Curriculum Vitae

Personal and Contact Information

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Education

1999-2004	PhD, Chemistry	Cornell University, Ithaca NY USA
1996-1998	MSc., Chemistry	Indian Institute of Technology (IIT) Kanpur, UP, India
1993-1996	BSc., Chemistry	Miranda House, Delhi University, Delhi, India

Professional Experience

12/2018- Present	Professor of Chemistry, IIT Bombay, Mumbai, India
07/2014-11/2018	Associate Professor of Chemistry, IIT Bombay, Mumbai, India
05/2008-06/2014	Assistant Professor of Chemistry, IIT Bombay, Mumbai, India
01/2005-06/2006	Post Doctoral Research Scientist, University of Pennsylvania/Wistar Institute, Philadelphia, Pennsylvania, USA
01/2003-12/2004	Post Doctoral Howard Hughes Fellow, Sloan Kettering New York, NY, USA
08/1998-05/2002	Teaching Assistant, Cornell University, USA

Awards and Honors

- Institute Chair Professor, ***Indian Institute of Technology Bombay*** **2022.**
- Fellow of ***Indian Academy of Sciences (IASc)*** **2022.**
- IIT Bombay Impactful Research Award, ***Indian Institute of Technology Bombay*** **2021.**
- Inducted into the International Advisory Board of ***AsianJOC*** **2021.**
- Member of ***International IUPAC CHEMRAWN*** committee **2022**.
- Inducted as a Member of the ***Research Council*** of Indian Institute of Chemical Technology **2020.**
- Elected member of the ***Guha Research Conference*** **2020.**
- Recipient of the AV Rama Rao Foundation Lecture Award at JNCSAR **2020.**
- Recipient of the ***Chemical Research Society of India (CRSI)*** bronze medal **2020.**
- Selected member of ***Chemical Research Society of India (CRSI) Council*** **2020-2023.**
- Recipient of the ***Wellcome Trust-DBT Alliance Senior Research Fellowship*** **2020.**
- Elected fellow of the ***National Academy of Sciences (FNASc)*** **2019.**
- Core committee member; ***Water Innovation Centre: Technology, Research and Education.***
- Member of ***International Program Committee*** for **AsCA 2019.**
- Elected ***Secretary, Royal Society of Chemistry West India Section*** **2019** onwards.
- Elected member ***Executive Council of the Indian Biophysical Society*** **2019-22.**
- Elected member of **the** ***International Gender Equity and Diversity Committee of IUCr*** **2019.**
- Inducted as a Member of **the** ***Asian Chemical Biology Initiative*** **(ACBI).**
- Recipient of ***B.K Bachhawat International Travel Award*** **2019.**
- Recipient ***National Women Bio-scientist Award,*** Department of Biotechnology **2018.**

- Recipient ***Young Outstanding Researcher Award,*** International Conference on Recent Trends in Material Science and Technology, October, **2018.**
- Member ***Editorial Advisory Board "ACS Sensors"*** an American Chemical Society Journal **2016.**
- ***Faculty Mobility Award*** for Faculty Exchange to Northwestern University **2016.**
- Royal Society of Chemistry, Mumbai Chapter, Madam Curie ***Women Scientist Award*** **2012** .
- DAAD ***Research Stay Award*** for scientific exchange at EMBL Hamburg **2011.**
- ***Linus Pauling poster prize*** for exceptional scientific contribution at the American Crystallographic Association (ACA) Meeting, Chicago, August **2004.**
- Miranda House (***Book Award*** three years in a row for academic excellence) **1996-1998.**

