

Dr. Mohammad Jellur Rahman

Associate Professor

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EDUCATION

- **Doctor of Philosophy (Ph.D.)** [October 2011–September 2014] -Year 2014
Department of Optoelectronics and Nanostructure Science,
Graduate School of Science and Technology, Shizuoka University, Shizuoka 422-8529, Japan
Thesis: Study of the Production, Functionalization and Applications of Carbon Nanotubes
Supervisor: Prof. Tetsu Mieno
Research Key Words: Carbon nanotubes, arc discharge, plasma functionalization
MEXT (Monobukagakusho) Scholar
- **Master of Philosophy (M.Phil.)** [October 2007 – April 2011] - Year 2011
Department of Physics, Bangladesh University of Engineering and Technology, Dhaka-1000, Bangladesh
Thesis: Optical and AC Electrical Properties of Plasma Polymerized o-methoxyaniline Thin films
Supervisor: Prof. Md. Abu Hashan Bhuiyan
Research Key Words: Plasma polymer, thin films, optical and electrical properties
ICT Fellow, GOB
Result: GPA 3.416 (out of 4)
- **Master of Science (M.S.)** [July 2001 – June 2002; held in 2005] -Year 2002
Department of Physics, University of Dhaka, Dhaka-1000, Bangladesh
Thesis: Synthesis of Pure and Cerium Doped Barium Titanate and Study of their Different Electrical and Dielectric Properties
Supervisor: Prof. Shamima Karim Choudhury
STRC Fellow, University of Dhaka
Result: First Class Thirteenth. Marks: 67.83%
- **Bachelor of Science (B.Sc.)** with 4 years Honours [July 1998 – June 2001; held in 2004] – Year 2001
Department of Physics, University of Dhaka, Dhaka-1000, Bangladesh
Specialized subjects: Solid State Physics, Computational Physics, Reactor Physics
Result: First class tenth, Marks obtained: 61.37%
- **Higher Secondary Certificate (H.S.C.)** [December 1994 – October 1996] – Year 1996
Science group, Dhaka board, Notre-Dame College, Dhaka-1000, Bangladesh
Result: First Division, 70.6%
- **Secondary School Certificate (S.S.C.)** [January 1989-August 1994] – Year 1994
Science group, Dhaka board, Vibekananda High School, Tangail-1900, Bangladesh
Result: First Division, 80.6%

PROFESSIONAL CARRIER

Associate Professor [March 12, 2018 – to date]

Department of Physics, Bangladesh University of Engineering and Technology (BUET)
Dhaka -1000, Bangladesh

- Lecturing courses and conducting laboratory classes in undergraduate and postgraduate level.
- As the member of board of undergraduate and postgraduate studies, participate in discussion meetings for review and suggest modification for improvement of the courses of the undergraduate and graduate level.
- Assisting newly enrolled postgraduate students in their research work in the Department of Physics, BUET.
- Supervising the graduate students in the Department of Physics, BUET.

Assistant Professor [February 24, 2015 – March 11, 2018]

Department of Physics, Bangladesh University of Engineering and Technology (BUET), Dhaka -1000, Bangladesh

- Lecturing courses and conducting laboratory classes in undergraduate and graduate level.
- As the member of board of undergraduate and postgraduate studies, participate in discussion meetings for review and suggest modification for improvement of the courses of the undergraduate and graduate level.
- Assisting newly enrolled postgraduate students in their research work in the Department of Physics, BUET.
- Supervising the graduate students in the Department of Physics, BUET.

Lecturer [June 27, 2007 – February 24, 2015]

Department of Physics, Bangladesh University of Engineering and Technology (BUET)
Dhaka -1000, Bangladesh

- Lectured courses and conducted laboratory classes in undergraduate level
- Completed Master of Philosophy (MPhil) as a part time student

Assistant Director [December 3, 2006 – June, 26 2007]

Bangladesh Bank, Dhaka-1000, Bangladesh

- Central Banking
- Monetary policy making

RESEARCH EXPERIENCE

Shizuoka University, Japan

Graduate Researcher

Study of the Production, Functionalization and Applications of Carbon Nanotubes
October 2011 - September 2014

Department of Physics, BUET, Dhaka, Bangladesh

Graduate Researcher

Study of optical, structural and electrical properties of plasma polymerized thin films
November 2007 - April 2011

