UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE/ CV

1. **Full name of the faculty member**: Dr. Sanjay Ghosh
2. **Designation**: Professor
3. **Specialisation**: Microbiology, Nitric Oxide Synthase: Structure-Function, Nitrosative Stress Response.
   Vidwan-ID**: 122110**
   Orcid ID**: 0000-0001-8624-1494**
   Scopus Id**: 55340437000**
   Researcher Id**: KYP-5128-2024**
   Google Scholar Id**: c-_TkesAAAAJ**

4. **Passport size photograph**:

5. **Contact information**:
   Dept. of Biochemistry, University of Calcutta, 35, Ballygunge Circular Road, Kolkata-700019, West Bengal, India.
   Email: sgbioc@caluniv.ac.in sgbioc@gmail.com ghoshs71@hotmail.com Phone: 033-2461-5445 (Ext-442) (Office), 09433394502 (Cell).

6. **Academic qualifications**:

College/ university from which the degree was obtained	Abbreviation of the degree
Scottish Church College, University of Calcutta (1986-1989)	B.Sc. in Chemistry (Honours)
Dept. of Biochemistry, University of Calcutta (1989-1991)	M.Sc. in Biochemistry
Dept. of Biochemistry, University of Calcutta (1992-1997)	Ph. D. in Science

7. **Positions held/ holding:**

1. Post-Doctoral Fellow, Dept. of Immunology, The Cleveland Clinic Foundation, The Lerner Research Institute, Ohio, USA, March, 1997- February, 1999.

2. Project Scientist, Dept. of Immunology, The Cleveland Clinic Foundation, The Lerner Research Institute, Ohio, USA March, 1999-March, 2000.
3. Scientist C, Indian Institute of Chemical Biology, Jadavpur, Kolkata, September-December, 2000.
4. Lecturer, Dept. of Biochemistry, University of Calcutta, December, 12, 2000- December, 2004.
5. Senior Lecturer, Dept. of Biochemistry, University of Calcutta, December, 2004-February, 2009.
6. Reader, Dept. of Biochemistry, University of Calcutta, February, 2009-February, 2012.
7. Associate Professor, February, 2012-February-2015.
8. Professor, February 4, 2015-Till date.

8. Research interests:

- *Characterizing Nitrosative Stress Response using yeast as a model system*

Increasing number of evidences suggest that reactive nitrogen species(RNSs) and nitric oxide (NO) itself affect the redox state of cells like oxidative stress and modify cellular proteins reversibly or irreversibly. Yeast is an excellent model system to study the effect of reactive nitrogen species in cell. Currently we are investigating the role of bZIP transcription factors Atf1 and Pcr1 under nitrosative stress in *Schizosaccharomyces pombe.*

Investigating the effect of nitrosative stress on mitochondrial respiratory chain supercomplexes of *Saccharomyces cerevisiae*

- *Characterizing the effect of NO and RNS on cell death mechanisms*

The role of NO and RNS on cell death mechanisms in chronic myelogenous leukemic K562 cell line and MCF7 cell line.

- *Secretome analysis of Phytopathogenic fungi Macrophomina phaseolina grown in solid state culture.* We have developed a bioprocess for production of endoglucanase and xylanase using solid-state fermentation in a small scale in *Macrophomina phaseolina*.
- *Studies on the nitrosative stress response mechanisms in Vibrio cholerae.*

9. **Research guidance**: **Registered Ph.D. Supervisor, Dept. of Biochemistry, University of Calcutta, March 2001**.
Number of researchers awarded Ph.D. degrees: **Eighteen (18)**
Number of researchers pursuing M.Phil./ Ph.D.: **Four (4)**
Present:
1) Chirandeep Dey, B.Sc. & M.Sc. in Zoology, UGC-NET SRF
2) Ayantika Sengupta, B.Sc. & M.Sc. in Zoology, CSIR-NET SRF
3) Sanchita Biswas, B.Sc. in Zoology & M.Sc. in Biochemistry, CSIR-NET SRF
4) Shuddhasattwa Samaddar, B.Sc. in Microbiology & M.Sc. in Biochemistry, DBT-SRF
5) Sourav Mukherjee, M.Sc. in Biotechnology, Project Intern

Former Ph.D. students:

1) **Dr. Rajib Sengupta**, B.Sc. in Chemistry, M.Sc. in Biochemistry, **Ph.D. awarded in the year 2007**, Former Post-Doctoral Researech Fellow under the supervision of Prof. Detcho A. Stoyanovsky, Department of Surgery, University of Pittsburg, Post-doctoral research fellow under the supervision of Prof. Arne Holmgren, Department of Biochemistry and Biophysics at Karolinska Institutet, Sweden, **Associate Professor, Amity University, Kolkata**.

2) **Dr. Rupam Sahoo**, B.Sc. in Chemistry, M.Sc. in Biochemistry, **Ph.D. awarded in the year 2008,** Former Post-Doctoral Research Fellow under the supervision of Prof. Elaine A. Elion, Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, M.A. Presently **Instructor** under the supervision of Prof. Jose Halperin, **The Laboratory for Translational Research, Harvard Medical School, Boston, Massachusetts, United States.**

3) **Dr. Tanmay Dutta**, B.Sc. in Chemistry, M.Sc. in Biochemistry, **Ph.D. awarded in the year 2008,** Postdoctoral Associate, under the supervision of Prof. Murray P. Deutscher, Dept. of Biochemistry and Molecular Biology, Miller School of Medicine, University of Miami. **Associate Professor in the Dept. of Chemistry, I.I.T, New Delhi**

4) **Dr. Sougata Sinha Ray**, B.Sc. in Microbiology, M.Sc. in Biotechnology, **Ph.D. awarded in the year 2008,** Post-Doctoral Fellow, under the supervision of Prof. Dennis J. Stuehr, Dept. of Pathobiology, Lerner Research Institute, The Cleveland Clinic Foundation, Cleveland. **Presently, Scientist in GE Healthcare**

5) **Dr. Arindam Bhattacharyya**, B.Sc. in Microbiology, M.Sc. in Microbiology, **Ph.D. awarded in the year 2011, Assistant Professor in the Dept. of Microbiology, North Bengal University.**

6) **Dr. Uddalak Majumder**, B.Sc. in Chemistry, M.Sc. in Biochemistry, **Ph.D. awarded in the year 2013,** Former Post-Doctoral Fellow in the laboratory of Dr. Nava Segev, Professor, Dept. of Biochemistry and Molecular Genetics, University of Illinois at Chicago. Presently **Post-Doctoral Research Fellow in Center for Cardiovascular and Pulmonary Research, Nationwide Children's Hospital, Columbus, Ohio** under the supervision of Dr. Vidu Garg. **Presently, Molecular Biology and Genomics Scientist, Eurofins Lancaster Laboratories Cambridge, Massachusetts, United States**

7) **Dr. Tuhin Subhra Sarkar**, B.Sc. in Zoology, M.Sc. in Zoology, UGC-NET. **Ph.D. awarded in the year 2014,** Former D.S. Kothari Fellow, **Assistant Professor in Zoology, New Town Govt. College**

8) **Dr. Debasis Maiti**, B.Sc. in Microbiology, M.Sc. in Microbiology, NET-LS. **Ph.D. awarded in the year 2014,** Presently **Senior Scientific Officer, posted in Regional Drugs Testing Laboratory (RDTL) Chandigarh**

9) **Dr. Achintya Mohan Goswami**, B.Sc. & M.Sc. in Physiology, **Ph.D. awarded in the year 2015, Assistant Professor in Physiology, Krishnanagar Govt. College.**

10) **Dr. Pranjal Biswas**, B.Sc. & M.Sc. in Biochemistry, **Ph.D. awarded in the year 2016**, Former Post-Doctoral Fellow in Dept. of Genetics, Cell Biology and Anatomy, Nebraska Medical Center, Omaha, NE 68198-6395. **Presently Post-Doctoral Fellow in the Dept. of Pathobiology, The Lerner Research Institute, The Cleveland Clinic under the supervision of Prof. Dennis J. Stuehr.**

11) **Dr. Chiranjit Panja**, B.Sc. in Chemistry, M.Sc. in Biochemistry, NET-LS, SRF in DST-PURSE Programme, **Ph.D. awarded in the year 2017, Post-Doctoral Fellow under Dr. Roza Kucharczyk in Dept. of Genetics, Institute of Biochemistry and Biophysics Polish Academy of Sciences, Pawinskiego 5a, 02-106 Warszawa, Poland. Post-doctoral Researcher at Northwestern University, Feinberg School of Medicine, Chicago, Illinois, United States**

