Vibin Ramakrishnan

Professor
Department of Biosciences & Bioengineering
Indian Institute of Technology, Guwahati
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EDUCATION AND EMPLOYMENT

- Associate Professor: Indian Institute of Technology, Guwahati – 781039. India (2015-2019).
- Assistant Professor: Indian Institute of Technology, Guwahati – 781039. India (2011-2015).
- Faculty Scientist: Institute of Bioinformatics and Applied Biotechnology (IBAB) Bangalore and RGCB Thiruvananthapuram.
- Post-Doctoral Research Associate: Center for Bioinformatics, Biology, Jonsson Rowland Science Center, RPI Troy NY - 12180 USA
- Ph.D.: Indian Institute of Technology, Bombay, Powai-400076 India

  Doctoral Thesis: Stereo chemical Effects in Protein Structure Folding and De novo Design
- Master of Science: *in* Applied Chemistry. Cochin University of Science and Technology, Kochi, India. Specialization: Synthetic Polymers, Industrial Catalysis

RESEARCH INTERESTS

Bio-nanotechnology, Peptide based antibiotics, Computational Biology, Drug Delivery Vehicles, Network Biology

AWARDS & SCHOLASTIC ACHIEVEMENTS

- **Innovative Young Biotechnologist Award Extension (IYBA 2011-12), Dept. of Biotechnology, Ministry of Science and Technology, Govt. of India.**
- **Innovative Young Biotechnologist Award (IYBA 2007-08), Dept. of Biotechnology, Ministry of Science and Technology, Govt. of India.**
- Post Doctoral Fellowship funded by National Science Foundation United States
- Institute Research Fellowship IIT Bombay
- CSIR-UGC National Eligibility Test, Graduate Aptitude Test in Engg. (GATE)
- Cochin University Merit Scholarship by CUSAT for top two students in each discipline

PROFESSIONAL AFFILIATIONS

- Member, National Academy of Sciences. India
- Member, American Chemical Society
- Member, International Society for Computational Biology (ISCB).
- Biophysical Society

PATENTS

International Patent

1. Title: A device for non-invasive treatment of neurodegenerative diseases.

Inventors: Vibin Ramakrishnan, Gaurav Pandey, Harshal B. Nemade, Jahnu Saikia, Sajitha S, & Nitin Chaudhary.

Patent No. WO/2019/012556. **Present Status: Published**

Indian Patents

1. Generation and usage of Di-Histidine based stimulus responsive nanostructures

Inventors: Vibin Ramakrishnan, Sajitha S, Nitin Chaudhary & Gaurav Pandey.

Patent No. 243/KOL/2015. Dated 09.03.2015. **Present Status: Published**

2. Antimicrobial Peptides.

Inventors: Vibin Ramakrishnan, Prakash Kishore Hazam, Nitin Chaudhary, Vishal Trivedi and Gaurav Jerath.

Patent No. 333/KOL/2015. Dated 26.03.2015**. Present Status: Published**

3. Antimicrobial short peptides.

Inventors: Nitin Chaudhary, Karabi Saikia, Durga Sravani Yalavarthi and Vibin Ramakrishnan

Patent No. 353/KOL/2015. Dated 30.03.2015, **Present Status: Published**

4. Title: Magnetic hydrocarbon crystals

Inventors: Vibin Ramakrishnan, Sajitha S, Nitin Chaudhary & Gaurav Pandey.

Patent No. 201631011471 Dated 31.03.2016.

