

INDIAN NATIONAL SCIENCE ACADEMY

BAHADUR SHAH ZAFAR MARG, NEW DELHI - 110002

Minutes of the Ordinary General Meeting of the Indian National Science Academy held on 27 April, 2018 in the Academy premises.

The following Fellows were present:

Professor Ajay K Sood, President, INSA
Professor Anurag Sharma, Vice-President (Fellowship Affairs)
Professor Kankan Bhattacharyya, Vice-President (Science Promotion)
Professor NR Jagannathan, Vice-President (Resource Management)
Professor Gadadhar Misra, Vice-President (Informatics and Publications)
Dr Chandrima Saha, Vice-President (International Affairs)
Professor AK Singhvi, Vice-President (Science & Society)
Professor Faizan Ahmad
Professor Manindra Agrawal
Professor Rajendra Bhatia
Professor NM Bujurke
Professor Subhasis Chaudhuri
Dr Madhu Dikshit
Professor Aparna Dutta Gupta
Professor Ganesh Pandey
Dr Kunal Ghosh
Dr KC Gupta
Professor LC Gupta
Dr Sushil Kumar
Dr Krishan Lal
Professor BD Malhotra
Professor KC Malhotra
Dr Debashis Mitra
Professor SWA Naqvi
Professor Indira Nath
Professor Sourav Pal
Professor PN Pandita
Professor LC Rai
Professor SK Satheesh
Professor Shobhona Sharma
Professor Maithili Sharan
Professor RP Sharma
Dr RV Sonti
Professor K Veluthambi

1. Condolence at the passing away of the following distinguished Fellows and Foreign Fellow:

The sad demise of Professor Jayanta Kumar Ghosh, Dr Balawant Shankar Joshi, Dr Baldev Raj, Professor Rengaswamy Ramesh, Professor GV Subba Rao, Professor Badri Nath Tandon (Fellows) and Professor George A Olah

(Foreign Fellow) of the Academy were reported. The obituary notes were read by the President and all those present stood in silence for a minute as a mark of respect to the deceased.

2. Confirmation of minutes of 83rd Anniversary General Meeting held on 29 December, 2017.

The minutes of the 83rd Anniversary General Meeting held on 29 December, 2017 were presented by Professor Anurag Sharma, Vice-President. These minutes were already uploaded on INSA website. No comment were received. Thereafter, the minutes were confirmed.

3. Announcement of names of recipients of the INSA Medal for Young Scientists for the year 2018.

Professor Anurag Sharma mentioned in the General Body that INSA had received a total of 629 nominations which were considered for 2018 awards. On the basis of assessment reports received, the Conveners recommended 82 candidates (out of 629) for presentation of their work before the Sectional Committee on 25 April, 2018. The Sectional Committees recommended a total of 37 candidates for consideration of the Council. After due deliberations in the Council today, it was decided to select 30 candidates for the award 2018.

The names and brief citation of 30 scientists (*Annexure-I, p/ 5-8*) selected as awardee of INSA Medal for Young Scientists 2018 were announced.

4. Announcement of the INSA Awards for 2018.

Professor Anurag Sharma, Vice-President announced the names of the awardees of INSA awards (list enclosed at *Annexure-II, p/ 9*).

5. To announce the voting results on amendments of INSA Rules: 3, 13, 16, 23, 30 (g), 41(a) and 49 (i).

The voting papers for the amendment of Rules 3, 13, 16, 23, 30 (g), 41(a) and 49 (i) were forwarded to all the Fellows of the Academy for online voting. The results of the voting process were announced by Professor Anurag Sharma. The Fellows were informed that a large majority (over 95.5%) of the vote polled have favoured closure of the Pravasi Fellowship programme. The General Body unanimously agreed to close this programme and stop inducting any more Pravasi Fellows in INSA.

6. To read as required under Rule 40(c) the name of nominees for election as INSA Fellow / Foreign Fellow received from 9 December, 2017 to 10 April, 2018.

Professor Anurag Sharma, Vice-President, INSA read the names of those whose nominations were received for election as INSA Fellow and Foreign Fellow.

7. Any other item.

After taking the regular agenda items, President, INSA discussed some of the issues which were considered by the Council in the forenoon. These are:

i). INSA Distinguished Professors, Senior and Honorary Scientists

President, INSA briefly apprised the General Body about the funds position and the growing number of INSA Honorary and Senior Scientists which needed to relook at these schemes. He further mentioned that though there were seven positions vacant for INSA Distinguished Professors, Academy was constraint to select only following two fellows, despite receiving extremely good nominations :

1. Professor S Chandrasekaran, FNA, IISc, Bengaluru and
2. Professor Sankar K Pal, FNA, ISI, Kolkata

With the joining of these two fellows, the additional financial burden under this programme will be to the tune of Rs.28 Lakhs per annum.

