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EDUCATION

Postdoctoral Visiting Fellow, National Cancer Institute, Frederick, Maryland, USA	Sep. 2006-Jul. 2009.
Postdoctoral Research Associate, Wake Forest University, North Carolina, USA	Jan. 2006-Aug. 2006.
Ph.D., Duke University, North Carolina, USA	Aug 1999-Dec. 2005.
M.Sc., Chemistry, Indian Institute of Technology, Madras	Jul. 1997-May 1999
B.Sc., Chemistry, Loyola College, University of Madras	Jul. 1994- May 1997

PROFESSIONAL EXPERIENCE

Professor, Indian Institute of Science Education and Research, Pune.	May 2020 – present.
Associate Professor, Indian Institute of Science Education and Research, Pune.	Jul. 2015-May 2020.
Assistant Professor, Indian Institute of Science Education and Research, Pune.	Jul. 2009-Jul. 2015.

PUBLICATIONS

1. Chaudhary, B.S.; Anand Kumar, T.; Vashishta, A.; Tejasri, S.; Kumar, A. S.; Agarwal, R.; **Chakrapani, H.** "An Esterase-Cleavable Persulfide Donor with No Electrophilic Byproducts and a Fluorescence Reporter" *Chemical Communications*, **2024**, 60, 1727-1730.
2. Sawase, L.; Anand Kumar, T.; Mathew, A. B.; Khodade, V. S.; Toscano, J. P.; Saini, D. K.; **Chakrapani, H.** "β-Galactosidase-activated nitroxyl (HNO) donors provide insights into redox cross-talk in senescent cells" *Chemical Communications*, **2023**, 59, 12751-12754.
3. Kumari, P.; Kaul, G.; Anand Kumar, T.; Akhir, A.; Shukla, M.; Sharma, S.; Kamat, S.S.; Chopra, S.; **Chakrapani, H.** "Heterocyclic Diaryliodonium-Based Inhibitors of Carbapenem-Resistant *Acinetobacter baumannii*" *Microbiology Spectrum* **2023**, 11, 2, e04773-22.
4. Sawase, L.; Jishnu, C.V.; Manna, S.; Chakrapani, H. "A modular scaffold for triggerable and tunable nitroxyl (HNO) generation with a fluorescence reporter" *Chemical Communications*, **2023**, 59, 3415-3418.
5. Gupta, K.; Mathew, A. B.; **Chakrapani, H.**; Saini, D. K. "H₂S contributed from CSE during cellular senescence suppresses inflammation and nitrosative stress" *Biochimica et Biophysica Acta* **2023**, 1870, 119388
6. Shee, S.; Singh, S.; Tripathi, A.; Thakur, C; Kumar, T. A.; Das, M.; Yadav, V.; Kohli, S., Rajmani R.S.; Chandra, N.; **Chakrapani, H.**; Drlica, K.; Singh, A. "Moxifloxacin-Mediated Killing of Mycobacterium tuberculosis Involves Respiratory Downshift, Reductive Stress, and Accumulation of Reactive Oxygen Species" *Antimicrobial Agents and Chemotherapy* **2022**, 66, e0059222.
7. Bora, P.; Sathian, M.B.; **Chakrapani, H.** "Enhancing Cellular Sulfane Sulfur Through β-glycosidase-Activated Persulfide Donors: Mechanistic Insights and Oxidative Stress Mitigation" *Chemical Communications*, **2022**, 58, 2987–2990.
8. Bora, P.; Manna, S.; Nair, M.; Sathe, R.M.S.; Singh, S.; Adury, V.S.S.; Gupta, K.; Mukherjee, A.; Saini, D. K.; Kamat, S.S.; Hazra, A. B.; **Chakrapani, H.** "Leveraging an Enzyme/ Artificial Substrate System to Enhance Cellular Persulfides and Mitigate Neuroinflammation" *Chemical Science*, **2021**, 12, 12939-12949.
9. Khandelwal, N.; Shaikh, M.; Mhetre, A.; Balaji, K. N.; **Chakrapani, H.**; Kamat, S. S. "Fatty acid chain length drives lysophosphatidylserine-dependent immunological outputs" *Cell Chemical Biology*, **2021**, 28, 1169-1179
10. Malwal, S. R.; Pardeshi, K. A.; Chakrapani, H. "Synthesis and evaluation of cyclic sulfite diesters as sulfur dioxide (SO₂) donors" *ChemBioChem*, **2020**, 8, 1201-1205.
11. Chauhan, P.; Gupta, K.; Ravikumar, G.; Saini, D. K.; **Chakrapani, H.** "Carbonyl Sulfide (COS) Donor Induced Protein Persulfidation Protects against Oxidative Stress" *Chemistry, an Asian Journal*, **2019**, 14, 4717–4724 (Selected as a VIP article; Special Issue to Celebrate the 20th Anniversary of Chemical Research Society of India)

