

ACADEMY NEWS

83rd ANNIVERSARY GENERAL MEETING, PUNE

The 83rd Anniversary General Meeting of the Council was held at the Indian Institute of Science Education & Research, Pune during December 27-29, 2017. This three day event included three mini symposia on *Policy for Science and Science for Policy vis-a-vis role of Science Academies* (Convener: Professor S Sivaram, IISER Pune); *Science in IISER Pune* (Convener: Professor KN Ganesh, Director, IISER Tirupati) and *Science in India in the Era of Mega Projects* (Convener: Professor Ajay K Sood, President, INSA). In addition, two special lectures on *Gandhi and Science* by Dr Subodh Kerkar, Artist, Activist, Cultural theorist and Historian, founding Director of Museum of Goa and *ASSURED: The Game Changing Innovation Paradigm* by Professor RA Mashelkar, FRS, President, Global Research Alliance, Pune were also delivered. Professor Mashelkar also released the special publication of INSA on *Indian National Science Academy's Inspirational Journey in 75 years*, written by Mr. SK Sahni and Professor PN Tandon.

Professor Ajay K Sood, delivered the Presidential Anniversary Address on *Nature Inspired Physics: Flocking and Bacterial Heat Engine*. During this meeting, 39 new 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 1 young historian was presented the INSA Young Historian of Science Award.

The Council, at its meeting at IISER Pune decided to offer Meghnad Saha Medal (2018) to Professor Ashutosh Sharma, Secretary, Department of Science & Technology, New Delhi, Aryabhata Medal (2018) to Professor SC Lakhota, Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi, and Sisir Kumar Mitra Memorial Lecture (2018) award to Professor Indira Nath, Emeritus Professor, National Institute of Pathology, New Delhi.

The Council also announced the institution of a new endowment award named 'Professor Mihir Chowdhury Memorial Medal'. The Medal will be



Release of INSA's special publication *Indian National Science Academy's Inspirational Journey in 75 years* during the AGM at IISER Pune

awarded to an eminent scientist for outstanding contributions in any branch of Chemistry. The award carries an honorarium of Rs. 25,000/-, a bronze medal and a citation. The first medal will be awarded in 2019.

Award Lectures during the 83rd Anniversary General Meeting

Three award lectures were delivered at IISER Pune:

Indira Gandhi Prize for Popularization of Science Medal (2017): Professor Arnab Bhattacharya, TIFR, Mumbai delivered Indira Gandhi Prize for Popularization of Science Medal lecture on *Seeking N-lightenment, one cup at a time! The Journey of Chai and Why?*



Professor Arnab Bhattacharya receiving the medal and citation of the award from President, INSA

Homi Jehangir Bhabha Medal (2014): Professor Varun Sahni, Inter-University Centre for Astronomy



Professor Varun Sahni receiving the medal and citation from Professor Sood

and Astrophysics, Pune delivered Homi Jehangir Bhabha Medal lecture on *Reconstructing Dark Energy*.

Homi Jehangir Bhabha Medal (2017): Professor Chanda J Jog, Department of Physics, Indian Institute of Science, Bengaluru delivered Homi Jehangir Bhabha Medal lecture on *Dynamics of Galaxies: Effect of Interstellar Gas and Dark Matter Halo*.



Professor Chanda J Jog delivering the HJ Bhabha Medal lecture during AGM

Condolence at the passing away of the distinguished Fellows

President, INSA read the obituary notes with respect to Professor K Chandrasekharan and Professor Lalji Singh, esteemed Fellows 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 (Professors SC Lakhota, LS Shashidhara, Vice-Presidents, Nibir Mandal, Dhananjai Pandey and Dr SK Ghosh, Members) were felicitated by Professor Sood, President, INSA. He presented them a shawl as a token of respect.

AWARD LECTURES DELIVERED UNDER LOCAL CHAPTER

Jagadis Chandra Bose Medal (2016): Professor

Pinakpani Chakrabarti, Department of Biochemistry and Bioinformatics Centre, Bose Institute, Kolkata delivered Jagadis Chandra Bose Medal lecture on *Protein fibrillation: Some Theoretical and Experimental Observations* at Bidhan Nagar College, Kolkata on December 19, 2017.



