

ACADEMY NEWS

AWARD LECTURE DELIVERED

Professor Vishwa Nath Memorial Lecture (2015):

Professor Subrata Sinha, Director, National Brain Research Centre, Manesar delivered Professor Vishwa Nath Memorial Lecture on *Molecular Markers and Tumour Behavior in Glioma – The Tumours of the Supporting Cells of the Brain* at Delhi University, South Delhi Campus, New Delhi on March 19, 2016.



Professor Subrata Sinha delivering Professor Vishwa Nath Memorial Lecture

INTERNATIONAL ACTIVITIES

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

- Dr Anil Kumar, Scientist, Physical Chemistry Division, CSIR-National Chemical Laboratory, Pune has been nominated for the position of Member of Executive Committee of Committee on Data for Science & Technology (CODATA) for the term 2016-2018.

Workshop/Symposia/Conferences supported by the Academy

- The 9th International Geographical Union (IGU)

Conference on *Land Use Change, Climate Extremes and Disaster Risk Reduction* was held at Paintal Memorial Golden Jubilee Auditorium, VP Chest Institute, University of Delhi, Delhi during March 18-20, 2016 under the convenership of Dr Suraj Mal, Shaheed Bhagat Singh College, University of Delhi, Delhi.

- A workshop *To Develop Scientific Programme for Research on Rare Diseases* was held at INSA premises during April 22-23, 2016 under the convenership of Professor Alok Bhattacharya, School of Life Sciences & School of Computational and Integrative Sciences, JNU, New Delhi. Some of the issues that were discussed are:

1. Awareness about these diseases so that proper diagnosis can be done at an early age. The target population should be both clinicians and common public.
2. Developing low cost diagnostic platforms. This will be particularly helpful for the large number of genetic disorders which constitute a major fraction of rare diseases. These platforms can be useful for both screening and diagnostics.
3. Development of new therapeutics, which could be small molecules, biologicals, stem cells, and gene delivery systems.
4. Developing resources to carry out research in the area of rare diseases. In this regard a concerted effort to develop animal models, stem cell lines, genome editing systems and gene delivery systems which could be shared with researchers and clinicians can facilitate research in this area.

5. Fiscal and other policies that will encourage people to invest in developing therapies.
 6. Rapid regulatory approval, on the lines of FDA office of Orphan Drug Development.
- An Indo-US Workshop on “Building Regional Capacity to Tackle Challenges of Emerging Infections and Global Health Safety” was held during May 8-11, 2016 at the Savoy Resort & Spa, Mahe Island, Seychelles. A 17 member Indian delegation comprising of Professor Rajendra Prasad, Vice-President, INSA, Professor Indira Nath, FNA, Professor Rakesh Bhatnagar, FNA, Dr Alok K Moitra, Executive Director and Mr Madhavendra Narayan, Assistant Executive Director-II, History of Sciences, INSA were nominated by the Academy to attend the workshop.

On the invitation of the Academy, Shri Sanjay Panda, High Commissioner of India to the Republic of Seychelles, graced the inaugural session of the workshop. The workshop provided an opportunity to biological safety and disease surveillance experts from India, US and several other countries in South and South East Asia to meet and discuss issues relating to gathering of information and knowledge about the research work going-on in our neighbouring countries as well as in the US to tackle challenges of ‘Emerging infections and global health safety’.

Overseas Visits by INSA Delegations

- Professor R Gadagkar, President, INSA attended the Annual Ceremonial Session-2016 of the Austrian Academy of Sciences held in Vienna, Austria on May 20, 2016.
- On the invitation of Science Council of Asia, Professor JP Mittal, Vice President INSA attended the 16th SCA Conference held in Colombo, Sri Lanka during May 30 - June 01, 2016 on “Science for the People: Mobilizing Modern Technologies for Sustainable Development in Asia”. The Conference was organised by National Academy of Sciences of Sri Lanka (NASSL) and National Science Foundation of Sri Lanka (NSF). During the event, Professor Mittal delivered a lecture on “Excitement in Radiation Research”.

Support for Visiting Scientists during March-May 2016

- 20 Indian scientists were supported by the Academy for attending various international conferences abroad.
- 22 Indian scientists visited different countries in connection with their scientific studies and research while two foreign scientists were supported to visit India laboratories/institutes under INSA Bilateral Exchange Programme.