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12. Kulkarni, A.; Soni, I.; Kelkar, D.S. Dharmaraja, A. T.; Sankar, R. K.; Beniwal, G.; Rajendran, A.; Tamhankar, S.; Chopra, S.; Kamat, S. S.; **Chakrapani, H.** "Chemoproteomics of an Indole-Based Quinone-Epoxyde identifies druggable vulnerabilities in Vancomycin resistant *Staphylococcus aureus* (VRSA)" *Journal of Medicinal Chemistry*, **2019**, 62, 6785-6795. ([Press coverage in India Science Wire, The Hindu, IndiaBioScience, Businessline](#))
13. Sharma, A. K.; Singh, H.; **Chakrapani, H.** "Photocontrolled Endogenous Reactive Oxygen Species (ROS) Generation" *Chemical Communications*, **2019**, 55, 5259-5262.
14. Pardeshi, K. A.; Anand Kumar, T.; Ravikumar, G.; Kaul, G.; Shukla, M.; Chopra, S.; **Chakrapani, H.** "Targeted Antibacterial Activity Guided by Bacteria-Specific Nitroreductase Catalytic Activation to Produce Ciprofloxacin" *Bioconjugate Chemistry*, **2019**, 30, 751-759.
15. Kelkar, D.; Ravikumar, G.; Mehendale, N.; Singh, S.; Joshi, A.; Sharma, A. K.; Mhetre, A.; Rajendran, A.; **Chakrapani, H.**; Kamat, S. S. "A chemical-genetic screen identifies ABHD12 as an oxidized-phosphatidylserine lipase" *Nature Chemical Biology*, **2019**, 15, 169-178. ([Press coverage in Vigyan Prasar, India Science Wire, Biotech Times, The Hindu BusinessLine](#))
16. Bora, P.; Chauhan, P.; Manna, S.; **Chakrapani, H.** "A Vinyl-Boronate Ester-Based Persulfide Donor Controllable by Hydrogen Peroxide, a Reactive Oxygen Species (ROS)" *Organic Letters*, **2018**, 20, 7916-7920.
17. Chauhan, P.; Jos, S.; **Chakrapani, H.** "Reactive Oxygen Species (ROS)-Triggered Tunable Hydrogen Sulfide (H₂S) Release" *Organic Letters*, **2018**, 20, 3766-3770. ([Selected as a part of "Letters from India, a collection featuring the work of organic chemists in India" by Editors of Organic Letters](#))
18. Kumari, P.; Kulkarni, A.; Sharma, A. K.; **Chakrapani, H.** "Visible-Light Controlled Release of a Fluoroquinolone Antibiotic for Antimicrobial Photopharmacology" *ACS Omega*, **2018**, 3, 2155-2160.
19. Pardeshi, K. A.; Ravikumar, G.; **Chakrapani, H.** "Esterase Sensitive Self-Immolative Sulfur Dioxide (SO₂) Donors" *Organic Letters*, **2018**, 20, 4-7.
20. Ravikumar, G.; Bagheri, M.; Saini, D. K.; **Chakrapani, H.** "A small molecule for theraNOstic targeting of cancer cells" *Chemical Communications*, **2017**, 53, 13352-13355.
21. Sharma, A. K.; Nair, M.; Chauhan, P.; Gupta, K.; Saini, D. K.; **Chakrapani, H.** "Visible-Light-Triggered Uncaging of Carbonyl Sulfide for Hydrogen Sulfide (H₂S) Release" *Organic Letters* **2017**, 19, 4822-4825.
22. Shukla, P.; Khodade, V. S.; SharathChandra, M.; Chauhan, P.; Mishra, S.; Siddaramappa, S.; Bulagonda, E. P.; Singh, A.; **Chakrapani, H.** "On Demand" Redox Buffering by H₂S Contributes to Antibiotic Resistance Revealed by a Bacteria-Specific H₂S Donor" *Chemical Science* **2017**, 8, 4967-4972. ([Press coverage in The Hindu, IndiaBioScience, Sakal Times](#))
23. Ravikumar, G.; Bagheri, M.; Saini, D. K.; **Chakrapani, H.** "FLUORO/NO, a Nitric Oxide Donor with a Fluorescence Reporter" *ChemBioChem*, **2017**, 18, 1529-1534
24. Chauhan, P.; Bora, P.; Ravikumar, G.; Jos, S.; **Chakrapani, H.** "Esterase Activated Carbonyl Sulfide/Hydrogen Sulfide (H₂S) Donors" *Organic Letters* **2017**, 19, 62-65.
25. Khodade, V.S.; Kulkarni, A.; Sen Gupta, A.; Sengupta, K.; **Chakrapani, H.** "A Small Molecule for Controlled Generation of Peroxynitrite" *Organic Letters* **2016**, 18, 1274-1277.
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27. Tyagi, P.; Dharmaraja, A. T.; Bhaskar, A.; **Chakrapani, H.**; Singh, A. "Mycobacterium tuberculosis has diminished capacity to counteract redox stress induced by elevated levels of endogenous superoxide" *Free Radical Biology and Medicine*, **2015**, 84, 344-354. ([Press coverage in Pune Mirror](#))
28. Malwal, S. R.; **Chakrapani, H.** "Benzosulfones as Photochemically Activated Sulfur Dioxide (SO₂) Donors" *Organic and Biomolecular Chemistry*, **2015**, 13, 2399-2406.
29. Sankar, R. K.; Kumbhare, R. S.; Dharmaraja, A. T.; **Chakrapani, H.** "A Phenacrylate Scaffold for Tunable Thiol Activation and Release" *Chemical Communications*, **2014**, 50, 15323-15326.
30. Dharmaraja, A. T.; Jain, C.; **Chakrapani, H.** "Substituent Effects on Reactive Oxygen Species (ROS) Generation by Hydroquinones" *The Journal of Organic Chemistry*, **2014**, 79, 9413-9417.
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33. Dharmaraja, A. T.; Ravikumar, G.; **Chakrapani, H.** "Arylboronate Ester Based Diazeniumdiolates (BORO/NO), a Class of Hydrogen Peroxide Inducible Nitric Oxide (NO) Donors" *Organic Letters*, **2014**, 16, 2610-2613.
34. Dharmaraja, A. T.; **Chakrapani, H.** "A Small Molecule for Controlled Generation of Reactive Oxygen Species (ROS)" *Organic Letters*, **2014**, 16, 398-401.
35. Sharma, K.; Sengupta, K.; **Chakrapani, H.** "Nitroreductase Activated Nitric Oxide Prodrugs" *Bioorganic and Medicinal Chemistry Letters*, **2013**, 23, 5964-5967.
36. Sharma, K.; Iyer, A.; Sengupta, K.; **Chakrapani, H.** "INDQ/NO, a Bioreductively Activated Nitric Oxide Prodrug" *Organic Letters*, **2013**, 15, 2636-2639.

