May 2, 2026

Curriculum Vitae of Mohammed Abdul Basith

Contact Information

Professor
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Date of Birth

- **05th March 1975**

Education

- **Doctor of Philosophy**, School of Physics and Astronomy, University of Glasgow, UK, September 2007 - November 2011.
- **Master of Philosophy**, Solid State Physics, Bangladesh University of Engineering and Technology (BUET), Dhaka -1000, Bangladesh, September 2002 - June 2005.
- **Master of Science in Physics**, Shahjalal University of Sciences and Technology, Sylhet-3114, Bangladesh, April 1999 - April 2001.
- **Bachelor of Science with Honors in Physics**, Shahjalal University of Sciences and Technology, Sylhet-3114, Bangladesh, April 1994 - April 1999.

Professional Career

- **Professor**, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, December 2017- Present.
- **Associate Professor**, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, March 2015 - December 2017.
- **Assistant Professor**, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Dec 2011 - Mar 2015.
- **Lecturer**, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Mar 2005 - Dec 2011.
- **Teaching Assistant**, School of Physics and Astronomy, University of Glasgow, United Kingdom, September 2007 - May 2011.
- **Lecturer**, Department of Physics, Dhaka University of Engineering and Technology (DUET), Gazipur, October 2001 - March 2005.

Membership

- **Fellow of the Institute of Physics (FInstP)**, since October 2022 - Present (Id 80189193).
- **Fellow of the Royal Society of Chemistry (FRSC)**, since December 2024 - Present (Id 687093).
- **Founding member, National Young Academy of Bangladesh, June 2019-Present.**
- **Life Member Bangladesh Physical Society, 2001 - Present.**
- **Life Member Bangladesh Nano Society, 2020 - Present.**

Administrative and Other Experience

- **Head of the Department**, Department of Physics, BUET, Dhaka, Bangladesh, January 2024 - January 2026.
- **Founder and Principal Investigator**, Nanotechnology Research Laboratory, Department of Physics, BUET, Dhaka, Bangladesh, April 2014 - present.

- **Member**, Peer Review Committee, Engineering and Applied Sciences Division, Ministry of Science and Technology, Government of Bangladesh, 2019 - present.
- **International Expert Committee Member**, Global Energy Prize, 2022 - present.
- **Founder President**, National Young Academy of Bangladesh, June 2019 - 2022.
- **Executive Member**, Bangladesh Nano Society, December 2019 - present.
- **Executive Member**, Bangladesh Physical Society, Mar 2018 - Feb 2020.
- **Convener**, International Poster Presentation Competition (IPPC 2020), September-October 2020.
- **Organizing secretary**, International Conference on Nanotechnology and Condensed Matter Physics, 11-12 January 2018.
- **Provost**, Kazi Nazrul Islam Hall, BUET, Dhaka, Bangladesh, May 2018 - February 2021.
- **Member**, Board of Residence and Discipline, BUET, May 2018 - February 2021.

No. of the students Supervised

Doctor of Philosophy (Ph.D.)	: Five (05)
Master of Philosophy (M.Phil.)	: Twelve (12)
Master of Science (M.Sc.)	: Nineteen (19)

No. of the students Under Supervision

Doctor of Philosophy (Ph.D.)	: Four (04)
Master of Philosophy (M.Phil.)	: Two (02)
Master of Science (M.Sc.)	: Five (05)

Research Grants

1. **Title of the Project**: Exploring Locally Available Ancient Materials for Aqueous Electrolyte-Based High-Performance Supercapacitors; ***Funding organization*:** Bangladesh Energy and Power Research Council (BEPRC); ***Amount*:** USD 2,50,000, BDT 2,99,70,000/-; Role: Principal Investigator; Year: 2025-2028.
2. **Title of the Project**: High-Performance Aqueous Supercapacitors with Pb-Free $CsSnBr_2Cl$-MoS_2 Nanocomposite Electrodes (continuation); ***Funding organization*:** Ministry of Science and Technology, Bangladesh; ***Amount*:** USD 3,000, BDT 3,50,000/-; Role: Principal Investigator; Year: 2024-2025.
3. **Title of the Project**: High-Performance Aqueous Supercapacitors with Pb-Free $CsSnBr_2Cl$-MoS_2 Nanocomposite Electrodes; ***Funding organization*:** Ministry of Science and Technology, Bangladesh; ***Amount*:** USD 5,000, BDT 5,50,000/-; Role: Principal Investigator; Year: 2024-2025.
4. **Title of the Project**: Synthesis and investigation of MoS_2 incorporated Cesium Tin Halide perovskites for catalytic and supercapacitor applications; ***Funding organization*:** Research and Innovation Center for Science and Engineering (RISE), BUET; ***Amount*:** USD 18,500, BDT 1,992,264/-; Role: Principal Investigator; Year: 2024-2025.
5. **Title of the Project**: Synthesis and investigation of MoS_2 incorporated Cesium Tin Halide perovskites for catalytic and supercapacitor applications; ***Funding organization*:** Research and Innovation Center for Science and Engineering (RISE), BUET; ***Amount*:** USD 18,500, BDT 1,992,264/-; Role: Principal Investigator; Year: 2023-2024.
6. **Title of the Project**: Dysprosium ferrite-molybdenum disulfide photocatalysts to remediate environmental pollution; ***Funding organization*:** University Grants Commission of Bangladesh; ***Amount*:** USD 2,500, BDT 2,50,000/-; Role: Principal Investigator; Year: 2022-2023.
7. **Title of the Project**: Increasing Awareness Against Predatory Academic Practices; ***Funding organization*:** The InterAcademy Partnership (IAP); ***Amount*:** USD 20,000, BDT 17,00,000/-; Role: Co-Investigator; Year: 2021.

