Shama E. Haque, Ph.D.

Professor, Civil and Environmental Engineering
North South University, Plot # 15, Block B, Bashundhara, Dhaka 1229
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EDUCATION

Ph.D., Environmental Science and Engineering (Geochemistry) **2007**
The University of Texas at Arlington, USA

B.S., Civil Engineering **1995**
The University of Texas at Austin, USA

EMPLOYMENT HISTORY

Professor **2026 - Present**
Department of Civil and Environmental Engineering, North South University, Dhaka, Bangladesh

- Responsible for teaching Pollution Control Engineering, Solid and Hazardous Waste Management Engineering, Environmental Chemistry, Inorganic Chemistry, and Engineering Research courses.
- Current research focuses on PFAS, bioengineering, climate change impacts on the environment, cyclone shelter, construction and demolition waste management, industrial wastewater management, agricultural household waste management, plastic recycling, urban impacts on surface water systems, and hydro-geochemistry research involving the fate and transport of contaminants in sediments, surface water, and groundwater resources.

Associate Professor **2018-2026**
Department of Civil and Environmental Engineering, North South University, Dhaka, Bangladesh

- Responsible for teaching Pollution Control Engineering, Solid and Hazardous Waste Management Engineering, Environmental Chemistry, Inorganic Chemistry, and Engineering Research courses.
- Current research focuses on climate change impacts on the environment, cyclone shelter, construction and demolition waste management, industrial wastewater management, household waste management, plastic recycling, urban impacts on surface water systems, and hydro-geochemistry research involving the fate and transport of contaminants in sediments, surface water, and groundwater resources.

Assistant Professor **2016-2018**
Department of Civil and Environmental Engineering, North South University, Dhaka, Bangladesh

- Responsible for teaching Environmental Chemistry, Inorganic Chemistry, Environmental Science, and Engineering Research courses.

Lecturer **2011-2012**
Department of Earth and Environmental Sciences, Douglas College, New Westminster, BC, Canada

- Responsible for teaching courses in Earth History and Physical Geology courses.

Lecturer **2011-2011**

Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, BC, Canada

- Course administrator for the Earth Science for Engineers course.

Postdoctoral Research Fellow **2009-2010**

Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, BC, Canada

- Involved in a multidisciplinary oil sands mining (Suncor) project that aims to understand the impact of process-affected water ingress on metal speciation, redox state, and mobilization. The work involved performing detailed mineralogical analyses of sediments, managing projects, controlling the budget, providing work updates to the supervisor, presenting findings at conferences, and writing scientific journal articles.
- Involved in a biofuel biodegradation study that aimed to understand the fate of generated gases in the subsurface. Responsibilities included managing the project, developing and the controlling budget, setting up the experiment, planning, organizing, and implementing field trips, analyzing data, and mentoring a student.

Environmental Scientist/Geochemist in Training **2008**

Amec Earth and Environmental Limited, Saskatoon, SK, Canada

- Participated in hydrocarbon-contaminated site investigation projects. Worked involved collecting sediments and groundwater samples for analysis and preparing environmental monitoring reports.

Postdoctoral Research Fellow **2007**

Department of Geological Sciences, University of Saskatchewan, Saskatoon, SK, Canada

- Involved in a study aiming at identifying a geologic fault. Responsibilities included collecting sediment samples, geochemical data analysis/interpretation, and determination of elemental distribution.
- Participated in a Uranium (U) mine tailings project (Cameco). Performed initial research on U analysis in tailings samples using asymmetrical flow field-flow fractionation method.

Graduate Research and Teaching Assistant **2003-2007**

Department of Earth & Environmental Sciences, The University of Texas at Arlington, Arlington, TX, USA

- Research assistant involved in a multidisciplinary project investigating the evolution of arsenic (As) concentrations and speciation in groundwaters. Responsible for developing a conceptual model of As mobility and speciation along groundwater flow paths based on the field and laboratory studies, planning, organizing, and implementing field trips, collecting sediment and groundwater samples for analysis, managing the laboratory and training incoming students, writing proposals, reports, and journal articles.
- Research assistant involved in a study of surface water quality of the Trinity River, Texas. Responsibilities included collecting groundwater samples and measuring geochemical parameters.
- Teaching assistant for Earth Systems laboratory course.

Assistant Civil Engineer **1996-2000**

Bangladesh Consultants Limited, Dhaka, Bangladesh

- Involved in multidisciplinary projects including the feasibility study of the Road Bridge over the Ganges River (Paksey), and the pre-feasibility and feasibility study of the bridge over the Meghna River (Bhairab). Responsible for conducting traffic and environmental surveys, assisting in bridge approach road design, and preparing proposals and progress reports.

Student Intern **1995**

Bangladesh Consultants Limited, Dhaka, Bangladesh

- Assisted in routine environmental and traffic surveys, and in preparing proposals.