SCIENTIFIC MEETINGS DURING MARCH - MAY 2016

- An International Geographical Union (IGU) Executive Committee Meeting was held on March 17, 2016 at INSA premises. This was attended by 10 IGU Office Bearers including Professor Tom Beer, Ex IUGG (International Union of Geodesy and Geophysics) President.
- A Brain-storming session on ‘Spreading Quality Teaching’ was organised in INSA premises on March 29, 2016 under the convenership of Professor SC Lakhota, Vice-President INSA. The main objective of this session was to create network among teachers for achieving quality science education in the country. The three science Academies already have programmes for improving teaching quality. The idea of this brain-storming session is to expand the horizon, so that all the teachers and students across colleges/universities in India can have the benefit of quality science teaching methods.
- A discussion meeting, as a part of IGC 2020 initiative, was organised by Professor AK Singhvi, FNA, Chairman, IUGS-INQUA National Committee at INSA premises during April 24-25, 2016.

- A Group Discussion meeting on ‘Srinagar Rain and Flood of September 2014’ was organised by the Academy on May 13-14, 2016 at Jammu University, Jammu under the convenership of Professor V Rajamani, FNA. The programme was supported by INSA and the National Academy of Sciences (NAS), USA.

RECENT PUBLICATIONS OF THE ACADEMY

Proceedings of the Indian National Science Academy

Volume 82, No. 1 (March 2016) issue of *Proceedings* has been published. This issue contained four Letters to Editor, a medal lecture by Professor MS Valiathan, three meeting reports, an academy sponsored report by Dr GP Dutta, three review articles and two research papers.

Indian Journal of History of Science (IJHS)

Volume 51, No. 1 (March 2016) issue of *IJHS* has been published. This thematic issue is based on a seminar on *Knowledge Production in Pre-colonial*

India held during January 24-26, 2015 at Centre for Contemporary Studies, IISc, Bangalore. The papers in the issue include Introductory outline of the methodology of knowledge production; Metallurgy of Zinc, high-tin Bronze and Gold in Indian Antiquity, Caraka’s approach to Knowledge; Origins and growth of the Ayurvedic Knowledge; Knowledge generation in Ayurveda; Indian Mathematics; Canopus in Indian Astronomy; Inference as a means of knowledge in Indian Epistemological Tradition; Debate as a methodology of knowledge production in Pre-Modern India and Translation as method.

It also include papers on Growth of Knowledge Production in Tamil; Grammatical Knowledge in early Tamilakam; Bodies as Knowledge (Kathakali), Knowledge in *Prabandha* : a premodern musical Genre and Knowledge in *Vāstuśāstrā* to *Vāstu-vidyā*.

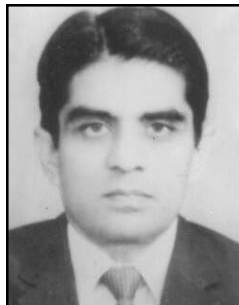
Indian Journal of Pure and Applied Mathematics (IJPAM)

Volume 47, No. 1 (April 2016) issue of *IJPAM* has been published.

OBITUARY

Mangalore Vivekananda Bhatt

Mangalore Vivekananda Bhatt (*b* 01 February 1924; *d* 19 April 2016) obtained his AIISc degree and worked independently for PhD and continued his post-doctoral studies from Indian Institute of Science (IISc), Washington University, and Purdue University. On his return, he joined as Lecturer in the Department of Organic Chemistry at IISc, Bangalore and later became Professor in 1969 and served as the Chairman of the Department and Dean of the Science Faculty. He was also the Visiting Professor at Purdue University, USA and Mangalore University.



Professor Bhatt started his independent research group at IISc. Some of the major research contributions of his group were in the areas of ring-chain tautomerism, new reagents and reactions and quinone studies. He also collaborated with faculty members from the departments of Chemical Engineering, Biochemistry and Microbiology and Cell Biology at IISc. He published papers on kinetics and mechanistic studies in these areas. He also published a series of papers on different aspects of ring-chain tautomerism in *American Chemical Society* and *Royal Society of Chemistry* journals.

