DR. PRAJNA MUKHERJEE

Ram Krishna Mandir Road, P.O.: Bolpur, District: Birbhum, State: West Bengal, Pin Code-731204, India.
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Current Position
Assistant Professor
Department of Physics
Bolpur College
The University of Burdwan
Bolpur, Birbhum, West Bengal 731204
India

Personal details:
Date of Birth: 28th Dec 1985.
Nationality: Indian.
Sex: Female

Education:

- Ph.D. in Physics, May 2016, Visva-Bharati, Santiniketan, 731235, West Bengal, India
  Thesis title: "Theoretical Investigation of Structural, Electrical and Magnetic Properties of a few Nano-Scale Systems"
- Qualified CSIR-UGC National Eligibility Test (NET) in Physical Sciences: Dec 2008
- Joint Entrance Screening Test (2009): Rank 69
- Master's degree (M.Sc.) in Physics, 2008
  Visva-Bharati, Santiniketan, 731235, West Bengal, India
  First Class with rank 2nd (79.33%)
- Bachelor's degree (B.Sc.) in Physics, 2006
  Visva-Bharati, Santiniketan, 731235, West Bengal, India
  First Class with distinction with rank 2nd (80.70%)
- Higher Secondary Examination (Class-XII) in 2003
  W.B.C.H.S.E. (80.20%)
- Madhyamik Examination (Class-X) in 2001
  W.B.C.H.S.E. (87.12%)

Teaching Experience:

- Contractual whole-time teacher (Govt. approved) in the Department of Physica, Bolpur College, Bolpur, West Bengal, India under The University of Burdwan from September 2010 to July 2017.
- Assistant Professor in Physics at Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia, 723121, West Bengal, India under Sidho Kanho Birsa University from August 2017 to July 2019.
- Assistant Professor in Physics at Bolpur College, Bolpur, Birbhum, West Bengal 731204 under The University of Burdwan since July 2019.
- Teach undergraduate students; Papers: Quantum Mechanics, Solid State Physics, Mathematical Physics, and Scilab (Laboratory Courses).
- Examiner: Performed examiner's duties both external and internal
- Paper Setter: Performed as paper-setter at UG level (Hons.) as appointed by Kazi Nazrul University, Asansol, India

Faculty Development Programs Completed:

(1) Self-learning Online Course on "Understanding Open Educational Resources", November 06, 2020, Commonwealth of Learning, Canada.
(2) One week online Faculty Development Program on "Learning Management Systems and Open Educational Resources", November 04-10, 2020, Krishna Chandra College, University of Burdwan.
(3) 12 week course Faculty Development Program on Solid State Physics from NPTEL online certification (SWAYAM) SEP-DEC, 2020.

(4) 4-Week Induction/Orientation Programme for "Faculty in Universities/Colleges/Institutes of Higher Education" from *February 11 - March 13, 2021* and obtained Grade *A+* from Teaching Learning Centre, Ramanujan College University of Delhi under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers And Teaching

(5) Two weeks National Interdisciplinary Refresher Course on "Research Methodology and Data Analysis" from 24th March to 7th April 2021 and obtained Grade A from Teaching Learning Centre, Ramanujan College, University of Delhi under the aegis of Ministry of Education, Pandit Madan Mohan Malaviya National Mission on Teachers And Teaching.

(6) 12-week course Faculty Development Program on "Chemistry: Atomic Structure and Chemical Bonding" from NPTEL online certification (SWAYAM) Jan-April, 2022.

(7) International FDP organized by the Department of Computer Science and Engineering, JIS University from 28th November 2022 to 02nd December 2022.

(8) 12-week course Faculty Development Program on "Atomic and Molecular Physics" from NPTEL online certification (SWAYAM) Jan-April, 2023.

Research Experience:

- Junior Research Fellow at "Advanced Material Research Unit", Satyendra Nath Bose National Center for Basic Sciences, Kolkata, India from August 2008 to September 2010.
- Ph.D. Research Fellow at the Department of Physics, Visva-Bharati, Santiniketan, India from October 2010 to May 2016.
- Visiting Fellow at the Department of Material Science and Nanoengineering, Rice University, Houston, Texas 77005, USA from December 2023 to February 2024.

Research Skill:

- First Principle study of Electronic structure of nanomaterials: nanotubes, nanowires, nanoclusters, and nanosheets using Density Functional Theory (VASP code).
- Study of Electrical, Magnetic, and catalytic properties of nano-materials.

Publications:

1. S. Chowdhury, M. Das, **P. Mukherjee** and B. C. Gupta, "Diameter-dependent structural and electronic property of fused porphyrin nanotubes: A density functional study", Journal of Porphyrins and Phthalocyanines (2020) 24: 1021-1029.

