

Md. Abu Bakar Siddique

Official Address

Senior Scientific Officer
Institute of National Analytical Research and Services (INARS)
Bangladesh Council of Scientific and Industrial Research (BCSIR)
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Education	Bangladesh University of Engineering and Technology (BUET) <ul style="list-style-type: none">• M.Phil. in Physical and Inorganic Chemistry. CGPA 3.67/4.00.• Thesis Title: Electrochemical capacitive properties of synthesized nanostructured manganese oxides-graphene composites.• Supervisor: Dr. Md. Shakhawat H. Firoz, Professor and Ex-Head, Department of Chemistry, BUET, Dhaka, Bangladesh.	Bangladesh March 2018
	University of Chittagong <ul style="list-style-type: none">• M.S. in Inorganic Chemistry, GPA 3.71/4.00.• Thesis Title: Studies of some Schiff base complexes of magnesium (II) and oxovanadium (V).• Supervisor: Dr. Md. Abdus Salam, Professor and Ex-Chairman (Retired), Department of Chemistry, University of Chittagong, Chittagong, Bangladesh.	Bangladesh February 2011 (Academic year 2008)
	University of Chittagong <ul style="list-style-type: none">• B.Sc. (Honors) in Chemistry. CGPA 3.66/4.00.	Bangladesh July 2009 (Academic year 2007)
Scholarship	Dean's Scholarship based on B.Sc. (Honors) result.	2009
Teaching Experience	Teaching of Chemistry at private organizations and homes. <ul style="list-style-type: none">• Worked as a tutor of general Chemistry for many undergraduate students.• Teaching of general Chemistry to undergraduate students at a private institute as an employee.	January 2006- December 2015 January 2011- March 2013
Research Experience	More than 9 years of research experience in the top-most Government research organization in Bangladesh. <ul style="list-style-type: none">• Worked as Scientific Officer at BCSIR from 01 April 2013 – 31 December 2019.• Working as Senior Scientific Officer at BCSIR from 01 January 2020 – Present.	April 2013 - Present
Research Interest	<ul style="list-style-type: none">• Inorganic Chemistry, Analytical Chemistry, Environmental Chemistry, Nanochemistry, Water Treatment, Water Quality, Soil Science, Risk Assessment, Phytochemistry, Phytoremediation, Microplastics, Food Chemistry, Chromatography, and Spectroscopy.	
Award	Elected and awarded as the best officer for practicing Integrity in the official service.	2020

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Job Responsibilities	<ul style="list-style-type: none">• Research and Development (R&D) in the relevant fields.• To publish scientific articles in peer-reviewed journals.• To supervise students from reputed universities to conduct their research work.• Maintaining ISO/IEC 17025:2017 accreditation on water quality testing parameters.• To ensure chemical safety and security in the laboratory.• Continual improvement of the laboratory to obtain accreditation for more testing parameters.• Analysis of samples of research and services by Atomic absorption spectrometer (AAS) for metal content.• To supervise laboratory technical staff to conduct commercial sample analysis.• In-house Calibration of Atomic absorption spectrometer (AAS) and glassware.• Purchasing traceable standards, chemicals, reagents, and consumables.
Volunteer Activity	<ul style="list-style-type: none">• I do provide analytical services to different clients for their research and commercial samples using AAS, UV-Vis. Spectrophotometer, and FTIR.
Research Projects	<p>Two Projects (as Project Leader) approved by BCSIR with research grants of about 4000 USD</p> <ol style="list-style-type: none">1. "Evaluation of the level of toxic elements in water, soil and plants in the vicinity of Sava and Gazipur industrial regions of Dhaka, Bangladesh and their impacts on human health and environment" (Financial year-2020-21, ongoing).2. "Removal of heavy metals from polluted water using low-cost adsorbent materials" (Financial year-2015-16, Completed).
Research Mentoring	<p>Undergraduate and Graduate Research Mentoring/Assisting</p> <ul style="list-style-type: none">• Supervise and assist more than 25 students for their research work through conceptualization, methodology, analytical services, manuscript writing and reviewing.
Publications (Published)	<p>Selected Peer-Reviewed Publications till 15 November 2022 (*Corresponding Author)</p> <p>Year 2022: 21</p> <ol style="list-style-type: none">1. Rahman, M. A., *Siddique, M. A. B., Khan, R., Reza, A. H. M. S., Khan, A. H. A. N., Akbor, M. A., Islam, M. S., Hasan, A. B., Hasan, M. I., & Elius, I.B. (2022). Mechanism of arsenic enrichment and mobilization in groundwater from southeastern Bangladesh: Water quality and preliminary health risks assessment. <i>Chemosphere</i>, 294, 133556 https://doi.org/10.1016/j.chemosphere.2022.1335562. Hossain, S., Anik, A. H., Khan, R., Ahmed, F. T., Siddique, M. A. B., Khan, A. H. A. N., Saha, N., Idris, A. M., & Alam, M. (2022). Public Health Vulnerability Due to the Exposure of Dissolved Metal(oid)s in Tap Water from a Mega City (Dhaka, Bangladesh): Source and Quality Appraisals. <i>Exposure and Health</i>, 1-20, https://doi.org/10.1007/s12403-021-00446-03. Khan, M. R., Hoque, S. M., Hossain, K. F. B., Siddique, M. A. B., Uddin, M. K., & Rahman, M. M. (2022). Green synthesis of silver nanoparticles using <i>Hibiscus sabdariffa</i> leaf extract and its cytotoxicity assay. <i>Inorganic and Nano-Metal Chemistry</i>, 1-11, https://www.tandfonline.com/doi/abs/10.1080/24701556.2021.20250914. Ferdousi, L., Sultana, N., Bithi, U. H., Lisa, S. A., Hasan, M. R., *Siddique, M. A. B. (2022). Nutrient Profile of Wild Black Soldier Fly (<i>Hermetia illucens</i>) Prepupae Reared on Municipal Dustbin's Organic Waste Substrate. <i>Proceedings of the National</i>

