



THE NATIONAL ACADEMY OF SCIENCES, INDIA (NASI)

cordially invites you to kindly attend

87th Annual Session of NASI & Symposium

on

“Basic Research- Its Role in National Development”

Venue: -Savitribai Phule Pune University (SPPU), Ganeshkhind Road, Pune

Date: - 8th to 10th Dec 2017

Program

8th December 2017

at IUCAA Auditorium, SPPU Campus, Pune
(Inaugural Session; 9:30 to 11:05 AM)

National Anthem (9.32 AM)

Lighting the Lamp (9.33 - 9.35 AM)

- Welcome**
9:35 to 9:40 AM : **Dr. Nitin Karmalkar**, Vice Chancellor, Savitribai Phule Pune University, Ganeshkhind, Pune; Email: nrkarmalkar@gmail.com
- 9:40 to 9:43 AM : **Felicitation of the Hon'ble Governor & Other Dignitaries**
- About Activities of Local Chapter**
(9:43 to 9:48 AM) : **Prof. Dilip Dattatray Dhavale**, Chairman, NASI - Pune Chapter; Department of Chemistry, University of Pune, Pune; Email: ddd@chem.unipune.ernet.in
- About the Symposium**
(9:48 to 10:00 AM) : **Dr. Manju Sharma**, Convener; NASI-DST Distinguished Woman Scientist Chair Professor, Formerly Secretary to Gol, DBT; Res. B9/6476 FF, Vasant Kunj, New Delhi; Email : manjuvps@gmail.com
- Theme Address**
(10:00 to 10:15 AM) : **Dr. A.S. Kiran Kumar**, Guest-of-honour; Chairman, Indian Space Research Organization, Secretary, Department of Space, Antariksh Bhavan, New BEL Road, Bangalore; Email: chairman@isro.gov.in
- Presidential Address**
(10:15 to 10:30 AM) : **Dr. Anil Kakodkar**, President, NASI; Formerly Chairman AEC & Secretary, DAE, Gol; DAE Homi Bhabha Chair Professor & Member AEC, Bhabha Atomic Research Center, Trombay, Mumbai; Email: kakodkar@barc.gov.in
- (10:30 to 10:32 AM) : **Release of Compendium by the Hon'ble Governor**
- (10:32 to 10:37 AM) : **Presentation of NASI-Reliance Awards by the Hon'ble Governor**
- Inaugural Address**
(10:37 to 10:52 AM) : **Hon'ble Sri Chennamaneni Vidyasagar Rao (Chief Guest), The Governor of Maharashtra**, Raj Bhawan, Malabar Hill, Mumbai; Email: vidyasagarch6@gmail.com
- Vote-of-thanks**
(10:52 to 10:57 AM) : **Dr. Veena Tandon**, General Secretary (OS), NASI, Allahabad; Biotech Park, Sector G, Kursi Road, Jankipuram, Lucknow; Email: tandonveena@gmail.com

National Anthem (10.57 AM)

Tea Break

Session 1: Agriculture (Productivity, Nutrition and Food Security)

11:45 AM to 2:00 PM

- Chairman** : **Prof. Akhilesh Tyagi**, Former President, NASI; Plant Molecular Biology Department, University of Delhi South Campus, New Delhi; Email: akhilesh@genomeindia.org
- Co-chair** : **Dr. Pramod Tandon**, CEO, Biotech Park, Sector G, Kursi Road, Jankipuram, Lucknow; Email: profptandon@gmail.com
- Speaker** : **Dr. T. Mohapatra**, Director General, Indian Council of Agricultural Research, Dr. Rajendra Prasad Road, Krishi Bhawan, New Delhi; Email: dg.icar@nic.in; tmnrpcb@gmail.com
- Title** : **"Innovation Led Agriculture for Hunger and Malnutrition Free India"**
- Speaker** : **Dr. Sanjay Kapoor**, Associate Professor, Department of Plant Molecular Biology, University of Delhi South Campus, New Delhi; Email: kapoors@south.du.ac.in
- Title** : **"Understanding the Molecular Mechanics of a Major Regulator-MADS29 - of Seed Development in Rice"**
- Speaker** : **Prof. Usha Vijayraghavan**, Indian Institute of Science, CV Raman Road, Bangalore; Email: uvr@mcbl.iisc.ernet.in
- Title** : **"Functional Genomic Studies of Regulatory Transcription Factor Networks During Rice Inflorescence and Floret Meristem Development"**
- Speaker** : **Dr. V. Prakash**, Distinguished Scientist of CSIR; Former Director, Central Food Technology Research Institute, Mysuru; Email: prakashvish@gmail.com
- Title** : **"Agriculture with better Nutrition Leading to Sustainable Health-from Cells to Sales"**

