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Assistant Research Scientist
University of Texas Rio Grande Valley
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EDUCATION

PhD in Chemical Sciences

Dec 2010

University of Turin (UniTo)

Via Giuseppe Verdi, 8, 10124 Torino, Italy

Dissertation: Addition of Ternary Transition Metal Oxides on Nanostructured MgH_2 Towards Hydrogen Storage.

Supervisors: Prof. Dr. Marcello Baricco and Prof. Dr. Elio Giamello

B.Sc. (Engg.) in Chemical Engineering and Polymer Science

Jul 2003

Shahjalal University of Science & Technology (SUST)

Sylhet, Bangladesh

RESEARCH INTERESTS

- Functional materials in hybridization of nanogenerators for energy harvesting applications
- Hydrogen storage materials for clean energy and sustainable environment
- Separation technology of toxic chemicals from industrial wastewater
- Photocatalysis of greenhouse gas for alternative energy generation
- Thermal processes related to the production of fuels and chemicals
- Active polymeric matrices for food packaging

RESEARCH PROJECTS (Worked as PI)

- **Biodegradable polymeric matrices for state-of-the-art technology of food packaging**
Dec 2023
(funded by Bangladesh Academy of Sciences (BAS) & United States Department of Agriculture (USDA))
- **Conversion of urban waste to energy through jute waste based activated carbon supported nano-catalytic pyrolysis process**
Oct 2022
(funded by Jashore University of Science and Technology, Bangladesh)
- **Preparation of Jute Waste Based Activated Carbon Supported Copper Oxide Nanoparticles for Hydrogen Storage in MgH_2**
Jun 2021
(funded by University Grants Commission (UGC), Bangladesh)
- **4th Generation Hydrogen Fuel Car: An Improvement in Hydrogen Storage Properties of MgH_2 by Drumstick-based Activated Carbon Supported Ternary Transition Metal Oxides**
Jun 2020
(funded by Ministry of Science and Technology, Bangladesh)

PROFESSIONAL EXPERIENCES

Assistant Research Scientist

Department of Mechanical Engineering
University of Texas Rio Grande Valley (UTRGV), United States

Aug 2023–current

Professor

Department of Chemical Engineering
Jashore University of Science and Technology, Bangladesh

Jul 2024–current

Associate Professor

Department of Chemical Engineering
Jashore University of Science and Technology, Bangladesh

Feb 2017–Jul 2024

Assistant Professor

Department of Chemical Engineering
Jashore University of Science and Technology, Bangladesh

Aug 2012– Feb 2017

Postdoctoral Fellow

Faculty of Chemical & Natural Resources Engineering
Universiti Malaysia Pahang (UMP), Malaysia

Jul 2014–Jun 2015

Lecturer

Department of Chemical Engineering
Jashore University of Science and Technology, Bangladesh

Jul 2011–Aug 2012

Assistant Engineer

Bangladesh Chemical Industries Corporation, Bangladesh

Jul 2005–Jul 2011

RESEARCH PROFILE

- **Expertise in Materials Science & Environmental Engineering:** Specializes in energy harvesting, hydrogen storage, environmental pollution control, and sustainable energy solutions.
- **Recognized Research Impact:** Google Scholar Citations: 1264, h-index: 20, i10-index: 33 (<https://scholar.google.com.my/citations?user=cf5bu2AAAAAJ&hl=en> as of Feb 01, 2026).
- **Scopus Metrics:** h-index: 19 with 60 high-impact journal publications, total citations: 950 (779 without self-citations) (<https://www.scopus.com/results/results.uri?s=AU-ID%28%22Rahman%2C+Md+Wasikur%22+56336606400%29&limit=10&origin=searchhistory&sort=plf-f&src=s&sot=b&sdt=b&sessionSearchId=128ad323fe0ed3f573ebdc1501415378> as of Feb 01, 2026).
- **ResearchGate Metrics:** h-index: 15, total publications 62 including 48 high-impact journal articles, total citations: 814 (<https://www.researchgate.net/profile/Md-Rahman-44/research> as of Feb 01, 2026).
- **Publication Record:** 61 journal articles, 5 book chapters, and 7 conference proceedings, predominantly as the first/corresponding author.
- **Publications in Prestigious Journals:** Research featured in top-tier Q1/Q2 journals, including *Environmental Nanotechnology*, *Monitoring and Management*, *International Journal of Hydrogen Energy*, *ACS Applied Engineering Materials*, and *Environmental Science and Pollution Research*.
- **Development of Sustainable Energy Harvesting Technologies:** Current research focused on energy harvesting using piezoelectric and triboelectric nanogenerators (TENGs) for electrical energy generation.

- **Advanced Piezoelectric Nanogenerators (PENGs):** Fabricated a three-phase PENG integrating Metal-doped Transition Metal Oxides (TMO), Polyvinylidene Fluoride (PVDF), and Multi-walled Carbon Nanotubes (MWCNT) to optimize dielectric, ferroelectric, and piezoelectric properties.
- **Advancements in Hydrogen Storage:** Designed MgH₂-based hydrogen storage systems enhanced with graphene oxide and copper oxide nanoparticles.
- **Innovations in Water Treatment:** Developed low-cost adsorbents from natural materials (jute stick powder, coconut husk, tea dust) for effective pollutant removal from wastewater.
- **Breakthroughs in Polymer Science:** Engineered biodegradable and active polymeric matrices for food packaging and wastewater treatment applications.
- **Sustainable Energy Contributions:** Focused on biodiesel production from non-edible oils and plastic waste conversion to liquid fuels for eco-friendly alternatives.
- **Nanomaterial Applications:** Pioneered the use of nanomaterials for catalysis and adsorption, enhancing sustainability in energy and environmental sciences.
- **Commitment to Eco-friendly Solutions:** Dedicated to developing scalable, green technologies to address pressing environmental and energy challenges.