Academy of Sciences, India Section B: Biological Sciences, 1-7, <https://doi.org/10.1007/s40011-021-01340-0>

5. Kibria, K. Q., Islam, M. A., Hoque, S., **Siddique, M. A. B.**, Hossain, M. Z., & Islam, M. A. (2022). Variations in cadmium accumulation among amon rice cultivars in Bangladesh and associated human health risks. *Environmental Science and Pollution Research*, 1-15, <https://doi.org/10.1007/s11356-022-18762-6>
6. Islam, M. S., Nakagawa, K., Abdullah-Al-Mamun, M., **Siddique, M. A. B.**, & Berndtsson, R. (2022). Is road-side fishpond water in Bangladesh safe for human use? An assessment using water quality indices. *Environmental Challenges*, 6, 100434, <https://doi.org/10.1016/j.envc.2021.100434>
7. Himu, M. M., Afrin, S., Akbor, M. A., **Siddique, M. A. B.**, Uddin, M. K., & Rahman, M. M. (2022). Assessment of microplastics contamination on agricultural farmlands in central Bangladesh. *Case Studies in Chemical and Environmental Engineering*, 100195, <https://doi.org/10.1016/j.cscee.2022.100195>
8. Nasrin, S., Islam, M. N., Tayab, M. A., Nasrin, M. S., **Siddique, M. A. B.**, Emran, T. B., & Reza, A. S. M. A. (2022). Chemical profiles and pharmacological insights of *Anisomeles indica* Kuntze: An experimental chemico-biological interaction. *Biomedicine & Pharmacotherapy*, 149, 112842, <https://doi.org/10.1016/j.biopha.2022.112842>
9. Afrin, S., Rahman, M. M., Akbor, M. A., **Siddique, M. A. B.**, Uddin, M. K., & Malafaia, G. (2022). Is there tea complemented with the appealing flavor of microplastics? A pioneering study on plastic pollution in commercially available tea bags in Bangladesh. *Science of the Total Environment*, 837(1), 155833, <http://dx.doi.org/10.1016/j.scitotenv.2022.155833>
10. Halder, M., Rahman, T., Mahmud, A., Jim, S. A., Akbor, M. A., ***Siddique, M. A. B.**, & Joardar, J. C. (2022). Are the vegetables grown in the soil of municipal solid waste dumping sites safe for human health? An assessment from trace elements contamination and associated health risks. *Environmental Nanotechnology, Monitoring & Management*, 18, 100731. <https://doi.org/10.1016/j.enmm.2022.100731>
11. Jannat, J. N., Khan, M. S. I., Islam, H. M. T., Islam, M. S., Khan, R., **Siddique, M. A. B.**, ... & Islam, A. R. M. T. (2022). Hydro-chemical assessment of fluoride and nitrate in groundwater from east and west coasts of Bangladesh and India. *Journal of Cleaner Production*, 372, 133675. <https://doi.org/10.1016/j.jclepro.2022.133675>
12. Anik, A. H., Khan, R., Hossain, S., **Siddique, M. A. B.**, Tamim, U., Islam, A. R. M. T., Idris, A. M., & Tareq, S. M. (2022). Reconciling the geogenic and non-crustal origins of elements in an Indo-Bangla transboundary river, Atrai: Pollution status, sediment quality, and preliminary risk assessment. *Environmental Research*, 214, 114134. <https://doi.org/10.1016/j.envres.2022.114134>
13. Hossain, S., Khan, R., Anik, A. H., **Siddique, M. A. B.**, Tamim, U., Islam, A. R. M. T., Idris, A. M., & Khaleque, M. A. (2022). Natural and anthropogenic contribution to the elemental composition and subsequent ecological consequences of a transboundary river's sediments (Punarbhaba, Bangladesh). *Environmental Research*, 114444. <https://doi.org/10.1016/j.envres.2022.114444>

14. Hasan, A. B., Reza, A. H. M. S., **Siddique, M. A. B.**, Akbor, M. A., Nahar, A., Hasan, M., Zaman M. N., Hasan, M. I., & Moniruzzaman, M. (2022). Spatial distribution, water quality, human health risk assessment, and origin of heavy metals in groundwater and seawater around the ship-breaking area of Bangladesh. *Environmental Science and Pollution Research*, 1-26. <https://doi.org/10.1007/s11356-022-23282-4>
15. Haque, M. R., Ali, M. M., Ahmed, W., **Siddique, M. A. B.**, Akbor, M. A., Islam, M. S., & Rahman, M. M. (2022). Assessment of microplastics pollution in aquatic species (fish, crab, and snail), water, and sediment from the Buriganga River, Bangladesh: An ecological risk appraisals. *Science of The Total Environment*, 159344. <https://doi.org/10.1016/j.scitotenv.2022.159344>
16. Ul-Haque, J., **Siddique, M. A. B.**, Islam, M. S., Ali, M. M., Tokatli, C., Islam, A., ... & Islam, A. R. M. T. (2022). Effects of COVID-19 era on a subtropical river basin in Bangladesh: Heavy metal (loid) s distribution, sources and probable human health risks. *Science of The Total Environment*, 159383. <https://doi.org/10.1016/j.scitotenv.2022.159383>
17. Nasiruddin, M., Islam, A. R. M. T., **Siddique, M. A. B.**, Hasanuzaman, M., Hassan, M. M., Akbor, M. A., ... & Kumar, S. (2022). Distribution, sources, and pollution levels of toxic metal (loid) s in an urban river (Ichamati), Bangladesh using SOM and PMF modeling with GIS tool. *Environmental Science and Pollution Research*, 1-25. <https://doi.org/10.1007/s11356-022-23617-1>
18. Islam, M. N., Ganguli, S., Saha, N., Khatun, F., Karim, R., Tanvir, E. M., Howlader, S., **Siddique, M. A. B.**, Peng, C., & Ng, J. C. (2022). Effects of shipwrecks on spatiotemporal dynamics of metal/loids in sediments and seafood safety in the Bay of Bengal. *Environmental Pollution*, 120452. <https://doi.org/10.1016/j.envpol.2022.120452>
19. Kormoker, T., Karmoker, R., Uddin, M., Kabir, M. H., **Siddique, M. A. B.**, Khan, R., Islam, M. S., Al, M. A., Alam, M., Ustaoğlu, F., Islam, M., & Idris, A. M. (2022). Toxic elemental abundances in the sediment of the Jamuna River, Bangladesh: pollution status, sources, toxicity, and ecological risks assessment. *International Journal of Environmental Analytical Chemistry*. <https://doi.org/10.1080/03067319.2022.2134781>
20. Sultan, M. B., Rahman, M. M., Khatun, M. A., Shahjalal, M., Akbor, M. A., **Siddique, M. A. B.**, Huque, R., & Malafaia, G. (2022). Microplastics in different fish and shellfish species in the mangrove estuary of Bangladesh and evaluation of human exposure. *Science of The Total Environment*, 858 (1), 159754. <https://doi.org/10.1016/j.scitotenv.2022.159754>
21. Hossain, M. N., Rahman, M. M., Afrin, S., Akbor, M. A., **Siddique, M. A. B.**, & Malafaia, G. (2022). Identification and quantification of microplastics in agricultural farmland soil and textile sludge in Bangladesh. *Science of The Total Environment*, 160118. <https://doi.org/10.1016/j.scitotenv.2022.160118>

