

# The National Academy of Sciences, India (NASI)

## 88<sup>th</sup> Annual Session of NASI & Symposium

ON

### Science, Technology and Ecosystem for Sustainable Rural Development

*jointly organized by*

Mahatma Gandhi Chitrakoot Gramoday Vishwavidyalaya (MGCGV)  
& Deendayal Research Institute (DRI), Chitrakoot, Satna, M. P.

Date: 6-8<sup>th</sup> Dec 2018

Venue: MGCGV, Chitrakoot

--- Tentative Programme ---

### Day 1: 6<sup>th</sup> December, 2018

Inaugural Session: (10:00 - 11:30 am)

Lighting of the lamp; and *Vandana*

Welcome	<b>Prof. N C Gautam</b> Vice Chancellor, Mahatma Gandhi Gramoday Vishwavidyalaya, Chitrakoot Email: gautamnc@yahoo.co.in
About the Session	<b>Prof. Manju Sharma</b> NASI-DST Distinguished Woman Scientist Chair; Formerly Secretary, DBT, Govt. of India Email : manjuvps@gmail.com
Key Note & Presidential Address	<b>Dr. Anil Kakodkar</b> President, NASI; Formerly Chairman AEC & Secretary, DAE, Govt. of India; DAE Homi Bhabha Chair Professor & Member AEC, Bhabha Atomic Research Center, Trombay, Mumbai Email: kakodkar@barc.gov.in
Award Ceremony (NASI-Reliance Industries Platinum Jubilee Awards -2018); & Felicitation of the Guests	
Vote of Thanks	<b>Prof. Satya Deo</b> General Secretary (HQ); Formerly Vice-Chancellor, APS University, Rewa, MP Email: sdeo94@gmail.com

National Anthem

*Tea Break (11.30 am - 12.00 noon)*

### Session 1: **Agriculture, Food Security and Nutrition** (12:00 noon -1:30 pm)

Chairman	<b>Prof. Akhilesh K Tyagi</b> Department of Plant Molecular Biology, University of Delhi South Campus, New Delhi; Past President, NASI Email: akhilesh@genomeindia.org
Co-chair	<b>Dr. Ajay Parida</b> Director, Institute of Life Science, Bhubaneswar Email: drajayparida@gmail.com
Speaker	<b>Dr. Panjab Singh</b> President, National Academy of Agricultural Sciences Email: panjabsingh03@yahoo.com
Title	<b>Sustainable Food Security-a Continuing Challenge</b>

<b>Speaker</b>	<b>Dr. G S Toteja</b> Director, ICMR-DMRC, Jodhpur; Scientist G & Head (Nutrition), ICMR Hqrs., New Delhi Email: <a href="mailto:gstoteja@gmail.com">gstoteja@gmail.com</a>
<b>Title</b>	<b>Food and Nutrition Security: Challenges and Opportunities</b>
<b>Speaker</b>	<b>Dr. K K Singh,</b> Director, ICAR- Central Institute of Agricultural Engineering, Bhopal Email: <a href="mailto:kksingh@icar.org.in">kksingh@icar.org.in</a> ; <a href="mailto:kksingh@ciae.res.in">kksingh@ciae.res.in</a>
<b>Title</b>	<b>Development of Agricultural Implements to reduce farmers drudgery</b>

*Lunch 1.30- 2.00 pm*

## Session 2: **S&T for New Health Care Regime (2:00– 3:30pm)**

<b>Chairman</b>	<b>Prof. Manju Sharma</b> NASI-DST Distinguished Woman Scientist Chair; Formerly Secretary, DBT, Govt. of India
<b>Co-chair</b>	<b>Prof. U C Srivastava</b> Formerly Emeritus Professor, University of Allahabad, Allahabad Email: <a href="mailto:ucsrivastava@rediffmail.com">ucsrivastava@rediffmail.com</a>
<b>Speaker</b>	<b>Prof. Pramod Garg</b> Department of Gastro Enterology, AIIMS, New Delhi Email: <a href="mailto:pgarg10@gmail.com">pgarg10@gmail.com</a>
<b>Title</b>	<b>Diet and Human Health</b>
<b>Speaker</b>	<b>Prof. Anand Krishnan</b> Head, Centre for Community Medicine, AIIMS, New Delhi Email: <a href="mailto:kanand@aiims.ac">kanand@aiims.ac</a>
<b>Title</b>	<b>A New Health Regime</b>
<b>Speaker</b>	<b>Dr. RLS Sikarvar</b> Scientist, Deendayal Research Institute, Chitrakoot Email: <a href="mailto:sikarwarrls@gmail.com">sikarwarrls@gmail.com</a>
<b>Title</b>	<b>The role of Deendayal Research Institute for maintaining good health through traditional system of medicines</b>
<b>Speaker</b>	<b>Dr. Abhay Bang and Dr. Rani Bang</b> SEARCH, Gadchiroli, Maharashtra Email: <a href="mailto:search.gad@gmail.com">search.gad@gmail.com</a>
<b>Title</b>	<b>Health Research for Whom ? For What ?</b>

