

Semanti Ghosh, *M.Sc., Ph.D., Post doc*

Assistant Professor, Dept of Biotechnology,

School of Life Science, Swami Vivekananda University,

Barrackpore, Kolkata – 700121

Contact: +919432912893/+917278900157

Email ID: semanti2007@gmail.com/ semantig@svu.ac.in

ORCID ID: 0000-0001-8916-5159

Google Scholar: <https://scholar.google.com/citations?hl=en&user=y13o148AAAAJ>

Scopus ID: 55990430400

CAREER OBJECTIVE

I aim to contribute to the academic community by imparting knowledge, mentoring students, and conducting innovative research to advance the frontiers of knowledge. An enthusiastic and highly motivated biologist seeking an Associate Professor position to further explore in the area of computational structural biology and NGS technology. Bringing in-depth knowledge of computational genomics and drug discovery research, a proven record by publishing impactful research and a passion for advancing scientific understanding to make significant contributions in both teaching and research. By fostering a supportive and intellectually stimulating learning environment. I aspire to shape the next generation of scholars and make a lasting impact on the academic community.

ACADEMIC DEGREES AND POSITIONS	YEAR
ASSISTANT PROFESSOR Dept of Biotechnology, School of Life Science, Swami Vivekananda University	Sept, 2021 - Present
Post doc. DBT RA at Saha Institute of Nuclear Physics, Saltlake KOLKATA, INDIA	2018 - 2021
Ph.D. (BIOCHEMISTRY) UNIVERSITY OF Kalyani, INDIA	2018
M.SC. in Molecular Biology and Biotechnology UNIVERSITY OF Kalyani, INDIA	2009
B.SC. in Botany (HONS.) with Zoology and Chemistry UNIVERSITY OF CALCUTTA, INDIA	2007

EDUCATION DETAILS

Ph.D. in Biochemistry

University of Kalyani, Kalyani, Nadia, West Bengal, INDIA

Duration: 2013 -2018

Dissertation Title: “*In silico* study of Sulfur Metabolism”.

PhD Supervisor: Prof. Angshuman Bagchi, (Professor, Dept. of Biochemistry & Biophysics, University of Kalyani.

Ph.D. Research Summary

I received my Ph.D. in Biochemistry (science) from University of Kalyani. During my Ph. D. tenure, I have obtained the opportunity to perform the research work in computational structural biology field. I have carried out my research work seeking the mechanism study of *dsr* operon encoded Dsr proteins from purple sulfur gamma-proteobacteria *Allochromatium vinosum*. Macromolecular interaction study involved protein-protein, protein-sulfur anions, protein-DNA complex formations and molecular dynamics study. These studies yielded in 7 peer-reviewed research papers

and presented my work in 7 national and international conferences. I worked with several research collaborators from different faculties of Biochemistry department of University of Kalyani as well as Bose Institute; published several international peer reviewed research articles.

Awards during Ph.D.

- **University Research Scholarship (URS) Fellowship:** Awarded by University of Kalyani, Govt. of West Bengal, India from 15/01/2013 to 14/01/2018.
- **Project Fellow** in Department of Biotechnology (DBT), Govt. of India, research project (BT/PR7843/BID/7/436/2013) under Dr. Angshuman Bagchi, Dept. of Biochemistry & Biophysics, University of Kalyani from 15/01/2018 - 30/06/2018.
- **Best Oral presentation** award for the talk entitled “*In silico comparison of sulfur oxidation and reduction mechanisms for better application in environmental industry*” in International Conference on Environment and Ecology (ICEE) organized by International Foundation for Environment and Ecology, Kolkata; hosted by Dept. of Zoology, Gauhati University, Assam and in collaboration with Confederation of Indian Universities, New Delhi, on 12-14th February, 2018.

Master of Science: in Molecular Biology and Biotechnology from University of Kalyani, Nadia, West Bengal.

Year of post-graduation: 2007-2009

Summer training project: “Isolation and characterization of halophilic bacteria from salt processed fish”, conducted from 5th May, 2008 to 4th July, 2008.

Summer training project guide: Prof. Arun Kumar Pal, Biophysics Division, Saha Institute of Nuclear Physics, Kolkata-700064

- **Qualified Graduate Aptitude Test in Engineering (GATE)** with an All-India Rank of 563; percentile 96.15 in the year 2012.

Bachelor of Science: in Botany (Hons.) with Zoology and Chemistry

College and University Name: Serampore College under University of Calcutta

Year of Graduation: 2004- 2007

RESEARCH EXPERIENCE (Post-doctoral)

Project Title: “Structure, Function and Design of Peptidyl-Prolyl Cis-Trans Isomerases (PPIases) from *Leishmania* spp.”

Post doc Supervisor: Prof. Rahul Banerjee, Crystallography and Molecular Biology Division, Saha Institute of Nuclear Physics, Kolkata-700064

Post doc research summary

I have been completed my 3 years post-doctoral fellowship funded by Department of Biotechnology, Govt. of India (DBT), from 02nd July, 2018 to 30th June, 2021. As one of the research objectives to design an alternative hydrophobic core of cyclophilin protein from *Leishmania*, the computational algorithm developed in the laboratory is utilized to reconfigure the core of cyclophilin and experimentally validate the variants.

Key Responsibilities: Research project design, defending of project fellowship, lab management, computational lab establishment, data analysis, mentorship of PhD student for *in silico* work, collaboration with other labs

Achievements:

- We have deposited a mutant protein of cyclophilin in PDB (6L2B).
- During post-doctoral tenure my work published in *Proteins: Structure, function, Bioinformatics, International journal of biological macromolecules, Journal of Biomolecular Structure and Dynamics*.
- **DBT- Post-doctoral Fellowship:** Awarded by Department of Biotechnology, Govt. of India. (Vide letter from Co-ordinator, DBT-RA program May 29th, 2018).

RESEARCH EXPERIENCE (before doctoral)

1. Junior Research Fellow

July, 2012 to January, 2013

JRF at the CSIR funded project entitled: “Downstream Target Of EGFR AND NF-kB Expression: Inhibition of COX-2 at the Transcriptional & Post Transcriptional Levels of mRNA Stability and Translational in Oral Squamous Cell Carcinoma by Lupeol and Paclitaxel” at **Chittaranjan National Cancer Institute, Kolkata**.

2. Junior Project Assistant

November, 2010 to October, 2011

JPA at the DIT sponsored project entitled “Development of Medical Image Analyser for Cervical Cancer (CerviScan)” at Dept. of School of Medical Science & Technology, IIT Kharagpur.

TEACHING EXPERIENCE

Position: Assistant Professor

University name: Swami Vivekananda University,

Duration: September, 2021 to present

Position: Associate Professor (Adjunct)

College Name: Elitte College of Engineering, Ghola.

Duration: 08.02.2021- 07.09.2021

Research guidance:

UG students: 3 (2021-25)

PG students: 22 completed (2021-25), 5 ongoing (2026-27)

Ph.D. students: registered: 3, degree awarded: 3.