Year 2021: 07

22. Sarker, S., **Siddique, M. A. B.**, Bithi, U. H., Rahman, M. M., Rahman, M. S., & Akter, M. (2021). Diseases, metals and bioactive compounds in seaweeds of Bangladesh. *Regional Studies in Marine Science*, 48, 102021. <https://doi.org/10.1016/j.rsma.2021.102021>

23. ***Siddique, M. A. B.**, Islam, A. R. M. T., Hossain, M. S., Khan, R., Akbor, M. A., Hasanuzzaman, M., Sajid, M. W. M., Mia, M. Y., Mallick, J., Rahman, M., & Rahman, M.M. (2021). Multivariate Statistics and Entropy Theory for Irrigation Water Quality and Entropy-Weighted Index Development in a Subtropical Urban River, Bangladesh. *Environmental Science and Pollution Research*, 29, 8577-8596, <https://doi.org/10.1007/s11356-021-16343-7>.
24. ***Siddique, M. A. B.**, Khan, R., Islam, A. R. M. T., Alam, M. K., Islam, M. S., Hossain, M. S., Habib, M. A., Akbor, M. A., Bithi, U. H., Rashid, M. B., Hossain, F., Rahman, I. M. M., Elius, I. B., & Islam, M. S. (2021). Quality assessment of freshwaters from a coastal city of southern Bangladesh: irrigation feasibility and preliminary health risks appraisal. *Environmental Nanotechnology, Monitoring & Management*, 16, 100524. <https://doi.org/10.1016/j.enmm.2021.100524>
25. Hasan, M. N., ***Siddique, M. A. B.**, Reza, A. S., Khan, R., Akbor, M. A., Elius, I. B., Hasan, A. B., & Hasan, M. (2021). Vulnerability assessment of seawater intrusion in coastal aquifers of southern Bangladesh: Water quality appraisals. *Environmental Nanotechnology, Monitoring & Management*, 100498, <https://doi.org/10.1016/j.enmm.2021.100498>
26. Sarker, S., Akbor, M. A., Nahar, A., Hasan, M., Islam, A. R. M. T., & ***Siddique, M. A. B.** (2021). Level of pesticides contamination in the major river systems: a review on South Asian countries perspective. *Heliyon*, e07270. <https://doi.org/10.1016/j.heliyon.2021.e07270>
27. Hasan, S. M. M., Akber, M. A., Bahar, M. M., Islam, M. A., Akbor, M. A., **Siddique, M. A. B.**, & Islam, M.A. (2021). Chromium contamination from tanning industries and Phytoremediation potential of native plants: a study of savar tannery industrial estate in Dhaka, Bangladesh. *Bulletin of Environmental Contamination and Toxicology*, 106, 1024-1032. <https://doi.org/10.1007/s00128-021-03262-z>
28. Papri, N., Sarker, A., Hossain, M. L., Hossain, K. S., **Siddique, M. A. B.**, & Rahman, A. K. M. L. (2021). Synthesis, Characterization and Biological Applications of Mo (VI) and V (IV) Complexes of 2-[2-(2-aminoethoxy) ethoxy] ethanamine dithiocarbamate. *Chiang Mai Journal of Science*, 48(1), 196-206, <http://cmuir.cmu.ac.th/jspui/handle/6653943832/72058>

Year 2020: 11

29. Khan, M. R., Hoque, S. M., Hossain, K. F. B., **Siddique, M. A. B.**, Uddin, M. K., & Rahman, M. M. (2020). Green synthesis of silver nanoparticles using *Ipomoea aquatica* leaf extract and its cytotoxicity and antibacterial activity assay. *Green Chemistry Letters and Reviews*, 13(4), 303-315, <https://doi.org/10.1080/17518253.2020.1839573>
30. ***Siddique, M. A. B.**, Alam, M. K., Islam, S., Diganta, M. T. M., Akbor, M. A., Bithi, U. H., Chowdhury, A. I., & Ullah, A. K. M. A. (2020). Apportionment of some chemical elements in soils around the coal mining area in northern Bangladesh and associated health risk assessment. *Environmental Nanotechnology, Monitoring & Management*, 14, 100366. <https://doi.org/10.1016/j.enmm.2020.100366>