5. Title: Peptide based Molecular Constructs for Tumor Homing and Cell Penetration

Inventors: Vibin Ramakrishnan, Ruchika Goyal and Gaurav Jerath

Patent No. TEMP/E-1/36058/2019-KOL Dated 23.08.2019

6. Title: Peptide-based Drug Delivery Vectors

Inventors: Vibin Ramakrishnan and Gaurav Jerath

Patent No. TEMP/E-1/36087/2019-KOL Dated 23.08.2019

7. Title: Peptide based modulators for amyloidogenic diseases

Inventors: Vibin Ramakrishnan, Gaurav Pandey and Vivek Prakash

Patent No. TEMP/E-1/36478/2019-KOL Dated 27.08.2019

PUBLICATIONS (Refereed Journals)

(* indicates Corresponding author)

1. Gaurav Jerath, Ruchika Goyal, Vishal Trivedi, T R. Santhoshkumar, Vibin Ramakrishnan*. Conformationally constrained peptides for drug delivery. **Journal of Peptide Science**. (2020) DOI: 10.1002/psc.3244

   Publisher: **Wiley**

2. Modulation of tau protein aggregation using 'Trojan' sequences. Gaurav Pandey, Sudhir Morla, Sachin Kumar, Vibin Ramakrishnan*. **Biochimica et Biophysica Acta, BBA** - General Subjects (2020). DOI: 10.1016/j.bbagen.2020.129569.

   Publisher: **Elsevier**

3. Modulating Aβ Fibrillogenesis with 'Trojan' peptides. Gaurav Pandey, Sudhir Morla, Sachin Kumar, Vibin Ramakrishnan*. **Neuropeptides** (2020) DOI: 10.1016/j.npep.2020.102030.

   Publisher: **Elsevier**

4. Directive effect of chain length in modulating peptide nano-assemblies. Gaurav Pandey, Prem Prakash Das, Vibin Ramakrishnan*. **Protein & Peptide Letters** (2020) DOI: 10.2174/0929866527666200224114627.

   Publisher: **Bentham Science**

5. Praksah Kishore Hazam, Akhil, R., Gaurav Jerath, Jahnu Saikia and Vibin Ramakrishnan. Topological effects on the designability and bactericidal potency of antimicrobial peptides. **Biophysical Chemistry**, 2019, 142, 10 – 18.

   Publisher: **Elsevier**

6. Jahnu Saikia, Gaurav Pandey, Sajitha Sasidharan, Ferrin Antony, Harshal B. Nemade, Sachin Kumar, Nitin Chaudhary, and Vibin Ramakrishnan*. Electric Field Disrupts Amyloid Aggregation; Potential Non-invasive Therapy for Alzheimer's Disease. **ACS Chemical Neuroscience**. (2019), doi:10.1021/acschemneuro.8b00490.

   Publisher: **American Chemical Society**

7. Gaurav Pandey, Sudhir Morla, Harshal B. Nemade, Sachin Kumar and Vibin Ramakrishnan*. Modulation of Aggregation with Electric Field; Scientific Roadmap for a Potential Non-Invasive Therapy Against Tauopathies. **RSC Advances**. (2019), doi: 10.1039/c8ra09993f.

   Publisher: **Royal Society of Chemistry**

8. Gaurav Jerath, Ruchika Goyal, Vishal Trivedi T.R. Santhoshkumar and Vibin Ramakrishnan*. Syndiotactic Peptides for Targeted Delivery. **Acta Biomaterialia**. (2019), doi: 10.1016/j.actbio.2019.01.036.

   Publisher: **Elsevier**

9. Sooram Banesh, Vibin Ramakrishnan, and Vishal Trivedi. Mapping of phosphatidylserine recognition region on CD36 ectodomain. **Archives of Biochemistry and Biophysics**. (2018), doi::10.1016/j.abb.2018.10.005.

   Publisher: **Elsevier**

10. Praksah Kishore Hazam, Ruchika Goyal, Vibin Ramakrishnan*. Peptide based Antimicrobials: Design Strategies and Therapeutic Potential. **Progress in Biophysics and Molecular Biology**. (2018) http://doi.org/10.1016/j.pbiomolbio.2018.08.006

    Publisher: **Elsevier**

11. Ranbhor Ranjit, Anil Kumar, Abhijit Tendulkar, Kirti Patel, Vibin Ramakrishnan*, and Susheel Durani. IDeAS: Automated Design Tool for Hetero-chiral Protein Folds. **Physical biology**. (2018), doi::10.1088/1478-3975/aacdc3.

