

Dr. (Ms.) Nandini Sarkar

Assistant Professor, Dept. of Biotechnology and Medical Engineering,
National Institute of Technology Rourkela, Rourkela- 769008, Orissa, India
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Research Interests

Protein misfolding and aggregation; Structure-Function Relationship of Proteins; Protein Engineering; Structural Biology.

Educational Background

- Doctor of Philosophy in Biotechnology (2007-2011) from Indian Institute of Technology Guwahati, Assam, India. **Ph.D course work Cumulative Performance Index (CPI) 9.93 out of 10.** Thesis title: *Studies on effect of small molecules on protein folding, misfolding and amyloidogenesis.*
- Bachelor of Technology in Biotechnology (2003-2007) from Heritage Institute of Technology, Kolkata under West Bengal University of Technology, West Bengal, India. **Degree Grade Point Average (DGPA) 8.6 out of 10**
- Indian School Certificate Examinations 2003 from Salt Lake School (English Medium). **First Division with 92% marks.**
- Indian Certificate of Secondary Education Examinations 2001 from Salt Lake School (English Medium). **First Division with 90% marks.**

Research Experience

Worked as a Research Associate in an ICMR funded project entitled “An integrated computational and biochemical approach to target Ornithine decarboxylase, a key enzyme involved in synthesis of trypanothione for antileishmanial drug discovery”, from June’ 2011 to August’ 2011 in Indian Institute of Technology Guwahati, India.

Professional Experience

Assistant Professor in Dept. of Biotechnology and Medical Engineering, National Institute of Technology Rourkela since August’ 2011.

Teaching Responsibilities: Courses taught at NIT Rourkela (Current and Past):

- BM 444- Introduction to Molecular Medicine (Open Elective)
- BM 461- Protein Engineering for BTech (Biotech. and Biomed.)
- BM 653- Advanced Protein Engineering for MTech (Biotech.)
- BM 381- Industrial Microbiology Lab for BTech (Biotech.)
- BM 493- Seminar and Technical Writing for BTech (Biotech. and Biomed.)
- BM 643- Seminar and Technical Writing for MTech (Biotech. And Biomed.)

- BM 351- Genetic Engineering for BTech (Biotech. and Biomed.)
- BM 342- Industrial Microbiology for BTech (Biotech.)
- BM 282- Microbiology Lab for BTech (Biotech.)
- BM 382- Cell and Molecular Biology Lab for BTech (Biotech.)
- BM 443- Introduction to Biotechnology (Open Elective)
- BM 254- Bioprocess Calculation for B.Tech (Biotech)
- BM 444- Structural Biology for B.Tech (Biotech)
- BM 274- Analytical Biotechnology Lab for B.Tech (Biotech)
- BM 372- Bioseparation Lab for B.Tech (Biotech)
- BM 672- Advanced Bioseparation Lab for M.Tech (Biotech)
- BM 673- Cell and Protein Processing Lab for M.Tech (Biotech)
- BM 654- Advanced Bioseparation for M.Tech (Biotech)
- BM 241- Biotechnology in Human Health (Open Elective)
- BM 403- Medical Biotechnology (Open Elective)
- BM 274- Bioheat and Masstransfer Lab for B.Tech (Biotech. and Biomed.)

Thesis Supervised

M.Tech

- Tulasi Prathyusha (2011-2012)
- Swapna Namani (2011-2012)
- Racha Harish Kumar (2011-2012)
- Arun EVR (2012-2013)
- Vivek Kumar Yadav (2012-2013)
- Ritika Chauhan (2013-2014)
- Karthic Krishnan (2013-2014)
- Arun Maurya (2013-2014)
- Tulika Das (2015-2016)
- Rupsa Chatterjee (2015-2016)
- Gloria Narayanan (2015-2016)
- Srijeeb Karmakar (2016-2017)
- Pritha Paul (2017-2018)
- Hitesh Mandal (2018-2019)
- Arbin Basak (2018-2019)
- Reshob Routh (2019-2020)
- Veer Kumar Wraw (2019-2020)
- Santhosh P (2020-2021)
- Kavita Kundal (2020-2021)

- Aranyak Mitra (2021-2022)
- Prakriti Seth (2022-2023)

