

Curriculum Vitae (CV)

Md. Zillur Rahman, PhD

Professor, Department of Disaster Science and Climate Resilience, University of Dhaka, Dhaka 1000

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Experiences

- 29-10-2019 to Present **Professor**, Department of Disaster Science and Climate Resilience, University of Dhaka
Duties: Teaching Vulnerability and Risk Assessment, Seismic Risk Reduction, Engineering Geology, Geotechnical Engineering, GIS and Remote Sensing, Geotechnical Earthquake Engineering, Geodesy and Seismology. Supervising PhD, MPhil, and M. S. students in the fields of Disaster Risk Management, Engineering Geology, Geotechnical Earthquake Engineering and GIS & Remote Sensing.
- October 2013 to 28-10-2019 **Associate Professor**, Department of Geology, University of Dhaka
Duties: Taught Engineering Geology, Geotechnical Engineering, GIS and Remote Sensing, Geological Map Lab., Engineering Geology Lab. and GIS & Remote Sensing Lab. courses in under-graduate and graduate levels. Supervised M. S. thesis students in the fields of Engineering Geology, Geotechnical Earthquake Engineering and GIS & Remote Sensing.
- January 2009 – October 2013 **Assistant Professor**, Department of Geology, University of Dhaka
Duties: Same as above
- July 2007 – December 2008 **Lecturer**, Department of Geology, University of Dhaka, Bangladesh
Duties: Same as above
- June 1999 – June 2007 **Assistant Director (Engineering Geologist)**, Geological Survey of Bangladesh
Duties: Carrying out geological and engineering geological field works and preparing geological and engineering geological maps and reports.
- January 1998 – June 1999 **Geotechnical Engineer**, Eastern Geotechnical, Dhaka, Bangladesh
Duties: Carrying out geotechnical site investigations, laboratory tests, geological and engineering geological field works and preparing geological, geotechnical, and engineering geological maps and reports.

Supervising Experiences

Supervising 4 PhD, 3 MPhil, and 5 MS students and supervised more than 15 M. S. students in the fields of Natural Hazard and Risk Analysis, Engineering Geology, Geotechnical Engineering, GIS and Remote Sensing, Environmental Sciences.

Relevant Experiences

- January 2020 - to date Working as an Engineering Geologist in a collaboration project between University College London and Dhaka University (UCL-DU) on “Landslide risk assessment of the Kutupalong Rohingya Camp Areas. This project is funded by the Royal Society as part of the project ‘Resilient Futures for the Rohingya’ supported under the UK Government’s Global Challenges Research Fund (GCRF).
- July 2011 – June 2012 Worked as an Engineering Geological Consultant in the project on “Landslide hazard zonation mapping at Cox’s Bazar and Teknaf in Bangladesh”.
- October 2010 – July 2014 Worked as Local coordinator of Eurasian University Network for International Cooperation in Earthquakes (EU-NICE) which is a mobility project funded under the Erasmus Mundus Action 2 Partnership (EMA2) coordinated by the Sapienza University of Rome, Italy.
- January 2010 – August 2013 Worked as an Engineering Geologist in the project on “seismic hazard and vulnerability assessment for Rajshahi, Mymensingh, Rangpur cities and Tangail, Bogura, Rangpur, Dinajpur district towns in Bangladesh” that was funded by the Comprehensive Disaster Management Programme (CDMP-II) and United Nations Development Programme (UNDP).
- January 2008- August 2013 Worked as an Engineering Geological Consultant with JICA, OYO International Corporation, Japan; Asian Disaster Preparedness Center (ADPC), Thailand and ILF Consulting Engineers, Germany for geotechnical site investigation, landslide hazard assessment, etc.
- January 2012 – March 2012 Worked as short-term National Consultant in the UNDP for developing policy documents for slope management
- January 2008 – December 2009 Worked as an Engineering Geologist in the project on “Seismic hazard and vulnerability assessment of Dhaka, Chittagong and Sylhet city corporation areas” funded by the Comprehensive Disaster Management Programme (CDMP) and United Nations Development Programme (UNDP).
- September 2009 - June 2010 Worked as an Engineering Geologist in the UNDP funded project on “Seismic hazard and vulnerability assessment of Rangamati, Bandarban and Khagrachari district town areas” from September 2009 to June 2010.
- January 2008 – December 2009 Worked as an Expert in the CDMP-UNDP project on “Flash flood early warning system development for Sunamganj, Bangladesh”.
- May 2007 – June 2007 Worked as an Engineering Geologist in the Geological Survey of Bangladesh for slope stability analysis and geomorphological, geological, and

