ANNUAL GENERAL MEETING

The Annual General Meeting of the Academy was held on October 12, 2018 at Centre of Biomedical Research (CBMR), Lucknow. During the one day event, the following lectures were held:

Dealing with Second Biggest Killer and Most Disabling Disease, Stroke: a Scientific Approach by Professor (Dr) Kameshwar Prasad, AIIMS, New Delhi; Journey of a Drug: Discovery to Market by Dr Madhu Dixit, FNA, formerly Director, CDRI, Lucknow; Cyber Space: the Next Frontier by Professor Sandeep Shukla, IIT Kanpur, Kanpur and Exciting Science at Lucknow Based Biomedical Research Institutes by Dr VP Kamboj, FNA, formerly Director, CDRI, Lucknow; these lectures were delivered during a specially organized interactive meeting with school/college students of Lucknow.

In it’s October meeting, the Council announced the election of two new Vice-Presidents – Professors V Chandrasekhar and JP Khurana and two new members - Professor PP Chakrabarti and Dr Madhu Dixit of the Council for 2019. It also reported the sad demise of Professor Predhiman Krishan Kaw, Dr Arcot Ramachandran, Professor Mushi Santappa, Professor MAL Thathachar, Professor SS Katiyar, Professor Paul Hagenmuller, Professor Alla Genirkhovna Massevitch and Professor Robert Ghormley Parr distinguished Fellows and Foreign Fellows of the Academy.

The Council approved the election of 30 Indian scientists as INSA Fellows, five overseas scientists as Foreign Fellows. It also decided to offer the INSA Teachers Award to 12 outstanding teachers and INSA Young Historian of Science Award to one young scholar as detailed below:

FELLOWS ELECTED 2018 (Effective from 01 January 2019)

Anurag Agrawal (b 1972), MBBS, MD, DM, PhD, Director, CSIR-Institute of Genomics and Integrative Biology, Delhi.

For showing that obesity or Air pollution related cellular stress precipitates asthma by affecting the cellular metabolism of Air way epithelial cells. He has shown how donation of mitochondria by stem cells can correct the cellular functions. His contribution to e-Health would enhance health care delivery.

Madhoolika Agrawal (b 1958), PhD, Professor, Department of Botany, Banaras Hindu University, Varanasi.

For her significant research contributions on global environmental change including effect of O3 and UV-B on agricultural crops under field conditions.

Balram Bhargava (b 1961), MBBS, MD, DM, Director General, Indian Council of Medical Research, New Delhi.

An outstanding cardiologist and one of the foremost leaders in biomedical innovation, public health and medical education/research. Professor Balaram Bhargava has pioneered a number of medical innovations, of which some are approved for human use. His research and innovation on Indian stents, cardiac compression devices, interosseous needles etc. have influenced health care.

Soumen Chakrabarti (b 1969), PhD, Professor, Computer Science, Indian Institute of Technology Bombay, Mumbai.

For the conceptualization and development of powerful algorithms for web search, right from the early days of the Internet. One of his outstanding
contributions is focused crawling which is a part of current day search engines and rigorously combines text-based search spectral analysis of the web graph. He has pushed the frontier of search far beyond just web page links to directly interpreting and answering questions.

**Jayaram Narayanan Chengalur** (b 1965), PhD, Senior Professor, National Centre for Radio Astrophysics-TIFR, Pune.

For his pioneering work at GMRT, in particular for his very challenging 21 cm radio observations of gas in galaxies at different stages of evolution that had a major impact on our understanding of star formation.

**Amita Das** (b 1965), PhD, Professor, Department of Physics, Indian Institute of Technology Delhi, New Delhi.

For her foundational contributions in the field of laser plasma interactions emphasizing the role of self-generated magnetic fields.

**Maitrayee Dasgupta** (b 1959), PhD, Professor, Department of Biochemistry, Calcutta University, Ballygunge Science College, Kolkata.

For her outstanding contribution in the field of root nodule symbiosis (RNS), particularly delineating the role of symbiosis and cytokinin signaling in developing RNS in crack-entry legumes like *Arachis*.

**Deepak Gaur** (b 1972), PhD, Professor, School of Biotechnology, Jawaharlal Nehru University, New Delhi.

For making significant contributions in understanding molecular mechanism of red cell invasion by malaria parasite, and his elucidation of novel candidates for malaria vaccine development.

**Samudrala Gourinath** (b 1972), PhD, Professor, Structural Biology Lab, School of Life Sciences, Jawaharlal Nehru University, New Delhi.

For establishing a strong structural biology group to study structure-function relation in the infectious micro-organisms *Entamoeba histolytica* and *Helicobacter pylori*. He has elucidated the function of Calcium-binding proteins involved in *E. histolytica* phagocytosis. His work has revealed novel features of cysteine biosynthetic enzymes in *E. histolytica* and DNA replication protein in *H. pylori*.

