

Meghnad Saha

Sunder Lal Hora

S. Chandra

P. Venkateswara Murthy

J. V. Narayana Murthy

S. Ghoshal

H. S. Gahlot

A. C. Bose

B. N. K. Choudhury

H. F. Shau

C. G. Overton

P. N. Choudhury

W. B. Barrow



FELLOWS ELECTED 2008



EXCELLENCE IN SCIENCE

C. V. Raman  
H. S. Gahlot  
P. Venkateswara Murthy  
S. Ghoshal  
D. H. Raman  
P. Choudhury

H. F. Shau  
W. B. Barrow  
S. Ghoshal  
B. N. K. Choudhury  
A. C. Bose  
J. V. Narayana Murthy

# Fellows Elected-2008

**Tapan Kumar Adhya** (b. 04.09.1949), PhD, Principal Scientist (Microbiology), Division of Crop Production, Central Rice Research Institute, Cuttack-753006, Orissa.

Dr Adhya has made significant contributions to the frontier area of agro-environment science. His research on methane emission from Paddy cultivation in India indicated annual methane emission ranging between 4-6 Tg which is one-tenth of US-EPA estimate. This lower estimate was later entered in IPCC database. His research identified flooded paddy as an important source of  $N_2O$ , another greenhouse gas. He has also worked on pesticide degradation in rice soils and isolated which can degrade recalcitrant  $\beta$  and  $\delta$  isomers of HCH under aerobic conditions.



**Manindra Agrawal** (b. 20.05.1966), PhD, Department of Computer Science, Indian Institute of Technology, Kanpur-208016.

Dr Agarwal has made fundamental contribution to the deterministic polynomial time algorithm for primality testing. This solves an age-old basic problem which has been intensively studied over the last three decades in the context of computer science. He has also made significant contributions to the theory of efficient reductions between computational problems which are part of the programme studying the well-known "P vs NP" question in mathematics/computer science.



**Faizan Ahmad** (b. 10.07.1949), PhD, Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, Jamia Nagar, New Delhi-110025.

Dr Ahmad has made fundamental contributions to the protein folding problem. His studies have provided very strong support for the linear free energy model for evaluating protein stability. Further, he has shown that compatible osmolytes do not perturb the physiological protein folding/unfolding equilibrium. His early work on properties of unfolded proteins is classic.



**Soumitro Banerjee** (b. 17.10.1960), PhD, Professor, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur-721302.

Professor Banerjee has made significant contributions to nonlinear dynamics and chaos theory, and its applications to electrical engineering. His results in the theory of non-smooth bifurcations and its applications to switching dynamical systems are particularly path-breaking.



**Vinod Bhakuni** (b. 24.05.1962), PhD, Division of Molecular & Structural Biology, CDRI, Lucknow-226001.

Dr Bhakuni has highlighted the role of electrostatic interactions in maintenance of quaternary structure and cooperativity in oligomeric proteins which have importance as drug targets in *M. tuberculosis* and *P. falciparum*.



**Somendra Mohan Bhattacharjee** (b. 24.01.1957), PhD, Institute of Physics, Bhubaneswar-751005.

Dr Bhattacharjee has made outstanding contributions in the field of statistical mechanics of phase transitions such as existence of a force induced unzipping transition of DNA, vicinal surface with a tricritical point and nonlocality in kinetic roughening transition.



**Vadapalli Chandrasekhar** (b. 06.11.1958), PhD, Professor, Department of Chemistry, Indian Institute of Technology, Kanpur-208016.

Professor Chandrasekhar has made significant contributions in the area of main group and organometallic chemistry through innovative synthesis and structural investigations of inorganic clusters and inorganic polymers.



**Pratim Kumar Chattaraj** (b. 26.04.1958), PhD, Department of Chemistry, Indian Institute of Technology, Kharagpur-721302.

Professor Chattaraj has made outstanding contributions in the broad area of density based quantum mechanics including applications in the electronic structure, properties, reactivity, bonding, toxicology, aromaticity, dynamics and quantum chaos.



**Krishnaswamy Krishnamoorthy** (b. 07.01.1952), PhD, Scientist G & Project Director, Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram-695022.

Dr Krishnamoorthy has made fundamental contributions to the insightful discovery of the hitherto unsuspected significant role of aerosols in influencing the radiative forcing and its consequent effect on the climate system.



**Gattamraju Ravindra Kumar** (b. 15.06.1961), PhD, Professor, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Mumbai-400005.

Professor Ravindra Kumar has made significant contributions to the behaviour of matter in intense ultrashort laser fields such as first ever experimental demonstration of ultrashort, megagauss pulses in dense, hot plasmas and 'real time' demonstration of electron-plasma wave breaking.