12) **Dr. Sampurna Datta**, B.Sc. in Physiology, M.Sc. in Biochemistry, UGC-NET. **Ph.D. awarded in the year 2018, Post Doctoral Fellow under Dr. Pawel Niewiadomski, Centre of New Technologies, University of Warsaw, Poland. Post-doctoral Researcher at Northwestern University, Feinberg School of Medicine, Chicago, Illinois, United States**

13) **Dr. Puranjoy Kar**, B.Sc. & M.Sc. in Microbiology, UGC-NET JRF, **Ph.D. awarded in the year 2019, Public Health Manager, Health & Family Welfare Department National Health Mission, Govt. of West Bengal. Former Programme Manager, Urban Health under National Urban Health Mission, Deputy Analyst, Microbiology, Kolkata Municipal Corporation.**

14) **Dr. Saugata Roy**, B.Sc. & M.Sc. in Microbiology, **Ph.D. awarded in the year 2021**, **Deputy Manager - Research and Development IFB Agro Industries Ltd.**

15) **Dr. Subhamoy Chakraborty**, B.Sc. in Microbiology, M.Sc.in Biochemistry, CSIR-SRF, **Ph.D. awarded in the year 2021**. **Post-Doctoral Research Fellow, Icahn School of Medicine at Mount Sinai, USA**

16) **Dr. Sourav Kumar Patra**, B.Sc. & M.Sc. in Biochemistry, NET, University Research Fellow, **Ph.D. awarded in the year 2022, Post-Doctoral Research Fellow, University of North Carolina, Chapel Hill, North Carolina, USA**

17) **Dr. Nilanjan Sinha**, B.Sc. & M.Sc. in Biochemistry, Research Fellow in WB-DBT Project, **Ph.D. awarded in the year 2024. Analyst - Systemic Review at Indence Health**

Joint Supervisor:

18) Dr. Sudipta Paul Bhattacharya, Assistant Professor, Dept. of Microbiology, Lady Brabourne College, **Ph.D. awarded in the year 2022**.

Former Project Trainee:

1. Dr. Shaeri Mukherjee. M.Sc. in Biochemistry,C.U.2000. Post M.Sc. GRE Trainee. Presently Assistant Professor, Department of Microbiology and Immunology, The George William Hooper Foundation, University of California, San Francisco.
2. Dr. Arpita Das. M.Sc. in Microbiology, PES College, Bangalore, 2001,Summer Project Trainee.
3. Dr. Avijit Majumdar. M.Sc. in Biochemistry, C.U. 2001. Post M.Sc. GRE Trainee.
4. Dr. Kausik Pal. M.Sc. in Microbiology,C.U. 2002. Post M.Sc. GRE Trainee.
5. Dr. Irina Debnath. M.Sc. in Microbiology,C.U. 2002. Post M.Sc. GRE Trainee.
6. Dr. Nabanita Biswas. M.Sc. in Microbiology,C.U. 2002. Post M. Sc. GRE Trainee.
7. Dr. Amlan Das. M.Sc. in Biochemistry,C.U. 2003. Post M.Sc. Project Trainee.
8. Mohit Jana. M.Sc. in Microbiology, Vidyasagar University 2005 Summer Project Trainee.
9. Dr. Hemanta Dutta. M.Sc. in Biotechnology, Burdwan University 2006 Summer Project Trainee.
10. Dr. Srabanee Mullick. M.Sc. in Zoology from Maulana Azad College, C.U. 2006, Post M.Sc. Research Trainee
11. Dr. Shayanki Lahiri. M.Sc. in Microbiology from Rastraguru Surendranath College,C.U. 2007, Summer Project Trainee.
12. Dr. Soumitra Polley, M.Sc. in Biotechnology, 2008, Jadavpur University, Summer Project Trainee.
13. Dr. Sayantanee Niyogi. M.Sc. in Biochemistry, C.U. 2009, Post M.Sc. GRE Trainee
14. Dr. Arunava Ghosh, M.Sc. in Biochemistry, C.U. 2010, Post M.Sc. GRE Trainee.
15. Arnab Sarkar, M.Sc. in Microbiology, APC College, West Bengal State University, 2011, Summer Project Trainee.
16. Dr. Avik Dutta, M.Sc. in Biochemistry, C.U. 2012, Post M.Sc. GRE Trainee.
17. Rachana Nitin, M.Sc. in Zoology, University of Pune, 2013 NASI Summer Project Trainee.
18. Dr. Subhamoy Chakraborty, M.Sc. in Biochemistry, 2014 GRE Trainee.
19. Bidisha Mukhopadhyay, M.Sc. in Botany, 2015 NASI Summer Project Trainee
20. Sai Divya, Ms Karra (I MSc) M.Sc. in Biochemistry, Andhra University, Visakhapatnam. 2018 NASI Summer Project Trainee
21. Aishita Chakraborty, M.Sc. in Microbiology, St. Xavier's College, Kolkata 2018 Summer Project Trainee.
22. Gaurav Patil, Institute of Bioinformatics and Biotechnology, Savitribai Phule Pune University (SPPU), Pune 411007, 2019 Summer Project Trainee
23. Vishal Keshri, M.Sc. in Biochemisry, C.U. 2021-2022 Project Trainee, Present affiliation: Project Junior Research Fellow · Institute of Medical Sciences, Banaras Hindu University, Varanasi
24. Sayantan Das, M.Sc. in Biochemisry, C.U. Oct 2021 - Dec 2021-3 months Project Trainee, Present Affiliation: Junior Research Fellow, IICB, Jadavpur
25. Subhankar Kundu, M.Sc. in Biochemistrty, C.U.2022 Project Trainee.
26. Sourav Mukherjee, M.Sc. in Biotechnology, Maulana Abul Kalam Azad University of Technology, West Bengal, 2023 Six months project trainee.
27. Aditya Ghosal, M.Sc. in Biotechnology, Semester II, Benaras Hindu University, From June10-July 12, 2024, Project Intern

10. **Projects:**

Completed projects:

1. **UGC Minor** Project for the year **2001-2002**. Project Title: Studies on the nitric oxide synthesizing enzyme in yeast. Rs. 50 thousands.

2. Received **UGC Major** Project for the year **2002-2005**. Project Title: Studies on the effect of reactive nitrogen species on yeast. Rs. 7 Lakhs

3. Received **CSIR Project** for the year **2002-2005**. Project Title: Studies on the industrially important cellulase enzymes isolated from extremophilic Bacillus species. Rs. 10 Lakhs

4. Received **DAE Project** for the year **2005-2008.** Project Title: Characterizing the effect of nitrosative stress on mitochondria using yeast cells. Rs. 14.89 Lakhs.

5. Received **DST Project** for the year **2006-2009.** Project Title: Molecular and Biochemical characterization of Drosophila Nitric Oxide Synthase: A structure-function study. Rs. 22.84 Lakhs.

6. Received **ICAR Project** as Collaborative Investigator for the year **2006-2011**. Project Title: Control of yellow vein mosaic disease of Hibiscus cannabinus. Rs. 18.59 lakhs.

7. Received **UPE project** as Co Project Investigator for the year **2007-2012**.
Project Title: Investigating Molecular Principles of Species Interaction in Rhizosphere: Biochemical and Metagenomic Approaches. Project Investigator: Dr. Maitrayee Dasgupta, Co PIs: Dr. Maitree Bhattacharyya, Dr. Anirban Siddhanta, Dr. Prosanta K. Bag , Dr. Sanjay Ghosh , Dr. Sanghamitra Sengupta, Dept. of Biochemistry, Calcutta University. Rs. 81 Lakhs.

8. Received a seed money project from Centre for research in Nanoscience and Nanotechnology, University of Calcutta for the year **2009-2010**. Project Title: Microbial synthesis of Silver and Gold Nanoparticle. Rs. 5 lakhs.

9. Received **DBT project** for the year **2010-2013**. Project Title: "Studies on the gene expression under nitrosative stress using yeast as model system" Rs. 60 Lakhs

10. Received **DAE project** for the year **2011-2014**. Project Title: "Proteomic analysis of nitrosative stress responsive proteins in yeast" Rs. 34,39,000/-.