    Publisher: **Institute of Physics (IOP)**

12. Prakash Kishore Hazam, Anjali Singh, Nitin Chaudhary and Vibin Ramakrishnan*. Bactericidal Potency and Extended Serum Life of Stereo-Chemically Engineered Peptides Against Mycobacterium. **International Journal of Peptide Research and Therapeutics**. (2018), doi:10.1007/s10989-018-9690-0.

    Publisher: **Springer**

13. Ranbhor Ranjit, Anil Kumar, Kirti Patel, Vibin Ramakrishnan*, and Susheel Durani. Automated design evolution of stereo-chemically randomized protein foldamers. **Physical biology**. (2018), doi:10.1088/1478-3975/aaac9a

    Publisher: **Institute of Physics (IOP)**

14. Sajitha Sasidharan, Shyni P. C., Nitin Chaudhary, and Vibin Ramakrishnan*.Single Crystal Organic Nanofowers. **Scientific Reports**. (2017), doi:10.1038/s41598-017-17538-0.

    Publisher: **Nature (npg**)

15. Prakash Kishore Hazam, Gaurav Jerath, Nitin Chaudhary, and Vibin Ramakrishnan*. Peptido-mimetic Approach in the Design of Syndiotactic Antimicrobial Peptides. **International Journal of Peptide Research and Therapeutics**. (2017), doi:10.1007/s10989-017-9615-3

Publisher: **Springer**

16. Prakash Kishore Hazam, Gaurav Jerath, Anil Kumar, Nitin Chaudhary, and Vibin Ramakrishnan*. Effect of tacticity-derived topological constraints in bactericidal peptides. **Biochimica et Biophysica Acta**. (2017), doi:10.1016/j.bbamem.2017.05.002.

    Publisher: **Elsevier**

17. Gaurav Pandey, Jahnu Saikia, Sajitha Sasidharan, Deep C. Joshi, Subhash Thota, Harshal B. Nemade, Nitin Chaudhary, and Vibin Ramakrishnan*. Modulation of Peptide Based Nano-Assemblies with Electric and Magnetic Fields. **Scientific Reports**. (2017). doi:10.1038/s41598-017-02609-z

    Publisher: **Nature (npg)**

18. Karabi Saikia, Yalavarthi Durga Sravani, Vibin Ramakrishnan, and Nitin Chaudhary. Highly potent antimicrobial peptides from N-terminal membrane-binding region of E. coli MreB. **Scientific Reports.** (2017), 7, 42994. DOI:10.1038/srep42994.

    Publisher: **Nature (npg)**

19. Sajitha Sasidharan, Prakash Kishore Hazam and Vibin Ramakrishnan*. Symmetry Directed Self-Organization in Peptide Nano-Assemblies Through Aromatic pi-pi Interactions. **The Journal of Physical Chemistry B.** (2017) 121, 404−411. DOI: 10.1021/acs.jpcb.6b09474.

    Publisher: **American Chemical Society**

20. Anil Kumar, Ranjit Ranbhor, Kirti Patel, Vibin Ramakrishnan*, Susheel Durani. Automated Protein and Peptide Design: Landmarks and Operational Principles. **Progress in Biophysics and Molecular Biology.** (2016). DOI:http://dx.doi.org/10.1016/j.pbiomolbio.2016.12.002.

    Publisher: **Elsevier**

21. Suman Jyoti Deka, Ashalata Roy, Vibin Ramakrishnan, Debasis Manna and Vishal Trivedi. Danazol has potential to cause pkc translocation, cell-cycle dysregulation and apoptosis in breast cancer cells. **Chem. Biol. Drug Des.** (2016) DOI:10.1111/cbdd.12921.

