# BANKURA UNIVERSITY

## FACULTY ACADEMIC PROFILE/ CURRICULUM VITAE

1. **Name**: NASIR ALAM
2. **Designation**: ASSISTANT PROFESSOR
3. **Date of Birth** :04/08/1986
4. **Specializations**: Quantum optics and quantum information
5. **Contact Information**:
   Contact Address: Department of physics, Bankura University
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6. **Academic qualifications**:

| College/ University from which the degree was obtained | Abbreviation of the degree |
|---|---|
| Burdwan Raj college | B. Sc. |
| Visva Bharati | M. Sc. |
| Visva Bharati | PhD |

7**. Academic Experience:** Research Associate, sponsored by DST.

8. **Research Interests**:
   - Quantum optics
   - Quantum information theory
   - Nonclassical state
   - Opto-mechanical systems
   - Non-linear optics
   - Open quantum system
   - Quantum cryptography
   - PT symmetry.

9. **Select list of publications**:
   a) ***Journals / Online Journals:***
      - **Nasir Alam**, Kishore Thaplyal , Anirban Pathak, Biswajit Sen, Amit Verma, Swapan Mandal, Bose-condensed optomechanical-like system and a Fabry–Perot cavity with one movable mirror: quantum correlations from the perspectives of quantum optics, *The European Physical Journal D***73** (2019) 139

- Kathakali Mandal, **Nasir Alam**, Amit Verma, Anirban Pathak and J. Banerji, Generalized binomial state: Nonclassical features observed through various witnesses and a measure of nonclassicality, *Optics Communications* **445** (2019) 193-203
- Priya Malpani, **Nasir Alam,** Kishore Thapliyal, Anirban Pathak, V. Narayanan, Subhashish Banerjee, Lower- and higher-order nonclassical properties of photon added and subtracted displaced Fock states, *Annalen der Physik***531** (2018) 1800318
- **Nasir Alam**, Kathakali Mandal, Anirban Pathak, Higher-order nonclassical properties of a shifted symmetric cat state and a one-dimensional continuous superposition of coherent states, *Int. Journal Theor. Phys.***57** (2018) 3443-3456
- **Nasir Alam**, Anirban Pathak and Amit Verma, Nonclassicality in truncated Hilbert space: A comparative study, Phys. Lett. A **382** (2018) 1842-1851
- **Nasir Alam,** Swapan Mandal, On the quantum phase fluctuations of coherent light in a chain of two anharmonic oscillators coupled through a linear one, *Optics Communications,* **366** (2016) 340-348
- **Nasir Alam,** Swapan Mandal, Nonclassical properties of coherent light in a pair of coupled anharmonic oscillators, *Optics Communications,* **359** (2016) 221-233
- **Nasir Alam,** Swapan Mandal and Patrik Öhberg, Approximate analytical solutions of a pair of coupled anharmonic oscillators, *J. Phys. B: At. Mol. Opt. Phys.* **48** (2015) 045503 (7pp)
- Chitra Shukla, **Nasir Alam**, Anirban Pathak, Protocols of quantum key agreement solely using Bell states and Bell measurement,*Quantum Inf. Process* **13** (2014) 2391–2405
- Priya Malpani, Kishore Thapliyal, **Nasir Alam**, Anirban Pathak, V. Narayanan, Subhashish Banerjee, Quantum phase properties of photon added and subtracted displaced Fock states,arXiv:1904.01603
- Priya Malpani, **Nasir Alam**, Kishore Thapliyal, Anirban Pathak, V. Narayanan, Subhashish Banerjee, Manipulating nonclassicality via quantum state engineering processes: Vacuum filtration and single photon addition, arXiv:1907.03257
- **Nasir Alam**, Kishore Thaplyal , Anirban Pathak, Biswajit Sen, Amit Verma, Swapan Mandal, Lower- and higher-order nonclassicality in a Fabry–Perot cavity with one movable mirror and a Bose-condensed optomechanical-like system: squeezing, antibunching and entanglement, arXiv:1708.03967

b) ***Conference/ seminar volumes***:

- Priya Malpania, **Nasir Alam**, Anirban Pathak,V.Narayanan and Subhashish Banerjee, "On the role of number state filtration on the nonclassical properties of displaced Fock state", Student Conference on Optics and Photonics (SCOP-2018), PRL, India, 4-6 October, (2018).
- Kathakali Mandal, **Nasir Alam** and Amit Verma, "Nonclassical properties of a generalized binomial state of the quantized radiation field" ", Student

Conference on Optics and Photonics (SCOP-2018), PRL, India, 4-6 October, (2018).