Semiconductor Technology Research Centre, University of Dhaka, Dhaka, Bangladesh

Research Fellow

Synthesis of Pure and Cerium Doped Barium Titanate and Study of their Different Electrical and Dielectric Properties

December 2005- November 2006

Department of Physics, DU

Graduate Researcher

Synthesis of Pure and Cerium Doped Barium Titanate and Study of their Different Electrical and Dielectric Properties

December 2004- November 2005

STUDENT SUPERVISION

A. Doctor of Philosophy (Ph.D.) Thesis

1. **Structural, Optical and Electrical Properties of Thin Films of N-Benzylaniline Synthesized by Plasma Polymerization Method**, Rani Nasrin, **Student no:** 1014144005P, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.
2. **Structural, Optical and AC Electrical Properties of Different Thin Films of Synthesized by Plasma Polymerization Method** (Tentative Title), Masud Reza, **Student no:** 0417144013, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing
3. **Structural, Optical and DC Electrical Properties of Plasma Polymerized Composite Thin Films** (Tentative Title), Md. Ahaduzzaman Deraz, **Student no:** 0417144005, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing
4. **Investigation of Structural, Optical and Electrical Properties of Inorganic Thin Films Deposited by Chemical Bath Deposition Technique** (Tentative Title), Tanvir Ahmmed, **Student no:** 1017144003, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.

B. Master of Philosophy (M.Phil)

1. **Synthesis of ZnO Nanorods by Microwave Irradiation of Precursor Solution and Study of their Process Parameters**, Munira Sultana, **Student no:** 0417143010, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.
2. **Study of Optical and Electrical Properties of Plasma Polymerized 1,2-Diaminocyclohexane Thin Films Synthesized by AC and RF Power Source**, Md. Mahmud Hasan, **Student no:** 0416143006, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.

C. Master of Science (M.Sc.)

1. **Investigation of Structural, Optical and Electrical Properties of Zinc Selenide Thin Films Deposited by Chemical Bath Deposition Technique**, M.Sc. Thesis, Tanvir Ahmmed, **Student no:** 1014142514, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, January 2017.
2. **Investigation of Structural, Mechanical, and Electrical Properties of Rubber Nanocomposites of Carbon Nanotubes**, M.Sc. Thesis, Md. Forhad Hossain, **Student no:** 1015142503, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, September 2017.
3. **Investigation of Structural, Mechanical, and Electrical Properties of Cellulose Nanocomposites of Carbon Nanotubes**, M.Sc. Thesis, Urena Mostafa, **Student no:**

1015142503F, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 27 May, 2018.

4. **Investigation of the Electrical, Thermal and Mechanical Properties of Graphene Reinforced Low Density Polyethylene Nanocomposite**, M.Sc. Thesis, Md. Mehedi Hasan Sohag, **Student no:** 0417142523F, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 11 December, 2019.
5. **Functionalization of Carbon Nanotubes using Oxygen Plasma to Prepare Jute Nanocomposites**, MSc Thesis, Md. Johurul Islam, **Student no:** 1017142504F, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, 17 December, 2019.
6. **Synthesis and Characterization of Plasma Polymerized 3,4-Ethylenedioxythiophene Thin Films**, M.Sc. Thesis, Md. Juel Sarder, **Student no:** 1018142512, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.
7. **Synthesis and Characterization of Plasma Polymerized 3,4-Ethylenedioxythiophene Thin Films**, M.Sc. Thesis, Md. Saddam Sheikh, **Student no:** 1018142512, Department of Physics, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, Ongoing.