PUBLICATIONS (Peer-reviewed Journal)

61. 2026 Md Arafat Hossain, **Md. Wasikur Rahman**, Victoria Padilla, Mohammed Jasim Uddin, Synergistic Effect of ZnO/MWCNT on the Performance of Ecoflex Triboelectric Nanogenerator for Mechanical Energy Harvesting, *ACS Applied Engineering Materials*, DOI: 10.1021/acsaenm.5c01029 (accepted on Jan 21, 2026).
60. 2026 S M Anyet Ullah Shohag, Fahmida Akhter, Ahmed Touhami, Swati Mohan, **Md. Wasikur Rahman** Mohammed Jasim Uddin, Antimicrobial Performance of Amorphous vs. Crystalline La_{1-x}Sr_xCoO₃ Perovskites, *Next Materials* (accepted on Jan 29, 2026).
59. 2025 Rigobert Ybarra, Diego de Leon, Michael Moreno, Cesar Sanchez, Fernando Viesca, Kevin Alejandro, Shishir Timilsena, Nicholas Dimakis, Joseph Henry Dumont, Tommy Rockward, Tarik J. Dickens, **Md. Wasikur Rahman**, Mohammed Jasim Uddin, Advanced Microstructured BaTiO₃-Embedded PVDF-HFP/PEO Film for Enhanced Triboelectric Interface in Self-sufficient Energy Generation and Sensing, *ACS Omega*, 10.1021/acsomega.5c01183.
58. 2025 Ulises Vidaurri Romero, Sk Shamim Hasan Abir, Najlah Karam, Mariana Torres, Shahria Ahmed, **Md. Wasikur Rahman**, Bahareh Azimi, Serena Danti, Jianzhi Li, Mohammed Jasim Uddin, A biocompatible nitinol based triboelectric stent sensor for prospective cardiovascular health monitoring, *Hybrid Advances*, <https://doi.org/10.1016/j.hybadv.2025.100484>.
57. 2025 Mehedi Hasan, Deboshree Rani Mukta, Abdullah Mohammad Sarjish, Stefano Enzo, Muhammad Nurunnabi Siddiquee, Mohammad Mozahar Hossain, Victoria Padilla, Mohammed Jasim Uddin, **Md. Wasikur Rahman**, Combined effects of ternary oxides (Mg-Cu-O) and jute stick derived activated carbon for hydrogen storage in MgH₂, *Environmental Science and Pollution Research*, <https://doi.org/10.1007/s11356-025-36394-4>.
56. 2025 Jahid Inam Chowdhury, **Md. Wasikur Rahman**, Md Arafat Hossain, Md Nicholas Dimakis, Mohammed Jasim Uddin, Improved triboelectric nanogenerator by as-prepared lithium niobate for energy harvesting and sensing applications, *Nano Trends*, <https://doi.org/10.1016/j.nwnano.2025.100123>.
55. 2025 Md Sabbir Ahmed, Selim Reja, Sk Md Ali Zaker Shawon, Farhana Nazmin, Abdullah Mohammad Sarjish, Yousuf Ali, M Azizur R Khan, Mohammed Jasim Uddin, **Md. Wasikur Rahman**, Production of Sustainable Liquid Fuel from Waste Polymeric Materials via Thermal Pyrolysis, *International Journal of Energy Research*, <https://doi.org/10.1155/er/1449087>.