engineering geological mapping of Bandarban district town and surroundings.

February 2008 - Slope stability analysis at 2007 Chittagong landslide areas: A slope stability
March 2008 classification work has been carried out using slope stability probability classification (SSPC) system.

May 2004 - June Slope stability analysis in Spain: A slope stability analysis and classification
2005 work has been carried out along the hilly road cut sections of Cambrils in Spain during M. Sc. Research in Netherlands.

Slope stability analysis in highly jointed rockmass: A course work has been completed on slope stability analysis in highly jointed rockmass during M. Sc. Research in Netherlands.

September 2003 Deriving roughness characteristics of rockmass discontinuities from
– March 2005 terrestrial laser scan data (LIDAR data) (M. Sc. Thesis).

Education

2019 PhD in Civil Engineering (Geotechnical Earthquake Engineering),
University of British Columbia, Canada

2005 M. Sc. in Geo-information Science and Earth Observation, Specialization in
Geological Engineering, ITC, University of Twente, The Netherlands

1993 M. Sc. in Geology, University of Dhaka, Bangladesh

1992 B. Sc. (Honors) in Geology, University of Dhaka, Bangladesh

Academic Awards and Honors

2013 – 2019 University Graduate Fellowship (UGF), University of British Columbia, Canada.

2003 – 2005 Netherlands Fellowship Program (NFP), Netherlands.

2001 – 2001 UNESCO Fellowship, India.

1989 – 1993 University of Dhaka Merit Scholarship, Bangladesh.

Articles Published in Refereed Journals

1. Fahim, A. K. F., **Rahman, M. Z.**, Hossain, M. S., and Kamal, A. S. M. M., 2022. Liquefaction Resistance Evaluation of Soils using Artificial Neural Network for Dhaka City, Bangladesh, Natural Hazards. doi: <https://doi.org/10.1007/s11069-022-05331-w>
2. Gazi, M. Y., Kamal, A. S. M. M. Uddin, M. N., Bhuiyan, M. A. H., and **Rahman, M. Z.**, 2022. The Stability and Suitability of the Bhasan Char Island as an Accommodation for the Forcibly Displaced Myanmar Nationals (FDMN), Sustainability 4(2): 747. <https://doi.org/10.3390/su14020747>