**Anil Kumar Gupta** (b 1952), PhD, Secretary, Gujarat Grassroots Innovations Augmentation Network (GIAN), Ahmedabad.

For opening new, creative, innovative and entrepreneurial bottom-up paths of progress for millions of creative, inclusive, generous minds of not only India but the world at large. He spawned the inclusive frugal grassroots innovation movement thirty years ago through the Honey Bee Network. It has created institutions some of which became part of national polity (such as SRISTI, GIAN and NIF) but these also redefined the concept of National Innovation systems.

**Neeraj Jain** (b 1960), PhD, Professor and Scientist VII, National Brain Research Centre, Manesar.

Dr Neeraj Jain’s work has increased our understanding of organization and information processing in sensorimotor areas of the mammalian brain. His work on adult brain plasticity and post injury reorganization has direct relevance to diseases of human brain.

**Dinakar Kanjilal** (b 1955), PhD, Former Director, Inter-University Accelerator Centre (IUAC), New Delhi.

For path-breaking development of high temperature superconducting electron cyclotron resonance ion source and for significant contributions to controlled modification of material-properties through high energy ion irradiation.

**Goutam Kumar Lahiri** (b 1960), PhD, Professor, Department of Chemistry, Indian Institute of Technology Bombay, Mumbai.

For his seminal contributions in the area of electron transfer in multi-metal complexes to understand biological processes and several organometallic catalytic reactions.

**Souvik Maiti** (b 1971), PhD, Senior Principal Scientist, CSIR-Institute of Genomics and Integrative Biology, New Delhi.
For comprehensively studying thermodynamics basis of RNA quadruplexes to understand their role in gene expression. He has used integrated chemical biology approaches by modifying and designing small molecules that can modulate miRNA levels.

Mahitosh Mandal (b 1963), PhD, Professor, School of Medical Science and Technology, Indian Institute of Technology Kharagpur, Kharagpur.

For his outstanding contributions to cancer biology, studying the role of both natural and synthetic inhibitors that impact survival and stress related signaling cascades and inhibit tumor growth. He has also innovatively applied the use of nanocomposites loaded with chemo therapeutics to overcome chemoresistance.

Sushmita Mitra (b 1962), PhD, Professor, Machine Intelligence Unit, Indian Statistical Institute, Kolkata.

For her pioneering contributions in the area of neuro-fuzzy computing, pattern recognition, and machine intelligence. She is a pioneer in neuro-fuzzy rule generation which led to the development of neuro-fuzzy expert systems. Her contributions in the use of soft computing in bioinformatics has opened many avenues for the mining of high-dimensional gene expression data.

Vinay Kumar Nandicoori (b 1969), PhD, Staff Scientist VII, Signal Transduction Lab 1, National Institute of Immunology, New Delhi.

For his seminal contributions towards understanding signaling and survival mechanisms of *Mycobacterium tuberculosis*, and developing technologies to study the pathogen towards translational objectives.

Swapan Kumar Pati (b 1968), PhD, Professor, Theoretical Sciences Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru.

For his significant contributions to the understanding of novel properties of molecules and materials systems using computational methods.

Nagaraj Guru Prasad (b 1974), PhD, Associate Professor, Indian Institute of Science Education and Research Mohali.

For his outstanding contributions to our understanding of the role of immunity and sexual selection in evolution. This work has important implications for speciation.

Krishnamurthi Ramasubramanian (b 1969), PhD, Professor, Department of Humanities and Social Sciences, Indian Institute of Technology Bombay, Mumbai.

Professor K Ramasubramanian is a prominent historian of classical Indie science with a strong grounding in the physical sciences as well as Sanskrit. He has done important research on the history of Indian astronomy, and his scholarly translations of the works of the Kerala School of Mathematics constitute a major contribution to an authentic assessment of the remarkable advances made in India foreseeing the development of calculus in Europe a few centuries later.

Nittala Venkata Chalapathi Rao (b 1969), PhD, Professor, Centre of Advanced Study in Geology, Institute of Science, Banaras Hindu University, Varanasi.

For his cutting edge research on kimberlites, lamproites, lamprophyres, their entrained xenoliths and mafic dykes has significantly enhanced our understanding of the geodynamic evolution of the Indian lithosphere. He has established a world-class school of deep mantle petrology.

Vajravelu Ravindran (b 1965), PhD, Professor H, The Institute of Mathematical Sciences, Chennai.

For his critical work on the computation of the Higgs Boson cross-section and properties that contributed significantly to its discovery.

Krishnan Ray (b 1964), PhD, Professor, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai.

For contributing significantly towards establishing a role for motor proteins in axonal transport, in particular specific cargo motor interactions. He has also provided key insights into the mechanisms that control sperm release in fruit fly. His work on F actin dynamics has key implications for the ability of animal cells to repel microbial invasion.
Mamiyil Sabu (b 1959), PhD, Professor, Department of Botany, University of Calicut, Kerala.

For contributing significantly on the taxonomy of families Zingiberaceae and Musaceae. Besides taxonomical aspects of palynology and cytology of these two families, he has published four monographs and established the largest germplasm collections of Zingiberaceae in India.

