

**Recipients of INSA Distinguished Lecture Series  
(for the year 2023)**

**Sectional Committee - I : Mathematical Sciences: Applied Mathematics, Pure Mathematics, Theoretical Computer Science, Statistics and Operations Research**

**Dr Manjunath Krishnapur**, Associate Professor, Department of Mathematics, Indian Institute of Science, Bengaluru.

Dr Manjunath Krishnapur is one of the leading probabilists in the country, who has been recognized world wide for his work on random analytic functions, arithmetic random waves, stochastic operators and other related areas. Manjunath Krishnapur's research contributions are deep and elegant, and those are published in topmost international journals in the field. He is also a good speaker capable of conveying technical ideas to a broad audience. His lectures will be of interest to a wide audience.

**Sectional Committee - II : Physics:**

*Astronomy, Astrophysics, Nuclear and High Energy Physics, Atomic, Molecular and Optical Physics, Statistical Physics, Theoretical Physics, Mathematical and Computational Physics, Condensed Matter including Soft, Liquids and Nano Materials, Cosmic Radiation, Cosmology, Space Physics, Basic Planetary Sciences, Lasers and Optoelectronics, Plasma Physics, Solar Physics, Atmospheric Physics*

**Professor HR Krishnamurthy, FNA**, Department of Physics, Indian Institute of Science, Bengaluru.

Prof. H. R. Krishnamurthy (FNA, FASc, FNASc, FTWAS, FAPS) has made seminal contributions in theoretical condensed matter physics especially in the area of strongly correlated electron systems. His research contributions include the discovery and analysis of novel scaling phenomena in hysteresis in model spin systems, an analysis of the instabilities of the Nagaoka ferromagnetic state of the large-U Hubbard model, development of an elegant mean-field theory of phase-transitions in the Bose-Hubbard model, development of the dynamical cluster approximation for embedding a causal self-consistent cluster in an effective medium, novel applications of dynamical mean-field theory, and a new theory for the colossal magneto-resistance and other hitherto poorly understood phenomena seen in doped manganites.

**Sectional Committee - III :Chemistry:**

*Analytical Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Theoretical and Computational Chemistry, Structural Chemistry, Chemistry of Materials, Medicinal and Pharmaceutical Chemistry, Bio-organic, Bio-inorganic and Bio-physical Chemistry*

**Professor Asit Kumar Chakraborti, FNA** Mahananda Apartment, Block A, Flat No. 4, 5A Green Row, Kolkata.

The committee recommends Professor Asit Kumar Chakraborti, FNA for his outstanding contributions to synthetic organic and medicinal chemistry and developing new concepts in drug discovery process. He has made original contributions to the understanding of the role of water in accelerating organic reactions as potential green chemistry approaches and applications of ionic liquids in chemical reactions. His work on C-H/Br/O activation by heterobimetallic nanoparticles led to the development of novel and selective COX-2 inhibitors.

**Sectional Committee - IV : Earth & Environmental Sciences:**

*Surface and Solid Earth Science, Applied Atmospheric Chemistry and Physics, Climate Sciences, Meteorology, Geo Engineering, Ocean Sciences, Geo Sciences and Applied Planetary Sciences*

**Professor Anil Bhardwaj, FNA**, Director, Physical Research Laboratory, Ahmedabad.

Prof. Anil Bhardwaj is well-known for his contributions in Planetary Science. He was the Principal Investigator (PI) of SARA experiment on Chandrayaan-1, and MENCA experiment on the Indian Mars Mission, which have yielded significant new findings. He is the PI of currently running XSM and CHASE-2 experiments on Chandrayaan-2 orbiter, and CHASTE and APSX experiments on Chandrayaan-3 lunar Lander and Rover, respectively. His team PI-led experiment ASPEX would be flying on the upcoming solar mission Aditya-L1. He has provided exceptional scientific leadership for plans of future Indian planetary missions. During his tenure as the Director of SPL-VSSC, he nurtured the planetary research group. As Director of PRL, he has introduced other contemporary research areas, and innovative public outreach programs. For all his outstanding contributions to Science, he has been awarded with the Fellowship of the three Science Academies of India, the J. C. Bose fellowship, S. S. Bhatnagar, and Infosys prizes.