PUBLICATIONS

Peer-Reviewed Journal Articles

1. **Haque, S.E.**, Nahar, N., Chowdhury, N.N., Muktadir, M.A., Asif, M.M., Sayanno, T.K., Shupti, I.F. and Khan, M.A.H., (2026). Assessment of multi-purpose cyclone shelters in Cox's Bazar and implications for community resilience. Marine Development. Marine Development 4(1) DOI: 10.1007/s44312-026-00084-7.
2. Rani, L., Srivastav, A.L., Kaushal, J., Jangra, N., Kumar, M., **Haque, S.E. (**2025) 'Sustainable remediation strategies for emerging PFAS contaminants in water', RSC Advances, 59 50963–50984. https://doi.org/10.1039/D5RA05521K).
3. **Haque, S.E**, Nahar, N., Chowdhury, N. N., Gazi-Khan, L., Sayanno, T.K., Muktadir, M.A., Haque, M.S., (2025). Identification of Recycling Potential of Construction and Demolition Waste: Challenges and Opportunities in the Greater Dhaka Area. Environmental Monitoring and Assessment. Environ Monit Assess. 2025 May 10;197(6):646. doi: 10.1007/s10661-025-14081-8.
4. **Haque, S.E.**, Chowdhury, N.N. (2025) Bangladesh Plastic Consumption Trend: Current Scenario. *Water Air Soil Pollut* **236**, 218. https://doi.org/10.1007/s11270-025-07862-x
5. **Haque, S.E.,** Nahar, N., Haque, M.S. (2024). A Study on the Waste Generation Rates and Recycling Potential for the Construction and Demolition Waste in Dhaka, Bangladesh. *Environmental Monitoring* and *Assessment,* 196, 183. https://doi.org/10.1007/s10661-024-12329-3
6. Nahar, N., Haque, M.S., **Haque, S.E.** (2024) Groundwater Conservation, and Recycling and Reuse of Textile Wastewater in a Denim Industry of Bangladesh. Water Resources Industry. https://doi.org/10.1016/j.wri.2024.100249
7. **Haque, S.E.,** Nahar, N., Chowdhury, N.N., Sayanno, T.K., Haque, M.S. (2024). Geomorphological Changes of River Surma due to Climate Change. International Journal of Energy and Water Resources. https://doi.org/10.1007/s42108-023-00275-8
8. **Haque, S.E.** (2023). The Effects of Climate Variability on Florida's Major Water Resources. Sustainability, *15*, 11364. https://doi.org/10.3390/su151411364
9. **Haque, S.E.**, Nahar, N. (2023). Bangladesh: Climate Change Issues, Mitigation and Adaptation in the Water Sector, ACS ES&T Water. https://doi.org/10.1021/acsestwater.2c00450 (Invited Paper)
10. **Haque, S.E.,** Shahriar, M.M., Nahar, N., Haque, M.S. (2022). Impact of Brick Kiln Emissions on Soil Quality: A Case Study of Ashulia Brick Kiln Cluster, Bangladesh. Environmental Challenges, 2022-10. DOI: 10.1016/j.envc.2022.10064
11. Gazi-Khan, L., **Haque, S.E.** (2022). A Review of the Current Status of Water Quality and Eutrophication in Dhaka's Water Bodies. International Journal of Students' Research in Technology & Management, 10, 2, 01-09. https://doi.org/10.18510/ijsrtm.2022.1021
12. **Haque, S.E.** (2021). How Effective are Existing Phosphorus Management Strategies in Mitigating Surface Water Quality Problems in the U.S.? Sustainability, 13, 6565. https://doi.org/10.3390/su13126565
13. **Haque S.E**., Nahar, N., Chowdhury, S., Sakib, A.S., Saif, S., Hasan, S., Gomes, A.S., Nezum, S.T. (2020). Impacts of the Partial Relocation of Hazaribagh Tanneries on the Environment and Human Health: Focus on Children and Vulnerable Population. International Journal of Students' Research in Technology & Management. https://doi.org/10.18510/ijsrtm.2020.841
14. Holden, A.A., **Haque**, **S.E.,** Mayer, K.U., Ulrich, A.C. (2013). Biogeochemical Processes Controlling the Mobility of Major Ions and Trace Metals in Aquitard Sediments Beneath an Oil Sand Tailing Pond: Laboratory Studies and Reactive Transport Modeling. Journal of Contaminant Hydrology. DOI:10.1016/j.jconhyd.2013.04.006

15. Willis, S., **Haque, S.**, Johannesson, K. (2011). Arsenic and Antimony in Groundwater Flow Systems: A Comparative Study. *Aquatic Geochemistry*. https://doi.org/10.1007/s10498-011-9131-6.
16. Holden, A., Tompkins, T., **Haque**, **S.**, Perez, L., Sutherland, H., Bowron, M., Biggar, K., Donahue, R., Mendoza, C., Martin, J., Mayer, K.U., Baker, J., Sego, D., Ulrich A. (2010). Fate and Transport of Process-Affected Water in Out-of-Pit Tailings Ponds in the Oil Sands Industry in Canada. Geotechnical News, 29(1): 53-57.
17. **Haque**, **S.,** Tang, J., Johannesson, K. (2008). Evaluating Mobilization and Transport of Arsenic in Sediments and Groundwaters of Aquia aquifer, Maryland, USA. Journal of Contaminant Hydrology, 99: 68-84. DOI:10.1016/j.jconhyd.2008.03.003
18. **Haque**, **S.,** Tang, J., Bounds, W., Burdige, D., Johannesson, K. (2007). Geochemistry of the Great Dismal Swamp, Virginia, USA: Possible Organic Matter Controls. Aquatic Geochemistry, 13**:** 289-308. DOI:10.1007/s10498-007-9021-0
19. Basu, R., **Haque**, **S.**, Tang, J., Ji, J., Johannesson, K. (2007). Evolution of Selenium Concentrations and Speciation in Groundwater Flow Systems: Upper Floridan (Florida) and Carrizo Sand (Texas) aquifers. Chemical Geology, 246: 147-169. DOI:10.1016/j.chemgeo.2007.09.010
20. **Haque**, **S.**, Johannesson, K. (2006). Arsenic Concentrations and Speciation Along a Groundwater Flow Path: The Carrizo Sand aquifer, Texas, USA. Chemical Geology, 228: 57-71. DOI:10.1016/j.chemgeo.2005.11.019
21. **Haque**, **S.**, Johannesson, K. (2006). Concentrations and Speciation of Arsenic Along a Groundwater Flow-Path in the Upper Floridan Aquifer, Florida, USA. Environmental Geology, 50: 219-228. DOI:10.1007/s10498-011-9131-6