Lunch Break (2:00 to 2:45 PM)

Session 2: Environment (Biodiversity, Pollution-abatement and Climate change)

2:45 to 4:15 PM

- Chairman** : **Prof. Madhoolika Agrawal**, Department of Botany, Banaras Hindu University, Varanasi; Email: madhoo.agrawal@gmail.com
- Co-chair** : **Prof. A.S. Raghavendra**, Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad; Email: asrsl@uohyd.ernet.in
- Speaker** : **Prof. Amitabh Joshi**, Evolutionary & Organismal Biology Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur P.O., Bangalore; Email: ajoshi@jncasr.ac.in
- Title** : **"The Relevance of Experimental Evolution Studies in Times of Rapid Anthropogenic Change"**
- Speaker** : **Dr. Tapan Chakrabarti**, Formerly Scientist, CSIR - NEERI; Opp NMV Play Ground 655, Chhoti Dhantoli, Nagpur; Email: tapan1249@yahoo.co.in
- Title** : **"Appropriate Waste Management Technologies Suitable for Developing Countries Towards Sustainable and Green Development"**
- Speaker** : **Prof. Jitendra Pandey**, Banaras Hindu University; Res. 44, Kawalyadham Colony, Durgakund, Varanasi; Email: jiten_pandey@rediffmail.com
- Title** : **"Alternative Alert Systems for River Health: Implications for Ganga River Basin Management"**

Session 3: Biomedical Research

4:15 to 5:45 PM

- Chairman** : **Dr. D. Balasubramanian**, Distinguished Scientist & Director Emeritus, LV Prasad Eye Institute, Road No. 2, Banjara Hills, Hyderabad; Email: dbala@lvpei.org

- Co-chair** : **Prof. Pramod Garg**, Department of Gastro Enterology, All India Institute of Medical Sciences, New Delhi; Email: pgarg10@gmail.com
- Special Remarks regarding Research and Entrepreneurship** : **Prof. Balram Bhargava**, Executive Director, Stanford India Biodesign Centre, Department of Cardiology, All India Institute of Medical Sciences, Ansari Nagar, New Delhi; Email: balrambhargava@yahoo.com
- Speaker** : **Dr. R.C. Dhiman**, Consultant, National Institute of Malaria Research, Sector 8, Dwarka, Delhi; Email: r.c.dhiman@gmail.com
- Title** : **"Bionomics of Vector for Disease Control"**
- Speaker** : **Dr. Sanjeev Sinha**, Department of Medicine, All India Institute of Medical Sciences, New Delhi; Email: sanjusinha@hotmail.com
- Title** : **"Dengue Fever - Prevention and Control Measures including Awareness"**
- Speaker** : **Prof. Vijaylakshmi Ravindranath**, Centre for Neuroscience, Old TIFR Building, Indian Institute of Science, Bangalore; Email: viji@iisc.ac.in
- Title** : **"The changing Demography and Challenge for Neuroscience"**
- Remarks** : **Dr. Purnima Sharma**, MD, Biotech Consortium India Limited (BCIL), New Delhi; Email: purnima@biotech.co.in

