

RAJIB KUMAR SAHA

Assistant Director (Geology), Geological Survey of Bangladesh

(Currently in study deputation for pursuing MSc under Erasmus Mundus Scholarship supported by European Union)

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SUMMARY

- Geologist having 10 years of industrial and academic experiences managing multiple interdisciplinary research projects.
- Experienced and effective writer and public speaker with ability to present complex scientific material in a clear and succinct manner.

1. Education and degrees awarded

Name of the Certificates/Degree	School/College/University	Year of Passing	Division/Class with % of Marks/CGPA
Erasmus Mundus International Master in Quaternary and Prehistory	Muséum National D'Histoire Naturelle, Alliance Sorbonne University, Paris, France	2021-2023	Ongoing
Post Graduate Diploma Specialization Certificate for the Assessment and Management of Geological and Climate Related Risk	Dept. of Earth Sciences University of Geneva, Geneva Switzerland	2020	5.15 out of 6.00
Master of Science in Geological Sciences (Thesis Group)	Dept. of Geological Sciences, Jahangirnagar University, Savar, Dhaka, Bangladesh	2008 (Exam. held in 2010)	CGPA 3.63 out of 4.00
Bachelor of Science (Honors) in Geological Sciences	Dept. of Geological Sciences, Jahangirnagar University, Savar, Dhaka, Bangladesh	2007 (Exam. held in 2009)	First Class
Higher Secondary Certificate (HSC) in Science Group	Notre Dame College, Dhaka, Bangladesh	2002	First Division (star marks)
Secondary School Certificate (SSC) in Science Group	Brahmondi K.K.M. Govt. High School, Narsingdi, Bangladesh	2000	First Division (star marks)

2. Research Interest:

Quaternary Geology, Geochronology, Geomorphology, Geo-archeology, Mineralogy, Sedimentology, Hydrometeorology, GIS & RS and Climate change induced geo-hazards risk assessment

3. Country Visited: Thailand, Switzerland, Italy, France, Hungary

4. Computer and Software Management Skills:

Operating System (Win 10, UNIX)

Software Management: Arc GIS, QGIS, ENVI, gsi3D, Corel draw, Strater, Surfer, MODFLOW, HEC-RAS, Rock Works, ERDAS IMAGINE, SPSS

Computer Programming: R, PYTHON, MATLAB

5. Other education and training, qualifications and skills

Name of The Training	Start and End Time	Organizer
Global Warming Mitigation and Adaptation by Balancing Sustainable Energy Management, GSEM, 2019	30 January, 2019 to 15 February, 2019	Prince of Songkla University, Thailand International Cooperation Agency (TICA)
Global Platform for Disaster Risk Reduction - Sixth Session	13 May to 17 May, 2019	UNDRR, Switzerland

Training Institute/Persons	Start From	End To	Title of qualification awarded
Department of Statistics, Biostatistics & Informatics University of Dhaka	02/06/2013	18/07/2013	Training Course on SPSS for Professionals, Researchers & Students
Bangladesh Space Research and Remote Sensing Organization (SPARRSO)	17/11/2013	28/11/2013	Training Course for Professionals on Advance Level Remote Sensing and Digital Image Processing
International Experts from BRUKER Place: Geological Survey of Bangladesh	24/11/2014	30/11/2014	X-RF Operation & Maintenance (WD X-RF Model: S8 TIGER)
Geo-Information for Urban Development, Bangladesh Bangladesh & German Govt. Technical Cooperation Project in cooperation with State Authority for Mining, Energy & Geology (LBEG), Lower Saxony, Germany	19/04/2015	23/04/2015	Interpretation of Geotechnical Laboratory Results
Department of Geography & Environment University of Dhaka	08/10/2015	25/12/2015	Arc GIS 10.2.1: Advance Level Professional GIS Training
Expert of ESRI, Place: Geological Survey of Bangladesh	20/05/2018	30/06/2018	Introduction to Remote Sensing with ENVI 5.5 and Image Analysis Integration of ENVI Applications with Arc GIS Desktop
Experts of Gradex, Place: Geological Survey of Bangladesh	20/05/2018	24/05/2018	Automatic Grain Size Analyzer (Model: Gradex 2000)
International Experts of Carl Zeiss, Place: Geological Survey of Bangladesh	21/10/2018	25/10/2018	Operation and Application Training Zeiss Sigma-300 Field Emission Scanning Electron Microscope
Experts of EDAX, Place: Geological Survey of Bangladesh	18/11/2018	24/11/2018	The Advance EDS and WDS certified Training
Jointly sponsored by ICIMOD's Himalayan University Consortium and the Mountain Research Initiative (MRI) and coordinated by the University of Arizona's Udall Center for Studies in Public Policy	07/04/2021	09/04/2021	Synthesis Workshop on Renewable energy transitions: A comparative assessment of the Hindu Kush Himalaya, Andes and Alps

