Dr. Md. Ashraful Islam Molla
Professor
Department of Applied Chemistry and Chemical Engineering
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RESEARCH INTERESTS

- ✧ Eco-friendly technology for sustaining the environment
- ✧ Wastewater treatment using nanophotocatalyst
- ✧ Decomposition and detoxification of organic pollutants
- ✧ Analytical and environmental chemistry

ACADEMIC CREDENTIALS

Doctor of Philosophy (PhD) in Engineering (October 2014–March 2018), Mie University, Japan
Research topic: Development of Advanced Technology for Photocatalytic Degradation of Organic Pollutants in Wastewater

Master of Science (M. Sc.) in Applied Chemistry & Chemical Technology
First class 2nd, University of Dhaka, Bangladesh, 2002
Research topic: Electrochemical Behavior of Pd 50at.% Ni Electrode and Its Hydrogen Evolution Reaction

Bachelor of Science (B. Sc.) in Applied Chemistry & Chemical Technology
First class 1st, University of Dhaka, Bangladesh, 2001

Higher Secondary School Certificate (HSC), Science Group
First Division, Rajshahi Board, Bangladesh, 1997

Secondary School Certificate (SSC), Science Group
First Division, Rajshahi Board, Bangladesh, 1995

PROFESSIONAL EXPERIENCES

October 2023–till date: Professor, Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh

June 2018– October 2023: Associate Professor, Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh

December 2010–June 2018: Assistant Professor, Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh

April 2008–December 2010: Lecturer, Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh

October 2006–April 2008: Lecturer in Chemistry, Department of Arts and Sciences, Ahsanullah University of Science and Technology, Dhaka, Bangladesh

2008–2013: Part Time Faculty (Chemistry), United International University, Dhaka, Bangladesh

2018: Part Time Faculty (Mathematics and Physical Sciences), East West University, Dhaka, Bangladesh

2022–2024: Part Time Faculty (Institute of Leather Engineering and Technology), University of Dhaka, Bangladesh

2024–till date: Part Time Faculty (Department of Arts and Sciences), Ahsanullah University of Science and Technology, Dhaka, Bangladesh

AWARDS AND SCHOLARSHIPS

1. **Dean's Awards 2024** (professor category), Faculty of Engineering and Technology, University of Dhaka, **Bangladesh**

2. Achievement of **DU Research Excellence Recognition 2025**, **Bangladesh**.

3. Young research fellowship of the Alexander von Humboldt Foundation, Karlsruhe University of Applied Sciences, **Germany**, May 2019 – Nov 2019.

4. Japanese Government Scholarship for PhD by Monbukagakusho [Ministry of Education, Science and Culture, Japan] – Mie University, **Japan**, Oct 2014 – Mar 2018.

5. Provost Award, Fazlul Huq Mislim Hall, University of Dhaka, **Bangladesh**, 2004.

6. Nurul Haque Bhuiyan Award, Department of Applied Chemistry and Chemical Engineering, University of Dhaka, **Bangladesh**, 2004.

7. Merit–based Scholarship, University of Dhaka, **Bangladesh**, 2004.

RESEARCH PROJECTS

1. Synthesis and characterization of Al-doped ZnO nanoparticles for solar light-driven photocatalytic removal of organic pollutants from water, funded by Center for Climate Change Study & Resource Utilization (CCCSRU), University of Dhaka, 2024–2025.

2. Fabrication, Characterization, and Evaluation of B-SnO_2 Nanoparticles to Photodegrade Organic Pollutants in Aqueous Media, funded by Ministry of Science and Technology (MOST), Government of the People's Republic of Bangladesh, 2024–2025.

3. Fabrication and characterization of Fe-doped ZnO nanoparticles for photocatalytic degradation of textile dye pollutants in aqueous media, funded by UGC Research Grant, University of Dhaka, Bangladesh, 2024–2025.

4. Photocatalytic Degradation of Ciprofloxacin Antibiotic in Water by Using B-Doped ZnO Nanoparticles, funded by Ministry of Science and Technology (MOST), Government of the People's Republic of Bangladesh, 2023–2024.

5. Photocatalytic Degradation of Textile Dye Pollutants Using CdS/ZnO Nanocomposites, funded by University Grants Commission of Bangladesh (UGC), 2022–2023.