54. 2025 **Md. Wasikur Rahman**, Muhammad Nurunnabi Siddiquee, Mohammad M. Hossain, M. Jasim Uddin, Effect of Mg–Nb Oxides on Hydrogen Sorption Kinetics of Ball-milled MgH₂, *Clean Energy*, zkae108, <https://doi.org/10.1093/ce/zkae108>.
53. 2025 Shahria Ahmed, SM Shohag, **Md. Wasikur Rahman**, Jianzhi Li, Mataz Alcoutlabi, M Jasim Uddin, The features and advancements of electrodes and electrolyte materials for lithium-ion batteries, *Journal of Solid State Electrochemistry*, <https://doi.org/10.1007/s10008-025-06251-y>.
52. 2025 Shahria Ahmed, Sachin Chopra, Swati Mohan, Ahmed Touhami, **Md. Wasikur Rahman**, M Jasim Uddin, Exploring the potentials of delafossite-coated cotton textiles: photocatalytic self-cleaning, UV-blocking, antimicrobial activity, and hydrophobicity, *Research on Chemical Intermediates*, <https://doi.org/10.1007/s11164-025-05554-z>.
51. 2025 Nawrin Rahman Shefa, Most Afroza Khatun, Ahmed Hasnain Jalal, M Jasim Uddin, **Md. Wasikur Rahman**, Adsorption-Photodegradation Performance of Silver Titanate for Methylene Blue Removal: Kinetics, Thermodynamics and Isotherm Studies, *Cleaner Chemical Engineering*, <https://doi.org/10.1016/j.clce.2025.100163>.
50. 2024 S M Anyet Ullah Shohag, Luke Franco, Adhira Tippur, Swati Mohan, **Md. Wasikur Rahman**, Mohammed Jasim Uddin, Enhanced Piezoelectric Nanogenerators with Sr-doped Lanthanum Cobaltite (La_{1-x}Sr_xCoO₃) and MWCNT for Energy Harvesting, *ACS Applied Engineering Materials*, 2:12, 2842–2855, <https://doi.org/10.1021/acsaenm.4c00503>.
49. 2024 Muhtasim Ul Karim Sadaf, Abu Musa Abdullah, Haimanti Majumder, Sk Shamim Hasan Abir, Mariana Torres, Karen Lozano, **Md. Wasikur Rahman**, M. Jasim Uddin, Neodymium Doped Zinc Oxide Based Advanced Flexible Piezoelectric Energy Harvester and Self-powered Biomotion Sensor, *Nano Trends*, 8, 100063, <https://doi.org/10.1016/j.nwnano.2024.100063>.
48. 2024 **Md. Wasikur Rahman**, Md. Yousuf Ali, M. Jasim Uddin, Md. Maksudur Rahman Khan, Stefano Enzo, Preparation of Jute Waste-Based Activated Carbon Supported Copper Oxide nanoparticles for Hydrogen Storage in MgH₂, *Journal of the Iranian Chemical Society*, <https://doi.org/10.1007/s13738-024-03130-7>.
47. 2024 Molla Rahman Shaibur, Yasmin Khatun, Masum Howlader, Md. Mirajul Islam, **Md. Wasikur Rahman**, Abu Shamim Khan, Balram Ambade, Determination of water quality and efficient removal of arsenic and iron from groundwater using mahogany fruit husk and banana peduncle charcoals, *Results in Engineering*, 22, 102220, <https://doi.org/10.1016/j.rineng.2024.102220>.
46. 2024 Deboshree Rani Mukta, Md Mehedi Hasan, Md Yousuf Ali, KM Anis Ul Haque, Most Afroza Khatun, M Jasim Uddin, Stefano Enzo, **Md. Wasikur Rahman**, Improved in hydrogen storage properties of MgH₂ catalyzed by as-prepared Graphene oxide-supported SnO₂ nanoparticles, *Research on Chemical Intermediates*, 50, 2859–2872, <https://doi.org/10.1007/s11164-024-05294-6>.
45. 2024 **Md. Wasikur Rahman**, Sumaya Tarannum Nipa, Nawrin Rahman Shefa, Rumana Akter, Md. Maksudur Rahman Khan, Mohammed Jasim Uddin, Physicochemical interaction of microstructured drumsticks with synthetic Dye: The tailoring of surface phenomenon, *Inorganic Chemistry Communications*, 164, 112472, <https://doi.org/10.1016/j.inoche.2024.112472>.
44. 2024 Neloy Sen, Nawrin Rahman Shefa, Kismot Reza, Sk Md Ali Zaker Shawon, **Md. Wasikur Rahman**, Adsorption of Crystal Violet Dye from Synthetic Wastewater by Ball-milled Royal Palm Leaf Sheath. *Scientific Reports*, 14, 5349, <https://doi.org/10.1038/s41598-024-52395-8>.
43. 2023 Sumaya Tarannum Nipa, Nawrin Rahman Shefa, Shahanaz Parvin, Most Afroza Khatun, Md Jahangir Alam, Sujon Chowdhury, M. Azizur R. Khan, Sk Md Ali Zaker Shawon, Biplob K. Biswas, **Md. Wasikur Rahman**, Adsorption of methylene blue on papaya bark fiber: Equilibrium, isotherm and kinetic perspectives, *Results in Engineering*, 17, 100857, <https://doi.org/10.1016/j.rineng.2022.100857>.