31. Akbor, M. A., Rahman, M. M., Bodrud-Doza, M., Haque, M. M., **Siddique, M. A. B.**, Ahsan M. A., Bondad, S. E. C., & Uddin, M.K. (2020). Metal pollution in water and sediment of the Buriganga River, Bangladesh: an ecological risk perspective. *Desalination and Water Treatment*, 193, 284-301, <https://doi.org/10.5004/dwt.2020.25805>
32. Islam, A. R. M. T., Hasanuzzaman, M., Islam, H. T., Mia, M. U., Khan, R., Habib, M. A., Rahman, M. M., **Siddique, M. A. B.**, Moniruzzaman, M., & Rashid, M. B. (2020). Quantifying Source Apportionment, Co-occurrence, and Ecotoxicological Risk of Metals from Upstream, Lower Midstream, and Downstream River Sediments, Bangladesh. *Environmental toxicology and chemistry*, 39(10), 2041-2054. <https://doi.org/10.1002/etc.4814>
33. Khan, R., Islam, M. S., Tareq, A. R. M., Naher, K., Islam, A. R. M. T., Habib, M. A., **Siddique, M. A. B.**, Islam, M. A., Das, S., Rashid, M. B., & Ullah, A. K. M. A., et al. (2020). Distribution, sources and ecological risk of trace elements and polycyclic aromatic hydrocarbons in sediments from a polluted urban river in central Bangladesh. *Environmental Nanotechnology, Monitoring & Management*, 14, 100318, <https://doi.org/10.1016/j.enmm.2020.100318>
34. Akbor, M. A., Rahman, M. M., Akter, R., Hossain, S., Ahmed, S., **Siddique, M. A. B.**, Nahar, A., & Uddin, M. (2020). Interfering effects of Iron (II) and Arsenic (III) in the Cerium-based adsorption technology in Bangladesh. *Pollution*, 6(3), 513-519, DOI: [10.22059/POLL.2020.290154.692](https://doi.org/10.22059/POLL.2020.290154.692)
35. Uddin, A. K. M. R., **Siddique, M. A. B.**, Rahman, F., Ullah, A. K. M. A., & Khan, R. (2020). *Cocos nucifera* Leaf Extract Mediated Green Synthesis of Silver Nanoparticles for Enhanced Antibacterial Activity. *Journal of Inorganic and Organometallic Polymers and Materials*, 1-12, <https://doi.org/10.1007/s10904-020-01506-9>
36. Biswas, P., Islam, M. S., **Siddique, M. A. B.**, & Halder, M. (2020). Organic carbon content and Fe-organo association in soils under rice dominant cropping system in Bangladesh. *Bangladesh Journal of Botany*, 49(1), 185-190, <https://doi.org/10.3329/bjb.v49i1.49129>
37. Habib, M. A., Islam, A. R. M. T., Bodrud-Doza, M., Mukta, F. A., Khan, R., **Siddique, M. A. B.**, Phoungthong, K., & Techato, K. (2020). Simultaneous appraisals of pathway and probable health risk associated with trace metals contamination in groundwater from Barapukuria coal basin, Bangladesh. *Chemosphere*, 242, 125183. <https://doi.org/10.1016/j.chemosphere.2019.125183>
38. Islam, A. R. M. T., Islam, H. T., Mia, M. U., Khan, R., Habib, M. A., Bodrud-Doza, M., **Siddique, M. A. B.**, & Chu, R. (2020). Co-distribution, possible origins, status and potential health risk of trace elements in surface water sources from six major river basins, Bangladesh. *Chemosphere*, 249, 126180. <https://doi.org/10.1016/j.chemosphere.2020.126180>
39. Hasan, A. B., Reza, A. S., Kabir, S., **Siddique, M. A. B.**, Ahsan, M. A., & Akbor, M. A. (2020). Accumulation and distribution of heavy metals in soil and food crops around the ship breaking area in southern Bangladesh and associated health risk assessment. *SN Applied Sciences*, 2(2), 155, <https://doi.org/10.1007/s42452-019-1933-y>

Year 2019: 03

40. Islam, M. E., Reza, A. S., Sattar, G. S., Ahsan, M. A., Akbor, M. A., & **Siddique, M. A. B.** (2019). Distribution of arsenic in core sediments and groundwater in the Chapai Nawabganj district, Bangladesh. *Arabian Journal of Geosciences*, 12(3), 99. <https://doi.org/10.1007/s12517-019-4272-9>
41. Ahsan, M. A., Satter, F., ***Siddique, M. A. B.**, Akbor, M. A., Ahmed, S., Shajahan, M., & Khan, R. (2019). Chemical and physicochemical characterization of effluents from the tanning and textile industries in Bangladesh with multivariate statistical approach. *Environmental monitoring and assessment*, 191(9), 575. <https://doi.org/10.1007/s10661-019-7654-2>
42. Islam, M., Halder, M., **Siddique, M. A. B.**, Razir, S. A. A., Sikder, S., & Joardar, J. C. (2019). Banana peel biochar as alternative source of potassium for plant productivity and sustainable agriculture. *International Journal of Recycling of Organic Waste in Agriculture*, 8(1), 407-413 <https://doi.org/10.1007/s40093-019-00313-8>

Year 2014 (Published articles from M.S. Thesis)

43. Uddin, M. N., Salam, M. A., Chowdhury, D. A., & Siddique, M. A. B. (2014). Binuclear Tetrahedral Dimeric Mg (II) Complexes of Dibasic Tridentate Schiff Base Ligands and Their Microbial Studies. *Chiang Mai University Journal of Natural Sciences*, 13(1), 23-35. DOI:[10.12982/cmujns.2014.0017](https://doi.org/10.12982/cmujns.2014.0017)

Publications (Accepted)

1. Farjana Rahman, Md Abdul Majed Patwary, **Md. Abu Bakar Siddique**, Muhammad Shahriar Bashar, Md. Aminul Haque, Beauty Akkter, Rimi Rashid, Md. Anamul Haque, A. K. M. Royhan Uddin. (2022). Green synthesis of ZnO nanoparticles using *Cocos nucifera* leaf extract: Characterization, antimicrobial, antioxidant, and photocatalytic activity. **Royal Society Open Science**.