**Narinder Kumar Mehra** (b. 04.11.1949), PhD, Department of Transplant Immunology & Immunogenetics, All India Institute of Medical Sciences, Ansari Nagar, New Delhi-110029.

Professor Mehra has pioneered Transplant Immunology and Clinical Immunogenetics and made original contributions in infectious, autoimmune and rheumatological diseases that have helped understand molecular basis of their susceptibility.



**Rabindra Nath Mukherjee** (b. 19.04.1953), PhD, Professor, Department of Chemistry, Indian Institute of Technology, Kanpur-208016.



Professor Mukherjee has made significant contributions in co-ordination chemistry through directed synthesis of well-designed bio-mimetic model compounds and demonstrated their unusual magnetic interaction and studied structure-activity relationship.

**Javaregowda Nagaraju** (b. 06.11.1954), PhD, Staff Scientist 'G' and Group Leader, Laboratories of Molecular Genetics and DNA Fingerprinting Services & Team Leader, Centre of Excellence for Genetics and Genomics of Silk moths, Centre for DNA Fingerprinting and Diagnostics, 4-87/1, ECIL Road, Nacharam, Hyderabad-500076.

Dr Nagaraju has been consistently working on genetic and genomics of silk moths. His research contributions include development and application of microsatellite DNA markers, construction of molecular linkage map, RNAi-based strategy to fight baculoviral in silk worm, some of which have been transferred to the field to help the farmers. His research work in silkworm has spun off into major applications in DNA-based authentication of basmati rice.



**Ramakrishna Ramaswamy** (b. 14.10.1953), PhD, Professor, School of Physical Sciences, Jawaharlal Nehru University, New Delhi-110067.



Professor Ramaswamy has made several important contributions in the area of non-linear dynamics, understanding the onset of chaos, and the implications of energy flow in molecules, transcending borders of chemistry, physics and biology.

**Brindaban Chandra Ranu** (b. 01.08.1949), PhD, Professor & Head, Department of Organic Chemistry, Indian Association for the Cultivation of Science, Jadavpur, Kolkata-700032.



Professor Ranu has made significant contributions in developing synthetic tools for Green Chemistry, has used ionic liquid as catalyst rather than medium and provided several innovative strategies in synthetic chemistry.

**Saurabh Dilsukhraj Rindani** (b. 13.06.1952), PhD, Senior Professor, Theoretical Physics Division, Physical Research Laboratory, Navrangpura, Ahmedabad-380009.



Professor Rindani has made significant contributions to the study of collider processes probing physics beyond the standard model, and his study of CP violation effects in top quark processes relevant to the proposed International Linear Collider.

**Manmohan Sarin** (b. 26.07.1951), PhD, Professor, Planetary & Geosciences Division, Physical Research Laboratory, Navrangpura, Ahmedabad-380009.



Professor Sarin has made significant contributions to versatile applications of geochemistry and U-Th series isotopes systematic to characterize weathering processes in river basins and chemical scavenging in oceans.

**Chandrima Shaha** (b. 14.10.1952), PhD, National Institute of Immunology, Aruna Asaf Ali Marg, New Delhi-110067.



Dr Chandrima Shaha's research has provided novel insights in the understanding of cell death mechanisms in two different model systems, the multicellular model of mammalian germ cells and a unicellular Trypanosomatid parasite model. The observations provide clues for treatment of infertility and improving drug efficacy for protozoal parasitic diseases.

**Umesh Varshney** (b. 26.10.1957), PhD, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore-560012.



Dr Varshney showed that specific interactions between ribosome recycling factor, EFG, IF3 and ribosome are crucial for recycling of the ribosomal subunits for initiation in eubacteria. He then revealed a mechanism that allows selection of initiator tRNA on the ribosomal P-site for initiation. Further, using novel substrates and a repertoire of Ung mutants, he has made vital contributions to our understanding of uracil excision by Ung.

**Karuppannan Veluthambi** (b. 07.03.1953), PhD, Professor, School of Biotechnology, Madurai Kamaraj University, Madurai-625021.



Professor Veluthambi has contributed to our understanding of T-DNA transfer mechanism and to the biology of mungbean yellow mosaic virus (MYMV), for developing an efficient agroinoculation method for MYMV, and for developing a strategy for raising marker-free transgenic plants.

**Usha Vijayaraghavan** (b. 25.08.1961), PhD, Department of Molecular & Cell Biology, Indian Institute of Science, Bangalore-560012.



Dr Usha Vijayaraghavan's contributions mainly related to elucidating functions for regulators such as RFL, OsMADS1 and OsMADS2 during rice inflorescence branching and floral organ development. Her work provides insights on the regulatory network between transcription factors and signaling molecules during flowering.

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