B.Tech

- Sumon Rudra (2011-2012)
- Ritiritao Brahma (2012-2013)
- Sangita Soren (2012-2013)
- Neha Goyal (2013-2014)
- Sai Venkata Sarath Chandra (2013-2014)
- Shraddhananda Biswal (2013-2014)
- Siddhant Mohanty (2013-2014)
- Vishnu Murthy Appala (2013-2014)
- Ajeet Dudhawal (2014-2015)
- Ombikash Kumar Das (2014-2015)
- Sudipt Dalei (2015-2016)
- Megha Agarwal (2017-2018)
- Satyam Ahirwar (2017-2018)
- Abhinash Bhagat (2017-2018)
- Shibu Prasad Behera (2017-2018)
- Rahul Pradhan (2018-2019)
- Sidharth Kumar (2018-2019)
- G V Nikhil (2019-2020)
- Apoorva Potnuru (2019-2020)
- Arijit Das (2020-2021)
- Neeharika Sunkara (2020-2021)
- Ananya Rout (2021-2022)
- Lakhsman Gadde (2021-2022)
- Ekta Kumari (2022-2023)
- Olivia Niebel Isaac Newton (2022-2023)
- Koneru Hemesh (2022-2023)

Ph.D

- Dr. Vidyalatha Kolli
Title- Mutagenesis, Structure, Stability And In Silico Studies On Fibroblast Growth Factor Homologous Factor 2, (Awarded in 2021)
- Dr. Macherla Pochaiiah Taraka Prabhu
Title:- Studies on the Effects of Surface Functionalized Carbon Quantum Dots towards Hen Egg White Lysozyme Amyloidogenesis (Awarded in 2023)

Awards & Honours

- Invited as one of the Expert Panel of Judges for “One minute Innovation Idea Presentation” conducted by “Amity Institute of Biotechnology” on 28th September 2021 (online mode).

- Guest Editor, Special Issue on Enzymes from Extremophiles and Their Industrial Applications, Industrial Biotechnology Journal, Mary Ann Liebert Publications.
- Awarded Early Career Award 2018 by SERB, Govt. of India for a duration of three years.
- Appointed as Editorial Board member of Protein and Peptide Letters, Bentham Science Publication. Research work on protein amyloid listed by "Global Medical Discovery" as a key scientific article. Received "Young Scientist Program Award" for 21st International Union of Biochemistry and Molecular Biology (IUBMB) and 12th Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB) International Congress of Biochemistry and Molecular Biology held during 2-7 August 2009 in Shanghai, China.
- Awarded International Union of Biochemistry and Molecular Biology (IUBMB) full travel fellowship to attend the 21st IUBMB and 12th Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB) International Congress of Biochemistry and Molecular Biology held during 2-7 August 2009 in Shanghai, China.
- Received B.S Narasinga Rao Best Poster presentation Award during 77th Annual Meeting of Society of Biological Chemists, India held at Indian Institute of Technology Madras, Chennai, India in December 18-20, 2008.
- Qualified Graduate Aptitude Test in Engineering (GATE) 2007 in Life Sciences with a percentile of 98.39 and All India Rank of 175.

Sponsored Projects

Project Title	Funding Agency	Amount	Period	As PI/CoPI
Stability, mutagenesis and functional studies on Fibroblast Growth Factor Homologous Factors	Department of Biotechnology, Ministry of Science and Technology, India	30.58 lakhs	2013-2016	PI
Evaluating anti-amyloidogenic propensity of surface functionalized carbon dots	Science and Engineering Research Board, Department of Science and Technology	38.85 lakhs	2018-2021	PI

Professional Affiliations

Life member of Society of Biological Chemists, India (SBCI).

Life member of National Academy of Biological Sciences (NABS).

Life member of The Biotech. Research Society, India (BRSI).

Life member of Indian Society of Chemists and Biologists (ISCB).