Research Areas

Structural Biology & Bioinformatics:

- Protein structure function relationship during abiotic stress of rice plant
- Gene expression study and computer-aided drug discovery against Dengue virus mediated fever
- Molecular insight study and molecular regulation of neurodegenerative diseases

RESEARCH PUBLICATIONS

Swami Vivekananda University Affiliation

1. Karmakar, S., Moulik, S., **Ghosh, S.** *et al.* (2026). Acridine-derived small molecule associates with VEGF and is linked to reduced CAM vascularization: a combined *in silico* and CAM study. **BMC Pharmacol Toxicol.** 27: 87. <https://doi.org/10.1186/s40360-026-01148-6> [I.F. 2.7, ISSN: 2050-6511, Q2]
2. Samanta A, Banerjee D, Biswas S, **Ghosh S***, Bagchi A. *In Silico* Therapeutic Approaches Based on Natural Phytochemicals Against Alpha Synuclein Protein Involved in Parkinson's Disease. **Disease and Research.** DOI: 10.54457/DR.202504004.
3. Datta D, **Ghosh S*** (2026). Role of micro-RNA 21 (miR-21) in dengue disease progression and cross talk with target proteins. **Computational Biology and Chemistry** 121, 108861. Elsevier. <https://doi.org/10.1016/j.compbiolchem.2025.108861> [I.F. 3.1, ISSN: 1476-9271]
4. Ningombam, P., Kundu, R. D., **Ghosh, S.**, Ghosh, S. K., & Wangkheimayum, V. D. (2025). Impact of metformin on gene expression in Burmese loach (*Lepidocephalichthys berdmorei*) from Manipur, India. **The Science Of The Total Environment**, 978, 179458. <https://doi.org/10.1016/j.scitotenv.2025.179458> [I.F. 8.2, ISSN: 1879-1026]
5. Datta D, **Ghosh S*** (2025). Analyzing the Molecular Signature Genes and Pathways of Dengue Fever, Dengue Hemorrhagic Fever and Dengue Shock Syndrome Caused by Dengue Virus in India. **Molecular Biotechnology.** <https://doi.org/10.1007/s12033-025-01407-7> [I.F. 2.4, ISSN: 1073-6085].
6. Nahar M, Samanta A, **Ghosh S***. (2024). Identification of Key Genes Related to Salinity Stress in Rice (*Oryza sativa*) Using Bioinformatics Analysis. **Advances in BioResearch.** Vol 15 (6) November 2024: 387-394. DOI: 10.15515/abr.0976-4585.15.6.387394 [Print ISSN: 0976-4585, Online ISSN: 2277 1573]
7. Datta D, **Ghosh S***. (2024). “Comparative Study of Sequence & Phylogeny Analysis of Dengue Virus isolates from globally infected countries”. **Advances in BioResearch.** Vol 15 (6) November 2024: 395-404. DOI: 10.15515/abr.0976-4585.15.6.395404 [Print ISSN: 0976-4585, Online ISSN: 2277 1573]

Saha Institute of Nuclear Physics Affiliation

8. Dutta S, Bose D, **Ghosh S** & Chakrabarti A (2022) Spectrin: an alternate target for cytoskeletal drugs. *Journal of Biomolecular Structure and Dynamics*. 41(14), 6534–6545. DOI: 10.1080/07391102.2022.2109063. [I.F.: 2.7, ISSN 0739-1102]
9. Biswas, G. **Ghosh S.***, Basu, S., Bhattacharya, D., Dutta, A.K., Banerjee R.* (2022) Can the Jigsaw Puzzle Model of Protein Folding Re-assemble a Hydrophobic Core? *Proteins: Structure, function, Bioinformatics*. 90(7), 1390–1412. DOI: 10.1002/prot.26321 [I.F. 3.2, ISSN: 0887-3585]
10. Basak, D., Jamal, Z., Ghosh, A., Mondal, PK., Talukdar, PD., **Ghosh, S.**, et al. (2021) Reciprocal interplay between asporin and decorin: Implications in gastric cancer prognosis. *PLoS ONE* 16(8): e0255915. DOI: <https://doi.org/10.1371/journal.pone.0255915>. [I.F.: 2.9, ISSN: 1932-6203]
11. Biswas, G., **Ghosh, S.**, Raghuraman H., Banerjee R. (2020). Probing conformational transitions of PIN1 from *L. major* during chemical and thermal denaturation. *International journal of biological macromolecules*, 154, 904–915. Elsevier. DOI: <https://doi.org/10.1016/j.ijbiomac.2020.03.166> [I.F.: 7.7, 0141-8130]

University of Kalyani Affiliation

12. **Ghosh, S.**, & Bagchi, A. (2020). Protein dynamics and molecular motions study in relation to molecular interactions between DsrAB and DsrC proteins from sulfur oxidizer proteobacteria *Allochrochromatium vinosum*. *Journal of Biomolecular Structure and Dynamics*. 39(8), 2771–2787. <https://doi.org/10.1080/07391102.2020.1754914> Taylor & Francis. [I.F.: 2.7, ISSN: 0739-1102]
13. **Ghosh, S.**, & Bagchi, A. (2019). Structural study to analyze the DNA-binding properties of DsrC protein from the dsr operon of sulfur-oxidizing bacterium *Allochrochromatium vinosum*. *Journal of molecular modeling*, 25(3), 74. Springer. DOI: <https://doi.org/10.1007/s00894-019-3945-3> [I.F.: 2.1, ISSN: 1610-2940]
14. Biswas, A., **Ghosh, S.**, Sinha, D., Dutta, A., Seal, S., Bagchi, A., & Sau, S. (2019). Dimerization ability, denaturation mechanism, and the stability of a staphylococcal phage repressor and its two domains. *International journal of biological macromolecules*, 124, 903-914. Elsevier. DOI: <https://doi.org/10.1016/j.ijbiomac.2018.11.263> [I.F.: 7.7, ISSN: 0141-8130]
15. **Ghosh, S.**, & Bagchi, A. (2018). Insight into the molecular mechanism of the sulfur oxidation process by reverse sulfite reductase (rSiR) from sulfur oxidizer *Allochrochromatium vinosum*. *Journal of molecular modeling*, 24(5), 117. Springer. DOI: <https://doi.org/10.1007/s00894-018-3652-5> [I.F.: 2.1, ISSN: 1610-2940]
16. Mandal, S., **Ghosh, S.**, Sinha, D., Seal, S., Mahapa, A., Polley, S., ... & Sau, S. (2018). Alanine substitution mutations in the DNA binding region of a global staphylococcal virulence regulator affect its structure, function, and stability. *International journal of biological macromolecules*, 113, 1221-1232. Elsevier. DOI: <https://doi.org/10.1016/j.ijbiomac.2018.03.045> [I.F.: 7.7, ISSN: 0141-8130]
17. Samui, S., Chakraborty, A., Biswas, S., Singh, G., Mondal, S., **Ghosh, S.**, ... & Naskar, J. (2018). A Terminally Capped Synthetic, Acyclic Tripeptide Forms Dimer in the Solid, Liquid and Gaseous States. *Chemistry Select*, 3(9), 2523-2527. Wiley. DOI: <https://doi.org/10.1002/slct.201702722> [I.F.: 1.9, ISSN: 2365 6549]
18. Ali, A., **Ghosh, S.**, & Bagchi, A. (2017). Structural study of the effects of mutations in proteins to identify the molecular basis of the loss of local structural fluidity leading to the onset of autoimmune diseases. *Biochemical and biophysical research communications*, 484(1), 165-170. Elsevier. DOI: <https://doi.org/10.1016/j.bbrc.2017.01.048> [I.F.: 2.2, ISSN: 1090 2104]
19. Biswas, R., **Ghosh, S.**, & Bagchi, A. (2017). A structural perspective on the interactions of TRAF6 and Basigin during the onset of melanoma: A molecular dynamics simulation study. *Journal of Molecular Recognition*, 30(11), e2643. Wiley. DOI: <https://doi.org/10.1002/jmr.2643> [I.F.: 2.3, ISSN: 0952 3499]
20. Ray, S., **Ghosh, S.**, & Bagchi, A. (2018). Molecular Interactions, Structural Transitions and Alterations in SoxB Protein Due to SoxYZ Interaction from Two Distinct β -Proteobacteria: An In-silico Approach Towards the Thiosulfate Oxidation and Recycling of SoxY Protein. *Interdisciplinary Sciences: Computational Life Sciences*, 10(2), 390-399. Springer. DOI: <https://doi.org/10.1007/s12539-016-0199-y> [I.F.: 3.9, ISSN: 1913 2751]
21. **Ghosh, S.**, & Bagchi, A. (2015). Comparative analysis of the mechanisms of sulfur anion oxidation and reduction by dsr operon to maintain environmental sulfur balance. *Computational biology and chemistry*, 59, 177-184. Publishers: Elsevier. DOI: <https://doi.org/10.1016/j.compbiolchem.2015.07.001> [I.F.: 2.6, ISSN: 1476-9271]
22. Bhattacharya, S., Das, A., **Ghosh, S.**, Dasgupta, R., & Bagchi, A. (2014). Hypoglycosylation of dystroglycan due to T192M mutation: a molecular insight behind the fact. *Gene*, 537(1), 108-114. Publishers: Elsevier. DOI: <https://doi.org/10.1016/j.gene.2013.11.071> [I.F.: 2.4, ISSN: 0378-1119]

