

Curriculum Vitae of Mohammed Abdul Basith

CONTACT INFORMATION	<p>Professor Department of Physics, Bangladesh University of Engineering and Technology (BUET), Dhaka – 1000; Bangladesh. Phone: +8801552428068 E-mail: mabasith@phy.buet.ac.bd, m.basith75@gmail.com Website: www.nanotechlabuet.com</p>
DATE OF BIRTH	<ul style="list-style-type: none"> ● 05th March 1975
EDUCATION	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● Fellow, Institute of Physics (IOP), since October 2022 - Present (Id 80189193). ● 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	<ul style="list-style-type: none"> ● 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.

RESEARCH GRANTS

1. **Title of the Project:** Synthesis and investigation of MoS₂ incorporated Cesium Tin Halide perovskites for catalytic and supercapacitor applications; **Funding organization:** Research and Innovation Centre for Science and Engineering (RISE), BUET; **Amount:** USD 18,500, BDT 1,992,264/-; Role: Principal Investigator; Year: 2023-2024.
2. **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.
3. **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.
4. **Title of the Project:** Synthesis of MoS₂ incorporated GaFeO₃ 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.
5. **Title of the Project:** Synthesis and investigation of MoS₂ 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.
6. **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.
7. **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.
8. **Title of the Project:** Multiferroic properties of Li doped BiFeO₃ 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.
9. **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.
10. **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.
11. **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.

12. **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.
13. **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: *Unveiling Misconceptions in Perovskite Materials: Ensuring Experimental Integrity***, 8th Conference of Bangladesh Crystallographic Association, Dhaka, Bangladesh, 25 November 2023.
2. **Title: *Potential of locally synthesized nanomaterials in multifunctional applications***, 38th Biweekly Colloquium, Department of Mathematics and Physics, North South University, 17 August 2023.
3. **Title: *Tuning the physicochemical properties of nanostructured materials for industrial applications***, BRSIR Congress-2022, BCSIR, Dhaka, Bangladesh, 02 December 2022.
4. **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.
5. **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.
6. **Title: *Perovskite nanomaterials as next-generation photocatalysts to remediate environmental pollution***, International Conference on Environmental Protection for Sustainable Development, Dhaka, Bangladesh, 4 Sep., 2022.
7. **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.
8. **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.

9. **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.
10. **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.
11. **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.
12. **Title: Research Article: Publication Process and Ethical Issues**, North South University, Dhaka, 16 February 2020.
13. **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.
14. **Title: Nanomaterials: Synthesis techniques and their Properties**, Department of Mathematical and Physical Sciences, East West University, Dhaka, 14 March 2019.
15. **Title: Nanomaterials for Multifunctional Applications**, 1st Alumni Reunion and Scientific Meeting, Polymer Collides and Nanomaterials Group, University of Rajshahi, 12 February 2019.
16. **Title: How to get published in a peer reviewed journal**, BUET Career Club. BUET, 5 February 2019.
17. **Title: Synthesis of nanostructured materials and their multifunctional applications**, School of Engineering, University of Glasgow, UK, 4 January 2019.
18. **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.
19. **Title: Nanostructured materials and their potential applications**, Department of EEE, University of Dhaka, 31st July 2018.
20. **Title: Nanomaterials and Their Multifunctional Applications**, Department of Physics, Shahjalal University of Science and Technology, 16 April 2018.
21. **Title: Multiferroic Nanomaterials for Multifunctional Applications**, International Conference on Physics – 2018, organized by Bangladesh Physical Society, Dhaka, Bangladesh, 09 March 2018.
22. **Title: Multiferroic ceramics for multifunctional applications**, 15 Annual Conference of Bangladesh Ceramic Society, Dhaka, Bangladesh, 07 April 2017.
23. **Title: Exploring Gd and Ti co-doped BiFeO₃ Multiferroics for Spintronic and Energy Applications**, International workshop on Energy devices and Nanotechnology, Yamagata University, Japan, 13-14 March 2014.

NO. OF THE STUDENTS SUPERVISED	Doctor of Philosophy (Ph.D.)	: One (02)
	Master of Philosophy (M.Phil.)	: Nine (12)
	Master of Science (M.Sc.)	: Seventeen (16)
NO. OF THE STUDENTS UNDER SUPERVISION	Doctor of Philosophy (Ph.D.)	: Five (05)
	Master of Philosophy (M.Phil.)	: Three (03)
	Master of Science (M.Sc.)	: Three (03)