3. Kamal, A. S. M. M., Hossain, F., **Rahman, M. Z.**, Ahmed, B., Sammonds, P., 2022. Geological and soil-engineering properties of shallow-landslides occurring in the Kutupalong Rohingya Camp Area in Cox's Bazar, Bangladesh, *Landslides* 19: 465-478. <https://doi.org/10.1007/s10346-021-01810-6>
4. Kamal, A. S. M. M., Islam, M. S., Hayat, H., Hossain, M. S., Woobaidullah, A. S. M., and **Rahman, M. Z.**, 2021. Towards an earthquake risk-sensitive land use planning: a case study for Tangail Municipality, Bangladesh, *Arabian Journal of Geosciences* 14 (22): 2382. doi: <https://doi.org/10.1007/s12517-021-08558-2>
5. Gazi, M. Y., Apu, S. I., Sharmili, N., and **Rahman, M. Z.**, 2021. Origin and characterization of clay deposits in the Dupi Tila Formation of the Bengal Basin, Bangladesh, *Solid Earth Sciences* 6 (3): 313-327. doi: <https://doi.org/10.1016/j.sesci.2021.07.001>
6. Kamal, A. S. M. M., Mitu, M., Hossain, M. S., Rahman, M. M., and **Rahman, M. Z.**, 2021. Seismic hazard analysis for the south-central coastal region of Bangladesh considering the worst-case scenario, *Pure and Applied Geophysics*, <https://doi.org/10.1007/s00024-021-02770-7>.
7. Mahmud, T., Sifa, S. F., Islam, N. N., Rafsan, M. A., Kamal, A. S. M. M., Hossain, M. S., **Rahman, M. Z.**, and Chakraborty, T. R., 2021. Drought dynamics of Northwestern Teesta Floodplain of Bangladesh: a remote sensing approach to ascertain the cause and effect, *Environ Monit Assess* 193, 218 (2021). <https://doi.org/10.1007/s10661-021-09005-1>.
8. **Rahman, M. Z.**, Siddiqua, S., Kamal, A. S. M. M., 2020. Seismic source modeling and probabilistic seismic hazard analysis for Bangladesh, *Natural Hazards*. Doi: <https://doi.org/10.1007/s11069-020-04094-6>.
9. Gazi, M. Y., **Rahman, M. Z.**, Uddin, M. M., and Rahman, F. M. A., 2020. Spatio-temporal dynamic land cover changes and their impacts on the urban thermal environment in the Chittagong metropolitan area, Bangladesh, *GeoJournal*. Doi: <https://doi.org/10.1007/s10708-020-10178-4>.
10. Hossain, M. S., Kamal, A. S. M. M., **Rahman, M. Z.**, Farazi, A. H., Mondal, D. R., Mahmud, T., and Ferdous, N., 2020. Assessment of soil liquefaction potential: a case study for Moulvibazar town, Sylhet, Bangladesh, *SN Applied Sciences*, 2: 777.
11. Dey, A., Siddiqua, S., **Rahman, M. Z.**, 2019. Suitability assessment using multicriteria spatial decision support system for the existing landfill sites of Chittagong City, Bangladesh. *Environmental Earth Sciences* 78 (24): 702.
12. Paul, S. S., Akhter, S. H., Hasan, K., **Rahman, M. Z.**, 2019. Geospatial analysis of the depletion of surface water body and floodplains in Dhaka City (1967 to 2008) and its implications for earthquake vulnerability. *SN Applied Sciences* 1: 565.
13. **Rahman, M. Z.**, Siddiqua, S., Kamal, A. S. M. M., 2018. Geology and topography based V_s^{30} map for Sylhet City of Bangladesh. *Bulletin of Engineering Geology and the Environment*. Doi: <https://doi.org/10.1007/s10064-018-1331-5>
14. **Rahman, M.Z.**, Kamal, A.S.M.M., Siddiqua, S., 2018. Near-surface shear wave velocity estimation and V_s^{30} mapping for Dhaka City, Bangladesh. *Natural Hazards*. doi:10.1007/s11069-018-3266-3
15. **Rahman, M. Z.**, Siddiqua, S., 2017. Evaluation of liquefaction-resistance of soils using standard penetration test, cone penetration test, and shear-wave velocity data for Dhaka, Chittagong, and Sylhet cities in Bangladesh. *Environmental Earth Sciences* 76:207.
16. **Rahman, M. Z.**, Hossain, M. S., Kamal, A. S. M. M., et al., 2017. Seismic site characterization for Moulvibazar town, Bangladesh. *Bulletin of Engineering Geology and the Environment*.