6. Synthesis and Characterization of Metal/Nonmetal Co-doped SnO_2 Nanoparticles for Photocatalytic Degradation of Organic Pollutants, funded by UGC Research Grant, University of Dhaka, Bangladesh, 2022–2023.

7. Synthesis and Characterization of Non-Metal Doped TiO_2 Nanoparticles for Photodegradation of Dye Pollutants, funded by Ministry of Science and Technology (MOST), Government of the People's Republic of Bangladesh, 2021–2022.

8. B/Sn-doped TiO_2 nanoparticles for the solar photodegradation of organic pollutants, funded by UGC Research Grant, University of Dhaka, Bangladesh, 2020–2021.

9. Natural sunlight driven photocatalytic removal of toxic textile dyes in water using B-doped ZnO/TiO_2 nanocomposites, funded by Centennial Research Grant (CRG), University of Dhaka, Bangladesh, 2020–2021.

10. Fabrication of Cu/ZnO by Mechanochemical Combustion Method and Their Application into Photocatalytic Degradation of Azo Dyes, funded by University Grants Commission of Bangladesh, 2018–2019.

11. Optimization of Photocatalytic Degradation Conditions of Azo-Dye with Dye-Sensitized TiO_2 under Visible Light Irradiation, funded by Bangladesh University Grand Commission (UGC) with collaboration of University of Dhaka for the academic year 2018–2019.

12. Synthesis and Evaluation of Non-metal doped SnO/ZnO Nanocomposites for Photocatalytic Degradation of Organic Pollutants under Sunlight, funded by Ministry of Science and Technology (MOST), Government of the People's Republic of Bangladesh, 2018–2019.

PUBLICATIONS

2025:

1. M.S. Rana, R.A. Putul, N. Salsabil, M.T. Kabir, M. Shakhawoat Hossain, S.M. Masum, **M.A.I. Molla**, Solar-driven Photodegradation of Methylene Blue Dye Using Al-Doped ZnO Nanoparticles, **2025** (Under Review).

2. H. Gazi, S.A. Fahim, F. Tamzid, S.M. Masum, **M.A.I. Molla**, Photocatalytic removal of toxic congo red dye from aqueous solution using Fe-ZnO nanorods, **2025** (Under Review).

3. L. Rahman, R.A. Putul, M.S. Rana, T.M.N.I. Dipto, M.T. Kabir, M.S. Hossain, S.M. Masum, **M.A.I. Molla**, Fabrication, characterization, and evaluation of B-SnO_2 nanoparticles to photodegrade methylene blue dye **2025** (Under Review).

4. S. Bhowmik, M.S. Uddin, T. Sarker, P. Paul, S.C. Dey, A. Sarkar, F. Khalil, M.T. Islam, **M.A.I. Molla**, M. Sarker, A review on WO_3-based photocatalysts: Functionalization, properties and applications for the removal of organic pollutants from wastewater, *Inorganic Chemistry Communications* 182, 115577, **2025**. **(I.F = 5.4)**

5. A. Sarker, S.A. Fahim, R.A. Putul, H. Gazi, S.M. Masum, **M.A.I. Molla**, ZnO/CdS nanocomposites: Synthesis, characterization and assessment of photocatalytic performance, *Next Nanotechnology* 8, 100146, **2025**. **(CiteScore = 1.0)**

6. N. Zahan, S.A. Fahim, M. Sarker, S.M. Masum, **M.A.I. Molla**, Fabrication and characterization of C–doped TiO_2 nanoparticles for the photodegradation of organic dyes, *Inorganic and Nano-Metal Chemistry* 55(7), 851–863, **2025**. **(I.F = 1.6)**

7. R.A. Putul, S.A. Fahim, S.M. Masum, **M.A.I. Molla**, Fabrication and characterisation of B-ZnO nanoparticles for photodegradation of ciprofloxacin antibiotic and textile dyes, *International Journal of Environmental Analytical Chemistry* 105(16), 4208–4227, **2025**. DOI: 10.1080/03067319.2024.2360711. **(I.F = 2.5)**

2024:

8. N. Zahan, S.A. Fahim, H. Gazi, M.S. Hossain, **M.A.I. Molla**, Photocatalytic Removal of Textile Dye Pollutant from Water Using C-TiO_2 Nanoparticles, *Acta Chemica Malaysia (ACMY)* 8(2), 74–77, **2024**.

