GOVERNMENT GENERAL DEGREE COLLEGE, SINGUR

ACADEMIC PROFILE

DR. PRADIPTA GHOSH
Assistant Professor in Chemistry (W.B.E.S.)
M.Sc., Ph.D.
Email: pradipta2002@gmail.com

- **Specialization:** Physical Chemistry
- **Date of joining in this college:** 13.01.2025
- **Total teaching experience in college level:** 24 years
- **Area of research:** Statistical Mechanics, Many-body Quantum Chemistry
- **Title of Ph.D. thesis (if any):** Formulation and Implementation of Theoretical Methods to Study Stochastic Processes in Complex Open Systems.
- **Research guidance (if any):** Nil
- **Research projects [completed / ongoing] (if any):** Nil
- **List of publications:**

A. Published papers in Journals:

1. "State-specific Multi-reference Perturbation Theories with Relaxed Coefficients: Molecular Applications", **P. Ghosh**, S. Chattopadhyay, D. Jana, and D. Mukherjee, *International Journal of Molecular Sciences*, **2002**, 3(6), 733-754, DOI: https://doi.org/10.3390/i3060733 [**IF: 5.6**]
2. "Full Effects of Triples in a Valence Universal Multi-Reference Coupled Cluster Calculations", S. Chattopadhyay, A. Mitra, D. Jana, **P. Ghosh**, and D. Sinha, *Chemical Physics Letters*, **2002**, 361(3-4), 298-306, DOI: https://doi.org/10.1016/S0009-2614(02)00974-0 [**IF: 2.9**].
3. "Applications of Size-consistent State-specific Multireference Coupled Cluster (SS-MRCC) Theory to Study the Potential Energy Curves of Some Interesting Molecular Systems", S. Chattopadhyay, **P. Ghosh**, and U. S. Mahapatra, *Journal of Physics B*, **2003**, 37(2), 495-510, DOI: https://doi.org/10.1088/0953-4075/37/2/016 [**IF: 1.7**].
4. "Towards the Development and Applications of Manifestly Spin-free Multi-reference Coupled Electron-pair Approximation (MRCEPA) like Methods: A State Specific Approach", D. Pahari, **P. Ghosh**, D. Mukherjee, and S. Chattopadhyay, *Theoretical Chemistry Accounts*, **2006**, 116, 621-636, DOI: https://doi.org/10.1007/s00214-006-0108-2 [**IF: 1.8**].
5. "Realization of a Brownian engine to study transport phenomena: A semiclassical approach", **P. Ghosh**, A. Shit, S. Chattopadhyay, and J. Ray Chaudhuri, *Physical*

Review E, **2010**, 81(6), 061112, DOI: https://doi.org/10.1103/PhysRevE.81.061112 [**IF: 2.5**].