CO-SUPERVISION

1. **Study of Structural and Dielectric Properties of Pure and Cerium Doped Barium Titanate**, MS Thesis, Sabina Yasmin, Student no: 2512, Session: 2004-2005, Department of Physics, University of Dhaka, Dhaka, Bangladesh, November, 2008.
2. **Study of Structural and Frequency Dependent Dielectric Properties of Pure and Cerium Doped Barium Titanate**, MS Thesis, Md. Sahriaz Hossain Khan, Student no: 2812, Session: 2007-08, Department of Physics, University of Dhaka, Dhaka, Bangladesh, March 2009.
3. **Structural, Electrical and Dielectric Properties of Pure and Manganese Dioxide (MnO₂) Doped Barium Titanate (BaTiO₃) Ceramics**, MS Thesis, Rafiqul Islam, Student no: 3704, Session: 2006-07, Department of Physics, University of Dhaka, Dhaka, Bangladesh, June 2010.
4. **Alternating Current Electrical Properties of Cerium Doped Barium Titanate at Intermediate Temperature (-25 °C to 30 °C)**, MS Thesis, Afia Iffat, Student no: 3120, Session: 2009-10, Department of Physics, University of Dhaka, Dhaka, Bangladesh, November 2012.
5. **Synthesis and study of Structural and Electrical properties of Cerium (Ce) doped, Manganese (Mn) doped and Ce-Mn co-doped Barium Titanate ceramics at room temperature**, MS Thesis, Myeesha Mostafa, Student no: 4413, Session: 2013-14, Department of Physics, University of Dhaka, Dhaka, Bangladesh, March 2016.
6. **Synthesis, Structural and Electrical properties of undoped, doped (Ce & Mn) and co-doped (Ce-Mn) Barium Titanate ceramics at different temperatures**, Tahmida Raheen Iqbal, Student no: 5023, Session: 2014-15, Department of Physics, University of Dhaka, Dhaka, Bangladesh, April 2017.
7. **Fabrication and Characterization of Multiwalled Carbon Nanotube Reinforced Starch Biocomposites**, Nafisa Alam, Student no: 1924, Session: 2015-16, Department of Physics, University of Dhaka, Dhaka, Bangladesh, February 2018.
8. **Fabrication and Characterization of Multiwalled Carbon Nanotube Reinforced Banana Tree Fiber Nanocomposites**, Mahjabin Binte Mostafiz, Student no: 2323, Session: 2017-18, Department of Physics, University of Dhaka, Dhaka, Bangladesh, February 2020.

FUNDING

1. *Biopolymer Extracted Nanocelluloses and Smart Fibers for Future Technology*, Sanction order: 39.00.0000.009.06.009.20/1331; 08/12/2020, Ministry of Science and Technology, Government of the People's Republic of Bangladesh, Bangladesh Secretariat, Dhaka – 1000 (Ongoing).
2. *Carbon Nanotube Reinforced Nanocomposites of Natural Polymers for Biofriendly Applications*, Sanction order: 39.00.0000.09.06.024.19/Phy's-529-545; 12/01/2020, Ministry of Science and Technology, Government of the People's Republic of Bangladesh, Bangladesh Secretariat, Dhaka – 1000 (Completed Successfully).
3. *Carbon Nanotube Reinforced Nanocomposites of Natural Polymers for Biofriendly Applications*, Sanction order: 39.00.0000.09.14.009.2019/PHY's-35/505; 16/01/2019, Ministry of Science and Technology, Government of the People's Republic of Bangladesh, Bangladesh Secretariat, Dhaka – 1000 (Completed).
4. *Carbon Nanotube Reinforced Nanocomposites of Natural Polymers for Biofriendly Applications*, Sanction order: 39.00.0000.09.06.79.2017/PHY's-443/447, Date: 06.11.2017, Ministry of Science and Technology, Government of the People's Republic of Bangladesh, Bangladesh Secretariat, Dhaka – 1000 (Completed).

FIELD OF INTEREST

- ◆ Carbon nanotubes and nanomaterials.
- ◆ Plasma modification of carbon nanomaterials.
- ◆ Study of optical, structural and electrical properties of plasma polymerized thin films.
- ◆ Study of structural and electrical properties of ceramics materials.
- ◆ Studies of crystallization, phase transition, surface morphology, mechanical micromechanical, thermal, electrical and other properties of soft condensed matters (polymeric and organic substances).

EXPERIMENTAL TECHNIQUES AND INSTRUMENTS USED

- ◆ Arc discharge method to produce carbon nanotubes, radio frequency plasma surface modification of the carbon nanotubes, and application of the carbon nanotubes especially as electro-thermal element.
- ◆ Characterization of carbon nanotubes using transmission electron microscope, scanning electron microscope, Raman spectroscopy, X-ray photoelectron spectroscopy, Time of flight mass spectroscopy, Thermogravimetric analysis, FT-IR and UV-visible spectroscopies, and optical microscopy.
- ◆ Preparation of ceramics materials using solid state reaction method.
- ◆ Preparation of organic thin films using capacitively coupled plasma polymerization technique.
- ◆ Preparation of polymer composites and blends by compression molding, extrusion molding and injection molding method.
- ◆ Differential Thermal Analyzer (DTA), Thermogravimetric Analyzer (TGA).
- ◆ Study of crystal structure by X-ray Diffraction (XRD) method.
- ◆ Optical Microscopy, Scanning electron microscopy.
- ◆ AC and DC electric measurements using impedance analyzer and electrometer respectively.
- ◆ UV-visible spectroscopy.
- ◆ FTIR Spectroscopy using IR spectrophotometer.
- ◆ Microhardness measurements using a microindentation tester.
- ◆ Mechanical testing using universal testing machine.

