MINHAJUL ISLAM

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EXPERIENCES

- Scientific Officer (Physics), Bangladesh Atomic Energy Regulatory Authority (BAERA), E-12/A, Agargaon, Sher-E-Bangla Nagar, Dhaka 1207, Bangladesh. June 17, 2021 to present
- Research Assistant (RA), UGC Project Ref. No.: 6(74)/UGC/RS&P/BOPro/Physical-6/2018/3409, Materials Science Laboratory, Department of Physics, University of Rajshahi, Rajshahi 6205, Bangladesh. March 15, 2019 to January 15, 2020

EDUCATION

Master of Science in Physics (Thesis Group) July 8, 2018
Concentration: Materials Science
Department of Physics, University of Rajshahi, Rajshahi 6205, Bangladesh
1st class 3rd position with 75 to less than 80% marks
GPA: 3.83 (out of 4.00)

Bachelor of Science in Physics (Honors) January 30, 2017
Department of Physics, University of Rajshahi, Rajshahi 6205, Bangladesh
1st class 4th position with 70 to less than 75% marks
CGPA: 3.63 (out of 4.00)

Higher Secondary Certificate (Alim) July 27, 2011
Baniapara Kamil (MA) Madrasah, Joypurhat
Group: Science
Madrasah Board, Dhaka, Bangladesh
GPA: 5.00 (out of 5.00)

Secondary School Certificate (Dakhil) May 26, 2009
Baniapara Kamil (MA) Madrasah, Joypurhat
Group: Science
Madrasah Board, Dhaka, Bangladesh
GPA: 5.00 (out of 5.00)

RESEARCH/PUBLICATIONS/PRESENTATIONS

- Md Murshidul Islam, and **Minhajul Islam**, Designing resilient nuclear reactor materials: First-principles study of transition metal carbides MAC (M = Ti, Zr, Hf; A = Be, B), Submitted.
- Md N.J. Rifat, Mohammad Nazmul Hasan, Jahid Kabir Rony, Md Murshidul Islam, Md Saiduzzaman, and **Minhajul Islam**, Modulating physical properties of $ASnF_3$ (A = K, Rb) perovskites under pressure: Insights for enhanced optoelectronic performance via first-principles, Submitted.

- Md Murshidul Islam, Ashek-I-Ahmed, Md Abdur Rob Sheikh, Md Samiul Islam Sarker, and **Minhajul Islam**, Exploring the essential physical characteristics of tetragonal M_2O_3 (M = Zr, Hf) via first-principles for extreme environment suitability, Submitted.

- **Minhajul Islam**, and Md Murshidul Islam, Understanding the superior stability and enhanced physical performance of tetragonal XH_2 (X = Y, Zr) hydrides over their cubic counterparts via *ab-initio* computational investigation, *Chemical Physics* 597 **(2025)** 112805. https://doi.org/10.1016/j.chemphys.2025.112805

- Mohammad Nazmul Hasan, Md N.J. Rifat, Jahid Kabir Rony, Md Saiduzzaman, and **Minhajul Islam**, First-principles investigation of $NaGeX_3$ (X = Cl, Br, I) perovskites for eco-friendly photovoltaic and optoelectronic applications, *Physics Open* 24 **(2025)** 100278. https://doi.org/10.1016/j.physo.2025.100278

- Jahid Kabir Rony, Md Saiduzzamana, Mohammad Nazmul Hasan, Md N.J. Rifat, and **Minhajul Islam**, Pressure-controlled enhancement of key physical properties for improved optoelectronic performance in $MPbI_3$ (M = K, Tl) perovskites, *Chemical Physics* 596 **(2025)** 112747. https://doi.org/10.1016/j.chemphys.2025.112747

- **Minhajul Islam**, and Md Murshidul Islam, Designing resilient reactor materials: First-principles study of transition metal carbides MAC (M = Ti, Zr, Hf; A = Be, B), Poster Presentation, *National Conference on Physics*, 6-7 February **2025**, Paper ID: PP-99, organized by Bangladesh Physical Society (BPS).

- Ovijit Das, Jahid Kabir Rony, Pallab Kumar Karmaker, Mst.A. Khatun, Md Murshidul Islam, M.H. Mia, Md Saiduzzaman, and **Minhajul Islam**, Tailoring the physical properties of $InSnX_3$ (X = F, Cl) perovskites via pressure: A path toward sustainable optoelectronics, *Chemical Physics* 592 **(2025)** 112635. https://doi.org/10.1016/j.chemphys.2025.112635

- Md Safin Alam, Aldina Sultana, Arpon Biswas, Tanjun Ahmed, Md Saiduzzaman, and **Minhajul Islam**, Investigating the adaptability of $CsMF_3$ (M = Ge, Si) perovskites under hydrostatic pressure for improved optoelectronic performance: A DFT-based computational study, *Next Research* 1 **(2024)** 100069. https://doi.org/10.1016/j.nexres.2024.100069