Publications (In Peer Reviewed Journals)

1. Srijita Chowdhury and **Nandini Sarkar***. Exploring the potential of amyloids in biomedical applications: A review. *Biotechnology and Bioengineering* (2023) doi.org/10.1002/bit.28569.
2. M P Taraka Prabhu, Shreya Chrungoo, **Nandini Sarkar***. Amine Group Surface-Functionalized Carbon Quantum Dots Exhibit Anti-amyloidogenic Effects Towards Hen Egg White Lysozyme by Inducing Formation of Nontoxic Spherical Aggregates. *The Protein Journal* (2023) DOI: 10.1007/s10930-023-10157-x.
3. Prakriti Seth, Aniket Mukherjee, **Nandini Sarkar***. Formation of hen egg white lysozyme derived amyloid-based hydrogels using different gelation agents: A potential tool for drug delivery. *International Journal of Biological Macromolecules* (2023) 253, 127177 doi: 10.1016/j.ijbiomac.2023.127177.
4. Debashmita Chakraborty, Aniket Mukherjee and **Nandini Sarkar***. A Comprehensive Review on Inorganic Nanoparticles as Effective Modulators of Amyloidogenesis. *Protein and Peptide Letters* (2023) doi : 10.2174/0929866530666230705153229.
5. Aniket Mukherjee and **Nandini Sarkar***. A facile one pot synthesis of water-soluble CQDs for evaluation of it's anti-amyloidogenic propensity. *Materials Advances* (2023) doi: 10.1039/D2MA01041K.
6. Kavita Kundal, Santhosh Paramasivam, Amit Mitra and **Nandini Sarkar***. Identification of Novel Peptides as Potential Modulators of A β 42 Amyloidogenesis: An insilico Approach. *Current Computer Aided Drug Design* (2023) doi: 10.2174/1573409919666230112170012.
7. Amit Mitra and **Nandini Sarkar***. Elucidating the inhibitory effects of rationally designed novel hexapeptide against hen egg white lysozyme fibrillation at acidic and physiological pH. *BBA Protein and Proteomics* (2023) 1871, 140899 Doi: 10.1016/j.bbapap.2023.140899.
8. Aranyak Mitra, Amit Mitra and **Nandini Sarkar***. Differential effects of DTT on HEWL amyloid fibrillation and fibril morphology at different pH. *Biophysical Chemistry* (2023) 294, 106962 Doi: 10.1016/j.bpc.2023.106962.
9. Biplob Halder, Amit Mitra, Smriti Dewangan, Rabiul Gazi, **Nandini Sarkar**, Madhurima Jana, Saurav Chatterjee. Solid state synthesis of bispyridyl-ferrocene conjugates with unusual site selective 1,4-Michael addition, as potential inhibitor and electrochemical probe for fibrillation in amyloidogenic protein. *Journal of Molecular Structure* (2022) 134362, doi: 10.1016/j.molstruc.2022.134362.
10. Prakriti Seth and **Nandini Sarkar***. A comprehensive mini-review on amyloidogenesis of different SARS-CoV-2 proteins and its effect on amyloid formation in various host proteins. *3 Biotech* (2022) 12, 322. Doi:10.1007/s13205-022-03390-1. [*Corresponding author].

