

### Curriculum Vitae/ Faculty Profile

- Name : APURBA BARMAN
- Designation: Assistant Professor
- Department: Physics
- Date of Joining: 04.03.2015
- Nationality: Indian
- Address for Correspondence: Vill. + P.O.: Kamat Sheoraguri, P.S.: Tufanganj, Dist.: Cooch Behar, West Bengal-736132
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### ACADEMIC INFORMATION

- Qualification Details:

| Examinations Passed | Institution/University | Year of Passing |
|---------------------|------------------------|-----------------|
| M.Sc.               | IIT GUWAHATI           | 2009            |
| Ph.D.               | IIT GUWAHATI           | 2014            |
| NET                 | UGC-CSIR               | 2009            |
| GATE                | IIT                    | 2009, 2010      |
| JAM                 | IIT                    | 2007            |

- Subject(s) Specialization: Condensed Matter Physics

### CAREER INFORMATION

- Professional Development Programs (FIP, RC, Short Course, Workshop)

| Sl. No. | Title of the Professional Development Program | Venue | Date and Duration |
|---------|---|-------|-------------------|
|---------|---|-------|-------------------|

|    |  |                                  |  |
|----|--|----------------------------------|--|
| 1. | 32nd Orientation Programme   | HRDC, University of North Bengal | November 03, 2017 to November 30, 2017                         |
| 2. | Inter-disciplinary Refresher Course on Disaster Management: Water and Environmental Sanitization | UGC HRDC, Jadavpur University    | 7th January, 2019 to 30th January, 2019                        |
| 3. | Interdisciplinary RC in Foundation of Education  | HRDC MIZORAM UNIVERSITY          | 17 <sup>th</sup> August, 2021 to 30 <sup>th</sup> August, 2021 |

**ADMINISTRATIVE EXPERIENCES(IF ANY)**

- **Member of Board of Studies:(i) 13.08.2018 to 10.02.2021 & (ii) 08.04.2021 to 10.02.2025**
- **Member of IQAC: (i) 2019-2021 (ii) 2021-2023**
- **Member of Governing Body: Internal- 2020 to Till Now**
- **TCS : 17.11.2022 to Till Now**

**ACHIEVEMENTS AND PUBLICATIONS**

- **Recognition/ Fellowship/ Award:**

| Date of Award | Name of the Award/ Recognition | Awarding Authority/Organization |
|---------------|--------------------------------|---------------------------------|
| 2009          | JRF                            | IIT GUWAHATI                    |
| 2011          | SRF                            | IIT GUWAHATI                    |

**Research Field: Condensed Matter Physics (Theory)- Bose-Hubbard Model, Cold Atom in Optical Lattices, Superfluid-Mott-insulator Transition, Three-body Interaction**

- **Published Papers/Articles:**
  1. Interplay of optical potential and condensate properties for bosons in different optical lattice geometries, **Apurba Barman** and Saurabh Basu, J. Phys. B: At. Mol. Opt. Phys. **45** 105303(2012).
  2. Understanding the Bose glass phase via a percolation scenario, **Apurba Barman**, S. Dutta, A. Khan, and Saurabh Basu, Eur. Phys. J. B **86** 308(2013).
  3. Phase diagram of bosons in a tripartite lattice - emergence of exotic density ordered phases,

**Apurba Barman** and Saurabh Basu, J. Phys. B: At. Mol. Opt. Phys. **46** 125303(2013).

4. Phase diagram of trapped bosons in a kagome lattice- application of inhomogeneous mean field theory, **Apurba Barman** and Saurabh Basu, J. Phys. B: At. Mol. Opt. Phys. **47** 025302(2014).
5. Phase diagram of multi-component bosonic mixtures: emergence of mixed superfluid and insulating phases, **Apurba Barman** and Saurabh Basu, J. Phys. B: At. Mol. Opt. Phys. **48** 055301(2015).
6. Tunneling dynamics of a correlated bosons in a double well potential, S. Dutta, **Apurba Barman**, A. Siddharth, A. Khan and Saurabh Basu, Eur. Phys. J. B **88** 139(2015).

• **Participation in Seminars/ Conferences (State/ National/ International):**

| Sl. No. | Name of Seminar/ Conference                               | Level of Seminar | Attended as Participant only/ Paper Presented | Name of the Paper/ Lecture Topic   |
|---------|---|------------------|---|--|
| 1       | 55 <sup>th</sup> DAE-Solid State Physics Symposium        | National         | Paper Presenter                               | Emergence of Supersolid Order in a Disordered Bose Gas with Harmonic Trapping,                                       |
| 2.      | 58 <sup>th</sup> DAE-Solid State Physics Symposium        | National         | Paper Presented                               | Interplay of Superfluidity and Lattice Geometry in Bose Systems,   |
| 3.      | XXVII IUPAP Conference on Computational Physics: CCP 2015 | International    | Paper Presented                               | Phase diagram of Bosons on a tripartite optical lattice: Effects of long range and three-body interaction potentials |

**Publications in Conference Proceedings:**

1. Emergence of Supersolid Order in a Disordered Bose Gas with Harmonic Trapping, **Apurba Barman** and Saurabh Basu, AIP Conf. Proc. 1591, 102(2014).
2. Interplay of Superfluidity and Lattice Geometry in Bose Systems, **Apurba Barman** and Saurabh Basu, AIP Conf. Proc. 3149, 921(2010).