During his career, he published around 135 research papers including review articles and book chapters. He has 10 Indian and two foreign patents to his credit. He served as Indian representative of International Union of Pure and Applied Chemistry (IUPAC). He was a Fellow, Indian Academy of Sciences, Bangalore.

Professor MV Bhatt was elected to the Fellowship of the Indian National Science Academy in the year 1982.

Charusita Chakravarty

Charusita Chakravarty (*b* 5 May 1964; *d* 29 March 2016) obtained her PhD from Cambridge University and worked as a Post-doc at University of California and Cambridge University. She joined Indian Institute of Technology, Delhi as Assistant Professor and rose to the position of Professor of Chemistry. She was an Associate Member of the Centre for Computational Material Science, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore.



Professor Chakravarty research centred around the characteristics of atomic and molecular clusters, anomalous properties of water and ionic liquids, phase transition in classical and quantum clusters, diffusion in constrained media and related phenomena. She was an expert in using path integral Monte Carlo simulation to unravel quantum mechanical effects in the properties of atomic and molecular clusters. She published research papers in referred national and international research journals and was a member of the Editorial Board of *Pramana – Journal of Physics*, *Journal of Chemical Sciences*, *Physical Chemistry and Chemical Physics*. She was also a Member of various scientific committees particularly that of Science Academies, DST and CSIR. She actively participated in education related activities of the Science Academies in India.

Professor Chakravarty received several awards including Shanti Swarup Bhatnagar Prize in Chemical Sciences; BM Birla Science Award; INSA Medal for Young Scientists; AK Bose Memorial Award of INSA; Bronze Medal of the Chemical Research Society of India. She was awarded Swarnajayanti Fellowship of the Department of Science and Technology and was elected Fellow of Indian Academy of Sciences, Bangalore.

Professor Charusita Chakravarty was elected to the Fellowship of the Indian National Science Academy in the year 2015.

Bahadur Chand Nakra

Bahadur Chand Nakra (*b* 31 March 1939; *d* 12 April 2016) obtained his PhD from Imperial College of Science & Technology, London. On returning to India, he joined Mechanical Engineering Department and the ITMME Centre at IIT-Delhi. During his career, he served as Head, Mechanical Engineer, Dean, Deputy Director and officiating Director. He was also involved in joint research with universities in UK and Japan. In addition, he worked in the Editorial Boards of journals like *Sadhana*, *Proceedings of the Indian National Science Academy*, *Tribology International* and *International Journal of Applied Mathematics and Mechanics*.



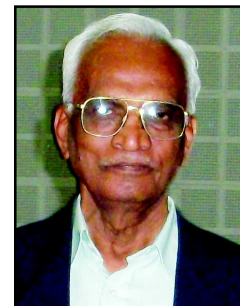
Professor Nakra started teaching and research in vibration analysis and control. He concentrated his research in the areas of vibration and noise engineering condition monitoring and diagnostic maintenance system identification and dynamic design and dynamics of hydraulic and pneumatic systems. He published several research papers, books and technical reports for sponsored R&D work from leading industrial and government undertakings in power, automotive, railways, process and manufacturing sectors.

Professor Nakra was recipient of several awards including the CV Raman Award by Acoustical Society of India; Eminent Engineer Award by Institution of Engineers, India; Distinguished Mechanical Engineering Educator by ISME and INSA-GP Chatterjee Memorial Award. He was elected Fellow of the Indian National Academy of Engineering; Indian Academy of Sciences, Bangalore; National Academy of Sciences, Allahabad; Institution of Engineers and World Innovation Foundation.

Professor BC Nakra was elected to the Fellowship of the Indian National Science Academy in the year 1987 and served its Council as Member during 1996-98.

Paramasivam Natarajan

Paramasivam Natarajan (*b* 17 September 1940; *d* 18 March 2016) obtained his PhD from University of Southern California. He began his career as Reader in Physical Chemistry and spent nearly 30 years at the University of Madras. He founded the National Centre for Ultrafast Processes at the University of Madras and served its Founder-Director. Later, he became Director of CSIR-Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar (1991-97). He was also a Member of SERC in DST, IUPAC committees and editorial boards of several journals.



Dr Natarajan started his career in inorganic photochemistry and made significant contributions in various fields of photochemistry such as polymer dynamics in aqueous solution using fluorescence techniques, photophysics and photochemistry in organised media, flash photolysis studies of organic and inorganic systems using pico and femtosecond lasers, and photoelectrochemistry applications to solar energy conversion.

