# **BIO-DATA**

1. **Name (Dr.):** Analabha Roy
2. **Designation:** Assistant Professor
3. **Complete Postal Addresses and PIN:**Department of Physics, The University of Burdwan, Golapbag Campus, Bardhaman 713104, West Bengal, India

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1. **Date of birth:** 21/03/1978
2. **Educational Qualification:**

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| **Degree** | **Institution** | **Field(s)** | **Year** |
| Bachelor of Science | Jadavpur University | Physics | 2000 |
| Master of Science | Indian Institute of Technology, Kanpur | Physics | 2002 |
| Doctor of Philosophy | The University of Texas at Austin, Austin, TX USA | Physics | 2009 |

1. **Research Experience**

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| --- | --- | --- |
| **Duration (From-To)** | **Institution** | **Particulars of work done** |
| 2009-2009 | Center for Complex Quantum Systems, The University of Texas at Austin, Austin, TX USA | Postdoctoral Associate |
| 2009-2011 | S.N. Bose National Centre for Basic Sciences, Kolkata, India | Postdoctoral Fellow |
| 2011-2014 | Saha Institute of Nuclear Physics, Kolkata, India | CSIR Senior Research Associate |
| 2015-2017 | Stellenbosch University, Stellenbosch, South Africa | Postdoctoral Fellow |
| 2017-Present | The University of Burdwan, Bardhaman, West Bengal, India | Assistant Professor |

1. **Other Experience (Apart from Research)**

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| **Duration (From-To)** | **Institution** | **Particulars of work done** |
| 2002-2009 | The University of Texas at Austin,  Austin, TX USA | Graduate Teaching Assistant (Part-Time, Department of Physics) |
| 2017-Present | The University of Burdwan, Bardhaman,  West Bengal, India | Assistant Professor (Teaching M.Sc & Ph.D, Department of Physics) |

1. **Research specialization**

* Non-Equilibrium Quantum Many Body Physics :
  + 1. [Quantum athermality and Many Body Localization](https://arxiv.org/abs/1804.11065)
    2. [Time Crystals](https://www.scientificamerican.com/article/the-exquisite-precision-of-time-crystals/)
    3. [Deep Learning in Quantum Many Body Physics](https://doi.org/10.48550/arXiv.2301.00942)
    4. [Quantum Phase Space Methods](https://arxiv.org/abs/2102.11095)
* Statistical Physics and Dynamics of Complex Systems:
  + 1. [Molecular Dynamics](http://www.mdtutorials.com/): [Drug-discovery](https://pubs.acs.org/doi/10.1021/acs.jmedchem.5b01684)
    2. [Ab-initio Quantum Methods](https://chem.libretexts.org/Bookshelves/Physical_and_Theoretical_Chemistry_Textbook_Maps/Quantum_Mechanics__in_Chemistry_%28Simons_and_Nichols%29/20%3A_Response_Theory/20.02%3A_Ab_Initio%2C_Semi-Empirical%2C_and_Empirical_Force_Field_Methods)

1. **Financial support received**

a) From the Ministry of Ayush - N/A

b) From any other Ministry of Govt. of India

Past:

* + CSIR SRA Fellowship, 2011-2014.
  + UGC-BSR Startup Grant, 2019-2021: ₹ 10,00,000,
  + ANRF (formerly SERB) Core Research Grant, 2019-2022: *₹* 34,74,476
  + ANRF (formerly SERB) TARE Fellowship, 2018-2022: ₹ 15,00,000

Present: N/A

Pending: N/A

c) From other Institutions (National or International) - N/A

1. **Research projects in hand under Programme on Ayurveda-Biology Integrated Health Research of Ministry of Ayush - N/A**
2. **Research Projects in hand under any other Grant-in-aid programme of Govt. of India - N/A**
3. **Other research projects, if any - N/A**
4. **Recent publications**
   1. Bagchi, A., Roy, A., Halder, A., & Biswas, A. (2025). A multifaceted examination of the action of PDE4 inhibitor rolipram on MMP2/9 reveals therapeutic implications. Scientific Reports, 15(10963). DOI:10.1038/s41598-025-95549-y
   2. Chandra, R., & Roy, A. (2024). Discrete time crystal phase of higher dimensional integrable models. Physics Letters A, 511, 129552. DOI: 10.1016/j.physleta.2024.129552
   3. Rahaman, M., Mori, T., & Roy, A. (2024). Phase crossover induced by dynamical many-body localization in periodically driven long-range spin systems. Phys. Rev. B, 109(10), 104311. DOI:10.1103/PhysRevB.109.104311
   4. Rahaman, M., Sakurai, A., & Roy, A. (2024). Time crystal embodies chimeralike state in periodically driven quantum spin system. New J. Phys., 26, 063035. DOI: 10.1088/1367-2630/ad5757
   5. Sanjib Das, Arka Bagchi, Analava Bera, Arunima Biswas, Analabha Roy, Rik Ganguly, Amalesh Mondal, Deepanjan Chattopadhyay, Paromita Saha Mondal, Tanushree Mondal, Subhasree Samanta, Achintya Mohan Goswami, & Tanima Saha. (2025). In-silico drug repositioning studies of Candida albicans Nitrogen permease reactivator 1 (Npr1) kinase. Scientific Reports (in Review).
   6. Biswas, N., Roy, A., & Chakraborty, A. (2024). Investigation of intramolecular proton transfer in 5,6-dihydroquinolin-8-ol in both the S0 and S1 states. Chinese Journal of Chemical Physics (In Review).
   7. Kalyan Banerjee, Analabha Roy, Subhadeep Mandal, & Shreyasi Gupta. (2025). Phenylhydrazine hydrochloride induces hemolytic anemia in adult zebrafish (*Danio rerio*) and role of KEAP-1/NRF-2/HO-1 antioxidant pathway in its reversal. Archives of Toxicology (In Review).
   8. Rajendra Kr Roy, Raju Biswas, Analabha Roy, Rahul Chandra, Rajdeep Shaw, Arun Kumar Shaw, & Rajib Bandopadhyay. (2025). Overview of the Breadth of Bacterial Resistance Development within the Framework of Antibiotics and Antimicrobial Peptides. The Microbe (in Review).
   9. Rajendra Kr Roy, Raju Biswas, Anubhab Laha, Rajdeep Shaw, Rahul Chandra, Anindya Sundar Panja, Analabha Roy, & Rajib Bandopadhyay. (2025). A Novel approach to disinfect *Pseudomonas aeruginosa* through Genome Mining and Screen Based Selection of Potent Antimicrobial Peptides. Scientific Reports (in Review).
   10. Rajendra Kr Roy, Raju Biswas, Sumit Hira, Analabha Roy, Samrat Daripa, Arghya Nath, Arun Shaw, Renuka Suravajhala, & Milind Ratnaparkhe. (2025). Lysine-Rich Antimicrobial Peptide from *Pseudomonas bubulae* KU04 Disrupts Cell Wall Integrity and Damages DNA of Multidrug-Resistant Gram Negatives. Nature Microbiology (in Review).
   11. Raju Biswas, Rajendra Kr Roy, Urmi Halder, Anindya Sundar Panja, Analabha Roy, Rahul Chandra, & Rajib Bandopadhyay. (2025). The Evolutionary History of Antibiotic Targets in *Pseudomonas aeruginosa* and Future Prospects. Heliyon (In Review).
5. **Other information, if any:**

**Signature:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date:** \_\_\_21/05/2025\_\_\_\_\_\_\_\_\_\_\_