    Publisher: **Wiley**

22. Gaurav Jerath, Prakash Kishore Hazam, Shashi Shekhar, Vibin Ramakrishnan*. Mapping the Geometric Evolution of Protein Folding Motor. **PLOS ONE.** (2016) 11(10): e0163993. DOI:10.1371/journal.pone.0163993.

    Publisher: **PLOS**

23. A. Mehra, Gaurav Jerath, Vibin Ramakrishnan, Vishal Trivedi. Characterization of ICAM-1 biophore to design cytoadherence blocking peptides. **Journal of Molecular Graphics & Modelling.** (2015) 57, 27–35.

    Publisher: **Elsevier**

24. Gaurav Jerath, Prakash Kishore Hazam and Vibin Ramakrishnan*. bPE toolkit: toolkit for computational protein engineering. **Systems and Synthetic Biology.** (2014) 8:337–341.

    Publisher: **Springer**

25. Rahul Metri, Gaurav Jerath, Govind Kailas, Adityabarna Pal & Vibin Ramakrishnan*. Structure Based Barcoding of Proteins. **Protein Science** (2014) 23, 117-120.

    Publisher: **Wiley**

26. Gaurav Jerath & Vibin Ramakrishnan*. Web-resources in Post Genomic Era. **Health Sciences** (2014) 1(3), JS002A.

27. Kimjolly Lhouvum.; Vibin Ramakrishnan & Vishal Trivedi. Insight into structural and biochemical determinants of substrate specificity of PFI1625c: Correlation analysis of protein-peptide molecular models. **Journal of Molecular Graphics & Modelling** (2013) 43, 21-30.
    Publisher: **Elsevier**

28. Vibin Ramakrishnan, Saeed Salem; Saipraveen Srinivasan, Mohammed Zaki, Suzanne Mathews, Wilfredo Colon and Christopher Bystroff. Developing a detailed mechanistic model for protein unfolding. **Proteins: Structure Function & Bioinformatics** (2012), 80, 920-934.

    Publisher: **Wiley**

29. Anil Kumar and Vibin Ramakrishnan*. Alternate protein scripts with unnatural alphabets. **Systems & Synthetic Biology** (2010), 4(4), 247-256.

    Publisher: **Springer**

30. Aimy Sebastian, Andreas Bender and Vibin Ramakrishnan*; Virtual Activity Profiling of Bioactive Molecules by 1D Fingerprinting. **51** (2010) 29, 773-779.

    Publisher: **Wiley**

31. Anil Kumar; Vibin Ramakrishnan; Ranjit Ranbhor and Susheel Durani. Homochiral Stereochemistry: The Missing Link of Structure to Energetics in Protein Folding. **Journal of Physical Chemistry B** (2009) 113 (51), pp 16435–16442.

    Publisher: **American Chemical Society**

32. Ranjit Ranbhor; Vibin Ramakrishnan; Anil Kumar and Susheel Durani. The Interplay of Sequence and Stereochemistry in defining Conformation in Proteins and Polypeptides. **Biopolymers** (2006) 83, 537-545.

    Publisher: **Wiley**

33. Vibin Ramakrishnan; Ranjit Ranbhor; Anil Kumar and Susheel Durani. The link between Sequence and Conformation in Protein Structures appears to be Stereochemically Established. **The Journal of Physical Chemistry B** (2006) 110, 9314-9323.

    Publisher: **American Chemical Society**

34. Vibin Ramakrishnan; Ranjit Ranbhor and Susheel Durani. Probing Main Chain Roles in Protein Structure and Folding Stereochemically. A Simulated Annealing Folding Study of Isotactic, Syndiotactic and Heterotactic Polypeptides. **Biopolymers** (2005) 78, 96-105.

    Publisher: **Wiley**

35. Vibin Ramakrishnan; Ranjit Ranbhor and Susheel Durani. Existence of Specific "Folds" in Polyproline-II Ensembles of an Unfolded Alanine Peptide Detected by Molecular Dynamics. **Journal of the American Chemical Society** (2004) 126, 16332-16333.