42. 2023 **Md. Wasikur Rahman**, Md Yousuf Ali, Md Maksudur Rahman Khan, Stefano Enzo, Preparation of jute waste-based activated carbon supported copper oxide nanoparticles for hydrogen storage in MgH₂, *Journal of the Iranian Chemical Society*, 22, 73–82, <https://doi.org/10.1007/s13738-024-03130-7>.
41. 2023 Ahammed Jubair, Md Akhlakur Rahman, Md Maksudur Rahman Khan, **Md. Wasikur Rahman**, Catalytic role of binary oxides (CuO and Al₂O₃) on hydrogen storage in MgH₂, *Environmental Progress & Sustainable Energy*, 42:1, e13940, doi:10.1002/ep.13940.
40. 2022 **Md. Wasikur Rahman**, Asim Kumar Mondal, Md Shakil Hasan, Marzia Sultana, Biodiesel production from a non-edible source of royna (*Aphanamixis polystachya*) oil, *Energy, Sustainability and Society*, 12:33, <https://doi.org/10.1186/s13705-022-00360-6>.
39. 2022 **Md. Wasikur Rahman**, Sumaya Tarannum Nipa, Sarmin Zaman Rima, Md. Mahmudul Hasan, Raghunath Saha, Md. Abdul Halim, Yousuf Ali, Anjan Deb, Pseudo-stem banana fiber as a potential low-cost adsorbent to remove methylene blue from synthetic wastewater, *Applied Water Science*, 12:10, 2190-5495, 10.1007/s13201-022-01769-2.
38. 2022 Nipa, S.T., Akter, R., Al Raihan, M., Rasul, S.B., Som, U., Ahmed, S., Alam, M.J., Khan, M.M.R., Enzo, S., **Md. Wasikur Rahman**, State of the Art Biosynthesis of Tin Oxide Nanoparticles by Chemical Precipitation Method towards Photocatalytic Application, *Environmental Science and Pollution Research*, 29, 10871–10893, <https://doi.org/10.1007/s11356-021-17933-1>.
37. 2022 Md Owaleur Rahman, Md Abdul Halim, Anjan Deb, Shafi Ahmed, **Md. Wasikur Rahman**, NC Dafader, SM Alam, Shahjalal Khandaker, Md Jahangir Alam, Modification of superabsorbent hydrogels for industrial wastewater treatment, *Advances in Polymer Technology*, 2022, 8405230, <https://doi.org/10.1155/2022/8405230>.
36. 2022 Sharmin Sultana, Khairul Islam, Md. Asif Hasan, H.M. Jawad Khan, M. Azizur R. Khan, Anjan Deb, Md. Al Raihan, **Md. Wasikur Rahman**, Adsorption of crystal violet dye by coconut husk powder: Isotherm, kinetics and thermodynamics perspectives, *Environmental Nanotechnology, Monitoring & Management*, 17, 100651, <https://doi.org/10.1016/j.enmm.2022.100651>.
35. 2021 **Md. Wasikur Rahman**, Synthetic approach of ternary magnesium niobate (Mg–Nb–O) compounds, *Scientific Reports*, 11:1, 16065, <https://doi.org/10.1038/s41598-021-95690-4>.
34. 2021 S. B. Rasul, U. Som, M. S. Hossain, **Md. Wasikur Rahman**, Liquid Fuel Oil Produced from Plastic-based Medical Waste by Thermal Cracking, *Scientific Reports*, 11:1, 17048, <https://doi.org/10.1038/s41598-021-96424-2>.
33. 2021 **Md. Wasikur Rahman**, Nawrin Rahman Shefa, Minireview on Self-Healing Polymers: Versatility, Application, and Prospects, *Advances in Polymer Technology*, 2021, Article ID 7848088, <https://doi.org/10.1155/2021/7848088>.
32. 2021 **Md Wasikur Rahman**, Huei Ruey Ong, Wendy Yin Jou Kong, Hamidah Abdullah, Md Maksudur Rahman Khan, Adsorption of manganese ions from aqueous solution by using manganese oxide coated zeolite, *Desalination and Water Treatment*, 224, 273-281, <https://doi.org/10.5004/dwt.2021.27174>.
31. 2020 Sumaia Aktar Sumi, **Md. Wasikur Rahman**, Nirmal Chandra Dafader, Influence of storage time and blending on irradiated sodium alginate–polyethylene oxide films modified by methyl acrylate monomer, *SN Applied Sciences*, 2:7, 1150, <https://doi.org/10.1007/s42452-020-2936-4>.
30. 2019 Sumaya Tarannum Nipa, **Md. Wasikur Rahman**, Raghunath Saha, Md. Mahmudul Hasan, Anjan Deb, Jute stick powder as a potential low-cost adsorbent to uptake methylene blue from dye enriched wastewater, *Desalination and Water Treatment*, 153, 279-287, <https://doi.org/10.5004/dwt.2019.23767>.