Parameswaran Sankaran (b 1959), PhD, Professor H, The Institute of Mathematical Sciences, Chennai.

For his significant contributions to topology, group theory, representation theory and algebraic groups. His work on equivariant Schubert calculus has been especially influential. The techniques and ideas of Sankaran proved to be crucial in the construction of Littelmann’s bases. His results explicitly describing classical cohomology theories for toric manifolds have influenced works on higher algebraic K-theory and cobordism as well as equivariant compactifications.

Yogendra Sharma (b 1959), PhD, Chief Scientist (Scientist G), CSIR-Centre for Cellular and Molecular Biology, Hyderabad.

For discovering novel calcium binding protein superfamily of βγ-crystallins. Through his work he has established this family as the second most prevalent family of calcium binding proteins after EF-hand family.

Ashok Kumar Singh (b 1962), PhD, Head, Division of Genetics, Indian Agricultural Research Institute, New Delhi.

For his outstanding contributions in basic and applied research on rice genetics and molecular breeding and developing 14 basmati rice varieties and hybrids.

Maya Shankar Singh (b 1960), PhD, Professor, Department of Chemistry, Institute of Science, Banaras Hindu University, Varanasi.

For his contribution to the development of selective one-pot reactions employing simple and easily available synthons leading to various important intermediates.

Sunil Kumar Singh (b 1971), PhD, Director, CSIR-National Institute of Oceanography, Dona Paula, Goa.

For his outstanding research on particle-water interaction and submarine groundwater discharge have provided new insights into regulating the flux and distribution of trace elements and isotopes to the ocean. His work on Re-Os chronometry of black shales enabled direct dating of sedimentary sequences in the country. He has made fundamental contributions on the Himalayan erosion and its linkage to climate and tectonics.

Alok Krishna Sinha (b 1969), PhD, Staff Scientist VII, National Institute of Plant Genome Research, New Delhi.

For his significant contribution towards understanding the MAPK cascade in plants. His research on regulation of SUB1A1 by MPK3 during submergence has led to understanding the underlying mechanism of submergence tolerance in rice. Blue light dependent regulation of MYC2 by MPK6 during Arabidopsis seedling development is another significant contribution.

FOREIGN FELLOWS ELECTED 2018 (Effective from 01 January 2019)

Harshad Kumar Dharamshi Hansraj Bhadeshia (b 1953), Tata Steel Professor of Metallurgy, Materials Science and Metallurgy, University of Cambridge, 27 Charles Babbage Road, Cambridge CB3 0FS, UK.

For his work on the theory of solid-state phase transformations, in particular the prediction and verification of microstructural development in multicompontent steels. He has made a major contribution to the understanding of the complex bainitic transformation to show that different modes of transformation have measurable influences on the final microstructure that has impacted steel manufacturing industry.

For his outstanding contribution to understand the genetic basis of trait variation and to use this natural variation to improve crops. He is a pioneer leader in unifying quantitative genetics with genomics, and then applying these technologies and approaches to a wide range of crops.

**Anthony Kevin Cheetham** (*b* 1946), Goldsmiths’ Professor of Materials Science Emeritus, Department of Materials Science and Metallurgy, University of Cambridge, Cambridge CB0 3FS, UK.

Professor Anthony K Cheetham is one of the world’s leading materials chemists. His principal achievements have been in four distinct areas: Structural properties of materials, especially with neutron and synchrotron X-ray methods; Catalysis with zeolites and other materials; Oxides for solid-state lighting and Metal-Organic Frameworks (MOFs).

**Sir David Neil Payne** (*b* 1944), Director, Optoelectronics Research Centre, University of Southampton, Southampton, SO17 1 BJ, UK.

For his contributions in fibre fabrication in the 70’s resulted in almost all of the special fibres in use today. He led the team that in 1985 first announced the silica fibre laser and the Erbium-Doped Optical Amplifier (EDFA), the device that fuelled an explosive growth in the internet through its ability to transmit and amplify vast amount of data. The fibre laser is now also undergoing rapid growth for application in manufacturing and defence.

**Subir Sachdev** (*b* 1961), Department Chair and the Herchel Smith Professor of Physics, Department of Physics, Harvard University, Cambridge, MA 02138, USA.

Professor Subir Sachdev is a world renowned condensed matter theorist, with many seminal contributions to the theory of strongly interacting condensed matter systems. He is a pioneer in the study of systems near quantum phase transitions. He has also pioneered the exploration of the connection between physical properties of modern quantum materials and the nature of quantum entanglement in their many-particle state, elucidating the diverse varieties of entangled states of quantum matter.

**INSA TEACHER AWARDSEES 2018**

**Dr Javed Ali** (*b* 17.07.1972), Department of Pharmaceutics, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi.

Dr Ali is a compassionate and enthusiastic academician who has mentored a large number of well qualified and competitive students in the field of Pharmaceutics.

