Annexure-IV

INSA TEACHERS AWARD

To recognize and value excellence, consistency and high level of teaching in Indian Colleges, Universities and Institutions, the Academy has instituted the INSA Teachers Award. The award is made annually to recognize and honour teachers for providing guidance, inspiration and mentoring 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 award consists of a scroll and a cash award of Rs. 50,000. In addition, the awardee is also eligible for a onetime book grant up to Rs. 20,000. 86 nominations were received for the year 2016, out of which 13 awardees were selected. They are:

1. **Professor Bekkam Venkateswara Rao** (*b* 27.05.1961), Centre for Water Resources, Jawaharlal Nehru Technological University, Hyderabad

   For his valuable contributions to both teaching and research in geohydrology and water resources. He also contributed to the development of remote sensing and computer simulation laboratories as a part of his teaching programme in a university system.

2. **Professor Sunil Subhash Bhagwat** (*b* 12.10.1963), Department of Chemical Engineering, Institute of Chemical Technology, Mumbai

   For his inspiring teaching and mentorship and for formulating and guiding research oriented student projects in chemical engineering.

3. **Professor Pradeep Kumar Burma** (*b* 06.01.1961), Department of Genetics, University of Delhi, South Campus, New Delhi

   For being a role model for teachers and students alike.

4. **Professor Nashreen S Islam** (*b* 30.08.1961), Department of Chemical Sciences, Tezpur University, Tezpur

   For her excellent contributions as a very popular, highly dedicated and influential chemistry teacher. Apart from regular teaching, she inspired the students to master the subject, contribute to society and to be a good human being.

5. **Dr Joby Thomas Kakkassery** (*b* 15.05.1965), Associate Professor and Head, Department of Chemistry, St. Thomas' College (Autonomous), Thrissur-Kerala

   For his innovative contributions to teaching physical organic chemistry with dedication and sincerity. He has been a passionate teacher who brought out the best in every student in the class.

6. **Professor Sangeeta Narendra Kale** (*b* 23.09.1967), Head, Department of Applied Physics, Defence Institute of Advanced Technology (DIAT), Pune

   For having served as an enthusiastic teacher and an able researcher who has influenced a whole generation of physics students.

7. **Professor CS Lalitha** (*b* 12.06.1966), Department of Mathematics, University of Delhi South Campus, New Delhi

   For her dedication and sincerity as a teacher of mathematics. Her inspiring and motivational style of teaching is greatly appreciated by her students.

8. **Professor Amitava Basu Mallick** (*b* 15.03.1962), Associate Dean (Academic Affairs), Department of Metallurgy and Materials Engineering, Indian Institute of Engineering Science and Technology, Shibpur

   For his innovative teaching of engineering science with illustrations from the real world.

9. **Dr Nandita Narayanasamy** (*b* 19.03.1966), Associate Professor, Department of Biochemistry, Sri Venkateswara College, New Delhi

   For inspiring generations of students with exemplary teaching and integrating research findings with laboratory practices.

10. **Professor G Santhanam** (*b* 10.04.1963), Department of Mathematics and Statistics, Indian Institute of Technology, Kanpur

    For his contributions to mathematics education, particularly his involvement in mathematics training and talent search programme of the National Board for Higher Mathematics since its inception.

11. **Professor Sheshshayee Madavalam Sreeman** (*b* 20.02.1964), Department of Crop Physiology, University of Agricultural Sciences, Bengaluru

    For his creative and innovative teaching with examples mixed with vibrant skills in connecting things in the field of crop physiology.

12. **Dr Devaki N Subraya Bhat** (*b* 20.05.1963), Associate Professor and Course Coordinator, Department of Molecular Biology, Yuvaraja's College, Mysuru

    For her extraordinary teaching abilities in enthusing undergraduate students under less endowed ambience.

13. **Professor Mahendra Kumar Verma** (*b* 27.05.1966), Department of Physics, Indian Institute of Technology, Kanpur

    For having mentored a large number of students by inspiring them to take up a research career and for being an accomplished researcher in the field of turbulence and magneto hydrodynamics.

INSA MEDAL FOR YOUNG SCIENTISTS AWARDEES – 2016

Since 1974, the Academy has instituted **INSA Medal for Young Scientists** with the aim of recognizing young scientists of extraordinary promise and creativity who have made notable research contributions in Science and Technology. This award, considered to be the highest recognition of promise, creativity and excellence in a young scientist, is made annually to those distinguished for these attributes as evidenced by their research work carried out in India. The award consists of a Medal, a certificate and cash prize of Rs. 25,000/-. In addition, the recipient may be considered for research support with seed money. Till 2016, 759 young scientists have been thus recognized. Many of them have established a rewarding scientific career and continue to make outstanding contributions winning further honour both in this country and abroad. A total of 626 nominations were received for the award in 2016, out which 78 were shortlisted. The Council finally approved 22 names for this award. Out of these 22, 18 are present here. They are:

1. **Dr Nazia Abbas** (b 18.08.1982), PhD, Plant Biotechnology Division, Indian Institute of Integrative Medicine, Srinagar.

   For his research on interaction of CAM7 and HY5 transcription factors in light-dependent control of plant seedling development.

2. **Dr Prabeer Barpanda** (b 24.06.1981), PhD, Materials Research Centre, Indian Institute of Science, Bengaluru.

   For developing new classes of Li- and Na-cathode materials for next generation battery and storage application.

3. **Dr Sivaraman Bhalamurugan** (b 29.03.1981), PhD, Atomic Molecular and Optical Physics Division, Physical Research Laboratory, Ahmedabad.