29. 2019 **Md. Wasikur Rahman**, Preparation of magnesium diniobate by solid–state reactions and its role for hydrogen storage, *Journal of the Australian Ceramic Society*, 55, 579–586, <https://doi.org/10.1007/s41779-018-0265-5>.
28. 2019 Shahanaz Parvin, **Md. Wasikur Rahman**, Indrajit Saha, Md Jahangir Alam, Md Maksudur Rahman Khan, Coconut tree bark as a potential low-cost adsorbent for the removal of methylene blue from wastewater, *Desalination and Water Treatment*, 146, 385–392, <https://doi.org/10.5004/dwt.2019.23598>.
27. 2019 Uday Som, Md Shameem Hossain, Farzana Rahman, Tithi Saha, **Md. Wasikur Rahman**, Assessment of Electrical Energy from Pyrolysis of Medical Waste in Jessore City, Bangladesh, *European Journal of Sustainable Development Research*, 3:2, em0078, <https://doi.org/10.20897/ejosdr/3965>.
26. 2019 Shahanaz Parvin, Afzal Hossen, **Md. Wasikur Rahman**, Israfil Hossen, Abdul Halim, Biplob Kumar Biswas, Abu Shamim Khan, Uptake Hazardous Dye from Wastewater Using Water Hyacinth as Bio-Adsorbent, *European Journal of Sustainable Development Research*, 3:1, em0065, <https://doi.org/10.20897/ejosdr/3917>.
25. 2017 Dafader, N. C., **Md. Wasikur Rahman**, Sumi, S. A. Breakthrough in the preparation of irradiated sodium alginate/polyethylene oxide blend films using methacrylate monomer. *International Journal of Polymer Analysis and Characterization*, 22:2, 152–159.
24. 2017 **Md. Wasikur Rahman**, M.Y. Ali, I. Saha, M. Al Raihan, M. Moniruzzaman, M.J. Alam, A. Deb, M.M.R. Khan, Date palm fiber as a potential low-cost adsorbent to uptake chromium (VI) from industrial wastewater, *Desalination and Water Treatment*, 88:1, 169–178.
23. 2017 Anjan Deb, Jannatul Ferdous, Kaniz Ferdous, M. Rakib Uddin, Maksudur R. Khan, **Md. Wasikur Rahman**, Prospect of castor oil biodiesel in Bangladesh: Process development and optimization study, *International Journal of Green Energy*, 14:12, 1063–1072, <https://doi.org/10.1080/15435075.2017.1357558>.
22. 2017 S. T. Nipa, S. Z. Rima, R. Saha, M. M. Hasan, **Md. Wasikur Rahman**, Isotherm and Kinetic Study of an Adsorption Process to Remove Methylene Blue by Banana Fibre from Wastewater, *Journal of Jashore University of Science and Technology*, 1, 35–45.
21. 2017 Biplob Kumar Biswas, Md. Abdul Halim, Shahanaz Parvin, Bablu Hira Mandal, **Md. Wasikur Rahman**, Md. Jahangir Alam, Kh. Md. Shafiul Islam, Experimental Study of the Operational Parameters on Low-cost Single-basin Solar Still in Jessore, Bangladesh, *Journal of Chemical Engineering, IEB*, 29, 3–8.
20. 2016 Ong, H. R., Khan, M. M. R., Ramli, R., Yunus, R. M., **Md. Wasikur Rahman**, Glycerolysis of palm oil using copper oxide nanoparticles combined with homogeneous base catalyst, *New Journal of Chemistry*, 40(10), 8704–8709, DOI: 10.1039/C6NJ01461E.
19. 2016 S. A. Sumi, **Md. Wasikur Rahman**, J. Alam, N. C. Dafader, S. Manir, M. R. Khan, Irradiated sodium–alginate/poly (ethylene oxide) blend films improved by methyl acrylate monomer, *Journal of Applied Polymer Science*, 133:26, <https://doi.org/10.1002/app.43562>.
18. 2016 M. M. R. Khan, **Md. Wasikur Rahman**, O. H. Ruey, A. B. Ismail, C. K. Cheng, Tea dust as a potential low–cost adsorbent for the removal of crystal violet from aqueous solution, *Desalination and Water Treatment*, 57:31, 14728–14738.
17. 2016 **Md. Wasikur Rahman**, J. Alam, M. R. Khan, Investigation of polymer degradation by addition of magnesium, *International Journal of Polymer Analysis and Characterization*, 21, 156–162
16. 2016 N. C. Dafader, S. T. Rahman, **Md. Wasikur Rahman**, N. Rahman, M. S. Manir, M. F. Alam, Preparation of gelatin/poly (vinyl alcohol) film modified by methyl methacrylate and gamma irradiation, *International Journal of Polymer Analysis and Characterization*, 21:6, 513–523.