Administrative and Academic Positions

- Member, The **Advisory Board of Chemical Society Reviews**, 2023
- Member, The ***Journal of Physical Chemistry A/B/C Editorial Advisory Board***, 2023-2025.
- Member, ***Faculty Assessment Committee, JNCASR,*** Bengaluru, 2022.
- Member, ***International Chemical Biology Society (ICBS) Scientific Program*** Committee 2022.
- Member, ***Project Advisory Committee (PAC)*** of Organic Chemistry, 2021-2023.
- Associate Member, Standing Committee on ***Chemical Research Applied to World Needs (CHEMRAWN)***, **2022-2023.**
- Member, ***Project Advisory Committee (PAC)*** of the International Division Chemistry 2022.
- Member, Women in Science, ***Task Force, DST,*** Chemical Science 2022-2025.
- Expert member, ***Committee for promotion interview***, UM-DAE Centre for Excellence in Basic Sciences, Mumbai, 2022.
- Expert member, ***SERB – DST, Centre for Antibody Engineering*** (IRHPA - CAE), 2022.
- Convener, ***SERB VORTEX Cryo-EM Workshop***, IIT Bombay, May 2022.
- Received ***SERB*** grant for setting up the ***Cryo-EM facility*** (28 crores) at IIT Bombay, 2020.
- Expert Member, ***SERB committee for SERB - POWER Fellowship*** (Promoting Opportunities For Women in Exploratory Research) **2021.**
- Expert Member, ***Organic Chemistry Task Force,*** SERB, **2021** onwards.
- Expert Member, SERM-STAR award committee, **2021** onwards.
- Special Invite Expert Committee for ***COVID-19 Research, SERB*** 2020.
- Special Invitee Expert Committee ***Interdisciplinary Biological Sciences Task Force SERB*** 2020.
- VORTEX (Vision ORiented Thought EXchange), ***Task Force, in Chemical Science, SERB*** 2020.
- Chairperson, ***IIT Bombay Hospital Management Committee*** 2019-2021.
- Member Special Expert Committee, ***DST for Water Technology Initiative*** **2019**
- Convener, ***Indo-German Joint Workshop in Chemical Biology,*** IIT Bombay, August **2019**
- Convener, ***Vigyan Jyoti Program***: Three Week DST Women in Science Initiative to enhance awareness of science and technology among school girls May **2018.**
- Expert Member Committee DBT-RA National Program in Biotechnology & Life Sciences, 2019-20.
- Member Technical Expert Committee, Energy, Environment and Biodiversity Conservation for North Eastern Region, Department of Biotechnology **2018.**
- Member Executive Council, Royal Society of Chemistry West India Section 2018.
- Member PG Board of Studies Bioinformatics & Computational Biology, Pondicherry University 2018-2021.

- Member, ***Environmental Biotechnology, Task Force,*** Department of Biotechnology **2018-2020.**
- Member, Women in Science, ***Task Force, DST,*** Chemical Science 2016-2019.
- Expert Member of Best Thesis Selection Committee**,** TIFR Mumbai 2016.
- Graduate Aptitude Test **Vice Chairperson, IIT Bombay (GATE)** 2016 .
- Session *Chair* "Macromolecular Complexes and Assemblies" at the 12th Asian Crystallography Society Meeting, Dec 7-10th, 2013, Hongkong.
- *Convener*, of symposium celebrating ***100 years of Crystallography***, 17th Nov 2015, on "*Recent Advances in Crystallography*" IIT Bombay, Mumbai, India.
- Member organizing committee ***Indo-US symposium*** on "*Recent Advances in Structural Biology and Drug Discovery*", Oct **2014,** IIT Roorkee, India.
- Member organizing committee 16th ***CRSI National Symposium in Chemistry*** held Feb **2014,** *IIT Bombay, Mumbai, India.*
- Member organizing committee 42nd *National Seminar on Crystallography and International workshop for application of X-ray diffraction for Drug Discovery*, Nov 20-23rd, 2013, Delhi .
- Session ***Chair*** "Macromolecular Complexes and Assemblies" at the 12th Asian Crystallography Society Meeting, Dec 7-10th, **2013**, Hongkong, China.
- Convener and organizer of 4 day *International Conference and Indo-US Workshop on ModernTrends in Macromolecular Structures* 2011**,** Mumbai, India.

Publications

1. "Diverse strategies adopted by nature for regulating purine biosynthesis via fine-tuning of purine metabolic enzymes." Singh, S., **Anand, R.*** ***Current Opinion in Chemical Biology. 2023***, 73, 102261.