AWARDS AND
RECOGNITION BY
STUDENTS UNDER
SUPERVISION

1. **Best Oral Presentation Award**, Fahmida Sharmin and M. A. Basith, Sillenite-type bis-muth 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.
2. **Best Poster Presentation Award**, Fahmida Sharmin, Ferdous Ara and M. A. Basith, Comparative investigation on the structural, optical, and magnetic properties of Dy doped bis-muth 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.
3. **Best Poster Presentation Award**, Fahmida Sharmin and M. A. Basith, Facile Synthesis and characterization of $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{FeO}_3$ 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.
4. **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.
5. **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.
6. **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 $\text{Nd}_2\text{FeCrO}_6$ 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.
7. **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.
8. **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.
9. **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 (INYNAS), Thai Young Scientists Academy (TYSA), and Sri Lankan Academy of Young Scientists (SLAYS), October 2020.
10. **Best Poster Presentation Award**, Subrata Das and M. A. Basith, Temperature effect on the crystallographic and magnetic properties of $\text{Nd}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ nanoparticles, International Conference on Physics-2020, Organized by Bangladesh Physical Society, March 2020.
11. **Outstanding Publication Award**, M. A. Basith, A. Quader, M. A. Rahman, B. L. Sinha, Simple top-down preparation of magnetic $\text{Bi}_{0.9}\text{Gd}_{0.1}\text{Fe}_{1-x}\text{Ti}_x\text{O}_3$ nanoparticles by ultrasonication of multiferroic bulk material, United Group, April 2019.

12. **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 DyCrO₃ Nanoparticles, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
13. **Best Poster Presentation Award**, M. S. Alam and M. A. Basith, Improved Morphology and Enhanced Multiferroicity in Gd-doped BiMn₂O₅ Ceramics, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
14. **Best Poster Presentation Award**, M A Jalil and M. A. Basith, A Comparative Investigation on Enriched Photocatalytic Properties between Sillenite and Perovskite/Bismuth Ferrite-rGO Nanocomposites, International Conference on Nanotechnology and Condensed Matter Physics 2018, Organized by Bangladesh University of Engineering and Technology (BUET), January 2018.
15. **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 BiFeO₃, National Conference on Physics-2017, Organized by Bangladesh Physical Society, January 2017.
16. **Best Poster Presentation Award**, M. A. Jalil, Sayeed S. Chowdhury, Mashnoon Alam Sakib, Emran Khan Ashik, S.M.Enamul Hoque Yousuf, Shakhawat H. Firoyz and M. A. Basith, Preparation of Bi₂₅FeO₄₀-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.
17. **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 BiFeO₃: A multiferroic with bulk structural and ferroelectric properties comparable with nano counterparts, 9th International Conference on Electrical and Computer Engineering, December 2016.
18. **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}CoMnO₆, National Conference on Physics research and education in Bangladesh, Organized by Bangladesh Physical Society, April 2015.
19. **Best Poster Presentation Award**, M. S. Alam, M. A. Rahman, B. L. Sinha, Bashir Ahmad, M. R. Karim and M. A. Basith, Temperature-dependent dielectric and magnetic properties of Bi_{1-x}Gd_xMnO₃ 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 Barbara, 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 and IAP. Role: Chair and key organizer

INTERNATIONAL
RESEARCH
COLLABORATORS

- **Dr. Kristian Mølhave**
Technical University of Denmark
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- **Professor Tadahiyo Komeda**
Institute of Multidisciplinary Research of Advanced Materials
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2-1-1, Katahira, Aoba-ku, Sendai 980-0877, Japan.
Email: tadahiyo.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: Uchoshikkha O Gobeshona: Songkoter Shorup ebong Uttorone Koronio
Publisher: Samhati Prokashan
Year of publication: 2020