    Publisher: **American Chemical Society**

Book Chapters

36. Ruchika Goyal & Vibin Ramakrishnan. Peptide-Based Drug Delivery Systems. Characterization and Biology of Nanomaterials for Drug Delivery. Elsevier (Book Chapter, 2018). ISBN: 978-0-12-814031-4

    Publisher: Elsevier

37. Aimy Sebastian & Vibin Ramakrishnan*. Computational Biology Applications. **Nutri Horticulture**. Ed. K. V. Peter. DPH New Delhi. (2012) pp 123-142.
    Publisher: NIPA.

COMPUTATIONAL TOOLS/WEB SERVERS

1. Protein Barcode

Description: Tool structure based barcoding of proteins
Reference: Structure Based Barcoding of Proteins Rahul Metri, Gaurav Jerath, Govind Kailas, Nitin Gachhe , Adityabarna Pal & Vibin Ramakrishnan (2014) **Protein Science 23:117–120**

2. Basic Protein Engineering Toolkit (bPE Toolkit)

Description: Consists of six useful protein modeling tools
Reference: bPE toolkit:Toolkit for Computational Protein Engineering Gaurav Jerath, Prakash K. Hazam and Vibin Ramakrishnan. **Systems and Synthetic Biology. (2014) 8:337–341.**

3. Geofold: Protein Unfolding Pathway prediction server

Description: Tool for predicting protein unfolding pathways
Reference: Vibin Ramakrishnan, Saeed Salem; Saipraveen Srinivasan, Mohammed Zaki, Suzanne Mathews, Wilfredo Colon and Christopher Bystroff. **Proteins: Structure Function & Bioinformatics (2012), 80, 920-934.**

4. IDEAS

Description: Software for protein inverse design
Reference: Ranbhor Ranjit, Anil Kumar, Abhijit Tendulkar, Kirti Patel, Vibin Ramakrishnan*, and Susheel Durani. IDeAS: Automated Design Tool for Hetero-chiral Protein Folds. **Physical biology. (2018), doi::10.1088/1478-3975/aacdc3**

5. Time Piece model for Virtual Activity Profiling of Drug molecules

Description: Tool virtual activity profiling of drugs.

Reference: Aimy Sebastian, Andreas Bender and Vibin Ramakrishnan*; Virtual Activity Profiling of Bioactive Molecules by 1D Fingerprinting. Molecular Informatics (2010) 29, 773-779.

CONFERENCE PRESENTATIONS (SELECTED)

1. Vibin Ramakrishnan, Ranjit Ranbhor and Susheel Durani. Stereochemical origins of compactness and stability in proteins. A simulated annealing study of poly L and alternating L, D diastereomer variants of Ac-Ala_{30}-NHMe. *48th Annual Meeting of Biophysical Society, Baltimore, Maryland, USA. Biophys. J S.* 2004, 86, 621.

2. Ranjit Ranbhor, Vibin Ramakrishnan, Anil Kumar, Abhijit Tendulkar and Susheel Durani. Heterochiral Proteins. De novo Design by Stereochemical Control of Folding. *The 19th Annual Symposium of Protein Society, USA. 2005.* Boston, USA. *Protein Science S.* 2005, 14, 105.

3. Anil kumar, Vibin Ramakrishnan, Ranjit Ranbhor; Susheel Durani. "Poly-L stereochemistry and conformational landscapes of protein folding. Explicit solvent MD of Poly-L and Alternating-L, D octa-alanines." *51st Annual Meeting of Biophysical Society, CA, USA Biophys. J.* 94: 195. 2008.

4. Anil Kumar; Ranjit Ranbhor; Vibin Ramakrishnan; Susheel Durani. "Simulated Dynamics of Blocked Octa-L-alanine Implicates Inter-Peptide Interaction as Possible Speed Barrier in Protein Folding." *The 21st Annual Symposium of Protein Society, USA*. Boston, U.S.A. July 21-25, 2007. *Protein Science S* (2007) 16, 107

5. Vibin Ramakrishnan; Saeed Salem; Mohammed Zaki and Christopher Bystroff. Simulation of Protein Folding Pathways and Folding Kinetics using Statistical Mechanical Model. *5th International Conference on Bioinformatics December 18-20, InCoB 2006*, New Delhi.

