

ADMISSION OF FELLOWS

Identifying and honouring outstanding achievements in Science is one of the major responsibility of the Indian National Science Academy. The process involves detailed scrutiny of nominations by sectional committees covering all branches of science and technology including engineering, medicine, agricultural sciences and studies in multidisciplinary research. The sectional committees considered a total of 380 nominations and forwarded 52 scientists for consideration by the Council. In addition to regular Sectional Committees, 8 nominations were received in two new categories viz. Scientists Working in Technology Missions of National Significance and Scholars in the History and Philosophy of Science. Out of these 8 nominations, the Search-cum-Selection Committee forwarded 3 scientists for consideration by the Council. The Council makes an intra and interdisciplinary comparison of all the recommended cases and takes all care to select only the best. After prolonged discussions in the Council, lasting a whole day, 30 scientists (including scientists in new categories) were recommended to the General Body of Fellows for voting and finally elected. Out of these 30 new Fellows, 24 are present here and will be formally inducted as Fellow. Some of the Fellows are also here who were elected in earlier years but are attending Anniversary General Meeting for the first time. We shall first start with Fellows elected in this years.

Fellows (w.e.f. 1st January, 2017)

1. **Anirban Basu** (b 16.11.1968), PhD, Scientist VI, National Brain Research Centre, Manesar.

For his outstanding contributions about the role of neuroinflammation in pathogenesis of Japanese encephalitis in animal models of the disease.

2. **Suman Chakraborty** (b 08.08.1973), PhD, Professor, Department of Mechanical Engineering, Indian Institute of Technology Kharagpur, Kharagpur.

For his pathbreaking work on microfluidics and nanofluidics, ranging from fundamental insights to applications to medical diagnostics, drug delivery and chip cooling.

3. **Dipshikha Chakravorty** (b 16.09.1968), PhD, Professor, Department of Microbiology and Cell Biology, Indian Institute of Science, Bengaluru.

For her original contributions in understanding *Salmonella*-host interactions and the evasion mechanisms adopted by *Salmonella*, demonstrating a blend of basic and translational research.

4. **Amitava Das** (*b* 24.12.1959), PhD, Director, CSIR-Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar.

For his immense contributions to molecular recognition, supramolecular assemblies, photo-induced process in donor-acceptor molecules for addressing issues related to health care (diagnostic), stimuli responsive smart molecules/assemblies (molecular sensors, imaging reagents and enzymatic assay), and security (sensors for low intensity explosives).

5. **Shankar Prasad Das** (*b* 16.03.1959), PhD, Professor, School of Physical Sciences, Jawaharlal Nehru University, New Delhi.

For his significant research in the field of slow dynamics in supercooled liquids and glass transition, with important contributions to studies of atomic correlations in supercooled liquids leading to glass transition using a microscopic theory of correlation functions.

6. **Hirendra Nath Ghosh** (*b* 16.08.1966), PhD, Scientific Officer (H+), Radiation and Photochemistry Division, Bhabha Atomic Research Centre, Mumbai.

For his fundamental contributions to interfacial electron transfer through synthesis of nano-structured materials and ultrafast spectroscopy leading to improved understanding of quantum-dot based solar cell and dye sensitized solar cell.

7. **Kota Harinarayana** (*b* 14.05.1943), PhD, NEB 3/401, Shriram Spandana, Challaghatta, off Wind Tunnel Road, Bengaluru.

For leading the teams that designed and developed the Light Combat Aircraft (LCA) Tejas, the first indigenous supersonic fourth generation plus fighter aircraft to be successfully deployed and go into production.

8. **Athipettah Jayakrishnan** (*b* 25.04.1953), PhD, Department of Biotechnology, Bhupat and Jyoti Mehta School of Biosciences, Indian Institute of Technology Madras, Chennai.

For his pioneering contributions in the the development of novel polymeric materials and coatings for ophthalmic applications.

9. **Sambasivarao Kotha** (*b* 10.10.1957), PhD, Chair Professor, Department of Chemistry, Indian Institute of Technology Bombay, Mumbai.

For developing a variety of new synthetic strategies and reagents for non-natural amino acids and peptide-mimics.

10. **Bedangadas Mohanty** (*b* 08.04.1973), PhD, Professor and Chairman, School of Physical Sciences and Dean Faculty Affairs, National Institute of Science Education & Research, Bhubaneswar.

For his influential contributions and leadership in the international STAR collaboration on the phase diagram of strongly interacting nuclear matter and for his collaborative work with theorists to help pinpoint the critical point of this phase diagram from experimental measurements of heavy ion collisions.

11. **Donihakalu Shankar Nagaraj** (b 12.07.1958), PhD, Professor (H), The Institute of Mathematical Sciences, Chennai.

For his fundamental work on several aspects of moduli theory of bundles and interesting results in topics ranging from higher dimensional algebraic geometry to Iwasawa theory of multiple Z_p extensions of a local field.

12. **Saradha Natarajan** (b 21.12.1954), PhD, Professor, School of Mathematics, Tata Institute of Fundamental Research, Mumbai.

For her important contributions to the classical field of Diophantine Equations, and also to the theory of transcendental numbers.

13. **Manoj Prasad** (b 16.12.1970), PhD, Staff Scientist V, National Institute of Plant Genome Research, New Delhi.

For his significant contributions in the area of crop genomics through generation of novel molecular markers, development of the first comprehensive database for millets and understanding the molecular mechanism of natural resistance in tomato against *Tomato-Leaf-Curl New Delhi-Virus* (ToLCNDV).

14. **Madhavan Nair Rajeevan** (b 27.07.1961), PhD, Secretary, Government of India, Ministry of Earth Sciences, New Delhi and formerly Director, Indian Institute of Tropical Meteorology, Pune.