PUBLICATIONS

Manuscripts under Preparation:

1. Rani Nasrin, A. H. Bhuiyan, A. T. M. K. Jamil, and Mohammad Jellur Rahman, "Thermal and Optical Properties of As-deposited Plasma Polymerized N-benzylaniline Thin Films", prepared to submit in a peer-reviewed Journal.

Submitted Manuscripts:

1. Md. Mahmud Hasan, Mohammad Jellur Rahman*, Md. Azizul Hoque and A. H. Bhuiyan, Smooth and Transparent Plasma Polymerized 1,2-Diaminocyclohexane Thin Films for Optoelectronic Applications, Submitted to *Thin Solid Films*, 2021.
2. M. M. Rahaman, M. A. Momin, M. J. Rahman, Structural, Electronic and Optical Properties of SnO and Indium-Doped SnO Bi-layer Film: DFT Based Computation, *Solid State Communications*, 2020.
3. P. Mojumder, M. J. Rahman, M. A. H. Bhuiyan, and S. Choudhury, Structural and Thickness Dependent Optical Parameters of Plasma Polymerized 2-Vinylpyridine Thin Films, *Bulletin of Materials Science*, 2020 (Under Revision)
4. Md. Johurul Islam, M. Jhahan, N.I. Khan, Toma Khatun, Mohammad Jellur Rahman, Md. Aminul Islam, Abdullah Al-Momin, Md. Monjarul Alam, Influence of Mg Substitution on Structural, Magnetic and Electrical Properties of Zn-Cu Ferrites, Submitted to *Journal of Materials Science: Materials in Electronics* (2021).

Published Manuscripts:

2021

1. M. Sultana, Mohammad Jellur Rahman, M. S. Bashar, Size Distribution of Hexagonal Prismatic Shaped ZnO Nanorods Synthesized by Microwave Assisted Irradiation of Precursors, *Journal of Theoretical and Applied Physics*, 2021, (Accepted).
2. Md. Abdul Momin, Md. Aminul Islam, Meherun Nesa, Mehnaz Sharmin, Mohammad Jellur Rahman, A. H. Bhuiyan, Effect of M (Ni, Cu, Zn) doping on the structural, electronic, optical, and thermal properties of CdI₂: DFT based theoretical studies, *AIP Advances*, 2021, 11, Article ID: 055203 (10 pages); <https://doi.org/10.1063/5.0050145>. **IF: 1.62** (2020)
3. Mahajabin Binte Mustafiz, Kazi Haniem Maria, Mohammad Jellur Rahman, Tetsu Mieno, Bio-composites from Banana Tree Fibers Ambient with Multi-Walled Carbon Nanotubes: Manufacturing and Properties, *International Nano Letters*, 2021, 11(2), 149-158. DOI: <https://doi.org/10.1007/s40089-021-00331-3>.
4. Rani Nasrin, Mohammad Jellur Rahman, A. T. M. K. Jamil, Khandker S. Hossain, and A. H. Bhuiyan, Thickness Dependent Structural and Surface Properties of Plasma Polymerized N-benzylaniline Thin Films, *Applied Physics A*, 2021, 127, Article ID: 240 (12 Pages). DOI: <https://doi.org/10.1007/s00339-021-04326-x>. **IF: 2.50** (2020)
5. Tahmida Iqbal, Myeesha Mostafa, Md Saif Ishtiaque, Mohammad Jellur Rahman, Shamima Choudhury, Effect of Ce-Mn co-doping on the Structural, Morphological and Electrical Properties of the BaTiO₃ Based Ceramics, *Biointerface Research in Applied Chemistry*, 11(4), 2021, 12215 – 12226. DOI: <https://doi.org/10.33263/BRIAC114.1221512226>. **IF: 0.873** (2020)
6. A. Nahar, M. A. Bhuiyan, M. J. Rahman, S. Choudhury, Enhanced Dielectric properties of Bismuth Doped Barium Titanate Ceramics with their Structural and Compositional Studies,