2. "Phenol Sensing in Nature Modulated via a Conformational Switch Governed by Dynamic Allostery." Singh, J., Sahil, M., Ray, S., Dcosta, C., Panjikar, S., Krishnamoorthy, G., Mondal, J., **Anand, R.*** ***Journal of Biological Chemistry*** 102399, 2022.

3. "Cooperativity in ATP Hydrolysis by MopR Is Modulated by Its Signal Reception Domain and by Its Protein and Phenol Concentrations" Singh, J., **Anand, R.**, & Horovitz, A., ***Journal of Bacteriology***, 204(8), 2022, e00179-22.

4. "Identification of Allosteric Hotspots regulating the ribosomal RNA-binding by Antibiotic Resistance-Conferring Erm Methyltransferases" Bhujbalrao, R., Gavvala, K., Singh, R. K., Singh, J., Boudier, C., Chakrabarti, S., **Anand, R.*** ***Journal of Biological Chemistry*****,** 102208, 2022.

5. "Decoding the Mechanism of Specific RNA Targeting by Ribosomal Methyltransferases" Singh, J., Raina, R., Vinothkumar, KR., **Anand, R*,** ***ACS Chemical Biology*** 2022, 17, 4, 829–839.

6. "Harnessing the Potential of Biological Recognition Elements for Water Pollution Monitoring" Sahu, S., Roy, R., **Anand, R*.**, ***ACS Sensors*** 2022, 7, 3, 704–715.

7. "Mechanism of Coordinated Gating and Signal Transduction in Purine Biosynthetic Enzyme Formylglycinamidine Synthetase" Sharma, N., Singh, S., Tanwar, A.S, Mondal, J., **Anand, R*.**, ***ACS Catalysis*** 2022, 12, 3, 1930–1944.

8. "Tunnel Architectures in Enzyme Systems that Transport Gaseous Substrates" Singh, S., **Anand, R*.**, ***ACS Omega*** 2021, 6, 49, 33274–33283.

9. "The Coenzyme A Level Modulator Hopantenate (HoPan) Inhibits Phosphopantotenoylcysteine Synthetase Activity" Mostert, KJ., Sharma, N., van der Zwaag, M., Staats, R., Koekemoer, L., Anand, R., Sibon, OC., Strauss, Eric*., ***ACS Chemical Biology*** 2021, 16, 11, 2401–2414.

10. "Insights into the Dual Shuttle Catalytic Mechanism of Guanine Deaminase" Sen, A., Gaded, V., Jayapal, P., Rajaraman, G.*, **Anand, R*.**, ***J. Phys. Chem. B.*** 2021, 125(31), 8814 - 8826.

11. "Deciphering protein microenvironment by using a cysteine specific switch-ON fluorescent probe" Mariam, J., Ashoka, A, H., Gaded, V., Ali, Firoz., Malvi, H., Das, A.*, **Anand, R***., ***Organic & Biomolecular Chemistry*** 2021, 19, 5161-5168.

12. "Structure Guided Mutagenesis Reveals the Substrate Determinants of Guanine Deaminase" Singh, J., Gaded, V., Bitra, A., **Anand, R*.**, ***J. Struct. Biol.*** 2021, 107747.

13. "Tunable Multiplexed Whole-Cell Biosensors as Environmental Diagnostics for ppb-Level Detection of Aromatic Pollutants" Roy R., Ray S., Chowdhury* A., **Anand R*.*, ACS Sensors* (2021)**, 6, 5, 1933–1939.

14. "Role of Allosteric Switches and Adaptor Domains in Long Distance Cross-Talk and Transient Tunnel Formation" Sharma, N., Ahalawat, N., Sandhu, P., Strauss, E., Mondal, J., **Anand, R.*; *Science Advances* (2020)**; 6, eaay7919.

15. "Structural basis for differentiation between two classes of thiolase: Degradative vs biosynthetic thiolase" Bhaskar S., Steer D., **Anand R.,** Panjikar S.* ***Journal of Structural Biology*** **(2020**), 100018.