 ● PUBLISHED PAPERS IN PEER-REVIEWED JOURNALS

1. Mohasin Tarek, Ferdous Yasmeen, and M. A. Basith, Nanostructured DyFeO₃ photocatalyst: an authentic and effective approach for remediation of industrial and pharmaceutical wastewater, *Journal of Materials Chemistry A*, (Publisher: Royal Society of Chemistry), 2024.
2. Ferdous Yasmeen, Mohasin Tarek, and M. A. Basith, Moisture-Stable CsSnBr₂Cl Halide Perovskite: Electrochemical Insights in Aqueous Environments, *ACS Appl. Mater. Interfaces*, (Publisher: American Chemical Society), 16, 36, 47535–47550, 2024.
3. M. A. Islam, Mohasin Tarek, Md Asif Adib, and M. A. Basith, B-site disorder driven Griffiths-like phase and electrochemical behavior in Y₂NiCrO₆ double perovskite, *Journal of Physics D: Applied Physics*, (Publisher: Institute of Physics, UK), 57, 215302, 2024.
4. Mohasin Tarek and M. A. Basith, MoS₂ mediated tuning of CuCo₂S₄-MoS₂ nanocomposites for high-performance symmetric hybrid supercapacitors, *Journal of Materials Chemistry C* (Publisher: Royal Society of Chemistry), 11, 16605-16622, 2023.
5. Titas Vincent Rozario, Fahmida Sharmin, Shadmani Shamim, and M. A. Basith, 10% La-doped BiFeO₃ Nanoceramics: A Promising Magnetic Catalyst to Degrade Pharmaceutical Antibiotics, *Ceramics International* (Publisher: Elsevier), 2023 (published online).
6. Md. Asif Adib, Fahmida Sharmin and M. A. Basith, Tuning the morphology, stability and optical properties of CsSnBr₃ nanocrystals through bismuth doping for visible-light-driven applications, *Nanoscale Advances* (Publisher: Royal Society of Chemistry), 5, 6194, 2023.
7. M. A. Islam, T. Sato, F. Ara and M. A. Basith, Sol-Gel based synthesis to explore structure, magnetic and optical properties of double perovskite Y₂FeCrO₆ nanoparticles, *Journal of Alloys and Compounds* (Publisher: Elsevier), 944, 169066, 2023.
8. Fahmida Sharmin, Ferdous Ara and M. A. Basith, Comparison of the structure-property relationships between sillenite and perovskite phases of Bi_{0.9}Dy_{0.1}FeO₃ nanostructures, *New J. Chem.* (Publisher: Royal Society of Chemistry), 47, 4707–4719, 2023.
9. Fahmida Sharmin and M. A. Basith, A simple low temperature technique to synthesize sillenite bismuth ferrite with promising photocatalytic performance, *ACS Omega* (Publisher: American Chemical Society), 7, 39, 34901–349, 2022.
10. Tarique Hasan, Arnab Saha, M. N. I. Khan, R. Rashid, M. A. Basith, Muhammad Shahriar Bashar, and Imtiaz Ahmed, Structural, electrical, and magnetic properties of Ce and Fe doped SrTiO₃, *AIP Advances* (Publisher: American Institute of Physics), 12, 095003, 2022.
11. Sajjad Hasan, Akter Hossain Reaz, Subrata Das, Chanchal Kumar Roy, and M. A. Basith, CuCo₂S₄-MoS₂ nanocomposite: A novel electrode for high-performance supercapacitors, *Journal of Materials Chemistry C* (Publisher: Royal Society of Chemistry), 10, 7980–7996, 2022.
12. Y. F. Abed, S. Das, M.S. Ali, Z. Rana, and M. A. Basith, Nanostructured DyCrO₃-rGO for efficient photocatalytic dye degradation and hydrogen generation, *Materials Letters* (Pub-

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- lisher: *Elsevier*), 163604, 2022.
13. Fahmida Sharmin, and M. A. Basith, Highly efficient photocatalytic degradation of hazardous industrial and pharmaceutical pollutants using gadolinium doped BiFeO₃ nanoparticles, *Journal of Alloys and Compounds (Publisher: Elsevier)*, 163604, 2022.
 14. Manifa Noor, Fahmida Sharmin, M. A. Al Mamun, Sajjad Hasan, M. A. Hakim, and M. A. Basith, Effect of Gd and Y co-doping in BiVO₄ photocatalyst for enhanced degradation of methylene blue dye, *Journal of Alloys and Compounds (Publisher: Elsevier)*, 895, 162639, 2022.
 15. M. D. I. Bhuyan, Rana Hossain, Ferdous Ara, and M. A. Basith, A first-principles study on the phase stability and physical properties of a B-site ordered Nd₂CrFeO₆ double perovskite, *Physical Chemistry Chemical Physics (Publisher: Royal Society of Chemistry)* 24, no. 3, 1569-1579, 2022.
 16. Md Shahjahan Ali, Subrata Das, Yasir Fatha Abed, and M. A. Basith, Lead-free CsSnCl₃ perovskite nanocrystals: rapid synthesis, experimental characterization and DFT simulations, *Physical Chemistry Chemical Physics (Publisher: Royal Society of Chemistry)*, 23, no. 38, 22184-22198, 2021.
 17. Fahmida Sharmin, Dayal Chandra Roy, and M. A. Basith, Photocatalytic water splitting ability of Fe/MgO-rGO nanocomposites towards hydrogen evolution, *International Journal of Hydrogen Energy (Publisher: Elsevier)* 46, no. 77, 38232-38246, 2021.
 18. Md Sarwar Hossain, Sankar Kumar Das, Md Moniruzzaman, M. A. Hakim, and M. A. Basith, Frequency and temperature dependent electric polarization, relaxation, and transport properties of Mo and W doped BaTiO₃, *Results in Physics (Publisher: Elsevier)*, 30, 104873, 2021.
 19. Subrata Das, M. D. I. Bhuyan, and M. A. Basith, First-principles calculation of the electronic and optical properties of Gd₂FeCrO₆ double perovskite: Effect of Hubbard U parameter, *Journal of Materials Research and Technology (Publisher: Elsevier)* 13, 2408-2418, 2021.
 20. Shahran Ahmed, AKM Sarwar Hossain Faysal, M. N. I. Khan, M. A. Basith, Muhammad Shahriar Bashar, H. N. Das, Tarique Hasan, and Imtiaz Ahmed, Room temperature ferroic orders in Zr and (Zr, Ni) doped SrTiO₃, *Results in Physics (Publisher: Elsevier)* 31, 104940, 2021.
 21. Subrata Das, Sagar Dutta, Angkita Mistry Tama, and M. A. Basith, Nanostructured LaFeO₃-MoS₂ for efficient photodegradation and photocatalytic hydrogen evolution, *Materials Science and Engineering: B (Publisher: Elsevier)* 271, 115295, 2021.
 22. M. D. I. Bhuyan, Subrata Das, and M. A. Basith, Sol-gel synthesized double perovskite Gd₂FeCrO₆ nanoparticles: Structural, magnetic and optical properties, *Journal of Alloys and Compounds (Publisher: Elsevier)* 878, 160389, 2021.
 23. Subrata Das, Bashir Ahmmad and M. A. Basith, Thermal stability of the crystallographic structure of nanocrystalline Nd_{0.7}Sr_{0.3}MnO₃ manganite with enhanced magnetic properties, *AIP Advances (Publisher: American Institute of Physics)*, 10, 095135, 2020.
 24. Angkita Mistry Tama*, Subrata Das, Sagar Dutta, M. D. I. Bhuyan, M. N. Islam and M. A. Basith, MoS₂ nanosheets incorporated -Fe₂O₃/ZnO nanocomposite with enhanced pho-