8. **Title of the Project**: Synthesis of MoS_2 incorporated $GaFeO_3$ nanocomposite and investigation of their structural and magnetoresistive properties along with photocatalytic dye degradation and hydrogen production ability; ***Funding organization*:** Ministry of Education, Bangladesh;***Amount*:** USD 23,570, BDT 20,00,000/-; Role: Principal Investigator; Year: 2019.
9. **Title of the Project**: Synthesis and investigation of MoS_2 based nanocomposites for solar energy applications; ***Funding organization*:** Ministry of Science and Technology, Bangladesh; ***Amount*:** USD 3,750, BDT 3,00,000/-; Role: Principal Investigator; Year: 2018.
10. **Title of the Project**: Modernization of Teaching-Learning Facilities to Enhance the Quality of Undergraduate and Postgraduate Programs at the Department of Physics, BUET; ***Funding organization*:** Bangladesh University Grants Commission (UGC), and Ministry of Education, Government of Bangladesh; ***Amount*:** USD 2,37,000, BDT 1,90,00,000/-; Role: Principal Investigator (Manager); Year: 2017.
11. **Title of the Project**: Feasibility Studies on Deploying a Self-contained Solar-hydraulic Pilot Power Plant in a Rural Area in Bangladesh
***Funding organization*:** Global Challenges Research Fund (GCRF), UK; ***Amount*:** GBP 3,100; Role: Academic Partner, Year: 2018.
12. **Title of the Project**: Multiferroic properties of Li doped $BiFeO_3$ nanoparticles prepared by ultrasonication of their bulk material; ***Funding organization*:** University Grants Commission (UGC) of Bangladesh, Dhaka, Bangladesh; ***Amount*:** USD 1,875, BDT 1,50,000/-; Role: Principal Investigator; Year: 2016.
13. **Title of the Project**: Solar hydrogen production via water splitting using locally synthesized nanoparticles as a photocatalyst; ***Funding organization*:** The Infrastructure Development Company Limited (IDCOL), Dhaka, Bangladesh; ***Amount*:** USD 93,750, BDT 75,00,000/-; Role: Principal Investigator; Year: 2015.
14. **Title of the Project**: Synthesis and characterization of multiferroic nanoparticles for energy applications; ***Funding organization*:** Ministry of Education, Government of Bangladesh; ***Amount*:** USD 30,487, BDT 24,50,000/-; Role: Principal Investigator; Year: 2016.
15. **Title of the Project**: Multiferroic properties of Gd and Ti co-doped bismuth ferrite ceramics; ***Funding organization*:** The World Academy of Science (TWAS), Grant No.: Ref.:14-066 RG/PHYS/AS-I; UNESCO FR: 324028567; ***Amount*:** USD 19,200; Role: Principal Investigator; Year: 2015.
16. **Title of the Project**: Synthesis and Investigation of Manganites And Multiferroic Nanoparticles for Energy Applications; ***Funding organization*:** Ministry of Science and Technology, Bangladesh; ***Amount*:** USD 12,500, BDT 10,00,000/-; Role: Principal Investigator; Year: 2015.
17. **Title of the Project**: Structural, dielectric and magnetic properties of Gd doped ABO_3(A = Bi; B =Fe, Mn) multiferroics; ***Funding organization*:** University Grants Commission (UGC) of Bangladesh, Dhaka, Bangladesh; ***Amount*:** USD 1700, BDT 1,36,000/-; Role: Principal Investigator; Year: 2014.

Current Research Projects

1. Synthesis of metal halide perovskite for optoelectronic applications.
2. Tunable exchange bias effect in multiferroics.
3. MoS_2 based nanocomposites for energy applications.
4. Solar hydrogen production via water splitting.
5. Preparation of bismuth ferrite-2D materials based nanocomposites as efficient photocatalysts.
6. Structural, dielectric, ferroelectric and magnetic properties of multiferroic nanomaterials.

7. Development of top-down preparation technique for the synthesis of nanostructured materials.
8. Synthesis and characterization of manganites nanopartilces
9. Investigation of the phase stability and physical properties of double perovskites by first-principles DFT calculations.