   For his contributions in low temperature astrochemistry and planetary science and to understand the occurrence of IC objects on planetary surfaces.

4. **Dr Ashima Bhaskar** (b 23.07.1982), PhD, National Institute of Immunology, New Delhi.

   For developing a genetic biosensor to measure cellular and sub-cellular redox changes in HIV/Mtb/HIV-TB infected macrophages that provides meaningful numerical indicators of redox potential changes required to induce HIV-1 reactivation from persistence.

5. **Dr Kanishka Biswas** (b 25.10.1982), PhD, New Chemistry Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru.

   For probing and developing new thermoelectrics for energy harvesting.

6. **Dr Abhishek Bohra** (b 15.06.1983), PhD, Crop Improvement Division, Indian Institute of Pulses Research, Kanpur.

   For his significant contribution in the area of development and application of molecular tools for facilitating hybrid pigeon pea improvement, and for having developed molecular markers in large number and construction of first genetic as well as consensus map in pigeon pea that are being used in practical breeding and cited widely.

7. **Dr Soumitra Ghosh** (b 23.06.1983), PhD, Department of Biochemistry, University of Lausanne, Switzerland.

   For providing the critical insights into the regulation of genome organization in mycobacteria by nucleoid-associated proteins (NAPs) and for demonstrating that DNA architectural protein HU is a novel target for anti-bacterial drug development.

8. **Dr Sai Siva Gorthi** (b 05.08.1981), PhD, Department of Instrumentation and Applied Physics, Indian Institute of Science, Bengaluru.
   For his contributions to Innovative Optofluidic Technologies: In-vitro Diagnostics, Green Nano Synthesis, Analyte Detection.

9. **Dr Aditi Gupta** (b 25.02.1986), PhD, Interdisciplinary Center for Plant Genomics, University of Delhi, South Campus, New Delhi.

   For her studies in sugar signalling to sustain early development and seedling fitness under different environmental conditions.

10. **Dr Rajat Subhra Hazra** (b 12.03.1982), PhD, Theoretical Statistics and Mathematics Unit, Indian Statistical Institute, Kolkata.

    For his significant contributions to the study of spectral limits of patterned Gaussian free fields, random matrix theory and free probability.

11. **Dr Santanu Kapat** (b 08.11.1981), PhD, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur.

    For his contributions to High-Performance, Energy-Efficient, EMI-Aware Mixed-Signal Dynamic Power Management.

12. **Dr Nirbhay Kumar Kushwaha** (b 04.02.1981), PhD, Molecular Virology Laboratory, School of Life Sciences, Jawaharlal Nehru University, New Delhi.

    For his significant contribution in elucidating interactions among chilli leaf curl virus (ChiLCV) and for developing highly efficient infectious constructs of ChiLCV for screening chilli germplasm that identifies resistant sources.

13. **Dr Aastha Mishra** (b 06.02.1986), PhD, Prof. Randall Johnson's Laboratory, Department of Physiology, Development and Neurosciences, University of Cambridge, Cambridge.

    For her outstanding work on the apelin pathway under conditions of hypoxia and the correlated aberrations of the same to maladaptation to high altitude and the pathophysiology of high altitude pulmonary edema and for providing a molecular understanding of disease susceptibility which act as a basis of genetic predisposition to the same.

14. **Dr Anshu Pandey** (b 22.08.1982), PhD, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bengaluru.

    For his outstanding contributions in the area of low threshold quantum dot lasers.

15. **Dr Swathi Srinivasamurthy Rotti** (b 17.07.1982), PhD, School of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram.

    For her contributions on theoretical understanding of carbon-based and metal-based nanostructures.

16. **Dr Chandan Saha** (b 11.01.1982), PhD, Department of Computer Science and Automation, Indian Institute of Science, Bengaluru.

    For his work on arithmetic circuit lower bounds, polynomial identity testing and reconstruction of arithmetic circuits that has led to the discovery of new mathematical techniques and substantial progress on these problems.

17. **Dr Somlata** (b 31.01.1983), PhD, School of Life Sciences, Jawaharlal Nehru University, New Delhi.

    For elucidating the mechanism of phagocytosis in *E. histolytica* and discovering the recruitment of a calcium binding protein by the C2 domain containing kinase to the site of phagocytosis and subsequently initiation of action dynamics at the site.

18. **Dr Srikanth Srinivasan** (b 13.06.1984), PhD, Department of Mathematics, Indian Institute of Technology Bombay, Mumbai.

    For his work dealing with the complexity of "algebraic circuits'' and studies in the problem of computing the determinant (over non commuting domains), and iterated matrix multiplication. He has also made substantial progress in producing lower bounds for "threshold circuits".

INSA YOUNG HISTORIAN OF SCIENCE AWARD

The Academy has instituted an INSA Young Historian of Science Award with the aim of recognizing young historian of science of extraordinary promise and creativity who have made notable research contributions in areas related to History of Science. This award, considered to be the highest recognition of promise, creativity and excellence is made annually to those historians of science distinguished for these attributes as evidenced by their research work carried out in India. The award consists of a certificate, a bronze medal, cash award of Rs. 25,000/- and seed amount to initiate research project and further scope for overseas training for advancement of career. 9 nominations were received and all these 9 were called for interview. Two were selected for this award. Out of these two, one is present:

1. **Shri Naresh Keerthi** (*b* 18.10.1985), MSc, Research scholar, National Institute of Advanced Studies, Bengaluru.

   For the excellent studies he has done in trying to remove some of the misconceptions in interpreting the technical terms employed in Sanskrit literature, and also shedding light on the traditional lexical corpora.