11. Received **DBT project** for the year **2015-2018**. Project Title: "Characterizing the role of Sty1 and Pap1 under nitrosative stress in *Schizosaccharomyces pombe*." Rs. 45, 44, 800/-

12. Received **WB-DBT** project for the year **2016-2019** Project Title:"Secretome analysis of Phytopathogenic fungi *Macrophomina phaseolina* grown in solid state and submerged culture".Rs. 26, 63, 200/- Extended due to COVID 19 situation

13. Received **UPE-II** project for the year **2017-2020,** Prof. Sanjay Ghosh, Project Coordinator and Group Leader: Beneficial Plant Microbe Interaction. Co-Investigators: Prof. Anirban Siddhanta, Dept. of Biochemistry, University of Calcutta, Dr. Anindita Seal, Dept. of Biotechnology, University of Calcutta Rs. 6 Lakh for 6 months.

14. Received **UGC Mid-Career Award Grant** for the year **2022-2024**. Rs. 10 lakh.

11. **Select list of publications**:

a) ***Journals:*** Article: 60, Chapter: 4, Conference Paper: 3, Other Publication: 1, Scopus Author ID: 55340437000.
Total Scopus Citations: 1571 by 1190 documents, Scopus h index=22 Date of creation: June 28, 2024.
https://www.scopus.com/authid/detail.uri?authorId=55340437000
https://scholar.google.com/citations?user=c-_TkesAAAAJ
h index is the largest number h such that h publications have at least h citations.
Orchid ID https://orcid.org/0000-0001-8624-1494
Researchgate Profile: https://www.researchgate.net/profile/Sanjay-Ghosh-6

Publications (2024-2000) from the Dept. of Biochemistry, University of Calcutta

- Ayantika Sengupta, Subhamoy Chakraborty, Sanchita Biswas, Sourav Kumar Patra, **Sanjay Ghosh** (**2024**). S-nitrosoglutathione (GSNO) induces necroptotic cell death in K562 cells: Involvement of p73, TSC2 and SIRT1. **Cell Signal**. 2024 Sep 1;124:111377. doi: 10.1016/j.cellsig.2024.111377. Epub ahead of print. PMID: 39222864. **Impact Factor: 4.4** https://pubmed.ncbi.nlm.nih.gov/39222864/

- Soumyajit Mukherjee, Shubhojit Das, Sourav Kumar Patra, Mayukh Das, **Sanjay Ghosh**#, Alok Ghosh # **(2024)** Absence of mitochondrial CX9C-CX10C protein Cox12 generates oxidative and nitrosative stress in Saccharomyces cerevisiae: Implication on cellular redox homeostasis. **Advances in Redox Research** Volume 13, December 2024, 100112. # Sanjay Ghosh and Alok Ghosh should be considered as co-corresponding authors. https://www.sciencedirect.com/science/article/pii/S2667137924000195

- Nibedita Ray Chaudhuri 1 †, Nilanjan Sinha 2 †, Shubhra Ghosh Dastidar 1 * and **Sanjay Ghosh** 2 * **(2024)** Nitration at Tyrosine 61 residue of *Macrophomina phaseolina* secretory glucanase brings a conformational change through a lock-unlock mechanism. 1. Department of Biological Sciences, Bose Institute, 2. Department of Biochemistry, University of Calcutta, † Contributed equally *Corresponding authors. **Journal of Biomolecular Structure & Dynamics (In press) Impact Factor:4.4**

- Ayantika Sengupta*, Subhamoy Chakraborty*, Sampurna Datta, and **Sanjay Ghosh (2023)** Cell Death-NO-Today: Effect of NO and RNS on Non-apoptotic Regulated Cell Death. In: Ray, A., Gulati, K. (eds) Nitric Oxide: From Research to Therapeutics. **Advances in Biochemistry in Health and Disease, vol 22**. Springer, Cham. https://doi.org/10.1007/978-3-031-24778-1_9 First Online: 08 March 2023 DOI: 10.1007/978-3-031-24778-1_9 Springer *Contributed equally.

- Sourav Kumar Patra, Nilanjan Sinha, Firoz Molla, Ayantika Sengupta, Subhamoy Chakraborty, Souvik Roy and **Sanjay Ghosh (2022)** In-vivo protein nitration facilitates *Vibrio cholerae* cell survival under anaerobic, nutrient deprived conditions. **Archives of Biochemistry and Biophysics 728 (2022) 109358. Impact Factor: 4.114** https://doi.org/10.1016/j.abb.2022.109358

- Nilanjan Sinha, Sourav Kumar Patra, and **Sanjay Ghosh (2022)** Secretome analysis of *Macrophomina phaseolina* identifies an array of putative virulence factors responsible for charcoal rot disease in plants. **Frontiers in Microbiology, April 2022, Volume 13, Article 847832.**
doi: https://doi.org/10.3389/fmicb.2022.847832 **Impact Factor: 6.064**

- Sourav Kumar Patra, Nilanjan Sinha, Ayantika Sengupta, Subhamoy Chakraborty, Souvik Roy, **Sanjay Ghosh (2022)** In-vivo Protein Nitration and De-Nitration Facilitate Vibrio cholerae Cell Survival under Anaerobic Nutrient Deprived Condition: Consequences of Nitrite Induced Protein Nitration. **Free Radical Biology and Medicine**, Volume 180, Supplement 1, 20 February **2022**, **Page s94** Part of special issue: SfRBM 2021 **Conference Abstracts** https://doi.org/10.1016/j.freeradbiomed.2021.12.219 **Impact Factor: 8.101**

- Nilanjan Sinha, Sourav Kumar Patra, Tuhin Subhra Sarkar and **Sanjay Ghosh (2021)** Secretome analysis identified extracellular superoxide dismutase and catalase of *Macrophomina phaseolina*. **Archives of Microbiology; 204:62 doi:** https://doi.org/10.1007/s00203-021-02631-w
Impact Factor: 2.667

- Subhamoy Chakraborty, Sampurna Datta, **Sanjay Ghosh (2019**) Induction of autophagy under nitrosative stress: A complex regulatory interplay between SIRT1 and AMPK in MCF7 cells. **Cellular Signaling. 2019 Sep 3; 64:109411. doi: 10.1016/j.cellsig.2019.109411.** https://www.ncbi.nlm.nih.gov/pubmed/31491460 **Impact Factor: 4.85**

- Sourav Kumar Patra, Saurabh Samaddar, Nilanjan Sinha, **Sanjay Ghosh (2019)** Reactive nitrogen species induced catalases promote a novel nitrosative stress tolerance mechanism in Vibrio cholerae. **Nitric Oxide**. 2019 Apr 11; 88:35-44. doi: 10.1016/j.niox.2019.04.002. https://www.ncbi.nlm.nih.gov/pubmed/30981896 **Impact Factor: 4.898**

- Sampurna Datta, Subhomoy Chakraborty, Chiranjit Panja, **Sanjay Ghosh (2018)** Reactive nitrogen species control apoptosis and autophagy in K562 cells: implication of TAp73 α induction in controlling autophagy. **Free Radical Research** Mar 6:1-271. **Impact Factor: 4.148**
doi:10.1080/10715762.2018.1449210.https://www.ncbi.nlm.nih.gov/pubmed/29508625

- Pranjal Biswas, Uddalak Majumdar, **Sanjay Ghosh (2018)** Analysis of Reverse Transcribed mRNA Using PCR and Polyacrylamide Gel Electrophoresis. **Methods in Molecular Biology *Schizosaccharomyces pombe*** 2018; 1721:73-87. doi: 10.1007/978-1-4939-7546-4_7 https://www.ncbi.nlm.nih.gov/pubmed/29423848

- Puranjoy Kar, Pranjal Biswas, Sourav Kumar Patra, **Sanjay Ghosh (2018)** Transcription factors Atf1 and Sty1 promote stress tolerance under nitrosative stress in *Schizosaccharomyces pombe.* **Microbiological Research** 206, 82-90. **Impact Factor: 5.07**
https://www.ncbi.nlm.nih.gov/pubmed/29146263

- Abhishek Bhattacharya; Pranjal Biswas; Puranjoy Kar; Piya Roychoudury; Sankar Basu; **Sanjay Ghosh**; Koustubh Panda; Souradipta Ganguly; Ruma Pal; Anjan Kr Dasgupta **(2017)** Nitric oxide sensing by chlorophyll a. **Analytica Chimica Acta** Sep 8;985:101-113. doi: 10.1016/j.aca.2017.07.026. Epub 2017 Jul 15. http://www.sciencedirect.com/science/article/pii/S0003267017308309 **Impact Factor: 6.911**