doi: 10.1007/s10064-017-1031-6

17. **Rahman, M. Z.**, Siddiqua, S., Kamal, A. S. M. M., 2016. Shear wave velocity estimation of the near-surface materials of Chittagong City, Bangladesh for seismic site characterization. *Journal of Applied Geophysics* 134, 210-225.
18. **Rahman, M. Z.**, Siddiqua, S., Kamal, A. S. M. M., 2015. Liquefaction hazard mapping by liquefaction potential index for Dhaka city, Bangladesh. *Engineering Geology* 188, 137-147.
19. Kibria, M. G., Saha, S. K., Monsur, M. H., Rashid, T., **Rahman, M. Z.**, 2015. Mid- Holocene marine transgression at eastern coastal margin of Bangladesh - Implications for past sea level change. *Journal of Climate Change* 1(1-2), 89-97.
20. Morino, M., Kamal, A. S. M. M., Akhter, S. H., **Rahman, M. Z.**, Ali, R. M. E., Talukder, A., Khan, M. M. H., Matsuo, J., Kaneko, F., 2014. A paleo-seismological study of the Dauki fault at Jaflong, Sylhet, Bangladesh: historical seismic events and an attempted rupture segmentation model. *Journal of Asia Earth Sciences* 91, 218-226.
21. Michio M., Monsur, M. H., Kamal, A. S. M. M., Akhter, S. H., **Rahman, M. Z.**, Ali, R., M. E., Talukder, A., and Khan, M. M. H., 2014. Examples of paleo-liquefaction in Bangladesh. *Journal of Geological Society of Japan* 120 (9), 7-8.
22. Hossain, M. S., Kamal, A. S. M. M., **Rahman, M. Z.**, Rahman, M. M., 2014. Predominant period and amplification factor estimation with respect to geomorphology-A case study of Sylhet city corporation area, Bangladesh. *The Bangladesh Journal of Scientific Research* 27, 1-10.
23. Hossain, M. F., **Rahman, M. Z.**, Rana, A. A., Karim, M. M., Chowdhury, R. S., Amin, A. F. M. S., Ahmed, I., Dewan, A. H., 2013. Development of standard sand from Sreemangal silica deposit for testing hydraulic cement mortars in Bangladesh. *Bangladesh Journal of Geology* 31-32, 122-132.
24. Morino, M., Kamal, A. S. M. M., Muslim, D., Ali, R. M. E., Kamal, M. A., **Rahman, M. Z.**, and Kaneko, F., 2011. Seismic event of the Dauki fault in 16th century confirmed by trench investigation at Gabrakhari village, Haluaghat, Mymensingh, Bangladesh. *Journal of Asian Earth Sciences* 42, 492-498.
25. **Rahman, M. Z.**, Saha, S. K., Islam, S. M., Hassan, M. Q., and Woobaidullah, A. S. M., 2011. Hydro-meteorological study of Sunamganj town and surroundings for forecasting flash flood early warning. *Journal of Asiatic Society of Bangladesh* 37 (1), 35-44.
26. Hasan, N., Sadik, S., Saha, S. K., **Rahman, M. Z.**, and Rahman, M. M. S., 2011. Chemical characterization and quality compliance of bottled mineral water in Bangladesh. *Dhaka University Journal of Science* 59 (1), 33-37.
27. **Rahman, M. Z.**, Hassan, M. Q., Saha, S. K., Roy, V., and Khan, A. J., 2010. Development of early warning device for detection of flash flood in Sunamganj, Bangladesh. *Dhaka University Journal of Earth and Environmental Sciences* 1, 61-65.
28. Rahman, M. M., Saha, S. K., and **Rahman, M. Z.**, 2010. Impact assessment of environmental consequences on a blowout at Chhatak-2 (Tengratila) gas field, Bangladesh. *Bangladesh Journal of Environmental Research* 8, 15-22.
29. Saha, S. K., Rokunuzzaman, M., **Rahman, M. Z.**, 2009. Assessment of vulnerability and adaptive response in the context of climate variability in south-west Bangladesh. *Bangladesh Journal of Geology* 26-28, 129-138.
30. Ullah, A. S. M. W., Hussain, M., **Rahman, M. Z.**, and Uddin, M. Z., 2006. Geoelectric resistivity survey for delineating hydrogeological condition of Purbachal residential project area, Narayanganj district. *Bangladesh Journal of Geology* 25, 138-148.