**Dr Urmia Bajpai** (*b* 30.09.1969), Acharya Narendra Dev College, University of Delhi, New Delhi.

Dr Bajpai has contributed significantly to the growth of Biomedical Science as a teaching program at under-graduate level and has been a role model for a large number of students and faculty colleagues.

**Professor Amartya Kumar Dutta** (*b* 28.02.1966), Theoretical Statistics and Mathematics Unit, Indian Statistical Institute, Kolkata.

Professor Dutta motivated a large number of students, through his teaching and research publications in Mathematics to take academic careers while his popular and public lectures greatly helped popularisation of Mathematics in public at large.

**Professor Nazir Ahmad Ganai** (*b* 12.05.1965), Faculty of Veterinary Sciences and Animal Husbandry, Sher-e-Kashmir University of Agricultural Sciences and Technology, Srinagar.

Professor Ganai, an inspirational teacher and a capable researcher, has trained many students in Veterinary Science and motivated them to take up research as a career.

**Professor Rajesh Ramachandran Iyer** (*b* 29.04.1966), Department of Physics and Electronics, St. Xavier’s College, Ahmedabad.

Professor Iyer is an outstanding teacher-mentor who has inspired generations of students to take up successful research career.

**Professor Prafulla Kumar Jha** (*b* 02.02.1966), Department of Physics, Faculty of Science, The M.S. University of Baroda, Vadodara.

Professor Jha is an accomplished teacher renowned
for his effective mentorship and guidance of students.

Professor Vijaya Kumar Kopparapu (b 01.07.1968), School of Earth Sciences, SRTM University, Nanded.

Professor Kumar, an outstanding teacher in Geology, has motivated a large number of students to take up research in Petrology and Pre-Cambrian Geology.

Professor Ashis Kumar Mukherjee (b 10.07.1970), Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur.

Professor AK Mukherjee has significantly contributed to development of innovative teaching programs in Molecular Biology, Biotechnology, Nanoscience and five year integrated M.Sc. programme in Bioscience and Bioinformatics which have benefited a large number of students in north-east India.

Professor Achintya Mukhopadhyay (b 04.04.1968), Department of Mechanical Engineering, Jadavpur University, Kolkata.

Professor Mukhopadhyay has educated and inspired a large number of students to become successful engineers, researcher and academicians.

Dr Sivaraman R (b 10.04.1975), Department of Mathematics, DG Vaishnav College, Chennai.

Dr Sivaraman motivated and supported a large number of students to take up career in Mathematics through his teaching, self-help books and articles in magazines and newspapers. His academic and financial help to needy and physically challenged students is especially noteworthy.

Professor Vasudeva R (b 20.06.1964), Department of Forest Biology and Tree Improvement, University of Agricultural Sciences, Dharwad, College of Forestry, Sirsi.

Professor Vasudeva is an excellent teacher and an involved researcher, who has been an inspiration to students in the area of tree biology and forestry.

Professor Srabani Taraphder (b 31.07.1969), Department of Chemistry, Indian Institute of Technology Kharagpur, Kharagpur.

Professor Taraphder’s unique method to teach Statistical Mechanics through theory followed by advanced computer programming and her research, has inspired many students to reach successful academic careers.

INSA YOUNG HISTORIAN OF SCIENCE Awardee 2018

Dr Aparajith Ramnath (b 25.10.1983), PhD, Department of Humanities and Languages, School of Arts and Sciences and Amrut Mody School of Management, Ahmedabad University, Ahmedabad.

For his researches on the historical development of science and technology in twentieth-century India specially the engineering profession, addressing the nature of the late-colonial state and the history of industrialization.

84th ANNIVERSARY GENERAL MEETING, AHMEDABAD

The 83rd Anniversary General Meeting of the Council was held at Physical Research Laboratory, Ahmedabad; Institute of Plasma Research, Bhat and IIT, Gandhinagar during December 26-28, 2018. This three day event included seven symposia on i) Vikram Sarabhai Space Science Symposium (Vs4): Innovations from Space Program (Chair: Professor AK Sood, President, INSA and Conveners: Dr BN Suresh, Chancellor, IISST, Thiruvananthapuram and Professor Anil Bhardwaj, Director, PRL, Ahmedabad); ii) Food Security and Genomics (Chair: Professor K Velimuthu, Madurai Kamaraj University, Madurai and Conveners: Dr Deepak Pental, Director, University of Delhi, South Campus, New Delhi; Dr RK Varshney, Director, Centre of Excellence in Genomics & Systems Biology, ICRISAT, Telangana and Dr IP Abrol, Director, Centre for Advancement of Sustainable Agriculture (CASA), New Delhi; iii) Scaling Up Artificial Intelligence in India (Chair: Dr Shashank Chaturvedi, Director, IPR and Convener: Professor Y Narahari, Department of Computer Science and Automation, IISc, Bengaluru); iv) Water Futures (Chair: Professor RN Singh, IIT, Gandhinagar and Conveners:
Professor PP Mujumdar, Department of Civil Engineering, IISc, Bengaluru and Professor VM Tiwari, NGRI, Hyderabad); v) Ethics in Science Research and Education (Chair: Professor JP Mittal, BARC, Mumbai and Conveners: Professor Amit Ghosh, ICMR-National Institute of Cholera and Enteric Diseases, Kolkata and Professor K Muralidhar, University of Hyderabad, Hyderabad); vi) New Drug Discovery and Development: The Indian Narrative (Chair: Dr Somdatta Sinha, IISER, Mohali and Conveners: Dr Madhu Dikshit, THSTI, Faridabad and Dr BK Thelma, University of Delhi, South Campus, New Delhi) and vii) Sustainable Energy and Chemical Engineering Platforms (Chair: Dr Sourav Pal, IISER, Kolkata and Convener: Dr Ashwini Nangia, CSIR-NCL, Pune).