Regarding the Senior Scientist position the following guidelines were revised:

- a) The maximum number of Senior Scientist positions will be restricted to 75.
- b) Fellows having any position with Honorarium/Fellowship/ Salary will not be eligible. Those who are having this will be converted to INSA Emeritus Scientist scheme, if they so desire. A letter would be sent to all existing Senior Scientists and to the new applicants. After getting information from existing 77 Senior scientists, decision will be taken about new applicants.
- c) A Senior Scientist will have to avail the position in one go. He will not be allowed to break it up in smaller installments

It was further decided that the upper age limit to apply for INSA Distinguished Professors, Senior / Honorary scientists will be 75 years and these positions will be restricted to three years only. Selected Fellows have to join within a period of six months from the date of issue of the offer letter.

ii) Support to National / International Conferences

Regarding the support for organization of National / International Conference, the amount is raised from Rs. 30,000/- to Rs. 50,000/-. It was also

recommended that the maximum of 50 conferences (not exceeding 13 in any quarter) will be supported within one financial year.

iii) *Interim Fellowship to Young Scientist Awardees*

In case the young scientist medal awardee is not in full employment, he/ she will be considered for a suitable interim fellowship. The term of interim fellowship is for a period of three years or he / she get a permanent a job, whichever is earlier. The emoluments will be equivalent to middle level position as per the Department of Science and Technology guidelines.

In addition, Professor Sood also apprised the members about the book release function organized in INSA on 25th of April. The following two books were released :

- a) *Indian Science, transforming India. Impact of Science in Independent India* edited by Professor LS Shashidhara, FNA
- b) *Opportunities and Challenges for Research on Food and Nutrition Security and Agriculture in Asia* by Professor Krishan Lal, Past- President, INSA

The pdf of the first book will be uploaded on the website. The print copies, however, will be available at a nominal cost. He then requested Professor Singhvi to apprise the members about the future publications which are in pipeline. Professor Singhvi mentioned that he is working on a series of publications such as water science and research, discovery of new drugs, ethics in science, science of plasmas, mathematics and crop genomics. A few more will be identified gradually. He requested the Fellows present in the General Body that they should identify specific topics on frontier science and subjects of societal importance on which INSA can bring out suitable documents. He had made a similar request to the members of the sectional committees. It is expected that many more topics would be available under this programme.

The meeting ended with a vote of thanks to the Chair.

INSA MEDAL FOR YOUNG SCIENTIST AWARDEES- 2018

1. **Dr Hafsa Ahmad** (b 26.05.1986), PhD, CSIR- National Botanical Research Institute, Lucknow

The novel formulations developed by Dr. Hafsa Ahmad using Withanolides have shown significantly improved potency in the experimental model of ischaemic stroke. Considering the limitations of the current medications for stroke, it has substantial translational value.

2. **Dr Sushmee Badhulika** (b 13.05.1985), PhD, Department of Electrical Engineering, Indian Institute of Technology Hyderabad, Hyderabad

For the development of layered materials and electronic devices for biomedical applications.

3. **Dr Mousomi Bhakta** (b 09.05.1983), PhD, Department of Mathematics, Indian Institute of Science Education and Research, Pune

Bhakta established results on Hardy equations with critical and super critical non-linearities, and obtained significant regularity results on bounded and unbounded domains.

4. **Dr Mainak Das Gupta** (b 20.05.1984), PhD, Department of Comparative Development and Genetics, Max Planck Institute for Plant Breeding Research, Germany

Dr Mainak Das Gupta unravelled the role of microRNA and their target genes in leaf pattern development

5. **Dr Mehak Gupta** (b 20.09.1988), PhD, Oilseeds Section, Department of Plant Breeding and Genetics, Punjab Agricultural University, Ludhiana

For her outstanding contribution in developing synthetic Brassicas and their evaluation.

6. **Dr Neha Gupta** (b 27.01.1986), PhD, Protein Conformation and Enzymology Laboratory, Department of Biosciences, Faculty of Natural Sciences, Jamia Millia Islamia, New Delhi

Dr. Neha Gupta demonstrated a novel mechanism of hypoxia-induced venous thrombosis that acts via NLRP3 inflammasome. This has implications for high altitude medicine.