16. "Use of 6-Methylisoxanthopterin, a Fluorescent Guanine Analog, to Probe Fob1-Mediated Dynamics at the Stalling Fork Barrier DNA Sequences"; Mariam, J., G, Krishnamoorthy, and **Anand, R***.; ***Chemistry–An Asian Journal*** **(2019);** 14,4760 –4766.

17. "Deciphering Determinants in Ribosomal Methyltransferases that Confer Antimicrobial Resistance" Bhujbalrao, R.; **Anand, R.***; ***Journal of American Chemical Society*** **(2019),** 141, 1425-1429.

18. "Design of Ultrasensitive Protein Biosensor Strips for Selective Detection of Aromatic Contaminants in Environmental Wastewater" Ray S., Senapati, T, Sahu, S; Bandyopadhyaya, R, Anand, R*; *Analytical Chemistry* (2018), 90 (15), 8960-8968.

19. "Design of Protein based Biosensors for Selective Detection of Benzene Group of Pollutants", Ray, S., Panjikar, S., **Anand, R***; ***ACS Sensors*** **(2018)**, 3(9), 1632–1638.

20. "Nucleobase Deaminases as potential enzymes for new therapies", Gaded V***, Anand R****, ***RSC Adv.***, (**2018**),8, 23567-23577

21. "Fluorescence Quenching studies of γ-butyrolactone-Binding Protein (CprB) from Streptomyces coelicolor A3(2) ", Mariam J., **Anand R***; ***Methods Mol Biol.*** **(2018)**, 1673, 131-143.

22. "Site-specific fluorescence dynamics to probe polar arrest by Fob1 in replication fork barrier sequences", Biswas A., Mariam J., Kombrabail M. , Narayan S. , Krishnamoorthy G., **Anand R***; ***ACS Omega*** **(2017)**, 2, 7389-7399.

23. "Functional insights into the mode of DNA and ligand binding of TetR family regulator TylP from Streptomyces fradiae", Ray, S., Maitra, A., Biswas, A., Panjikar, S., Mondal, J., **Anand R*** ; ***Journal of Biological Chemistry*** **(2017)**, 292, 15301-15311

24. "Selective deamination of Mutagens by mycobacterial Enzymes ", **Gaded, V., Anand, R.***; ***Journal of American Chemical Society*** **(2017)**, 139(31), 10762-10768.

25. "TetR Regulators: A Structural and Functional Perspective" Bhukya, H. & **Anand, R.***; ***Journal of Indian Institute of Science*** **(2017)**, 97, 245.

26. "Structural and Dynamics Studies of the TetR Family Protein, CprB from Streptomyces coelicolor in complex with its Biological Operator Sequence" Bhukya, H., Jana, A.K., Sengupta, N., **Anand, R.***; ***Journal of Structural Biology*** **(2017)**, 198; 134–146.

27. "Rassf Proteins as Modulators of Mst1 Kinase Activity" Bitra, A., Sistla, S., Mariam, J., Malvi, H., **Anand, R.***; ***Scientific Reports*** **(2017)**, 7, 45020.

28. "Structure Guided Design of Protein Biosensors for Phenolic Pollutants" Ray, S., Panjikar, S., **Anand, R***; ***ACS Sensors*** **(2017)**, 2(3), 411-418.

29. "Structural Basis of Selective Aromatic Pollutant Sensing by the Effector Binding Domain of MopR, an NtrC Family Transcriptional Regulator" Ray, S., Gunzburg, M., Wilce, M., Panjikar, S., **Anand, R***; ***ACS Chemical Biology*** **(2016)**, 11, 2357−2365.

30. "Determination of formylglycinamide ribonucleotide amidotransferase ammonia pathway by combining 3D-RISM theory with experiment", Tanwar, A.S, Sindhikara, D.J, Hirata, F, **Anand, R*;** ***ACS Chemical Biology*** **(2015)**, 10(3), 698-704.