For his outstanding contributions in understanding physical mechanisms of Indian Summer Monsoon variability and seasonal predictions.

15. **Ramasamy Ramaraj** (b 08.03.1956) PhD, CSIR Emeritus Scientist, former Head, Department of Physical Chemistry, School of Chemistry, Madurai Kamaraj University, Madurai.

For his original research on a variety of chemically modified electrodes using Nafion, zeolite, clay and cellulose with a variety of metal phthalocyanines and porphyrines, and for designing supramolecular cyclodextrin based devices for photo-electrochemistry.

16. **Pundi Narasimhan Rangarajan** (b 15.04.1963), PhD, Professor, Department of Biochemistry, Indian Institute of Science, Bengaluru.

For developing novel hepatitis B DNA vaccine, marketed by 3 major companies and for studies on nuclear noncoding RNA essential for the formation of nuclear paraspeckles.

17. **Madan Rao** (*b* 11.07.1960), PhD, Professor, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bengaluru.

For his outstanding contributions, using theoretical physics methods, to modeling cellular actin cytoskeleton interaction with the membrane and its proteins to mediate self-assembly of signaling complexes and to problems in metallurgical transformations.

18. **Susanta Roychoudhury** (*b* 20.04.1955), PhD, Chief, Basic Research, Saroj Gupta Cancer Centre and Research Institute, Kolkata.

For his studies on roles of spindle assembly checkpoint genes CDC20 and MAD1 in genomic instabilities in human cancer.

19. **Neelam S Sangwan** (*b* 02.01.1966), PhD, Professor, CSIR-Academy of Scientific & Innovation Research, New Delhi and Scientist F, Metabolic and Structural Biology, CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow.

For her significant contributions in understanding withanolide biosynthetic pathways, genes and tissue-specific transcriptomics and for development of novel chemotypically defined Ashwagandha varieties.

20. **Sagar Sengupta** (*b* 23.06.1968), PhD, Staff Scientist VI, National Institute of Immunology, New Delhi.

For his work on the roles of BLM helicase in homologous recombination and chromosome instability in normal and cancer cells.

21. **Balasubramanian Senthilkumar** (*b* 14.07.1965), PhD, Professor, Department of Animal Biology, School of Life Sciences, University of Hyderabad, Hyderabad.

For his significant contributions to the concept of "shift in steroidogenesis" during oogenesis in teleostean fishes and the role of transcripts and products in gonads and brain in their sexual dimorphism.

22. **Panganamala Vijay Kumar** (*b* 22.09.1955), PhD, Professor, Department of Electrical Communication Engineering, Indian Institute of Science, Bengaluru.

For his significant contributions to coding theory, covering nonlinear codes, space-time codes, generation of low correlation sequences, low complexity algebraic geometric codes, and codes for distributed storage.

23. **Shrirang Ramchandra Yadav** (*b* 01.06.1954), PhD, Professor (Retd), UGC BSR Faculty Fellow, Department of Botany, Shivaji University, Kolhapur.

For his notable contributions to plant taxonomy (grass systematic) and endangered plants, and discovery of more than 50 new plant species, many of which have ornamental and medicinal values.

Fellows (w.e.f. 1st January, 2016)

1. **Gagandeep Kang** (b 03.11.1962), PhD, Professor and Head, The Wellcome Trust Research Laboratory, Division of Gastrointestinal Sciences, Christian Medical College, Vellore.

For her outstanding investigation in community trial of the Rota virus vaccine and being the key person to generate data, relevant for policy makers, on disease burden, vaccine efficacy and safety.

2. **Sangita Mukhopadhyay** (b 01.01.1966), PhD, Staff Scientist VI, Centre for DNA Fingerprinting and Diagnostics, Hyderabad.

For her pioneering contributions to mechanistic understanding of hijacking of host signaling pathways by *M. tuberculosis* proteins for its own benefit.

3. **Dinesh Kumar Srivastava** (b 20.06.1952), PhD, Distinguished Scientist & Director, Variable Energy Cyclotron Centre, Kolkata.

For his pioneering work on the electromagnetic signatures of the formation of quark-gluon plasma in relativistic collisions of nuclei and for the formation of quark-gluon plasma, evaluation of its temperature and the understanding of its spectra.

Fellows (w.e.f. 1st January, 2015)

1. **Ravi Achutha Rao** (b 14.04.1954), PhD, Professor, School of Mathematics, Tata Institute of Fundamental Research, Mumbai.

Professor Ravi Rao works in the general area of Algebraic K-Theory of classical groups where he is widely recognized as a world leader. His most important recent contribution has appeared in the most prestigious journal, the publications of the IHES improving on earlier contributions of Quillen and Suslin on Serre's conjecture.

Fellows (w.e.f. 1st January, 2014)

1. **Sudha Bhattacharya** (b. 07.03.1952), PhD, Professor, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi.

Professor Sudha Bhattacharya has made outstanding contributions to RNA biology of amoeba.

2. **Chilakalapudi Durga Rao** (b. 05.12.1950), PhD, Professor, Department of Microbiology & Cell Biology, Indian Institute of Science, Bengaluru.

Has made major scientific contributions to an understanding of the molecular biology, molecular epidemiology and clinical pathology of Rota virus and enteroviruses, sources of major morbidity and mortality in children. Of note, his research has contributed importantly to the development of candidate vaccines and diagnostics for these agents.

Fellows (w.e.f. 1st January, 2012)

1. **Sandip Parimal Trivedi** (b.05.04.1963), PhD, Professor, Department of Theoretical Physics, Tata Institute of Fundamental Research, Mumbai.

For his deep and significant contribution in the areas of superstring cosmology, black-hole physics and supersymmetry breaking, especially for his demonstration that accelerating universe can arise in string theory.