Tea Break : 5:45 to 6:00 PM

Evening Lecture : 6:00 to 7:00 PM

- Chairman** : **Dr. Anil Kakodkar**, President, NASI; Formerly Chairman AEC & Secretary, DAE, Gol; DAE Homi Bhabha Chair Professor & Member AEC, Bhabha Atomic Research Center, Trombay, Mumbai; Email: kakodkar@barc.gov.in
- Evening Lecture** : **Dr. R.A. Mashelkar**, Chairman, National Innovation Foundation, President, Global Research Alliance, 3rd Floor, Adams Court, Above Bank of Baroda, Baner Road, Baner, Pune; Email: ram@mashelkar.com
- Title** : **"Innovation : From Leap Frogging to Pole Vaulting"**

Cultural Programme; followed by Dinner

9th December 2017

Session 4: Material Science (Housing, Construction etc.)

9:30 to 11:00 AM

- Chairman** : **Dr. Sankar Pal**, Distinguished Scientist & Former Director, Indian Statistical Institute, 203, B. T. Road, Kolkata; Email: sankar@isical.ac.in; sankarpal@yahoo.com
- Co-chair** : **Prof. Jayesh Bellare**, Department of Chemical Engineering Room No: 131, Indian Institute of Technology Bombay, Powai, Mumbai; Email: jb@iitb.ac.in
- Speaker** : **Dr. V. Ramgopal Rao**, Director, Indian Institute of Technology Delhi, Hauz Khas, New Delhi; Email: director@admin.iitd.ac.in
- Title** : **"Bridging Academic R&D with Product Innovation - A Few Case Studies and a Way Forward"**
- Speaker** : **Dr. Indranil Chatteraj**, Director, CSIR- NML, Laxmi Nagar, Burma Mines, Jamshedpur; Email: recttnml@gmail.com
- Title** : **"Curiosity and Serendipity in Research"**
- Speaker** : **Dr. Bhagavatula Prasad**, Physical and Materials Chemistry Division, CSIR-National Chemical Laboratory, Dr. Homi Bhabha Road, Pashan, Pune; Email: pl.bhagavatula@ncl.res.in
- Title** : **"Molecular Tools for Controlling Nanoparticle Size/ Morphologies"**
- Tea Break (11:00 to 11:15 AM)**
- Special Presentation** : **Dr. Ashok Misra**, NASI Platinum Jubilee Chair Professor, IISc, Bangalore; Formerly Director, Indian Institute of Technology Bombay; Email: ashokmisra47@gmail.com
- Title** : **"Indian Science, its Competitive Strength and its Relevance to National Needs"**

Session 5: Research Translation to Industry and Commercialization and Employment Generation

11:30 AM to 1:30 PM

- Chairman** : **Dr. Ashok Misra**, NASI Platinum Jubilee Chair Professor, IISc, Bangalore; Formerly Director, Indian Institute of Technology Bombay; Email: ashokmisra47@gmail.com
- Co-chair** : **Prof. Paramjit Khurana**, Sir J. C. Bose Chair Professor, Department of Plant Molecular Biology, University of Delhi South Campus, Benito Juarez Road, Dhaula Kuan, New Delhi; Email: paramjitkhurana@hotmail.com
- Speaker** : **Dr. Jitendra N. Verma**, Founder & Managing Director, Lifecare Innovations Pvt. Ltd, B-589, Gurgaon; Email: drjnverma@lifecareinnovations.com
- Title** : **“Basic Research is Foundation for Innovate and Make in India Mission- Industry Perspective”**
- Speaker** : **Dr. Baba Kalyani**, Chairman and Managing Director, Bharat Forge Ltd, Mundhwa, Pune Cantonment, Pune; Email: bkalyani@bharatforge.com
- Title** : **“R&D Case Study from Bharat Forge Ltd.: Commercialization of Advanced Products using Research within the Company”**
- Speaker** : **Prof. Devang Khakhar**, Department of Chemical Engineering, IIT Mumbai, Powai, Mumbai; Email: khakhar@iitb.ac.in
- Title** : **“Understanding the Flow of Granular Materials”**
- Speaker** : **Dr. Kota Harinarayana**, Dr. D S Kothari DRDO Chair, Bangalore; NEB3/401, Sriram Spandana, Challaghatta, Off Wind Tunnel Road, Bangalore; Email: hnkota@yahoo.com
- Title** : **“R&D to Product Realization-- Case Studies from Tejas Programme”**

