

Curriculum Vitae



Ansuman Lahiri

Professor,
Department of Biophysics, Molecular Biology & Bioinformatics
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Fields of specialization: Theoretical and Computational Study of Biomolecular Structure and Dynamics

Positions:

2016 – till date

Professor in the Department of Biophysics, Molecular Biology & Bioinformatics,
University of Calcutta

2013 - 2016 Associate Professor in the Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta

2010 - 2013 Reader in the Department of Biophysics, Molecular Biology & Bioinformatics,
University of Calcutta

2001 – 2010 Lecturer in the Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta.

Education & Training:

1999 – 2000 Post-doctoral researcher in the computational chemistry group of Prof. Aatto Laaksonen in the Physical Chemistry Division of Stockholm University, Sweden.

1995 – 1999 Post-doctoral researcher in the molecular dynamics group of Prof. Lennart Nilsson in the Center for Structural Biochemistry, Karolinska Institute, Sweden.

1994-1995 Research Associate with Prof. Rabi Majumdar in the Biophysics Division, Saha Institute of Nuclear Physics, Calcutta, India

1994 Ph.D. in Biophysics & Molecular Biology (Calcutta University, Calcutta)

1986 Associateship in Biosciences from Saha Institute of Nuclear Physics, Calcutta

1984 M.Sc. degree in Physics from Calcutta University

1982 B.Sc. degree in Physics from Calcutta University

Distinctions:

2014 Secretary of the National Symposium of the Indian Biophysical Society, Saha Institute of Nuclear Physics, Kolkata (February 7-10, 2014)

2009 Co-Convener of International Conference on Physics Biology Interface (ICPBI2009), Saha Institute of Nuclear Physics, Kolkata

2007 Organizer, International Conference on Chromosomes to Neurons (January 12-14, 2007) Department of Biophysics, University of Calcutta, Kolkata.

2005 Organizer, Conference on Molecular Mechanism of Diseases and Drug Action (MMDDA 2005) at Saha Institute of Nuclear Physics, Kolkata

2002 Organizer, DBT sponsored Training Program on Application of Perl in Biological Sequence Analysis, Calcutta University.

1995 Recipient of Wenner-Gren Foundation Fellowship, Sweden

Professional Service:

- 2019 - Treasure, Indian Biophysical Society
- 2017 - Member of the Executive Committee, DNA Society of India
- 2017 - Chairperson, Board of Studies on undergraduate teaching of Molecular Biology/Biophysics (University of Calcutta)
- 2017 - Head of the Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta and Member of the University Senate
- 2013 - Member of the Executive Committee, Indian Biophysical Society
- 2013 – 2015 Head of the Department of Biophysics, Molecular Biology & Bioinformatics, University of Calcutta and Member of the University Syndicate and Senate
- 2009 - Member, Board of Studies on undergraduate teaching of Molecular Biology/Biophysics (University of Calcutta)
- 2001 - Member, Board of studies on graduate teaching of Biophysics, Molecular Biology & Genetics/Bioinformatics (University of Calcutta)

Students and Trainees

Post-doctoral researchers

1. Biprashekhar Chakraborty (N-PDF SERB)

Doctoral students (Ph.D dissertation advisor)

1. Sweta Mishra (JRF)
2. Nivedita Dutta (JRF)
3. Bharat Gopal Somkuwar
4. Biswanath Chowdhury (Degree awarded)
5. Priya Rani Agarwal (DST-Inspire SRF)
6. Rupak Pal (CSIR SRF)
7. Aditya Kumar Sarkar (CSIR SRF)
8. Saikat Dutta Chowdhury (Degree awarded)

9. Indrajit Deb (Degree awarded)

10. Ananyo Choudhury (Degree awarded)

Extramural Research Grants

1. Development and validation of accurate force fields for modified nucleosides in RNA (UGC, 2012 – 2015 completed, about Rs. 12 lakhs)

2. Validation and reparameterization of the additive AMBER force field for accurate modeling of modified RNA residues (DST, 2018 – 2021 ongoing, Rs. 23 lakhs)

Membership in scientific bodies

1. Indian Biophysical Society
2. DNA Society of India
3. American Chemical Society

Editor/or Editorial Board Member etc.