31. **Rahman, M. Z.**, and Karim, M. F., 2005. Geological advantages for construction of underground metro railway transit system in Dhaka city. *Bangladesh Journal of Geology* 24, 19-37.
32. Khan, S. R., Ahsan, K., **Rahman, M. Z.**, and Ahsan, M. K., 2005. Emerging hazards in the deltaic coastal plains of Bangladesh. *Bangladesh Journal of Geology* 24, 105-119.
33. Ali, R. M. E.; Karim, M. F. and **Rahman, M. Z.**, 2004. Engineering geology of Khulna metropolitan city area. *Bangladesh Journal of Geology* 23, 83-92.
34. Huque, M. A., **Rahman, M. Z.**, Akhter S. H., and Bhuiyan, A. H., 2003. Thin-section petrography of the Permian Gondwana coal-bearing sandstones of the Barapukuria basin, Dinajpur, Bangladesh. *Bangladesh Journal of Geology* 22, 71-82 (M. Sc. work).
35. Karim, M. F. and **Rahman, M. Z.**, 2002. Possible effect of a moderate earthquake on existing infrastructures of Dhaka city: A geological-geotechnical overview. *Bangladesh Journal of Science and Technology* 4 (2), 193-203.
36. Kamal, A. S. M. M.; Dewan, A. M. and **Rahman, M. Z.**, 2000. Differentiation of morphotectonic landforms in the Mid-northern part of Bangladesh: A study using remote sensing and GIS techniques. *Bangladesh Journal of Geology* 19, 1-12.

Papers in Refereed Conference Proceedings

1. **Rahman, M.Z.**, Siddiqua, S., Kamal, A. S. M. M., 2017. Probabilistic seismic hazard analysis for Dhaka city, Bangladesh, in: 70th Canadian Geotechnical Conference and the 12th Joint CGS/IAH-CNC Groundwater Conference. Canadian Geotechnical Society (CGS), October 01-04, 2016, Ottawa City.
2. **Rahman, M. Z.**, Siddiqua, S., 2016. Liquefaction resistance evaluation of soils using standard penetration test blow count and shear wave velocity, in: 69th Canadian Geotechnical Conference. Canadian Geotechnical Society (CGS), October 02-04, 2016, Vancouver City, Paper no. 3715.
3. **Rahman, M. Z.**, Kamal, A. S. M. M., Siddiqua, S., 2015. Shear wave velocity mapping of Dhaka City for seismic hazard assessment, in: 11th Canadian Conference on Earthquake Engineering. Canadian Association of Earthquake Engineering, July 21-24, 2015, Victoria, Paper no. 98251.
4. **Rahman, M.Z.**, Siddiqua, S., Kamal, A. S. M. M., 2015. Shear wave velocity estimation using multichannel analysis of surface wave and small scale microtremor measurement for seismic site characterization, in: 68th Canadian Geotechnical Conference and 7th Canadian Permafrost Conference. Canadian Geotechnical Society (CGS), September 20-23, 2015, Quebec City, Paper no. 174.
5. Faggella, M., Monti, G., Braga, F., Gigliotti, R., Capelli, M., Spacone, E., Laterza, M., Triantafyllou, T., Varum, H., Safi, M. D., Subedi, J., Dixit, A., Lodi, S., **Rahman, Z.**, Limkatanyu, S., Xiao, Y., Yingmin, L., Kumar, H., Salvatore, W., Cecchini, A., Lukkunaprasit, P., 2012. EU-NICE, Eurasian university network for international cooperation in earthquakes, in: 15th World Conference of Earthquake Engineering (15WCEE). September 24-28, 2012, Lisbon, Portugal.
6. **Rahman, M. Z.**, Slob, S, and Hack, R., 2006. Deriving roughness characteristics of rockmass discontinuities from terrestrial laser scan data, in: Culshaw, M. G., Reeves, H. J., Jefferson, I. and Spink, T. W. (Eds.), 10th International Congress of International Association of Engineering Geology and The Environment (IAEG2006); Engineering Geology for Tomorrow's Cities. 6-10 September 2006, Nottingham. *Engineering Geology Special Publications of Geological Society of London* 22 (2009): Paper no. 437 (M. Sc. work).