7. **Dr Dhananjay Huilgol** (b 08.09.1983), PhD, Cold Spring Harbor Laboratory, New York, USA

Dr. Dhananjay Huilgol, for his important work in studying neuronal migration during mammalian development, leading to the characterization of two novel migratory streams that form the posterior accessory olfactory bulb and the nucleus of the lateral olfactory tract, providing evolutionary insights into the development of the olfactory system.

8. **Dr Biman Jana** (b 14.01.1983), PhD, Department of Physical Chemistry, Indian Association for the Cultivation of Science, Jadavpur

For theoretical understanding of molecular locomotion in motor proteins and mechanistic aspects of anti-freeze protein activity.

9. **Dr Somnath Jha** (b 11.07.1983), PhD, Department of Mathematics and Statistics, Indian Institute of Technology Kanpur, Kanpur

Jha established a basic twisting lemma in non-commutative Iwasawa theory, and obtained duality results for Selmer groups of ordinary Hida families of modular forms.

10. **Dr Charanpreet Kaur** (b 06.07.1985), PhD, Stress Physiology and Molecular Biology Laboratory, Jawaharlal Nehru University, New Delhi

Dr Charanpreet Kaur has significantly contributed in understanding biochemical, molecular and functional properties of glyoxylase I and II enzymes, and demonstrated that methyl glyoxal acts as a stress-inducible signal molecule in plants.

11. **Dr Ujjwal Koley** (b 21.05.1983), PhD, Centre for Applicable Mathematics, Tata Institute of Fundamental Research, Bengaluru

Koley obtained higher order numerical schemes for KdV equations with an L^2 initial data, gave a new theoretical framework for stochastic PDE's, and proved explicit continuous dependence estimates on entropy solutions in the presence of noise.

12. **Dr M Muthamilarasan** (b 02.12.1986), PhD, ICAR-National Research Centre on Plant Biotechnology, New Delhi

For his outstanding contributions in developing genomic resources in foxtail millet.

13. **Dr Ratnesh Chandra Mishra** (b 11.05.1984), PhD, Laboratory of Functional Plant Biology, Ghent University, Belgium

Dr Ratnesh Chandra Mishra has experimentally validated rice Hsp101 gene using *Arabidopsis* Hsp101 null mutant and found that the expression provides complementation and thermotolerance.

14. **Dr Mukesh** (b 24.09.1984), PhD, Centre for DNA Taxonomy, Molecular Systematics Division, Zoological Survey of India, Kolkata

Dr. Mukesh for his important contributions to our understanding of *hangul* (Kashmir deer) population status, ecology and conservation issues. Using a broad spectrum of field and molecular approaches, Dr. Mukesh has helped set the appropriate critically endangered species status for *hangul* and has established a case for in situ and ex situ management and conservation.

15. **Dr Budhaditya Mukherjee** (b 26.08.1984), PhD, Department of Microbiology and Molecular Medicine, University of Geneva, Switzerland

For understanding the mechanism of immune modulation of host cells during *Leishmania* infection and establishing the molecular basis of the resistance to the anti-Leishmania drug antimony.

16. **Dr Aseem Sudhir Paranjape** (b 26.01.1983), PhD, Inter-University Centre for Astronomy and Astrophysics, Pune

For his demonstration that the dark energy problem in cosmology cannot be eliminated by averaging over fluctuations and for his development of new techniques to study the growth of large-scale structures in the Universe.

17. **Dr R Vinu** (b 08.10.1984), PhD, Department of Chemical Engineering, Indian Institute of Technology Madras, Chennai

For contributions to the development of low power microwave assisted pyrolysis of a wide range of municipal solid waste mixture of e-wastes, micro- and macro-algae, and coal biomass blends to produce valuable oils and blendstocks.

18. **Dr Ketan Rajawat** (b 14.02.1984), PhD, Department of Electrical Engineering, Indian Institute of Technology Kanpur, Kanpur

For contributions in the area of optimization in signal processing and communications, on topics related to asynchronous algorithms, distributed, online, and stochastic optimization.

19. **Dr Satya Brata Routh** (b 11.08.1985), PhD, Structural Biology Laboratory, CSIR-Centre for Cellular and Molecular Biology, Hyderabad

His work has revealed structural and mechanistic features of the chiral specificity of D-aminoacyl-tRNA deacylase, which operates based on L-chiral reject mechanism but not on D-selection. His studies thus have brought to the fore the glycine misediting phenomenon in the cellular scenario.