In addition, a public lecture on Reflections from a Personal Journey as Scientist, Technologist and Entrepreneur: Academia and Industry Interactions was delivered by Professor AV Ramarao, FNA, AVRM Industries, Hyderabad at PRL, Ahmedabad on December 26, 2018. A panel discussion on Strengthening AI Research & Education in India was also held by the panellists Professor Sanghmitra Bandyopadhyay, Director, ISI, Kolkata; Professor Chiranjib Bhattacharyya, IISc, Bengaluru and Professor Vijay Chandru, Strand Life Sciences, Bengaluru at IPR, Bhat on December 27, 2018.

Professor Ajay K Sood, delivered the Presidential Anniversary Address on Nano Heat Engines. During this meeting, 32 new Fellows and two Foreign Fellows were inducted to Fellowship of the Academy, 20 Young Scientist awardees were presented the INSA Medal for Young Scientist, 11 Teachers were presented the INSA Teacher’s Award and one young historian was presented the INSA Young Historian of Science Award.

The Council, at its meeting at PRL Ahmedabad decided to offer Chandrasekhara Venkata Raman Medal to Professor K VijayRaghavan, Principal Scientific Adviser, GoI, New Delhi, Shanti Swarup Bhatnagar Medal to Dr Chandrima Shaha, Professor of Eminence, National Institute of Immunology, New Delhi, KS Krishnan Memorial Lecture award to Professor Rohini M Godbole, Centre for High Energy Physics, Indian Institute of Science, Bengaluru and Jawaharlal Nehru Birth Centenary Medal to Professor PM Ajayan, Rice University, USA.

Award Lecture during the 84th Anniversary General Meeting

Aryabhata Medal (2018): Professor SC Lakhotia, Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi delivered Aryabhata Medal lecture on Need for Integration of Ayurveda with Modern Biology and Medicine.

Condolence at the passing away of the distinguished Fellows and Foreign Fellow

President, INSA read the obituary notes with respect to Professors MM Chawla, HL Nigam, MKK Pillai, ES Raja Gopal (Fellows) and Ronald Charles David Breslow (Foreign Fellow) of the Academy who left for heavenly abode. A minute’s silence was observed as a mark of respect to the departed souls.

Felicitations to the outgoing members of the Council

The outgoing members of the Council (Professor Kankan Bhattacharyya, Dr Chandrima Shaha, Vice-Presidents, Professors BK Thelma and K Veluthambi, Members) were felicitated by Professor Sood, President, INSA. He presented them a shawl as a token of respect.

AWARD LECTURES DELIVERED UNDER LOCAL CHAPTERS

Sisir Kumar Mitra Memorial Lecture (2018): Professor Indira Nath, FNA, former, Head and Senior Professor, Department of Biotechnology, AIIMS, Delhi delivered Sisir Kumar Mitra Memorial Lecture on Forward to the Past: Immune Defence Against Ancient Leprosy at the National Institute of Pharmaceutical Education and Research, Gandhinagar, Ahmedabad on August 6, 2018.

DN Wadia Medal (2018): Professor Somnath Dasgupta, FNA, Visiting Professor, Department of Earth Sciences, Indian Institute of Science Education & Research, Kolkata delivered DN Wadia Medal lecture on A Tale of Three Super Continents: The
Indian Connection at Jadavpur University, Kolkata on September 6, 2018.


Professor GN Ramachandran 60th Birthday Commemoration Medal (2018): Professor DN Rao, FNA, Department of Biochemistry, Indian Institute of Science, Bengaluru delivered Professor GN Ramachandran 60th Birthday Commemoration Medal lecture on Restriction – Modification Systems: Guardians of Bacterial Genomes at Indian Institute of Technology Madras, Chennai on November 1, 2018.

Professor Bal Dattatraya Tilak Lecture (2017): Professor Anil Kumar Tripathi, FNA, Director, CSIR-Central Institute for Medicinal and Aromatic Plants, Lucknow delivered Professor Bal Dattatraya Tilak Lecture on Empowering Indian farmer by developing and deploying improved agrotechnologies of medicinal and aromatic crops at Banaras Hindu University, Varanasi on November 19, 2018.