Biointerface Research in Applied Chemistry, 11(3), 9862 - 9870, 2021. DOI: 10.33263/BRIAC113.98629870. **IF: 0.873** (2020)

2020

7. N. Alam, K. H. Maria, M. J. Rahman, P. Sultana, T. Mieno, A wet chemical synthesis and characterization of mwcnt-starch biocomposites, *Journal of Bangladesh Academy of Sciences*, 44(1), 43-52, 2020. DOI: <https://doi.org/10.3329/jbas.v44i1.48562>.
8. Urena Mostafa, Mohammad Jellur Rahman, Tetsu Mieno, Md. Abu Hashan Bhuiyan, Carbon nanotube-incorporated cellulose nanocomposite sheet for flexible technology, *Bulletin of Materials Science*, 2020, 43, 142 (1-10). DOI: <https://doi.org/10.1007/s12034-020-02145-z>. **IF: 1.392** (2020)
9. M. J. Islam, M. J. Rahman, T. Mieno, Safely functionalized carbon nanotube-coated jute fibers for advanced technology, *Advanced Composites and Hybrid Materials*, 2020, 3, 285-293. DOI: <https://doi.org/10.1007/s42114-020-00160-6>.
10. M. A. Momin, M. J. Rahman, and T. Mieno, Foot pressure sensor system made from MWCNT coated cotton fibers to monitor human activities, *Surface and Coatings Technology*, 394, 2020, Article ID: 125749. DOI: <https://doi.org/10.1016/j.surfcoat.2020.125749>. **IF: 3.784** (2020)

2019

11. M. J. Rahman, A. Iffat, M. A. H. Bhuiyan, S. Choudhury, Alternating Current Electrical Properties of Cerium Doped Barium Titanate below the Room Temperature, *Bangladesh Journal of Physics*, 25, 55-64, 2019.
12. M. A. Momin, M. J. Rahman, and T. Mieno, Development of Compact Load Cell Using Multiwall Carbon Nanotube/Cotton Composites and Its Application to Human Health and Activity Monitoring, *Journal of Nanomaterials*, 2019, Article ID 7658437, 15 pages (2019). DOI: <https://doi.org/10.1155/2019/7658437>. **IF: 1.98** (2020)
13. M. Mostafa, M. J. Rahman, Shamima Choudhury, Enhanced Dielectric Properties of BaTiO₃ Ceramics with Cerium Doping, Manganese Doping and Ce-Mn Co-doping, *Science and Engineering of Composite Materials*, 26(1), 62-69, (2019). DOI: <https://doi.org/10.1515/secm-2017-0177>. **IF: 1.56** (2020)
14. S. Alam, M. F. Mina, M. J. Rahman, M. A. Gafur, K. H. Maria, T. Mieno, A. K. M. M. Alam, M. D. H. Beg, Effects of Micro-Size Graphite-Flake to Reinforce the Performances of Poly (Lactic Acid) Thermoplastic Biocomposites, *Polymer and Polymer Composites*, 27(1), 20-32, 2019. DOI: <https://doi.org/10.1177/0967391118811218>. **IF: 1.74** (2020)

2018

15. M. J. Rahman and A. H. Bhuiyan, AC Electrical Properties of Plasma Polymerized o-Methoxyaniline Thin Films, *Polymer Science: Series A*, 60(3) 2018, 1-8. DOI: 10.1134/S0965545X18030148. **IF: 0.968** (2020)

2017

16. M. J. Rahman and T. Mieno, Functionalization of Single-Walled Carbon Nanotubes by Citric Acid/Oxygen Plasma Treatment, *Fullerenes, Nanotubes and Carbon Nanostructures*, 25(9), 2017, 519-525. DOI: <http://dx.doi.org/10.1080/1536383X.2017.1347639>. **IF: 1.80** (2020)

2015

17. M. J. Rahman and T. Mieno, Conductive cotton textile from safely functionalized carbon nanotubes, *Journal of Nanomaterials* 2015 (2015) 978484 (10 pages). DOI: <http://dx.doi.org/10.1155/2015/978484>. **IF: 1.98** (2020)

