

ACADEMY NEWS

80th ANNIVERSARY GENERAL MEETING, GOA



Participants at the Anniversary General Meeting at NIO, Goa

The 80th Anniversary General Meeting of the Council was held at CSIR-National Institute of Oceanography, Goa from December 19-21, 2014. This three day event included two mini symposia on *Reconciliation of Marine and Terrestrial Records of Summer Monsoon Variability during the Holocene* (Dr SWA Naqvi, Director, CSIR-NIO, Goa, Convenor) and *The Impact of Genomic Instability on Aging and Cancer* (Professor K Muniyappa, Department of Biochemistry, IISc, Bengaluru, Convenor). In addition, a special lecture on *The Rise of Informational Thinking in Science* by Professor Sahotra Sarkar, University of Texas at Austin, USA and a public lecture on *ISRO's Mission to Mars driven by Science or Technology?* by Shri AS Kiran Kumar, former Director, Space Applications Centre, Department of Space, Ahmedabad were also held.

Professor R Gadagkar, President INSA, delivered the Anniversary Address on *The Evolution of Social Life in Animals*. 37 new Fellows were inducted to the Fellowship of the Academy, 23 Young Scientist awardees were presented INSA Medal for Young Scientist, 9 Teachers were presented the INSA

Teachers Award and 1 young historian was presented the INSA Young Historian of Science Award.

The Council, at its meeting at NIO, decided to award the Meghnad Saha Medal (2015) to Dr Bikash C Sinha, FNA; the Aryabhata Medal (2015) to Professor Alok Bhattacharya, FNA, and the Sisir Kumar Mitra Memorial Lecture (2015) to Dr SWA Naqvi, FNA.

The Council also decided:

1. To initiate e-voting process for election of Fellowship.
2. To establish INSA Young Academy of Science (INYAS) to work in close collaboration with the Global Young Academy.
3. To appoint a joint advisory board for nine INSA awards which are due in the year 2015.
4. To establish the AASSA (Association of Academies and Societies of Sciences in Asia) Secretariat in INSA.
5. Institution of 12 INSA Teachers Award instead of 10 from 2015.

Award Lectures during the 80th Anniversary General Meeting

Five award lectures were delivered at CSIR-NIO, Goa:

The Kalpathi Ramakrishna Ramanathan Medal Lecture (2008): Professor BN Goswami, Director, Indian Institute of Tropical Meteorology, Pune delivered the Kalpathi Ramakrishna Ramanathan Medal Lecture on *Emergence of Quantitative Weather and Climate Forecasts in India*.



Professor R Gadagkar presenting the medal and citation of the award lecture to Professor BN Goswami

The Prasanta Chandra Mahalanobis Medal Lecture (2008): Professor VS Borkar, Department of Electrical Engineering, Indian Institute of Technology, Mumbai delivered the Prasanta Chandra Mahalanobis Medal Lecture on *Playing Dice with the Universe: Algorithms for a Random Environment*.



Professor VS Borkar receiving the citation from Professor R Gadagkar; Professor JP Mittal is on left

Dr Jagdish Shankar Memorial Lecture (2009): Dr Swapan K Ghosh, Bhabha Atomic Research Centre, Mumbai delivered the Dr Jagdish Shankar Memorial Lecture on *Modelling Molecules and Materials through Density at Different Length Scales*.



Dr SK Ghosh receiving the citation from Professor R Gadagkar

The Satyendranath Bose Medal Lecture (2009): Professor Rohini M Godbole, Centre for High Energy Physics, Indian Institute of Science, Bengaluru delivered The Satyendranath Bose Medal Lecture on *Particle Physics beyond the Higgs Boson through the Higgs Portal*.



Professor R Gadagkar presenting the medal and citation to Professor Godbole

The Kalpathi Ramakrishna Ramanathan Medal Lecture (2011): Dr K Krishnamoorthy, Indian Space Research Organization, Bengaluru delivered The Kalpathi Ramakrishna Ramanathan Medal Lecture on *Inspires and Inspirations*.



Dr K Krishnamoorthy receiving the citation from Professor R Gadagkar

AWARD LECTURES DELIVERED UNDER LOCAL CHAPTERS

Professor Sadhan Basu Memorial Lecture (2014): Dr Sourav Pal, Director, CSIR-National Chemical Laboratory, Pune delivered the Professor Sadhan Basu Memorial Lecture on *Chemical Reactivity using Conceptual Density Functional Theory* at CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram under Thiruvananthapuram Local Chapter on December 29, 2014.