Professor Vishnu Vasudeva Narlikar Memorial Lecture (2018): Professor S Thangavelu, FNA, Department of Mathematics, Indian Institute of Science, Bengaluru delivered Professor Vishnu Vasudeva Narlikar Memorial Lecture on In Search of Inequalities at Indian Institute of Science, Bengaluru on February 15, 2019.

Meghnad Saha Medal (2018): Professor Ashutosh Sharma, FNA, Secretary, Department of Science and Technology, New Delhi delivered Meghnad Saha Medal lecture on Navigating Complexity by Common Sense at INSA premises, New Delhi on February 28, 2019.

INTERNATIONAL ACTIVITIES

Nominations/Election of Indian scientists for various positions at International Science Council (formerly ICSU) and its different Unions

- Dr VM Tiwari, Director, CSIR-National Geophysical Research Institute, Hyderabad has been nominated for the position of IUGG
Bureau Member for the period 2019-2023.

- **Professor Sanjay Mittal**, FNA, Department of Aerospace Engineering, Indian Institute of Technology Kanpur, Kanpur has been re-elected as Member of IUTAM Congress Committee from November 1, 2018 to October 31, 2022.

- **Professor KS Narayan**, FNA, Dean (R&D), Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru has been nominated for the membership of IUPAP Working Group of Industry (WG 16).

- **Dr Bipul Behari Saha**, Director-R&D, Nagarjuna Agrichem, Hyderabad has been nominated for the position of Titular Member of COCI (Committee on Chemistry and Industry) and also for IUPAC Bureau Member.

**Workshop/Symposia/Conference supported by the Academy**

A three day AASSA-INS A-NISCAIR Regional Workshop on *Share Communication Science Breakthroughs: Paid News, Fake News & Ethics* was held at Hotel Shanti Palace, Mahipalpur, New Delhi during February 20-22, 2019. Around 40 national and international delegates participated in the workshop to share their views on Paid News, Fake News & Ethics.

**Overseas Visits by INSA Delegations**

- Professor AK Singhvi, Vice-President (Science & Society), INSA visited Malaysia to participate in IAP/AASSA regional workshop on *Supporting the Sustainable Development Goals: How Can Academies Help?* held at Academy of Sciences Malaysia, Kuala Lumpur during August 13-14, 2018.

- Professor Ajay Sood, President INSA along with Dr Chandrima Shaha, Vice-President (International Affairs) visited Leopoldina, Germany and delivered the 3rd Lecture of INSA-German National Academy of Sciences, Leopoldina Lecture Series entitled *Nature Inspired Physics: Why Do We Flock Together* on September 18, 2018 at Embassy of India, Tiergartenstr, Berlin.

- Professor Ajay Sood, President INSA visited Korea on the invitation of Korean Academy of Science & Technology (KAST), to participate in 2018 Inter Academy Seoul Science Forum (IASSF) held during October 22-24, 2018.

- Dr Chandrima Shaha, Vice-President (International Affairs) attended the 4th AASSA General Assembly held at Bangkok International Trade and Exhibition Center (BITEC), Bangkok, Thailand on October 31, 2018. Dr Shaha also attended the AASSA-IAP International workshop on *Promoting role of scientists and media in science and health communication: From Policy to Practice* during October 29-31, 2018 jointly organized by The Association of Academies and Societies of Sciences in Asia (AASSA) and The Science Society of Thailand under the Patronage of His Majesty the King National Science Museum (NSM) Thailand and supported by Inter-Academy Partnership (IAP). She also presented a paper on *Role of Indian Science Academies in Science Communication to Society: From Policy to Practice*.

- Professor Kankan Bhattacharya, Vice-President (Science Promotion) attended the International Scientific Leaders’ Forum marking 90th Anniversary Meeting of Academia Sinica at Taipai on November 12, 2018 and presented a talk on *Role of the Indian National Science Academy in Nation Building*.

**Visit of Overseas Delegates to INSA**

A high level German Delegation comprising of renowned scientists and medical doctors visited INSA on October 30, 2018 and had discussion to enhance the cooperation between the two countries.

**Support for Visiting Scientists during August 2018-February 2019**

- Six Indian scientists were supported by the Academy for attending various ISC (formerly
ICSU) sponsored international conferences abroad.

- 12 Indian scientists and seven foreign scientists were exchanged under INSA Bilateral Exchange Programme with overseas academies.

- 10 Indian Scientists were nominated to visit Japan and two Japanese scientists visited India under DST-JSPS Fellowship Programme for Young Researchers.

**SCIENTIFIC MEETINGS**

- INYAS Core Committee Meeting was organised on July 16, 2018 at INSA under the chairmanship of Dr Mahesh Kumar, Assistant Professor, IIT Jodhpur.

- An Indo-Japanese Joint Project on “Establishment of Young Researcher Fellowship Programme 2018-19” supported by DST and jointly coordinated by INSA & Japan Society for the Promotion of Science (JSPS) was initiated on July 27, 2018.