2014

18. M. J. Rahman and T. Mieno, Water-Dispersible Multiwalled Carbon Nanotubes Obtained from Citric-Acid-Assisted Oxygen Plasma Functionalization, *Journal of Nanomaterials*, 2014 (2014) 508192 (9 pages). DOI: <http://dx.doi.org/10.1155/2014/508192>. **IF: 1.98** (2020)
19. M. J. Rahman and T. Mieno, Effects of Magnetic Field and Gravity on Single-Walled Carbon Nanotube Production in Three Directions of Arc Discharge Current, *JPS Conference Proceedings* 1 (2014) 015074 (8 pages). DOI: <http://dx.doi.org/10.7566/JPSCP.1.015074>.

2013

20. M. J. Rahman and T. Mieno, Production of Single-Walled Carbon Nanotubes by Modified Arc Discharge Method, *Japanese Journal of Applied Physics*, 52 (2013), 056201 (5 pages). DOI: <http://dx.doi.org/10.7567/JJAP.52.056201>. **IF: 1.376** (2020)
21. M. J. Rahman and A. H. Bhuiyan, Structural and Optical Properties of Plasma Polymerized o-Methoxyaniline Thin Films, *Thin solid Films*, 534 (2013) 132–136. DOI: <http://dx.doi.org/10.1016/j.tsf.2013.02.026>. **IF: 2.03** (2020)

2012

22. R. Islam, S. Choudhury, S. N. Rahman and M. J. Rahman, The Effect of Manganese Doping on the Grain Size and Transition Temperature of Barium Titanate Ceramics, *Journal of Ceramic Processing Research*, 13(3) (2012)248-251. Link: http://jcpr.kbs-lab.co.kr/file/JCPR_vol.13_2012/JCPR13-3/12-2011-95.pdf. **IF: 0.467** (2019)
23. M. A. Haque, M. F. Mina, A.K.M. M. Alam, M. J. Rahman, M. A. H. Bhuiyan, T. Asano, Multiwalled Carbon Nanotubes-Reinforced Isotactic Polypropylene Nanocomposites: Enhancement of Crystallization and Mechanical, Thermal, and Electrical Properties, *Polymer Composites*, 33 (2012) 1094-1104. DOI: 10.1002/pc.22235. **IF: 2.265** (2020)

2011

24. S. Yasmin, S. Choudhury, M. A. Hakim, A. H. Bhuiyan and M. J. Rahman, Effect of Cerium doping on microstructure and dielectric properties of BaTiO₃ Ceramics, *Journal of Materials Science and Technology*, 27(8) (2011)759-763. DOI: 10.1016/S1005-0302(11)60139-4. **IF: 5.04** (2020)
25. A. H. Bhuiyan, M. F. Mina, S. Seema, M. J. Rahman, M. M. Khan, and M. A. Gafur, Structural, Elastic and Thermal Properties of Titanium Dioxide Filled Isotactic Polypropylene, *Journal of Polymer research*, 18 (2011)1073-1079. DOI:10.1007/s10965-010-9509-y. **IF: 2.83** (2020)
26. S. Yasmin, S. Choudhury, M. A. Hakim, A. H. Bhuiyan and M. J. Rahman, Structural and dielectric properties of pure and cerium doped barium titanate, *Journal of Ceramic Processing Research*, 12(4), 387-391 (2011). **IF: 0.467** (2019)

2009

27. M. F. Mina, S. Seema, R. Matin, M. J. Rahman, R. B. Sarker, M. A. Gafur, and M. A. H. Bhuiyan; Improved performance of isotactic polypropylene/titanium dioxide composites: Effect of processing conditions and filler content; *Polymer Degradation and Stability*, 94, 183-188 (2009). DOI: 10.1016/j.polymdegradstab.2008.11.006. **IF: 4.032** (2020)
28. M. F. Mina, N. Banu, A. Razzak, M. J. Rahman, M. A. Gafur, and M. A. H. Bhuiyan; Structures and Performance of White Clay-Filled Isotactic-Polypropylene Composites Prepared by Double-Molding Techniques, *Polymer-Plastics Technology and Engineering*, 48: 1275–1281, 2009. DOI:10.1080/03602550903204139. **IF: 1.973** (2020)

2008

29. S. Choudhury, S. Akter, M. J. Rahman, A. H. Bhuiyan, S. N. Rahman, N. Khatun and M. T. Hossain; Study of Dielectric and Electrical Properties of Zirconium Doped Barium Titanate Perovskite; *Journal of Bangladesh Academy of Sciences*, 32(2): 221-229 (2008).