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38. Dharamaraja, A. T.; Alvala, M.; Sriram, D.; Yogeeswari, P.; **Chakrapani, H.** "Design, synthesis and evaluation of small molecule reactive oxygen species generators as selective *Mycobacterium tuberculosis* inhibitors" *Chemical Communications*, **2012**, *48*, 10325-10327.
39. Malwal, S. R.; Sriram, D.; Yogeeswari, P.; **Chakrapani, H.** "Synthesis and antimycobacterial activity of prodrugs of sulfur dioxide (SO₂)" *Bioorganic and Medicinal Chemistry Letters*, **2012**, *22*, 3603-3606.
40. Khodade, V. S.; Dharamaraja, A. T.; **Chakrapani, H.** "Synthesis, reactive oxygen species generation and copper-mediated nuclease activity profiles of 2-aryl-3-amino-1,4-naphthoquinones" *Bioorganic and Medicinal Chemistry Letters*, **2012**, *22*, 3766-3769.
41. Malwal, S. R.; Sriram, D.; Yogeeswari, P.; Konkimalla, V. B.; **Chakrapani, H.** "Design, Synthesis and Evaluation of Thiol-Activated Sources of Sulfur Dioxide (SO₂) as Antimycobacterial Agents" *Journal of Medicinal Chemistry*, **2012**, *55*, 553-557 (Highlighted in *Chemical & Engineering News*: <http://cen.acs.org/articles/89/web/2011/12/Hitting-TB-Toxic-Gas.html>; Press coverage: *Times of India*; *Financial Express* and *Maharashtra Times*)
42. Dharamaraja, A. T.; Dash, T. K.; Konkimalla, V. B.; **Chakrapani, H.** "Synthesis, Thiol-Mediated Reactive Oxygen Species Generation Profiles and Anti-Proliferative Activities of 2,3-Epoxy-1,4-Naphthoquinones" *Medicinal Chemistry Communications*, **2012**, *3*, 219-224.
43. Holland, R.; Maciag, A. E.; Kumar, V.; Shi, L.; Saavedra, J. E.; Prud'homme, R.; **Chakrapani, H.**; Keefer, L. K. "Crosslinking Protein Glutathionylation Mediated by O²-Arylated Bis-Diazeniumdiolate "Double JS-K"" *Chemical Research in Toxicology*, **2012**, *25*, 2670-2677.
44. Maciag, A. E.; Holand, R. J.; Saavedra, J. E.; **Chakrapani, H.**; Shami, P. J.; Keefer, L. K. "Thiol Modification By Pharmacologically Active Agents of the Diazeniumdiolate Class" *Forum on Immunopathological Diseases and Therapeutics* **2012**, *3*, 91-95.
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49. Nandurdikar, R. S.; Maciag, A. E.; Hong, S. Y.; **Chakrapani, H.**; Citro, M. L.; Keefer, L. K.; Saavedra, J. E. "Glycosylated PROLI/NO Derivatives as Nitric Oxide Prodrugs" *Organic Letters*, **2010**, *12*, 56-59.
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51. Rai, G.; Sayed, A. A.; Lea, W. A.; Luecke, H.; **Chakrapani, H.**; Prast-Nielsen, S.; Jadhav, A.; Leister, W.; Shen, M.; Inglese, J.; Austin, C. P.; Keefer, L. K.; Arnér, E. S. J.; Simeonov, A.; Maloney, D. J. Williams, D. L.; Thomas, C. J. "Structure-Mechanism Insights and the Role of Nitric Oxide Donation Guide the Development of Oxadiazole-2-Oxides as Therapeutic Agents against Schistosomiasis" *Journal of Medicinal Chemistry* **2009**, *52*, 6474-6483.
52. Hong, S. Y.; Nandurdikar, R. S.; Saavedra, J. E.; Keefer, L. K.; **Chakrapani, H.** "An improved synthesis of V-PROLI/NO, a cytochrome P450-activated nitric oxide prodrug" *Tetrahedron Letters* **2009**, *50*, 4545-4548.
53. Nandurdikar, R. S.; Maciag, A. E.; Citro, M. L.; Shami, P. J.; Keefer, L. K.; Saavedra, J. E.; **Chakrapani, H.** "Piperazine and homopiperazine analogues of JS-K, an anti-cancer lead compound" *Bioorganic and Medicinal Chemistry Letters* **2009**, *19*, 2760-2762.
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55. **Chakrapani, H.**; Bartberger, M. D.; Toone, E. J. "C-Nitroso donors of Nitric Oxide" *The Journal of Organic Chemistry* **2009**, *74*, 1450-1453 (Featured Article).
56. Andrei, D. A.; Maciag, A. E.; **Chakrapani, H.**; Citro, M. L.; Keefer, L. K.; Saavedra, J. E. " Aryl-bis(Diazeniumdiolates): Potent Inducers of S-Glutathionylation of Cellular Proteins and Their *in Vitro* Anti-proliferative Activities" *Journal of Medicinal Chemistry* **2008**, *51*, 7944-7952.
57. **Chakrapani, H.**; Maciag, A. E.; Citro, M. L.; Keefer, L. K.; Saavedra, J. E. "Cell-permeable Esters of Diazeniumdiolate Nitric oxide Prodrugs" *Organic Letters* **2008**, *10*, 5155-5158.