Review Article:

Swami Vivekananda University Affiliation

1. Sourav Das, **Semanti Ghosh***, Surajit Hansda*. Epigenetic Regulation in Chemotherapy Resistance of Breast Cancer: Role of Chromatin Modifications and Non-Coding RNAs in Chemotherapeutic Resistance. *Diseases & Research*. DOI: 10.54457/DR.202503004 [ISSN: 2709 2402]
2. Shrestha Pal and Semanti Ghosh*. From Gene Editing to Immunotherapy: The Role of CRISPR-Cas9 in Breast Cancer. *Journal of Research in Allied Life Sciences*, Volume 2(Issue 1: January, 2026): Pages1-8.
3. Ghosh, A., Naskar, P., Dey, S., Mukherjee, S., Biswas, S., Das, R., Sarkar, S., **Ghosh, S.**, Ghosh, B., Sarkar, S. The Key to A Sustainable Future - Algal Biofuel, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6395-6400. ISSN: 2368-7487
4. Nayak, S., Chakraborty, S., Roy, S., Roy, S., Ghosh, K., Ghorui, A., Sarkar, S., Ghosh, B., **Ghosh, S.**, Sarkar, S. The Role of Plant Hormone on Root Development, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6401 – 6407. ISSN: 2368-7487
5. Ghosh, S., Ghosh, B., Ghosh, M., Paul, S., Pal, A., Dey, T., Sarkar, S., **Ghosh, S.**, Ghosh, B., Sarkar, S. Phytoremediation- Friendlier and Affordable Approach to Remediate Heavy Metal Pollution, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6291-6296. ISSN: 2368-7487
6. Pal, N., Das, P., Dutta, R., Sarkar, S., Mukherjee, S., Devi, P., Mukherjee, M., Dhar, S., **Ghosh, S.**, Sarkar, S., Sarkar, S., Ghosh, B. Water Reclamation Through Nano-remediation & Bioremediation: A Weal Against Conventional Chemical Techniques, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6297-6305. ISSN: 2368-7487
7. Banerjee, D., Sadhu, P., Das, S., Pal, S., Mitra, S., Ghosal, A., Sarkar, S., Ghosh, B., **Ghosh, S.**, Sarkar, S. Phosphate Solubilizing Bacteria: A potential biotic component for solubilizing phosphate in soil and its application as Biofertilizer: A Review. *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6306-6315. ISSN: 2368-7487
8. Biswas, D., Chourasia, A., Sasmal, A., Santra, S., Panigrahi, S., Kundu, M., Sarkar, S., Ghosh, B., **Ghosh, S.**, Sarkar, S. Mycoremediation is a Potential Strategy for Environmental Clean-up of Heavy Metal: A Review, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6316- 6327. ISSN: 2368-7487
9. Sen, A., Mondal, I., Das, S., Roy, S., Mondal, M., Roy, R., Sarangi, S., Banerjee, S., Sarkar, S., Ghosh, B., Sarkar, S., **Ghosh, S.** Analytical approach of micro-RNA interaction study in ovarian cancer, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6328- 6335. ISSN: 2368-7487
10. Chakraborty, B., Gosai, R., Saha, D., Nayek, B., Biswas, P., Das Gupta, A., Ghosh, R., Ghosh, B., Sarkar, S., Sarkar, S., **Ghosh, S.** Structural and functional relationship study in plant salinity stress, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6336- 6343. ISSN: 2368-7487
11. Dalalthakur, S., Singh, P., Singh, S., Sasmal, A., Deb, T., Karmakar, S., Dasgupta, T., Sarkar, S., Sarkar, S., Ghosh, B., **Ghosh, S.** Role of pathogenesis-related (PR) proteins in plant microbes defense mechanism, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6344- 6352. ISSN: 2368-7487
12. Noor, S., Mondal, M., Singh, S., Sadhu, P., Chourasia, S., Patra, S., Ghosh, K., Pal, S., Sarkar, S., Sarkar, S., **Ghosh, S.**, Ghosh, B. Scavenging of Waste Water Using Oyster Mushrooms, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6364- 6371. ISSN: 2368-7487
13. Saha, S., Devi, P., Das, S., Roy, S., Sing, P., Mitra, S., Banerjee, S., Mallick, J., Sarkar, S., Sarkar, S., **Ghosh, S.**, Ghosh, B. Study About the Absorption Pattern of Soil Chromium By Perennial Flowering Herbs, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6372- 6377. ISSN: 2368-7487
14. Sharma, P., Das, S., Sadhu, P., Pal, S., Mitra, S., Ghoshal, A., Biswas, S., Roy, S., Sarkar, S., Ghosh, B., **Ghosh, S.**, Sarkar, S. Therapeutic Role of Probiotics In Managing Various Diseases, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6378-6380. ISSN: 2368-7487
15. Ghoshal, A., Saha, P., Mallick, J., Sarkar, S., Chakraborty, M., Sarkar, S., Ghosh, B., **Ghosh, S.**, Sarkar, S. Phytoremediation: A Way Forward Towards Heavy Metal Management, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6381-6394. ISSN: 2368-7487
16. Bidisha Ghosh, Monoswita Chakraborty, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Genetic Basis And Clinical Perspectives of Breast Cancer. *Journal of Advanced Zoology*, 44(S6), 2265-2272. <https://doi.org/10.53555/jaz.v44iS6.3708> [ISSN: 0253-7214]