6. Vibin Ramakrishnan, Ranjit Ranbhor and Susheel Durani. Stereochemical origins of compactness and stability in proteins. A systematic modeling study of poly L and alternating L, D diastereomer variants of Ac-Ala_8-NHMe. *NCBS Symposium on Molecules, Machines and Networks 2004* National Centre for Biological Sciences, TIFR, GKVK Campus, Bangalore.

7. Vibin Ramakrishnan, Ranjit Ranbhor, Anil Kumar and Susheel Durani. Seeds of protein folding in polyproline-II ensembles of unfolded polypeptides. *The Second Indian Symposium of Protein Society- Protein Structure and Function. 2004.* IIT-Bombay.

8. Ranjit Ranbhor, Vibin Ramakrishnan, Anil Kumar and Susheel Durani. De novo design of heterotactic mini-protein. *The Second Indian Symposium of Protein Society- Protein Structure and Function. 2004* IIT-Bombay.

9. Anil Kumar, Ranjit Ranbhor, Abhijit Tendulkar, Kirti Patel, Vibin Ramakrishnan and Susheel Durani. De novo Design with Diversification of Molecular Tacticity. *Joint International Conference by American Chemical Society and Council of Scientific and Industrial Research. 2006.* National Chemical Laboratory, Pune.

10. Ranjit Ranbhor, Vibin Ramakrishnan, Anil Kumar and Susheel Durani. The Link between Sequence and Conformation in Protein Structures could be Stereochemically Established. *The Eighth Symposium of Chemical Research Society of India. 2006.* IIT-Bombay, Mumbai.

11. Ranjit Ranbhor, Vibin Ramakrishnan, Anil Kumar, Abhijit Tendulkar and Susheel Durani. Computational Design of Heterochiral Protein Assemblies. *75th Annual Meeting, Society of Biological Chemists (India) December 8-11, 2006* at Jawaharlal Nehru University, New Delhi.

12. Ranjit Ranbhor, Anil Kumar, Vibin Ramakrishnan, Abhijit Tendulkar and Susheel Durani.

    Computational Design of Protein Dimers in C2-Symmetry. *5th International Conference on Bioinformatics December 18-20, 2006* at Hotel Ashok, New Delhi.

13. Anil Kumar, Vibin Ramakrishnan, Ranjit Ranbhor and Susheel Durani. Inter-peptide Interaction and Protein Folding Mechanism. Molecular Dynamics of Blocked Octa-L-Alanine in Explicit Solvent. *5th International Conference on Bioinformatics December 18-20, 2006* at Hotel Ashok, New Delhi.

14. Anil Kumar; Ranjit Ranbhor; Vibin Ramakrishnan; Susheel Durani. "Molecular Dynamics of Blocked Octa-L-alanine Implicates Inter-Peptide Electrostatics as Possible Speed Barrier in

Protein Folding." *Indian Biophysical Society-2007* (National Symposium on Biophysics: Trends in Biomedical Research) New Delhi, Feburary 13-15, 2007

15. Anil Kumar; Ranjit Ranbhor; Vibin Ramakrishnan; Susheel Durani. "Poly-L Structure and Peptide Dipolar Interaction in Protein Folding Speed and Specificity." *Western Regional Humboldt Kolleg 2007* Jaipur, Rajasthan, September 28-30, 2007.

16. Vibin Ramakrishnan, Saeed Salem, Saipraveen Srinivasan, Wilfredo Colon, Mohammed Zaki & Christopher Bystroff. GEOFOLD: *A Mechanistic Model to Study the Effect of Topology on Protein Unfolding Pathways and Kinetics*. 3DSig. STRUCTURAL BIOLOGY & COMPUTATIONAL BIOPHYSICS. (2008) 25-26.