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61. **Chakrapani, H.**; Showalter, B. M.; Citro, M. L.; Keefer, L. K.; Saavedra, J. E. "Nitric Oxide Prodrugs: Diazeniumdiolates of Hindered Secondary Amines" *Organic Letters* **2007**, *9*, 4551-4554.
62. **Chakrapani, H.**; Showalter, B. M.; Kong, L.; Keefer, L. K.; Saavedra, J. E. "V-PROLI/NO, a Prodrug of the Nitric Oxide donor, PROLI/NO" *Organic Letters* **2007**, *9*, 3409-3412.
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65. **Chakrapani, H.**; Liu, C.; Widenhoefer, R. A. "Enantioselective Cyclization/Hydrosilylation of 1,6-Enynes Catalyzed by a Cationic Rhodium Bis(phosphine) Complex" *Organic Letters* **2003**, *5*, 157-159.
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REVIEWS AND BOOK CHAPTERS

68. Bora, P.; Chauhan, P. Pardeshi, K. A.; **Chakrapani, H.** "Small molecule generators of biologically reactive sulfur species" *RSC Advances* **2018**, *8*, 27359-27374 (Invited Review, 10th Anniversary of Chemical Frontiers, Goa).
69. Kulkarni, A.; Sharma, A. K.; **Chakrapani, H.** "Redox-Guided Small Molecule Antimycobacterials" *IUBMB Life* **2018**, *70*, 826-835 (Invited Review, Special Issue on New Advances in Tuberculosis Drug Discovery and Therapy).
70. Ravikumar, G.; **Chakrapani, H.** "Synergistic Activities of Nitric Oxide and Various Drugs" in NITRIC OXIDE DONORS, Novel Biomedical Applications and Perspectives **2017** Academic Press 293-307 (Book Chapter)
71. Soni I.; **Chakrapani H.**; Chopra S. "Draft Genome Sequence of Methicillin-Sensitive *Staphylococcus aureus* ATCC 29213" *Genome Announcement* **2015** Sep 24;3(5).
72. Sharma, K.; **Chakrapani, H.** "Site-Directed Delivery of Nitric oxide to Cancers" *Nitric Oxide: Biology and Chemistry* **2014**, *43*, 8-16 (Review).
73. Maciag, A. E.; Saavedra, J. E.; **Chakrapani, H.** "The Nitric Oxide Prodrug JS-K and its Structural Analogues as Cancer Therapeutic Agents" *Anti-Cancer Agents in Medicinal Chemistry* **2009**, *9*, 798-803. (Review)
74. Gooden, D. M.; Chakrapani, H.; Toone, E. J. "C-nitroso compounds: synthesis, physicochemical properties and biological activities"