20. **Dr S Vijayan** (b 11.01.1983), PhD, Planetary Science Division, Physical Research Laboratory, Ahmedabad

Finding of Recent Fluvial Activities on Mars at location unknown before.

21. **Dr Sumit Sen Santara** (b 16.02.1985), PhD, Boston Children's Hospital, Harvard Medical School, Boston, USA

Dr. Sumit Sen Santara has reported for the first time a globin coupled heme containing adenylate cyclase in a unicellular eukaryotic organism, *Leishmania*. Since this enzyme plays an essential role in the parasite survival, it could be an important drug target.

22. **Dr Sakya Singha Sen** (b 02.03.1983), PhD, Inorganic Chemistry and Catalysis Division, CSIR-National Chemical Laboratory, Pune

For stabilization of low valent main group compounds and their utilization as catalyst for cyanosilylation of carbonyl compounds.

23. **Dr Mahak Sharma** (b 23.04.1983), PhD, Department of Biological Sciences, Indian Institute of Science Education and Research, Mohali

Dr. Sharma's group has done outstanding work to show the role of small GTP-binding proteins in lysosome positioning and cargo trafficking. Importantly, she has shown a smart strategy evolved by *Salmonella* to exploit the lysosomal fusion machinery to promote its intracellular growth and survival in the host.

24. **Dr Prerna Sharma** (b 20.09.1985), PhD, Department of Physics, Indian Institute of Science, Bengaluru

For her innovative experimental approach to solving technologically important problems in soft matter physics using colloidal particles as model systems. Her contribution to the quantitative understanding of adhesion in terms of rheological properties of the stress-coupling medium deserves special mention.

25. **Dr Mayank Shrivastava** (b 14.09.1984), PhD, Department of Electronic Systems Engineering, Indian Institute of Science, Bengaluru

For contributions to the development, enablement, and integration of nano-scale CMOS and power MOSFET devices in System-on-Chip and power ASIC applications.

26. **Dr Sanjay Singh** (b 15.09.1983), PhD, School of Materials Science and Technology, Indian Institute of Technology, Varanasi

For the contributions to the fundamental understanding of magnetic shape memory materials.

27. **Dr Kumar Somyajit** (b 24.05.1986), PhD, The Novo Nordisk Foundation, Center for Protein Research, University of Copenhagen, Copenhagen

He unraveled important novel roles of RAD51 paralogs in mammalian replication fork stability control biology. These findings have significant implications in cancer genome instability.

28. **Dr Shalu Thakur** (b 03.02.1985), PhD, Division of Plant Biotechnology, Indian Institute of Pulse Research, Kanpur

For her outstanding contributions in allele mining for blast resistance in rice.

29. **Dr Vishvanath Tiwari** (b 15.09.1983), PhD, Department of Biochemistry, SLS Central University of Rajasthan, Ajmer

For using proteomic and bioinformatics approaches to develop insights and strategies to control antibiotic-resistant strains of *Acetobacter baumannii*.

30. **Dr Chandra MR Volla** (b 10.07.1983), PhD, Department of Chemistry, Indian Institute of Technology Bombay, Mumbai

For development of cost-effective catalyst using cobalt for C-H functionalization reactions.

LIST OF INSA AWARDEES-2018

SUBJECTWISE MEDALS/LECTURES/ AWARDS

(A) Medals Instituted by the Academy

1. **Satyendranath Bose Medal** to Professor Chandan Dasgupta
2. **Darashaw Noshervanji Wadia Medal** to Professor Somnath Dasgupta
3. **Golden Jubilee Commemoration Medal (for Animal Sciences)** to Professor PP Majumder

(B) Endowed Medals

4. **Vishwakarma Medal** to Professor AK Shukla
5. **Professor GN Ramachandran 60th Birthday Commemoration Medal** to Professor DN Rao
6. **Professor Krishna Sahai Bilgrami Memorial Medal** to Dr Tilak Raj Sharma
7. **Professor Har Swarup Memorial Medal** to Dr Usha Vijayraghavan
8. **Professor Subramania Ranganathan Memorial Medal** to Professor VK Singh

(C) Endowment Lectures

9. **Dr Nitya Anand Endowment Lecture** : No Award
10. **Professor Vishnu Vasudeva Narlikar Memorial Lecture** to Professor S Thangavelu
11. **Professor Vishwa Nath Memorial Lecture** to Dr SK Apte