17. Indrani Ray, Gaurav Kumar Sharma, Prakash Kishore Hazam & **Vibin Ramakrishnan**. *'Quantification of Local Vs Global effects in Protein Conformational Fold Selection'*. ***International Conference on Biomolecular Forms & Functions***. Indian Institute of Science Bangalore. India. Jan 8-11 2013.

18. Gaurav Pandey, Jahnu Saikia, Sajitha Sasidharan and **Vibin Ramakrishnan**. Modulation of peptide based nano structure assembly with physical perturbants. International Conference on "Advances in Biological Systems and. Materials Science in NanoWorld. 1, 46-47, 2017.

19. Sajitha Sasidharan, Prakash Kishore Hazam and Jahnu Saikia. International Conference on "Advances in Biological Systems and. Materials Science in NanoWorld. 1, 84-84, 2017.

20. Gaurav Pandey, and Vibin Ramakrishnan. Modulation of Aggregation with Electric Field; Electric feld assisted inhibition of aggregation in amyloidogenic proteins. Proceedings of the 35th European Peptide Symposium, Dublin City University, Dublin, Ireland. 286-269, 2018.

21. Jahnu Saikia and Vibin Ramakrishnan. Electric Field Disrupts Amyloid Aggregation; Potential Non-invasive Therapy for Alzheimer's Disease. 63rd Biophysical Society Annual Meeting'2019. Baltimore, Maryland, USA. Biophysical Journal. 116.3, 51 a, 2019.

22. S. Sasidharan and V.Ramakrishnan. Novel hybrid magnetic material for reduction and removal of heavy metals. 6th International Conference on Multifunctional, Hybrid and Nanomaterials, 11-15 March 2019, Meliá Sitges, Sitges, Spain. 56, 2019.

INVITED LECTURES (SELECTED)

1. Symmetry directed self-organization of nano-assemblies through aromatic π-π interactions. International Conference on Nanomaterials: Synthesis, Characterization and Applications (ICNP 2018).MGU, December 9, 2018.
2. Design of Novel Hetero-Tactic Fluorescent Proteins by Automated Design Approaches. INPEC 2017: The 23rd INPEC Meeting: Protein Structure, Function and Engineering, November 11, 2017, Bose Institute, Kolkata.
3. A Reductionist Approach to Drug Discovery Research. National Workshop on Drug Design and Discovery, ILS Bhubaneswar, March 22, 2017
4. Ying-yang hypothesis for conformational fold selection and its implications in designing peptide assemblies. Third International conference on Natural Polymers, Biopolymers ICNP 2012. MG Univ.
5. Topology based prediction of Protein folding pathways.Workshop on modeling biological systems II. Indian Statistical Institute, Kolkota & Mizoram University, Aizwal. 2012.
6. Canonicalization of Molecular Structures for Virtual Activity Profiling. National workshop on Chemical Informatics; Applications in Drug Design. Tezpur University. 2012.
7. A 'reductionist' approach in virtual activity profiling of drug molecules **ICDDT**, 2011. 3rd International Conference on Drug Discovery and Therapy, Feb 7-10, 2011 Dubai, UAE.
8. Computational Protein Design. ADCOM 2009. International Conference on advanced computing and communication. Indian Institute of Science Bangalore. 14-17 Dec 2009.

OTHER NOTABLE CONTRIBUTIONS

1. Editorial Board Member, Scientific Reports. 2018 onwards. Publisher: Nature Publishing Group (npg). Impact Factor : 4.525

2. Member, International Panel for review of sponsored projects, National Science Center, Poland, 2019.

3. Panel Member, scientific panel for Method of Sampling and Analysis, by Food Safety and Standards Authority of India (FSSAI), Govt. of India 2017-.

4. Member Secretary, Department Undergraduate Programme Committee (DUPC) from 2016 – 2018 and Convener of Curriculum development committee for Biosciences and Bioengineering.