World Wildlife Fund (WWF), USA	23/03/2021	15/04/2021	Natural and Nature-Based Flood Management Green Guide Training Course
South East Asian Regional Center for Archeology and Fine Arts (SEAMEO-SPAFA), International Center for the Study of the Preservation and the Restoration of Cultural Property (ICCROM), and Institute of Disaster Risk Mitigation for Urban Cultural Heritage, Ritsumeikan University (R-DMUCH), Kyoto, Japan	04/02/2021	03/06/2021	2nd Training workshop on Disaster Risk Management for Southeast Asian Cultural Heritage: Understanding People, Nature, Culture-Heritage Management for Building Resilience of Living Settlements
Min Ex Target project, UiT The Arctic University of Norway, in collaboration with AGH University of Science and Technology, Geological Survey of Denmark and Greenland (GEUS), Geological Survey of Finland (GTK), University of Oulu (OU), and EIT Raw Materials Academy	14/06/2021	18/06/2021	Fingerprinting techniques in mineral exploration

6. Linguistic skills

- Bengali (Native Speaker)
- Other languages: English (Fluent), French (Basic speaking, writing and reading knowledge A2 level), Hindi (Intermediate)

English:

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	C1
C2	C1	C1	C1	

7. Current position

Name of Organization	Current Position	Employment Nature	Experience	
			From	To
Geological Survey of Bangladesh (GSB) Ministry of Power, Energy & Mineral Resources, Government of the People's Republic of Bangladesh 153 Pioneer Road, Segunbagicha, Dhaka-1000, Bangladesh	Assistant Director (Geology)	Full Time Government Employee	16/09/2012	Till Date

8. Previous work experience

Name of Organization	Position	Employment Nature	Experience	
			From	To
Bangladesh Water Development Board (BWDB) Groundwater Hydrology Division-II 72 Green Road, Dhaka, Bangladesh	Geologist	Full Time Government Employee	18/07/2012	12/09/2012

9. Research History:

- Research experience as a geoscientist working at the Petrology and Mineralogy branch of GSB and conducted 09 field works in different parts of Bangladesh and prepared professional report especially on heavy mineral assemblages and minerals of Tertiary hills of Chottogram hill tracts of Bangladesh from 2014 to 2021.
- Research experience as a thesis student Post Graduate training “Specialization Certificate for the Assessment and Management of Geological and Climate Related Risk” from the Department of Earth Sciences, University of Geneva, Switzerland from 2019 to 2020.
- Research experiences as a Geologist (both field & laboratory) in Bangladesh Government revenue project ‘Identification & Economic Assessment of Valuable Minerals in River Sands of Bangladesh (ISRM-BD)’ implemented by GSB from January 2017 to June, 2019.
- Research experiences as an Engineering Geologist (both field & laboratory) in Bangladesh-German Government Technical Co-operation Project ‘Geo-Information for Urban Development, Bangladesh (GUD)’ implemented by GSB and BGR from 2012 to 2014.
- Research experience as a Master of Science student in Geological Sciences at Dept. of Geological Sciences, Jahangirnagar University. Thesis entitled: “Soil Geomorphic Evolution of Shitalakhya-Dhaleswari Interfluvium” during 2010 to 2011.

10. Merits in teaching and pedagogical competence

- Provided training for the 2nd year students of Dept. of Oceanography, Bangabandhu Sheikh Mujibur Rahman Maritime University Bangladesh and 3rd year students of the Dept. of Petroleum Engineering, Military Institute of Science and Technology, Bangladesh) on mineralogy and petrology basic theories, principles and laboratory analysis (heavy mineral identification by polarizing microscope operation, sample analysis through XRF, XRD, Automatic Grain Size Analyzer and heavy mineral separation through density separation (Tetrabromoethane/Bromoform) on the year 2018, 2019 and 2020.