Dissertation

Haque, S.E. (2007). Hydrogeochemical evolution of arsenic along groundwater flow paths: linking aqueous and solid phase arsenic speciation. The University of Texas at Arlington.

Book Chapters

1. Chowdhury, N. N., and **Haque, S.E.** (In Publication). Persistent Organic Pollutants in Dhaka: Pathways, Bioaccumulation, and Risk Mitigation Strategies. Elsevier Book: Phytonanoparticles as Green Catalysts for the Degradation of Persistent Organic Pollutants.
2. Chowdhury, N.N. and **Haque, S.E.** (In publication) 'Plastic waste governance: Global initiatives, regulatory measures, and the Bangladesh context', in Recent Advances for Plastic Waste Management: Cases and Perspectives from Developing Countries. Springer.
3. **Haque, S.E.,** Chowdhury, N.N., Snigdho, M.F.S. and Tasneem, N. (In publication) 'Plastic waste in developing countries: Trends, constraints, and opportunities for sustainable development', in Chaudhary, V.K., Patel, N., Patel, A. and Srivastav, A.L. (eds.) Recent Advances in Plastic Waste Management: Cases and Perspectives from Developing Countries. Springer.
4. **Haque, S.E.,** Chowdhury, N.N. and Tanvir, N.N. (Accepted for publication) 'Case studies and real-world applications of bioengineering approaches for wastewater treatment', in Singhal, B., Gaur, N., Shankar, S. and Srivastav, A.L. (eds.) Significance of Omics and Bioprocess Insights for Sustainable Wastewater Treatment: Challenges and Future Scope. Springer Nature.
5. Chowdhury, N.N. and Haque, S.E. (Accepted for publication.) 'Surface water quality degradation in developing countries: Historical trends, drivers and the emerging role of AI (A Bangladesh perspective)', in *Artificial Intelligence Driven Strategies for the Conservation of Surface Water Resources*. CRC Press.
6. **Haque, S.E.**, Tasneem, N., Snigdho, M.F.S. (2026). Utilization of Aquatic Plants for Water Treatment and Resource Recovery. In: Prajapati, U.B., Lal Srivastav, A. (eds) Wastewater Management Using Aquatic Macrophytes. Springer, Cham. https://doi.org/10.1007/978-3-032-20493-6_6.
7. **Haque, S.E**., Chowdhury, N.N. (2026). Developing Urban Resilience Against Climate Uncertainties: Case Study Megacity Dhaka. In: Srivastav, A.L., Dubey, A.K., Kumar, A., Ouaissa, M. (eds) Climate Resilience: Impact of Quantum Computing and Artificial Intelligence on Urban Planning. Studies in Systems, Decision and Control, vol 637. Springer, Cham. https://doi.org/10.1007/978-3-032-06791-3_4