- **Nasir Alam**, Kathakali Mandal, Kishore Thapliyal and Anirban Pathak, "Higher order nonclassicality: Where can we find it?", International Conference on Quantum Frontiers and Fundamentals, RRI, India, 30th April - 4th May, (2018) 108-110.
- Kathakali Mandal and **Nasir Alam**, "Nonclassicality in photon-added and photon subtracted squeezed coherent state", Student Conference on Optics and

10. **Fellowships/Scholarships:**

- **Research Associate,** sponsord by DST.
- **National Eligibility Test (JRF AIR - 176)** awarded by CSIR-UGC, India, **Sr. No. 2061251248, Ref. No. 17-06/2012(i) EU-V**
- **Graduate Aptitude Test in Engineering (GATE, AIR - 179)** awarded by IIT's and IISc.
- **Maulana Azad National Fellowship** awarded by University Grants Commission (UGC), India, Fellowship code number: **201011/MANF-MUS-WES-2751**
- **Merit cum means scholarship**, on the basis of the performance in the BSc and MSc.

11. **Awards:**

- **TPSC category A speaker**, awarded by TPSC sponsored by DST, Govt. of India

12. **Papers presented in Conferences, Seminars, Workshops and Symposia:**

- **Nasir Alam,** Kishore Thapliyal, Anirban Pathak, Squeezing in an optomechanical and an optomechanical-like systems, International conference on fiber optics and photonics, IIT Delhi, Delhi, India, December 12-15, 2018 **(Present a poster)**
- **Nasir Alam,** Kishore Thapliyal, Anirban Pathak, Nonclassical properties of a Fabry-Perot cavity with one movable mirror, International conference on quantum and nonlinear optics, Kuala Lumpur, Malaysia, February 2-5, 2018 **(Oral Presentation)**
- **Nasir Alam,** Anirban Pathak, Nonclassical properties of finite dimensional coherent states, International conference on new frontiers in quantum correlations, S. N. Bose center for basic sciences, Kolkata, India, January 29 - February 2, (2018) **(Oral Presentation)**
- **Nasir Alam** and Swapan Mandal, Squeezing of quadrature of a Fabry Perot cavity of having one fixed and one movable mirror, International Conference on Light and Quanta: Modern perspectives and Applications, Department of Physics, University of Allahabad, Uttar Pradesh, India, December 14-16, (2015) (**Present a Poster**)
- DAE-BRNS National LASER Symposium (NLS-24), December 2-5, 2015 held at RRCAT, Indore, India (**Present a Poster**)

- National conference on Role of Optics and Philosophy in Environment Protection (ROPEP-2015), March 10-11, 2015 held at Department of Mathematics and Philosophy, Women's College, Tinsukia (**Oral Presentation**)
- DAE-BRNS National LASER Symposium (NLS-23), December 3-6, 2014 held at Sri Venkateswara University, Tirupati, Andhra Pradesh, India (**Present a Poster**)
- Vidyasagar- Satyendranath Bose National Workshop 2014 on Physics of Advanced optical Materials and Photonics (PAOMP 2014), March 26-28, 2014, Department of Physics and Technophysics, Vidyasagar University, Midnapore (**Present a Poster**)
- National Conference on Physical Science, September 13-14, 2013 held at Department of Physics D. H. S. K. College, Dibrugarh, Assam (**Present a Poster**)
- International Workshop on Optical Quantum Information (IWOQI), 1-2 September, 2013 held at JIIT, Noida, Uttar Pradesh, India (**Participated**)