11. Arijit Das, M. P. Taraka Prabhu and **Nandini Sarkar***, "Synthesis, characterization, and *in vitro* DPPH radical scavenging assay study of PEG-capped carbon nanoparticles derived from *Butea monosperma* flower extract", *Advances in Natural Sciences: Nanoscience and Nanotechnology* (2022) 13, 015002, doi: 10.1088/2043-6262/ac5498 [*Corresponding author].
12. Aranyak Mitra and **Nandini Sarkar***, "The role of intra and inter-molecular disulfide bonds in modulating amyloidogenesis: A review", *Archives of Biochemistry and Biophysics* (2022) 716, doi: 10.1016/j.abb.2021.109113 [*Corresponding author].
13. Santhosh Paramasivam, Kavita Kundal and **Nandini Sarkar***, "Human Serum Albumin aggregation and its modulation using nanoparticles: A review", *Protein and Peptide Letters* (2021) doi: 10.2174/0929866528666211125104600 [*Corresponding author].
14. Macherla Pochaiiah Taraka Prabhu, and **Nandini Sarkar***, "Inhibitory effects of carbon quantum dots towards hen egg white lysozyme amyloidogenesis through formation of a stable protein complex", *Biophysical Chemistry* (2022) 280, 106714 [*Corresponding author].
15. Amit Mitra and **Nandini Sarkar***, "Sequence and structure-based peptides as potent amyloid inhibitors: A review", *Archives of Biochemistry and Biophysics* (2020) 695, 10.1016/j.abb.2020.108614 [*Corresponding author].
16. Hitesh Mandal, Arbin Basak, Macherla Pochaiiah Taraka Prabhu, Vidyathala Kolli, and **Nandini Sarkar***, "Inhibitory as well as Disaggregation Potential of Selected Hydroxy Benzoic Phytochemicals on Hen Egg-White Lysozyme Amyloidogenesis", *Current Proteomics* (2020) 18, 10.2174/1570164617999200729161846 [*Corresponding author].
17. Vidyathala Kolli, Subhankar Paul, Praveen Kumar Guttula and **Nandini Sarkar***. Elucidating the role of Val-Asn 95 and Arg-Gly 52 mutations on structure and stability of fibroblast growth factor homologous factor 2. *Protein and Peptide Letters* (2019) 26, 12. [* Corresponding author].
18. Macherla PT Prabhu and **Nandini Sarkar***. Quantum Dots as Promising Theranostic Tools Against Amyloidosis: A Review. *Protein and Peptide Letters* (2019) 26, 1-8 [* Corresponding author].
19. Srijeeb Karmakar, **Nandini Sarkar*** and Lalit Mohan Pandey. Proline functionalized gold nanoparticles modulates lysozyme fibrillation. *Colloids and Surfaces B* (2019) 174, 401-408 [* Corresponding author].
20. Tulika Das, Vidyathala Kolli, Srijeeb Karmakar and **Nandini Sarkar***. Functionalisation of polyvinylpyrrolidone on gold nanoparticles enhances its anti-amyloidogenic propensity towards hen egg white lysozyme. *Biomedicines* (2017) 5, 19 [* Corresponding author].
21. Rupsa Chatterjee, Vidyathala Kolli and **Nandini Sarkar***. Trehalose and magnesium chloride exert a common anti-amyloidogenic effect towards hen egg white lysozyme. *The Protein Journal* (2017) 36, 138-146 [* Corresponding author].
22. Vidyathala Kolli, Subhankar Paul and **Nandini Sarkar***. An Overview on Fibroblast Growth Factors: Structural, Functional and Therapeutic Implications. *Current Proteomics* (2015) 12, 144-51 [* Corresponding author].

23. Arun EVR, Karthic Krishnan, Arun Maurya and **Nandini Sarkar***. *In Silico* Screening of Drugs to Find Potential Gamma-Secretase Inhibitors Using Pharmacophore Modeling, QSAR and Molecular Docking Studies. *Combinatorial Chemistry and High Throughput Screening*(2014) 17, 770-80 [* Corresponding author].
24. **Nandini Sarkar*** and Vikash Kumar Dubey. Exploring critical determinants of protein amyloidogenesis: A review. *Journal of Peptide Science* (2013) 9, 529-36 [* Corresponding author].
25. Manjeet Kumar, **Nandini Sarkar*** and Vikash Kumar Dubey. Evaluating quinacrine as a potential amyloid imaging compound: studies on hen egg white lysozyme as model system. *Protein and Peptide Letters* (2012) 19, 826-831 [* Corresponding author].
26. **Nandini Sarkar**, Manjeet Kumar and Vikash Kumar Dubey. Rottlerin dissolves pre-formed protein amyloid: A study on hen egg white lysozyme. *Biochimica et Biophysica Acta - General Subjects*(2011) 1810, 809-814.
27. **Nandini Sarkar**, Manjeet Kumar and Vikash Kumar Dubey. Effect of sodium tetrathionate on amyloid fibril: Insight in to the role of disulfide bond in amyloid progression. *Biochimie* (2011) 93, 962-968. **Listed by Global Medical Discovery as a key scientific article.**
28. **Nandini Sarkar**, Manjeet Kumar and Vikash Kumar Dubey. Exploring possibility of promiscuity of amyloid inhibitor: Studies on effect of selected compounds on folding and amyloid formation of proteins. *Process Biochemistry* (2011) 46, 1179-1185.
29. **Nandini Sarkar**, Abhay Narain Singh and Vikash Kumar Dubey. Effect of curcumin on amyloidogenic property of molten globule like intermediate state of 2,5-Diketo-D-Gluconate Reductase A. *Biological Chemistry*(2009) 390, 1057-1061.
30. **Nandini Sarkar**, Vikash Kumar Dubey. Protein nano-fibrillar structure and associated diseases. *Current Proteomics* (2010) 7, 116-120.
31. **Nandini Sarkar**, Pramod Kumar Srivastava, Vikash Kumar Dubey. Understanding the language of Vitamin C. *Current Nutrition & Food Science*(2009) 5, 53-55.
32. Bishal Kumar Singh, **Nandini Sarkar** and Vikash Kumar Dubey. Modeled Structure of Trypanothione synthetase of *Leishmania infantum* for development of novel therapeutics for leishmaniasis. *Current Trends in Biotechnology and Pharmacy* (2008) 2, 390-395.
33. Bishal Kumar Singh, **Nandini Sarkar**, M.V. Jagannadham and Vikash Kumar Dubey. Modeled Structure of Trypanothione Reductase of *Leishmania infantum*. *Biochemistry and Molecular Biology Reports*(2008) 41, 444-447.
34. Vikash Kumar Dubey, Bishal Kumar Singh, **Nandini Sarkar**, Monu Pande and M.V. Jagannadham. Biophysical characterization of Fibroblast Growth Factor homologous Factor-1b (FHF-1b): Sodium dodecyl sulfate promotes two state folding. *Protein & Peptide Letters* (2008) 15,215-218.