- Puranjoy Kar, Pranjal Biswas, and **Sanjay Ghosh (2017)** Multimodal control of transcription factor Pap1 in *Schizosaccharomyces pombe* under nitrosative stress. **Biochem Biophys Res Commun.** 2017 May 19. pii: S0006-291X(17)30982-8.doi:10.1016/j.bbrc.2017.05.100. https://www.ncbi.nlm.nih.gov/pubmed/28528978
Impact Factor: 3.322

- Sourav Kumar Patra, Prasanta Kumar Bag and **Sanjay Ghosh (2017)** Nitrosative Stress Response in *Vibrio cholerae*: Role of S-Nitrosoglutathione Reductase. **Appl Biochem Biotechnol. (2017)** 182:871–884. doi: 10.1007/s12010-016-2367-2. https://www.ncbi.nlm.nih.gov/pubmed/28000045
Impact Factor: 3.094

- Chiranjit Panja, Rakesh KS Setty, Gopal Vaidyanathan, and **Sanjay Ghosh (2016)** Label free proteomic analysis of flavohemoglobin deleted strain of *Saccharomyces cerevisiae*. **International Journal of Proteomics** (Hindawi Publishing Corporation) Volume 2016 (2016), Article ID 8302423, 12 pages
http://dx.doi.org/10.1155/2016/8302423, https://www.ncbi.nlm.nih.gov/pubmed/26881076

- Pranjal Biswas, Uddalak Majumdar and **Sanjay Ghosh (2016)** Gene expression profiling data of *Schizosaccharomyces pombe* under nitrosative stress using differential display. **Data in Brief (Elsevier)** 6, 101-111. DOI: 10.1016/j.dib.2015.11.047 https://www.ncbi.nlm.nih.gov/pubmed/26858975

- Pranjal Biswas, Puranjoy Kar, and **Sanjay Ghosh (2015)** Nitrosative stress induces a novel intra S checkpoint pathway in *Schizosaccharomyces pombe* involving phosphorylation of Cdc2 by Wee1. **Free Radical Biology and Medicine**. Sep; 86:145-55. doi: 10.1016/j.freeradbiomed.2015.05.021. Epub 2015 May 22. **Impact Factor 8.101**. https://www.ncbi.nlm.nih.gov/pubmed/26006103

- Pranjal Biswas and **Sanjay Ghosh (2015)** Global transcriptomic profiling of *Schizosaccharomyces pombe* in response to nitrosative stress. **Gene.** 2015 Mar 10;558(2):241-53. doi: 10.1016/j.gene.2014.12.067. Epub 2014 Dec 31 https://www.ncbi.nlm.nih.gov/pubmed/25556969
Impact Factor: 3.913

- Tuhin Subhra Sarkar, Pranjal Biswas, Subrata Kumar Ghosh and **Sanjay Ghosh (2014)** Nitric Oxide production by necrotrophic pathogen *Macrophomina phaseolina* and the host plant in charcoal rot disease of Jute: Complexity of the interplay between necrotroph-host plant interactions. **PLoS ONE** 9(9): e107348. 10.1371/journal.pone.0107348. 0107348 https://www.ncbi.nlm.nih.gov/pubmed/25208092 **Impact Factor: 3.752**

- Chiranjit Panja and **Sanjay Ghosh (2014)** Detection of in vivo protein tyrosine nitration in petite mutant of *Saccharomyces cerevisiae*: Consequence of its formation and significance. **Biochemical and Biophysical Research Communications** 451 (2014) 529–534. **Impact Factor: 3.322** doi:10.1016/j.bbrc.2014.08.011. https://www.ncbi.nlm.nih.gov/pubmed/25111815

- Saugata Roy, Tanmay Dutta, Tuhin Subhra Sarkar and **Sanjay Ghosh (2013)**Novel xylanases from *Simplicillium obclavatum* MTCC 9604: Comparative analysis of production, purification and characterization of enzyme from submerged and solid state fermentation. **Springer Plus** 2013 2:382. doi:10.1186/2193-1801-2-382, https://www.ncbi.nlm.nih.gov/pubmed/24010040

- Achintya Mohan Goswami, and **Sanjay Ghosh (2013)** Biological synthesis of colloidal gold nanoprisms using Penicillium citrinum MTCC9999. **Journal of Biomaterials and Nanobiotechnology (JBNB)** SCRIP Open Access Journal DOI: 10.4236/jbnb.2013.42A003 http://www.scirp.org/journal/PaperInformation.aspx?PaperID=29846 **Google Based IF: 2.06**

- Achintya Mohan Goswami, Tuhin Subhra Sarkar and **Sanjay Ghosh (2013)** An Ecofriendly synthesis of silver nano-bioconjugates by Penicillium citrinum (MTCC9999) and its antimicrobial effect. Springer Open Access Journal **AMB Express** 2013, 3:16 doi: 10.1186/2191-0855-3-16. https://www.ncbi.nlm.nih.gov/pubmed/23433075 **5 year Impact Factor: 4.126**

- Debasis Maiti, Tuhin Subhra Sarkar and **Sanjay Ghosh (2012)** Detection of S-nitrosothiol and nitrosylated proteins in Arachis hypogaea functional nodule: Response of the nitrogen fixing symbiont **PLOS ONE** 7(9), art. No.e45526. DOI No. 10.1371/journal.pone.0045526 **Impact Factor: 3.752** https://www.ncbi.nlm.nih.gov/pubmed/23029073

- Uddalak Majumdar, Pranjal Biswas, Tuhin Subhra Sarkar, Debasis Maiti, **Sanjay Ghosh (2012)** Regulation of cell cycle and stress responses under nitrosative stress in Schizosaccharomyces pombe. **Free Radical Biology and Medicine** Apr 17, 52(2012)2186–2200.PMID:22561704 https://www.ncbi.nlm.nih.gov/pubmed/22561704 **Impact Factor: 8.101**

- Tuhin Subhra Sarkar, Arindam Bhattacharjee, Uddalak Majumdar, Anirban Roy, Debasis Maiti, Achintya Mohan Goswamy, Subrata Kumar Ghosh and **Sanjay Ghosh (2011)** Biochemical characterization of compatible plant-viral interaction: A case study with a Begomovirus-Kenaf host-pathosystem. **Plant Signaling and Behavior.** Apr;6(4):501-9. Epub 2011 Apr 1. https://www.ncbi.nlm.nih.gov/pubmed/21412047 **Impact Factor: 2.734**

- Arindam Bhattacharjee, Uddalak Majumdar, Debasis Maity, Tuhin Subhra Sarkar, Achintya Mohan Goswami, Rupam Sahoo, and **Sanjay Ghosh (2010)** Characterizing the effect of nitrosative stress in *Saccharomyces cerevisiae*. **Archives of Biochemistry and Biophysics (ABB)** 496, 109-116. doi:10.1016/j.abb.2010.02.003 https://www.ncbi.nlm.nih.gov/pubmed/20153714
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- Tanmay Dutta, Arindam Bhattacharjee, Uddalak Majumdar, Saugata Sinha Ray, Rupam Sahoo and **Sanjay Ghosh (2009)** In Vitro Renaturation of Alkaline Family G/11 Xylanase via a Folding Intermediate: α-Crystallin Facilitates Refolding in an ATP-Independent Manner. **Appl Biochem Biotechnol.** 162(5):1238-48. **Impact Factor: 3.094** https://www.ncbi.nlm.nih.gov/pubmed/20703955

- Arindam Bhattacharjee, Uddalak Majumdar, Debasis Maity, Tuhin Subhra Sarkar, Achintya Mohan Goswami, Rupam Sahoo, **Sanjay Ghosh (2009)** In vivo protein tyrosine nitration in *S. cerevisiae*: Identification of tyrosine-nitrated proteins in mitochondria. **Biochem Biophys Res Commun. (BBRC)** 388(3):612-7. **Impact Factor: 3.322** https://www.ncbi.nlm.nih.gov/pubmed/19695224

- Rupam Sahoo, Arindam Bhattacharjee, Uddalak Majumdar, Sougata Sinha Ray, Tanmay Dutta, and **Sanjay Ghosh (2009)** A novel role of catalase in detoxification of peroxynitrite in *S. cerevisiae* yhb1- and sfa1-mutants. **Biochem Biophys Res Commun (BBRC)** Aug 7;385(4):507-11. **Impact Factor: 3.322** https://www.ncbi.nlm.nih.gov/pubmed/19463791