Keynote and Invited Speeches

1. ***Title: Transforming Fragile Metal Halide Perovskites into Robust Materials for Solar Catalysis and Energy Storage*** , 2nd International Conference on Frontiers in Science: Innovation Technology for Greener Industry (2nd ICFS:ITGI), organized by the Faculty of Science, Bangladesh University of Engineering Technology, 15–16 January, 2026.
2. ***Title: Perovskites and Beyond: A Scientific Journey Toward Sustainable Materials Solutions***, 10th Conference of Bangladesh Crystallographic Association, Department of Physics, BUET, 11 - 12 December, 2025.
3. ***Title: Nanoscale Design of Porous Orthoferrites and Stabilized Halide Perovskites for Solar Photocatalysis and Energy Storage***, 1st International Conference on Science and Humanities for Sustainable Development (ICSHSD-2025), Dhaka University of Engineering Technology (DUET), Gazipur, 23-24 October, 2025,Bangladesh.
4. ***Title: Engineering Porous $DyFeO_3$ Nanostructures for High-Performance Photocatalysts and Symmetric Supercapacitors***, 9th Conference of Bangladesh Crystallographic Association, Dhaka, Bangladesh, 10-11 January 2025.
5. ***Title: Porous $DyFeO_3$ Nanoparticles: High-Performance Photocatalysis and Symmetric Supercapacitors for Environmental and Energy Applications*** , 9th Conference of Bangladesh Crystallographic Association, 23rd Science Council of Asia Conference (23rd SCAC), Dhaka, Bangladesh, 30 November-02 December, 2024
6. ***Title: Unveiling Misconceptions in Perovskite Materials: Ensuring Experimental Integrity***, 8th Conference of Bangladesh Crystallographic Association, Dhaka, Bangladesh, 25 November 2023.
7. ***Title: Potential of locally synthesized nanomaterials in multifunctional applications***, 38th Biweekly Colloquium, Department of Mathematics and Physics, North South University, 17 August 2023.
8. ***Title: Tuning the physicochemical properties of nanostructured materials for industrial applications***, BRSIR Congress-2022, BCSIR, Dhaka, Bangladesh, 02 December 2022.
9. ***Title: Exploring Nanotechnology Research in Bangladesh for Environmental Remediation***, International Conference on 4IR for Emerging Future (4IREF 2022),Institute of Engineers, Dhaka, Bangladesh, 5 November 2022.
10. ***Title: Perovskite-Based Nanocomposites for Photodegradation of Industrial Dyes and Pharmaceutical Wastes***, 1st International Conference of Physical Sciences (ICPS), Shahjalal University of Science and Technology, Sylhet, 21-23 October 2022.
11. ***Title:Perovskite nanomaterials as next-generation photocatalysts to remediate environmental pollution***, International Conference on Environmental Protection for Sustainable Development, Dhaka, Bangladesh, 4 Sep., 2022.
12. ***Title: Perovskite Nanomaterials for Efficient Photodegradation and Solar H_2 Evolution***, 2nd International Conference on Renewable Energy (ICRE-2022), University of Rajasthan, Jaipur India, 27 February 2022.
13. ***Title: Perovskite Nanomaterials: Synthesis, Characterization, and Applications***, 4th International Conference on "Physics for Sustainable Development Technology (ICPSDT-2022), Chittagong University of Engineering and Technology (CUET), 22 January 2022.

14. ***Title: Perovskite Nanomaterials for Energy and Environmental Applications***, International webinar on physics, Department of Physics, Pabna University of Engineering and Technology (PUST), 04 May 2021.
15. ***Title: Perovskite Nanomaterials: Synthesis, Properties, and Applications***, International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021), BCSIR, Dhaka, 13 March 2021.
16. ***Title: Locally Synthesized Nano-structured Materials for Energy Harvesting***, International Symposium on Nanotechnology 2020, Center for Nanotechnology Research at American International University -Bangladesh, Dhaka, 12 March 2020.
17. ***Title: Research Article: Publication Process and Ethical Issues***, North South University, Dhaka, 16 February 2020.
18. ***Title: Nanotechnology Research Laboratory: A primary platform to train young academics in experimental research***, Annual general meeting of the National Young Academy of Bangladesh (NYAB) at the Centre for Advanced Research in Sciences (CARS), Dhaka University, 16 June 2019.
19. ***Title: Nanomaterials: Synthesis techniques and their Properties***, Department of Mathematical and Physical Sciences, East West University, Dhaka, 14 March 2019.
20. ***Title: Nanomaterials for Multifunctional Applications***, 1st Alumni Reunion and Scientific Meeting, Polymer Collides and Nanomaterials Group, University of Rajshahi, 12 February 2019.
21. ***Title: How to get published in a peer reviewed journal***, BUET Career Club. BUET, 5 February 2019.
22. ***Title: Synthesis of nanostructured materials and their multifunctional applications***, School of Engineering, University of Glasgow, UK, 4 January 2019.
23. ***Title: Locally synthesized nanostructured materials and their multifunctional applications***, International Conference on Material Science and Semiconductor Devices, Department of Electrical and Electronic Engineering, University of Dhaka, 7 September 2018.
24. ***Title:Nanostructured materials and their potential applications***, Department of EEE, University of Dhaka, 31st July 2018.
25. ***Title: Nanomaterials and Their Multifunctional Applications***, Department of Physics, Shahjalal University of Science and Technology, 16 April 2018.
26. ***Title: Multiferroic Nanomaterials for Multifunctional Applications***, International Conference on Physics – 2018, organized by Bangladesh Physical Society, Dhaka, Bangladesh, 09 March 2018.
27. ***Title: Multiferroic ceramics for multifunctional applications***, 15 Annual Conference of Bangladesh Ceramic Society, Dhaka, Bangladesh, 07 April 2017.
28. ***Title: Exploring Gd and Ti co-doped $BiFeO_3$ Multiferroics for Spintronic and Energy Applications***, International workshop on Energy devices and Nanotechnology, Yamagata University, Japan, 13-14 March 2014.

Awards And Recognition by Students under Supervision

1. **Best Poster Presentation Award**, Ferdous Yasmeen, Mohasin Tarek and M. A. Basith, "$CsSnBr_2Cl$ Halide Perovskite With Enhanced Moisture Stability for Versatile Electrochemical Applications in Water-Based Electrolytes", 9th Conference of Bangladesh Crystallographic Association, A.F. Mujibur Rahman Mathematics Building, Department of Mathematics, University of Dhaka, 10-11 January 2025.