PATENTS

75. **Chakrapani, H.**; Manna, S.; Gupta S.; Agarwal, R.; Vasishtha, A. "PERSULFIDE/HYDROGEN SULFIDE RELEASING MICROPARTICLES FOR THE TREATMENT OF CHRONIC INFLAMMATION" Provisional Patent application 202421036480
76. **Chakrapani, H.**; Anand Kumar, T.; Singh, A. *et al.* "FLUOROQUINOLONE DERIVATIVES FOR TREATMENT OF ACTIVE AND LATENT TUBERCULOSIS" Provisional Patent Application No. 202221069131
77. **Chakrapani, H.**; Kumari, P.; Chopra, S.; and others HETEROCYCLIC IODONIUM COMPOUNDS AS BROAD-SPECTRUM ANTIBACTERIAL AGENTS Patent filed 0211NF2021 (India)
78. **Chakrapani, H.**; Malwal, S. R. "Thiol-Mediated/Activated Prodrugs of Sulfur Dioxide (SO₂) Having Anti-bacterial Activity" US 9,079,870, issued July 14, **2015**; Indian Patent Application No. 3162/MUM/2012.
79. Maciag, Anna E.; Keefer, Larry K.; Saavedra, Joseph E.; Anderson, Lucy M.; **Chakrapani, H.** Diazeniumdiolated compounds, pharmaceutical compositions, and method of treating cancer. WO2011/60215 A1, **2011**

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80. Toone, E. J.; **Chakrapani, H.** "Stable Neutral Nitric Oxide Source" WO2008/130567 A1, **2008**

DOCTORAL THESES

1. "Synthesis and Evaluation of Organic Sources of Reactive Sulfur Species" Satish R. Malwal, **2014**
2. "Synthesis and Evaluation of Small Molecule Based Reactive Oxygen Species (ROS) Generators" A. T. Dharmaraja, **2014**
3. "Synthesis and Evaluation of Bioactivable Nitric Oxide (NO) Donors" Kavita Sharma, **2015**
4. "Synthesis and Evaluation of Small Molecule Generators of Redox-active Reactive Species" Vinayak Khodade **2016**
5. "Design, Synthesis and Evaluation of Bioactivable Organic Donors of Sulfur Dioxide (SO₂)" Kundansingh A. Pardeshi **2018**
6. "Real-Time Monitoring of Nitric Oxide Release" Govindan Ravikumar **2018**
7. "Synthesis and Evaluation of Light Triggerable Redox-Active Species Generators" Ajay Kumar Sharma, **2019**
8. "Towards Targeted and Tunable Release of Hydrogen Sulfide" Preeti Chauhan, **2019**
9. "Design, Synthesis and Evaluation of Small Molecules for Profiling Thiol Proteome of Microbes" Amogh Kulkarni **2019**
10. "Stimuli-responsive small molecule persulfidating agents" Prerona Bora **2022**
11. "Development of Iodonium-Based Gram-negative Antibacterial Compounds and Target Identification using a Chemoproteomics Approach" Pooja Kumari, **2022**
12. "Design, Synthesis and Evaluation of Bioreductively-activated Fluoroquinolone Prodrugs" T. Anand Kumar **2023**
13. "Enhancing Cellular Persulfides through Artificial Substrate of 3-mercaptopyruvate sulfurtansferase (3-MST)" Suman Manna **2023**
14. "Synthesis and Evaluation of Enzyme Activated Nitroxyl (HNO) Generators" Laxman R Sawase **2023**

MASTERS THESES

1. "Design, Synthesis and Evaluation of Scaffolds for Thiol-Mediated Tunable Drug Release" Rohan S. Kumbhare, **2013**
2. "Design, Synthesis and Evaluation of Nitroreductase Activated Hydrogen Sulfide Donors" Mallojjala Sharath Chandra, **2015**
3. "Design, Synthesis and Evaluation of a Scaffold for Mitochondria-Targeted Drug Delivery" Bandana Kumari, **2016**
4. "Synthesis and Evaluation of Small Molecule Hydrogen Sulfide Donors" Sushma Tejasri, **2017**
5. "Green light activated BODIPY based Hydrogen sulfide donor" Aswin P. K. **2018**
6. "Oxidative Stress Triggered Tunable Hydrogen Sulfide Donors" Swetha Jos **2018**
7. "Mechanistic Investigation of Novel Unnatural Substrates for Enzymatic Production of Hydrogen sulfide in Bacteria" Mrutyunjay Nair **2019** (Supervisor; Co-Supervisor: Dr Amrita B. Hazra)
8. "Synthesis and Evaluation of Hypervalent Iodine Compounds as Antibacterial" Suraj Sharma **2019**
9. "An Esterase Activated Persulfide Donor with a Fluorescence Reporter" Amal S. Kumar **2020**
10. "Mechanistic investigation of bacterial 3-mercaptopyruvate sulfurtransferase (3MST) using unnatural substrates" Saswata Nayak **2020** (Co-Supervisor; Supervisor: Dr Amrita B. Hazra)
11. "Design and Development of Enzyme-Triggered Persulfide Donors" Manjima B.S. **2021**
12. "Design and Synthesis of Esterase Activated Nitroxyl (HNO) Donor" Jishnu C.V. **2021**.
13. Vruta Gupte (Co-Supervisor; Supervisor: Dr Amrita B. Hazra) **2022**
14. "Small Molecule Modulators of Sulfur/Selenium Transfer" Mahima Rana, **2024**
15. "Design and Synthesis of Nitroreductase activated HNO Donor" Shayandeep Bhaumik, **2024**.