9. M.S.H. Shuvo, R.A. Putul, K.S. Hossain, S.M. Masum, **M.A.I. Molla**, Photocatalytic removal of metronidazole antibiotics from water using novel Ag-N-SnO_2 nanohybrid material, *Toxics* 12(1), 36, **2024**. **(I.F = 4.1)**

2023:

10. S.A. Fahim, N. Zahan, R.A. Shathy, M.S. Quddus, M. Moniruzzaman, S.M. Masum, **M.A.I. Molla**, B–Sn/TiO_2 nanoparticles for photodegradation of metronidazole antibiotics under different lights, *Materials Chemistry and Physics* 305, 127937, **2023**. **(I.F = 4.7)**

2022:

11. H. Katsumata, **M.A.I. Molla**, J.B. Islam, I. Tateishi, M. Furukawa, S. Kaneco, Dual Z-scheme heterojunction g-C_3N_4/Ag_3PO_4/AgBr photocatalyst with enhanced visible-light photocatalytic activity, *Ceramics International* 48(15), 21939–21946, **2022**. **(I.F = 5.6)**

12. **M.A.I. Molla**, H. Katsumata, M. Furukawa, I. Tateishi, S. Kaneco, Synthesis of an iso-type graphitic carbon nitride heterojunction derived from oxamide and urea in

molten salt for high-performance visible-light driven photocatalysis, *New Journal of Chemistry* 46(19), 8999–9009, **2022**. **(I.F = 2.5)**

13. R.A. Shathy, S.A. Fahim, M.S. Quddus, M. Moniruzzaman, M. Sarker, S.M. Masum, **M.A.I. Molla**, Natural Sunlight Driven Photocatalytic Removal of Toxic Textile Dyes in Water Using B–Doped ZnO/TiO_2 Nanocomposites, *Catalysts* 12(3), 308, **2022**. **(I.F = 4.0)**

2021:

14. T. Sultana, S.C. Dey, **M.A.I. Molla**, M.R. Hossain, M.M. Rahman, M.S. Quddus, M. Moniruzzaman, S.M. Shamsuddin, M. Sarker, Facile Synthesis of TiO_2/Chitosan Nanohybrid for Adsorption-Assisted Rapid Photodegradation of an Azo Dye in Water, *Reaction Kinetics, Mechanisms and Catalysis* 133, 1121–1139, **2021**. **(I.F = 1.7)**

15. M.A. Haque, A-Al. Kaium, **M.A.I. Molla**, M. Sarker, S.C. Dey, M. Ashaduzzaman, Facile Fabrication of Copper Oxide Nanoparticles for Antimicrobial Activity, *Journal Clean WAS* 5(1), 27–30, **2021**.

16. B. Mondol, A. Sarker, A.M. Shareque, S.C. Dey, M.T. Islam, A.K. Das, S.M. Shamsuddin, **M.A.I. Molla**, M. Sarker, Preparation of Activated Carbon/TiO_2 Nanohybrids for Photodegradation of Reactive Red-35 Dye Using Sunlight, *Photochem* 1(1), 54–66, **2021**. **(I.F = 2.3)**

17. **M.A.I. Molla**, G. Yanagi, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Optimization of Operating Conditions for Electrochemical Decolorization of Methylene Blue with Ti/α-PbO_2/β-PbO_2 Composite Electrode, *Journal of Composites Science* 5(5), 117, **2021**. **(I.F = 3.7)**

18. S.C. Paul, S.C. Dey, **M.A.I. Molla**, S. Debnath, M.S. Islam, M.Y. Miah, M. Ashaduzzaman, M. Sarker, Nanomaterials as Electrocatalyst for Hydrogen and Oxygen Evolution Reaction: Exploitation of Challenges and Current Progressions, *Polyhedron*, 193, 114871, **2021**. **(I.F = 2.6)**

19. A.Z. Ahmed, M.M. Islam, M.M-ul. Islam, S.M. Masum, R. Islam, **M.A.I. Molla**, Fabrication and Characterization of B/Sn-doped ZnO Nanoparticles via Mechanochemical Method for Photocatalytic Degradation of Rhodamine B, *Inorganic and Nano-Metal Chemistry* 51 (10), 1369–1378, **2021**. **(I.F = 1.6)**