17. Santanu Biswas, Subhajit Pal, Sayani Das, Soumili Banerjee, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Microbial Plastic Degradation: Nature's Solution for Sustainable Waste Management. *Journal of Advanced Zoology*, 44(S6), 2315–2321. <https://doi.org/10.53555/jaz.v44iS6.3720> [ISSN: 0253-7214]
18. Abhishek Ghoshal, Joydev Mallick, Suranjana Sarkar, **Semanti Ghosh**, Bidisha Ghosh, & Subhasis Sarkar. (2023). Efflux Pumps In Antimicrobial Resistance: Mechanism, Regulation And Therapeutic Implications. *Journal of Advanced Zoology*, 44(S5), 2575–2580. <https://doi.org/10.53555/jaz.v44iS5.3282> [ISSN: 0253-7214]
19. Dipti Das, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Recombinant Protein Production: Advancements And Applications. *Journal of Advanced Zoology*, 44(S6), 2236–2242. <https://doi.org/10.53555/jaz.v44iS6.3706> [ISSN: 0253-7214]
20. Sayantani Chakraborty, Sampanna Roy, Aayushee Chatterjee, Falguni Pal, Ritu Das, Puja Sadhu, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Exosomal RNA: Interplay and Therapeutic Potential. *Journal of Advanced Zoology*, 44(S6), 2309–2314. <https://doi.org/10.53555/jaz.v44iS6.3718> [ISSN: 0253-7214]
21. Puja Sadhu, Suranjana Sarkar, Aritri Laha, **Semanti Ghosh**, Bidisha Ghosh, & Subhasis Sarkar. (2023). Oncolytic Viral Nanoparticles: A Combination Of Targeted And Immunotherapeutic Approach For Cancer Treatment: A Review. *Journal of Advanced Zoology*, 44(S5), 2537–2550. <https://doi.org/10.53555/jaz.v44iS5.3277> [ISSN: 0253-7214]
22. Sulogna Mitra, Suranjana Sarkar, Debjit De, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar. (2023). Management Of Microbial Biofilm Using Nano Particle: A Review. *Journal of Advanced Zoology*, 44(S6), 2070–2080. <https://doi.org/10.17762/jaz.v44iS6.2696> [ISSN: 0253-7214]
23. Prity Singh, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Application Of Genetic Engineering In Crop Improvement. *Journal of Advanced Zoology*, 44(S6), 2301–2308. <https://doi.org/10.53555/jaz.v44iS6.3717> [ISSN: 0253-7214]
24. Sourav Banerjee, Suranjana Sarkar, Subhasis Sarkar, Bidisha Ghosh, & **Semanti Ghosh**. (2023). Biofertilizer and their importance in sustainable agriculture. *Journal of Advanced Zoology*, 44(S5), 2526–2529. <https://doi.org/10.53555/jaz.v44iS5.3222> [ISSN: 0253-7214]
25. Sayani Da, Suranjana Sarkar, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar. (2023). Gut Microbiome And Human Health: A Review. *Journal of Advanced Zoology*, 44(S6), 2062–2069. <https://doi.org/10.17762/jaz.v44iS6.2695> [ISSN: 0253-7214]
26. Sulogna Mitra, Suranjana Sarkar, Debjit De, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar. (2023). Management Of Microbial Biofilm Using Nano Particle: A Review. *Journal of Advanced Zoology*, 44(S6), 2070–2080. <https://doi.org/10.17762/jaz.v44iS6.2696> [ISSN: 0253-7214]
27. Sayani Das, Sulogna Mitra, Monalisa Mallik, Soumili Banerjee, Subhajit Pal, Abhijit Kumar, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Advancing Biomedical Frontiers: Unveiling The Potential Of 3d Bioprinting In Organ Regeneration. *Journal of Advanced Zoology*, 44(S5), 2488–2493. <https://doi.org/10.53555/jaz.v44iS5.3210> [ISSN: 0253-7214]
28. Tilatoma Dasgupta, Bidisha Ghosh, Suranjana Sarkar, Subhasis Sarkar, & **Semanti Ghosh**. (2023). Tuberculosis - A multisystemic disease and antimicrobial resistance in Mycobacterium tuberculosis. *Journal of Advanced Zoology*, 44(S5), 2641–2645. <https://doi.org/10.53555/jaz.v44iS5.3304> [ISSN: 0253-7214]
29. Ankit Pal, Shreyoshi Pal, Saikat Manna, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Unlocking The Potential of Phytochemicals in Anti-Diabetic Therapy: Mechanisms, Challenges, And Future Prospects. *Journal of Advanced Zoology*, 44(S6), 2284–2289. <https://doi.org/10.53555/jaz.v44iS6.3713> [ISSN: 0253-7214]
30. Sahely Roy, **Semanti Ghosh**, Srijani Karmakar, Subhasis Sarkar, Suranjana Sarkar, & Bidisha Ghosh. (2023). Immunity Risk Associated with Cytomegalovirus Infection After Organ Transplantation. *Journal of Advanced Zoology*, 44(S5), 2451–2456. <https://doi.org/10.53555/jaz.v44iS5.3202> [ISSN: 0253-7214]
31. Srijani Karmakar, Sahely Roy, Suranjana Sarkar, Bidisha Ghosh, Subhasis Sarkar, & **Semanti Ghosh**. (2023). Genetic Diagnosis of Vexas Syndrome: A New Rare And Deadly Autoinflammatory Disorder In Adults. *Journal of Advanced Zoology*, 44(S5), 2636–2640. <https://doi.org/10.53555/jaz.v44iS5.3302> [ISSN: 0253-7214]

32. Anwesha Das, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Recombinant Hormones: Applications And Challenges. *Journal of Advanced Zoology*, 44(S6), 2279–2283. <https://doi.org/10.53555/jaz.v44iS6.3712> [ISSN: 0253-7214]
33. Deeti Das, Sudipta Chakraborty, Moumita Mukherjee, Susoma Garai, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar, & Suranjana Sarkar. (2023). Revolutionizing the Biological Landscape: the Power of Genome Editing. *Journal of Advanced Zoology*, 44(S5), 2446–2450. <https://doi.org/10.53555/jaz.v44iS5.3199> [ISSN: 0253-7214]
34. Smarta Das, & **Semanti Ghosh**. (2023). Melittin based nano drug delivery system for cancer therapy. *Journal of Advanced Zoology*, 44(S5), 2607–2610. <https://doi.org/10.53555/jaz.v44iS5.3290> [ISSN: 0253-7214]
35. Shrestha Mukherjee, Subhasis Sarkar, Suranjana Sarkar, **Semanti Ghosh**, Bidisha Ghosh. CRISPR-Cas based nano-sensors in water pathogen detection. *Int J Res Adv Electron Eng* 2024; 5(1):07-10. DOI: [10.22271/27084558.2024.v5.i1a.32](https://doi.org/10.22271/27084558.2024.v5.i1a.32) [E-ISSN: 2708-4566 P-ISSN: 2708-4558]
36. Arijit Maity, Subhasis Sarkar, **Semanti Ghosh**, Suranjana Sarkar and Bidisha Ghosh. Recent advances in dendrimer-based drug and gene delivery system. *Int. J. Pharmacol. Pharm. Sci.*, 2024; 6(1): 01-04. <https://doi.org/10.33545/26647206.2024.v6.i1a.13> [ISSN Print: 2664-7206 ISSN Online: 2664-7214]
37. Additya Sinha, Suranjana Sarkar, Subhasis Sarkar, **Semanti Ghosh** and Bidisha Ghosh. Recent insights into anti-adhesion inhibition in medical implants to treat bacterial infections through naturally derived compounds. *Int. J. Res. Med. Sci.* 2024;6(1):21-26. DOI: [10.33545/26648733.2024.v6.i1a.53](https://doi.org/10.33545/26648733.2024.v6.i1a.53) [P-ISSN: 2664-8733, E-ISSN: 2664-8741]
38. Ritika Roy, Bidisha Ghosh, Suranjana Sarkar, Subhasis Sarkar, & **Semanti Ghosh**. (2024). Immunotherapy: A New Generation Treatment For Cancer. *Journal of Advanced Zoology*, 45(1), 504–507. <https://doi.org/10.53555/jaz.v45i1.4565> [ISSN: 0253-7214]
39. Monisha Sarker, & **Semanti Ghosh**. (2024). Recent Advancement of Algal Biofuel Production And Its Potential Uses. *Journal of Advanced Zoology*, 45(1), 508–510. <https://doi.org/10.53555/jaz.v45i1.4566> [ISSN: 0253-7214]
40. Debojyati Datta, & **Semanti Ghosh**. (2024). A Study On Potential Drug Target For SARS-CoV-2-And Combinatorial Therapeutic Approach To Combat COVID-19. *Journal of Advanced Zoology*, 45(1), 511–517. <https://doi.org/10.53555/jaz.v45i1.4567>. [ISSN: 0253-7214]
41. Prabahan Nath, & **Semanti Ghosh**. (2024). Role Of LncRNA In Alzheimer's Diseases. *Journal of Advanced Zoology*, 45(1), 518–523. <https://doi.org/10.53555/jaz.v45i1.4568> [ISSN: 0253-7214]
42. Satabdi Dey, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar. (2024) Analysis of pathogenic genes in dengue virus. *Zoological and Entomological Letters*, 2024; 4(1): 67-70. DOI: <https://doi.org/10.22271/letters.2024.v4.i1a.84> [P-ISSN: 2788-8428, E-ISSN: 2788-8436]