Conference Presentations

- **Nandini Sarkar**, Abhay Narain Singh and Vikash Kumar Dubey. “Studies on 2,5 Di Keto D Gluconate Reductase : Identification of amyloid forming folding intermediate state in acidic

condition". 77th Annual Meeting of Society of Biological Chemists India, held at IIT Chennai during 18-20 December 2008. **Awarded B.S Narasinga Rao best poster award.**

- **Nandini Sarkar**, Abhay Narain Singh, Vikash Kumar Dubey. "Identification of amyloidogenic folding intermediate state of 2,5-Diketo-D-Gluconate Reductase A: Effect of Curcumin on Amyloid formation". 21st IUBMB and 12th FAOBMB International Congress of Biochemistry and Molecular Biology held on 2-7 August 2009 and Young Scientist Program held on July 30-August 2, 2009 in Shanghai, China. **The work was selected for IUBMB full travel fellowship funding and Young Scientist Program Award.**
- **Nandini Sarkar** and Vikash Kumar Dubey. "Effect of small molecule aggregators on amyloid formation of proteins". Symposium on Recent Trends in Biophysics sponsored by Indian Biophysical Society, held at Benaras Hindu University, Varanasi, 13-15 February 2010.
- Vikash Kumar Dubey and **Nandini Sarkar**. "Exploring possibility of promiscuity of amyloid inhibitors". International Interdisciplinary Science Conference 2012 on protein folding and Diseases held at Jamia Milia Islamia University, New Delhi, December 8-10, 2012.
- Ritika Chauhan and **Nandini Sarkar***. "Homology Modeling Of Trypanthione reductase in Leishmania donovani and finding appropriate ligands for drug discovery". International Conference on Recent Advances in Computational Drug Design held at IISC Bangalore, September- 16-17, 2013.
- **Nandini Sarkar**. "Unraveling Key Determinants of Amyloidogenesis". International Conference on Recent Developments in Medical Biotechnology and Structure-Based Drug Designing held at IIT Guwahati, December 6-7, 2015. **[Invited Talk]**
- Rupsa Chatterjee, Arun Maurya and **Nandini Sarkar***. "In-Silico Inhibition Of Galectin-1 During HIV-1 Pathogenesis: A Pharmacophore Based Virtual Screening, Molecular Docking & QSAR Studies". International Conference on Recent Developments in Medical Biotechnology and Structure-Based Drug Designing held at IIT Guwahati, December 6-7, 2015.
- Tulika Das, Arun EVR and **Nandini Sarkar***. "In Silico Screening of Drugs to Find Potential Gamma-Secretase Inhibitors Using Pharmacophore Modeling, QSAR and Molecular Docking Studies". International Conference on Recent Developments in Medical Biotechnology and Structure-Based Drug Designing held at IIT Guwahati, December 6-7, 2015.
- Gloria Narayan, Karthic Krishnan and **Nandini Sarkar***. "Targeting Epigenetic Regulator Histone Deacetylase 6 in the treatment of Cancer: A Computational Approach". International Conference on Recent Developments in Medical Biotechnology and Structure-Based Drug Designing held at IIT Guwahati, December 6-7, 2015.
- Vidyalatha Kolli and **Nandini Sarkar***. "Role of Val-Asn95 and Arg-Gly 52 Mutations on the Thermodynamic Stability of Fibroblast Growth Factors Homologous Factor 2". 23rd meeting of the International Network of Protein Engineering Centers (INPEC) held at Bose Institute Kolkata, November 9-11, 2017.
- Pritha Paul, **Nandini Sarkar*** and Indranil Banerjee. "Effect of graphene oxide on Hen Egg White Lysozyme amyloidogenesis". National Conference on Biomolecular Dynamics:

Experimental and Theoretical Perspectives (BDETP-2017) held at NIT Rourkela, December 18-20, 2017.

- Hitesh Mandal and **Nandini Sarkar***. “In-silico mutagenesis endo-1,4- β -xylanase C to increase catalytic activity and stability”. International conference on Proteomics for Cell Biology and Molecular Medicine (ICPCBMM-2018) held at NCCS Pune, December 12-14, 2018.
- Vidyalyatha Kolli and **Nandini Sarkar***. “Effects of double mutations Arg 52 - Gly, Val 95 - Asn on structure and stability of Fibroblast growth factor homologous factor 2”. International conference on Proteomics for Cell Biology and Molecular Medicine (ICPCBMM-2018) held at NCCS Pune, December 12-14, 2018.
- Arbin Basak, Hitesh Mandal, Subhankar Paul and **Nandini Sarkar***. “Effect of Vanillic acid and Iso-Vanillic acid on Hen Egg White Lysozyme Amyloidogenesis”. Research Conclave 2019 held at IIT Guwahati, March 14-17, 2019. **Awarded second best poster award.**
- **Nandini Sarkar***. “Proline Capped Gold Nanoparticle Mediated Inhibition Of Hen Egg White Lysozyme Amyloidogenesis”. Recent Advances in Biochemical Engineering and Biotechnology 2019 held at IIT BHU, March 15-16, 2019. ***[Invited Talk]***
- **Nandini Sarkar***. “Studies on Effects of Selected Phytochemicals on Hen Egg White Lysozyme Amyloidogenesis”. 14thAsian Congress of Biotechnology 2019 held in Taipei, Taiwan, July 1-4, 2019 ***[Oral speaker]***.
- Reshob Routh and **Nandini Sarkar***. “Studies on effect of polar and non-polar amino acid derived carbon quantum dots on hen egg white lysozyme fibrillation”. International Conference on Biotechnological Interventions for Societal Development 2020 held in Motilal Nehru National Institute of Technology (MNNIT) Allahabad, India, February 21-23, 2020.
- M.P. Taraka Prabhu and **Nandini Sarkar***. “Carbon Quantum Dots as therapeutic agents against amyloidosis”. International Conference on Biotechnological Interventions for Societal Development 2020 held in Motilal Nehru National Institute of Technology (MNNIT) Allahabad, India, February 21-23, 2020.
- **Nandini Sarkar***. “Studies on carbon dot mediated inhibition of hen egg white lysozyme amyloidogenesis”.GSBTM SPONSORED ONE WEEK ONLINE FACULTY DEVELOPMENT PROGRAMME “PROTEIN-RECEPTOR BINDING CHEMISTRY” (online mode) JOINTLY ORGANIZED BY Dr. Vikram Sarabhai Institute of Cell and Molecular Biology (VSCIMB), The Maharaja Sayajirao University of Baroda (MSU) and Department of Biotechnology, National Institute of Technology (NIT), Warangal Sponsored by: GUJARAT STATE BIOTECHNOLOGY MISSION (GSBTM) May 17-22, 2021. ***[Invited Talk]***
- M.P. Taraka Prabhu and **Nandini Sarkar***. “Surface Modified Carbon Quantum Dots as therapeutic agents against amyloidosis”. International Conference in Biotechnology for Resource Efficiency, Energy, Environment, Chemicals and Health held in CSIR-Indian Institute of Petroleum, Dehradun, December 1-4, 2021.
- M.P. Taraka Prabhu and **Nandini Sarkar***. “Evaluating the anti-amyloidogenic propensity of amine group surface functionalized carbon quantum dots against hen egg white

lysozyme". BioSangan2022 - International Conference in Emerging Trends in Biotechnology held in MNNIT Allahabad, March 10-12, 2022.