Lunch Break (1:30 to 2:00 PM)

Panel Discussion (10 minutes each)

(2:00 to 3:30 PM)

- Chairman** : **Dr. K.V.R. Chary**, Sir J.C. Bose National Fellow (DST, Gol); Director, Indian Institute of Science Education and Research Berhampur, Berhampur; Email: chary@tifr.res.in; chary54@gmail.com
- Co-chair** : **Dr. Amit Ghosh**, NASI-J.C. Bose Chair Professor, National Institute of Cholera and Enteric Diseases (ICMR), JICA Building, P-33, CIT Road, Scheme XM, Beliaghata, Kolkata; Email: amitghosh24@yahoo.com
- Panelists**
1. **Prof. Rinti Banerjee**, Department of Biosciences & Bioengineering, Centre for Research in Nanotechnology & Science, Indian Institute of Technology Bombay, Powai, Mumbai; Email: rinti@iitb.ac.in
 2. **Prof. P.N. Rangarajan**, Department of Biochemistry, Indian Institute of Science, Bangalore; Email: pnr@biochem.iisc.ernet.in
 3. **Dr. Chandrima Shaha**, Professor of Eminence and Former Director, National Institute of Immunology, Aruna Asaf Ali Marg, New Delhi; Email: cshaha@nii.ac.in; chandrimas@gmail.com
 4. **Prof. J.B. Joshi**, Professor Emeritus- J.C. Bose Fellow, Homi Bhabha National Institute, Anushaktinagar, Mumbai; Email: jbjoshi@gmail.com
 5. **Dr. G.C. Mishra**, NASI- Senior Scientist, National Centre for Cell Sciences, Ganeshkhind, NCCS Complex, Pune; Email: gcmishra@nccs.res.in
 6. **Dr. S.K. Apte**, J.C. Bose National Fellow, Room 1-156-H, Modular Laboratories, Bhabha Atomic Research Centre, Trombay, Mumbai; Email: sksmbd@barc.gov.in

Concluding Session (3:30 to 4:00 PM)

- Chairman** : **Dr. Anil Kakodkar, President**, NASI; Formerly Chairman AEC & Secretary, DAE, Gol; DAE Homi Bhabha Chair Professor & Member AEC, Bhabha Atomic Research Center, Trombay, Mumbai; Email: kakodkar@barc.gov.in

- Co-chair** : **Dr. K.V.R. Chary**, Sir J.C. Bose National Fellow (DST, Gol); Director, Indian Institute of Science Education and Research Berhampur, Berhampur; Email: chary@tifr.res.in; chary54@gmail.com
- Co-chair** : **Dr. Manju Sharma**, Convener; NASI-DST Distinguished Woman Scientist Chair Professor, Formerly Secretary to Gol, DBT; Res. B9/6476 FF, Vasant Kunj, New Delhi; Email: manjuvps@gmail.com
- Vote of thanks** : **Dr. Niraj Kumar**, Executive Secretary- NASI, 5-Lajpatrai Road, Allahabad; Email: nasi.allahabad1@gmail.com

Tea Break

Annual Session Activities

(2.00 - 4.00 PM) Evaluation of the Posters

Addresses by the Sectional Presidents (4.30 - 5.30 PM)

Physical Sciences: Sectional President-

Dr. Dinakar Kanjilal, Director, Inter University Accelerator Centre, New Delhi;
Title: Modern Accelerator based Research in Nuclear and Condensed Matter Physics - Review.

Biological Sciences: Sectional President-

Dr. Chandrima Shaha, Professor of Eminence and Former Director, National Institute of Immunology, New Delhi; **Title:** Looking into Life: The Beauty of Cellular Struggle.