BOOK CHAPTERS

Swami Vivekananda University Affiliation

1. **Ghosh S.**, Bagchi A. (2022) An Overview of Computational Tools and Databases. Multidisciplinary Review Book. Mallick P, Chakravarti A R, Tewari S. (Eds) ISBN: 978-93-91074-40-1. Taurean Publications. New Delhi.
2. **Ghosh S.**, Bagchi A. (2022). A short note on Computational biomolecular modelling and molecular docking. The Gen-Next Genomics Revolution. Bagchi P (Eds). ISBN: 978-81-952207-1-7 (online) ISBN: 978-81-952207-0-0 (print). Sarvasumanâ Association, India.
3. Samanta A, **Ghosh S**, Bagchi A. (2023) Protein – protein Interaction Mapping of Phospholipase. Phospholipases in Physiology & Pathology, V6: Stem cell, Nanotechnology, System Biology and Bioinformatic Approaches in therapy of phospholipases induced Diseases. Editor: Sajal Chakraborti. Hardcover ISBN: 9780323956871. Publisher: Academic Press. <https://doi.org/10.1016/B978-0-443-15177-4.00009-1>
4. **Semanti Ghosh***, Suranjana Sarkar, Bidisha Ghosh, Subhasis Sarkar. (2023) Recent Advancements on Computational Enzyme Designing: Rational to *De-Novo*. Frontiers In Biotechnology: Emerging Approaches And Strategies. ISBN: 978-93-5980-245-9
5. Bidisha Ghosh, Subhasis Sarkar, Suranjana Sarkar, **Semanti Ghosh**. (2023) Recent Advances In The Sensing Of Pesticides And Antibiotics In Water Through Fluorescent Quantum Dots. Frontiers In Biotechnology: Emerging Approaches and Strategies. ISBN: 978-93-5980-245-9

6. Subhasis Sarkar, Bidisha Ghosh, Suranjana Sarkar, **Semanti Ghosh**. (2023) Advances In Wastewater Treatment Technology. *Microbiome Principles and Explorations*. ISBN: 978-93-5980-246-6
7. Suranjana Sarkar, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar. (2023) Beyond The Plate: Advances and Future Frontiers in Food Microbiology. *Microbiome Principles and Explorations*. ISBN: 978-93-5980-246-6
8. Bidisha Ghosh, Suranjana Sarkar, **Semanti Ghosh***. (2024) Advancing Sustainable Wastewater Treatment: Unleashing the Potential of Nano-Sponges for Effective Remediation. "Innovative and Hybrid Technologies for Wastewater Treatment and Recycling". ISBN: 9781032593265. CRC Press, Taylor & Francis.
9. Suranjana Sarkar, Bidisha Ghosh, **Semanti Ghosh***. (2024) Microbial Interventions in Bioremediation of Nuclear Waste. "Radioactive Pollutant - Sources, Issues and Remediation". Hardcover ISBN 978-3-031-73795-4 eBook ISBN: 978-3-031-73796-1. Springer Nature Singapore Pte Ltd.
10. Bipasha Dey Sutradhar, **Semanti Ghosh***, Debjit De. (2024) "GBA Gene Expression study of Parkinson Disease". "Research Renaissance: Integration of Interdisciplinary Terrains". ISBN: 979-889588010. Pp 1-9.
11. Ritika Roy, Srijani Karmakar, **Semanti Ghosh***. (2024) Analyzing molecular signature proteins of VEXAS Syndrome. Research Renaissance: Integration of Interdisciplinary Terrains". ISBN: 979-889588010. Pp 39-52.
12. Krittika Das, Soumashri Mondal, Suranjana Dhara, Aditi Das, Daizy, **Semanti Ghosh***. (2024) Diagnosis of Alagille Syndrome: A Genetic Disorder. Interdisciplinary Review Articles, **ISBN: 978-93-6135-236-2 Book DOI: <https://doi.org/10.22271/ed.book.2879>** AkiNik Publications.
13. Debojyoti Dutta, **Semanti Ghosh*** (2024) A review on role of Long non coding RNA in Dengue Fever. Microbes and Biotechnology: Real – World Applications, **ISBN:978-93-5834-281-9 Book DOI: <https://doi.org/10.62778/int.book.451>** Integrated Publications.
14. Joysurya Kanthal, **Semanti Ghosh*** (2024) Nanotechnology based Immunotherapeutic medication for cancer diagnosis and treatment. Microbes and Biotechnology: Real – World Applications, **ISBN:978-93-5834-281-9 Book DOI: <https://doi.org/10.62778/int.book.451>** Integrated Publications.
15. Rajiv Gosai, **Semanti Ghosh*** (2024) Medicinal Review of *Costus igneus*: The Insulin Plant. Biotech Miracles: Harnessing the Power of Microbes. Integrated Publications. ISBN 978-93-5834-436-3 **Book DOI: <https://doi.org/10.62778/int.book.479>**
16. Ramu Samanta, **Semanti Ghosh*** (2024) Functional Effect of Yogurt in Human Health. Biotech Miracles: Harnessing the Power of Microbes. Integrated Publications. ISBN 978-93-5834-436-3 **Book DOI: <https://doi.org/10.62778/int.book.479>**
17. Ritika Roy, Riya Ghosh, Tilatoma Dasgupta, Srijani Karmakar and **Semanti Ghosh*** (2024) Role of Helicobacter pylori in Gastric Carcinogenesis. Miracles: Harnessing the Power of Microbes. Integrated Publications. ISBN 978-93-5834-436-3 **Book DOI: <https://doi.org/10.62778/int.book.479>**
18. Srijani Karmakar, Sahely Roy, Riya Ghosh, Ritika Roy and **Semanti Ghosh*** (2024) Phage Therapy: A Promising Paradigm Shift in Antibiotic Resistance. Miracles: Harnessing the Power of Microbes. Integrated Publications. ISBN 978-93-5834-436-3 **Book DOI: <https://doi.org/10.62778/int.book.479>**
19. Manashi Paul and **Semanti Ghosh*** (2024) Functional Effect Regarding Specialised Metabolites Constructed Over Endophytic Fungi. Microbial Biotechnology in Industry and Medicine. ISBN 978 93 6233 478 7 **Book DOI: <https://doi.org/10.62906/bs.book.213>**
20. Monisha Sarker, Ipsmita pan, Srijita Ghosh, Tandrima Tikadar, Shaloni Das, Pratim Patra, **Semanti Ghosh*** (2024) Cystic Fibrosis: An Inherited Life Threatened Genetic Disorder. Microbial Biotechnology in Industry and Medicine. ISBN 978 93 6233 478 7 **Book DOI: <https://doi.org/10.62906/bs.book.213>**
21. Pooja Kumari and **Semanti Ghosh*** (2024) Anticancer Peptides: Synthesis Methods, Modes of Action, and Future Potential Therapeutic uses for Cancer Treatment. Articles from Different Disciplines that Serve as a Link between Research and Development. ISBN 978-93-6135-406-9 **Book DOI: <https://doi.org/10.22271/ed.book.2993>**
22. Deep Saha, Prabahan Nath and **Semanti Ghosh*** (2024) Gene Enrichment, Network Mapping, and Identification of Potential Core Genes Associated with Parkinson's Disease. Articles from Different Disciplines that Serve as a Link between Research and Development. ISBN 978-93-6135-406-9 **Book DOI: <https://doi.org/10.22271/ed.book.2993>**
23. Shrestha Mukherjee, **Semanti Ghosh**, Subhasis Sarkar, Suranjana Sarkar and Bidisha Ghosh* (2024) A Systematic Review of Treatment of Antibiotics and Water-Borne Pathogens by Piezo-Catalytic Nanomaterials. Articles from Different Disciplines that Serve as a Link between Research and Development. *AkiNik Publications*. ISBN: 978-93-6135-406-9.