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- Sougata Sinha Ray, Jesús Tejero, Zhi-Qiang Wang, Tanmay Dutta, Arindam Bhattacharjee, Michael Regulski, Tim Tully, **Sanjay Ghosh***, and Dennis J.Stuehr***.(2007**) The Oxygenase Domain of *Drosophila melanogaster* Nitric Oxide Synthase: Unique Kinetic Parameters Enable a More Efficient NO Release. **Biochemistry** 46(42):11857-64. Epub 2007 Sep 27. * Corresponding Authors. **Impact Factor: 3.162**. https://www.ncbi.nlm.nih.gov/pubmed/17900148

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- S. K. Ghosh, **Sanjay Ghosh**, R. Ghacchui, A. Mandal **(2006)** Mercury and Organomercurial Resistance in Rhodotorularubra: Activation of Glutathione Reductase **Bulletin of Environmental Contamination and Toxicology** USA 77(3):351-8. **Impact Factor: 2.807** https://www.ncbi.nlm.nih.gov/pubmed/17033861

- D. K. Saha, **Sanjay Ghosh**, J. Chaudhuri and A. Mandal **(2006)** Mercury Resistance in Bacterial Strains Isolated from Hospitals and Clinics. **Bulletin of Environmental Contamination and Toxicology**USA77(1):88-95.**ImpactFactor:2.807** https://link.springer.com/article/10.1007%2Fs00128-006-1036-5

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- R. Sengupta, R. Sahoo, S. Sinha Ray, T. Dutta, A. Dasgupta, and **Sanjay Ghosh (2006)** Dissociation and unfolding of inducible nitric oxide synthase oxygenase domain identifies structural role of tetrahydrobiopterin in modulating the heme environment. **Molecular and Cellular Biochemistry** 284, 117–126. **Impact Factor: 3.842** https://www.ncbi.nlm.nih.gov/pubmed/16411020

- S. K. Ghosh, **Sanjay Ghosh**, J. Chaudhuri, R. Gachhui, and A. Mandal **(2004)** Studies on Mercury Resistance in Yeasts Isolated from Natural Sources. **Bulletin of Environmental Contamination and Toxicology** USA 72, 21-28. **Impact Factor: 2.807** https://www.ncbi.nlm.nih.gov/pubmed/15058650

- R. Sengupta, R. Sahoo, S. Mukherjee, M. Regulski, T. Tully, D. J. Stuehr, and **Sanjay Ghosh (2003)** Characterization of Drosophila Nitric Oxide Synthase: A Biochemical study **Biochemical and Biophysical Research Communication** 306, 590-597. **Impact Factor: 3.322** https://www.ncbi.nlm.nih.gov/pubmed/12804606

- R. Sahoo, R. Sengupta, and **Sanjay Ghosh (2003):** Nitrosative stress on yeast: inhibition of glyoxalase-I and glyceraldehydes-3-phosphate dehydrogenase in the presence of GSNO. **Biochemical and Biophysical**

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Ph.D. and Post-Doctoral Publications:

- K. Panda, R.J.Rosenfeld, **Sanjay Ghosh**, A. L. Meade, E. D. Getzoff, D.J. Stuehr **(2002):** Distinct dimer Interaction and regulation in nitric oxide synthase types I, II, and III. **The Journal of Biological Chemistry**, 277, 34, 31020-31030. https://www.ncbi.nlm.nih.gov/pubmed/12048205

- E. Blasko, C.B. Glaser, J.J. Devlin, W. Xia, R.I. Feldman, M.A. Polokoff, G.B. Phillips, M. Whitlow, D.S. Auld, K. McMillan, **Sanjay Ghosh**, Dennis J. Stuehr, and Parkinson, J. F. **(2002)** Mechanistic Studies with potent and selective inducible nitric oxide synthase dimerization inhibitors. **Journal of Biological Chemistry**, 277, 1,295-302. https://www.ncbi.nlm.nih.gov/pubmed/11689556

- K. Panda, **Sanjay Ghosh**, and Dennis J. Stuehr **(2001):** Calmodulin Activates Intersubunit Electron Transfer in the Neuronal Nitric-Oxide Synthase Dimer. The **Journal of Biological Chemistry**, 276, 26, 2334-23356. https://www.ncbi.nlm.nih.gov/pubmed/11325964

- M. Aoyagi, A. S. Arvai, **Sanjay Ghosh**, Dennis J. Stuehr, J. A. Tainer, and Getzoff, E. D. **(2001)** Structures of Tetrahydrobiopterin binding site mutants of inducible nitric oxide synthase oxygenase dimmer and implicated roles of Trp 457. **Biochemistry**, 40, 43, 12826-12832. https://www.ncbi.nlm.nih.gov/pubmed/11669619

- Z. Q. Wang, C. C. Wei, **Sanjay Ghosh**, A. L. Meade, C. Hemann, R. Hille, and Dennis J. Stuehr **(2001)** A conserved tryptophan in nitric oxide synthase regulates heme-dioxy reduction by tetrahydrobiopterin. Biochemistry, 40, 43, 12819-12825. https://www.ncbi.nlm.nih.gov/pubmed/11669618

- B.R. Crane, A. S. Arvai, **Sanjay Ghosh**, E. D. Getzoff, Dennis J. Stuehr **(2000)** Structures of the N omega)-hydroxy-L-arginine complex of inducible nitric oxide synthase oxygenase dimmer with active and inactive pterins. **Biochemistry**, 3, 16, 4608-4621. https://www.ncbi.nlm.nih.gov/pubmed/10769116

- **Sanjay Ghosh**, D. Wolan, S. Adak, B. R. Crane, N. S. Kwon, J. A. Tainer, E. Getzoff and Dennis J. Stuehr **(1999)** Mutational Analysis of the Tetrahydrobiopterin-binding Site in Inducible Nitric Oxide Synthase. **The Journal of Biological Chemistry**, 274, 34, 24100-24112. https://www.ncbi.nlm.nih.gov/pubmed/10446182

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- B. R. Crane, R. Rosenfeld, A. S. Arvai, D. K. Ghosh, **Sanjay Ghosh**, J. A. Tainer, D. J. Stuehr, and E. D. Getzoff **(1999)** N-terminal Domain Swapping and Metal-ion Binding in Nitric Oxide Synthase Dimerization. **The EMBO Journal**, 18, 22, 6271-6281. https://www.ncbi.nlm.nih.gov/pubmed/10562539

- S. Adak, **Sanjay Ghosh**, H. M. Abu-Soud and Dennis J. Stuehr **(1999)** Role of Reductase Domain Cluster 1 Acidic Residues in Neuronal Nitric Oxide Synthase: Characterization of the FMN-free Enzyme. **The Journal of Biological Chemistry**, 274, 32, 22313-22320. https://www.ncbi.nlm.nih.gov/pubmed/10428800

- **Sanjay Ghosh**, P. C. Sadhukhan, J. Chaudhuri, D. K. Ghosh, and A. Mandal **(1999)** Purification and properties of Mercuric Reductase from *Azotobacter chroococcum*. **The Journal of Applied Microbiology**, 86,7-12, U.K. Article first published online: 25 DEC 2001 | DOI: 10.1046/j.1365-2672.1999.00605.x http://onlinelibrary.wiley.com/doi/10.1046/j.1365-2672.1999.00605.x/abstract **Impact Factor: 4.059**

- **Sanjay Ghosh**, R. Gachhui, C. Crooks, C. Wu, M. P. Lisanti, and Dennis J. Stuehr **(1998)** Interaction between Caveolin–1 and the Reductase Domain of Endothelial Nitric Oxide synthase: Consequences for Catalysis. **The Journal of Biological Chemistry**, 273, 35, 22267-22271. https://www.ncbi.nlm.nih.gov/pubmed/9712842

- **Sanjay Ghosh**, P. C. Sadhukhan, , D. K. Ghosh, J. Chaudhuri, and A. Mandal **(1997)** Elimination of Mercury and Organomercurials by Nitrogen-Fixing Bacteria. **Bulletin of Environmental Contamination and Toxicology**, 58, 993-998, USA. https://www.ncbi.nlm.nih.gov/pubmed/9136665 **Impact Factor: 2.807**