Papers in Non-Refereed Conference Proceedings

1. Ali, R. M. E., **Rahman, M. Z.**, 2006. Ground improvement techniques for soft organic clay deposits in Khulna metropolitan city, Bangladesh, in: Proceedings of International Symposium on Geo-disasters, Infrastructure Management and Protection of World Heritage Sites. November 25-26, 2006, Kathmandu, Nepal, pp.33-41.

Abstracts in Conference Proceedings

1. Karim, M. F., **Rahman, M. Z.**, Kamal, A. S. M. M., Hassan, M. Q., Siddiqua, S., 2016. Sustainable underground constructions including tunnels for Dhaka city, Bangladesh: A geological and geotechnical insight, in Proceedings of 2016 Geological Society of America (GSA) Annual Meeting, September 25-28, 2016, Denver, Colorado, USA, Paper no. 178-8.
2. Karim, M. F., Kamal, A. S. M. M., **Rahman, M. Z.**, Hassan, M. Q., Khadiza, U., Serajee, F., and Siddiqua, S., 2015. Geological engineering evaluation of landslides in the southeastern Bangladesh (Abstract), in: Proceedings of 2015 Geological Society of America (GSA) Annual Meeting, November 1-4, 2015, Baltimore, Maryland, USA, Paper no. 237-8.
3. Ali, R. M. E., **Rahman, M. Z.**, Khan, M. M. H., Uddin, M. Z., 2009. Environmental geology for urban and landuse planning - A case study of Rangamati town and its surroundings, Bangladesh (Abstract), in: International Conference on Geoscience for Global Development (GeoDev). Jointly organized by Association of Geoscientists for International Development (AGID), Bangladesh Geological Society (BGS), International Geoscience Education Organization (IGEO) and International Union of Geological Sciences (IUGS), October 26-31, 2009, Dhaka, Bangladesh.
4. Uddin, M. Z., Woobaidullah, A. S. M., **Rahman, M. Z.**, Kabir, S. M. M, 2009. Geotechnical and hydrogeological evaluation of Purbachal area using SPT and resistivity data (Abstract), in: International Conference on Geoscience for Global Development (GeoDev). Jointly organized by Association of Geoscientists for International Development (AGID), Bangladesh Geological Society (BGS), International Geoscience Education Organization (IGEO) and International Union of Geological Sciences (IUGS), October 26-31, 2009, Dhaka, Bangladesh.
5. **Rahman, M. Z.**, 2001. Diagenetic changes of the Gondwana sandstone of Barapukuria basin, Dinajpur, Bangladesh (Abstract), in: 10th Geological Conference of Bangladesh Geological Society. March 16-19, 2001, Dhaka, Bangladesh.

Poster Presentation in Conference

1. Karim, M. F., **Rahman, M. Z.**, Kamal, A. S. M. M., Siddiqua, S., 2016. Site-specific earthquake hazard characterization for Dhaka City, Bangladesh (poster) in: Southern California Earthquake Center Annual Meeting, September 10-14, 2016, Palm Springs, California, USA.

Professional Affiliations

1. Member, Bangladesh Geological Society
2. Member, Canadian Geotechnical Society
3. Life Member, Association of Geoscientists for International Development (AGID)
4. Member, Society of Exploration Geophysicists