24. Santanu Biswas, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Precision Therapy: CRISPR-Cas9 Gene Editing in Sickle Cell Disease. Articles from Different Disciplines that Serve as a Link between Research and Development. *AkiNik Publications*. ISBN: 978-93-6135-406-9.
25. Bidisha Ghosh, Ankit Pal, **Semanti Ghosh**, Subhasis Sarkar and Suranjana Sarkar* (2024) Unveiling the Therapeutic Potential of *Mycobacterium vaccae* for Mental Health. Articles from Different Disciplines that Serve as a Link between Research and Development. *AkiNik Publications*. ISBN: 978-93-6135-406-9.
26. Puja Sadhu, Bidisha Ghosh, Suranjana Sarkar, **Semanti Ghosh** and Subhasis Sarkar* (2024) Mycobacteriophages: A Bacteriophage Therapeutic Approach for the Treatment of *Mycobacterium Tuberculosis* Infections: A Review. *Microbial Biotechnology in Industry and Medicine*. Bright Sky Publications. ISBN: 978 93 6233 478 7.
27. Ankit Pal, Bidisha Ghosh, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Navigating Neurotechnological Frontiers: Prospects and Trajectories of Neuralink's Brain-Machine Interface. *Microbial Biotechnology in Industry and Medicine*. Bright Sky Publications. ISBN: 978 93 6233 478 7
28. Diksha Adhikari, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Decoding Food Spoilage: Microbial Culprits and Mechanisms. *Biotech Miracles: Harnessing the Power of Microbes*. Integrated Publications. ISBN: 978 93 5834 436 3.
29. Jhilik Das, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Exploring the Role of Melatonin in Disease Prevention and Anti-Aging. *Biotech Miracles: Harnessing the Power of Microbes*. Integrated Publications. ISBN: 978 93 5834 436 3.
30. Abu Jishan, **Semanti Ghosh**, Subhasis Sarkar, Suranjana Sarkar and Bidisha Ghosh* (2024) Delving Into the Importance of Bioactive Peptide from Marine Algae & Their Potential Health Impacts. *Microbes and Biotechnology: Real-World Applications*. Integrated Publications. ISBN: 978-93-5834-281-9.
31. Santanu Mishra, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Aloe Vera: An In-Depth Exploration of Its Therapeutic and Medicinal Uses. *Microbes and Biotechnology: Real-World Applications*. Integrated Publications. ISBN: 978-93-5834-281-9.
32. Arpan Pattanayak, Bidisha Ghosh, **Semanti Ghosh**, Suranjana Sarkar and Subhasis Sarkar* (2024) Antimicrobial Activity of Medicinal Plants. *Microbes and Biotechnology: Real-World Applications*. Integrated Publications. ISBN: 978-93-5834-281-9.
33. Anushka Singh, Madiha Perween, Palak Bhardwaj, Priyanka Mandal, Riya Lama, **Semanti Ghosh**, Subhasis Sarkar, Suranjana Sarkar and Bidisha Ghosh * (2024) The Utility of Biologically Competent Polymers and Tuning Natural Bioactive Compounds in Modern Dermatological Formulations: A Concise Review. *Interdisciplinary Review Articles - Assisting as a Bridge between Research & Development*. AkiNik Publications. ISBN: 978-93-6135-236-2.
34. Prity Singh, Anwesha Das, Tiyaasha Saha, **Semanti Ghosh**, Bidisha Ghosh, Subhasis Sarkar and Suranjana Sarkar* (2024) Pioneering the Next Frontier: Innovative Approaches to Tackle Antibiotic Resistance. *Interdisciplinary Review Articles - Assisting as a Bridge between Research & Development*. AkiNik Publications. ISBN: 978-93-6135-236-2.
35. Mouli Nahar, **Semanti Ghosh*** (2024) Molecular Breeding: Beacon to Combat Salinity Stress in Rice – A Review". "Exploring the Cosmos: Interdisciplinary Research Approach." ISBN: 979-889673635-6 Notion Press.
36. Ananya Samanta, **Semanti Ghosh*** (2024) Diverse facets of alpha-synuclein in Parkinson's Disease. "Exploring the Cosmos: Interdisciplinary Research Approach." ISBN: 979-889673635-6 Notion Press.
37. Nandi, P., Kanthal, J., Hansda, S., **Ghosh, S.*** (2025). Neurophysiological Implications of Food Safety: Food Borne Pathogens and Its Neurological Impact. In: Sarkar, T., Hamad, A., Chatterjee, A. (eds) *Physiological Perspectives on Food Safety: Exploring the Intersection of Health and Nutrition*. Springer, Cham. https://doi.org/10.1007/978-3-031-94582-3_5
38. Ramu Samanta and **Semanti Ghosh*** (2025) AI in Eco-Friendly Sustainable Agriculture. *The Living Laboratory Biotechnology & Microbial Frontiers*. *Paperback ISBN: 978-93-6135-365-9 EBook ISBN: 978-93-6135-634-6*.
39. Prabahan Nath, Debojyati Datta, **Semanti Ghosh*** (2025). Translation Bioinformatics and Computational Biology: historical evolution, applications and future perspectives. *Translational Research in Applied Science: Microbiology, Biotechnology, and Bio-Innovation*. Cambridge Scholars Publishing Limited.
40. Joysurya Kanthal, **Semanti Ghosh*** (2025) Pesticide Residue Analysis In Marketed Green Chili's: A Comparative Study with Organically Grown Green Chilies. *Blueprints of Life: Unlocking the Power of Modern Biotechnology*. Penprints Publication. ISBN: 978-81-988004-7-3. ISBN 10 : 81-988004-7-6

