite. |