Editorial board member

1. Journal of Physics Through Computation (ISSN 2617-1163)

Complete list of publications of Ansuman Lahiri

1. Comparative study of the SBP-box gene family in rice siblings. PR Agarwal and A Lahiri* (2020) J. Biosci. 45 (1), 1-17.
2. Molecular Dynamics Simulation of the Conformational Preferences of Pseudouridine Derivatives: Improving the Distribution in the Glycosidic Torsion Space. N Dutta, J Sarzynska, A Lahiri* (2020) Journal of Chemical Information and Modeling 60 (10), 4995-5002.
3. Ensemble Allosteric Model for the Modified Wobble Hypothesis. AK Sarkar, J Sarzynska, A Lahiri* (2020) Journal of Physical Chemistry Letters 11 (15), 6337-6343
4. Computational and NMR studies of RNA duplexes with an internal pseudouridine-adenosine base pair. Indrajit Deb, Łukasz Popena, Joanna Sarzyńska,

- Magdalena Małgowska, Ansuman Lahiri, Zofia Gdaniec, Ryszard Kierzek (2019) Scientific reports 9 (1), 1-13.
5. Probing the functional conformations of an atypical proline-rich fusion peptide. N. Dutta, S. Dutta Chowdhury, A Lahiri* (2019) Phys. Chem. Chem. Phys. DOI: 10.1039/c9cp02216c
 6. Structural Stability of the Anticodon Stem Loop Domains of the Unmodified Yeast and Escherichia coli tRNAPhe: Differing Views from Different Force Fields. I Deb, J Sarzynska, L Nilsson, A Lahiri* (2019) ACS Omega 4 (2), 3029-3044.
 7. Dynamical Features of Cognate Site Recognition in bZIP–DNA Interaction. AK Sarkar, A Lahiri* (2019) ACS Omega 4 (1), 292-308.
 8. Plant Polypeptide Hormone Systemin Prefers Polyproline II Conformation in Solution. S. Dutta Chowdhury, A Lahiri (2017) ACS Omega 2 (10), 6831-6843.
 9. Effect of Inactivating Mutations on Peptide Conformational Ensembles: The Plant Polypeptide Hormone Systemin (2016) S. Dutta Chowdhury, A. K. Sarkar and A. Lahiri* J. Chem. Inf. Model. DOI: 10.1021/acs.jcim.5b00666
 10. Reparameterizations of the χ Torsion and Lennard-Jones σ Parameters Improve the
 11. Conformational Characteristics of Modified Uridines (2016) I. Deb, R. Pal, J. Sarzynska, and A. Lahiri* J. Comp. Chem. DOI 10.1002/jcc.24374
 12. Role of Tryptophan 135 of Chandipura Virus Phosphoprotein P in Dimerization and Complex Formation with Leader RNA: Structural Aspect using Time Resolved Anisotropy and Simulation (2015) M. Mukherjee, A. Sarkar, A. Roy, P. Saha Sardar, A. Lahiri, D. Chattopadhyay and S. Ghosh RSC Advances DOI: 10.1039/C5RA20863G
 13. Capturing the destabilizing effect of dihydrouridine through molecular simulations (2014) I. Deb, J. Sarzynska, L. Nilsson and A. Lahiri*. Biopolymers 101, 985-991.
 14. Conformational preferences of modified uridines: comparison of AMBER derived force fields (2014) I. Deb, J. Sarzynska, L. Nilsson and A. Lahiri*. J. Chem. Inf. Model 54, 1129-1142.
 15. Specificity determinants for the abscisic acid response element (2013) A. K. Sarkar and A. Lahiri*. FEBS Open Bio 3, 101-105.
 16. hsa-miR-503 is downregulated in β Thalassemia Major (2012) P. Roy, G. Bhattacharya, A. Lahiri, U. B. Dasgupta, D. Banerjee, S. Chandra, M. Das. Acta Haematol. 128, 187-189.
 17. Genome wide gene expression regulation by HIP1 protein interactor, HIPPI: prediction and validation (2011) M. Dutta, A. Choudhury, A. Lahiri and N. P. Bhattacharyya. BMC Genomics. 12, 463.
 18. Comparative Analysis of Abscisic Acid Regulated Transcriptomes in Arabidopsis (2011) A. Choudhury and A. Lahiri*. Plant Biol. 13, 28.
 19. Inclusion of chrysin in beta-cyclodextrin nanocavity and its effect on antioxidant potential of chrysin: A spectroscopic and molecular modeling approach (2010) S. Chakraborty, S. Basu, A. Lahiri and S. Basak J. Mol. Struct. 977, 180.
 20. TRABAS: a database for transcription regulation by ABA signaling. (2008) A. Choudhury and A. Lahiri*. In Silico Biol. 8, 0038.