15. 2016 M. Y. Ali, **Md. Wasikur Rahman**, M. Moniruzzaman, M. J. Alam, I. Saha, et al. Nypa fruticans as a potential low-cost adsorbent to uptake heavy metals from industrial wastewater, *International Journal of Applied Business and Economic Research*, 14:2, 1359–1371.
14. 2016 Md Maksudur Rahman Khan, **Md. Wasikur Rahman**, Md Salatul Islam Mozumder, Kaniz Ferdous, Huei Ruey Ong, Kar Min Chan, DM Reddy Prasad, Performance of a submerged adsorption column compared with conventional fixed-bed adsorption, *Desalination and Water Treatment*, 57:21, 9705–9717.
13. 2015 H. R. Ong, M. M. R. Khan, R. Ramli, **Md. Wasikur Rahman**, R. M. Yunus, Tailoring base catalyzed synthesis of palm oil-based alkyd resin through CuO nanoparticles, *RSC Advances*, 5:116, 95894–95902, DOI <https://doi.org/10.1039/C5RA19575F>.
12. 2015 M. R. Uddin, M. R. Khan, **Md. Wasikur Rahman**, A. Yousuf, C. K. Cheng, Photocatalytic reduction of CO₂ into methanol over CuFe₂O₄/TiO₂ under visible light irradiation, *Reaction Kinetics, Mechanisms and Catalysis*, 116:2, 589–604, <https://doi.org/10.1007/s11144-015-0911-7>.
11. 2015 **Md. Wasikur Rahman**, A proposed kinetic model for hydrogen sorption in MgH₂, *Progress in Reaction Kinetics and Mechanism*, 40:4, 402–408.
10. 2015 M. J. Alam, B. C. Das, **Md. Wasikur Rahman**, B. K. Biswas, M. M. R. Khan, Removal of dark blue–GL from wastewater using water hyacinth: a study of equilibrium adsorption isotherm, *Desalination and Water Treatment*, 56:6, 1520–1525.
09. 2015 M. M. R. Khan, K. M. Chan, H. R. Ong, C. K. Cheng, **Md. Wasikur Rahman**, Nanostructured Pt/MnO₂ Catalysts and Their Performance for Oxygen Reduction Reaction in Air Cathode Microbial Fuel Cell, *International Journal of Electrical, Computer, Electronics and Communication Engineering*, 9:3, 247–253.
08. 2015 **Md. Wasikur Rahman**, M. J. Alam, M. M. R. Khan, Effect of Manganese on Radiation Vulcanization of Natural Rubber, *International Journal of Polymer Analysis and Characterization*, 20:5, 406–413.
07. 2015 M. M. R. Khan, **Md. Wasikur Rahman**, S. I. Mozumdar, O. H. Ruey, K. M. Chan, D. M. R. Prasad, Performance of a Submerged Adsorption Column Compared with Conventional Fixed Bed Adsorption, *Desalination and Water Treatment*, 57:21, 9705–9717.
06. 2014 **Md. Wasikur Rahman**, M. J. Alam, M. M. Hossain, N. C. Dafader, M. E. Haque, Role of Divalent Metals on Polymer Degradation, *International Journal of Polymer Analysis and Characterization*, 19:1, 39–47, <https://doi.org/10.1080/1023666X.2014.850908>.
05. 2013 **Md. Wasikur Rahman**, M. M. Hossain, M. J. Alam, N. C. Dafader, M. E. Haque, Addition of Transition Metals to Improve Physico–Mechanical Properties of Radiation Vulcanised Natural Rubber Latex Films, *International Journal of Polymer Analysis and Characterization*, 18, 479–487.
04. 2012 M. Baricco, **Md. Wasikur Rahman**, S. Livraghi, S. Enzo, E. Giamello, Effects of BaRuO₃ addition on Hydrogen Desorption in MgH₂, *Journal of Alloys and Compounds*, 536, S216–S221, <https://doi.org/10.1016/j.jallcom.2011.12.008>.
03. 2011 **Md. Wasikur Rahman**, S. Livraghi, F. Dolci, M. Baricco, E. Giamello, Hydrogen Sorption Properties of Ternary Mg–Nb–O Phases Synthesized by Solid–State Reaction, *International Journal of Hydrogen Energy*, 36, 7932–7936, <https://doi.org/10.1016/j.ijhydene.2011.01.053>.
02. 2011 **Md. Wasikur Rahman**, S. Livraghi, A. Castellero, S. Enzo, E. Giamello, M. Baricco, Effect of Mg–Nb Oxides Addition on Hydrogen Sorption in MgH₂, *Journal of Alloys and Compounds*, 509, S438–S443, <https://doi.org/10.1016/j.jallcom.2011.02.064>.
01. 2009 **Md. Wasikur Rahman**, M. E. Haque, M. M. Rahman, M. Z. Abedin, Improvement of Physico–Mechanical Properties of Radiation Vulcanised Natural Rubber Latex Films by Adding Urea, *Polymer–Plastics Technology and Engineering*, 48, 696–700, <https://doi.org/10.1080/03602550902824564>.

PUBLICATIONS (Book Chapter)

05. 2025 Md. Sohel Rana, M. M. Maruf Hasan, K. M. Anis-UI-Haque, **Md. Wasikur Rahman**, Innovations in 3D-Printing-Assisted Biopolymers for Electronic Applications, In Sustainable 3D Printing for Innovative Biopolymer Production and Applications (Editors: B. Sharma, B. Pani, S. Shekhar and J. A. Okolie). <https://doi.org/10.1002/9781119792314.ch7>.
 04. 2025 Md. Sohel Rana, M. M. Maruf Hasan, K. M. Anis-UI-Haque, **Md. Wasikur Rahman**, 13 - Nanopaints in food packaging applications, In Micro and Nano Technologies, Nanopaints (Editors: Bhasha Sharma, Vijay Chaudhary, Prakash Chander Thapliyal, Vijay Mannari). <https://doi.org/10.1016/B978-0-443-26512-9.00014-8>.
 03. 2024 Nawrin Rahman Shefa, Most. Afroza Khatun, M. Azizur R. Khan, K. M. Anis-UI-Haque, Sk Md Ali Zaker Shawon, **Md. Wasikur Rahman**, Removal of Methylene Blue from Aqueous Solutions by Acid-Activated Neem Leaf, In Advances in Water and Wastewater Treatment: Theoretical and Experimental Approaches (1st ed.). (Editors: Pathak, P.D., Patel, H.J., & Jadhav, A.R.). <https://doi.org/10.1201/9781003515029>.
 02. 2023 Md. Sohel Rana, Most. Afroza Khatun, M. Azizur R. Khan, Biplob Kumar Biswas, Shahanaz Parvin, Sk Md Ali Zaker Shawon, **Md. Wasikur Rahman**, Alginate based nanocomposites for smart technology of food packaging, In Polysaccharides: Advanced Polymeric Materials (1st ed.). (Editors: Sharma, B., & Hoque, M.E.). <https://doi.org/10.1201/9781003265054>.
 01. 2022 **Md. Wasikur Rahman**, Md. Sohel Rana, Md. Jahangir Alam, Chapter Three - Biodegradable and active polymeric matrices reinforced with silver-titania nanoparticles for state-of-the-art technology of food packaging, In Radiation-Processed Polysaccharides, (Editors: M. Naeem, Tariq Aftab, M. Masroor A. Khan). <https://doi.org/10.1016/B978-0-323-85672-0.00011-8>.
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PUBLICATIONS (Proceeding)