2. **Best Poster Presentation Award**, Mohasin Tarek, Ferdous Yasmeen and M. A. Basith, "Solar Driven Photocatalysis Using Nanostructured $DyFeO_3$ for Environmental Remediation: An Effective and Authentic Approach", Summer School on Communication Skills and Research Poster Presentation, Department of Physics, BUET, 25 October 2024.
3. **Best Poster Presentation Award (CHAMPION)**, Mohasin Tarek, Ferdous Yasmeen and M. A. Basith, "Ultra-high Voltage Symmetric Supercapacitors Developed by Engineering $DyFeO_3$ Electrodes and Aqueous Electrolytes", Sultan Ahmed Memorial Conference, Sultan Ahmed Solid State Physics Research Laboratory, Department of Physics, University of Dhaka, 3-4 May 2024.
4. **1st Runners-up Poster Presentation Award**, Ferdous Yasmeen, and M. A. Basith, "$CsSnBr_2Cl$ Halide Perovskite for Aqueous Electrolyte-Based Electrochemical Applications", Sultan Ahmed Memorial Conference, Sultan Ahmed Solid State Physics Research Laboratory, Department of Physics, University of Dhaka, 3-4 May 2024.
5. **Best Poster Presentation Award**, Mohasin Tarek, Ferdous Yasmeen and M. A. Basith, "Multi-functional $DyFeO_3$ nanoparticles: An Electrode Material for High-Voltage Supercapacitors and Photocatalyst for Wastewater Treatment", 1st National Conference on Advances in Science and Technology (NCAST-2023), Faculty of Science, BUET, 7-8 December 2023.
6. **Best Poster Presentation Award**, Mohasin Tarek, Ferdous Yasmeen and M. A. Basith, "Multi-functional $DyFeO_3$ nanoparticles: An Electrode Material for High-Voltage Supercapacitors and Photocatalyst for Wastewater Treatment", 1st National Conference on Advances in Science and Technology (NCAST-2023), Faculty of Science, BUET, 7-8 December 2023.
7. **Best Poster Presentation Award**, Ferdous Yasmeen, and M. A. Basith, "Electrolyte Optimization: Enhancing Electrochemical Performance in Metal Halide Perovskite for Energy Storage Devices", 1st National Conference on Advances in Science and Technology (NCAST-2023), Faculty of Science, BUET, 7-8 December 2023.
8. **Best Poster Presentation Award**, Mohasin Tarek, and M. A. Basith, "Synergistic Effects of Molybdenum Disulfide Integration on Copper Cobalt Sulfide Nanocomposites for Symmetric Hybrid Supercapacitors", 8th Conference of Bangladesh Crystallographic Association, Bangladesh Crystallographic Association Department of Physics, University of Dhaka, 24-25 November 2023.
9. **Best Oral Presentation Award**, Fahmida Sharmin and M. A. Basith, Sillenite-type bismuth ferrite photocatalysts towards efficient removal of organic pollutants from wastewater, International Colloquium on Authentic Scientific Publications-2022, Organized by National Young Academy of Bangladesh, 14-15 July, 2022.
10. **Best Poster Presentation Award**, Fahmida Sharmin, Ferdous Ara and M. A. Basith, Comparative investigation on the structural, optical, and magnetic properties of Dy doped bismuth ferrite nanoparticles prepared by sol-gel and hydrothermal methods, International Colloquium on Authentic Scientific Publications-2022, Organized by National Young Academy of Bangladesh, 14-15 July, 2022.
11. **Best Poster Presentation Award**, Fahmida Sharmin and M. A. Basith, Facile Synthesis and characterization of $Bi_{0.9}Gd_{0.1}FeO_3$ nanoparticles for solar light-driven photocatalytic degradation of toxic pollutants, International Symposium of Nanotechnology-2022, Organized by Centre for Nanotechnology Research, American International University-Bangladesh (AIUB), January 2022.
12. **Best Poster Presentation Award**, Yasir Fatha Abed, Susmita Das, Md. Shahjahan Ali, Zuel Rana and M. A. Basith, Nanostructured reduced graphene oxide (rGO) incorporated $DyCrO_3$-rGO nanocomposites: A potential photocatalyst, International Symposium of Nanotechnology-2022, Organized by Centre for Nanotechnology Research, American International University-Bangladesh (AIUB), January 2022.