6. "External noise driven bath and the generalized semi-classical Kramers theory", **P. Ghosh**, A. Shit, S. Chattopadhyay, and J. Ray Chaudhuri, *Physical Review E*, **2010**, 82(4), 041113, DOI: https://doi.org/10.1103/PhysRevE.82.041113 [**IF: 2.5**].
7. "Escape of a driven particle from a metastable state: A semiclassical approach", **P. Ghosh**, A. Shit, S. Chattopadhyay, and J. Ray Chaudhuri, *Journal of Chemical Physics*, **2010**, 132(24), 244506, DOI: https://doi.org/10.1063/1.3443774 [**IF: 3.7**].
8. "Stochastic resonance in a generalized quantum Kubo Oscillator", **P. Ghosh**, S. Chattopadhyay, and J. Ray Chaudhuri, *Journal of Physical Chemistry B*, **2010**, 114(3), 1368, DOI: https://doi.org/10.1021/jp909858c [**IF: 3.2**].
9. "Development of a semiclassical method to compute mobility and diffusion coefficient of Brownian particle in a nonequilibrium environment", A. Shit, **P. Ghosh**, S. Chattopadhyay, and J. Ray Chaudhuri, *Physical Review E*, **2011**, 83(3), 031125, DOI: https://doi.org/10.1103/PhysRevE.83.031125 [**IF: 2.5**].
10. "A microscopic model for noise induced transport: Heat bath nonlinearly driven by external white noise", **P. Ghosh**, A. Shit, S. Chattopadhyay, and J. Ray Chaudhuri, *Chaos*, **2011**, 21(1), 013117, DOI: https://doi.org/10.1063/1.3545373 [**IF: 3.3**].
11. "A semiclassical approach to explore the bistable kinetics investigation of a Brownian particle in a nonequilibrium environment", **P. Ghosh**, A. Shit, S. Chattopadhyay, and J. Ray Chaudhuri, *Journal of Statistical Mechanics*, **2011**, 2011(2), 02026, DOI: https://doi.org/10.1088/1742-5468/2011/02/P02026 [**IF: 2.1**].
12. "Enhancement of current commensurate with mutual noise-noise correlation in a symmetric periodic substrate: The benefits of noise and nonlinearity", **P. Ghosh**, S. Chattopadhyay, and J. Ray Chaudhuri, *Chemical Physics*, **2012**, 402, 48, DOI: https://doi.org/10.1016/j.chemphys.2012.04.007 [**IF: 2.8**].
13. "Reinvestigating the "cis-effect" in 1,2-difluoro derivatives of ethylene and diazene using ab initio multireference method", D. Banerjee, A. Ghosh., S. Chattopadhyay, **P. Ghosh**, and R. K. Chaudhuri, *Molecular Physics*, **2014**, 112(24), 3206, DOI: https://doi.org/10.1080/00268976.2014.938710 [**IF: 1.8**].
14. "Improved virtual orbitals in state specific multireference perturbation theory for prototypes of quasi degenerate electronic structure", S. Sinha Ray, **P. Ghosh**, R. K. Chaudhuri, and S. Chattopadhyay, *Journal of Chemical Physics*, **2017**, 146(6), 064111, DOI: https://doi.org/10.1063/1.4975322 [**IF: 3.7**].
15. "On the conversion XCN ↔ XNC via an efficient and economic perturbative wavefunction approach", S. Manna, S. Sinha Ray, **P. Ghosh**, and S. Chattopadhyay, *Molecular Physics*, **2018**, 116(17), 2147, DOI: https://doi.org/10.1080/00268976.2018.1464224 [**IF: 1.8**].
16. "Structural properties and isomerization of simple S-nitrosothiols: Ab initio studies with a simplified treatment of correlation effects", S. Manna, S. Sinha Ray, **P. Ghosh**, and S. Chattopadhyay, *Molecular Physics*, **2019**, 118(5), e1641639, DOI: https://doi.org/10.1080/00268976.2019.1641639 [**IF: 1.8**].
17. "Recent advances on the synthesis of pyrido[3,4-c]coumarin derivatives as the backbone of natural product schumanniophytin scaffolds", S. K. Samanta, S. Patra, B. Biswas, A. Hatua Patra, **P. Ghosh**, T. Mistri, D. Rout, P. Patra, *Monatshefte für Chemie-Chemical Monthly*, **2024**, 155(11), 997-1026, DOI: https://doi.org/10.1007/s00706-024-03252-x [**IF: 2.2**].

B. Published papers in Seminars/Symposia/Conferences:

1. "State-specific Multi-reference Coupled-cluster Based Methods for PES and their Approximate Variants", S. Chattopadhyay, U. S. Mahapatra, **P. Ghosh**, and D. Mukherjee, in *Low-Lying Potential Energy Surfaces*, **2002**, M. R. Hoffmann and K. G. Dyall Eds. (ACS Symposium Series No. 828, Washington, DC) 109-152, ISBN: 9780841237926.

C. Published Books / Chapters in Books:

NIL

D. Participation in Seminars/Symposia/Conferences/Workshops:

Title of the invited lecture /paper presented (oral/poster)	Title of Conference /Seminar with date	Organized by	Level

- **Participation in OP/RC/FIP/FDP:**

Name of the Course	Place	Duration	Sponsoring Agency
Refresher Course in Chemistry	UGC-ASC, Jadavpur University	02/01/07–22/01/07	UGC
Orientation Program	HRDC, Ranchi University	01/11/17–28/11/17	UGC
Refresher Course in Disaster Management	Online (HRDC-AMU)	05/12/23–18/12/23	UGC

- **Membership of Learned Societies/ Editorial Boards, etc. (if any): NIL**
- **Patents (if any):** Nil
- **Awards (if any):**
  1. Qualified National Eligibility Test (NET) in 1998.
- **Other notable activities (if any):**
  1. NIL