Publications (Under Review)

1. Effects of straw and ash amendments on aggregate stability and soil organic carbon in fine clay soil, Bangladesh. **Geoderma Regional**.
2. Preparation of Manganese Oxide Nanoparticles with Enhanced Capacitive Properties Utilizing Gel Formation Method. **ACS Omega**. (From my M. Phil. Thesis)
3. Exposure and Potential Human Health Risk Appraisals of Toxic Metals in Imported and Local Brands Lipsticks and Eye Pencils from Retail Outlets in Central Bangladesh. **Environmental Science and Pollution Research**.
4. Human Exposures to Multiple Water Sources in the Southwestern Coastal Region of Bangladesh: Water Quality, Pollution Sources, and Preliminary health risks appraisals. **Environmental Geochemistry and Health**.
5. Accumulation of Metals in macroalgae in relation to environmental parameters and seasonality in a sub-tropical mangrove estuary. **Ecological Indicator**.
6. An overview on water quality status of urban lakes in a developing country: Pollution sources and associated ecological and human health risks appraisals. **Urban Water Journal**.

7. Accumulation of arsenic and other metals in soil and human consumable foods of Meherpur district, southwestern Bangladesh and associated health risk assessment. **Environmental Sciences Europe**.
8. Arsenic in groundwater from southwest Bangladesh: sources, water quality, and potential health concern. **HydroResearch**.
9. Investigation of the impacts of landfill leachate on the surrounding environment: A case study on Amin Bazar landfill, Dhaka. **Soil Systems**.
10. Extraction of oil from silkworm pupae (*Bombyx mori* L.) using a facile acid fermentation process and evaluation of its characteristics for utilization as edible oil. **Heliyon**.
11. Development of a fabricated first-flush rainwater harvested technology to meet up the freshwater scarcity in a South Asian megacity, Dhaka, Bangladesh. **Heliyon**.
12. Is Biofloc Fish a Safe Alternative to Conventionally Cultivated Fish in Bangladesh? **Heliyon**.
13. Bioaccumulation and sources of heavy metal(loid)s in fish species from a subtropical river in Bangladesh: A public health concern. **Environmental Science and Pollution Research**.

Book Chapter

- Chapter 8 - Metal contamination in groundwater of Bangladesh. Book Series: Current Directions in Water Scarcity Research (Elsevier, Scopus Indexed). Part of volume: Water Scarcity, Contamination and Management, 2022, 5, 109-131. <https://doi.org/10.1016/B978-0-323-85378-1.00008-8>

Conferences

Year 2022: 03

1. ***Md. Abu Bakar Siddique**. Handling and Management of Chemicals in the Laboratory and Industry: Chemical Safety, Security, and Risk Mitigation Strategies. **International Conference on Environmental Protection for Sustainable Development (ICEPSD)-2022** organized by the Forest and Environment Affairs sub-committee of Bangladesh Awami League on 02-04 September 2022. Serial number: PP-39, Technical Session: TS-F (Innovations in Environmental Science and Engineering). Day 2: 03 September 2021 (Saturday).
2. **Md. Abu Bakar Siddique***, Ummey Hafsa Bithi, Aninda Nafis Ahmed, M. A. Gafur, Akter Hossain Reaz, Chanchal Kumar Roy, Md. Mominul Islam, Shakhawat H. Firoz. Preparation of Manganese Oxide Nanoparticles with Enhanced Capacitive Properties Utilizing Gel Formation Method. **International Conference on Environmental Protection for Sustainable Development (ICEPSD)-2022** organized by the Forest and Environment Affairs sub-committee of Bangladesh Awami League on 02-04 September 2022. Serial number: OP-F4, Technical Session: TS-F (Innovations in Environmental Science and Engineering). Day 1: 02 September 2022 (Friday).
3. Mehedi Hasan, **Md. Abu Bakar Siddique**, Md. Moazzem Hossain, Md. Ahedul Akbor, Rahat Khan, Sayed M. A. Salam. Toxic elements in the commercially available branded cigarettes in Bangladesh and evaluation of human health risks associated with inhalation exposure. **International Conference on Environmental Protection for Sustainable Development (ICEPSD)-2022** organized by the Forest and Environment Affairs sub-committee of Bangladesh Awami League on 02-04

September 2022. Serial number: OP-J2, Technical Session: TS-J (Toxicology). Day 1: 02 September 2022 (Friday).

Year 2021: 07

1. **Md. Abu Bakar Siddique***. Chemical safety, security, management and their handling in the laboratory and industry with some chemical risk mitigation strategies. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-E27, Page-325, Technical Session: TS-E05 (Analytical-2), Day 3, 13 March 2021 (Saturday).
2. Tajmin Khanam, Mohammad Helal Uddin, **Md. Abu Bakar Siddique***, Aynun Nahar, Mehedi Hasan, Md. Ahedul Akbor, and Md. Anowar Hosen. Graphene oxide, cellulose and chitosan based adsorbents for the removal of Cd and Pb from contaminated water. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-E04, Page-118. Technical Session: TS-E01 (Environment_Water-1). Day 1, 11 March 2021 (Thursday).
3. Mehedi Hasan, **Md. Abu Bakar Siddique***, Md. Ahedul Akbor, Aynun Nahar, Md. Moazzem Hossain, Sayed M. A. Salam. Level of some toxic elements in the commonly available branded cigarettes in Bangladesh and associated human health risks. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-E24, Page-280, Technical Session: TS-E04 (Environment_Water-3), Day 2, 12 March 2021 (Friday).
4. Lailatul Ferdousi, Nahid Sultana, Ummey Hafsa Bithi, Sharmin Akter Lisa, Md. Rakibul Hasan, **Md. Abu Bakar Siddique**. Wild black soldier fly (*Hermetia illucens* L.) prepupae as an alternative nutritional feed source for fish and animals. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-G21, Page-287. Technical Session: TS-G04 (Food Science and Food Safety-4). Day 2, 12 March 2021 (Friday).
5. Md. Ahedul Akbor, Aynun Nahar, **Md. Abu Bakar Siddique**, Mehedi Hasan, Shudeepta Sarker. Organochlorine pesticides in water and sediment of Buriganga river, Bangladesh and their imposed ecological and human carcinogenic risks. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-E23, Page-280, Technical Session: TS-E04 (Environment_Water-3), Day 2, 12 March 2021 (Friday).
6. Shudeepta Sarker, **Md. Abu Bakar Siddique**, Md. Ahedul Akbor, Aynun Nahar, Mehedi Hasan. Concentration, human health and environmental risk assessment of poly chlorinated biphenyls (PCBs) in water and sediment samples of river Buriganga, Bangladesh. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-E18, Page-226, Technical Session: TS-E03 (Environment_Water-2), Day 2, 12 March 2021 (Friday).