Dr Natarajan was conferred upon with several awards including SS Bhatnagar Prize for Chemical Sciences, Best Teacher Award by the Tamil Nadu Government, Jawaharlal Nehru Birth Centenary Lecture Award by INSA, Acharya PC Ray Award by Indian Chemical Society, DST-Ramanna Fellowship and Sigma-Xi Society Award, USA. He was elected Fellow of the Indian Academy of Sciences, Bangalore and Society of Biosciences. He also held Visveshwaraiah Chair at Mysore University and the Pandit Jawaharlal Chair at University of Hyderabad.

Dr Paramasivam Natarajan was elected to the Fellowship of the Indian National Science Academy in the year 1988.

Suhas Chandra Sanyal

Suhas Chandra Sanyal (*b* 01 January 1942; *d* 05 August 2015) obtained his PhD from Calcutta University. He established an Enteric Infection Unit in BHU in 1975 and was appointed as Professor and Head, Department of Microbiology, Institute of Medical Sciences,



Banaras Hindu University (BHU) in 1979. He was also Visiting Scientist/Professor at several international institutes/laboratories. He moved to Kuwait in 1992 and joined as Chairman and Director of Laboratory Medicine and Senior Consultant Microbiologist of Specialized hospitals until his superannuation. He also served as President, Asia-Pacific Section, International Society on Toxicology and the Association of Microbiologists of India.

Professor Sanyal made outstanding contributions in medical microbiology involving infection control and antimicrobial technology. He had studied enterotoxins and their modes of action, epidemiological importance of diarrheal agents, genetics of toxin synthesis in pathogenic enteric bacteria, live oral cholera vaccine and Nag Vibrio toxin. He also worked on aspects related to immunity generated in acute enteric infections and studied prospects of preparing remedial vaccines.

Professor Sanyal received several awards and honours including the Shakuntala-Amirchand Award by the Indian Council of Medical Research; Dr SC Agarwal Award by the Indian Association of Medical Microbiologists; Ranbaxy International Research Award in Medical Sciences; VR Kanolkar Oration Award by the National Academy of Medical Sciences, India; Dr Bashambarnath Chopra Oration Award by INSA and Best Original Article Award by the *Journal of Kuwait Medical Association*. He was elected Fellow of the Royal Society of Tropical Medicine; Royal College of Pathologists; International Academy of Medical Sciences; National Academy of Medical Sciences and Indian Academy of Sciences, Bangalore.

Professor SC Sanyal was elected to the Fellowship of the Indian National Science Academy in the year 1992.

Pidaparty Seshadri Sastry

Pidaparty Seshadri Sastry (*b* 23 August 1943; *d* 17 January 2016) obtained his PhD from Indian Institute of Science (IISc), Bangalore for his work on 'Vitamin A metabolism'. He joined the University of Toronto, Canada as Assistant Director of Neurochemistry



Laboratory. Thereafter, he joined the Department of Biochemistry, IISc as Assistant Professor and superannuated as ASTRA Professor and Chairman.

Professor Sastry made notable contributions to lipid biochemistry, neurochemistry and plant lipids. He established the biosynthetic pathways for complex lipids in plants, isolated and determined the structures of the major galactolipids of the chloroplast membrane, also discovered the galactolipases and an entirely new class of lipids in Halophilic bacteria (Archea). He did pioneering work in signal transduction and showed that the mechanism of action of Na⁺K⁺ATPase involves the formation of an acyl phosphate on an aspartic residue. He made extensive studies on undernutrition and brain development, biosynthesis of myelin lipids, the process of myelination; synaptogenesis, receptor ontogeny in the developing human brain and signal transduction mechanisms in brain. His group carried out pioneering work on the biosynthesis of triglycerides in developing oil seeds and on the plant sulfolipids.

Professor Sastry received the Giri Medal from IISc; PB Rama Rao Award from the Society of Biological Chemists; BC Guha Memorial Award from INSA; Sir Shriram Memorial Award from National Academy of Medical Sciences and Ranbaxy Award for outstanding contributions in basic Medical Sciences. He was elected Fellow of the National Academy of Medical Sciences and Andhra Pradesh Academy.