2020:

20. R. Kabir, M.A.K. Saifullah, A.Z. Ahmed, S.M. Masum, **M.A.I. Molla**, Synthesis of N-Doped ZnO Nanocomposites for Sunlight Photocatalytic Degradation of Textile Dye Pollutants, *Journal of Composites Science* 4(2), 49, **2020**. **(I.F = 3.7)**

21. M.M. Islam, A.Z. Ahmed, S.F. Kabir, R. Islam, **M.A.I. Molla**, Optimization of Photodegradation Conditions of Rhodamine B in Water with Dye-Sensitized Titanium Dioxide, *Journal Clean WAS* 4(1), 28–31, **2020**.

22. U. Hellriegel, E. Cañas Kurz, **M.A.I. Molla**, R. Islam, J. Hoinkis, Energy Efficient Desalination with Membrane Capacitive Deionization (MCDI), *International Water Technology Journal, IWTJ* 10(1), 13–17, **2020**.

23. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Mineralization of Diazinon with nanosized-photocatalyst TiO_2 in water under sunlight irradiation: optimization of degradation conditions and reaction pathway, *Environmental Technology* 41(27), 3524–3533, **2020**. **(I.F = 2.0)**

2019:

24. A.A.M. Sakib, S.M. Masum, J. Hoinkis, R. Islam, **M.A.I. Molla**, Synthesis of CuO/ZnO Nanocomposites and Their Application in Photodegradation of Toxic Textile Dye, *Journal of Composites Science* 3(3), 91, **2019**. **(I.F = 3.7)**

25. R. Islam, **M.A.I. Molla**, T. Yigitoglu, J. Hoinkis, Removal of Inorganic Arsenic from Arsenic Spiked Local Tap Water using Titanium Oxide and Ferric (hydr) Oxide Based Adsorbents, *Scholars Journal of Engineering and Technology* 7(8), 223–228, **2019**.

26. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Fabrication of Ag-doped ZnO by mechanochemical combustion method and their application into photocatalytic Famotidine degradation, *Journal of Environmental Science and Health, Part A* 54(9), 914–923, **2019**. **(I.F = 2.1)**

27. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Studies of Effects of Calcination Temperature on the Crystallinity and Optical Properties of Ag–Doped ZnO Nanocomposites, *Journal of Composites Science* 3(1), 18, **2019**. **(I.F = 3.7)**

28. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Optimization of Alachlor Photocatalytic Degradation with Nano–TiO_2 in Water under Solar Illumination: Reaction Pathway and Mineralization, *Clean Technologies* 1(1), 141–153, **2019**. **(I.F = 4.7)**

2018:

29. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, S. Kaneco, Solar Photocatalytic Decomposition of Probenazole in Water with TiO_2 in the Presence of H_2O_2, *Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 40(20), 2432–2441, **2018**. **(I.F = 2.2)**

30. M.N. Rahman, R.R. Bhowmick, M. Nurnabi, **M.A.I. Molla**, Synthesis and characterization of an amidoxime compound with benzimidazole moiety and pH sensing behavior under basic condition in methanol and DMSO, *Journal of the Chilean Chemical Society* 63(3), 4047–4050, **2018**.

31. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Degradation of Fenitrothion in Water with TiO_2 under Solar Irradiation, *Water Conservation & Management* 2(2), 01–05, **2018**.

32. **M.A.I. Molla**, S. Ahsan, I. Tateishi, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Degradation, Kinetics, and Mineralization in the Solar Photocatalytic Treatment of Aqueous Amitrole Solution with Titanium Dioxide, *Environmental Engineering Science* 35(5), 401–407, **2018**. **(I.F = 1.8)**

2017:

33. **M.A.I. Molla**, M. Furukawa, I. Tateishi, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Decolorization of Dye with Self–Dye–Sensitization under Fluorescent Light Irradiation, *ChemEngineering* 1(2), 8, **2017**. **(I.F = 3.4)**

34. **M.A.I. Molla**, I. Tateishi, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Removal of Famotidine with TiO_2 from Water in the Presence of Dye under Visible Light Irradiation, *Desalination and Water Treatment* 87, 338–347, **2017**. **(I.F = 2.3)**

35. **M.A.I. Molla**, I. Tateishi, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Evaluation of Reaction Mechanism for Photocatalytic Degradation of Dye with Self–Sensitized TiO_2 under Visible Light Irradiation, *Open Journal of Inorganic Non–metallic Materials* 7(1), 1–7, **2017**.