7. Asma Binta Hasan, A. H. M. Selim Reza, **Md. Abu Bakar Siddique**, Md. Ahedul Akbor, Aynun Nahar, Mehedi Hasan, Mohammad Nazim Zaman, Pradip Kumar Biswas, and Md. Alamin. Assessment of metals contamination levels in the soil and water of the ship breaking area of Chattogram, Bangladesh by several pollution evaluation indices. **International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021)**, organized by BCSIR on 11-13 March 2021. Serial number: OP-D04, Page-114. Technical Session: TS-D01 (Soil, Environment). Day 1, 11 March 2021 (Thursday).

Year 2020: 02

1. K. Q. Kibria, **M. A. B. Siddique**, S. Aktar, U. Sumaiya, M. M. Bahar, M. A. Islam, M. A. Akber, M. A. Islam. Reducing phytoavailability of hexavalent chromium in soils by using hydrochars. Papers of the technical session-7, **International conference on sustainable agriculture and rural developments: Road to SDGs**, Jointly organized by Bangladesh Agricultural Extension Society and Sylhet Agricultural University at Sylhet Agricultural University, Sylhet, Bangladesh during 23-24 January 2020.
2. **Md. Abu Bakar Siddique***, Ummey Hafsa Bithi, Aninda Nafis Ahmed, M. A. Gafur, Md. Mominul Islam and Shakhawat H. Firoz. Study of capacitive properties of nanostructured MnO₂ heat treated at two different temperatures. **International Conference on Recent Advances in Chemistry (ICRAC)-2020**, organized by the Department of Chemistry, Jagannath University, Dhaka, Bangladesh on 07-08 February 2020. Session-D: Analytical, Environmental, and Nanoscience and Nanotechnology, Abstract ID: OP-D-03.

Year 2019: 06

1. Tanjina Ferdushy, **Md. Abu Bakar Siddique***, Md. Younus Mia, Shahriar Bashar, Md. Abdul Gafur, Md. Ahedul Akbor and Md. Aminul Ahsan. Synthesis, Characterization and Application of EDTA-functionalized Graphene Oxide-Chitosan Based Nanocomposite for Chromium Removal from Contaminated Water. **International Conference on Advancement of Life Sciences 2019**, organized by Faculty of Science, Mawlana Bhashani. Science and Technology University (MBSTU), Tangail, Bangladesh on 05-06 April 2019.
2. Md. Saddam Hossain, **Md. Abu Bakar Siddique***, Md. Ahedul Akbor, Md. Aminul Ahsan, Md. Younus Mia. Quality Assessment in terms of Heavy Metals, Anions and Physicochemical Parameters of *Dhaleshwari* River Water in Bangladesh with Water Quality Indices. **International Conference on Advancement of Life Sciences 2019**, organized by Faculty of Science, Mawlana Bhashani. Science and Technology University (MBSTU), Tangail, Bangladesh on 05-06 April 2019.
3. Mir Talas Mahammad Diganta, A.S.M Saifullah, **Md. Abu Bakar Siddique**, Mohammad Mostafa, Md. Shemul Sheikh and Muhammad Jasim Uddin. Mangrove macroalgae as bio-indicators for biomonitoring of metal contamination in the estuarine ecosystem of Bangladesh. **International Conference on Advancement of Life Sciences 2019**, organized by Faculty of Science, Mawlana Bhashani. Science and Technology University (MBSTU), Tangail, Bangladesh on 05-06 April 2019.
4. A. K. M. Royhan Uddin, **Md. Abu Bakar Siddique***, Farjana Rahman, A. K. M. Atique Ullah, Rahat Khan. *Cocos nucifera* leaf extract mediated green synthesis of silver nanoparticles for enhanced antibacterial activity. Bangladesh. **Bangladesh Chemical**

Society Conference-2019, organized by the Department of Chemistry, University of Rajshahi, Rajshahi, Bangladesh on 09-10 November 2019, Day-II, Technical Session-III, Session D: Natural Products, Abstract Code no. NP-OP-12.

5. M. A. Akbor, M. Khabir Uddin, Md. Mostafizur Rahman, **M. A. B. Siddique**, M. A. Ahsan, M. Hasan, A. Nahar, S. Ahmed, M. A. Al-Mansur. Spectroscopic determination of priority pollutants and synthesized nano-adsorbent for the removal of pollutants. Bangladesh. **Bangladesh Chemical Society Conference-2019**, organized by the Department of Chemistry, University of Rajshahi, Rajshahi, Bangladesh on 09-10 November 2019, Day-II, Technical Session-III, Session A: Analytical Chemistry, Abstract Code no. AC-OP-16.
6. M. A. Akbor, **M. A. B. Siddique**, M. A. Ahsan, S. Ahmed, A. Nahar, M. Hasan, M. M. Rahman, M.K. Uddin. Method validation and identification of priority pollutants in water and sediments of the Buriganga River, Bangladesh: An ecological risk perspective. **BCSIR Congress -2019**, organized by BCSIR, Dhaka, Bangladesh on 12-14 December 2019, Day-II, Technical Session-3B: Water and Environment, Abstract Code no. 02.