- A meeting to discuss UGC/Higher Education Commission acts and to draft a letter of suggestions to Government of India was held during August 4-5, 2018 at INSA premises. Fellows from three science Academies (Indian National Science Academy, New Delhi; Indian Academy of Sciences, Bengaluru and National Academy of Sciences of India, Allahabad) have participated in this meeting.

- A Brainstorming meet on “Rejuvenating Indian Palaeontology and Establishment of a National Earth Museum” supported by Principal Scientific Advisor, Government of India and coordinated by University of Delhi was organized during September 10-11, 2018 at INSA. Around 60 participants participated in the meeting.

- Dr Harsh Vardhan, Minister of Science and Technology and Earth Sciences, Minister of Environment, Forest and Climate Change inaugurated Wind Augmentation Purifying Unit, developed by CSIR-NEERI with support from DST on September 25, 2018. This event was coordinated by the Academy as a part of “India-UK Energy Demand Reduction in the Built Environment Programme” representing India’s Department of Science & Technology (DST), the UK’s Engineering and Physical Sciences Research Council (EPSRC) and Economic and Social Research Council (ESRC), as part of the Research Councils UK (RCUK).

- INYAS Core Committee Meeting was organised on October 31, 2018 at INSA under the chairmanship of Dr Mahesh Kumar, Assistant Professor, IIT Jodhpur.

- Local Organising Committee (LOC) meeting of the URSI Asia Pacific Radio Science Conference (AP-RASC 2019) was held at INSA during December 3-5, 2018.

- INYAS Core Committee Meeting was organised on December 26, 2018 at PRL Ahmedabad and on February 1, 2019 at INSA under the chairmanship of Dr Mahesh Kumar, Assistant Professor, IIT Jodhpur.

- The fourth General Body Meeting of Indian National Young Academy of Sciences (INYAS) was held during February 21-22, 2019 at INSA. Members discussed future activities and plans and other programmes.

**SCIENCE & SOCIETY PROGRAMME**

- A lecture on Chemistry and Physics Nobel Prizes – India’s Contribution delivered by Dr Rajinder Singh, Research Group - Physics Education and History of Science, Department of Physics, Physics Institute, University of Oldenburg, Germany on October 9, 2018 was organized at INSA in collaboration with National Academy of Sciences, Allahabad.

- **National Science Day 2019**

  Indian National Science Academy celebrated the National Science Day on February 28, 2019 in Academy premises. Professor AK Sood, President INSA, presided over the event along with Professor Anurag Sharma, Vice-President
Academy News

(Fellowship Affairs) and Professor AK Singhvi, Vice-President (Science & Society). On this occasion, Professor Ashutosh Sharma, FNA, Secretary, Department of Science and Technology, New Delhi delivered Meghnad Saha Medal lecture on *Navigating Complexity by Common Sense*. This was followed by release of four Academy’s special publications viz. *Ethics in Science Education, Research and Governance* (Editors: K. Muralidhar, A Ghosh and AK Singhvi); *Water Futures: Status of Science and Technology* (Editors: PP Mujumdar and VM Tiwari); *Emergence of Modern Science in Colonial India* (Editors: AK Bagh, Arnab Rai Choudhuri and Deepak Kumar); *Fellowships and Funding Opportunities for School Students: Way Forward* (Author: Muthamilarasan Mehanathan) by the respective authors and editors of the books. In addition, *INYAS Newsletter* (January-December 2018) was also released. The event was attended by college students and some of the local Fellows of the Academy and the copies of the book *Fellowships and Funding Opportunities for School Students: Way Forward* was freely distributed to students and teachers.
AWARDS AND HONOURS TO INSA FELLOWS

The following Fellows of the Academy have been awarded with Civilian Award by the Government of India.

Padma Shri

Dr BS Dhillon, Vice-Chancellor, Punjab Agricultural University, Ludhiana for his contribution in agricultural sector.

Professor Rohini M Godbole, Centre for High Energy Physics, Indian Institute of Science, Bengaluru for her contribution to particle physics and collider physics in India.

- Professor SK Satheesh, Centre for Atmospheric and Oceanic Science, Indian Institute of Science, Bengaluru has been awarded the Prestigious INFOSYS award for his work in Atmospheric Sciences in particular on Black Carbon.

- Professor RA Mashelkar, FRS, National Research Professor, has been decorated with the prestigious TWAS-Lenovo Science Prize for his work on smart polymer gels.

- Dr SK Jain, formerly Director, SK Jain Institute of Ethnobiology has been awarded with the Life Time Achievement Award 2018 by Indian Botanical Society.

- Professor Ashok K Vijh, FRS, Maître De Recherches, Institute de Recherches Hydro-Quebec (IREQ), Canada has been decorated with the Order of Montreal award. He was also decorated with Electrochemical Award by the Electrochemical Society-Canada Section.