2014:

36. M.R. Hasan, S. Sultana, M.M. Karim, **M.A.I. Molla**, Developing Natural Rubber Latex Characteristics Using Radiation Technology, *Dhaka University Journal of Applied Sciences and Engineering* 2(2), 125–128, **2014**.

2012:

37. M.Y. Hossan, **M.A.I. Molla**, M.S. Islam, A.A. Rana, M.A. Gafur, M.M. Karim, Fabrication and Characterization of Polyvinyl Alcohol–Hydroxyapatite Biomimetic Scaffold by Freeze Thawing in Situ Synthesized Hybrid Suspension for Bone Tissue Engineering, *International Journal of Emerging Technology and Advanced Engineering* 2(12), 696–701, **2012**.

38. M.F. Hossain, **M.A.I. Molla**, S.M. Masum, A.A. Rana, A.F.M.S. Amin, R.S. Chowdhury, S. Sultana, M.M. Karim, Chemical and Sedimentological Characterization of Moulvibazar Silica Deposit of Bangladesh as Standard Sand, *International Journal of Basic & Applied Sciences* 12(6), 170–176, **2012**.

2011:

39. M.R. Hasan, **M.A.I. Molla**, M. Sarker, S.M. Masum, A.A. Rana, S. Sultana, M.E. Haque, M.M. Karim, Determination of Protein Content in Gamma (γ)–ray Irradiated and Non–irradiated Natural Rubber Latex Film, *International Journal of Basic & Applied Sciences* 11(4), 34–37, **2011**.

40. M.S. Islam, **M.A.I. Molla**, M. Sarker, M.M. Karim, S.M. Masum, J.H. Yeum, Fabrication of Pllulan/Silver Nanoparticle Composite Nanospheres Using Electrospray Technique for Antibacterial Applications, *International Journal of Basic & Applied Sciences* 11(1), 59–69, **2011**.

41. M.M. Islam, S.M. Masum, M.M. Rahman, **M.A.I. Molla**, A.A. Shaikh, S.K. Roy, Preparation of Chitosan from Shrimp Shell and Investigation of its Properties, *International Journal of Basic & Applied Sciences* 11(1), 116–130, **2011**.

2010:

42. A.I. Chowdhury, **M.A.I. Molla**, M. Sarkar, A.A. Rana, S.K. Ray, H.P. Nur, M.M. Karim, Preparation of Edible Grade Dye and Pigments from Natural Sources Bixa Orellenae Linn, *International Journal of Basic & Applied Sciences* 10(4), 7–15, **2010**.

2009:

43. **M.A.I. Molla**, M. Sarker, R. Islam, A.K.M.F. Kibria, Oxidation–Reduction Behavior, Electrolysis Characteristics and Efficiency of Pd–50at.%Ni Electrode in Alkaline Electrolyte, *Journal of Bangladesh Academy of Sciences* 33(1), 1–13, **2009**.

44. M.M. Karim, S.H. Lee, R.S. Chowdhury, **M.A.I. Molla**, A.K. Das, Chemiluminescence Determination of Travafloxacin, *The AUST Journal of Science and Technology* 1, 137–142, **2009**.

2008:

45. M. Sarker, **M.A.I. Molla**, R. Islam, S. Ahmed, A.K.M.F. Kibria, Investigations on the Redox Behavior and the Electrolysis Characteristics of Pd–20at.%Ni Electrode in 30wt.%KOH Electrolyte, *Bangladesh Journal of Scientific and Industrial Research* 43(1), 13–28, **2008**.

46. **M.A.I. Molla**, M. Sarker, A.K.M.F. Kibria, Investigations on the Redox Characteristics and Hydrogen Evolution Efficiencies of Pd and Mo Deposited Pd Electrodes in Alkaline Electrolyte, *Bangladesh Journal of Scientific and Industrial Research* 43(1), 103–116, **2008**.