Year 2018: 02

1. **Md. Abu Bakar Siddique***, Aninda Nafis Ahmed, M. A. Gafur, Md. Mominul Islam and Shakhawat H. Firoz. Capacitive Properties of Nanostructured Manganese Oxides Synthesized by Gel formation Method. **Bangladesh Chemical Congress 2018** (OPB1, Day 1) held at Nabab Nawab Ali Chowdhury Senate Bhaban, University of Dhaka, organized by **Bangladesh Chemical Society (BCS)** during 17-19 October, 2018.
2. D. A. Chowdhury, M. J. Ahmed, M. H. Uddin, M. Rubel, M. F. Islam and **M. A. B. Siddique**. An assessment of physicochemical characteristics of surface water quality of greater Chittagong region of Bangladesh. **Bangladesh Chemical Congress 2018** (OPA3, Day 1) held at Nabab Nawab Ali Chowdhury Senate Bhaban, University of Dhaka, organized by **Bangladesh Chemical Society (BCS)** during 17-19 October, 2018.

Year 2016: 03

1. Shamsun Naher, Ajit mallik, Abdus Samad, **Md. Abu Bakar Siddique**, and Md. Aminul Ahsan, "Determination of the concentration of inorganic nutrients of salinity and non-salinity affected area of Bangladesh", **16th Asian Chemical Congress 2016 (March 16-19), Bangladesh**. Serial no. 25, Code EN-PP-013.
2. Anwarul Azim, **Md. Abu Bakar Siddique** and Shakhawat H. Firoz, "A starch assisted facile method for the preparation of iron-manganese based binary oxides in nano scale", **16th Asian Chemical Congress 2016 (March 16-19), Bangladesh**. Serial no. 74, Code NM-PP-009.
3. D. A. Chowdhury, M. J. Ahmed, M. H. Uddin, M. Rubel, M. F. Islam and **A. B. Siddique**, "An assessment of physicochemical characteristics of surface water quality of greater Chittagong region of Bangladesh", **16th Asian Chemical Congress 2016 (March 16-19), Bangladesh**. Serial no. 74, Code EN-OP-021N.

Md. Abu Bakar Siddique

Reviewer Activities	Till now, reviewed 37 manuscripts from Elsevier and Springer Nature publishers <ol style="list-style-type: none">1. Science of the Total Environment2. Chemosphere3. Environmental Research4. Environmental Science and Pollution Research5. Environmental Geochemistry and Health6. Discover Water7. Air Quality, Atmosphere & Health8. Communications Earth & Environment
Skills	Language: Fluent in Bengali and English Computer: Microsoft Office Software: <ul style="list-style-type: none">• Medium-level expertise in SPSS, Origin Lab, Sigma Plot, Chemdraw, Graph Pad Prism, Data analysis with 'R', and ImageJ.• Learning: ArcGIS, Surfer, AquaChem, Python, Matlab, and Software for molecular modeling and drug design.
Instrumental Expertise	Have professional training with certificates in sophisticated laboratory instruments <ul style="list-style-type: none">• Major: Atomic Absorption Spectrometer (AAS), Ultra Violet (UV) Visible Spectrometer, Fourier Transform Infrared Spectrometer (FT-IR), Raman Spectrometer, Flame Photometer, Elemental Analyzer, Ion Chromatograph (IC), High-Performance Liquid Chromatography (HPLC), Gas Chromatography (GC), Gas Chromatography-Mass Spectrometry (GC-MS and GC-MS/MS), Thermogravimetric and Differential Thermal Analyzer (TG/DTA), Nuclear Magnetic Resonance (NMR).• Minor: Energy Dispersive X-Ray Florescence (ED-XRF), Liquid Chromatography Mass Spectrometer (LCMS), Potentiometric Titrator with Karl Fischer Unit, X-ray Diffractometer (XRD), FT-Raman Spectroscopy, Wavelength Dispersive X-ray Florescence (WD-XRF), Microwave Plasma Atomic Emission Spectrometer (MP-AES).
Other Professional Training	Year 2021 <ol style="list-style-type: none">1. Successfully completed (on 8th January 2021) online paid (private) course on "Quantum Mechanics (QM): wave mechanics and matrix mechanics" conducted privately by Dr. Mahdy Rahman Chowdhury (Ph.D., Department of ECE, National University of Singapore), Associate Professor, Department of ECE, North South University, Dhaka, Bangladesh.2. Successfully completed (on 1st January 2021) online paid (private) training course on "SPSS and R-programming (2nd Batch)" conducted privately by Data Science Era (www.datascienceera.com), Dhaka, Bangladesh.3. Successfully completed 2 hours long online paid (private) training program on "Surfer Software Training" for data mapping and research visualization (Basic), organized privately by Research Learning Counter, held on 4 June 2022. Year 2020 <ol style="list-style-type: none">1. Attended and successfully completed the basic online training course (paid privately) on Ecological Data Analysis with 'R' organized by the Noazesh Knowledge Centre (NKC) of WildTeam, Bangladesh from 15-19 July 2020.

2. Successfully completed a 12-week online paid course (paid privately) on “**Environmental Science and Engineering and Sustainability using Life Cycle Assessment**” from 12th September to 5th December 2020 conducted privately by Dr. Nawshad Haque (Fellows of AusIMM & Aus Ins. Energy, Member of Aus LCA Soc.), Senior Scientist (CSIRO Australia), and Life Cycle Assessment Expert Consultant.

Year 2019

1. Attended and successfully completed the **evening** Training Course on “**Introduction to SPSS**” conducted by National Academy for Planning and Development (**NAPD**), Ministry of Planning of the People’s Republic of Bangladesh, Nilkhet, Dhaka, Bangladesh during 10-30 June 2019.
2. Attended and successfully completed the basic Training Course (paid) on “**GIS with QGIS**” organized by the Noazesh Knowledge Centre (**NKC**) of WildTeam at Cosmos Centre, 69/1, New Circular Road, Malibag, Dhaka-1217, Bangladesh during 26-27 July, 2019.

Year 2018

1. Participated and successfully completed the Training Course on “**Nanotechnology**” at Dr. M. N. Dastur School of Materials Science and Engineering, Indian Institute of Engineering Science and Technology (**IEST**), **Shibpur, West Bengal, India**, from June 18 to 08 July 2018.
2. Attended and successfully completed the Training Course on “**Environmental Issues of Project Management**” conducted by the National Academy for Planning and Development (**NAPD**), Ministry of Planning of the People’s Republic of Bangladesh, Nilkhet, Dhaka, Bangladesh during 06-10 May 2018.