41. Puja Dutta, **Semanti Ghosh*** (2025) Amelioration of Salinity Stress In Rice Cultivation Of West Bengal. Blueprints of Life: Unlocking the Power of Modern Biotechnology. Penprints Publication. ISBN: 978-81-988004-7-3. ISBN 10: 81-988004-7-6
42. Niranjana Barik, **Semanti Ghosh*** (2025) Advances In Stem Cell Biotechnology And Regenerative Medicine: Applications, Challenges, And Future Perspectives. Blueprints of Life: Unlocking the Power of Modern Biotechnology. Penprints Publication. ISBN: 978-81-988004-7-3. ISBN 10: 81-988004-7-6
43. Anurag Paul, **Semanti Ghosh*** (2025) Different Drug Activity and mechanisms used in neurodegenerative diseases. Blueprints of Life: Unlocking the Power of Modern Biotechnology. Penprints Publication. ISBN: 978-81-988004-7-3. ISBN 10: 81-988004-7-6
44. Debojyoti Datta, **Semanti Ghosh*** (2026). Papaya's (*Carica papaya*) leave extract's usage as an ultimate therapy for treating Dengue disease. Biotechnology: Future of Synthetic Biology. ISBN: 978-93-341-7833-3. Pages 28-40.
45. Vinitha S., **Semanti Ghosh^{2*}** (2026). Evolution of antibiotic therapy for urinary tract infections: past trends and current strategies. Microbial Cosmos: The Architects of Life. ISBN: 978-93-341-7834-0.
46. Puja Dutta, Semanti Ghosh^{2*} (2026) Lipase producing bacteria and protein designing of lipase. Essentials of Microbiology: Unearthing the Unseen. ISBN: 978-93-5635-848-5.
47. Vinitha S., **Semanti Ghosh^{2*}** (2026). From Skin Ally to Antimicrobial Arsenal: Exploring *Staphylococcus hominis*, Hominicin & Emerging Peptide Weapons. Vinitha S., Semanti Ghosh*. Biotech Horizons: Translational Research in Human Health. ISBN: 978-93-5655-163-3.
48. Karobi Dey, Semanti Ghosh* (2026) Bacterial Enzymes as Frameworks for Protein Design and Biotechnological Innovation. Biotechnology: Bridging Fundamental Science and Applied Innovation, ISBN: 978-93-5773-526-1
49. Madhurima Mukherjee, Chandrima Mukherjee, Semanti Ghosh* (2026) Decoding the Dark Genome: Emerging Roles of Long Noncoding RNAs (LncRNAs) in Gene Regulation and Disease. The Macroworld of the Microbes, ISBN: 978-93-5779-018-5.
50. Chandrima Mukherjee, Madhurima Mukherjee, **Semanti Ghosh*** (2026) The Versatile World of Circular RNAs: Dual Role as Therapeutic Targets and Promising Biomarkers. In S. Pal (Ed.), The Biotechnological Palimpsest: From Evolutionary Scratches to the Synthetic Future (pp. 103-116). ISBN: 978-93-5890-470-3.
51. Payel Sharma, **Semanti Ghosh*** (2026) ZIKA virus as an oncolytic adenovirus in malignant glioma preclinical evidence, engineering status, and challenges in translation. The Microbial Nexus: Intersections In Modern Science. ISBN Number: 978-93-5890-755-1.
52. Beauty Roy[#], Sourav Das[#], **Semanti Ghosh^{2*}** (2026). Recent Advances of Nanotechnology in Cancer Detection and Potential Drug Finding. In: Mallik, S., Ray, K., Mahmud, M. (eds) Landscape of Signaling Pathway and Genetic Markers in Cardio-Brain Oncology. Studies in Rhythm Engineering. Springer, Singapore. https://doi.org/10.1007/978-981-95-7012-6_10 Hardcover ISBN 978-981-95-7011-9. Softcover ISBN: 978-981-95-7014-0. eBook ISBN: 978-981-95-7012-6. Series ISSN 2524-5546, Series E-ISSN: 2524-5554.
53. Ananyo Mazumdar, Aditya Das, and **Semanti Ghosh*** Artificial Intelligence in Pharmacophore Modeling: Implications for Drug Repurposing. Book Name: "Predictive Models in Biology, Charting the Future with AI." **Editors: Barenaya Bikash Hazarika, A. V. Senthil Kumar, Harjeet Singh, Hetalkumar J. Panchal.** Pub Date: Forthcoming April 2027, Hard ISBN: 978-1-77964-763-4, E-Book ISBN: 978-1-77964-764-1. Apple Academic Press. (Article in Press)
54. Sampanna Roy, Sourav Ghosh, Surajit Hansda, Sayantani Karmakar, Gargi Ghosh*, **Semanti Ghosh*** Genetic Profiling of Biofilm-Associated Cancers: Towards Personalized Medicine. "Microbial Biofilms & Cancer: Genetic Mechanisms, Host interactions, and clinical applications". Book Title: "Microbial Biofilms & Cancer". Elsevier. Progress in Molecular Biology and Translational Science ISSN 1877-1173, DOI: <https://doi.org/10.1016/bs.pmbts.2026.07.002>.

University of Kalyani Affiliation

55. **Ghosh S.**, Bagchi A. (2015) Analysis of the structural details of DsrO protein from *Allochromatium vinosum* to identify the role of the protein in the redox transport process through the *dsr* operon. In: Muppalaneni N., Gunjan V. (eds) Computational Intelligence in Medical Informatics. Springer Briefs in Applied Sciences and Technology. Springer, Singapore

ISSN 2191-530X ISSN 2191-5318 (electronic) ISBN 978-981-287-259-3; ISBN 978-981- 287-260-9 (eBook).
DOI: https://doi.org/10.1007/978-981-287-260-9_1. Pp 1-10.

56. **Ghosh S.**, Bagchi A. (2015) Intermolecular Interaction Study of Dissimilatory Sulfite Reductase (DsrAB) from Sulfur Oxidizing Proteobacteria *Allchromatium vinosum*. In: Mandal J., Satapathy S., Kumar Sanyal M., Sarkar P., Mukhopadhyay A. (eds) Information Systems Design and Intelligent Applications. Advances in Intelligent Systems and Computing, vol 340. **Springer**, New Delhi, Proceedings of Second International Conference INDIA 2015, Volume 2, ISBN 978-81-322-2247-7.

Other publications:

(PDB Accession)

Saha Institute of Nuclear Physics Affiliation

1. **PDB ID: 6L2B** - Crystal structure of cyclophilin mutant I164M from *Leishmania donovani* at 2.65 angstrom resolution. **Ghosh, S.**, Biswas, G., Datta, AK., Banerjee, R.
2. **NCBI Accession**

Swami Vivekananda University Affiliation

- i) GenBank Accession: Staphylococcus sp. strain 16S ribosomal RNA gene, partial sequence.

GenBank: **PV738576, PV738577, PV738578**

Authors: **Ghosh, S.**, Kumari, P., Adhikary, D. and Paul, M.

- ii) Cytopacillus sp. strain CSC 16S ribosomal RNA gene, partial sequence

GenBank: **PZ185350.1**

Authors: **Ghosh, S.**, Pal, P., Sarkar, S., Kumar, C., Mishra, S. K. and Singh, C.

Swami Vivekananda University Affiliation

1. **Patent filing:** Beauty Roy, S. Vinitha, Puja Dutta, **Semanti Ghosh**. Natural anti-inflammatory powder formulation. Indian Patent Application No.202531022079 A. Filed Mar 12, 2025 and published on Mar 28, 2025.

CONFERENCE / SEMINAR/ WORKSHOP ATTENDED

1. **Oral Presentation** entitled “Protein Structure Function Relationship During Abiotic Stress Of Rice Plant”. Mouli Nahar, **Semanti Ghosh*** at International conference on "innovative approaches in life sciences and sustainable development" (IALSSD - 2025) from 17th-18th march, 2025, organized by Department of Botany and Zoology, Loknete Vyankatrao Hiray Arts, Science and Commerce College, Panchabati, Nasik, India.
2. **Oral Presentation** during International Webinar on Neoteric Approaches in Applied Sciences on 24th August, 2020 organized by UG & PG Department of Botany and Department of Physics in collaboration with Internal Quality Assurance Cell, Darjeeling Government College.
3. **Poster Presentation** entitled “Redesign of the hydrophobic core of a cyclophilin”, Biswas G., **Ghosh S.**, Bhattacharyya D., Banerjee R. 1st Department of Atomic Energy-Computational Chemistry Symposium (DAE-CCS-2019) organized by Chemical Engineering group, Bhabha Atomic Research Centre (BARC), Mumbai on 7-9th November, 2019.
4. **Oral Presentation** entitled “In silico comparison of sulfur oxidation and reduction mechanisms for better application in environmental industry,” **Ghosh S.**, Bagchi A. International Conference on Environment and Ecology (ICEE) organized by International Foundation for Environment and Ecology, Kolkata; hosted by Dept. of Zoology, Gauhati University, Assam and in collaboration with Confederation of Indian Universities, New Delhi, on 12-14th February, 2018.
5. **Poster Presentation** entitled “Molecular insight into DsrC protein as a regulatory protein and its key role in Sulfur Oxidation”, **Ghosh S.**, Bagchi A. Annual Meeting of the Indian Biophysical Society, 2016 “(IBS-2016)” organized by Indian Institute of Science, Bangalore, India on 8-10th February, 2016.
6. **Oral Presentation** entitled “Intermolecular Interaction Study of Dissimilatory Sulfite Reductase (DsrAB) from Sulfur Oxidizing Proteobacteria *Allochrochromatium vinosum*”, **Ghosh S.**, Bagchi A. Information Systems Design

and Intelligent Applications (INDIA - 2015) organized by Faculty of Engineering, Technology and Management, University of Kalyani, Kalyani, West Bengal, India on 8-9th January, 2015.