13. **Best Poster Presentation Award**, Yasir Fatha Abed, Md. Shahjahan Ali, Subrata Das and M. A. Basith, $CsSnCl_3$ nanocrystals as efficient lead-free perovskite: A combined experimental and theoretical study, 4th International Conference on Physics for Sustainable Development Technology (ICPSDT-2022), Organized by Department of Physics, Chittagong University of Engineering and Technology (CUET), January 2022.
14. **Best Oral Presentation Award**, Fahmida Sharmin, Ferdous Ara, Rana Hossain, Subrata Das, M.D.I Bhuyan and M. A. Basith,Insight into the exchange bias and magnetization reversal in Nd_2FeCrO_6 double perovskite, 4th International Conference on "Physics for Sustainable Development Technology (ICPSDT-2022), Organized by Department of Physics, Chittagong University of Engineering and Technology (CUET), January 2022.
15. **Best Poster Presentation Award**, Md. Shahjahan Ali, Yasir Fatha Abed, Subrata Das and M. A. Basith, DFT Based First-principles calculation of Lead-free $CsSnCl_3$ Perovskite: A "GGA+U" Approach, , National Conference on Physics-2021, Organized by Bangladesh Physical Society, August 2021.
16. **Best Oral Presentation Award**, Sajjad Hasan, Subrata Das, Akter H. Reaz, Chanchal Kumar Roy and M. A. Basith,Investigation of $CuCo_2S_4$-MoS_2 Nanocomposite as Electrode Material for Supercapacitor, National Conference on Physics-2021, Organized by Bangladesh Physical Society, August 2021.
17. **Best Poster Presentation Award**, Subrata Das, Sagar Dutta, Angkita Mistry Tama and M. A. Basith, Enhanced photocatalytic activity of Z-scheme $LaFeO_3$-MoS_2 nanocomposite for aquatic pollutants degradation and hydrogen evolution, International Poster Presentation Competition (IPPC)-2020, Organized by National Young Academy of Bangladesh (NYAB), Indian National Young Academy of Sciences (INYAS), Thai Young Scientists Academy (TYSA), and Sri Lankan Academy of Young Scientists (SLAYS), October 2020.
18. **Best Poster Presentation Award**, Subrata Das and M. A. Basith, Temperature effect on the crystallographic and magnetic properties of $Nd_{0.7}Sr_{0.3}MnO_3$ nanoparticles, International Conference on Physics-2020, Organized by Bangladesh Physical Society, March 2020.
19. **Outstanding Publication Award**, M. A. Basith, A. Quader, M. A. Rahman, B. L. Sinha, Simple top-down preparation of magnetic $Bi_{0.9}Gd_{0.1}Fe_{1-x}Ti_xO_3$ nanoparticles by ultrasonication of mutiferroic bulk material, United Group, April 2019.
20. **Best Poster Presentation Award**, Ragib Ahsan, Saleh Omar, Avijit Mitra, Md. Ziaur Rahman Khan and M. A. Basith, Effect of 10% Fe-doping on the Photocatalytic Hydrogen Production Ability of Sol-gel Synthesized $DyCrO_3$ Nanoparticles, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
21. **Best Poster Presentation Award**, M. S. Alam and M. A. Basith, Improved Morphology and Enhanced Multiferroicity in Gd-doped $BiMn_2O_5$ Ceramics, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
22. **Best Poster Presentation Award**, M A Jalil and M. A. Basith, A Comparative Investigation on Enriched Photocatalytic Properties between Sillenite and PerovskiteBismuth Ferrite-rGO Nanocomposites, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
23. **Best Poster Presentation Award**, Mashnoon Alam Sakib, Emran Khan Ashik, S.M.Enamul Hoque Yousuf, Sayeed Shafayet Chowdhury, M A Jalil, Bashir Ahmmad and M. A. Basith, A Promising Bulk Multiferroic Material: The 10% Gd And Ti Co-Doped $BiFeO_3$, National Conference on Physics-2017, Organized by Bangladesh Physical Society, January 2017.

24. **Best Poster Presentation Award**, M. A. Jalil, Sayeed S. Chowdhury,Mashnoon Alam Sakib, Emran Khan Ashik, S.M.Enamul Hoque Yousuf,Shakhawat H. Firoz and M. A. Basith, Preparation of $Bi_{25}FeO_{40}$-RGO nanocomposites via a facile hydrothermal route and investigation of their magnetic and optical properties, National Conference on Physics-2017, Organized by Bangladesh Physical Society, January 2017.
25. **Best Poster Presentation Award**, N. Yesmin and M. A. Basith, Effect of synthesis route on the structural, magnetic and optical properties of BiFeO3: a comparative study between solid state and hydrothermal methods, National Conference on Physics-2017, Organized by Bangladesh Physical Society, January 2017. Dy doped $BiFeO_3$: A multiferroic with bulk structural and ferroelectric properties comparable with nano counterparts, 9th International Conference on Electrical and Computer Engineering, December 2016.
26. **Best Poster Presentation Award**, Syeda Karimunnesa, Bashir Ahmmad and M. A. Basith, Preparation and Investigation of the Structural and Magnetic properties of perovskite manganites $La_{1.8}Sr_{0.2}CoMnO_6$, National Conference on Physics research and education in Bangladesh, Organized by Bangladesh Physical Society, April 2015.
27. **Best Poster Presentation Award**, M. S. Alam, M. A. Rahman, B. L. Sinha, Bashir Ahmmad, M. R. Karim and M. A. Basith, Temperature-dependent dielectric and magnetic properties of $Bi_{1-x}Gd_xMnO_3$ ceramics, International Conference on Physics for Energy and Environment, Organized by Bangladesh Physical Society, March 2014.

Scholarships, Awards And Honors

- **Overseas Research Student Award Scheme (ORSAS)** Sep 2007 - Mar 2011.
- **Glasgow University, UK funded postgraduate scholarship**, Sep 2007 - Mar 2011.
- **Selected for Japanese Government Monbu-Kagakusho Scholarship** from Keio University, Japan for PhD programme in April 2007.
- **Fellowship from ICTP, Italy** for joining in the Advanced workshop on Recent Developments in Inorganic Materials,Jan 2006.
- **Fellowship from University of California, Santa Barbaba, USA** for joining in the ICYS ICMR Summer School 2006 on Nanomaterials, National Institute of Materials Science, Tsukuba, JAPAN, July 2006.
- **Fellowship from ICTP Italy** for joining in the ICTP-NCNST-ICTS Asian /Pacific Regional College on Science at the Nanoscale, Beijing, China, August 2006.
- **Fellowship from JNCASR, Bangalore, India and University of California, Santa Barbara, USA** for in the JNCASR-ICMR Winter School on the Chemistry of Materials, JNCASR, Bangalore, INDIA, December 2006.
- **National Science and Technology fellowship**, Ministry of Science and Technology, Government of Bangladesh, Aug 2000.