RESEARCH FUNDING

1. "Organic Sources of Gaseous Entities with Physiological Relevance", Department of Science & Technology (DST). Funding: Rs. 26,00,000 (**2011-2014**).
2. "Hypoxia-Activated Prodrugs of Nitric Oxide" Department of Biotechnology (DBT), Rs. 41,00,000 (**2012-2015**). Early Career Scientist, **2012**; Royal Society of Chemistry-West India
3. "Redox-Directed Mycobacterial Therapeutics" Department of Biotechnology (DBT), Rs. 56,00,000 (**2012-2015**).
4. "Small Molecule Donors of Reactive Sulfur Species" Science and Engineering Board, Department of

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- Science & Technology (DST). Funding: Rs. 55,90,000 (**2015-2018**).
- "Small Molecule Inducers of Redox Stress Targeting Antibiotic Resistance" Department of Biotechnology (DBT), Rs. 98,46,000; with Dr. Sidharth Chopra, CSIR-CDRI Lucknow (Co-PI). (**2016-2020**)
- "Investigating Mycobacterial Responses to Endogenous Peroxynitrite" Department of Biotechnology (DBT), Rs. 81,04,800; with Dr. Amit Singh, IISc Bangalore (Co-PI) (**2018-present**)
- "Design and Development of Organic Persulfide Donors" Science and Engineering Research Board, Department of Science & Technology (DST). Funding: Rs. 75,54,888 (**2019-2023**).
- "Mechanism-Based Inhibitors of 3-Mercaptopyruvate Sulfurtransferase (3-MST)" Department of Biotechnology (DBT), Rs 17,00,000 (**2021-present**)
- "Targeting non-replicating drug tolerant M. tuberculosis through a pro-drug strategy" Ignite Life Sciences. Co-PI, with Amit Singh, IISc as PI
- "Synthesis and Evaluation of Organic Modulators of Cellular Sulfane Sulfur" Science and Engineering Research Board, Department of Science & Technology (DST). Funding: Rs. 73,07,525 (**2024-present**).
- "Comprehensive analysis of homocysteine induced neutrophil extracellular traps: Implications in pathogenesis of sepsis" as Co-PI with Manjunath B Joshi, Manipal Academy of Higher Education as PI, Centre Franco-Indien pour la Promotion de la Recherche Avancée-CEFIPRA (**2024-present**)

RESEARCH TALKS

- "Current Trends in Chemical Biology" Symposium held at Ahmednagar College, Ahmednagar Maharashtra on Feb. 13, **2010**.
- ACTREC-IISER Meet, Dec **2010** at IISER Pune
- "RSC-West India Challenge Symposium 2012" held at Institute of Science, Nagpur on Aug 31, **2012**
- "Advances in Synthetic and Applied Chemistry" held at Sangamner College, Sangamner Maharashtra on Sep. 7, **2012**
- "Indian Lab Automation: Drug Discovery & Development 2012" held at Mumbai, Oct 30-31, **2012**
- Chemical Biology Laboratory, National Cancer Institute at Frederick, USA Nov 27, **2012**
- "International conference on Physics, Mathematics and Engineering Sciences" Pune, March 18, **2013**
- "MDR/XDR Tuberculosis: A healthcare menace to developing countries" Sinhgad College of Pharmacy, Pune, March 22, **2013**
- Department of Chemistry, Keele University, United Kingdom, Oct 15, **2013**
- "The New Perspectives of Inculcating the Different Aspects of Chemistry" Department of Chemistry, University of Pune, Nov 18, **2013**
- "Kaleidoscope: a Discussion Meeting in Chemistry" International Centre, Goa, July 3-6, **2014**
- "Recent Approaches in Drug Design" SMBT College of Pharmacy, Igatpuri, Maharashtra, Nov 20-22, **2014**
- "New Directions in Chemical Synthesis-I" Department of Chemistry, Indian Institute of Technology Bombay, Dec 8-9, **2014**
- "International Symposium on Bioorganic Chemistry (ISBOC-10)", IISER Pune, Jan 11-15, **2015**
- "Emerging Trends in Chemical Sciences" Padamshri Vikhe Patil College, Pravaranagar, Jan 21, **2015**
- Department of Chemical Sciences, Tata Institute of Fundamental Research (TIFR), Seminar July 6, **2015**
- "Chemical Frontiers, 2015" Majorda Beach Resort, South Goa, August 15-18, 2015 (Selected for Young Scientist Award)
- "Complex Chemical Systems" Indian Institute of Technology Kanpur, Nov 2-3, **2015**
- "Inter-IISER Chemistry Meet" IISER Thiruvananthapuram, Dec 11-13, **2015**
- "5th INDIGO Research Conference" Lucknow, Feb 21-24, **2016**
- "Optics Within Life Sciences OWLS 2016" Mumbai, March 16-19, **2016**
- "Kaleidoscope: a Discussion Meeting in Chemistry" International Centre, Goa, July 13-17, **2016**
- "Chemsymphoria 2016" IISER Pune, July 21-22, **2016**.
- 6th Indo Japanese International Symposium on "Overcoming Intractable Diseases Prevalent in Asian Countries" The Maquinez Palace, Goa, Sep 23-24, **2016**.
- National Conference on Chemistry of Light and Medicine, IIT Gandhinagar, Dec 8-9, **2016**
- International Conference on Organic Synthesis (ICOS 21), IIT Bombay, Mumbai Dec 11-16, **2016**
- National Centre for Biological Sciences (NCBS), Bangalore Life Science Cluster - iCeMS meeting, Jan 23, **2017**
- Chemistry Interfacing with Biology and Physics, IISER Kolkata, Jan 27-28, **2017**
- 1st BASF Innovation Campus Science Symposium, May 30, **2017**
- "Kaleidoscope: a Discussion Meeting in Chemistry" International Centre, Goa, July 5-8, **2017**
- 86th Conference of Society of Biological Chemists at JNU, New Delhi, Nov 16-19, **2017**
- Newton Bhabha Fund Antimicrobial Resistance Workshop, Bengaluru, Dec 14-18, **2017**