31. "Mode of DNA Binding with γ-utyrolactone Receptor Protein CprB from Streptomyces coelicolor revealed by Site-specific Fluorescence Dynamics", Biswas, A., Narayan, S., Kallianpur, M, Krishnamoorthy,G. **Anand, R***; ***Biochimica et Biophysica acta*** (2015), 1850(11), 2283-92.

32. "Fluorescence Quenching Studies of γ-Butyrolactone Binding Protein (CprB) from Streptomyces coelicolor A3(2)", Biswas, A., Swarnkar, R. K., Hussain, B., Sahoo, S.K., Pradeepkumar, P.I., Patwari, G.N., **Anand, R.***; ***J Phys Chem B***. **(2014)**, 118(34):10035-42

33. "Structural and functional basis of transcriptional regulation by TetR family protein CprB from S. coelicolor A3(2)", Bhukya, H., Bhujbalrao, R., Bitra, A., **Anand, R.***; ***Nucleic acid Res.*** **(2014)**, 42(15), 10122-33.

34. "Importance of hydrophobic cavities in allosteric regulation of formylglycinamide synthetase: insight from xenon trapping and statistical coupling analysis", Tanwar, A.S., Goyal, V.D., Choudhary, D., Panjikar, S., **Anand, R*;** ***PLoS One*** **(2013)** 8(11), e77781.

35. "Diversity oriented approach to triazole based peptidiomimetics as mammalian sterile 20 kinase inhibitors." Kotha, S., Goyal, D., Bitra, A., Thota, N., Kruger, G., **Anand, R.***; ***RSC Adv.*** **(2013)** 3, 24447-24454. .

36. "Structural basis of the substrate specificity of cytidine deaminase superfamily Guanine deaminase" Bitra, A., Biswas, A., **Anand, R.*; *Biochemistry* (2013)** 52(45), 8106-14.

37. "Identification of Function and Mechanistic Insights of Guanine Deaminase from Nitrosomonas europaea: Role of the C-Terminal Loop in Catalysis" Bitra, A., Hussain, B., Tanwar, A.S., **Anand, R.***; ***Biochemistry*** **(2013)**, 52(20):3512-22.

38. "Formylglycinamide ribonucleotide amidotransferase from Salmonella typhimurium: role of ATP complexation and the glutaminase domain in catalytic coupling" Tanwar, A.S., Morar, M., Panjikar, S., **Anand, R.***; ***Acta Crystallographica D*** **(2012)**, 68, 627-36.

39. "Development of a Potent and Specific Organoruthenium Mammalian Sterile 20 Kinase Inhibitor", **Anand, R**, Pagano, N., Maksimoska, J., Wong, E., Diamond, S. L., Meggers, E., Marmorstein, R.; ***Journal of Medicinal Chemistry*** **(2008)**, 52(6):1602-11.

40. "Structural Basis for DNA Recognition by FoxO1 and its Regulation by Post-Translational Modification", Brent, M., **Anand, R**., Marmorstein, R.; ***Structure*** **(2008)**, 16(9):1407-16.

41. "Biochemical Analysis of MST1 Kinase: Elucidation of a C-Terminal Regulatory Region", **Anand, R**., Kim, A., Brent, M., Marmorstein, R.; ***Biochemistry*** **(2008)**, 242, (25); 6719-6726

42. "Structure and mechanism of lysine-specific demethylase enzymes", **Anand, R**., Marmorstein, R., ***J. Biol. Chem.*** **(2007)** 282(49):35425-9.

43. "Structure and mechanism of lysine-specific demethylase enzymes ", Morar, M., **Anand, R**., Stubbe, J., Ealick, S.E.; ***Biochemistry*** **(2006)**, 45(50):14880-95.

44. "A model for the Bacillus subtilis formylglycinamide ribonucleotide amidotransferase multiprotein complex", **Anand, R.**, Hoskins, A. A., Bennett, E. M., Sintchak, M.D., Stubbe, J., Ealick, S.E.; ***Biochemistry*** **(2004)** 43(32), 10343-52.

