

Nazia Khatun

naziabcsir@gmail.com and <https://orcid.org/0009-0006-0793-3120>
Office: Industrial Physics Division, BCSIR Dhaka Laboratories
Bangladesh Council of Scientific & Industrial Research (BCSIR)
Dr. Qudrat-I-Khuda Road, Dhaka-1205, Bangladesh
WhatsApp: +88-01710412484

Education

M. Sc. in Physics National University, Gazipur, Bangladesh	2005
B. Sc. (Hons.) in Physics National University, Gazipur, Bangladesh	2003

Professional Experience

Senior Scientific Officer Industrial Physics Division, BCSIR Dhaka Laboratories Bangladesh Council of Scientific & Industrial Research (BCSIR)	April 2019 to Present
Scientific Officer Industrial Physics Division, BCSIR Dhaka Laboratories Bangladesh Council of Scientific & Industrial Research (BCSIR)	July, 2011 to April 2019
Research Chemist Industrial Physics Division, BCSIR Dhaka Laboratories Bangladesh Council of Scientific & Industrial Research (BCSIR)	June, 2006 to July, 2011

Technical Skill and Competences

- Bulk & thin-film (metal, metal Oxide, dielectric, magnetic materials, semiconducting and nano materials) Synthesis and fabrication: Chemical reduction, sol-gel processing, hydrothermal/solvothermal synthesis, combustion synthesis, solid state reaction, spin coating, dip coating, sputtering, screen etc.
- Analytical & Characterization Techniques: SEM, Impedance analyzer and Four-point probe electrical measurement, UV-VIS spectroscopy etc.

Skills on Research Tools & Techniques

- Expert in Physics, Device and modelling of advanced high efficiency magnetic, dielectric and nano materials
- Experienced in sample preparation, chemical modification, flow synthesis, structure-property analysis
- Skilled in sample preparation instrument operating such as Spin Coater, Magnetic Starring Hot Plate, Oven, annealing chamber, High-Energy Planetary Ball Mill, etc. and characterizations equipment SEM, UV-VIS, Impedance analyzer, Potentiostat / Galvanostat (Electrochemical Workstation), Tension Meter (Tensiometer) etc.

Publications (Selected)

- Khatun, N., Ahmed, S., Hossain, M.S., Farhad, S.F.U., Al-Mamun, M., Alam, M.S., Begum, M.H.A., Tanvir, N.I., Hakim, M. and Islam, S., 2023. Influence of Y^{3+} and La^{3+} ions on the structural, magnetic, electrical, and optical properties of cobalt ferrite nanoparticles. *Heliyon*, 9(2).
- Khatun, N., Goni, M.O., Islam, M.S., Shaikh, M.A.A., Farhad, S.F.U., Al-Mamun, M., Alam, M.S., Islamtanvir, N., Hossain, M.S., Paul, T. and Islam, S., 2025. Impact of lanthanum ions on structural, morphological, magnetic, optical and electrical properties of Cobalt-Zinc ferrites. *Journal of Magnetism and Magnetic Materials*, 614, p.172740. <https://doi.org/10.1016/j.jmmm.2024.172740>
- Khatun, N., Islam, Md. J., Bhuiyan, R. H., Sultana, S., Shaikh, M. A. A., Bitu, M. N. A., Chowdhury, F., and Islam, S., (2023), "Psidium guajava leaf extract mediated green synthesis of silver nanoparticles and its application in antibacterial coatings", *RSC Adv.*, 13, 19164, DOI: [10.1039/d3ra03381c](https://doi.org/10.1039/d3ra03381c).
- Habib, M.S., Farhad, S.F.U., Tanvir, N.I., Alam, M.S., Bitu, M.N.A., Islam, M.S., Islam, S., Khatun, N., Hossain, M.S. and Shaikh, M.A.A., 2023. Fabrication and characterization of graphene-barium titanate-graphene layered capacitors by spin coating at low processing temperatures. *ECS Journal of SolidState Science and Technology*, 12(9), p.093006.
- Sakib, N., Nahid, F., Farhad, S.F.U., Khatun, N., Rayhan, M.A., Islam, S.S., Bitu, M.N.A., Hoque, S.M. and Al-Mamun, M., 2025. Significant improvement of photocatalytic activity of $Bi_{25}Fe_{0.5}Ni_{0.5}O_{40}@MWCNTs$ nanocomposites synthesized by various hydrothermal routes. *Ceramics International*, 51(27), pp.52777-52792.
- Ghosh, T.K., Khan, M.K.R., Rahman, M.M., Hossain, M.S., Islam, S., Khatun, N., and Sarker, M.S.I., 2024. Enhanced electrical, optical and magnetic properties of $BiFeO_3$ perovskite nanoparticles co-doped with Y and Cu. *AIP Advances*, 14(4).