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33. IISER-WIS Conference on Chemical Biology, Pune, Jan 17-19, **2018**
34. National Conference on Chemical Science: An Interdisciplinary Approach, Modern College, Pune Jan 18, **2018**
35. "Kaleidoscope: a Discussion Meeting in Chemistry" International Centre, Goa, July 5-8, **2018**
36. "Chemical Frontiers, 2018" Goa, August 19-22, **2018**
37. "Indo-German Chemistry Meeting" INST Mohali, Punjab and Kasauli, Himachal Pradesh. Oct 4-7, **2018**
38. Chemistry and Physics of Advanced Materials – III" IISER Pune-Temple University Meeting, Oct 8-9, **2018**
39. 2nd American Gasotransmitter Symposium, University of Oregon, USA, May 18-19, **2019**
40. "Kaleidoscope: a Discussion Meeting in Chemistry" International Centre, Goa, July 4-7, **2019**
41. Chemical Biology and Precision Synthesis, University of Glasgow, Scotland, UK July 26-31, **2019**
42. "Advances in Chemical Sciences and Technologies" NIT Warangal, Sep 23-25, **2019**
43. Ecole Normale Supérieure de Lyon, France, Oct 16, **2019**
44. Institute of Mathematical Sciences, Chennai, Oct 28, **2019**
45. Nanyang Technological University, Singapore, Nov 11-12, **2019**
46. Department of Chemistry, IIT Madras, Dec 27, **2019**
47. American Chemical Society (ACS) Science Talk Series, May 29, **2020** (Webinar)
48. Department Seminar, Birla Institute of Technology and Science (BITS) Pilani, Hyderabad Campus, Aug 14, **2020** (Webinar)
49. "Vaishwik Bharatiya Vaigyanik" (VAIBHAV) Summit, Theme: Pharmaceuticals and Biotechnology; Sub-theme: Drug Discovery, Repurposing and Drug Delivery, Sep 19, **2020** (Webinar)
50. Department Seminar, Birla Institute of Technology and Science (BITS) Pilani, Goa Campus, Oct 31, **2020** (Webinar)
51. "Current Trends in Medicinal Chemistry", ASP College, Devrukh, March 24, **2021** (Webinar)
52. "Advances in Synthetic Organic Chemistry and Their Applications in Modern Medicinal Chemistry (ASOCAMMC21)" National Institute of Technology, Calicut Aug 26, **2021** (Webinar)
53. Chemical Research Society of India (CRSI) Meeting, Kolkata, Sep 26-30, **2021**
54. "Kaleidoscope: a Discussion Meeting in Chemistry" Wabi-Sabi, Nashik, Oct 8-10, **2021**
55. XXI National Organic Symposium Trust-Organic Chemistry Conference, Chennai, Nov 25-28, **2021**.
56. Indian Institute of Technology, Patna Department Seminar, June 7, **2022**
57. "Kaleidoscope: a Discussion Meeting in Chemistry" Udaipur, Nashik, July 28-31, **2022**
58. Asian Chemical Biology Initiative (ACBI) Goa, September 15-18, **2022**.
59. Royal Society of Chemistry-Contemporary Facets in Organic Synthesis, Department of Chemistry, Indian Institute of Technology, Roorkee December 1-4, **2022**
60. InAdvanCS, Annual Symposium of the Indian Association for the Cultivation of Science, Kolkata, Jan 5-7, **2023**
61. School of Physical and Chemical Sciences, Queen Mary University of London, UK Jan 19-20, **2023**
62. Redox Chemical Biology of Health and Disease, April 7-8, 2023, IISER Pune
63. Department of Chemistry, Doon University Seminar May 11, **2023**.
64. "Kaleidoscope: a Discussion Meeting in Chemistry" Udaipur, July 6-9, **2023**
65. FORCE IICS, Kathmandu, Nepal, September 28- October 01, **2023**.
66. Contemporary Challenges in Chemical Science (C3S) IIT Bombay, Dec 6-8, **2023**
67. Chemsymphoria, Department of Chemistry, IISER Pune, Dec 18-20, **2023**
68. International Research Network on infectious diseases and antibiotic resistance (IRN MIRA), IISc Bangalore, March 5-6, **2024**