45. "Domain organization of Salmonella typhimurium formylglycinamide ribonucleotide amidotransferase revealed by X-ray crystallography", **Anand, R**., Hoskins, A.A., Stubbe, J., Ealick, S.E.; ***Biochemistry*** **(2004)** 43(32):10328-42.

46. "The formylglycinamide ribonucleotide amidotransferase complex from Bacillus subtilis: metabolite mediated complex formation", Hoskins, A.A., **Anand, R**., Ealick, S.E., Stubbe, J.; ***Biochemistry*** **(2004)** 43(32):10314-27.

47. "Structure of Purine 2'- Deoxyribosyltransferase, Substrate Complexes and the Ribosylated Intermediate at 1.75 Resolution", **Anand, R**., Kaminski, V.S., Ealick, S.E.; ***Biochemistry*** **(2004)**, 43(9), 2384-93.

48. "Designer Gene Therapy Using an Escherichia coli Purine Nucloside Phosphorylase/Prodrug System", Bennett, E.M., **Anand, R**., Allan, P.W., Hassan, A.E., Hong, J.S., Levasseur, D.N.,

McPherson, D.T., Parker, W.B., Secrist III, J.A., Sorcher, E.J., Townes, T.M., Waud, W.R., Ealick, S.E.; ***Chemistry and Biology*** **(2003)** 10(12), 1173-81.

49. "Structure of Oxalate Decarboxylase from Bacillus Subtilis at 1.75 Resolution", **Anand, R.**, Dorrestein, P.C., Kinsland, C., Begley, T., Ealick, S.E.; ***Biochemistry*** **(2002)**, 41(24), 7659-69

Published Book Chapters

1. Sahu, Subhankar, and Ruchi Anand. "Strategies for Development of Protein-Based Biosensors for Detecting Aromatic Xenobiotics in Water." The World Scientific Reference of Water Science: Volume 1 Molecular Engineering of Water Sensors. 2023. 101-136.

2. Mariam J., Anand R., Fluorescence Quenching studies of γ-butyrolactone-Binding Protein (CprB) from Streptomyces coelicolor A3(2), Quorum Sensing: Methods and Protocols, Methods in Molecular Biology 2018, 1673, 131-143.

Patents

1. IPA No. 201821003722, Filed on **31 January 2018.** Title: Biosensors for detecting organic pollutants and Process for producing the same, in the name of Indian Institute of Technology Bombay" Inventors: **Ruchi Anand** and Shamayeeta Ray

2. IPA No. 201821016035, Filed on **27 April 2018**. Design of Ultrasensitive Protein Biosensor Strips for Selective Detection of Aromatic Contaminants in Environmental Wastewater, in the name of Indian Institute of Technology Bombay. Inventors: **Ruchi Anand,** Rajdip Bandyopadhyaya, Shamayeeta Ray, Tamasri Senapati.

3. IPA 431170, granted on **08 May 2023**. Organic Electrochemical Transistor Based Biosensor for the Detection of DNA Binding Proteins and Method for Preparation Thereof, in the name of Indian Institute of Technology Bombay. Inventors: **Ruchi Anand**, Dipti Gupta, Lokesh K. Gautam, Subhankar Sahu, Siddharth Kurup.

4. IPA No. 202321015908, Filed on **2023.** Protein Immobilised organic electrochemical biosensor for detecting phenolic pollutants and process for producing the same, in the name of Indian Institute of Technology Bombay. Inventors: **Ruchi Anand**, Dipti Gupta, Lokesh Kumar, Subhankar Sahu, Siddarth Kurup.

Selected Research Seminars and Invited Talks

International:

1. "Structural Insights into Antibiotic Regulation and Resistance in *Streptomyces*" Gordon Conference on Drug Resistance, University of New England, Biddeford, June 2016, USA, Selected Speaker.
2. "Transcription Regulation in Biological Systems" University of Illinois, Aug 2016, Chicago, USA, Departmental Talk.