- P.C.Sadhukhan, **Sanjay Ghosh**, D.K.Ghosh, J.Chaudhuri, and A. Mandal **(1997)** Mercury and organomercurial resistance in bacteria isolated from fresh water fish of Wetland Fisheries around Calcutta. **Environmental Pollution**, 97,71-78, U.K. https://www.ncbi.nlm.nih.gov/pubmed/15093380 **Impact Factor: 9.988**

- **Sanjay Ghosh**, P. C. Sadhukhan, D. K. Ghosh, J. Chaudhuri, and A. Mandal **(1996)** Volatilization of mercury from mercury containing buffer by immobilized mercury-resistant bacterial cells. **The Journal of Applied Bacteriology**, 81, 104-108, U.K. Article first published online: 11 MAR 2008 | DOI: 10.1111/j.1365-2672.1996.tb03288.x.http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2672.1996.tb03288.x/full **Impact Factor: 4.059**

- **Sanjay Ghosh**, P. C. Sadhukhan, D. K. Ghosh, J. Chaudhuri, and A. Mandal **(1996)** Studies on the effect of mercury and organomercurial on the growth and nitrogen fixation by mercury-resistant Azotobacter strains. **The Journal of Applied Bacteriology**, 80, 319-326, U.K.Article first published online: 11 MAR 2008 | DOI: 10.1111/j.1365-2672.1996.tb03226.xhttp://onlinelibrary.wiley.com/doi/10.1111/j.1365-2672.1996.tb03226.x/full **Impact Factor: 4.059**

- **Sanjay Ghosh**, P. C. Sadhukhan, , D. K. Ghosh, J. Chaudhuri, and A. Mandal **(1996)** Volatilization of mercury by resting mercury resistant bacterial cells. **Bulletin of Environmental Contamination and Toxicology**, 56, 259-264, USA. https://www.ncbi.nlm.nih.gov/pubmed/8720098 **Impact Factor:2.807**

- P. C. Sadhukhan, **Sanjay Ghosh**, D. K. Ghosh, J. Chaudhuri, and A. Mandal **(1996)** Accumulation of mercury in edible fish from Wetlands around Calcutta. **Indian Journal of Environmental Health**, 38, 261-268.

- D.K.Ghosh, **Sanjay Ghosh**, P.C.Sadhukhan, J.Chaudhuri, and A. Mandal **(1993)** Purification of two azoreductases from Escherichia coli K12. **Indian Journal of Experimental Biology**, 31, 951-954. https://www.ncbi.nlm.nih.gov/pubmed/8112774

b) ***Books/ book chapters*** *:*

- Dennis J. Stuehr, and **Sanjay Ghosh (2000)** Enzymology of NO Synthase in Nitric Oxide (**Hand Book of Experimental pharmacology**, Edited by Bernd Mayer) Vol 143, pp 33-70, Springer- Verlag Publ., Heidelberg. https://link.springer.com/chapter/10.1007/978-3-642-57077-3_3

- Pranjal Biswas, Uddalak Majumdar and **Sanjay Ghosh (2018)** Analysis of reverse transcribed mRNA using PCR and polyacrylamide gel electrophoresis. **Methods in Molecular Biology for *S. pombe*.** Edited by Teresa L. Singleton, Springer 2018; 1721:73-87. doi: 10.1007/978-1-4939-7546-4_7 https://www.ncbi.nlm.nih.gov/pubmed/29423848

- Tuhin Subhra Sarkar and **Sanjay Ghosh (2019)** Comparative analysis of Nitric Oxide Function and Signaling in Incompatible Versus Compatible Plant Pathogen Interaction. Published as Book Chapter in **Wings of Life Genomics Biodiversity and Life processes**. Edited by Asok Kanti Sanyal, **The Asiatic Society**, ISBN: 978-81- 941437-4-1. pp 85-104. Published in November 2019

- Ayantika Sengupta*, Subhamoy Chakraborty*, Sampurna Datta, and **Sanjay Ghosh (2023)** Cell Death-NO-Today: Effect of NO and RNS on Non-apoptotic Regulated Cell Death. In: Ray, A., Gulati, K. (eds) Nitric Oxide: From Research to Therapeutics. **Advances in Biochemistry in Health and Disease, vol 22**. Springer, Cham. https://doi.org/10.1007/978-3-031-24778-1_9 First Online: 08 March 2023 DOI: 10.1007/978-3-031-24778-1_9 Springer *Contributed equally.

c) Conference/ seminar volumes:

- Sanchita Biswas, Ayantika Sengupta, Subhojit Das, Alok Ghosh and **Sanjay Ghosh (2022)** S-nitrosylation of mitochondrial respiratory chain complex II in *Saccharomyces cerevisiae* under nitrosative stress. Conference

Abstract PP122 in the Abstract Book in **91st Annual Meeting of the Society of Biological Chemists (India)**, held on 8th to 11th December 2022.

- Ayantika Sengupta, Subhamoy Chakraborty, Sanchita Biswas and **Sanjay Ghosh (2022)** S-Nitrosoglutathione induces non-apoptotic cell death in K562 cell line. Conference Abstract PP123 in the Abstract Book in **91st Annual Meeting of the Society of Biological Chemists (India),** held on 8th to 11th December 2022.

- Nilanjan Sinha and **Sanjay Ghosh (2022)** Secretome analysis of phytopathogenic fungus *Macrophomina phaseolina* uncovers an array of putative virulence factors associated with Charcoal Rot Disease in Plants. Conference Abstract PP174 in Abstract Book in **91st Annual Meeting of the Society of Biological Chemists (India)**, held on 8th to 11th December 2022.

- Chirandeep Dey, Shuddhasattwa Samaddar and **Sanjay Ghosh (2022)** A complex regulatory role of Atf1 in Schizosaccharomyces pombe under nitrosative stress Conference Abstract PP091 in the Abstract Book in **91st Annual Meeting of the Society of Biological Chemists (India)**, held on 8th to 11th December 2022.

- Sourav Kumar Patra, Nilanjan Sinha, Souvik Roy, **Sanjay Ghosh** (**2021**) In vivo Protein Nitration and De-Nitration Facilitate *Vibrio cholerae* Cell Survival Under Anaerobic Nutrient Deprived Condition: Consequences of Nitrite Induced Protein Nitration. Poster Presentation in 28th Annual Conference Society for Redox Biology and Medicine's (SfRBM). **Free Radical Biology and Medicine**, Volume 180, Supplement 1, 20 February 2022, Page s94

- **Sanjay Ghosh**, Rupam Sahoo, Uddalak Majumdar, Arindam Bhattacharjee (**2008**) A novel role of catalase in detoxification of peroxynitrite in *S. cerevisiae*. P57 **Nitric Oxide**, 2008 - Academic Press

- D.K. Ghosh, **Sanjay Ghosh**, R. Gachhui, B.R. Crane, C. Wu, D.J. Stuehr (**1998**) Inducible NO synthase: Role of the N-terminus in subunit dimeric interaction and tetrahydrobiopterin binding. **FASEB Journal**, 12 (8), p. A1479.

d) ***Other publications***: Contributed in **Bigyan Kosh**: **An encyclopedia of Science and Technology**, 2010 Published by: Sishu Kishore Academy, I & B Dept., WB Govt.

12. Membership of Learned Societies:

- Life member of **The Society For Free Radical Research – India**
- Life member of **Society of Biological Chemists (SBC), India**
- Life member of **Indian Science Congress, India Indian Science Congress Association (ISCA).**
- Fellow Membership (**F.I.S.B.T.**) is awarded by the **International Society of Biotechnology in 2008.**

13 Patents: Not Applicable

14. **Invited lectures delivered:**
International Seminar/Symposium

(i) Invited Speaker in the Third International Conference on Biochemistry and Molecular Biology of Nitric Oxide, July 11-15, **1998 University of California, Los Angeles, USA**. Conference Chairman- Prof. Louis J. Ignarro, Nobel Prize Winner in the field of medical Science, 1998: Title of the Presentation: High Affinity Interaction between Caveolin-1 and the Reductase Domain of Endothelial Nitric Oxide Synthase.

(ii) Invited abstract presentation in Fifth International Nitric Oxide: Biology, Chemistry and Therapeutic Applications held on 24-28th August, **2008** at **Bregenz, Austria**. Title of the abstract: Role of catalase in peroxynitrite detoxification in Saccharomyces cerevisiae.