8. Chowdhury, N.N., **Haque, S.E**. (2026). Importance of Sustainable Agriculture: Focus on Climate-Smart Sustainable Agriculture. In: Srivastav, A.L., Kumar, N., Zinicovscaia, I. (eds) Digital Twin Technology for Sustainable Agriculture. Springer, Singapore. https://doi.org/10.1007/978-981-95-5915-2_2
9. **Haque, S.E.**, Snigdho, M.F., Tasneem, N. (2025). 'Water Sustainability - A Review of Advances in Water Quality Management Technologies' In Dubey, A.K., Srivastav, A.L., Kumar, A., Marquez, F.P.G., Gainnakousakis, D.A. (eds) Computational Automation for Water Security Enhancing Water Quality Management. Elsevier Science. https://books.google.com.bd/books/about/Computational_Automation_for_Water_Secur.html?id=LD2_0AEACAAJ&redir_esc=y
10. **Haque, S.E.**, Gazi-Khan, L. (2024). Limitations and challenges of bioremediation approach: Alternative solutions." In: Srivastav, A.L., Zinicovscaia, I., Shah, M.P., Cepoi, L. (eds) Biotechnologies for wastewater treatment and resource recovery. Elsevier. https://shop.elsevier.com/books/biotechnologies-for-wastewater-treatment-and-resource-recovery/srivastav/978-0-443-27376-6
11. **Haque, S.E.**, Rafi, T.R. (2024). Is Biomass Energy a Boon or Bane for Society: A Comprehensive Analysis. In: Srivastav, A.L., Bhardwaj, A.K., Kumar, M. (eds) Valorization of Biomass Wastes for Environmental Sustainability. Springer, Cham. https://doi.org/10.1007/978-3-031-52485-1_1
12. **Haque, S.E.,** Gazi-khan, L., Rashid, H. (2023). Climate Change Mitigation and Adaptation Strategies, the Environment, and Impacts of the COVID-19 Pandemic: A Review of the Literature in Role of Green Chemistry in Ecosystem Restoration to Achieve Environmental Elsevier, UK. https://doi.org/10.1016/B978-0-443-15291-7.00006-7
13. **Haque, S.E.** (2023). Historical Perspectives on Climate Change and its Negative Impacts on the Nature. Visualization Techniques for Climate Change with Machine Learning and Artificial Intelligence. Elsevier, UK. https://www.elsevier.com/books/visualization-techniques-for-climate-change-with-machine-learning-and-artificial-intelligence/srivastav/978-0-323-99714-0
14. **Haque, S.E.** (2022). Urban Water Pollution by Heavy Metals, Microplastics and Organic Contaminants in Urban Water Crisis and Management Strategies for Sustainable Development. Elsevier, UK. https://doi.org/10.1016/B978-0-323-91838-1.00001-4
15. **Haque, S.E.**, Nahar, N. (2021). The Partial Relocation of Hazaribagh Leather Processing Industries – A Critical Overview of Recent Environmental and Public Health Concerns. Disaster, Environment and Health. Published by the Institute of Disaster Management and Vulnerable Studies, University of Dhaka.
16. **Haque, S.E.** (2020). Hydrogeochemical Characterization of Groundwater Quality in the States of Texas and Florida in Global Groundwater: Source, Scarcity, Sustainability, Security, and Solutions. Elsevier, USA. DOI:1016/B978-0-12-818172-0.00021-9
17. **Haque, S.E.** (2020). Groundwater Quality in the Megacity Dhaka, Bangladesh: Assessment and Environmental Impact in Groundwater Quality: Assessment and Environmental Impact. Nova Science Publishing, New York. https://novapublishers.com/shop/groundwater-quality-assessment-and-environmental-impact/
18. **Haque, S.E.** (2018). An Overview of Groundwater in Bangladesh, in: Mukherjee, A. (Ed.), Groundwater of South Asia. Springer Publishing Company, Singapore. https://doi.org/10.1007/978-981-10-3889-1_13

Short Paper, Proceedings of International Conference

1. Khan, M.A.H., Atik, A.B., Islam, A., Sajed, F.A., Shupti, I.F., Haque, S.M., Basher, S.B., **Haque, S.E.**, Nahar, N. (2025) 'Towards sustainable water practices in Bangladesh's textile industry: evaluating MBR implementation', Proceedings of the 8th IEOM Bangladesh Conference, 20–21 December, World University of Bangladesh (WUB), Dhaka, Bangladesh.
2. Rashid, H., Gazi-Khan, L., Rafi, T.R., Razin, M.M., Nahar, N., **Haque, S.E.** (2024). Engineering and Eco-Friendly Solution: Gabion Wall Design for Landslide Prevention in Kutupalong Refugee Camp. 12-14 December 2024 ICACE2024, CUET, Chattogram
3. Gazi-Khan, L., Haque, M.S., Nahar, N., **Haque, S.E.** (2023). Wastewater Recycling of a Bangladeshi Denim Factory: A Case Study. Paper ID: 001 WasteSafe, 8th International Conference on Integrated Solid Waste & Faecal Sludge Management. Khulna University of Engineering & Technology, Bangladesh; Bauhaus University Weimar, Germany; University of Padova, Italy; International Waste Working Group.

4. Chowdhury, N.N., Sayanno, T.K., Das, A.R., Saad, H.M., **Haque, S.E**., Nahar, N. (2023). A Sustainable Solution to Mitigate Climate Change Induced Flash Flood Disasters in Sunamganj, Bangladesh. 9th International Conference on Water and Flood Management (ICWFM). Bangladesh University of Engineering and Technology (BUET), Bangladesh.
5. Nayeem, S.U., Rashid, H., Habib, M.S., **Haque, S.E**., Nahar, N. (2022). Identification of construction and demolition waste generation rates and recycling and reuse potential: A case of Dhaka City. Paper ID: 1279, 6th International Conference on Advances in Civil Engineering (ICACE-2022), CUET, Chattogram, Bangladesh
6. **Haque, S.E.,** Shahriar, M.M., Nahar, N., Sakib, A.S., Saif, A., Gomes, A.S., Hasan, A.S., Nezum, S.T., Mahmud, M.H., Ray, T.K., Rashid, H. (2022). Impact of Ashulia brick kilns' emissions on heavy metals concentrations (cadmium, chromium and nickel) in the neighboring soil environment. Proceedings of International Conference on Research & Innovation in Civil Engineering. Paper ID 82. Southern University, Chittagong, Bangladesh.
7. Nahar, N., **Haque, S.E**., Hossain, M.O., Aktar, F. (2019). Preliminary Investigation of Water and Sanitation Condition of Uttara Lake Slum. 2019 International Symposium on Environment, Disaster and Health, 'Health at Risk in the World of Degraded Environment and Disaster.' The Institute of Disaster Management and Vulnerability Studies, University of Dhaka, Bangladesh.
8. Holden, A.A., **Haque, S.E.**, Donahue R.B., Ulrich, A.C., (2010). Leaching of trace elements from a clay till aquitard by seepage from an oil sands tailings facility. Proceedings of the 7th International Groundwater Quality Conference. Switzerland. pp. 330-333.