08. 2018 Huei Ruey Ong, Md. Maksudur Rahman Khan, Ridzuan Ramli, Rosli Mohd Yunus, **Md. Wasikur Rahman**, Chi Shein Hong, Muhammad Sheraz Ahmad, *Formation of CuO Nanoparticle in Glycerol and Its Catalytic Activity for Alkyd Resin Synthesis*, Materials Today: Proceedings, 5:1, 3165–3175.
 07. 2018 M. S. Aktar Sumi, M. A. Raihan, **Md. Wasikur Rahman**, S. Aminul Islam, D. Dutta, F. Elahi, A Battue on Anionic Dye (congo red) Removal from Aqueous Solution of Dye by Acryl amide Grafted Polyethylene, *2018 International Conference on Innovations in Science, Engineering and Technology (ICISSET)*, Chittagong, Bangladesh, pp. 69-73, doi: 10.1109/ICISSET.2018.8745623.
 06. 2017 **Md. Wasikur Rahman**, A review on on-board challenges of magnesium-based hydrogen storage materials for automobile applications, *7th BSME International Conference on Thermal Engineering*, 22-24 December 2016, AIP Conference Proceedings 1851, 020093, <https://doi.org/10.1063/1.4984722>.
 05. 2017 M. S. Hossain, U. Som, J. Hossain, **Md. Wasikur Rahman**, S. A. Iqbal, Recovery of Alternative Fuel from Thermal Pyrolysis of Medical Wastes, *International Conference on Engineering Research, Innovation and Education (ICERIE 2017)*, 13-15 January, 2017, SUST, Sylhet, Bangladesh.
 04. 2016 M. Y. Ali, **Md. Wasikur Rahman**, M. Moniruzzaman, M. J. Alam, I. Saha, et al., *Nypa fruticans as a potential low cost adsorbent to uptake heavy metals from industrial wastewater*, *5th International Conference on Engineering & Technology, Computer, Basic & Applied Sciences (ECBA-2016)*, January 25–26, 2016, Singapore.
 03. 2014 Md. Jahangir Alam, Sk. Md. Ali Zaker Shawon, Marzia Sultana, **Md. Wasikur**
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Rahman, Md. Maksudur Rahman Khan, Kinetic Study of Biodiesel Production from Soybean Oil, *2014 Power and Energy Systems: Towards Sustainable Energy (PESTSE 2014)*, IEEE, India.

02. 2014 M. Rahim Uddin, Maksudur R. Khan, **Md. Wasikur Rahman**, Abu Yousuf, Chin Kui Cheng, Synthesis, characterization and activity evaluation of visible light responsive CuFe_2O_4 catalyst, *8th MUCET 2014*, November 10–11, 2014, Melaka, Malaysia.
01. 2010 Marcello Baricco, **Md. Wasikur Rahman**, Alberto Castellero, Stefano Livraghi, Elio Giamello, S Enzo, Effetto di ossidi misti Mg-Nb sulle cinetiche di assorbimento di idrogeno in MgH_2 , *33° Convegno Nazionale AIM (Associazione Italiana di Metallurgia)*, 10-12 novembre 2010, Brescia, Italy.

THESIS SUPERVISION

Postgraduate (03), graduate (06) and undergraduate (40) students are as follows:

- **PhD: 3**

Academic Session 2023-2024

1. Md Arafat Hossain

Title: Energy Harvesting based on Al/ZnO-Ecoflex Triboelectric Nanogenerator.

Academic Session 2017-2018

2. Sk. Shahriar Bin Rasul: Awarded on 29 October 2022

Title: Conversion of urban waste to energy through jute waste based activated carbon supported nano-catalytic pyrolysis process.

Academic Session 2020-2021

3. Md. Sohel Rana: Thesis completed

Title: Biodegradable polymeric matrices for state-of-the-art technology of food packaging.

- **M. Sc. Engg.: 6**

Academic Session 2015-2016

1. Sumaya Tarannum Nipa

Title: Drumstick powder as a potential low-cost adsorbent to remove dye from synthetic wastewater.

2. Rumana Aktar

Title: Adsorption of methylene blue dye from synthetic wastewater by low-cost pseudo-stem banana fiber.

Academic Session 2016-2017

3. Mst. Sumaia Aktar Sumi

Title: State of the art biosorption of methylene blue from wastewater by a composite of coconut coir and sodium alginate.

4. Hasnat Zahan Sonia

Title: Biosynthesis of tin oxide nanoparticles by chemical precipitation method towards photocatalytic application.

5. Tania Afrose

Title: Green synthesis of tin oxide nanoparticles for photocatalytic degradation of congo red.

Academic Session 2019-2020

6. Nawrin Rahman Shefa

Title: Synthesis and characterization of silver titanate nanoparticles towards photocatalytic application.