(iii) Invited Speaker in International Conference on Omics Meets Disease and IIIrd Annual Meeting of Proteomics Society (India) held on 15th -18th December, **2011**, **SINP Auditorium Complex, Salt Lake** organized by Saha

Institute of Nuclear Physics (SINP), Indian Institute of Chemical Biology (CSIR-IICB), University of Calcutta & Proteomics Society. Title of Lecture: Proteomic Analysis of Tyrosine Nitrated Proteins in *Saccharomyces cerevisiae*.

(iv) Invited Speaker in International Symposium on "Legacy of Nitric Oxide Discovery: Impact on Disease Biology" November 5-6, **2013** at **Rajib Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala** Jointly Organized by Rajiv Gandhi Centre for Biotechnology (RGCB), Department of Biotechnology (DBT) and Srinivasa Ramanujan Institute for Basic Sciences (SRIBS), Kerala State Council for Science, Technology and Environment (KSCSTE).

(v) Invited Speaker in International Conference on "Developments in the Science of Oxidative Stress and Redox Medicine (**SFRR-INDIA-DISCOVER-2024**)" along with its 18th Annual Meeting at the **DAE Convention Centre, Anushaktinagar, Mumbai** from November 6-9, **2024** organized by The Society For Free Radical Research – India & Bhabha Atomic Research Centre, Mumbai.

National Seminar/Symposium

(i) Invited Speaker in the 69th Annual Meeting of **Society of Biological Chemists**, India held on November, 24-26, **2000** at **Kolkata.**

(ii) Invited Speaker in the conference on **Small Scale Industrial Enzymes Production** organized by Small Scale Industry Sector Awareness Programme, Department of Biotechnology, Govt. of India, at **Dinabandhu Andrews College** in the year **2002**. Title of the lecture: Solid State Fermentation.

(iii) Invited Speaker in the UGC sponsored seminar on **Industrial Enzymes** organized by **Sammilani Mahavidyalaya**, **Kolkata** in the year **2003**. Title of the lecture: Extremophilic Cellulases and Xylanases from Fungus.

(iv) Invited Speaker in the 76th Annual Meeting of **Society of Biological Chemists**, India held on **November, 26-28**, **2007** at **S.V.U Tirupati**. Title of Lecture: Nitrosative stress response in yeast.

(v) Invited Speaker in UGC sponsored Seminar on **Changing Facets of Microbiology in 21st Century** organized by **Department of Microbiology**, **Lady Brabourne College**, **Kolkata** on **27-28th November**, **2008**. Title of Lecture: Characterizing the effect of nitrosative stress on mitochondria.

(vi) Invited Speaker in UGC sponsored Seminar on **Journey of Microbiology: Evolution to its Modern Age Application** organized by **Department of Microbiology**, **Tara Devi Harakh Chand Kankaria Jain College, Kolkata** on **22nd January**, **2011**. Title of Lecture: Journey of Microbiology: Evolution to its Modern Age Application.

(vii) Invited Speaker in UGC sponsored Seminar on Microbiology: **Development and Challenges in Basic and Applied Research** organized by **Department of Microbiology**, **Ramkrishna Mission Vidyamandir, Belur Math, Howrah** on **7th April, 2011**. Title of Lecture: The effect of nitrosative stress on mitochondria.

(viii) Invited Speaker in DBT Star College Programme Workshop on **Techniques to Explore the Frontier of Modern Biological Sciences**: Organized by Post Graduate **Department of Zoology, Maulana Azad College** on 8th-**10th November, 2011**. Title of Lecture: The effect of nitrosative stress on cells.

(ix) Invited Speaker in **Refresher Course in Life Science** (thrust area: Organism to System) organized by Academic Staff College, University of Calcutta on **December 5, 2013** Venue: **Dept. of Zoology, University of Calcutta**. Title of Lecture: "Effect of Nitrosative Stress in cell"

(x) Invited Speaker in National Conference on **"Plant-Microbe Interactions"** on **5th & 6th November**, **2014** at **AGRI BIOTECH FOUNDATION, Hyderabad**. Title of Lecture: Nitric Oxide Production in Compatible Interaction: Complexity of the Interplay between Pathogen and Host Plant.

(xi) Invited Speaker in the **Refresher Course in Life Science** organized by Academic Staff College on **December 14, 2015** in the **Dept. of Botany, University of Calcutta**. Title of Lecture: The Role of Nitric Oxide and Reactive Nitrogen Species in Compatible Plant Microbe Interaction.

(xii) Invited Speaker in UGC-Sponsored National Seminar on **Modern Trends in Environmental Microbiology** on **January 31, 2017** organized by **Dept. of Microbiology**, **Scottish Church College**. Title of Lecture: The Role of Nitric Oxide and Reactive Nitrogen Species in Compatible Plant Microbe Interaction.

(xiii) Invited Speaker in third **Annual Symposium in Genetics** organized by **Dept. of Genetics, University of Calcutta** on **March 11, 2017**. Title of Lecture: Nitrosative Stress Responses in *Schizosaccharomyces pombe*.

(xiv) Invited Technical session Chairperson in a Workshop on **B.Sc. Part-III BIOCHEMISTRY (Honours) Practical on Microbiology**, University of Calcutta for College Teachers on **July 5 and 6**, **2017.** Venue: **DBT-BOOST LABORATORY, Asutosh College.**

(xv) Invited Speaker in Department Colloquium on **Aug 2, 2017** at **Department of Biological Sciences at IISER, Kolkata**. Title of Lecture: Nitrosative Stress Responses in *Schizosaccharomyces pombe*.

(xvi) Invited Keynote Address Speaker in UGC Sponsored National Seminar on **Applied Microbiology Microbial World 2017** in the **Dept. of Microbiology, North Bengal University** on **September 4, 2017.**

(xvii) Invited Speaker in Departmental Seminar on **February 12, 2018** at **Department of Microbiology, Sammilani Mahavidyalaya.** Title of Lecture: Current perspective on the disease Malaria.

(xviii) Invitation to deliver a lecture on **6th December 2018** in the Conference room of the **Department of Biochemistry, IISc, Bangalore**. Title of Lecture: Nitrosative stress response mechanisms in Schizosaccharomyces pombe.

(xix) Invitation to deliver a lecture at the **Refresher Course in Biological Sciences** on **4th of January 2019**, at 3:30 PM at the NR Sen Auditorium of the Rajababazar Science College Campus. Title of Lecture: Nitrosative stress response mechanisms in *Schizosaccharomyces pombe*.

(xx) Invitation to deliver a lecture at the **Refresher Course in Life Sciences** on **10 th of January 2019**, at 3:30 PM at the Dept. of Botany, University of Calcutta. Title of Lecture: Understanding proteins in the post genomic era.

(xxi) Invited speaker for the webinar series on "**Making Sense of Uncertainty: Coping in the Era of Corona virus**" on **31st July 2020** from 10:30 am organized by Department of Microbiology Dhruba Chand Halder College & Raidighi College. Title of Lecture: **Industrial Applications of Microbiology.**

(xxii) Invited speaker for the webinar series on **"Microbiology: Industrial Applications and Sustainable Development"** on **28th August 2020**, from 10.30 am organized by Department of Microbiology and IQAC, THK Jain College. Title of Lecture: **"Art of Food Preservation Techniques".**

(xxiii) Invited speaker for the webinar on **3rd November**, **2020**, from 5.30 pm organized by Department of Biochemistry, Asutosh College. Title of Lecture: **"History of Biochemistry Research in India".**

(xxiv) Invited speaker for National level webinar: A popular lecture on **'Journey of Microbiology: Evolution to its modern age applications'** on **28th February**, **2021** to celebrate National Science Day, Dept. of Microbiology, Scottish Church College in collaboration with the Internal quality assurance cell (IQAC) and Microbiologist Society of India.

(xxv) Invited speaker in **Refresher Course in Life Sciences** (Interdisciplinary), UGC-HRDC, NBU on **March 15**, **2021**. Title of Lecture: Understanding proteins in the post genomic era.

(xxvi) Invited speaker in **Fall Session Orientation Lecture for Undergraduate** (3rd and 5th semester) and Postgraduate (3rd semester) students of Department of Microbiology, Lady Brabourne College, on **3rd September, 2021**, on Google platform., at 3 pm. Title of Lecture: **'Journey of Microbiology: Evolution to its modern age applications'**

(xxvii) Invited speaker in 5 Days Faculty Development Programme (FDP) on "**Recent Paradigm for understanding cellular physiology and pathophysiology**" organized by Amity University, Kolkata, on **July 22, 2022** at 2 pm. Title of Lecture: **Nitrosative stress response**.