Editorial Experience

- **Editorial Board Member, MIST International Journal of Science and Technology, ISSN 2224-2007.**

Peer Review Experience

- Physical Review Applied (American Physical Society)
- Applied Physics Letters (American Institute of Physics)
- Journal of Materials Chemistry C (Royal Society of Chemistry)
- ACS Applied Nanomaterials (American Chemical Society)
- Journal of Alloys and Compounds (Elsevier)
- Scientific Reports (Nature Publishing Group)
- Journal of Applied Physics (American Institute of Physics)
- RSC Advances (Royal Society of Chemistry)
- Physica B: Condensed Matter Physics (Elsevier)

- Chemical Physics Letters (Elsevier)
- Journal of Magnetism and Magnetic Materials (Elsevier)
- Ecotoxicology and Environmental Safety (Elsevier)
- Solid State Science (Elsevier)
- Current Applied Physics (Elsevier)
- Sensors and Actuators A: Physical (Elsevier)

Selected Event Organization

- **International Conference on Nanotechnology and Condensed Matter Physics-2018**, Organized by Bangladesh University of Engineering and Technology, 11-12 January 2018. Role: Conference Secretary
- **International Poster Presentation Competition (IPPC-2020)**, Sep-October 2020, Organized by NYAB, INYAS, TYSA, and SLAYS, October 2020. Role: Convener and key organizer
- **International Colloquium on Authentic Scientific Publications**, 14-15 July 2022, organized by NYAB . Role: Chair and key organizer
- **Summer School on Skills Development for Scientific Writing**, 13-15 September 2022, organized by NYAB . Role: Chair and key organizer
- **National workshop on Increasing Awareness against Predatory Academic Practices**, 22 Feb. 2022, organized by NYAB and InterAcademy Partnership (IAP). Role: Chair and key organizer
- **International workshop on Increasing Awareness against Predatory Academic Practices**, 31 March 2022, organized by NYAB abd IAP. Role: Chair and key organizer

International Research Collaborators

- **Dr. Kristian Mølhave**
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- **Professor Tadahiro Komeda**
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  Tohoku University
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  Email: tadahiro.komeda.a1@tohoku.ac.jp
- **Dr. Ferdous Ara**
  Institute of Multidisciplinary Research of Advanced Materials,
  Tohoku University, 2-1-1, Katahira, Aoba-ku, Sendai 980-0877, Japan.
  Email: ara.ferdous.c8@tohoku.ac.jp

BOOK

Title: Ucchoshikkha O Gobeshona: Songkoter Shorup ebong Uttorone Koronio
Publisher: Samhati Prokashan
Year of publication: 2020

GOOGLE SCHOLAR METRICS

Total number of publications	: Sixty (69)
Total number of citations	: Two Thosands Three Hundred Forty (2340)
h-index	: Twenty Nine (29)
i10-index	: Fifty (51)

PUBLICATIONS

• PUBLISHED PAPERS IN PEER-REVIEWED JOURNALS

1. Tasnim Jahan and M. A. Basith, Interfacial coupling in $CsSnCl_3$–MoS_2 composite for enhanced aqueous pseudocapacitive performance, ***Physical Reviw Materials (Publisher: American Physical Society)***, 2026 (DOI: 10.1103/w6hz-58tr)

2. Md. Sobuj Hossain and M. A. Basith, Defect-Engineered Yttrium Orthoferrite for High-Energy Aqueous Supercapacitors, ***APL Materials (Publisher: American Institute of Physics)***, 2026 (DOI: 10.1063/5.0308127).

3. Mohasin Tarek, and M. A. Basith, Interfacial Engineering of Moisture-Stable $CsSnBr_3$–MoS_2 Heterostructures for High-Voltage Aqueous Energy Storage, ***ACS Applied Energy Materials (Publisher: American Chemical Society)***, 2026 (DOI: 10.1021/acsaem.5c04073).

4. Md. Sobuj Hossain, and M. A. Basith, Oxygen-vacancy-enabled charge separation in distorted orthorhombic $YFeO_3$, ***Journal of Materials Chemistry C (Publisher: Royal Society of Chemistry)***, 14, 6930–6945, 2026 (DOI: 10.1039/D5TC04394H).

5. Mohasin Tarek, Ferdous Yasmeen, and M. A. Basith, High-voltage symmetric supercapacitors developed by engineering $DyFeO_3$ electrodes and aqueous electrolytes, ***Journal of Materials Chemistry A (Publisher: Royal Society of Chemistry)***, 13, 499, 2025 (DOI: 10.1039/D4TA06769J).

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• CONFERENCE PROCEEDINGS / PRESENTATION

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2. Tasnim Jahan and M. A. Basith, "Water-Stable $CsSnCl_3$–MoS_2 Nanocomposites with Dual Functionality in Photocatalytic Degradation and Electrochemical Energy Storage", 1st International Conference on Science and Humanities for Sustainable Development (ICSHSD), Faculty of Science, Dhaka University of Engineering and Technology, 23-24 October 2025.

3. M. M. Rahman and M. A. Basith, "Solar-driven n-n $DyCrO_3/MoS_2$ S-scheme heterojunction photocatalyst for sustainable wastewater remediation", presented (oral) at the 1st International Conference on Science and Humanities for Sustainable Development (ICSHSD), Organized by Faculty of Science, DUET, Gazipur-1707, Bangladesh, 23-24 October 2025.

4. Md. Sobuj Hossain, Mohasin Tarek and M. A. Basith, "Nanoporous Yttrium Orthoferrite Electrodes for High-Energy Symmetric Aqueous Supercapacitors", 1st International Conference on Science and Humanities for Sustainable Development (ICSHSD-2025), 10-11 January 2025.

5. Tasnim Jahan, Ferdous Yasmeen and M. A. Basith, "Synthesis and Characterization of Lead-Free $CsSnCl_3$ Perovskite for Advanced Photocatalytic Applications", 9th Conference of Bangladesh Crystallographic Association, A.F. Mujibur Rahman Mathematics Building, Department of Mathematics, University of Dhaka, 10-11 January 2025.