RECENT PUBLICATIONS OF THE ACADEMY

Proceedings of the Indian National Science Academy

Volume 84, No. 3 (September 2018) issue of PINSA has been published. This issue includes six review articles, nine research papers, a book review, an editorial by Professor SC Lakhotia, FNA and Academy News.

Volume 84, No. 4 (December 2018) issue of PINSA has been published as a thematic issue on Dual Nutrition Burden in India: Challenges and Opportunities. This issue contained 15 articles and a book review besides a guest editorial by Dr Prema Ramachandran, Director, Nutrition Foundation of India, Qutab Institutional Area, New Delhi.

Indian Journal of History of Science (IJHHS)

Volume 53, No. 3 (September 2018) issue of IJHHS has been published. This issue includes main papers on Harappan Shell Industry; Indus Ceramic Industries; Copper Vessels of Indus Valley Civilization from Harinagar; Metals and Metallurgy in Harappan Civilization; Indigo Crop and its history; Determination of Ascensional Difference in Lagnaprakara; Origin of the 28 Nakṣatras; Bahadur Shah Zafar and Laureate Mirza Ghalib; Philippe Barbier and his Knowledge of Plants and Inorganic Principles; Bibha Chowdhuri and her Cosmic Ray Studies. The issue also contain features like book reviews and project report.

Volume 53, No. 4 (December 2018) issue of IJHHS has been published. It is a thematic issue based on papers of an international conference on Emergence of Modern Science in Colonial India coordinated by Arnab Rai Choudhuri, FNA held in INSA during March 14-16, 2018. The issue consists of 30 peer reviewed papers covering around 250 pages under subsections like Physical, Chemical & Medical sciences; Botany, Agriculture, Environment & Engineering; Congress, Society & Academy and Indian Response to the Colonial System. It provides a glimpse of path-breaking contributions made by Indian scientists like JC Bose, PC Ray, CV Raman, MN Saha, SN Bose etc. during nineteenth century. It tries to explain how the transplantation of science took place from one society to another during the colonial period – a topic of considerable interest to historians of science. This issue is also available in a form of a book.

Volume 54, No. 1 (March 2019) issue of IJHHS has been published. This issue includes papers on Indian astronomy dealing with determination of Kātalagāna in the Lagnaprakaraṇa; Painless surgery performed
on a mesmerized patient by Joseph Johnstone in 1847 in Madras Presidency; Glycolic Ferment and the works of Victor Barral and Raphaël Lépine; UN Brahmacari and discovery of Urea Stibamine for the treatment of Kala-azar; The Relationship between Science & Technology & Evolution in Methods of Knowledge Production; history of Linguistic Science of Bodo, Garo and Kokborok languages of North-East India. It also contains two historical notes on Multiplication table of Gañesa Daivajña and Biographical sketch of Dr Radhikaram Dhekial Phookan – Ist Chemist from Assam to completes his Ph.D. from Heidelberg University, Germany. It has other usual features like correspondences, book reviews and project reports.

**Indian Journal of Pure and Applied Mathematics (IJPAM)**

Volume 49, No. 3 & 4 (September and December 2018) issue of *IJPAM* has been published.

Volume 50, No. 1 (March 2019) issue of *IJPAM* has been published.
ANNOUNCEMENTS

INSA TEACHERS AWARD – 2019

Call for Nominations

The Academy has instituted the INSA Teachers Award to recognize and value excellence, consistency and high level of teaching in Indian Colleges, Universities and Institutions. The award aims to recognize and honour teachers who have provided guidance, inspiration and mentored students to take up careers in Science and Technology. The maximum number of awards is 12. The awardees shall receive a scroll, a cash award of Rs. 50,000/- and a one-time book grant of Rs. 20,000/–.

A teacher may be nominated by Fellows of INSA, IASc, NASI, Principal of a College, Vice-Chancellor of a University, Director of an Institution, a colleague or by a former student who is associated with an academic/R&D institution. The nominators may forward only one nomination in a year.

The last date for receipt of nominations is May 15, 2019. For further details and nomination proforma, please visit our website www.insaindia.res.in.

Proposal for Lectures in the Remote/Rural Areas

The Academy has launched a programme under which INSA Fellows, Young Scientists, Teachers’ Awardees & Indian National Young Academy of Science (INYAS) members are encouraged to deliver Popular Lectures to young students and teachers of schools and colleges in remote/rural areas in India.

Proposals are invited from Fellows, INSA young scientists, INSA teacher awardees and INYAS members with details like name and address of the school/college where they wish to deliver the lecture, title(s) of lecture(s), proposed dates and the quantum of required travel support. Proposals may be sent to esoffice@insa.nic.in and sci-soc@insa.nic.in at the earliest. For details refer INSA website www.insaindia.res.in.

Nomination for Election of Fellows, Foreign Fellows and Fellows in New Category

Nominations are invited from the Fellows of INSA for election of Fellows, Foreign Fellows and Fellows in New Category. Last date of receiving nominations is July 15, 2019. Nomination forms can be downloaded from the INSA website www.insaindia.res.in.