Professor Bhim Shanker Trivedi Memorial Medal Lecture (2014): Professor Chitra Mandal, CSIR-Indian Institute of Chemical Biology, Kolkata delivered the Professor Bhim Shanker Trivedi Memorial Medal Lecture on *Indian Herbs Meeting the Challenges of Human Health: Hope for Disease Free Survival in Cancer* at Birbal Sahni Institute of Palaeobotany, Lucknow under Lucknow Local Chapter on January 12, 2015.



Professor Chitra Mandal receiving the citation of the award from Professor BN Dhawan. The local Chapter Convenor, Professor PK Seth, is on extreme left

The Bashambar Nath Chopra Award Lecture (2010): Dr JS Singh, BHU, Varanasi delivered the Bashambar Nath Chopra Award Lecture on *Emerging Features of Tropical Dry Deciduous Forest* at Botany Department, Allahabad University under Allahabad Local Chapter on March 02, 2015.

INTERNATIONAL ACTIVITIES

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

Dr Ranjini Bandyopadhyay, Raman Research Institute, Bengaluru has been nominated for membership of ICSU Committee on Freedom and Responsibility in the Conduct of Science (CFRS).

Professor JP Khurana, Head Coordinator (UGC-SAP), Department of Plant Molecular Biology, University of Delhi, South Campus, New Delhi has been nominated for the new IAP project on *Agriculture, Food Security and Nutrition*.

Dr DM Salunke, Vice-President, INSA, has been nominated for membership of Committee on Scientific Planning and Review (CSPR).

Professor Ramakrishna Ramaswamy, Vice-President, INSA has been nominated for membership of World Data System Scientific Committee (WDS-SC).

Workshop/Symposia/Conference supported by the Academy

- The International Union of Theoretical and Applied Mechanics (IUTAM) sponsored Conference on *Advances in Computation, Modelling and Control of Transitional Flows* was held at Marriott Hotel, Goa, during December 15-18, 2014 with Professor Tapan K Sengupta, Indian Institute of Technology, Kanpur as Convenor.
- The 5th INSA-Leopoldina joint symposium on *Human Evolution towards Language* was held at Indian Institute of Science Education & Research, Pune during January 15-16, 2015 with Professor LS Shashidhara, Indian Institute of Science Education & Research, Pune being the main organiser.

Visit of Overseas Delegates to INSA

A three member German delegation comprising of Professor Dr Frank Roesler, Secretary of Class IV Humanities, Social and Behavioral Sciences, Dr Brigitte Roeder, Member and Dr Ruth Norman, Deputy Head of the International Relations Department, German Academy of Sciences, Leopoldina along with officials from DFG Office, New Delhi visited the Academy on January 20, 2015. They had a scientific discussion meeting with Vice-Presidents and Fellows of the Academy to further strengthen the existing scientific cooperation between the two Academies. They also discussed about the possibilities of organizing conferences on thematic topics of interest alternately in Germany and in India.

Overseas Visit by INSA Delegation

A four Member INSA delegation led by Professor R Gadagkar, President INSA, visited Bangladesh on the invitation of Professor Dr Mesbahuddin Ahmed, President, Bangladesh Academy of Sciences, Dhaka during January 27-30, 2015. The main aim of the visit was to strengthen bilateral scientific cooperation between the two Academies. During the visit, the following three lectures were delivered by INSA delegates at the University of Dhaka:

Professor R Gadagkar, President INSA, delivered a lecture on *War and Peace - Conflict and Cooperation in an Insect Society* on January 28, 2015.

Professor Rajendra Prasad, Vice-President INSA, delivered a lecture on *Multidrug Transporters in Clinical Drug Resistance* on January 28, 2015.

Professor JP Mittal, Vice-President INSA, delivered a lecture on *Breaking Bonds to Order a Dream still Alive?* on January 29, 2015.

Support for Visiting Scientists during December 2014- February 2015

One Indian scientist and seven foreign scientists were supported under INSA Bilateral Exchange Programme.

Three Foreign Scientists visited India as INSA Chair Awardees.

SCIENCE & SOCIETY PROGRAMME

A Public-Experts Interaction Event on *Climate Change in India* was organized at Indian Institute of Chemical Biology (IICB) Auditorium, Jadavpur, Kolkata on December 05, 2014. Professor V Rajamani, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, was the moderator of the programme.

