

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

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

**RESEARCH EXPERIENCE (before Phd)****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.**

**RESEARCH INTERESTS**

Structural Biology &amp; 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 EXPERIENCE**

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

I have been completed my DBT funded post-doctoral fellowship from 02<sup>nd</sup> July, 2018 to 30<sup>th</sup> 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. Recently 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*.

**Ph.D. Thesis Title:** “*In silico* study of Sulfur Metabolism”.

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

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*. *A. vinosum* has a wide range of industrial applications in bio-energy productions or waste remediations, biological desulfurization processes, industrially relevant organo-chemicals, biofertilizers and bio-plastics. The complete understanding of the sulfur oxidation mechanism is really essential for better application of this industrial and environmentally important and abundant proteobacteria *A. 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.

## **RESEARCH EXPERTISE AND SKILLS**

Computational expertise obtained during Ph.D. & Post-doctoral tenure:

Protein Modelling, Protein–protein and Protein-DNA docking and interaction study, Protein-small molecules/ligand docking and interaction study, Molecular Dynamics Simulation in GROMACS.

**Computational tools handled:**

1. GOLD, Autodock 4.2, Discovery Studio, GROMACS.
2. Familiar with running Bioinformatics Packages like Discovery Studio, PyMol, VMD, GROMACS, AutoDock.

Molecular Biology & Structural Biology expertise obtained during post-doctoral research:

1. Agarose gel electrophoresis, SDS-PAGE electrophoresis, Transformation and Plasmid isolation.
2. His tagged recombinant protein expression and purification using affinity column chromatography.
3. Secondary Structure analysis using Circular Dichorism.
4. Thermal Stability analysis using Differential scanning calorimetry.
5. Fluorescence spectroscopy
6. X-ray crystallography using hanging drop vapor diffusion method

**AWARDS AND GRANTS RECEIVED**

- **DBT- Post-doctoral Fellowship:** Awarded by Department of Biotechnology, Govt. of India. (Vide letter from Co-ordinator, DBT-RA program May 29<sup>th</sup>, 2018).
- **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 12-14<sup>th</sup> February, 2018.
- **Qualified Graduate Aptitude Test in Engineering (GATE)** with an All-India Rank of 563; percentile 96.15 in the year 2012.

**RESEARCH PUBLICATIONS**

*Swami Vivekananda University Affiliation*

1. Datta D, **Ghosh S\*** 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, Springer* [I.F. 2.4] <https://doi.org/10.1007/s12033-025-01407-7>.
2. Dutta D, **Ghosh S\*** (2024) Comparative Study of Sequence & Phylogeny Analysis of Dengue Virus isolates from globally infected countries, *Advances In Bioresearch*, Vol 15 [6].

3. Nahar M, **Ghosh S\***. (2024). Identification of Key Genes Related to Salinity Stress in Rice (*Oryza sativa*) Using Bioinformatics Analysis, *Advances In BioResearch*, Vol 15 [6].
4. Samanta A, **Ghosh S.** (2024). Molecular Insight of Q126P PINK1 Mutation Parkinson's Disease. *Journal of Advanced Zoology*, 45(1), 499–503. <https://doi.org/10.53555/jaz.v45i1.4564>
5. Nahar M, **Ghosh S.** (2024). Comprehensive In-Silico Study of PLAT Domain Containing Protein 1 Upregulated from Salinity Stress In *Oryza Sativa*. *Journal of Advanced Zoology*, 45(1), 529–534. <https://doi.org/10.53555/jaz.v45i1.4570>
6. Samanta A, **Ghosh S.** (2023) Protein – protein Interaction Mapping of Neurodegenerative Disease. *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6449 – 6450.
7. Nahar M, **Ghosh S.** (2023) Comparative in-silico Study of The Major Prolamin Protein of Wheat and Rice in Relation to Celiac Disease, *Journal of Survey in Fishery Sciences*. Vol. 10 No. 1S (Special issue 1), 6451 – 6453.