(xxviii) Invited speaker in **Interdisciplinary Refresher Course in Modern Biology**, organized by UGC-Human Resource Development Centre, University of Calcutta, on **8th December 2022** at 10.30am. Title of Lecture: '**Journey of Microbiology: its modern age applications'**

(xxix) Invited speaker in **91st Annual Meeting of the Society of Biological Chemists (India)**, held on 8th to **11th December 2022 at the Biswa Bangla Convention Centre, Kolkata**. Date: 11th December at 11 A.M in the Section Modern Biochemistry II. Title of the lecture: "**Complex regulation of cell cycle and stress responses under nitrosative stress in *Schizosaccharomyces pombe*".**

(xxx) Invited speaker for **Gopal Chandra Bhattacharyya Memorial Lecture** organized by Bangiya Bignan Parishod. Date: **August 1, 2023**, Venue: Satyendra Bhavan, Time: 5 PM., Title: **Human Microbiome and its effect.**

(xxxi) Invited speaker in **Regional Young Investigators' Meeting-Kolkata 2023-2024** in Presidency University, Kolkata on **8th December, 2023**. Title of Lecture: **Teaching and Research Ethics in Academia.**

(xxxii) Invited speaker in a One Day Symposium titled "INTERDISCIPLINARY APPROACHES TO MODERN BIOLOGY" on **JUNE 21, 2024** (FRIDAY) at the Unified Academic Campus (UAC), Bose Institute, Kolkata, Salt Lake, Sector-V Department of Biological Sciences, Bose Institute. Title of the lecture: "**Complex regulation of cell cycle and stress responses under nitrosative stress in *Schizosaccharomyces pombe*".**

(xxxiii) Invited speaker in National Conference of SOCIETY FOR NITRIC OXIDE AND ALLIED RADICALS (SNOAR) held on **26th September 2024** at Hamdard Institute of Medical Sciences and Research, New Delhi. (Theme: **Nitric Oxide: Impact on Health and Disease**). Title of the lecture: "Impact of excess NO on cell cycle progression and stress response in *Schizosaccharomyces pombe*: A model system to understand pathophysiology".

(xxxiv) Invited speaker in Vivekananda College, Kolkata to commemorate the occasion of centenary celebration of Prof. J.J.Ghosh on **September 30, 2024** seminar jointly organized by Prof. J. J. Ghosh Foundation and Vivekananda College. Title of the lecture: "Human Microbiome"

15. **Awards:**

- Fellow of West Bengal Academy of Science and Technology (WAST) for the year 2022
- Recipient of UGC Mid Career Award for the year 2021.
- Recipient for the Prof. B. K. Bachhawat International Travel Grant for Young Scientists for the year 2008.
- Recipient for the DST Travel Grant, Govt. of India for Young Scientists for the year 2008.
- Project Scientist in the Dept. of Immunology, The Cleveland Clinic Foundation, The Learner Research Institute in the year 1999.
- Post-Doctoral Fellowship in Dept. of Immunology, the Cleveland Clinic Foundation, 1997.
- ISCA Young Scientist Award for the year 1995, in the 82nd Session of the Indian Science Congress Association, Calcutta.
- Qualified in the National Eligibility Test (NET) for Junior Research Fellowship conducted jointly by Council of Scientific and Industrial Research (CSIR) and University Grants Commission (UGC), 1992.
- Qualified in Graduate Aptitude Test in Engineering (GATE), 1992 conducted by Human Resource Development Group, Government of India.
- National Scholarship by Govt. of India, 1984.

15. **A. Workshop/Symposium organized:**

Organized three-day hands-on workshop with the Department of Botany entitled "Techniques in Microbiology" from September 11-13, 2024 in the Department of Biochemistry, CU. Funded by RUSA.

16. **Other notable activities**:

- DBT representative in the Institutional Biosafety Committee (IBSC) of EAST INDIA PHARMACEUTICAL WORKS LTD (EIPEL-03), KOLKATA (2023-till date).
- Invited Reviewing Board Member of International Science Journals of Elsevier, Springer, Wiley, Taylor and Francis, Frontiers.
- Associate Faculty Member, Centre for Research in Nanoscience &Nanotechnology (CRNN), University of Calcutta.
- Project Evaluator Technical in IFB Agro Industries Limited with effect from 1st January, 2020-31st December, 2022.
- Jt. Coordinator, DBT-RRSFP: BUILDER level III (University of Calcutta, Kolkata, West Bengal) (2021-2025).
- Member, Ph. D. RAC Research Advisory Committee in Biochemistry, University of Calcutta (17.08.2023-16.08.2027).
- Vice Chancellor's nominee, Post Graduate Board of Studies in Microbiology in Bidhannagar College affiliated to West Bengal State University Kolkata (2022-2026).
- Vice Chancellor's nominee, Post Graduate Board of Studies in Biochemistry, West Bengal State University (2022-till date)
- Vice Chancellor's Nominee in the Governing Body, Mahitosh Nandi Mahavidyalaya, Jungipara (2021-till date)
- Head, Dept. of Biochemistry, University of Calcutta (14.01.2019-18.01.2021).
- Member, Ph. D. RAC Research Advisory Committee in Biochemistry, University of Calcutta (14.01.2019-18.01.2021).
- Chairperson, Under Graduate Board of Studies (UGBOS) in Microbiology, University of Calcutta, (2015-July 2021).
- Convenor, Ph. D. Research Advisory Committee (RAC) in Genetics, University of Calcutta (2016-Oct, 2021).
- External Member, Ph.D. Research Advisory Committee (RAC) in Biotechnology, Presidency University (2021-till date).
- External Board of Studies Member, M.Sc. Ph.D. programme in Life Science, Bose Institute (2020-till date).
- External Board of Studies Member for the School of Applied and Interdisciplinary Sciences (SAIS), Indian Association for the Cultivation of Sciences (IACS), Jadavpur (2021-till date).
- External Member PGBOS, Post Graduate Board of Studies Member in Microbiology, Raigunge University (2021-till date).
- Member, Ph.D. Research Advisory Committee Member (RAC) in Nanoscience and Nanotechnology, CRNN, University of Calcutta (2016-2020).
- Coordinator, DST-FIST Phase III, Dept. of Biochemistry, University of Calcutta (2019-2021).
- Coordinator, UPE-II, Beneficial Plant-Microbe Interaction (2015-2020).
- Vice Chancellor's nominee in Post Graduate Board of Studies in Microbiology in APC College, West Bengal State University (2016-2020).
- Vice Chancellor's nominee, Post Graduate Board of Studies in Microbiology in St. Xavier's College, Kolkata (2015-2018).
- Acted as Local Secretary, ISCA, New Biology (including Biochemistry, Biophysics & Molecular Biology and Biotechnology), 100th Indian Science Congress, Kolkata, January 3rd to 7th, 2013

- Deputy Coordinator, Centre for Advanced Studies in Biochemistry (CAS) Phase-II, 2012-2017 Dept. of Biochemistry, University of Calcutta.
- Acted as DST-FIST Phase II (2008-2012) implementation committee member.
- Acted as an Expert member of the Ph.D. Committee of Dept. of Biotechnology and Life Sciences, Jadavpur University (2008-2012).
- Secretary, Society of Biological Chemists (SBC) Kolkata Chapter (Aug, 2007-March, 2008).
- Member of Under Graduate Board of Studies (UGBOS) in Microbiology (2006-2015).
- Visiting Teacher (P.G.) Department of Biotechnology, Ravenshaw University, Cuttack, Orissa (2001-2005).
- Invited Reviewer in Major research project, (i) Department of Science and Technology (DST) (ii) Department of Atomic Energy (DAE) (iii) Department of Biotechnology (DBT) (2004-till date)
- Guest Faculty: Dept. of Biotechnology, Environmental Science, Genetics, Microbiology, and Neuroscience, University of Calcutta (2001-2020). Subjects taught: Microbiology, Cell Biology, and Fermentation Technology. School of Life Sciences, Bose Institute, School of Applied and Interdisciplinary Sciences (SAIS), Indian Association for the Cultivation of Sciences (IACS), Jadavpur (2019-2021).
- Coordinator, Paper Setter, Moderator in Theory and Practical Papers of Under Graduate Microbiology, University of Calcutta (2001-till date).