- Sakib, N., Nahid, F., Farhad, S.F.U., Khatun, N., Islam, S.S., Rayhan, M.A., Hossain, M.D., Bitu, M.N.A., Hoque, S.M. and Al-Mamun, M., 2024. Effects of nickel substitution on structural, magnetic and optical properties of Sillenite bismuth ferrite nanoparticles. *Journal of Solid State Chemistry*, 340, p.125045.
- Naher, M.I., Tanvir, N.I., Bitu, N.A., Khatun, N., Islam, S., Islam, M.S., Shaikh, M.A.A. and Farhad, S.F.U., 2024. Structural, morphological, optical, and electrochemical studies of α -Bi₂O₃ and CuBi₂O₄ photocathode materials: MI Naher et al. *MRS Advances*, 9(21), pp.1649-1657.
- Islam, S., Molla, M.R., Khatun, N., Tanvir, N.I., Hakim, M. and Islam, M.S., 2025. Exploring the effects of zirconium doping on barium titanate ceramics: structural, electrical, and optical properties. *Materials Advances*, 6(4), pp.1403-1413., <https://doi.org/10.1039/d4ma00967c>
- Rabbi MBU, Al Montasir MS, Emon EH, Rahim A, Ridoy FA, Khan MNH, Sani AA, Tania IS, Islam MR, Islam S, Khatun N, Bedoura S., “Enhancing the Antimicrobial and UV Resistance Properties of PC Blend and Recycled Cotton Fabric through Ag/TiO₂ Nanocomposite”. *ACS Omega*. 2025 Feb 18;10(8):7697-7710. doi: 10.1021/acsomega.4c07348.
- Hasan, M.R., Hossain, S., Parvez, M.M., Maudood, J., Islam, M.S., Alam, A., Islam, S., Khatun, N., Rob, M.A., Ahmed, F. and Aktar, M.S., 2025. Structural and electrical properties of Yb, Sn doped barium zirconate as a novel perovskite. *Materials Research Innovations*, pp.1-15.

Conference Presentations (Selected)

- Oral Presentation in BCSIR Congress-2022, BCSIR Campus, Dhaka-1000
- Oral Presentation in BCSIR Congress-2023, BCSIR Campus, Dhaka-1000
- Oral Presentation in BPS-2024, Atomic Energy Center, Shahbagh, Dhaka-1000

Thesis Supervision

- Supervised 5 M.Sc theses on topics magnetic materials for humidity sensor application.

Professional Memberships (Selected)

- Life-member of Bangladesh Physical Society, Dhaka, Bangladesh

Professional Trainings

Project Management (Selected)

- Training program on Computer applications and English language course, at Regional public administration Training Center, New Eskaton, Dhaka.
- Training program on ISO 17025 for Accreditation of testing parameter at BCSIR Laboratories Dhaka.
- Training on National Integrity Strategy at BCSIR Laboratories Dhaka.
- Training Program on Public Procurement Management at BCSIR Laboratories Dhaka.
- Training on, Annual budget distribution according to PPR-2008& discussion on basic software tools (Origin lab & Turnitin) at BCSIR Laboratories Dhaka.
- Learning Session on Patent Drafting & Industrial Process, BCSIR, Dhaka-1000

Training on Scientific Instrumentation (Selected)

- Training on operating system and maintenance of Photoluminescence, at BCSIR, Dhaka.
- Training on Basic principle, application, operation and maintenance of UV-vis Spectrophotometer at BCSIR Laboratories Dhaka.
- Training on Basic principle, application, operation and maintenance of HPLC at BCSIR Laboratories Dhaka.
- Training on operating system and maintenance of Inductively Coupled plasma Mass spectroscopy (ICPMS) at BCSIR, Dhaka.
- Training on operating system and maintenance of Energy Dispersive X-ray Fluorescence Spectroscopy (ED-XRF) at BCSIR, Dhaka.
- Training on operating system and maintenance of Universal Testing Machine (UTM) at BCSIR, Dhaka.
- Training on operating system and maintenance of X-ray Diffractometer (XRD) at BCSIR, Dhaka.
- Training on operating system and maintenance of Fourier Transform Infrared and far Infrared Spectro Photometer (FTIR and FTFIR) at BCSIR, Dhaka.

References

Available up on request

Last Updated: Tuesday, 22 February, 2026