Professor Pinakpani Chakrabarti receiving the JC Bose Medal from Dr. Madhumita Manna, Principal, Bidhan Nagar College, Kolkata. Professor Hemanta K Majumder, FNA is also seen

The Silver Jubilee Commemoration Medal (2016):

Dr Himanshu Pathak, Director, ICAR-National Rice Research Institute, Cuttack delivered The Silver Jubilee Commemoration Medal lecture on *Crop Productivity to Climate Stability: The Journey of Carbon the Atom of Life* at Bhubaneswar on January 9, 2018.

Professor Har Swarup Memorial Lecture (2017):

Professor Amitabh Joshi, Evolutionary and Organismal Biology Unit, JNCASR, Bengaluru delivered Professor Har Swarup Memorial Lecture on *Experimental Evolution and Ecology in the Laboratory* at Bengaluru on February 7, 2018.

INTERNATIONAL ACTIVITIES

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

- Professor AK Sood, President, INSA, has been nominated for the position of Vice-President of International Science Council (ISC).

Workshop/Symposia/Conference supported by the Academy

- The Final Indo-European Conference on *Moduli* was organised during December 11-15, 2017 at INSA, New Delhi.
- **Indo-Israel Symposium 2018**

An Indo-Israel Symposium on *Recent Advances in Molecular Genetics with New Biomedical Insights* was jointly organized by Indian National Science Academy & Israel Academy of Sciences and Humanities during February 12-13, 2018 at INSA, New Delhi. The symposium included contemporary areas of biomedical research, with a focus on both basic and translational sciences. Professor Adi Kimchi, The Weizmann Institute of Science, Israel and Professor BK Thelma, Department of Genetics, University of Delhi, South Campus, New Delhi, were conveners of the event. Ten Indian and eight Israeli researchers spoke during the symposium.

- A conference on *Perspectives in GNE Myopathy: Research, Clinical Management and Patient Care* under the convenorship of Professor Alok Bhattacharya, School of Life Sciences & School of Computational and Integrative Sciences, JNU, New Delhi, was held at INSA, New Delhi during February 16-17, 2018. The conference was attended by stakeholders including patients, caregivers, clinicians and scientists.
- An award ceremony of India-UK Collaborative Projects on *Water Quality Research* and *Energy Demand Reduction in Built Environment* was held on February 19, 2018 at Hotel Shangri La, New Delhi. Mr. Daniel Shah, Director, Research Council, UK delivered the welcome address and Professor Ashutosh Sharma, Secretary, Department of Science & Technology, New Delhi delivered the opening address. Dr VK Saraswat, Member, NITI Aayog was the Chief Guest during the event.
- A Brainstorming Session on *Code of*

Stratigraphic Nomenclature and Related Issues was organized at INSA, New Delhi, under the aegis of International Union of Geological Sciences - International Quaternary Research (IUGS-INQUA) National Committee during February 22-23, 2018.

Visit of INSA Chair Awardee

➤ Professor PC Ray Chair Award (2017-18)

Professor BN Datta, Department of Mathematical Sciences, Northern Illinois, USA, who was awarded the Professor PC Ray Chair of INSA, visited India during January 03-24, 2018 as distinguished overseas scientist nominated by Dr Sudha Balagopalan, Principal, Vidya Academy of Science and Technology, Thrissur. During his visit to India, Professor Datta visited IIT Delhi, IIT Tirupati, IIT Madras and IEST Shibpur, Kolkata.

Support for Visiting Scientists during December 2017 - February 2018

- Two Indian and two foreign scientists visited abroad and India, respectively, under INSA Bilateral Exchange Programmes.