- M.P. Taraka Prabhu and **Nandini Sarkar***. "Effect of Carboxyl group surface functionalized-Carbon quantum dots on HEWL amyloidogenesis". International Conference on Drug Discovery- 2022 held in BITS Pilani Goa Campus, November 10-11, 2022.
- Debashmita Chakraborty and Nandini Sarkar*. "A Comparative Study of the Anti-Amylogenic Effect of Gold and Gold-Iron Oxide Nanoparticles On the Hen Egg White Lysozyme (HEWL)". 3rd International Conference on Nanomaterials in Biology, IIT Gandhinagar, India. Nov 2023.
- Amit Mitra and **Nandini Sarkar***. "Evidence of Ph-Based Differential Effect of Dtt On in Vitro Amyloidogenesis of Hen Egg-White Lysozyme". 3rd International Conference on Frontiers in Biological Sciences (InCoFIBS-2023), National Institute of Technology Rourkela, India. Oct 2023.
- Amit Mitra and **Nandini Sarkar***. "Development of anti-amyloidogenic short-synthetic peptides, rationally designed using a sequence-based strategy". 92nd Annual Meet of Society of Biological Chemists, BITS Pilani Goa Campus, Dec 2023. **Awarded Best Poster Award.**

Book Chapters

Nandini Sarkar. Functional Amyloids (Chapter 12), Biopolymer-Based Formulations: Biomedical and Food Applications, ISBN: 9780128168974 [Publisher: Elsevier].

Mukherjee, A., **Sarkar, N.** (2022). Recent Developments in Quantum Dots Technologies as Effective Theranostic Tools Against Cancer. In: Barik, P., Mondal, S. (eds) Application of Quantum Dots in Biology and Medicine. Springer, Singapore. https://doi.org/10.1007/978-981-19-3144-4_6

Additional Responsibilities

- Member, Training and Placement Committee (2022-2023), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Student Activities (2022-2023), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Faculty Advisor, B.Tech (2021-2025) batch, Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Member, Department Accreditation Committee (2021-2022), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Faculty Advisor, M.Tech (2018-2020) batch, Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Library (2019-2022), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.

- Member, Departmental Purchase Committee (2019- 2020), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Research Student Enrolment & Registration, Departmental Research Committee (2015- 2017), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Member, Departmental Purchase Committee (2015- 2018), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Member, Departmental Academic Program Oversight Committee (2015- 2016), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Library (2014-2015), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Faculty Advisor for B.Tech (2013-2017) batch, Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Examinations (2012-13), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- PIC, Seminar (2012-13), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Faculty Advisor for M.Tech (2012-2014) batch, Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Member of Purchase Committee (2012-13), Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Member of Departmental Academic Committee (2011-2012), U.G., Dept. of Biotechnology and Medical Engineering, NIT Rourkela.
- Invited reviewer of several international journals such as British Biotechnology Journal (Publisher: Science Domain International), Letters in Drug Design & Discovery (Publisher: Bentham Science) and BMC Biotech (Publisher: BioMed Central).
- Appointed as external paper setter for B.Tech course for Vignan University, A.P.
- Invited as an external expert in a selection committee for the post of lecturer in Biotechnology under Orissa Public Service Commission held in Cuttack, Odisha.
- Assisted in several Tutorial courses and Biochemistry practical classes for B.Tech in Biotechnology at Dept. of Biotechnology, I.I.T Guwahati, India during PhD work.
- Volunteered in “Quality Improvement Program in Advances in Drug Discovery”, July 2009 held at Indian Institute of Technology Guwahati, India.

Personal Details

Father's Name: Mr Sunil Kumar Sarkar
Mother's Name: Dr (Mrs) Rita Sarkar
D.O.B: 4th October, 1984
Gender: Female
Nationality: Indian
Languages Known: English, Hindi, Bengali

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Referees

Prof. Vikash Kumar Dubey

Professor

Department of Biotechnology

Indian Institute of Technology Guwahati

Guwahati, Assam, India-781039

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Prof. Kannan Pakshirajan

Professor

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Prof. Sanjukta Patra

Professor

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