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THESES AND REPORTS

THESES

1. ***Title of the Thesis:*** Synthesis and Characterization of Dysprosium Chromite-Molybdenum Disulfide Nanocomposites for Photocatalytic Applications
   Name of the Student: Md. Mahbubar Rahman
   Name of the Degree Awarded: PhD, January 25, 2026.
2. ***Title of the Thesis:*** Synthesis of La and Cr co-doped BiFeO3 nanoparticles to investigate their magnetic properties and photocatalytic performance
   Name of the Student: Vincent Titas Rozario
   Name of the Degree Awarded: PhD, March 20, 2025.
3. ***Title of the Thesis:*** Synthesis of double perovskites Y_2MCrO_6 (M = Fe, Co, Ni) using sol-gel technique to investigate their structural, magnetic and optical properties
   Name of the Student: Mohammad Ashraful Islam
   Name of the Degree Awarded: PhD, October 06, 2024.
4. ***Title of the Thesis:*** Hydrothermal Synthesis of Rare Earth and Transition Metal Co-doped $BiFeO_3$ and Investigation of Their Photocatalytic Performance
   Name of the Student: Fahmida Sharmin
   Name of the Degree Awarded: PhD, April 02, 2023.
5. ***Title of the Thesis:*** Experimental and theoretical investigation of structural, magnetic and optical properties of Nd_2FeCrO_6 and Gd_2FeCrO_6 perovskites synthesized by sol-gel technique
   Name of the Student: Md. Didaru Islam Bhuyan
   Name of the Degree Awarded: PhD, April 02, 2022.
6. ***Title of the Thesis:*** Synthesis and Characterization of Molybdenum Disulfide Incorporated Cesium Tin Chloride for Enhanced Photocatalytic and Electrochemical Performance
   Name of the Student: Tasnim Jahan
   Name of the Degree Awarded: M.Sc., December 17, 2025.
7. ***Title of the Thesis:*** Synthesis of Bi doped $CsSnBr_3$ nanocrystals and investigation of their photocatalytic performance
   Name of the Student: Md. Sobuj Hossain
   Name of the Degree Awarded: M.Sc., December 10, 2025.
8. ***Title of the Thesis:*** Effect of concentration of molybdenum disulfide on the electrochemical performance of copper cobalt sulfide nanocomposites
   Name of the Student: Mohasin Tarek
   Name of the Degree Awarded: M.Sc., September, 02, 2025.
9. ***Title of the Thesis:*** Synthesis of Moisture Stable Chlorine Incorporated Cesium Tin Bromide to Investigate Electrochemical Properties in Aqueous Environments
   Name of the Student: Ferdous Yasmeen
   Name of the Degree Awarded: April 08, 2025.
10. ***Title of the Thesis:*** Synthesis of Bi doped $CsSnBr_3$ nanocrystals and investigation of their photocatalytic performance
    Name of the Student: Md. Asif Adib
    Name of the Degree Awarded: M.Sc., 2023.
11. ***Title of the Thesis:*** Synthesis of MoS_2 incorporated copper cobalt sulphide nanocomposites and investigation of their structural and electrochemical properties
    Name of the Student: Sajjad Hasan
    Name of the Degree Awarded: M.Sc., 2022.
12. ***Title of the Thesis:*** Synthesis of dysprosium chromite-reduced graphene oxide nanocomposites by hydrothermal process and study of their photocatalytic activity
    Name of the Student: Md. Zuel Rana
    Name of the Degree Awarded: MSc, 2021.

13. ***Title of the Thesis:*** Synthesis and optoelectronic Characterizations of cesium tin chloride perovskite nanocrystals
    Name of the Student: Md. Shahjahan Ali
    Name of the Degree Awarded: M.Sc., 2021.
14. ***Title of the Thesis:*** Synthesis of MoS_2 Incorporated Iron-Zinc Oxide Nanocomposites and Investigation of Their Photoluminescence and Photocatalytic Properties
    Name of the Student: Angkita Mistry Tama
    Name of the Degree Awarded: M.Sc., 2019.
15. ***Title of the Thesis:*** Preparation of Gd doped $La_2SrMn_2O_7$ layered manganites at inert atmosphere and investigation of their structural and magnetic properties
    Name of the Student:Irin Sultana
    Name of the Degree Awarded: M.Phil., 2019.
16. ***Title of the Thesis:*** Investigation of multiferroic and photocatalytic properties of $Bi_{0.9}Y_{0.1}FeO_3$ nanoparticles
    Name of the Student: Md. Masud Parvez
    Name of the Degree Awarded: M.Phil., 2019.
17. ***Title of the Thesis:*** Synthesis and investigation of Fe-Ni and Fe-Co binary nano-alloy
    Name of the Student: Rubayet Tanveer
    Name of the Degree Awarded: M.Phil., 2019.
18. ***Title of the Thesis:*** Synthesis and characterization of structural, magnetic and optical properties $Dy_2BB'CrO_6$(B'= Fe, Ne) perovskites
    Name of the Student: Md. Rana Hossain
    Name of the Degree Awarded: M.Sc., 2018.
19. ***Title of the Thesis:*** Investigation of structural, photocatalytic and magnetic properties of Dy doped $CoFe_2O_4$ nanoparticles prepared by hydrothermal method
    Name of the Student: Kowser Pervin
    Name of the Degree Awarded: M.Sc., 2018.
20. ***Title of the Thesis:*** Preparation of iron-magnesium oxide-reduced graphene oxide nanocomposite and investigation of its applicability for solar hydrogen production through water splitting
    Name of the Student: Dayal Chandra Roy
    Name of the Degree Awarded: M.Sc., 2017.
21. ***Title of the Thesis:*** Investigation of structural, magnetic and photocatalytic properties of Gd doped bismuth ferrite-reduced graphene oxide nanocomposites
    Name of the Student: Md. Abdul Jalil
    Name of the Degree Awarded: M.Sc., 2017.
22. ***Title of the Thesis:*** Investigation of multiferroic and photocatalytic properties of Gd doped $BiFeO_3$ prepared by hydrothermal technique
    Name of the Student: Nilufar Yesmin
    Name of the Degree Awarded: M.Sc., 2017.
23. ***Title of the Thesis:*** Investigation of multiferroic and photocatalytic properties of Gd and Mn co-doped $BiFeO_3$
    Name of the Student: Md. Anisur Rahman
    Name of the Degree Awarded: M. Phil., 2016.
24. ***Title of the Thesis:*** Synthesis and characterization of $Bi_{1-x}Dy_xFeO_3$ nanoparticles using ultrasonication technique
    Name of the Student: Abu Hena Mostafa Kamal
    Name of the Degree Awarded: M.Sc., 2016.
25. ***Title of the Thesis:*** Investigation of multiferroic and photocatalytic properties of Li doped $BiFeO_3$ nanoparticles prepared by ultrasonication
    Name of the Student: A H M Areef Billah
    Name of the Degree Awarded: M.Sc., 2016.
26. ***Title of the Thesis:*** Investigation of structural, ferroelectric and magnetic properties of Gd