Encyclopedia Entries

1. **Haque, S.E.** (2023) Climate-Change Impact on Florida's Water Resources. Encyclopedia. Available online: https://encyclopedia.pub/entry/47695

Presentations and Abstracts

1. Chowdhury, N.N., Jami, A.M., Asif, M.M., Sayanno, T.K., Shupti, I.F., Khan, M.A.H., **Haque, S.E**. and Nahar, N. (2026) 'Sheltering the future: Sustainable & resilient cyclone structure', SAFECON: A Showcase of Sustainable Infrastructure (11th edition), International Convention City Bashundhara (ICCB), Dhaka, Bangladesh, 16–18 April.
2. Sajed, F.A., Atik, A.B., Islam, A., Khan, M.A.H., Shupti, I.F., **Haque, S.E.** and Nahar, N. (2026) Recycling and the role of waste segregation in reducing carbon footprint in Dhaka's garment industry. SAFECON: A Showcase of Sustainable Infrastructure (11th edition), International Convention City Bashundhara (ICCB), Dhaka, Bangladesh, 16–18 April.
3. Khan, M.A.H., Atik, A.B., Islam, A., Sajed, F.A., Shupti, I.F., Haque, S.M., Basher, S.B., **Haque, S.E.**, Nahar, N. (2025) 'Towards sustainable water practices in Bangladesh's textile industry: evaluating MBR implementation', 8th IEOM Bangladesh Conference, 20–21 December, World University of Bangladesh (WUB), Dhaka, Bangladesh.
4. Islam, A., Shupti, I.F., Atik, A.B., Khan, A.H., Sajed, F.A., Haque, S.M., Basher, S.B., **Haque, S.E.,** Nahar, N. (2025). Membrane Technologies for Sustainable Treatment of Textile Wastewater in Bangladesh. 2nd Sustainable Water Management Expo 2025, Dhaka, Bangladesh.
5. Zaman, S.B., Sakib, M.H., Nahar, N., **Haque, S.E**. (2025). Grey water recycling system. 2nd Sustainable Water Management Expo 2025, Dhaka, Bangladesh.
6. Chowdhury, N.N., Muktadir, M.A., Asif, M.M., Sayanno, T.K., Shupti, I.F., Khan, A.H., Nahar, N., **Haque, S.E.** (2025). Water pollution from improper solid waste management. 2nd Sustainable water management expo 2025, Dhaka, Bangladesh.
7. **Haque, S.E.**, Chowdhury, N.N. (2025). Impact of Flooding on Microplastic Pollution - a Bangladeshi Perspective. ICETSD 2025 – International Conference Emerging Technologies for Sustainable Development, Jessore, 22-23 February 2025, p 90.