- **Minhajul Islam**, and Md Abdur Rob Sheikh, Predicting the stability and exploring the fundamental physical properties of tetragonal Gd_2O_3: A comprehensive first-principles investigation, *Nuclear Materials and Energy* 41 **(2024)** 101734. https://doi.org/10.1016/j.nme.2024.101734

- **Minhajul Islam**, M.S.I. Sarker, M.K.R. Khan, and M.N.I. Khan, Facile Sol-Gel Synthesis of CoPt Nanopowder in Air Ambient: A Characterization Study for Soft Magnetic Device Applications, *Bangladesh Journal of Physics* 31 **(2024)** 26-34. https://doi.org/10.3329/bjphy.v31i1.79518

- Md Istiaque Ahmed, Arpon Biswas, Tariqul Islam Asif, Md Saiduzzaman, and **Minhajul Islam**, Hydrostatic pressure-induced transformations and multifunctional properties of Francium-based halide perovskite $FrCaCl_3$: Insights from first-principles calculations, *Heliyon* 10 **(2024)** e34059. https://doi.org/10.1016/j.heliyon.2024.e34059

- Wasif Abu Dujana, Md Safin Alam, Arpon Biswas, Tanjun Ahmed, Aldina Sultana, Ovijit Das, Mohammad Nazmul Hasan, Md Saiduzzaman, and **Minhajul Islam**, Hydrostatic pressure effects on Francium-based halide perovskites $FrMI_3$ (M = Ca, Sr): A pathway to enhanced optoelectronic performance, *Computational and Theoretical Chemistry* 1238 **(2024)** 114715. https://doi.org/10.1016/j.comptc.2024.114715

- **Minhajul Islam**, A comprehensive investigation on the physical properties of SiC polymorphs for high-temperature applications: A DFT study based on GGA and hybrid HSE06 exchange correlation functionals, *Nuclear Materials and Energy* 38 **(2024)** 101631. https://doi.org/10.1016/j.nme.2024.101631

- Ovijit Das, Mohammad Nazmul Hasan, Pallab Kumar Karmaker, Md Saiduzzaman, and **Minhajul Islam**, Investigation of high-pressure effect on the physical properties of $FrNBr_3$ (N = Ca, Sr) non-toxic halide perovskites, *Materials Science in Semiconductor Processing* 174 **(2024)** 108252. https://doi.org/10.1016/j.mssp.2024.108252

- Jahid Kabir Rony, Mohammad Nazmul Hasan, Md N.J. Rifat, Md Saiduzzaman, and **Minhajul Islam**, Pressure-induced DFT evaluation of $MSnI_3$ (M = K, Rb) perovskites for electronic phase transition and enhanced optoelectronic utilization, *Computational and Theoretical Chemistry* 1233 **(2024)** 114512. https://doi.org/10.1016/j.comptc.2024.114512

- Shariare Hossain Rabbi, Tariqul Islam Asif, Md Istiaque Ahmed, Md Saiduzzaman, and **Minhajul Islam**, Unveiling the pressure-driven modulations in $AGeF_3$ (A = Na, Tl) cubic perovskite halides for enhanced optoelectronic performance, *Computational Condensed Matter* 38 **(2024)** e00887. https://doi.org/10.1016/j.cocom.2024.e00887

- Jahid Kabir Rony, **Minhajul Islam**, Md Saiduzzaman, Khandaker Monower Hossain, Safin Alam, Arpon Biswas, M.H. Mia, Sohail Ahmad, and S.K. Mitro, $TlBX_3$ (B = Ge, Sn; X = Cl, Br, I): Promising non-toxic metal halide perovskites for scalable and affordable optoelectronics, *Journal of Materials Research and Technology* 29 **(2024)** 897-909. https://doi.org/10.1016/j.jmrt.2024.01.093

- **Minhajul Islam**, A comparative investigation on the fundamental physical properties of UX_2 (X = O, N, C, Si and S) solid nuclear fuel materials: A DFT+U study, *Chemical Physics Impact* 7 **(2023)** 100310. https://doi.org/10.1016/j.chphi.2023.100310

- **M Islam**, DFT and DFT+U Insights into the Physical Properties of UO_2, *Journal of Scientific Research* 15(3) **(2023)** 739-757. https://doi.org/10.3329/jsr.v15i3.64394

- **Minhajul Islam**, and Md Abdur Rob Sheikh, A comprehensive DFT study on the physical properties of XCrAl (X = Fe, Co, Ni, Cu) half-Heusler alloys for applications in high-temperature technology, *Physica B: Condensed Matter* 668 **(2023)** 415244. https://doi.org/10.1016/j.physb.2023.415244

- **Minhajul Islam**, M Khalilur Rahman Khan, Alok Kumar, M Mozibur Rahman, Md Abdullah-Al-Mamun, Rimi Rashid, Md Mahbubul Haque, and Md Samiul Islam Sarker, Sol-Gel Route for the Synthesis of $CoFe_{2-x}Er_xO_4$ Nanocrystalline Ferrites and the Investigation of Structural and Magnetic Properties for Magnetic Device Applications, *ACS Omega* 7 **(2022)** 20731–20740. https://doi.org/10.1021/acsomega.2c00982