Professor PS Sastry was elected to the Fellowship of the Indian National Science Academy in the year 1982.

Soumitra Kumar Sen

Soumitra Kumar Sen (*b* 24 October 1936; *d* 08 February 2016) obtained PhD and DSc from Calcutta University specializing in Genetics. He joined Department of Genetics and Plant Breeding, Banaras Hindu University as Faculty Member. He was



Professor of Genetics at Bose Institute, Kolkata and later became Director of Bose Institute, Centre for Plant Molecular Biology, Kolkata and IIT Kharagpur. He also worked at California Institute of Technology, Washington State University and University of Hohenheim, Germany. He was a Visiting Professor at Max-Planck Society, Cologne, Germany. He also established a laboratory on modern plant biology at BHU; the Department of Plant Molecular and Cellular Genetics in Bose Institute, Kolkata, and a major research laboratory on crop biotechnology in IIT Kharagpur which later developed as Centre for Crop Biotechnological Studies.

Professor Sen's research focused on molecular genetics and somatic genetics of plants. At the Max-Planck Institute, he worked on mechanism of chromosome pairing during meiosis and its relationship with genetic recombination. This work has been considered as one of the pioneering studies on the significance of synaptonemal complexes in eukaryotes during meiotic prophase. He, along with his team was the first to produce stable genetically engineered major crops like rice and cotton. The insect resistant GM crop was considered as an exemplary case for the only genetically engineered crop in India that has gone to the farmer's field. He continued his work on plant biotechnology.

Professor Sen was recipient of Calcutta University Gold Medal. He was Alexander von Humboldt Foundation Fellow, Germany.

Professor SK Sen was elected to the Fellowship of the Indian National Science Academy in the year 1988.

ANNOUNCEMENTS

Indira Gandhi Prize for Popularization of Science (2017)

Nominations are invited from eminent individuals for the award of Indira Gandhi Prize for Popularization of Science for the year 2017 by the Academy. Two prizes will be awarded, one each to a career scientist and to a career media personnel who are engaged in popularization of science. Last date for receiving the nominations is **July 15, 2016**. For proforma and other details for nomination, please write to fellowship@insa.nic.in.

Deputation of Indian Scientists Abroad under Bilateral Exchange Programme 2017

Applications are invited from outstanding scientists/researchers holding Ph.D. degree and having regular positions in recognized S&T institutions/universities and who are actively engaged in research in frontline areas for deputation abroad during the calendar year 2017 in all fields of Science including Engineering, Medicine and Agriculture for short term (2-4 weeks for senior scientists) and long term visits (3 months for junior/younger scientists) under the Scientific Bilateral Exchange Programme with overseas Academies/Organizations in **China, France, Germany, Hungary, Iran, Israel, Kenya, Mauritius, Nepal, Philippines, Poland, Scotland, Slovak Republic, Republic of Slovenia, South Africa, Sudan, Taiwan and Turkey**.

Hard copy of application, duly completed and endorsed by the Head of the Institution should be submitted latest by **July 25, 2016** to **The Assistant Executive Director (International), Indian National Science Academy, Bahadur Shah Zafar Marg, New Delhi - 110002**. A soft copy of complete application (single PDF file only) should be emailed to: insaintl@gmail.com. Please include your **Name, Area of Research and Proposed Country** in the subject line of your email. The soft copy filename should be saved as: *Name of Applicant_Proposed Country*. Incomplete applications will be rejected and no further correspondence shall be made.

INSA Senior Scientists 2017

Nominations are invited for **INSA Senior Scientist** position from Fellows of the Academy. Objective of this programme is to utilise the expertise of INSA Fellows after superannuation to continue working in their areas choice in an R&D centre/university/institution in India. The proposal, duly endorsed by the Head of the Institution, where scientist intends to work, may be forwarded to the Academy by **July 31, 2016**.

For guidelines and application form, please write to sciprom@insa.nic.in. The names of the Fellows selected for Senior Scientist position 2017 will be announced at the Annual General Meeting in October 2016.

Nomination for Election of Fellows

Fellows of INSA are invited to nominate suitable candidates for election to Fellowship of the Academy in 2017. Last date for receiving nominations is **October 17, 2016**.