SCIENTIFIC MEETINGS DURING DECEMBER 2017 - FEBRUARY 2018

- A 'Young Scientists Brainstorming Meet' was organized on December 18, 2017 at INSA. 45 participants, including representatives from DST, DBT etc., Presidents of National Academies and Young Scientists participated in the meeting. The meeting was chaired by Dr R Chidambaram, DAE Homi Bhabha Professor, BARC and Principal Scientific Adviser to the Government of India.
- A meeting of the selection committee for Indo-Japanese Joint Project on *Establishment of Young Researcher Fellowship Programme 2017-18* was held on December 22, 2017 at INSA. Professor Anurag Sharma, Vice-President (Fellowship Affairs), INSA, who was the Chair of the committee, selected 15 Indian scientists for this joint project.

SCIENCE & SOCIETY PROGRAMME

• National Science Day Lectures 2018

Indian National Science Academy, in collaboration with Indian Academy of Sciences, Bengaluru, celebrated the National Science Day on February 28, 2018 in Academy premises. Dr Satya Pal Singh, Union Minister of State for Human Resource Development, Water Resources, River Development and Ganga Rejuvenation was the Chief Guest of this programme. Professor Avinash Khare, Department of Physics and Astrophysics, University of Delhi, Delhi, Convenor, Professor R Ramaswamy, President, Indian Academy of Sciences, Bengaluru, and Dr Chandrima Shaha, Vice-President (International Affairs), INSA, welcomed the audience. Professor K Ramasubramanian, IIT Bombay, delivered a lecture on *Science and Mathematics in Ancient India*; Professor Amitabh Joshi, Evolutionary and Organismal Biology Unit, JNCASR, Bengaluru, spoke on *Why evolution is central to both biology and our lives* and Professor Alok Bhattacharya, School of Life Sciences & School of Computational and Integrative Sciences, JNU, New Delhi, talked about *The unmet scientific agenda of rare genetic diseases*.



Professor Khare welcoming the guests at the National Science Day celebration at INSA

- Indian National Science Academy, in collaboration with Indian Institute of Science

Education and Research, Pune, organised a public lecture on *Science, Evolution and Rationality* by Professor Jerry Coyne, Professor, Department of Ecology and Evolution, University of Chicago, USA on January 4, 2018, at INSA Auditorium.

RECENT PUBLICATIONS OF THE ACADEMY

Proceedings of the Indian National Science Academy (PINSa)

Volume 83, No. 4 (December 2017) issue of *PINSa* has been published. This issue contained an opinion, seven review articles, six research papers, a book review and Academy News, besides the editorial by Professor SC Lakhota, FNA.

Indian Journal of History of Science (IJHS)

Volume 52, No. 4 (December 2017) issue of *IJHS* has been published. This issue includes papers on Date of *Mahābhārata War* based on Astronomical references, Āryabhaṭa-II and his concept of concave quadrilateral, Sisir Kumar Mitra's scientific achievements and the Fellowship of the Royal Society of London, and History of the scientific study of the Tibeto-Burman languages of North-East India. This issue also features two historical notes, three book reviews, a project report, news from history of science and an obituary of Dr Lotika Varadarajan. *Gaṇitapañcaviṃśi*, a Sanskrit text with introduction, English translation and notes by late Kripa Shankar Shukla also features under the Supplement section of this issue.

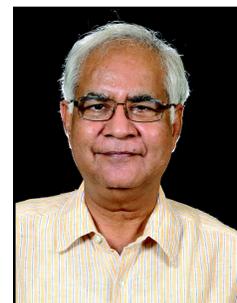
Indian Journal of Pure and Applied Mathematics (IJPAM)

Volume 48, No. 4 (December 2017) & Volume 49, No. 1 (March 2018) issue of *IJPAM* has been published.

OBITUARY

Baldev Raj

Baldev Raj (b 09 April 1947; d 06 January 2018) obtained PhD from the Indian Institute of Science, Bangalore and DSc from Sathyabama University, Chennai. He carried out post-doctoral research at the Bhabha Atomic Research Centre, Trombay. He



held various cardinal posts during his career, including serving as the Director of Indira Gandhi Centre for Atomic Research (IGCAR), and of the National Institute of Advanced Studies, Bengaluru since 2014.