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• CONFERENCE PROCEEDINGS / PRESENTATION

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2. S. Das, Y. F. Abed, M. S. Ali, Z. Rana and M. A. Basith, Effect of reduced graphene oxide (rGO) in DyCrO₄-rGO nanocomposite system: A photocatalytic perspective, 4th International Conference on Physics for Sustainable Development and Technology (ICPSDT-2022), organized by Department of Physics, CUET, Bangladesh, January 22-23. 2022.
3. Mohasin Tarek, M. A. Basith, "Tuning MoS₂ nanosheet impacts on structural and electrochemical properties of CuCo₂S₄/MoS₂ nanocomposite for energy storage devices", 5th Young Scientist Congress, organized by Bangladesh Academy of Sciences, 25-27 November, 2022.
4. M. A. Islam and M. A. Basith, "Y₂FeCrO₆ double perovskite nanoparticles: Synthesis, structural, magnetic and optical properties", 2ND International Symposium on Nanotechnology, Poster presentation, 24 January, 2022, AIUB, Dhaka, Bangladesh.
5. Y. F. Abed, S. Das, M. S. Ali, Z. Rana and M. A. Basith, Nanostructured reduced graphene oxide (rGO) incorporated DyCrO₃-rGO nanocomposites: A potential photocatalyst, 2nd International Symposium on Nanotechnology ISN - 2022, organized by Center for Nanotechnology Research (CNR), AIUB, Bangladesh, January 24. 2022.
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Name of the Student: Md. Didaru Islam Bhuyan
Name of the Degree Awarded: PhD, 2022.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **Title of the Thesis:** Preparation of Gd doped $\text{La}_2\text{SrMn}_2\text{O}_7$ 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.
8. **Title of the Thesis:** Investigation of multiferroic and photocatalytic properties of $\text{Bi}_{0.9}\text{Y}_{0.1}\text{FeO}_3$ nanoparticles
Name of the Student: Md. Masud Parvez
Name of the Degree Awarded: M.Phil., 2019.
9. **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.
10. **Title of the Thesis:** Synthesis and characterization of structural, magnetic and optical properties $\text{Dy}_2\text{BB}'\text{CrO}_6$ ($B' = \text{Fe, Ne}$) perovskites
Name of the Student: Md. Rana Hossain
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11. **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
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12. **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
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Name of the Student: Md. Abdul Jalil
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14. **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
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15. **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
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16. **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
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Name of the Student: A H M Areef Billah
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18. **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
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19. **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.
20. **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
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21. **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
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22. **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.
23. **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
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24. **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.
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Name of the Student: Tamanna Mariam
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REPORTS

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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
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5. **Title:** Solar hydrogen production via water splitting using locally synthesized nanoparticles as a photocatalyst.
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6. **Title:** Synthesis and characterization of multiferroic nanoparticles for energy applications.
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7. **Title:** Multiferroic properties of Gd and Ti co-doped bismuth ferrite ceramics.
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