Book Chapter

1. M.T. Kabir, R. Sarker, T.M.N.I. Dipto, **M.A.I. Molla**, Green Composites and Nanocomposites for Aerospace Applications, In Nanocomposites for Defense, Aeronautical and Aerospace Applications, Editor: S.K. Panda, Springer Nature Switzerland AG, Advanced Structured Materials 248, **2026**. DOI: 10.1007/978-3-032-11568-3_9.

2. N.I. Dipto, S. Bhowmik, I. Tahmid, K.N. Mim, S.C. Dey, **M.A.I. Molla**, S.C. Paul, S.H. Jhung, M. Sarker, MOF-Derived Noble Metal-Free Electrocatalysts for Water Splitting, In Noble Metal-Free Electrocatalysts: New Trends in Electrocatalysts for Energy Applications, Editor: R.K. Gupta, ACS Publisher, 77–99, **2022**; DOI: 10.1021/bk-2022-1432.ch004.

3. **M.A.I. Molla**, A.Z. Ahmed, S. Kaneco, Reaction Mechanism for Photocatalytic Degradation of Organic Pollutant, In Nanostructured Photocatalysts: From Fundamental to Practical Applications, Editors: V.-H. Nguyen, D.-V.N. Vo, S. Nanda**,** Elsevier Publisher, 63–84, **2021**; DOI: https://doi.org/10.1016/B978-0-12-823007-7.00011-0.

4. **M.A.I. Molla**, A.Z. Ahmed, Synthesis, Characterization and Application of CuO/ZnO Nanocomposites, In Current Perspectives on Chemical Sciences, Editors: F. Khan, Book Publisher International, Vol. 6, 46–55, **2020**; DOI: 10.9734/bpi/cpcs/v6.

Google Scholar link:
https://scholar.google.co.jp/citations?hl=en&user=eFUjYXAAAAAJ&view_op=list_works&sortby=pubdate

ORCID ID: *https://orcid.org/0000-0001-6825-2464*

Conference Publications (Oral)

1. A.Z. Ahmed, M.M. ul Islam, S.M. Masum, R. Islam, **M.A.I. Molla**, Fabrication of B/Sn-Doped ZnO Nanoparticles for the Photocatalytic Remediation of Toxic Textile Dye under Solar Irradiation, 6th International Conference on Chemical Engineering, Dhaka, Bangladesh, 19–22 December, **2020**.

2. U. Hellriegel, E. Cañas Kurz, **M.A.I. Molla**, R. Islam, J. Hoinkis, Energy Efficient Desalination with Membrane Capacitive Deionization (MCDI): Best-Practice Recommendations, Twenty-Second International Water Technology Conference, IWTC22, Ismailia, Egypt, 12–13 September, **2019**.

3. **M.A.I. Molla**, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Degradation of Famotidine in Water with Ag–ZnO under UV Light Irradiation, Seventh International Conference on Geotechnique, Construction Materials and Environment, Mie, Japan, 21–23 November, **2017**, p 934.

4. **M.A.I. Molla**, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Degradation of Famotidine with Ag–doped ZnO in Water under UV Irradiation, 48th Annual Meeting of Chemistry–Related Societies in Chubu Area, Japan, 11–12 November, **2017**.

5. **M.A.I. Molla**, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Activity of ZnO Doped with Ag for Degradation of Famotidine in Aqueous Solutions, The 7th International Symposium for Sustainability by Engineering at MIU, Japan, 29 September, **2017**.

6. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Degradation of Famotidine with Dye–Sensitized TiO_2 under Visible Light, The Second International Conference on Science, Engineering & Environment, Osaka City, Japan, 21–23 November, **2016**, p 969.

7. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Visible Light Induced Photocatalytic Degradation of Famotidine with Dye–Sensitized TiO_2, 47th Annual Meeting of Chemistry–Related Societies in Chubu Area, Japan, 5–6 November, **2016**.

8. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Degradation of Famotidine with Dye–Sensitized TiO_2 under Visible Light Irradiation, The 6th International Symposium for Sustainability by Engineering at MIU, Japan, 27–28 September, **2016**.

9. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Visible Weak Fluorescent Light Photocatalytic Degradation of Orange II and Methyl Orange with Dye–Sensitized TiO_2, The First International Conference on Science, Engineering & Environment, Mie, Japan, 19–21 November, **2015**, p 640.

10. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Visible–Light–Driven Photocatalytic Degradation of Dye with Dye–Sensitized TiO_2, 46th Annual Meeting of Chemistry–Related Societies in Chubu Area, Japan, 7–8 November, **2015**.

11. **M.A.I. Molla**, H. Katsumata, T. Suzuki, S. Kaneco, Visible–Light–Driven Photocatalytic Degradation of Orange II and Methyl Orange with Dye–Sensitized TiO_2, The 5th

International Symposium for Sustainability by Engineering at MIU, Japan, 29 September, **2015**.

Conference Publications (Poster)

1. R.A. Putul, S.A. Fahim, S.M. Masum, **M.A.I. Molla**, Natural sunlight-assisted photocatalytic degradation of ciprofloxacin drug in water using B-ZnO nanoparticles, BCSIR Congress-2023, 08–10 March, **2024**.

2. S.A. Fahim, N. Zahan, M.S.H. Shuvo, S.M. Masum, **M.A.I. Molla**, Synthesis and Characterization of B–Sn/TiO_2 Nanoparticles for the Photocatalysis of Metronidazole under Natural Sunlight, International Conclave on Materials, Energy & Climate, Dhaka, Bangladesh, 19–20 December, **2022**.

3. N. Zahan, S.A. Fahim, S.M. Masum, **M.A.I. Molla**, Fabrication and Characterization of C-doped TiO_2 Nanoparticles for the Photodegradation of Rhodamine B Dye, International Conclave on Materials, Energy & Climate, Dhaka, Bangladesh, 19–20 December, **2022**.

4. A.A. Elora, A. Azim, I. Tahmid, N.I. Dipto, S.C. Dey, **M.A.I. Molla**, M. Ashaduzzaman, S.M. Shamsuddin, M. Sarker, TiO_2@NH_2-ZIF-8: Highly Efficient Nanocomposite for Degradation for Dyes from Water, International Conclave on Materials, Energy & Climate, Dhaka, Bangladesh, 19–20 December, **2022**.

5. A.Z. Ahmed, M.M. Islam, M.M. ul Islam, S.M. Masum, R. Islam, **M.A.I. Molla**, Fabrication of B/Sn-doped ZnO Nanoparticles and their Application in Photocatalytic Remediation of Toxic Textile Dye under Solar Irradiation, International Conference on CLIMATE CHANGE AND FOOD SECURITY In South Asia (CCFS), Dhaka, Bangladesh, 18–20 May, **2022**.

6. A.A.M. Sakib, **M.A.I. Molla**, Photocatalytic Removal of Toxic Industrial Dye with Cu/ZnO Nanomaterial from Water under Sunlight Irradiation, International Conference on Climate Change, Dhaka, Bangladesh, 1–3 March, **2019**.

7. **M.A.I. Molla**, M. Furukawa, H. Katsumata, T. Suzuki, S. Kaneco, Photocatalytic Activity of Ag–doped ZnO for the Degradation of Famotidine in Water under UV Irradiation, 36th Summer Seminar of Analytical Chemistry in Chubu Area, Japan, 29–30 August, **2017**.

Invited Talk

1. Synthesis and Characterization of B–Sn/TiO_2 Nanoparticles for the Photocatalytic Removal of Metronidazole Antibiotics from Aqueous Media, **Seminar** at the Department of Arts and Sciences, Ahsanullah University of Science and Technology, Dhaka, Bangladesh, 25 February, **2025**.

Peer Reviewer

ACS, RSC, Elsevier, Springer, Wiley, Taylor & Francis, MDPI etc.

M.Phil. Student Thesis Supervision

1. Development of Chitosan and Silica-based Adsorbents for the Removal of Textile Dyes

2. Non-metal Doped TiO_2 Nanocomposites for the Removal of Nuclear Waste from Water

M.Sc. (Graduate) Student Thesis Supervision

1. Synthesis, Characterization, and Photocatalytic Activity of Boron-Doped Tin Dioxide (B-SnO_2) Nanoparticles for Methylene Blue Degradation

2. Fabrication and Characterization of Al-doped ZnO nanocomposites for sunlight driven photolytic degradation of toxic organic dye