***Sectional Committee - V : Engineering & Technology:***

*Electrical Engineering, Telecommunication Engineering, Electronics and Optoelectronics, Chemical Engineering, Civil Engineering, Environmental Engineering, Mechanical Engineering, Aeronautical Engineering, Metallurgical Engineering, Computer Science and Engineering including Software and Data science, Information Science and Technology, Advanced Materials (such as Bio-materials, Hybrid Materials and Nano Materials), Polymer Science & Engineering*

**Professor GD Yadav, FNA**, Emeritus Professor of Eminence, Institute of Chemical Technology, Mumbai.

Professor GD Yadav, Emeritus Professor of Eminence, is a distinguished chemical engineer of national and international repute. Over the decades, he has made critical contributions in several areas of national interest such as, Green Chemistry and Technology, Catalytic Science and Engineering, Biotechnology, and in the 'Net Zero Goal' - encompassing - Hydrogen economy, Carbon dioxide refineries, Biomass and Plastics Valorization into Fuels, Chemicals and Materials.

***Sectional Committee - VI : General Biology:***

*Taxonomy, Structure, Ecology, Environmental Biology, Evolution and Behaviour of Plants, Animals and Microbes including Unicellular Eukaryotes*

**Professor PP Majumder, FNA**, Distinguished Professor and Founder, National Institute of Biomedical Genomics, Kalyani.

Prof Partha Majumder has made outstanding contributions to human genetics and evolution using statistics, molecular genetics and anthropological methods. He devised innovative paradigms and statistical methods for solving biological problems related to modes of inheritance of complex human traits and mapping genes underlying such traits. His work on genetic diversity of ethnic Indian populations has resulted in a clear reconstruction of the processes of peopling of the Indian subcontinent, which had major impact on the design of studies for mapping disease genes.

**Sectional Committee - VII : Molecular and Cellular Biology:**  
*Cell Biology, Physiology, Development, Genetics, Genomics and other Omics of Plants,  
Animals and Microbes including Unicellular Eukaryotes*

**Professor Appa Rao Podile, FNA**, Senior Professor, Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad.

For his pioneering work on the use of pathogen-derived molecules like harpin and chitoooligosaccharides (COS) to induce plant immunity and to reduce the use of synthetic agrochemicals in agriculture. He worked extensively on chitinolytic plant growth promoting rhizobacteria (PGPR) targeting cell wall of fungal pathogens, besides promoting the growth and yield as PGPR.

**Sectional Committee - VIII : Biomolecular, Structural Biology and Drug Discovery:**  
*Biochemistry, Biophysics, Molecular Biology, Pharmacology, Structural Biology,  
Bioinformatics, Computational Biology, System Biology*

**Professor P Balaram, FNA**, Indian Institute of Science, Bengaluru.

Padma Bhushan Professor Padmanabhan Balaram is recommended for the INSA Distinguished Lecture Series. Professor Balaram has conducted unparalleled research on the structure, conformation, and biological activity of designed and natural peptides. Professor Balaram's efforts have significantly enhanced our understanding of how structural elements play a fundamental role in forming secondary structural motifs such as helices, beta turns, and sheets.

**Sectional Committee - IX : Health Sciences:**  
*Basic and Clinical Medical Sciences–Communicable and Non-communicable Diseases,  
Epidemiology, Anthropology, Psychology, Cognitive and Neurosciences, Medical Genetics  
and Genomics, Public Health, Nutrition, Immunology*

**Professor Subrata Sinha, FNA**, Professor and Head, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi.

Prof (Dr.) Subrat Sinha in his distinguished career has made significant contributions in precision medicine with his efforts directed towards identifying novel genetic alterations allowing for not only differentiating between apparently similar pathologies but also how these alterations affect tumor behaviour. His work has primarily focused on neuropathology, familial dyslexia, and recombinant human antibodies. He and his team have also contributed in identifying novel drug combinations to rescind hypoxia induced chemoresistance. His work has led to 4 patents being granted (4 India and 3 USA) in areas of transcriptional gene silencing and recombinant antibodies and novel tumour specific gene therapy.

**Sectional Committee - X : Agricultural Sciences:**

*Agriculture, Horticulture, Forestry, Fisheries, Food Science, Veterinary Science, Pathogen Biology and Host Pathogen Interaction Both Plant and Veterinary Importance*

**Professor TK Adhya, FNA**, School of Biotechnology, Kalinga Institute of Industrial Technology (Deemed University), Bhubaneswar.

Prof. Adhya's research has been on paddy. He has done outstanding work on sustainable management of tropical soils through use of ecofriendly technologies for maintaining higher levels of productivity with minimal environmental impacts. His current research focus is on valorization of plant biomass and food waste and the circular bioeconomy for carbon and nitrogen.