2007

30. M. J. Rahman, S. Choudhury, A. H. Bhuiyan, S. N. Rahman and A. H. Khan; Electrical Properties of Cerium Doped Barium Titanate; *Journal of Bangladesh Academy of Sciences*, 31(1): 137-141(2007).

Proceedings

1. M. J. Rahman and T. Mieno, Change of the Single-Walled Carbon Nanotube Production Rate with the Directions of Arc Discharge Current and Magnetic Field, Proceedings of The 15th Takayanagi Kenjiro Memorial Symposium, 12–13 November, 2013, Hamamatsu Campus, Shizuoka University, Japan, S4-21-1 - 5.

Books and Chapters

1. M. J. Rahman and T. Mieno, Safer Production of Water Dispersible Carbon Nanotubes and Nanotube/Cotton Composite Materials, In: Carbon Nanotubes - Current Progress of their Polymer Composites, Eds. M. R. Berber and I. H. Hafez, InTechOpen, Croatia, Chapter 12, 323-343 (2016). DOI: 10.5772/62880
2. M. F. Mina, T. A. Mobarak and M. J. Rahman, Physics Part I and II, Text Books for Higher Secondary Education, Extended Version of the Book Approved by NCTB, Starlit Publications, Dhaka, Bangladesh (2019).
3. M. F. Mina, T. A. Mobarak and M. J. Rahman, Physics Part I and II, Text Books for Higher Secondary Education, Approved by NCTB, Starlit Publications, Dhaka, Bangladesh (2018).
4. M. F. Mina, T. A. Mobarak and M. J. Rahman, Physics Part II, Text Books for Higher Secondary Education, Approved by NCTB, Alam Book House (Jupitar Publications), Dhaka, Bangladesh (2016).
5. M. F. Mina, T. A. Mobarak and M. J. Rahman, Physics Part I, Text Books for Higher Secondary Education, Approved by NCTB, Alam Book House (Jupitar Publications), Dhaka, Bangladesh (2015).

Presentations at Conferences, Seminars and Symposiums

1. M. Sultana, Mohammad Jellur Rahman, M. S. Bashar, “Study of the size distribution of ZnO nanorods synthesized by microwave assisted irradiation of precursor”, International Conference on Science and Technology for Celebrating the Birth Centenary of Bangabandhu (ICSTB-2021), 11-13th March, 2021, Bangladesh Council of Scientific and Industrial Research, Dhaka-1205.
2. Md. Abdul Momin, Mohammad Jellur Rahman, Tetsu Mieno, “Wearable Foot Pressure Sensors from MWCNT Coated Cotton Fibers for Human Activity Monitoring System”, 20th Workshop on fine particle plasmas, NIFS, Toki, Gifu, Japan; December 2020.
3. Md. Abdul Momin, Mohammad Jellur Rahman and Tetsu Mieno, “Compact Wearable Foot Pressure Sensors from MWCNT Coated Cotton Fibers for Human Activity and Sporting Performance Monitoring”, 58th Fullerenes-Nanotubes-Graphene General Sympo., Univ. Tokyo, March 15-17, 2020, Japan.
4. Md. Abdul Momin, Mohammad Jellur Rahman and Tetsu Mieno, “Wearable Foot Pressure Sensors from MWCNT Coated Cotton Fibers for Human Activity Monitoring System”, The 6th International

Symposium toward the Future of Advanced Researches in Shizuoka University (ISFAR-SU 2020), March 5, 2020, Shizuoka Univ., Hamamatsu, Japan.