Year 2017

1. Day-long In-House Training on “**Research Methodology**” held at **BCSIR** Laboratories, Dhaka, Bangladesh on 26 April 2017.
2. Day-long In-House Training on “**Linkages of R&D with National Development Plan (SDG)**” held at **BCSIR** Laboratories, Dhaka, Bangladesh on 07 August 2017.
3. Day-long In-House Training on “**CAMO The Unscrambler with Design Expert Software**” held at **BCSIR**, Dhaka, Bangladesh on 10 August 2017.

Year 2016

1. Attended the Training Course on “**Method Validation, Traceability, External and Internal Quality Control programme**” conducted by Bangladesh Accreditation Board (**BAB**), Dhaka, Bangladesh during 09-10 March 2016 at Ministry of Industries, 91, Motijheel C/A, Dhaka-1000.
2. Attended and **successfully completed** the “**Lead Assessor Training Course on ISO/IEC 17025:2005-General Requirements for the competence of Testing and Calibration Laboratories**” conducted by Bangladesh Accreditation Board (**BAB**), Dhaka, Bangladesh during 04-08 December 2016 at Ministry of Industries, 91, Motijheel C/A, Dhaka-1000.

Md. Abu Bakar Siddique

- Training Provided**
- Provided five days of training on **Atomic Absorption Spectrometer (AAS)** organized by the **Planning and Development Division, BCSIR, Dhaka** during 01-05 November 2020 at Bangladesh Council of Scientific and Industrial Research (**BCSIR**), Dhaka, Bangladesh.
- Workshops**
1. Participated in the “**South Asia Regional Chemical Management Workshop**” held in **Colombo, Sri Lanka**, from 4 to 6 December 2018, sponsored and organized by the **Organization for the Prohibition of Chemical Weapons (OPCW)**, Hague, Netherlands.
 2. A day-long workshop on **X-Ray Powder Diffraction and Data Analysis** organized by Bangladesh Crystallographic Association (**BCA**) on 27 January 2019 at the Centre for Advanced Research in Science (**CARS**), University of Dhaka, Bangladesh.
 3. Two-day-long workshop on **Research Methodology and Publication for Beginners** organized by GUSTO-A Research Group and Graduate Resources Enhancing Center (GREC), Dhaka, Bangladesh on 19-20 April 2019.
 4. Completed the “**Bangladesh Chemical Security Risk Assessment Webinar Series course**” managed by **Sandia National Laboratories (SNL)** on behalf of the **U.S. Department of State's Chemical Security Program (CSP)** and in collaboration with the Bangladesh University of Engineering and Technology, Dhaka, Bangladesh from 5 June-10 July 2020.
- ISO/IEC 17025:2017 Activities**
1. Worked in the implementation of **ISO/IEC 17025:2017** quality management system.
 2. Participated in the **proficiency testing (PT) program** in the year 2015 (for one parameter), 2016 (for 20 parameters), and 2022 (for 14 parameters) from ERA, A Waters Company, USA, and completed successfully.
 3. Participated in the **Surveillance Assessment** (two times) of the Analytical Chemistry Laboratory, Chemistry Division, Atomic Energy Centre, Bangladesh Atomic Energy Commission, Dhaka, Bangladesh as a Trainee Technical Assessor (TTA) on 17 August 2017 and 29 September 2020 on behalf of Bangladesh Accreditation Board (BAB), Dhaka, Bangladesh.
- Industrial Visits**
- Mustafa soybean oil limited, Chittagong.
 - Berger paints Bangladesh limited, Chittagong.
 - PHP glass industries limited, Chittagong.
 - PHP steel industries limited, Chittagong.
 - Royal cement industries limited, Chittagong.
 - Osmania glass industries, Chittagong.
 - F.B. Foot ware limited, Gazipur.
 - KAFCO, Chittagong
 - Intertek bd Laboratory, Chittagong
 - American & Efird Lanka (Pvt) Ltd, Welivita, Kaduwela, **Sri Lanka**.
 - Panchagarh Sugar Mills Ltd.
 - Kazi & Kazi Tea Estate Limited, Panchagarh.
 - Saidabad Water Treatment Plant, Dhaka, Bangladesh.
 - Dhaka WASA Bottled Water Production Plant “Shanti”.

Md. Abu Bakar Siddique

Membership in Technical Societies **Life member**

- Bangladesh Chemical Society (BCS)
- Network of Instrument Technical personnel and User scientists of Bangladesh (NITUB).
- Technical assessor: Bangladesh Accreditation Board (BAB).

Links of Research Profile **ORCID ID:** <https://orcid.org/0000-0001-7947-1910>
ResearchGate: https://www.researchgate.net/profile/Md_Siddique12/publications

References

Md. Ahedul Akbor Principal Scientific Officer Institute of National Analytical Research and Services (INARS) Bangladesh Council of Scientific and Industrial Research (BCSIR) Dr. Qudrat-I-Khuda Road, Dhanmondi, Dhaka-1205, Bangladesh. Email: akborbcsir@gmail.com Cell Phone: +8801816188859	Dr. Shamim Akhtar Professor and Ex-Chairman Department of Chemistry University of Chittagong, Chittagong-4331, Bangladesh Email: shamim3332000@yahoo.com Cell Phone: +8801712090205 Website: https://cu.ac.bd/public_profile/index.php?ein=2614
Dr. Md. Shakhawat H. Firoz Professor and Ex-Head Department of Chemistry Bangladesh University of Engineering and Technology (BUET), Dhaka-1000. Bangladesh Cell Phone: +88-01730713767 Email: shfiroz@chem.buet.ac.bd shakhawat_firoz@yahoo.com ORCID ID: https://orcid.org/0000-0002-1771-462X	Dr. Md. Mominul Islam Professor Department of Chemistry University of Dhaka, Dhaka, Bangladesh Email address: mominul@du.ac.bd Cell Phone: +8801947558235 ORCID ID: https://orcid.org/0000-0003-3896-6778