doped $BiFeO_3$ nanoparticles prepared by Sol-Gel method
Name of the Student: Md. Rafiq Azad
Name of the Degree Awarded: M.Sc., 2016.

27. ***Title of the Thesis:*** Temperature dependent dielectric and magnetic properties of Gd and Ti co-doped $BiFeO_3$ multiferroics
Name of the Student: Md. Zahirul Islam
Name of the Degree Awarded: M.Phil., 2016.
28. ***Title of the Thesis:*** Effect of strontium substitution on the structural and magnetic properties of $La_{1.8}Sr_{0.2}MMnO_6$ (M = Ni, Co) layered manganites
Name of the Student: Syeda Karimunnesa
Name of the Degree Awarded: M.Phil., 2016.
29. ***Title of the Thesis:*** Synthesis and comparative study of structural, electrical and magnetic properties of Sm doped and Sm-Ti co-doped $BiFeO_3$ ceramics and their corresponding nanoparticles
Name of the Student: Armin Anwar
Name of the Degree Awarded: M.S., 2016.
30. ***Title of the Thesis:*** Microstructure, dielectric and magnetic properties of $Bi_{1-x}Gd_xMnO_3$ ceramics
Name of the Student: Md. Saiful Alam
Name of the Degree Awarded: M.Phil., 2015.
31. ***Title of the Thesis:*** Structural, dielectric and magnetic properties of Gd and Ti co-doped $BiFeO_3$ multiferroics at room temperature
Name of the Student: Md. Oyes Kurni
Name of the Degree Awarded: M.Phil., 2015.
32. ***Title of the Thesis:*** Direct comparison of the magnetic properties of $Gd_{0.7}Sr_{0.3}MnO_3$ nanoparticles with bulk counterparts
Name of the Student: Mohammad Ashraful Islam
Name of the Degree Awarded: M.Phil., 2015.
33. ***Title of the Thesis:*** Structural, dielectric and magnetic properties of Co and Nd co-doped $BiFeO_3$ multiferroics at room temperature
Name of the Student: Tamanna Mariam
Name of the Degree Awarded: M.S., 2015.
34. ***Title of the Thesis:*** Study of the influence of edge profiles of permalloy ($Ni_{80}Fe_{20}$) nanowires on the magnetic behavior of domain walls using micromagnetic simulations
Name of the Student: Syed Hasibur Rahman
Name of the Degree Awarded: M.Phil., 2014.

REPORTS

1. ***Title:*** Synthesis of MoS_2 incorporated $GaFeO_3$ nanocomposites and investigation of their structural and magnetoresistive properties along with photocatalytic dye degradation and hydrogen production ability
Submitted to: Ministry of Education, Bangladesh, 2022.
2. ***Title:*** Synthesis and investigation of MoS_2 based nanocomposites for solar energy applications
Submitted to: Ministry of Science and Technology, Bangladesh, 2018.
3. ***Title:*** Modernization of Teaching-Learning Facilities to Enhance the Quality of Undergraduate and Postgraduate Programs at the Department of Physics, BUET
Submitted to: Bangladesh University Grants Commission (UGC), and Ministry of Education, Government of Bangladesh, 2017.
4. ***Title:*** Multiferroic properties of Li doped $BiFeO_3$ nanoparticles prepared by ultrasonication of their bulk material.
Submitted to: University Grants Commission (UGC) of Bangladesh, Dhaka, Bangladesh,

2016.

5. ***Title:*** Solar hydrogen production via water splitting using locally synthesized nanoparticles as a photocatalyst.
   Submitted to: The Infrastructure Development Company Limited (IDCOL), Dhaka, Bangladesh, 2015.
6. ***Title:*** Synthesis and characterization of multiferroic nanoparticles for energy applications.
   Submitted to: Ministry of Education, Government of Bangladesh, 2016.
7. ***Title:*** Multiferroic properties of Gd and Ti co-doped bismuth ferrite ceramics.
   Submitted to: The World Academy of Science (TWAS), 2015.
8. ***Title:*** Synthesis and Investigation of Manganites And Multiferroic Nanoparticles for Energy Applications
   Submitted to: Ministry of Science and Technology, Bangladesh, 2015.
9. ***Title:*** Structural, dielectric and magnetic properties of Gd doped ABO_3(A = Bi; B =Fe, Mn) multiferroics
   Submitted to: University Grants Commission (UGC) of Bangladesh, Dhaka, Bangladesh, 2014.