8. Chowdhury, N.N., Jami, A.M., Sayanno, T.K., Asif, M.M., **Haque, S.E.**, Nahar, N., Shupti, I. F., Khan, A.H. (2025). Resilient multipurpose cyclone shelters in Cox's Bazar in the face of severe cyclonic storms. ICETSD 2025 – International Conference Emerging Technologies for Sustainable Development, Jessore, 22-23 February 2025, p 102.
9. Chowdhury, N.N., Jami, A.M., Sayanno, T.K., Asif, M.M., **Haque, S.E.**, Nahar, N., Shupti, I. F., Khan, A.H. (2025). Understanding the influence of Socio-Economic Factors on Household Waste Management in Dhaka City. ICETSD 2025 – International Conference Emerging Technologies for Sustainable Development, Jessore, 22-23 February 2025, p 103.
10. Rashid, H., Gazi-Khan, L., Rafi, T.R., Razin, M.M., Nahar, N., **Haque, S.E.** (2024). Engineering and Eco-Friendly Solution: Gabion Wall Design for Landslide Prevention in Kutupalong Refugee Camp. 12-14 December 2024, ICACE2024, CUET, Chattogram
11. Gazi-Khan, L., Haque, M.S., Nahar, N., **Haque, S.E.** (2023). Wastewater Recycling of a Bangladeshi Denim Factory: A Case Study. 8th International Conference on Integrated Solid Waste & Faecal Sludge Management, Khulna University of Engineering & Technology, Bangladesh; Bauhaus University Weimar, Germany; University of Padova, Italy; International Waste Working Group.
12. Chowdhury, N.N., Sayanno, T.K., Das, A.R., Ahmed, T., Saad, H.M., **Haque, S.E.,** Nahar, N. (2023). Climate Change Induced Flood Disasters in Sunamganj. 16th UIU-International Conference on Sustainable Development, Bangladesh.
13. Chowdhury, N.N., Sayanno, T.K., Das, A.R., Saad, H.M., **Haque, S.E.**, Nahar, N. (2023). Possible Impacts of Climate Change-Induced Flash Flood on Sunamganj. UBC WEST Conference: Tapping into Water Sustainability. Vancouver, BC, Canada.
14. Chowdhury, N.N., Sayanno, T.K., Das, A.R., Saad, H.M., **Haque, S.E.**, Nahar, N. (2023). A Sustainable Solution to Mitigate Climate Change Induced Flash Flood Disasters in Sunamganj, Bangladesh. 9th International Conference on Water and Flood Management (ICWFM). Bangladesh University of Engineering and Technology (BUET), Bangladesh.
15. Habib, T., Rashid, H., **Haque, S.E**., Nahar, N., Haque, M.S. (2023). Ecological Footprint of the Textile Sector of Bangladesh. 16th UIU-International Conference on Sustainable Development, Bangladesh.
16. Gazi-Khan, L., As-salek, M.Z.A., Wriddhi, S.S., **Haque, S.E.,** Nahar, N. (2023). "Household Waste Separation and Public Attitude: A Case Study of Dhaka City. 9th AURS9, The International Academic Forum, Singapore.
17. Rashid, H., Gazi-Khan, L., Rafi, T.R., Razin, M.M., Nahar, N, **Haque, S.E.** (2023). Challenges of Water Security and Sanitation in the Kutupalong Refugee Camp, Bangladesh: A Literature Based Study. 2023 WEST Conference "Tapping into Water Sustainability". University of British Columbia, Vancouver, BC, Canada.
18. Nayeem, S.U., Rashid, H., Habib, T., Haque, M.S., **Haque, S.E**., Nahar, N. (2022). Identification of Construction and Demolition Waste Generation Rates and Recycling and Reuse potential: A Case of Dhaka City. 6th International Conference on Advances in Civil Engineering, CUET, Chittagong.
19. Habib, T., Rashid, H., Nayeem, S.U., **Haque, S.E.,** Nahar, N. (2022). The Linkage between Improper Construction and Demolition Waste Management and Surface Water Pollution: A Case Study of Dhaka City, Bangladesh. 2022 WEST Conference: Resiliency in Every Drop. Vancouver, BC, Canada.
20. Rafiq, M.S., Mahmood, A., Zayan, M.M., Mim, F.A., Ahmad, F., Nahar, N., **Haque, S.E.** (2022). Assessment of Different Rainwater Management Approaches for a Textile Industry Located in Narayanganj, Bangladesh. 2022 WEST Conference: Resiliency in Every Drop. Vancouver, BC, Canada.
21. Rashid, H., Gazi-Khan, L., **Haque, S.E.** (2022). Impact of Land Use and Urbanization Activities on Freshwater Eutrophication: A Case Study of Megacity Dhaka. The Regional Conference in Civil Engineering & Sustainable Development Goals in Higher Education Institution 2021. Universiti Teknologi Malaysia, Malaysia.
22. **Haque, S.E.,** Shahriar, M.M., Nahar, N., Sakib, A.S., Saif, A., Gomes, A.S., Hasan, S., Nezum, S.T., Mahmud, M.H., Ray, T.K., Rashid, H. (2022). Impact of Ashulia Brick Kiln's Emissions on Heavy Metal Concentrations (Cadmium, Chromium and Nickel) in the Neighboring Soil Environment. ICRICE Conference Proceedings, Southern University Bangladesh, Chattogram, Bangladesh.