Fellow's Meeting- 5:30 PM & Annual General Body Meeting- 6:00 PM

Council Meeting (7:30 - 9:00 PM); followed by Dinner
Exclusively for the members of the NASI Council & Special Invitees

10th December, 2017

Scientific Sessions of the 87th Annual Session at SPPU, Pune

(09:30 - 11:30 AM)

Physical Sciences & Biological Sciences (Oral Presentations) - Parallel Sessions including the Invited Talks by NASI-Reliance Industries Platinum Jubilee Awardees (2017)

Invited Talks in Physical Sciences (20 min each)

Dr. Debendra Kumar Mohapatra, Principal Scientist, Natural Products Chemistry Division, CSIR-Indian Institute of Chemical Technology, Hyderabad; Email: mohapatra@iict.res.in

Dr. Anil Kumar, Professor, Department of Chemistry, Indian Institute of Technology Bombay, Powai, Mumbai; Email: anilkumar@iitb.ac.in

Invited Talks in Biological Sciences (20 min each):

Dr. Debasis Chattopadhyay, Scientist V, National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi; Email: debasis@nipgr.ac.in

Dr. Inshad Ali Khan, Principal Scientist, Clinical Microbiology Division, CSIR-Indian Institute of Integrative Medicine, Canal Road, Jammu; Email: iakhan@iiim.res.in

Tea Break: (11:30 - 11:45 AM)

Parallel Sessions (Oral; 11:45 AM - 01:45 PM) Continued at the respective venues including the Invited Talks

Invited Talks in Biological Sciences (20 min each):

Dr. Harinath Chakrapani, Associate Professor, Indian Institute of Science Education and Research, Pune; Email: harinath@iiserpune.ac.in; Title: "Redox Chemical Tools to Understand Antibiotic Resistance".

Dr. Aneesh Kumar Arimbasseri, Staff Scientist, National Institute of Immunology, New Delhi; Email: aneesh@nii.ac.in; Title: "Implications of Crosstalk between tRNA Transcription and Post-Transcriptional Modifications in Diseases"

Invited Talks in Physical Sciences (20 min each):

Prof. Rudrajyoti Palit

Department of Nuclear and Atomic Physics, TIFR, Colaba, Mumbai; Email: r.palit1@gmail.com

Dr. Tapas Ganguli

Head, Raja Ramanna Centre for Advanced Technology, Condensed Matter Physics, Indore; Email: tapas@rrcat.gov.in

Parallel Session for Children Science Meet at IUCAA Auditorium (11:45 AM - 01:45 PM)

Welcome: Prof. Dilip Dattatray Dhavale, Chairman, NASI-Pune Chapter

- **Introductory Remarks: Dr. Manju Sharma, Past President, NASI**
- **Popular Science Talks by the Speakers:**
 - **Dr. Somak Raychaudhury, Director, IUCAA, Pune &**
 - **Prof. Paramjit Khurana, UoD South Campus, New Delhi**
- **Presidential Remarks: Dr. Anil Kakodkar, President, NASI**
- **Vote-of-thanks: Prof. Dipalee Malkhede, Chemistry Department, SPPU, Pune**

Lunch Break (01:45 PM)

Valedictory Session of the Annual Session at IUCAA Auditorium (02:30 - 03:30 PM)

Welcome: Dr. Niraj Kumar, Executive Secretary, NASI

Address by the Chief Guest: Prof. Nitin Karmalkar, Vice Chancellor, SPPU, Pune

Presidential Remarks- Dr. Anil Kakodkar, President, NASI

Presentation of Awards by the President, NASI and the Chief Guest-

- i) **NASI - Young Scientist Platinum Jubilee Awards**
 - ii) **NASI - Swarna Jayanti Puruskars for Best Paper**
 - iii) **NASI-Springer Young Scientist Awards**
- **Concluding Remarks - Dr. Manju Sharma, Past President, NASI**
 - **Vote-of-thanks - Dr. U.C. Srivastava, GS (HQ), NASI**

High Tea