11. Awards, prizes and honours

- Awarded European commission full fund scholarship to study International Master in Quaternary and Prehistory from 2021-2023
- Obtained best innovator award of the Geological Survey of Bangladesh for the fiscal year 2018-2019.
- Awarded University of Geneva scholarship to attend CERG-C, 2019 at University of Geneva, Switzerland.
- Awarded Royal Thai Govt. Scholarship to attend GSEM, 2019 Program at the Prince of Songkla University, Thailand
- Awarded University merit scholarship from Jahangirnagar University from 2005 to 2010.
- Awarded Sonali Bank Limited Gold Medal and Bangladesh Krishi Bank Merit Scholarship based on Secondary School Certificate Examination, 2000 and Higher Secondary School Certificate Examination, 2002.
- Awarded Government Scholarship in Secondary School Certificate Examination, 2000 to 2002.
- Awarded Government Scholarship in Junior Scholarship Examination, 1997.
- Awarded Government Scholarship in Primary Scholarship Examination, 1994.

12. Other academic merits

- General Member, Bangladesh Geological Society
- Member, International Society of Photogrammetry
- Member, International Society for Promoting Geoethics
- Life Member, Bangladesh Society of Geoinformatics

A list of practical and technical skills

My practical and technical skills are listed below:

Areas of Technical and Practical Skills:

Geological, Mineralogical and Engineering Geology study:

1. Geological field mapping and surveying, Sample collection through Auger, Standard Penetration Test and Pit Section, Petrology & Mineralogy study, Engineering Geological (geotechnical) study, GIS (mapping and spatial analysis).
2. Appropriate sample collection (coring and non-coring), field specimen description and core logging ability. Eye for details both in the field and under microscope (Petrographical & Ore microscopes), FESEM, XRD, XRF, Automatic Grain Size Analyzer.

Instrument / Scientific Method Name	Capability	Experience (Duration)
Polarizing Microscope	Thin section and Grain slide study and image Analysis	16 years
Sieve Shaker	Grain size analysis (ASTM Sieve)	16 years
Hydrometer Analysis	Clay and Fine size particle separation	12 years
Automatic Grain Size Analyzer (Gradex 2000)	Particle size analysis	2 years
Field Emission Scanning Electron Microscope (Sigma 300)	SE, BSE, EDS, WDS, CL Detector for grain image analysis, mineral mapping,	4 years
WD XRF (Bruker S8 Tiger)	Quant Express and Geo Quant T software for major, minor and trace elements analysis	7 years
XRD (Pan Analytical Xpert Pro)	Clay mineral identification, estimation, analysis	12 years
ICP-OES (Varian)	Element and Oxide Analysis	8 years
Heavy Mineral Separation	(Bromoform, Tetrabromoethane) used for separating light and heavy grain	16 years
Electrostatic Plate Separator, Vibrating Screen	Grain Size Separation	3 years
Induced Roll Magnetic Separator	Magnetic Separation of Sand grains	3 years
UCS, Fall Cone Tester, Pocket Penetrometer, Shrinkage Limit	Geotechnical Apparatus	9 years
Es-3000 Solution Seismograph with Accessories, GPR, Resistivity Meter	Geophysical Instrument	8 years

Analytical Skills:

3. Ability to select appropriate samples for Geology, Petrology and Mineralogy, Engineering Geology and Geophysical study.
4. Practical experience on using Arc GIS, ERDAS Imagine, SPSS, Rockworks, Starter, CorelDraw, Surfer and other geological software's. Ability to write project/progress report integrating geological data, geological mapping, geophysical results and assay result for 3-Dimensional model generation.