Dr Raj was particularly noted for his studies of sodium fast reactors with closed fuel cycles. He had called this technology a “robust pathway to reduce high level radioactive waste [by 200x], thus increasing public acceptance and sustainability” of nuclear power generation in India. He worked on designing reactors that could utilise lower amounts of uranium and more of thorium. He is also notable for his contributions to the development of non-destructive evaluation, where advanced signals analysis, imaging techniques and innovative sensors are used to evaluate the health of old, critical or fragile structures. Such evaluation methods have been deployed in strategic industries like space and defence, as well as to help characterise and conserve culturally important monuments. He developed new statistical methods to aid medical diagnostics, developed instruments to study biomagnetic fields and micro-electromechanical systems to study human movement. He has over 1300 publications, 80 books, besides more than 100 articles in encyclopedia and handbooks, technologies, patents, standards, etc to his credit.

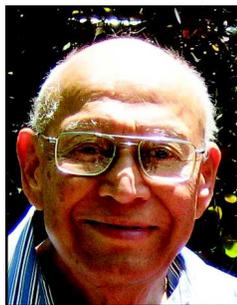
Dr Raj was recipient of numerous awards including the Life Time Achievement Award of Indian Society for Nondestructive Testing in 2004, the Indian Nuclear Society Award in 2005, the National Metallurgist Award from the Ministry of Steel &

Indian Institute of Metals in 2007, Padma Shri in 2007 and the Lifetime Achievement Award from International Institute of Welding in 2008. He was a Member of the German National Academy of Sciences, a Fellow of the Academy of Science for the Developing World, Indian National Academy of Engineering, National Academy of Sciences, Allahabad and the Indian Academy of Sciences, Bangalore.

Dr Baldev Raj was elected to the Fellowship of the Indian National Science Academy in the year 2006.

Balwant Shankar Joshi

Balwant Shankar Joshi (*b* 28 December 1924; *d* 02 November 2017) obtained his PhD from the Department of Chemical Technology, Mumbai University (now UICT, Mumbai) where he worked under the guidance of Professor K Venkataraman. He went to King's College, Cambridge University, and worked under the supervision of Alexander R Todd and obtained another PhD degree. Later, he joined the Institute of Organic Chemistry, University of Chicago, USA as Research Associate and did post-doctoral work with Morris S Kharasch. On his return to India, he joined National Chemical Laboratory as Senior Scientific Officer in-charge of K Venkataraman's research laboratory from 1958-61. In 1962, he joined the Division of Pharmaceutical



Chemistry of a newly initiated CIBA Research Centre, Mumbai. After his superannuation from CIBA-Geigy Research Centre, he worked as Research Scientist at the Institute for Natural Products Research, University of Georgia, Athens, USA.

Dr Joshi research was focused on the oxidation of hindered phenols which led to the isolation of the stable oxygen free radical "Galvinoxyl". He synthesized chrysophanol, rhein, emodin, islandicin and physcion. He investigated the colouring matters of shellac and determined the structure of erythrolaccin. He also made major contributions on the chemical constituents of medicinal plants, and research on Ayurvedic medicines at CIBA Research Centre, Mumbai. Over 1000 plant species were collected and investigated for their chemical constituents and biological activities. During his research career, he isolated more than 80 new naturally occurring compounds, determined their structures and synthesized several natural products. He has published over 210 research papers and contributed articles for several books.

Dr Joshi was conferred the Professor K Venkataraman Endowment Lectureship (1974) and Professor RC Shah Endowment Lectureship (1975). He was awarded the ScD degree by the University of Cambridge, England in 1983. He was elected Fellow of the Indian Academy of Sciences, Bangalore and the Maharashtra Academy of Sciences, Pune.

Dr Balwant Shankar Joshi was elected to the Fellowship of the Indian National Science Academy in the year 1976.

ANNOUNCEMENTS

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 (IN-YAS) 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 IN-YAS 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.

Nomination for Election of Fellows, Foreign Fellows and Pravasi Fellows

Nominations are invited from the Fellows of INSA for election of Fellows, Foreign Fellows and Pravasi Fellows. Nomination forms can be downloaded from the INSA website **www.insaindia.res.in**.