- **Minhajul Islam**, M.S.I. Sarker, Takahiro Nakamura, M.K.R. Khan, F.A. Khan, M.A. Islam, M.M. Rahman, and Shunichi Sato, Structural, Electronic and Magnetic Properties of $L1_0$ Ordered CoPt Nanoparticles: An Experimental and DFT Study, *Materials Chemistry and Physics* 269 **(2021)** 124727. https://doi.org/10.1016/j.matchemphys.2021.124727

- Antaz Ali, M.S.I. Sarker, **Minhajul Islam**, M.K.R. Khan, F.A. Khan, M.N.I. Khan, and M.M. Rahman, Effect of In on Superparamagnetic $CoIn_xFe_{2-x}O_4$ (x = 0−0.15) Synthesized Through Hydrothermal Method, *Results in Physics* 25 **(2021)** 104251. https://doi.org/10.1016/j.rinp.2021.104251

- **Minhajul Islam**, M.S.I. Sarker, M.K.R. Khan, Alok Kumar, and M.M. Haque, An Easy Way to Synthesis of Er Doped $CoFe_2O_4$ Soft Ferromagnetic Nanocrystalline Particles, Poster Presentation,

National Conference on Physics, 7-9 February **2019**, Paper ID: PP-68, organized by Bangladesh Physical Society (BPS).

- **Minhajul Islam**, M.S.I. Sarker, M.K.R. Khan, F.A. Khan, and M.N.I. Khan, Synthesis and Characterization of CoPt Magnetic Nanoparticles by Sol-gel Method, Poster Presentation, *International Conference on Physics*, 8-10 March **2018**, Paper ID: PP-112, organized by Bangladesh Physical Society (BPS).
- **MSc Thesis Work**: Synthesis and Characterization of CoPt Magnetic Nanoparticles by Sol-gel Method and First Principles Study **(2018)**.
  Project Work: An Easy Way to Synthesis of Er Doped $CoFe_2O_4$ Soft Ferromagnetic Nanocrystalline Particles for Magnetic Device Applications **(2018)**.

TRAINING/WORKSHOP

- Participated in the "Regional Workshop on Nuclear Law" (December 2, 2024 to December 6, 2024). Place: **Philippines**.
- Participated in the "Introductory Regulatory Training Program in the Russian Federation" (July 3, 2022 to July 17, 2022). Place: **Russia**.

TECHNICAL/COMPUTER SKILLS

- Computer Fundamentals and Programming, Database Programming, FORTRAN.
- Applications: Microsoft Office (Word, Excel, Power Point), WPS Office, Online network operation including E-mail and Internet, Troubleshooting, Materials Studio, Origin, Sigma Plot, VESTA, ELATE tool, and so on.
- Operating System(s): Windows.

LANGUAGES

- Bangla (Fluent in reading, speaking and writing).
- English (Fluent in reading, writing and speaking).
- Arabic (Basic in reading and writing).

ACTIVITIES 2013-2025

- Participating in National Conference on Physics-2025, organized by Bangladesh Physical Society (BPS) at Department of Physics, University of Rajshahi, Bangladesh.
- Former Joint General Secretary, Rajshahi University Science Club-RUSC.
- Volunteering in 5^{th}, 6^{th}, 7^{th} and 8^{th} Bangladesh Physics Olympiad, Rajshahi Division, organized by Physics Club, Department of Physics, University of Rajshahi.
- Participating in National Conference on Physics-2019, organized by Bangladesh Physical Society (BPS) at Department of Physics, University of Dhaka, Bangladesh.
- Participating in International Conference on Physics-2018, organized by Bangladesh Physical Society (BPS) at Department of Physics, University of Dhaka, Bangladesh.
- Participating in International Conference on Advances in Physics-2015, organized by Department of Physics, University of Rajshahi, Bangladesh.

MEMBERSHIP/FELLOWSHIP

- Life Member, Rajshahi University Alumni Association (RUAA).
- Life Member, Bangladesh Physical Society (BPS).

- Life Member, Physics Alumni Association of Rajshahi University (PAARU).
- Research Fellow, National Science and Technology (NST) Fellowship-2017.

OTHERS

Teachers' Registration Examination Certificate January 15, 2020

15th Teachers' Registration Examination-2018
Non-Government Teachers' Registration and Certification Authority (NTRCA)
Post: Lecturer, Subject: Physics, Marks Obtained: Written-76 (out of 100), Viva-17 (out of 20)

PERSONAL DETAILS

Full Name: Minhajul Islam
Nickname: Millat
Father's Name**:** Ataur Rahman
Mother's Name**:** Jahanara Bibi
Date of Birth & Place**:** 1st January 1995, Joypurhat
Nationality**:** Bangladeshi
Religion**:** Islam
Sex**:** Male
Marital Status: Married (Spouse Name: Rumman Sultana Sony)
Blood Group: B+

(Minhajul Islam) Date: Jun 18, 2025