23. Gomes, A.L., Saif, A., Hasan, S., **Haque, S.E**., Nahar, N. (2021). Impact of Covid-19 Pandemic on Waste Management: A Case Study of Dhaka City in Bangladesh. The 6th Asian Undergraduate Research Symposium, The International Academic Forum, Tokyo, Japan.
24. **Haque, S.E.,** Nahar, N., Chowdhury, S., Sakib, A.S., Saif, A., Hasan, S., Gomes, A.S., Nezum, S.T. (2021). Evaluation of the Effect of Partial Relocation of Hazaribagh leather Industry: Focus on the Surrounding Environment and Public Health. ICWFM-2021 Conference, Dhaka, Bangladesh.
25. **Haque, S.E.,** Nahar, N., Gomes A.S., Hasan S., Saif, A., Sakib, A.S., Nezum, S.T. (2019). The Impacts of Partial Relocation of Hazaribagh Leather Processing Industries on the Environment and Human Health: Focus on Children and Vulnerable Population. 2019 International Symposium on Environment, Disaster and Health, 'Health at Risk in the World of Degraded Environment and Disaster.' The Institute of Disaster Management and Vulnerability Studies, University of Dhaka, Bangladesh.
26. Nahar, N., **Haque, S.E.**, Hossain, M.O., Aktar, F. (2019). Preliminary Investigation of Water and Sanitation Condition of Uttara Lake Slum. 2019 International Symposium on Environment, Disaster and Health, 'Health at Risk in the World of Degraded Environment and Disaster.' The Institute of Disaster Management and Vulnerability Studies, University of Dhaka, Bangladesh.
27. Aktar, F., **Haque., S. E.** (2018). Impact of Urbanization on Water Quality of Uttara Lake, Dhaka, 3rd Student Conference on Science and Engineering, Dhaka University, Dhaka, Bangladesh.
28. Kone, M., **Haque, S.,** Dlusskaya, E., Ulrich, A.C., Mayer, K.U. (2011). "Geochemical Processes Mediating the Distribution and Mobilization of Major Ions and Trace Metals in the Wood Creek Sand Channel: A Laboratory Column Study". Proceedings of the Geohydro 2011 Conference, pp. 2244-2250 Quebec City, Quebec, Canada, August 28-31.
29. **Haque, S.,** Holden, A., Tompkins, T., Mayer, A.C., Ulrich, K., Barker, J. (2010). Biogeochemical Impacts of Oil Sands Process Water on Aquifer and Aquitard Materials, Goldschmidt Conference, USA.
30. **Haque**, **S.**, Tompkins, T., Holden, A., Mayer, K.U., Ulrich, A., Barker, J. 2010. Evaluation of Trace Element Mobility in a Sandy Aquifer of the Athabasca oil sands, Alberta, GeoCanada Conference Abstracts, Canada.
31. **Haque**, **S.**, Tompkins, T., Holden, A., Mayer, K.U., Ulrich, A., Barker, J. 2009. Distribution of Metals and Metalloids in Aquifers Impacted by the Ingress of Process-Affected Water from Oil Sands Tailings. Geological Society of America (GSA), 41: 327, USA.
32. Hund, S., **Haque, S**., Jones, K, Ulrich, K.U. 2009. Gas Generation in Sand Columns Contaminated with Small Volume Releases of Ethanol. GSA, 41: 653, USA.
33. Tompkins, T., Barker, J., Holden, S., Ulrich, A., Martin, J., Perez, A., **Haque, S.**, Mayer, K.U., Vincent-Lambert, W. 2009. Natural gradient tracer tests to investigate the fate and migration of oil sands process-affected water in a sand aquifer. Gussow Geoscience Conference, Canada.
34. Mayer, K.U., **Haque**, **S**., Hund, S., Jones, K. 2009. Examination of Influences of Gas Generation and Transport on LNAPL Site Evolution - Implications for Natural Attenuation and Groundwater Remediation. University Consortium for Field-Focused Groundwater Contamination Research, Annual Meeting, Canada.
35. **Haque, S.E**., Johannesson, K., 2007. Arsenic and Antimony in Groundwater Flow Systems. Geological Society of America, 38: 321, USA.
36. **Haque**, **S.**, Johannesson, K. 2006. Speciation and Distribution of Arsenic in the Aquia Aquifer, Maryland. GSA, 38: 321, USA.
37. **Haque**, **S.**, Johannesson, K. 2005. Speciation and Distribution of Arsenic Along a Groundwater Flow Path in the Upper Floridan Aquifer, Florida, USA. GSA, 37: 171, USA.
38. Johannesson, K., **Haque**, **S.** 2005. Impact of Dissolved Organic Matter on Inorganic Arsenic Speciation: Evidence from a Blackwater Swamp, GSA, 37: 248, USA.
39. **Haque**, **S.**, Johannesson, K. 2004. Concentrations and Speciation of Arsenic Along a Groundwater Flow Path in the Carrizo Sand Aquifer, Texas, USA. GSA, 36: 28, USA.
40. **Haque**, **S.**, M. Smith, Tang, J., Johannesson, K. 2003. Arsenic Concentrations and Speciation Along Groundwater Flow Paths: the Carrizo Sand and Floridan aquifers, Texas and Florida, USA. GSA, 35: 48, USA.
41. Smith, M., **Haque**, S., Tang, J., Johannesson, K. 2003. Chromium Along Groundwater Flow Paths: the Carrizo Sand and Floridan aquifers, Texas and Florida, USA. GSA, 35: 564, USA.

PROFESSIONAL ACTIVITIES

- 2017-Present: Associate Editor, Groundwater for Sustainable Development (Elsevier, Netherlands)

Referee for

- Chemical Geology
- Applied Geochemistry
- Geochimica et Cosmochimica Acta
- Springer Publishing Company
- Journal of Environmental Management
- International Journal of Soil, Sediment and Water: Documenting the Cutting Edge of Environmental Stewardship

ACADEMIC ACTIVITIES AT NORTH SOUTH UNIVERSITY

- **Committee Member:**
  - Board of Accreditation for Engineering and Technical Education (of The Institute of Engineers, Bangladesh) accreditation process of Civil Engineering and Environmental Engineering Program
  - Civil and Environmental Engineering Curriculum Committee
  - Environmental Engineering Course Content Update Committee
  - Former Member, Scientific/Research Review Committee of the School of Engineering and Physical Sciences

- **Event Organizer:**
  - 2019: Presentation titled "Potable Water Supply in Rural Bangladesh – Alternative Technological Options", DCEE, NSU
  - 2018: The Female Face of Civil Engineering, DCEE, NSU
  - 2017: CIVIL FEST, Seminar co-organizer, DCEE, NSU Newsletter
  - 2016 - 2017: Department of Civil and Environmental Engineering Newsletter