3. Photocatalytic Degradation of Ciprofloxacin Antibiotic in Water Using B-Doped ZnO Nanoparticles

4. Synthesis and Characterization of Fe-doped ZnO Nanoparticles for the Photocatalytic Removal of Congo Red Dye from Aqueous Media

5. Synthesis and Characterization of Ag and N co-doped SnO_2 Nanoparticles for the Photocatalytic Degradation of Metronidazole from Aqueous Media

6. Fabrication of ZnO/CdS Nanocomposites for Photocatalytic Degradation of Anionic Organic Dye in Aqueous Media

7. Synthesis and Characterization of B and Sn co-doped TiO_2 Nanoparticles for the Photocatalytic Removal of Metronidazole from Aqueous Media

8. Fabrication and Characterization of C-doped TiO_2 Nanoparticles for the Photodegradation of Rhodamine B (RhB) Dye

9. Fabrication and Characterization of B–doped ZnO/TiO_2 Nanocomposites and Investigation of its Photocatalytic Performance on Toxic Textile Dye Removal.

10. Fabrication and Characterization of Pure and B/Sn-doped ZnO Nanocomposites and their Application in Photodegradation of Rhodamine-B (RhB).

11. Optimization of Photocatalytic Degradation Conditions of Rhodamine B in Water with Dye-Sensitized Titanium Dioxide.

12. Photocatalytic degradation and removal of textile dye pollutant with CuO/ZnO.

13. Synthesis, Characterization and Photocatalytic Performance investigation of Nitrogen doped ZnO Nanoparticles and its Potential Applications.

14. Photocatalytic Degradation of Toxic Industrial Dye with CuO/ZnO Nanocomposites from Water under Sunlight Irradiation.

15. Grafting of Acrylic Acid onto Cotton Thread and Its Application on Water Soluble Dye.

16. Study on the Preparation of Polymer Based Herbicide with a View to Its Slow Release for Agricultural Purposes.

B.Sc. (Undergraduate) Student Project Supervision

- Carbon Fiber Reinforced Polymer (CFRP)
- Commercialization of Perovskite-Based Solar Systems in Bangladesh: A Circular Economical Approach
- Utilization of Plastic Wastes into Recycled and Valued Products for Reducing Plastic Pollution in Environment
- Production of Low Cost Activated Carbon from Bio-Waste
- Tungsten Trioxide (WO_3) Nanoparticles
- Tin Oxide (SnO_2) Nanoparticles
- Capacitive Deionization of Water
- Photocatalyst for Water Treatment
- Organic Pollutants
- Dye in Wastewater
- Hydrogen Fuel Cell
- Fuel Cell
- Hydrogen as Fuel
- Corrosion of Different Industries in Bangladesh

Academic Course Teaches

- Mass and Energy Balance
- Inorganic Chemistry
- Analytical Chemistry
- Corrosion Engineering
- Chemical Engineering
- Nanotechnology for Leather and Leather Products
- Analytical Chemistry for Footwear Manufacture-II
- Applied Chemistry and Chemical Engineering Labs

TRAINING & WORKSHOP

2004: "Industrial process unit operation & process control techniques" at Training Institute for Chemical Industries (TICI), Bangladesh, August 29 – September 28, 2004.

2003: In-plant training at Zeal Bangla Sugar Mills Ltd, Jamalpur, Bangladesh, September 06 – October 01, 2003.

Short in-plant trainings at:

Tabani Beverage (Coca-Cola) Company Ltd., Dhaka, Mimi Chocolate Industry Ltd., Dhaka, Savoy Ice-cream Industry Ltd., Dhaka, People Ceramic Industry, Gazipur. Global Capsule Ltd., Padma Caps & Glass Industry Ltd., Barishal, Opsonin Basic Chemicals Ltd, Opsonin Pharmaceutical Ltd. & Opso Saline Ltd., Eastern Refinery Ltd., Chittagong & Urea Fertilizer Ltd., Chittagong.

PROFESSIONAL MEMBERSHIPS

- ✧ Life Member, Bangladesh Chemical Society (BCS).
- ✧ Member, Mie Global Environment Center for Education & Research, Japan.
- ✧ Life Member, Japanese Universities Alumni Association in Bangladesh (JUAAB).
- ✧ Life Member, ACCE Alumni Association, DU, Dhaka.

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REFERENCES

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