B. Sc. Engg.: 40 (List of undergraduate students and Thesis titles will be provided in detail upon request).

PRESENTATIONS

Oral Presentation (*Selectively*)

- International Conclave on Materials, Energy & Climate, ICMEC 2022 in University of Dhaka, Bangladesh from 19-20 Dec 2022.
- 5th International Conference of Chemical Engineering & Industrial Biotechnology, ICCEIB 2020 (Online) in Universiti Malaysia Pahang, Malaysia from 9 -11 Aug 2020.
- International Conference on Engineering Research and Education, ICERIE 2019 in Shahjalal University of Science and Technology, Bangladesh from 25-27 Jan 2019.
- Fifth International Conference on Chemical Engineering (ICChE 2017) in Bangladesh University of Engineering and Technology, Bangladesh, 20–22 Dec 2017.
- 7th BSME International Conference on Thermal Engineering in Bangladesh University of Engineering and Technology, Bangladesh, 22–24 Dec 2016.
- 5th International Conference on Engineering & Technology, Computer, Basic & Applied Sciences (ECBA–2016), Singapore, Jan 25–26, 2016.
- International conference on Green Chemistry for Sustainable Development (GCSD), Jul 15, 2012, Jashore University of Science and Technology, Bangladesh.
- Conference on Engineering Research, Innovation and Education (CERIE–2011), Jan 11–13, 2011, Shahjalal University of Science and Technology, Sylhet, Bangladesh.
- 3rd World Congress of Young Scientists on Hydrogen Energy Systems (HYSYDAYS–2009), Oct 7–9, 2009, Turin, Italy.

Congress Contributions (*Selectively*)

- Green Chemistry Postgraduate Summer School, University of Venice, Italy, 6-10 July, 2020 Online.
- Material Inventory Control, Accountability and CMS Software Management Workshop in Manila, Philippines, 08-12 April 2019.
- KAUST Research Conference: Synergistic Approaches in Solar Energy Conversion, King Abdullah University of Science and Technology, Saudi Arabia, February 25-28, 2018.
- 1st SAT Residential School, Pracatinat, Università di Torino, Italy, May 2010
- 3rd INGAP NANOCAT Summer School, Trondheim, Norway, June 2009
- 5th Cosy Meeting of Marie Curie Network, Barcelona, Spain, December 2008
- 3rd Euro School, Ljubljana, Slovenia, May 2008

TRAINING COURSES

- Material Control & Accountability and CMS Software Workshop, Sponsored by United States Department of States, Philippines, Apr 8-12, 2019
- Teaching methods, Learning assessment and Curriculum development, Jashore University of Science and Technology, Sep 02–08, 2013.
- Crystallographic analysis of solid–state materials by Rietveld method, Università di Sassari, Italy, Jul 2009.
- Integrated Advanced Industrial Technology focusing Process Technology, Instrumentation and Control Engineering, Training Institute for Chemical Industries (TICI) of BCIC, Aug 06 – Oct 30, 2005.
- Industrial Process, Unit Operation and Process Control, TICI, Dec 14, 2002–Jan 13, 2003.

RESEARCH GRANTS *(support from funds in the USA)*

- National Science Foundation (NSF)
- Partnership for Research and Education in Materials Science (PREM)
- Welch Foundation

HONOURS and AWARDS

- **Exceptional Merit Award** for 2024-2025, University of Texas Rio Grande Valley, USA.
- **Referee**, Permanent Committee for Academic Promotion, University of Jeddah, Saudi Arabia (2021-Present)
- **Best poster award**: College of Sciences (COS) Annual Research Conference (ARC), University of Texas Rio Grande Valley, USA on April 26, 2024.
- **Best poster award**: 1st International Conference on Nano-bio and Advanced Materials Engineering (NAME-2023), Bangladesh, 2023
- **Silver Award**: CITREX- 2015 (Creation, Innovation, Technology & Research Exposition) competition at UMP, Malaysia
- **Expert Member** of Teacher Recruitment Committee, Z. H. Sikder University of Science and Technology, Bangladesh (2023-Present)
- **Member of Doctoral Committee**, Jashore University of Science and Technology, Bangladesh (2022-2023)
- **Chair of Master of Philosophy** and Master of Engineering Committee, Jashore University of Science and Technology, Bangladesh (2020-2023)
- **Doctoral Supervisor Award**, Jashore University of Science and Technology, Bangladesh, 2022
- **Convener of OBE** Curriculum Development, Jashore University of Science and Technology & Z. H. Sikder University of Science and Technology, Bangladesh (2019-2023)
- **Doctoral Fellowship**, Ministry of Education, University and Research (MIUR), Italy, (2008–2010)
- **Post Graduate Diploma**, inGAP-Nanocat Catalysis Summer School, Norway, 2009

VOLUNTEERING/ COMMUNITY INVOLVEMENT

- Judge in Poster Competition at Rio Grande Valley Regional Science and Engineering Fair, Feb 2024, USA
- Chairman, Department of Chemical Engineering, Jashore University of Science and Technology, Bangladesh (06/08/2017-05/08/2020)
- Guest Editor of Processes (ISSN 2227-9717) (MDPI, 2023-2024)
- Guest Editor of Advances in Polymer Technology (Wiley, 2021-2022)
- Conference Secretary of ICMEEE 2020, Jashore University of Science and Technology, Bangladesh, Nov 2020
- Editorial Member of Journal of Jashore University of Science and Technology, Bangladesh
- Technical Session Chair in International Conference on Advanced Material Technologies (ICAMT)- 2016, India
- Judge in Poster Competition at Fifth International Conference on Chemical Engineering (ICChE)- 2017 at BUET, Bangladesh
- Member of Institution of Engineers, Bangladesh (IEB)
- Director of Laboratory of Materials, Energy and Nanotechnology (MENTECH Labs), Jashore University of Science and Technology, Bangladesh