3. "Structural Insights into Plasticity of DNA-Protein Interactions in Tetracycline Receptors" Indo-German Conference on NMR Meets Biology, Sept 2017, Institut für Medizinische Physik und Biophysik, Leipzig Germany, Invited Talk.
4. "Development of Enzyme Based Biosensors for Xenobiotic Pollutants" Indo-German Conference on Elementary Reactions in Functional Materials: From Biophysics to Technological Applications, Nov 2017, University of Heidelberg, Heidelberg, Germany, Invited Talk
5. "Using Structural Biology as a Tool to Decipher Origins of Antibiotic Resistance" Asian Crystallographic Association Meeting, Auckland, New Zealand, December 2018, Invited Talk
6. "Why does Antibiotic Resistance Arise" 6th World Congress on Nanomedicine & Chemistry Biology Interface Synergistic in New Frontiers (CBISNF-2019), Vigyan Bhavan, Delhi January 2019, Invited Talk
7. "Structural Insights into Origins of Resistance" Asian Chemical Biology Initiative Meeting, Yangoon, Myanmar, January 2019
8. "Strategies to Combat Drug Resistance" International Conference on Multiscale Simulation and Mathematical Modelling (JNU), New Delhi, India. January 2019, Invited Talk
9. "Strategies to combat antibiotic resistance" Weizmann India exchange: Chemical Biology and Material Science conference, Weizmann Institute of Science, Israel, May 2019, Invited Talk
10. "Molecular Insights into Ribosomal Methyltransferases Mediated Antibiotic Resistance" Indo-German workshop on "Emerging Trends in Chemistry and Materials", IIT Bombay, August 2019, Invited Talk
11. "Understanding Allosteric Regulation in Transient Tunnels" 10th Toyota Riken international workshop: Science of life phenomenon woven by water and biomolecules, Toyota Physical and Chemical research Institute, Japan, September 2019, Invited Talk
12. "Understanding Molecular Mechanism of Drug Resistance" Indo-German workshop Multivalent and Adaptive Bioinspired Materials, University of Dusseldorf Essen, Germany, September 2019, Invited Talk
13. "Molecular Insights into the Mechanism of Methyltransferases Mediated Antibiotic Resistance" 8th Annual Conference of ICBS-2019, CSIR-Indian Institute of Chemical Technology, Hyderabad, Nov 2019, Invited Talk
14. "Strategies to Combat Antibiotic Resistance" 16th Asian Crystallographic Association Meeting, NUS, Singapore Dec 2019, Keynote speaker
15. "Unravelling the Allosteric Regulation Mechanism of Purine Biosynthetic Pathway Enzyme" 12th Asia-Pacific Microscopy Conference (APMC-2020), Feburary, Hyderabad, 2020
16. "Allosteric Regulation of Molecular Tunnels" Modern Approaches in Chemistry and Biology, Bangalore, February, 2020, Invited Talk
17. "Structural Biochemistry: A Versatile to Study Biological Reactions" W-CHEM, Women In Science, MS University, Baroda, March 2020, Invited Talk
18. "Crystallography: Photography at the Atomic Level", *ACS Webinar* Series, April 2020
19. "Probing Long Distance Allosteric Communication in Enzyme Systems" First Virtual ACES-CRSI Symposium, *Webinar* October 2020
20. "Strategies to Combat Antibiotic Resistance", 1st Virtual Indo-German Symposium, *Webinar* April 2021
21. Search for Molecular Tunnels in Enzyme Systems, RSC-IISER Desktop seminar with OBC, 2021, Invited Talk, RSC-IISER.
22. Strategies to combat antibiotic resistance, OIST mini symposium "New proteins by Evolution and Engineering", 2021, Seminar, OIST, Japan.