Public Lectures at INSA

- Professor Lalit Kumar, Department of Medical Oncology, Dr BRA Institute-Rotary Cancer Hospital, AIIMS, New Delhi delivered a public lecture on *Stem Cell Transplantation: Current Status* on December 02, 2014.
- Professor Isabelle Peretz, Director, International Laboratory for Brain, Music and Sound Research (BRAMS), Universite de Montreal, Canada delivered a public lecture on *What can we learn from the study of musical disorders?* on December 22, 2014.
- Professor Dipankar Chatterji, Molecular Biophysics Unit, Indian Institute of Science, Bengaluru delivered a public lecture on *Chance and Necessity: Nurturing the Young Talent* on February 02, 2015.



Professor JP Khurana, Vice-President, INSA honouring Professor Lalit Kumar after the public lecture



Shri BS Shetty being honored by Dr DM Salunke after the public lecture



Professor Isabelle Peretz delivering the public lecture



Professor Dipankar Chatterji interacting with the audience during the public lecture

- Shri Balkrishna Shetty, Guest Faculty, Indraprastha Institute of Information and Technology, Delhi delivered a public lecture on *Diplomacy and Science* on February 16, 2015.

National Science Day Lectures 2015

- To celebrate National Science Day, Indian National Science Academy in collaboration with University of Delhi, South Campus and The World Academy of Sciences- National Chapter, organized a public lecture on February 27, 2015 at S.P. Jain Centre, University of Delhi, South Campus, New Delhi. Professor SK Sarin, Director, Institute of Liver and Biliary Sciences (ILBS), New Delhi delivered a lecture on *Heart of the Liver*.



(L-R) Professors R Ramaswamy, Vice-President, INSA, SK Sarin & Suman Kundu during the National Science Day Lecture at S.P. Jain Centre, DUSC

- The Allahabad Local Chapter organized a Science Day Lecture on February 28, 2015 by Professor Jayanta K Bhattacharjee, Harish Chandra Research Institute, Allahabad on *Patterns in Nature*, at the HRI Auditorium, HRI Campus, Jhansi.

RECENT PUBLICATIONS OF THE ACADEMY***Indian Journal of History of Science (IJHS)***

The Volume 49, issue no. 4 (December 2014) of *IJHS* is a thematic issue on History of Chemistry and Chemical Researches in India. This is an outcome of a History of Science Seminar held at IISER, Mohali during November 14-15, 2013. The issue includes papers on Chemical Researches of Acharya Prafulla Chandra Ray, Early Research in Physical Chemistry, Natural Products Chemistry, Indian Organic Chemical Industry, Medicinal Chemistry Research, Electrochemistry, Manuscripts on Alchemy, Chemical Research in British India, PC Ray's Classic Book on Chemistry, Chemical World View of Late Jnan Chandra Ghosh apart from Editorial and Guest Editorial. It also contains reviews of the books *Rasendra Cuḍāmaṇi*, *Medical Pluralism and Homeopathy in India and Germany* and *Atomic State: Big Science in Twentieth-Century India* apart from cumulative index and annual contents of December 2014 issues.

Proceedings of the Indian National Science Academy

A special issue of the *Proceedings of the Indian National Science Academy* on "Matter at Extreme Conditions" (Volume 81, issue no. 1, February 2015), based on presentations at the international conference on Matter at Extreme Conditions (ICMEC, 2014), held at Bose Institute, Kolkata, during January 15-17, 2014, has been published.

Indian Journal of Pure and Applied Mathematics (IJPAM)

Volume 45, issue no. 6 (December 2014) of *IJPAM* has been published.

OBITUARY**Fellows****Maharani Chakravorty**

Maharani Chakravorty (*b* 02 January 1937; *d* 16 January 2015) obtained her PhD from Bose Institute, Kolkata, specialising in Microbial Protein Synthesis. She had post-doctoral experience in enzyme technology at School of Medicine, New York University.



On her return to India, she joined Bose Institute as CSIR pool officer and initiated work on the regulation of metabolism in unicellular organisms. Later, she joined the Department of Biochemistry, Banaras Hindu University, Varanasi as Senior Research Officer, where she was appointed as Reader in 1972.