RESEARCH FUNDING

- 2025-2026: Nahar, N. (PI), **Haque, S.E.** (Co-PI), Arun Lal Srivastav (Co-PI), Md. Matiul Islam (Co-PI). Investigating Development of a Sustainable and Cost-Effective Filtration System for Removing Excess Agrochemicals from Surface Water in Bangladesh. Fund: 7,28,000 BDT
- 2025-2026: Redwan, A.M. (PI), Shuvo, S.R. (Co-PI), Shuman, N.M. (Co-PI), Nahar, N. (Co-PI), **Haque, S.E.** (Co-PI). Immobilized Biomass Packed Bed Reactor (IB-PBR) as a Combined Dye Removal and Zero Liquid Discharge (ZLD) Technology from Textile Wastewater of Yarn Dyeing Facility in Bangladesh, ITN-BUET, Bangladesh. Fund: 14,00,000 BDT
- 2024-2025: Mustafy, T. (PI), Haque, S.E. (Co-PI), Nahar, N. (Co-PI). Predictive Modeling of Landslides Using Advanced Machine Learning. Fund: 7,46,000 BDT
- 2023-2024: **Haque, S.E.** (PI), Nahar, N. (Co-PI), Riffat, R. (Co-PI). Evaluating the Present Condition of Multi-Purpose Cyclone Shelters and Their Limitations in Cox's Bazar, Bangladesh, for Improving Community Resilience. Fund: 5,00,000 BDT

- 2023-2024: Nahar, N. (PI), **Haque, S.E.** (Co-PI). Investigating the household waste management chain from source (generation) to end (disposal): Case Study Dhaka City. Fund: 5,00,000 BDT
- 2022-2023: **Haque, S.E.** (PI), Nahar, N. (Co-PI). Recycling potential of Construction and Demolition Waste: Challenges and Opportunities in Greater Dhaka area. Fund: 5,00,000 BDT
- 2021-2022: **Haque, S.E.** (PI), Nahar, N. (Co-PI). Recycling Potential of Construction and Demolition Waste: Challenges and Opportunities in Dhaka City. Fund: 4,00,000 BDT
- 2021-2022: Nahar, N. (PI), **Haque, S.E.** (Co-PI). Water Management in Textile Industries of Bangladesh: Reuse and Recycle. Fund: 5,00,000 BDT
- 2019-2021: **Haque, S.E.** (PI), Minhaz M. Shahriar (Co-PI), Nahar, N. (Co-PI). Brick Kilns' Emission on the Neighbouring Environment's Soil Quality. Funding agency: North South University; Fund: 5,00,000 BDT
- 2018-2019 Project: **Haque, S.E.** (PI), Nahar, N. (Co-PI), Chowdhury, S. (Co-PI). The Impacts of Partial Relocation of Hazaribagh Leather Processing Industries on the Environment and Human Health: Focus on Children and Vulnerable Population. Funding agency: North South University; Fund: 3,50,000 BDT

- **Research Expertise**

    - **Water and Groundwater:** Groundwater quality assessment, contamination, natural attenuation, and sustainable water management
    - **Waste Management:** Municipal solid waste, construction and demolition waste, recycling, waste characterization, and landfill management
    - **Environmental Pollution and Remediation:** Emerging contaminants, PFAS, bioremediation, and sustainable remediation technologies
    - **Climate Change and Urban Resilience:** Climate change impacts, urban environmental challenges, climate adaptation, and resilience planning
    - **Water and Wastewater Treatment:** Sustainable filtration, wastewater treatment, biological treatment, and resource recovery
    - **Environmental Monitoring and Assessment:** Water quality assessment, hydrogeochemical analysis, GIS-based environmental assessment, and contamination mapping
    - **Natural Hazards:** Landslide susceptibility and prediction, flash-flood assessment, and disaster-resilient infrastructure
    - **Sustainable Environmental Engineering:** Circular economy, resource recovery, nature-based solutions, and sustainable environmental management

AWARDS AND HONORS

- 2007 University Scholar, The University of Texas at Arlington (UTA)
- 2007 College of Science Academic Excellence Award, UTA
- 2006 Outstanding Doctoral Student Award, UTA
- 2006 University Scholar, UTA
- 2005-2007 STEM Doctoral Research Assistant Fellowship, UTA
- 2005 Research Award for Excellence in Research, UTA
- 2005 Teaching Assistant Award for Excellence in Laboratory Instruction, UTA
- 2005 Dean's Excellence Scholarship Award, UTA
- 2004-2007 Rudolf Hermanns Graduate Fellowship, UTA
- 2003-2007 Phi Beta Delta, International Scholar Honor Society, USA
- 2002-2004 Graduate Deans Scholarship, UTA

- 1997 Selected for Commonwealth Scholarship, UK
- 1994 National Honor List, USA
- 1993-present Chi Epsilon, Civil Engineering Honor Society, USA
- 1992-1993 Dean's Honor List, University of Texas at Austin

OTHER MENTIONS IN NEWSPAPER AND BULLETIN

- Fatema-Tuz-Zohora, 2026. Polythene ban fiasco: Are we heading towards an anthropogenic catastrophe? The Daily Star. https://www.thedailystar.net/slow-reads/big-picture/news/polythene-ban-fiasco-are-we-heading-towards-anthropogenic-catastrophe-4140786
- Naznin, M., 2019. News article in The Daily Star titled "How Five Stem Women Shattered the Glass Ceiling". International Women's Day Special, 08 March 2019.

https://www.thedailystar.net/supplements/international-womens-day-2019/news/how-fivestem-women-shattered-the-glass-ceiling-1712161

- The Daily Star, 2019. News article titled "The female faces of civil engineering at NSU", Bulletin Board, 06 November 2018.

https://www.thedailystar.net/shout/bulletin-board/news/the-female-faces-civil-engineeringnsu-1656988.

- S. E. Haque, 2018. I got the point. Institutional Quality Assurance Cell Bulletin (NSU) Commemorating the International Women's Day, 04 March 2018.

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