23. Strategies to combat antibiotic resistance, Institute Colloquia, IISER Tirupati, 2022, Colloquium, IISER Tirupati.
24. "Allosteric regulation of molecular tunnel", Institute Colloquia, TIFR, Mumbai, 2022, Colloquium, TIFR Mumbai.
25. "Strategies to Combat Antibiotic Resistance", Asian Chemical Biology Initiative (ACIB 2022), Goa, 2022.
26. "Design of Biosensors for Environmental Monitoring of Aromatic Pollutants", Conference on Advances in Catalysis for Energy and Environment (CACEE 2022), TIFR Mumbai, 2022.
27. "Selective Electrochemical Biosensing of Proteins in Cellular Aging", Plenary Speaker, Indo-French Symposium on Molecules and Nanosciences for Health, University of Bordeaux, France, 2022.
28. "Strategies to Combat Antibiotic Resistance", Invited Talk, University of Strasbourg, France, 2022.
29. "Strategies to combat Antibiotic Resistance: Implications in deciphering origins of Resistance" 2nd Commonwealth Chemistry Congress, St. Augustine, Trinidad and Tobago, May 2023
30. "Mechanism of Ribosomal Methyltransferase Base Antibiotic Resistance" Uppsala University, Sweden, August 2023

National:

31. "Insights into Mechanisms of Drug Resistance" Innovations in Frontier Chemistry, IISER Pune, 2018, Invited Talk
32. "Strategies to Combat Drug Resistance" National Bioorganic Chemistry Conference (NBCC), Celebrating 65th year of DNA Structure, (NISER)-Bhubaneswar, December 2018, Invited Talk
33. "Strategies to Combat Drug Resistance" 8th National symposium on recent advances in chemical sciences, Amritsar, February 2019, Invited Talk
34. "Role of allosteric switches and adaptor domains in long distance cross talk and transient tunnel formation" Kaleidoscope, Goa, July 2019, Invited Talk
35. "Understanding Molecular Mechanism of Drug resistance" OCS2019@IIT Kanpur, IIT Kanpur, September 2019, Invited Talk
36. "Strategies to Combat Antibiotic Resistance" Chemistry Seminar Series, IISER Trivandam, September 2019, Invited Talk
37. "Molecular Insights into the Mechanism of Methyltransferase Mediated Antibiotic Resistance" 88th Annual Meeting of the Society Of Biological Chemists, Bhabha Atomic Research Centre & Homi Bhabha National Institute, Bombay, October 2019, Invited Talk
38. "Probing Mechanisms of Targeting and Allostery to Attain Specificity in Enzymatic Reactions" AV Rama Rao Foundation Award Lecture, JNCSAR, *Webinar* 2020
39. Strategies to combat antibiotic resistance, 48th National Seminar on Crystallography. 2021, Seminar, IIT Roorkee.
40. "Strategies to Combat Antibiotic Resistance", Kaleidoscope 2021: A Discussion Meeting in Chemistry, Goa, September 2021.
41. Allostery in Biological System, Special International Women's Day lecture, 2022, Seminar, IISER Kolkata.
42. Women in Science, Lecture on International Women's Day, CBS, 2022, Seminar, CBS.
43. From Laboratory Chemistry to Device fabrication, One Day Virtual National Conference on Role of women Chemist and technologist for sustainable future 2022, Seminar, Goa.
44. Antibiotic Resistance, Let There Be Light-A discussion meeting in spectroscopy and microscopy, 2022, Seminar, Himachal Pradesh.

45. "Strategies to Combat Antibiotic Resistance", Departmental Colloquium, S. N. Bose National Centre for Basic Sciences, Kolkata, India, 2022.
46. Strategies to combat antibiotic resistance, 44th Indian Biophysical Society Meeting, ACTREC, Mumbai 2022, Invited Talk, Seminar, Indian Biophysical Society.
47. Cryo-EM as a Bio-imaging tool to Decipher origins of antibiotic resistance, Biomedical, BIO-imaging & Therapeutics for healthcare, 2022, Invited Talk, IIT Jodhpur.
48. "From Laboratory Chemistry to Device Fabrication", Role of Women Chemists and Technologists for Sustainable Future, Dnyanprassarak Mandal's College and Research Centre, Goa, March 2022.
49. 'Prof. Nil Ratan Dhar Memorial Lecture', Conference on 'Sustainability and Interdisciplinarity in Chemical Sciences', IISER Kolkata 2023.