21. Arabidopsis thaliana regulatory element analyzer (2008) A. Choudhury and A. Lahiri. *Bioinformatics* 24, 2263.
22. Dynamics of Leucine-rich Repeat Proteins (2007) A. Lahiri* and S. Basu. *Biophys. Rev. Letts.* 2, 207.
23. Interactions of HIPPI, a molecular partner of Huntingtin interacting protein HIP1, with the specific motif present at the putative promoter sequence of the caspase-1, caspase-8 and caspase-10 genes (2007) P. Majumder, A. Choudhury, M. Banerjee, A. Lahiri and N. P. Bhattacharyya. *FEBS J.* 274, 3886.
24. Molecular Dynamics Simulation of the Preferred Conformations of 2-Thiouridine in Aqueous Solution (2007) A. Lahiri*, J. Sarzynska, L. Nilsson and T. Kulinski. *Theor. Chem. Acc.* 117, 267.
25. Theoretical Analysis of the Excited State Properties of Wybutine: A Natural Probe for Transfer RNA Dynamics (2004) A. Lahiri*, J. Ulicny and A. Laaksonen, *Int. J. Mol. Sci.* 5, 75.
26. Exploring the idea of self-guided dynamics (2001) A. Lahiri*, L. Nilsson and A. Laaksonen, *J. Chem. Phys.* 114, 5993.
27. Molecular dynamics of the anticodon domain of yeast tRNAPhe: Codon-anticodon interaction (2000) A. Lahiri and L. Nilsson, *Biophys. J.* 79, 2276.
28. Examining the characteristics of chaos in biomolecular dynamics: a random matrix approximation (1999) A. Lahiri and L. Nilsson, *Chem. Phys. Lett.* 311, 459.
29. Denaturation of supercoiled DNA: A Monte Carlo study (1998) S. Kundu, A. Lahiri and A. R. Thakur, *Biophys. Chem.* 75, 177.
30. Properties of dianionic oxyphosphorane intermediates from hybrid QM/MM simulation: Implications for ribozyme reactions (1997) A. Lahiri and L. Nilsson, *J. Mol. Str. THEOCHEM* 419, 51.
31. Ligand binding isotherm for DNA in the presence of supercoil-induced non-B form: a theoretical analysis (1996) A. Lahiri and R. Majumdar, *Biophys. Chem.* 58, 239.
32. Structure and energetics of plectonemically supercoiled DNA (1994) A. Lahiri*, *Biopolymers* 34, 799.
33. Computational approach to the study of supercoil-induced structural polymorphism in DNA (1993) R. Majumdar, A. Lahiri and A. Thakur, *J. Mol. Str. THEOCHEM* 105, 211.
34. A semiempirical expression for the gel electrophoretic mobility of supercoiled DNA (1992) A. Lahiri and S. Sen, *Biopolymers* 32, 893.
35. Melting characteristics of highly supercoiled DNA (1992) S. Sen, A. Lahiri and R. Majumdar, *Biophys. Chem.* 42, 229.
36. Theoretical analysis of gel electrophoretic data for interaction of lysine rich histone with supercoiled DNA (1992) A. Lahiri*, S. Chaudhuri and N. P. Bhattacharyya, *Biophys. Chem.* 42, 223.
37. Applicability of sequence generating techniques in supercoiled DNA (1991) A. Lahiri, *Ind. J. Phys.* 65B, 517.
38. Effect of supercoiling on the melting characteristics of heteropolynucleotides (1991) S. Sen and A. Lahiri, *Biophys. Chem.* 40, 33.

39. Theory of a supercoil induced B-Z transition in closed circular DNA (1991) R. Majumdar, A Lahiri and S. Sen, J. Mol. Str. THEOCHEM. 230, 431.
40. Influencing the B-Z switch in supercoiled DNA (1991) A. Lahiri*, Biophys. Chem. 39, 85.

Ph.D thesis:

Some studies on the energetics of supercoiled DNA (supervisor: Prof. Rabi Majumdar)