Dr Chakravorty's major research contribution was the understanding of biochemical differences between the hosts undergoing lysogeny and those undergoing lysis. Her work suggested that following viral infection, protein synthesis is regulated at the level of translation. She made significant contributions in the understanding of the roles of the products of early viral genes of P22 on transient depression of RNA and protein synthesis. She also isolated a large number of important bacterial mutants, apart from a new virus of *S typhimurium*, which was investigated at the molecular and genomic level.

Dr Chakravorty received several awards and honour from BHU and ICMR. She was also a recipient of the Hari Om Ashram Alembic Research Award (1981) by Medical Council of India and Professor Darshan Ranganathan Memorial Award (2007) of INSA. She was a Fellow of National Academy of Sciences (India), Allahabad; National Academy of Medical Sciences (India), New Delhi.

Dr Maharani Chakravorty was elected to the Fellowship of the Indian National Science Academy in the year 1993.

Foreign Fellows

Robin Holliday

Robin Holliday (*b* 06 November 1932; *d* 09 April 2014) obtained his PhD in Genetics from Cambridge University, UK. He held a research position at the John Innes Horticultural Institute in Bayfordbury, Herfordshire from 1958-65. Later, he worked as Head of the Division of Genetics at the National Institute of Medical Research, London for nearly two decades.



His work had established experimental genetic systems for *Ustilago* and he isolated the first DNA repair-deficient mutants of a eukaryote. During this period he proposed a model which became known as 'Holliday Junction' model for DNA Recombination that explains the molecular mechanism of both gene conversion and chromosomal crossover. Over the years, his area of research interests shifted to epigenetics and ageing. He was the first one to propose the epigenetic phenomenon called DNA Methylation to influence gene expression patterns. His work was rewarded with the Lord Cohen Medal for Gerontological Research in 1987. Later, he relocated to CSIRO Division of Biomolecular Science, Sydney where he continued his research on DNA methylation and cellular ageing until his superannuation in 1997.

Dr Holliday was honored with Membership of European Molecular Biology Organization. He was a Fellow of Royal Society, London and Australian Academy of Science, Australia.

Dr Robin Holliday was elected to the Foreign Fellowship of the Indian National Science Academy in year 1995.

Lord of Newnham Jack Lewis

Lord Newnham Jack Lewis (*b* 13 February 1928; *d* 17 July 2014) received his Sc.D. from Cambridge University, UK, specialising in Inorganic Chemistry. He also obtained D.Sc. (*h.c.*) degrees from eleven other universities. In 1970, he joined as Professor of Chemistry at Cambridge University, UK. Later, he was appointed Visiting Professor at University of Waterloo, Canada (1988), University of Strasbourg, France (1990-91) and as Wilter Hieber Visiting Professor at University of Munich, Germany (1992).



Professor Lewis' research was based on inorganic coordination chemistry with special reference to studies on the spectral magnetic properties of transitional metal complexes. His research achievements in metal carbonyl cluster compounds with particular reference to ruthenium and osmium are well known.

Professor Lewis was honoured with several awards during his career. He received American Chemical Society Award (1970); Transition Metal Award of Chemical Society, London & Davy Medal of Royal Society, London in 1985. He was also awarded for his Distinguished Service in the Advancement of Inorganic Chemistry by American Chemical Society in 1986.

He was member of various international committees including Committees of House of Lords and also a Member of Indian Academy of Sciences (Bangalore) & American Academy of Arts and Sciences. He was a Foreign Fellow of Bangladesh Academy of Sciences and Foreign Associate of National Academy of Sciences, USA.

Lord of Newnham Jack Lewis was elected to the Foreign Fellowship of the Indian National Science Academy in the year 1986.

ANNOUNCEMENT

INSA TEACHERS AWARD - 2015

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. All disciplines of Science and Technology including Medical & Engineering Sciences come under the purview of this award. The maximum number of awards to be made is 12 per year. The awardees shall receive a scroll, a cash award of Rs. 50,000/- and a one-time book grant up to Rs. 20,000/-.

The nominee should be currently working or worked till retirement in India, with at least 20 years of teaching experience at undergraduate or postgraduate level in any Indian Colleges/ Universities/Institutions.

A teacher may be nominated by Fellows of INSA, 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 nominator may forward only one nomination in a year.

The **last date** for receipt of nominations is **May 31, 2015**. For further details and nomination proforma, please visit our website **www.insaindia.org**.