7. **Oral Presentation** entitled “*Analysis of the structural details of DsrO protein from Allochromatium vinosum to identify the role of the protein in the redox transport process through the dsr Operon*”, **Ghosh S.**, Bagchi A. International Conference on Computational Intelligence: Health and Disease (CIHD-2014) held on 27-28th December, 2014 organized by Institute of Bioinformatics and Computational Biology (IBCB), Vishakhapatnam.
8. **Oral Presentation** entitled “*Structural Details of DsrO Protein from Allochromatium vinosum and Mechanism Involved in the Electron Transport by the dsr Operon*”, **Ghosh S.**, Bagchi A. International Conference on Health, Environment and Industrial Biotechnology (BIOSANGAM - 2013) held on 21-23rd November, 2013 organized by: Motilal Nehru National Institute of Technology, Allahabad. Abstract published in the conference proceedings having ISBN 978-93-83083-41-1 Page no. 322.
9. **Poster Presentation** entitled “*Mutation study of DsrP from Allochromatium vinosum and other proteobacteria using the amino acid sequences*”, **Ghosh S.**, Bagchi A. Indraprastha International Conference on Biotechnology (IICB-2013) held on 22 -25 October, 2013, organized by: University School of Biotechnology, Guru Gobind Singh Indraprastha University, New Delhi.
10. **Oral Presentation** entitled “*Characterization of DsrK and DsrO from Allochromatium vinosum and other proteobacteria using the amino acid*”, **Ghosh S.**, Ghosh A., Kundu I., Bagchi A. DST sponsored National Seminar on “New Horizons in Biotechnology” held on 30-31st August, 2013 organized by Department of Biotechnology, Haldia Institute of Technology, Haldia, West Bengal.

Workshop/Conference Participated

1. Participated in **Conference on “Biological Big Data Analysis”**, held during 15th September, 2017 organized by Bioinformatics Centre, Bose Institute, Kolkata-700054.
2. Participated in **DBT Sponsored National Workshop on “Introduction to Next Generation Sequencing”**, held during 9th -11th November, 2016 organized by Bioinformatics Infrastructure Facility, University of Kalyani.
3. Participated in the **NIBMG-UChicago Workshop on “Big Data Analysis in Biomedical Genomics”** held at National Institute of Biomedical Genomics, Kalyani from 5th -8th March, 2016.
4. Participated in the Department of Biotechnology sponsored **National Workshop on “In silico Analysis of Mutation”** organized by Bioinformatics Infrastructure Facility of University of Kalyani, West Bengal, India held on 16th December, 2015.
5. Participated in “**Three-Day International Workshop on Statistical Data Analysis Using R Programming**” organized by A2Z Edu Learning Hub on 15th to 17th February 2022.
6. Participated and organized **National Conference** in “Technological Interventions in Life Sciences, Food, Agriculture & Allied Health Sciences – A Paradigm Shift towards a Better Future”, organized by School of Life Sciences, Swami Vivekananda University, Barrackpore, Kolkata, West Bengal from 19th to 24th May, 2022.
7. Participated and organized **ICALF 2023 and ICALF 2024** by School of Life Sciences, Swami Vivekananda University during 27th-28th February, 2023 and 27th-28th February, 2024.
8. Participated and organized **ICSA 2023 and ICSA 2024** by School of Life Sciences, Swami Vivekananda University during 28th – 30th September, 2023 and 20th – 21st June, 2024
9. Participated and organized 1st International conference on the future of sustainable development: challenges, and opportunities (**ICFDSO 2025**) and **ICALF 2025** by School of Life Sciences, Swami Vivekananda University during 25th-26th September, 2025 and 4th-6th February, 2025.
10. Participated and organized 4th **ICALF 2026** by School of Life Sciences, Swami Vivekananda University during 19th-20th January, 2026.
11. **Organized Online Workshop on Computer-aided Drug Designing** as a coordinator jointly by Prescience *In Silico* Pvt Ltd and Swami Vivekananda University during 6th to 9th November, 2023.
12. **Hands on Workshop: “Python Essentials for Biologists – Data handling and Visualization”** from 19.07.2024 to 23.07.2024 conducted by Dr Omics Lab Pvt Ltd.

Online Certification courses:

1. **National Programme on Technology Enhanced Learning (NPTEL)** course successfully completed on “Computer-aided drug design”, co-ordinated by IIT Madras.
2. **BiotechNika Schrödinger Joint Workshop on Computer-aided Drug Discovery**, organized by BiotechNika Info Lab Pvt Ltd from 22nd July to 2nd August, 2019.
3. **Online training on the "Next Generation Sequencing Data Analysis"** held from 9th June 2020 to 20th July 2020 at Stratalyces Technologies Pvt. Ltd., Bangalore, Karnataka.
4. **"Indian Webinar Series - Introduction to Computational Drug Design"**, co-organized by Schrödinger, and Pharmacy Council of India, in association with JSS Academy of Higher Education & Research, and Manipal Academy of Higher Education from 21st Sept to 23rd Oct 2020.

Faculty development Program Participated

1. AICTE sponsored **Short Term Training Program (STTP) – Faculty Development Program (FDP) on “Biology for Mankind”** from 7th June, 2021 to 12th June, 2021 organized by Maulana Abul Kalam Azad University of Technology, West Bengal.
2. Participated **one week Faculty Development Programme** on “Advances in Characterization Techniques and Applications: A Material Science Perspective” jointly organized by Department of Biotechnology & Department of Chemistry, Ramaiah Institute of Technology, Bengaluru-560054, Karnataka, India in association with Shriram Institute of Industrial Research, Bengaluru-560067 from 07th to 12th March 2022.
3. Participated and presented **one week Faculty Development Program** organized by School of Life Sciences, Swami Vivekananda University, Barrackpore, Kolkata, West Bengal from 22nd to 30th June 2022.
4. **Faculty Skill Development Program** during 6th to 15th May, 2024 jointly organized by E-YUVA Centre, Adamas University and Swami Vivekananda University.
5. Online **Faculty Development Program** on Next Generation Sequencing during 6th to 11th May, 2024 organized by Dept of Biotechnology, Haldia Institute of Technology.
6. Five-day (24th July to 30th July, 2024) **Faculty Development Program on innovative teaching pedagogy: new education policy** organized by Department of Nutrition and Dietetics, School of Allied Health Science, Manav Rachna International Institute of Research and Studies in collaboration with Department of Applied Nutrition and Dietetics, Sister Nivedita University, Kolkata.
7. NPTEL SWAYAM organized **Faculty Development Program on “Structural Biology” and “Computational Genomics”** course with **83% and 88%** in the Jan to April 2025 session.
8. One day (11th January, 2025) **Faculty Development Program on “Ethical guidelines and clinical research practices”** organized by Swami Vivekananda University.
9. **One Week (17th to 22nd November, 2025) Faculty Development Program** on “**Biotech 2.0: Empowering educators with cutting-edge knowledge.**” Organized by Department of Biotechnology in association with IQAC, Haldia Institute of Technology, Haldia, West Bengal, India.
10. **One Week (7th to 19th July, 2025) FDP on "Innovation in Indian Higher Education: Promoting in Indian Higher Education: Promoting Holistic Multidisciplinary & Inclusive Teaching Learning & Governance"** organized by School of Life Sciences, Swami Vivekananda University.
11. **5-Day Faculty Development Program (online mode) on R for Research Excellence: Statistical Analysis, Visualization and Publication** Organized by **Department of Business Administration, IEM, Saltlake** in association with **HRDC, IEM-UEM Group**, held from 23rd March 2026 to 27th March 2026.
12. **5-Day Faculty Development Program (online mode) on “Ethical use of Artificial Intelligence in Manuscript Writing and Teaching”** Organized by **Department of Biotechnology, The Neotia University, West Bengal, India** held from 22nd June -26th June, 2026.
13. **Faculty Development Program (online mode) on “Emerging Innovations and Advances in Pharmaceutical Research 3.0”** Organized by **Amity Institute of Pharmacy, Greater Noida, Uttar Pradesh, India** held from 2nd-3rd July, 2026.