#### *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*. DOI: 10.1080/07391102.2022.2109063. [I.F.: 5.235]
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*. DOI: 10.1002/prot.26321 [I.F. 2.9]
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.: 3.7]
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.: 8.025]

#### *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 *Allochromatium vinosum*. *Journal of Biomolecular Structure and Dynamics*. Taylor & Francis. DOI: 10.1080/07391102.2020.1754914 [I.F.: 5.235]
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 *Allochromatium vinosum*. *Journal of molecular modeling*, 25(3), 74. Springer. DOI: <https://doi.org/10.1007/s00894-019-3945-3> [I.F.: 2.2]
  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.: 8.025]
  15. Ghosh, S., & Bagchi, A. (2018). Insight into the molecular mechanism of the sulfur oxidation process by reverse sulfite reductase (rSiR) from sulfur oxidizer *Allochromatium vinosum*. *Journal of molecular modeling*, 24(5), 117. Springer. DOI: <https://doi.org/10.1007/s00894-018-3652-5> [I.F.: 2.2]
  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.: 8.025]
  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.: 2.307]
  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.: 3.1]
  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.: 2.7]
  20. Karmakar, S., Manna, D., Ghosh, S., Hansda, S., Mitra, A., Bagchi, A., & Ghosh, R. (2017). 9-Phenyl Acridine: A Possible Poly (ADP-ribose) Polymerase-1 Inhibitor. *Journal of Chemical and Pharmaceutical Research*, 9(5), 188-200.

21. Ray, S., **Ghosh, S.**, & Bagchi, A. (2018). Molecular Interactions, Structural Transitions and Alterations in SoxB Protein Due to SoxYZ Interaction from Two Distinct  $\beta$ -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.: 4.8]
22. **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.: 3.1]
23. 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.: 3.913 (2021)]
24. **Ghosh, S.**, & Bagchi, A. (2013). Mutation study of DsrM from *Allochromatium vinosum* using the amino acid sequences. *Meta gene*, 1, 33-42. Publishers: Elsevier. DOI: <https://doi.org/10.1016/j.mgene.2013.10.006>
25. **Ghosh, S.**, & Bagchi, A. (October-December, 2013). Characterization of DsrK and DsrO from *Allochromatium vinosum* and other Proteobacteria Using the Amino Acid Sequences. *Research and Reviews: Journal of Material Sciences*, 31-38. e-ISSN: 2321-6212. p-ISSN: 2347-2278.
26. **Ghosh, S.**, & Bagchi, A. (2013). Amino Acid Sequence Comparison of DsrP Protein from Proteobacteria to Analyze the Probable Molecular Mechanism of Sulfur Oxidation Process. *Open Structural Biology Journal*, 5, 1-10. Publishers: Bentham Open. ISSN: 1874-1991.

## REVIEW PUBLICATIONS

### *Swami Vivekananda University Affiliation*

1. 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.
2. 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.

3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
  13. Ghoshal, A., Saha, P., Mallick, J., Sarkar, S., Chakarborty, 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.
  14. 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). <https://doi.org/10.53555/jaz.v44iS6.3708>
  15. 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>
  16. 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>
  17. 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>
  18. 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>
  19. 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>
  20. 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>



21. 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>
22. 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>
23. 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>
24. 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>.
25. 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>
26. 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>
27. 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>
28. 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>
29. 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>

30. 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>
31. 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>
32. 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>
33. 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)
34. 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>
35. Addityaa 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)
36. 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>
37. 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>
38. 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>.
39. 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>

40. 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.

### **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. 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. Recent Advancements on Computational Enzyme Designing: Rational to *De-Novo*. Frontiers In Biotechnology: Emerging Approaches And Strategies. ISBN: 978-93-5980-245-9
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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. "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\***. Analyzing molecular signature proteins of VEXAS Syndrome. Research Renaissance: Integration of Interdisciplinary Terrains". ISBN: 979-889588010. Pp 39-52.

12. Kritika Das, Soumashri Mondal, Suranjana Dhara, Aditi Das, Daizy, Semanti Ghosh\*. 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\* 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\* 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\* 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\* 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\*** 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\*** 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\*** 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>
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21. Pooja Kumari and **Semanti Ghosh\*** 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\*** 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>
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24. Ananya Samanta, **Semanti Ghosh\*** Diverse facets of alpha-synuclein in Parkinson's Disease. "Exploring the Cosmos: Interdisciplinary Research Approach." ISBN: 979-889673635-6 Notion Press.

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1. 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](https://doi.org/10.1007/978-981-287-260-9_1). Pp 1-10.
2. 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.

**DECLARATION**

I hereby declare that the above-mentioned information is true to the best of my knowledge and belief.