SCIENCE EDUCATION AND OUTREACH PROJECTS

1. Training Programmes Enabling Effective Science Communication, Department of Science and Technology, **2018-2021**
2. STEP for STEM, TATA Technologies **2019-2021**
3. India Innovation Competency Enhancement Programme, Funded by a Consortium of Department of Science and Technology (DST), TATA Technologies, Royal Society of Chemistry, British Council of India, **2020-present** (Co-Investigator, Dr Sourabh Dube, IISER Pune)
4. Transforming Higher Education Landscape through continuous Professional Development of Teachers in Higher Education Institutes of Maharashtra, Maharashtra State Faculty Development Academy, **2021-present** (Co-Investigator, Dr Sourabh Dube, IISER Pune)
5. Malaviya Mission Teacher Training Programme, Ministry of Education, 2023-present

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POPULAR SCIENCE TALKS, OUTREACH AND TEACHING RESOURCES

1. Kishore Vaigyanik Protsahan Yojana (KVPY) Summer Camp, **2010, 2011 & 2012**.
2. Rishi Valley School, July 4-5, **2010**
3. Royal College, Mumbai on Sep 24, **2011**
4. International Year of Chemistry Programme, Nov **2011**
5. S. P. College, Pune, Mar **2016**
6. Modern College, Pune, Oct **2016**.
7. DST-INSPIRE Camp, Pune Dec **2017**.
8. Simply Science lecture series, British Council, Pune, Aug 8, **2018**.
9. Alard College of Pharmacy, Jan **2019**
10. Science at the Sabha, Institute of Mathematical Sciences, Feb 15, **2020**
11. Tamil Nadu Science Forum, Aug 8, **2020** (webinar)
12. Delhi Public School Society, HRD Centre, June 24, **2021** (webinar)
13. INSPIRE Camp, Prabhudesai Charitable Trust, Pune Dec 9, **2021** (webinar)
14. Sagar Public School, Bhopal-Madhya Pradesh, April 26, **2022** (webinar)
15. UK-India Coming Together - Higher Education Collaboration: Strategies for Success: Industry-Academia Partnerships making it work for Employability and Research, June 8, **2022**
16. "Fostering academia-industry-society linkages through STEM research and innovation programmes" International Conference on Higher Education, Research and Innovation 2022 (ICHERI 22), July 28-30, **2022** (webinar)
17. RSC Thought-Leadership Roundtable on Tackling AMR in India, University of Bristol, UK Sep 14, **2023**

MAJOR ADMINISTRATIVE POSITIONS

1. Dean, International Relations and Outreach, Jan **2019**-Jan **2022**.
2. Convenor, COVID-19 Task Force, May **2020**-Jan **2022**.
3. Faculty-in-Charge, Science Media Centre, IISER Pune. Nov **2015**-April **2019**

NATIONAL-LEVEL COMMITTEES

1. Member (Co-opted), Expert Committee of Start-up Research Grant, National Post-Doctoral Fellowship and Early Career Research Award Schemes, Chemical Sciences (**2021**-present)
2. Member, Technical Expert Committee (TEC) for Vaccine Research and Development and New Drug Development, Department of Biotechnology (**2022**-present)
3. Member, Council of the Chemical Research Society of India (CRSI) (April 1, **2023**-March 31, **2026**)
4. Member, Area Review Panel, Drugs (including Drug Delivery), Biosimilar and Stem Cells (including Regenerative Medicines) & Vaccines and Clinical Trials, Biotechnology Industry Research Assistance Council (BIRAC) (Jun **2023**-**2026**)
5. Member, Domain Expert Group, CSIR Mission on Anti-microbial resistance, Feb **2024**-present

AWARDS AND HONOURS

1. Innovative Young Biotechnologist Award, **2011**; Department of Biotechnology India
2. Early Career Scientist, **2012**; Royal Society of Chemistry-West India
3. Young Scientist Award, **2015**; Chemical Research Society of India (CRSI)
4. Young Scientist Award, **2015**; Pune Municipal Corporation, Pune India.
5. Scientist Award, **2015**, Rotary Club of Pune
6. Chemical Research Society of India Bronze Medal, **2021**.
7. S Ramachandran National Bioscience Award for Career Development, **2021**, Department of Biotechnology, India
8. Editorial Board Member, Scientific Reports, Nature Publishing Group (**2017**-**2021**).
9. Convenor, Junior National Organic Symposium Trust (J-NOST) Meeting for Research Scholars, Oct 10-12, **2023** at IISER Pune

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