5. Md. Johurul Islam, Mohammad Jellur Rahman, Parvin Sultana, Green Synthesis of Copper Nanoparticles Using Justicia Adhatoda Leaf Extract and Its Application in Cotton Fibers as Antibacterial Coatings, International Conference on Physics - 2020, NM-09, 05-07 March, 2020, AECD, Dhaka, Bangladesh.
6. M. Sultana, Mohammad Jellur Rahman, M. S. Bashar, Study of the Size Distribution of ZnO Nanorods Synthesized by Microwave Assisted Irradiation of Precursor, International Conference on Physics - 2020, 05-07 March, 2020, AECD, Dhaka, Bangladesh.
7. Md. Mahmud Hasan, Mohammad Jellur Rahman, A. H. Bhuiyan, Fabrication and Characterization of 1, 2-Diaminocyclohexane Thin Films Obtained by AC Plasma Polymerization Technique, International Conference on Physics - 2020, 05-07 March, 2020, AECD, Dhaka, Bangladesh.
8. Mahajabin Binte Mustafiz, Mohammad Jellur Rahman and Kazi Haniyum Maria, Banana Tree Fiber: A New Dimension to the World of Bio-composites, Ambient with Multi-Walled Carbon Nanotubes, International Conference on Physics - 2020, 05-07 March, 2020, AECD, Dhaka, Bangladesh.
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42. M. F. Mina, N. Banu, R. Matin, M. J. Rahman, M. A. Gafur and A. H. Bhuiyan, Mechanical, Thermal and Electrical Properties of Polypropylene/White-Clay Composites, Presented in Bose Conference on Contemporary Physics, LCPTF-9, March 19-21, p. 78 (2008), Dhaka, Bangladesh.
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Curriculum Activities:

I have taught the following courses to the undergraduate students during my teaching period at BUET:

Modern Physics as part of PHY-105, PHY- 113, PHY151, PHY 157, PHY 167, PHY117 courses to the CE, WRE, ME, IPE, NAME and ChE, MME, BME Departments;

Structure of Matter as part of PHY-105, PHY-117, PHY-151 course to the CE, ChE, WRE, IPE and NAME departments and as part of PHY-109 course to the CSE department.

Wave Mechanics as part of PHY- 117 course to the IPE department.

Also conducted Physics Sessional courses (PHY-102 and PHY-104) in each term as department scheduled time to time. Time to time participated in developing and maintenance of the undergraduate laboratory.

Award : Best poster award in the 2015 International Symposium toward the Future of Advanced Researches in Shizuoka University, 27–28 January, 2015, Hamamatsu, Shizuoka, Japan.

Scholarship : Japanese Govt. MEXT (Monobukagakusho) Scholarship (2011)

Membership : Life member of the '*Bangladesh Physical Society*' (LM E0035)

Member of '*The Fullerenes, Nanotubes and Graphene Research Society*'

Life member of Association of Asia Pacific Physical Societies-Division of Plasma Physics (Membership number 206)

Life Member of BUET Alumni Association

Life Member of Dhaka University Physics Alumni Association

Life Member of JUAAB

Fellowship : NSICT Fellowship, 2010-2011, GOB

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Extra Curriculum Activities:

a) Activities Assigned by the University Authorities in Addition to own Duties:

- *Acting BPGS Secretary of the Department of Physics, BUET since October 2020.*
- *Acted as Postgraduate Tabulator of the Department of Physics, BUET from October 2017 to September 2020.*
- *Acted as Web-administrator of the Department of Physics, BUET since March 2016 to September 2020.*
- *Gave invigilation in the semester final exams and admission tests at BUET in 2008, 2009 and 2010, 2011, 2014, 2015, 2016, 2017, 2018, 2019, 2020.*
- *Act as Scrutinizer /Examiner of the UG Admission test of the sessions 2014-2015, 2015-2016, 2016-2017, 2017-2018, 2018-2019, 2019-2020.*
- *Helped to buy and setup new laboratory apparatus for the undergraduate level.*

b) Hall Administration:

Worked as an Assistant Provost (Mess) of the Dr. M. A. Rashid Hall of BUET from June 13, 2015 to October 2020.

c) Chairman or Member of Committees formed by University Authority, Syndicate, Academic Council, Finance Committee, etc:

- *Member of the Academic Council, BUET since June 2018.*
- *Member of Examination Committee of Undergraduate and Graduate levels of the Physics Department since June, 2018.*
- *Members of different Recruitment Committees of BUET*
- *Member of **Board of Undergraduate Studies (BUGS)** of the Physics Department since June, 2007.*
- *Member of **Board of Postgraduate Studies (BPGS)** of the Physics Department since June, 2015.*

- Member, **Publication Sub-committee**, 10th Convocation, 2011, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh
- Members of the vigilance team to observe the law and order situation of different residential halls.

REFERENCES

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I hereby declare that the information stated above is true.



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