2. S. Chowdhury, **P. Mukherjee,** M. Das and B. C. Gupta, "Formation of charge transfer complex between metalloporphyrins and aromatic solvents in tetrahydrofuran media: A density functional study", Journal of Porphyrins and Phthalocyanines (2019) 23: 1149–1157.

3. B. Roy, M. Ghosh, **P. Mukherjee**, S. Chowdhur, B. C. Gupta, K. Majhi and Subrata Sinha, "Ground state charge transfer complex formation of some metalloporphyrins with aromatic solvents: Further theoretical and experimental investigations", Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy (2018) 188 :311–317

4. M. Das, **P. Mukherjee**, S. Konar and B. C. Gupta, "Tunable structural and electrical properties of zigzag CdS nanotubes:A density functional study" Physica Status Solidi B (2017) 254:1700038(1-8).

5. **P. Mukherjee**, B. C Gupta and P. Jena, "Magnetic Properties of Bimetallic Clusters Composed of Gd and transition Metals", J. App. Phys. (2016) 119: 074301 (1-6)

6. **P. Mukherjee**, S. Konar, B. C. Gupta, "Structural and electrical properties of Selenium Nanotubes", Phys. Lett. A (2016) 380:238-241

7. **P. Mukherjee**, B. C. Gupta and P. Jena, "Catalytic activities of platinum nanotubes: a density functional study", Eur. Phys. J. B, (2015) 88:215.

8. **P. Mukherjee**, B. C. Gupta and P. Jena, "Chain-like structures of gold supported by silicon substrate" (Cover Page article), Physica Status Solidi B (2014) 251: 924–932.

9. M. Das, **P. Mukherjee***, S. Konar, and B. C. Gupta, "Work function and Young's modulus of platinum nanotubes: Density functional study" Physica Status Solidi B (2013) 250:1519-1525**.** ***Corresponding author**

10. **P. Mukherjee**, B. C. Gupta and P. Jena, "Electronic and magnetic properties of pristine and transition metal doped ZnTe nanowires" Journal of Physics: Condensed Matter, (2013) 25:266003

Presentations in National and International conferences and workshops:

1. **Poster presentation** in the national seminar "Condensed Matter Days", August 29-31, 2012 at Birla Institute of Technology, Mesra, Ranchi, Jharkhand.
2. **Poster Presentation** in "The Third International Symposium on clusters, cluster assemblies and nano-scale materials (ISCANM-III)", March 11-14, 2014 at Harish-Chandra Research Institute, Allahabad.
3. **Poster presentation** in the national seminar "Condensed Matter Days", August 27-29, 2015 at Visva-Bharati University, Santiniketan, West Bengal.
4. **Poster presentation** in the national seminar "2nd Regional Science and Technology Congress (Western Region), 2017", November 16-17, 2017 at The University of Burdwan, Burdwan.
5. **Oral presentation** in 28th National Conference On Condensed Matter Physics: Condensed Matter Days 2020 (Cmdays20) 11-13 December, 2020, National Institute Of Technology Silchar, Assam.

Conferences participated:

1. Participated in "India-Singapore Joint Physics Symposium", January 6-8, 2009 at S.N.B.N.C.B.S. , Kolkata.
2. Participated in the national Seminar on "Science and Nature: Tagore's Vision and its Relevance", March 12-13, 2011 at Visva-Bharati university, Santiniketan, West Bengal.
3. Participated in "5th Indian Youth Science Congress", December 6-9, 2013 at Visva-Bharati university, Santiniketan, West Bengal.
4. Participated in Science Academies' Education Programmes Lecture Workshop on "Recent Trends in Chemistry with Reference to Teaching and Research", March 13-14, 2015 at Visva-Bharati University, Santiniketan, West Bengal.
5. Participated in national seminar on "Rabindranath Tagore: Humanity and Cultural Affinity", December 2-3, 2015 at Bolpur College (under Burdwan University) Bolpur, West Bengal.
6. Participated in One Day Workshop on Vishakha Act Awareness Programme, January 28, 2016 at Bolpur College (under Burdwan University) Bolpur , West Bengal.
7. Participated in "International Webinar on Nano Science and its Applications", October 19, 2020 at Bankura Christian College, Bankura.
8. Participated in "One-Day International Webinar on Recent Advances in Chemistry", November 08, 2020 at Manbhum Mahavidyalaya, Sidho-Kanho-Birsa University.
9. Participated in International Webinar on "Nano Materials" and its Applications 22- 23 February, 2021 Organized by: Department of PHYSICS (Under DBT Star College Scheme) Krishna Chandra College, Hetampur, Birbhum, West Bengal