List of Scientific Publications

Journal Articles:

- **Saha, R.K.**, Khan, M. O, F., 2015, Landform Characterization and Geo-hazards in the area between Someswari and Ghoneswari Rivers, Netrokona district, Bangladesh, *Bangladesh Geoscience Journal*, Dhaka, Bangladesh, Vol. 21, P 35-49
- **Saha, R.K.**, Khan, S.H., Akhter, S., Huque, A., 2011, Study of Clay minerals of Shitalakhya-Dhaleswari Interfluve, *Bangladesh Journal of Geology*, Dhaka, Bangladesh, Vol. 29-30, P 88-99
- Khan, S.H., **Saha, R.K.**, Akhter, S., 2011, Soil Geomorphic Evolution of Shitalakhya-Dhaleswari Interfluve, *Bangladesh Geoscience Journal*, Dhaka, Bangladesh, Vol. 17, P 53-72

Conference Abstracts:

- Hasan, F., **Saha, R.K.**, 2021, Socio-Economic Importance of Heavy Minerals of the Jamuna River for Ensuring Sustainable Development of Bangladesh, National Seminar on Geosciences for Sustainable Development of Bangladesh (50th anniversary of Geological Survey of Bangladesh), Dhaka, Bangladesh, 15 December, 2021
- **Saha, R.K.**, Hasan, F., Hossain, S., 2020, Geomorphic-Pedologic Evolution of Char Kukri-Mukri Island, Bangladesh, 36th International Geological Congress, New Delhi, India, Abstract accepted for oral presentation.
- **Saha, R. K.**, 2018, Climate change influences on the braided bars of the Jamuna River: A case study from the Sonatala and Sariakandi Upazilas of Bogura district, Bangladesh, International Conference on Earth Science and Climate Change, September 06-07, 2018, Zurich, Switzerland, Expert Opinion on Environmental Biology, 2018, Volume: 7, DOI: [10.4172/2325-9655-C6-036](https://doi.org/10.4172/2325-9655-C6-036)
- **Saha, R.K.**, Talukder, S., Hasan, F., Arifuzzaman, M., Hossain, S., 2017, Geomorphic Evolution of Bhwal Garh: A Pedogenic Approach, International Conference of Geomorphology, New Delhi, India, Abstract No. 44, Abstract Volume, P 92

Unpublished Professional Reports:

- Hasan, F. M., Arifuzzaman, M., **Saha, R.K.**, Talukder, S., 2021, Geological Report on Geological Aspects and Minerals of the Tertiary Hills of Ruma Upazila, Bandarban Hill District, Bangladesh, *Records of the Geological Survey of Bangladesh*
- Hasan, F. M., Arifuzzaman, M., **Saha, R.K.**, Hosain S., 2020, Geological Report on Geological Aspects and Minerals of the Tertiary Hills of Lama, Alikadam and Thanchi Upazila's of Bandarban Hill District, Bangladesh, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-899
- Arifuzzaman, M., **Saha, R.K.**, Hosain S., 2020, Geological Report on Geological Aspects and Minerals of the Tertiary Hills of the Khagrachari Hill District, Bangladesh, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-875
- Hasan, F. M., **Saha, R.K.**, 2019, Geological Report on Identification and economic assessment of valuable minerals in the Tetulia and Meghna River and adjacent areas of Bhola and Patukhali Districts, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-863

- Hasan, F. M., Arifuzzaman, M., **Saha, R.K.**, Hosain S., 2019, Geological Report on Minerals of Rangamat and Kaptai Hills, Bangladesh, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-864
- Hasan, F. M., **Saha, R.K.**, 2018, Geological Report on Identification and economic assessment of valuable minerals in the Jamuna River and adjacent areas of Islampur and Madarganj (Northern part) Upazilas of Jamalpur District, Sonatala Upazila of Bogra District and Saghata Upazila of Gaibandha District, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-843
- Hasan, F. M., Arifuzzaman, M., **Saha, R.K.**, Talukder, S., Hossain, S., 2017, Geological Aspects and Elemental Composition of the Madhupur Clay of Sreepur and Kapasia Upazila, Gazipur District, Bangladesh, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-830
- Arifuzzaman, M., **Saha, R.K.**, Ahsan, K., Haque, A., 2014, Geological Report on Economic Minerals of the Old Brahmaputra River Sands, Bangladesh, *Records of the Geological Survey of Bangladesh*. GSB/DATA/UR-771
- Asaduzzaman, A.T.M., Ludwig, R.R, Hossain, M., Kamal, M. A., Faruka, N. N., Alam, M. F., Jabeen, S., **Saha, R.K.**, 2013, Report on Training and Assessment of Applicability of Multidisciplinary Techniques in Urban-Engineering Geology in Aftabnagar Area, Badda, Dhaka, *Records of the Geological Survey of Bangladesh*, GSB/DATA/UR-784 (2013)