*Tea Break (3:30- 4:00 pm)*

## Session 3: **Clean Energy (4:00– 6:00 pm)**

<b>Chairman</b>	<b>Prof. Ashok Misra</b> NASI-Platinum Jubilee Chair Distinguished Professor; Former Director, IIT, Mumbai Email: <a href="mailto:ashokmisra47@gmail.com">ashokmisra47@gmail.com</a>
<b>Co-chair</b>	<b>Prof. Satya Deo</b> General Secretary (HQ); Formerly Vice-Chancellor, APS University, Rewa Email: <a href="mailto:sdeo94@gmail.com">sdeo94@gmail.com</a>
<b>Speaker</b>	<b>Dr. Anjan Ray</b> Director, CSIR-Indian Institute of Petroleum, Dehradun Email: <a href="mailto:anjan.ray@iip.res.in">anjan.ray@iip.res.in</a>
<b>Title</b>	<b>Carbon Sources in Rural Economies- Energy Security for India</b>
<b>Speaker</b>	<b>Dr. D.K.Tuli</b> DBT-IOC centre for Bio-Energy Research (BERC), Faridabad Email: <a href="mailto:tulidk@gmail.com">tulidk@gmail.com</a>
<b>Title</b>	<b>Bio-Energy options for India</b>

<b>Speaker</b>	<b>Prof. P K Vijayan</b> Reactor Engineering Division, BARC, Mumbai Email: pkvijayan@barc.gov.in
<b>Title</b>	<b>Deep Decarbonization options for the energy sector</b>
<b>Speaker</b>	<b>Dr. K Lenin Babu</b> Asst. Professor, Bioenergy & waste recycling Agriculture Development and Rural Transformation Centre, ISEC, Bengaluru Email: <a href="mailto:lenin@isec.ac.in">lenin@isec.ac.in</a>
<b>Title</b>	<b>Clean Energy - Bioenergy and Waste Recycling</b>

### ➤ **Dr. B P Pal Memorial Lecture<sup>#</sup> (6:00 pm)**

<b>Chairman</b>	<b>Dr. Panjab Singh</b> President, National Academy of Agricultural Sciences Email: panjabsingh03@yahoo.com
<b>Speaker</b>	<b>Dr. Trilochan Mohapatra</b> Secretary, Department of Agricultural Research and Education & Director General, ICAR, New Delhi Email: dg.icar@nic.in
<b>Title</b>	<b>Ancient Indian Agriculture through the Lenses of Modern Science</b>

**# followed by Interaction with the farmers**

*Cultural Evening; followed by Dinner*

**Day 2: 7<sup>th</sup> December, 2018**

### ➤ **Dr. P. Sheel Memorial Lecture Award 2018 (9.30– 10.00 am)**

Speaker: Dr. Renu Swarup, Secretary, DBT, Govt. of India;

Topic: Science Technology and Innovation: Key Drivers for a Biobased Economy

Award Presentation by Dr. Anil Kakodkar, President, NASI

### **Session 4: Ecosystem & Sustainable Development (10:00 – 11:30 am)**

<b>Chairman</b>	<b>Dr. Renu Swarup</b> Secretary, Department of Biotechnology, Govt. of India, New Delhi Email: swarup.dbt@nic.in
<b>Co-chair</b>	<b>Dr. Pramod Tandon</b> CEO, Biotech Park, Lucknow; Formerly Vice Chancellor, NEHU, Shilong Email: profptandon@gmail.com
<b>Speaker</b>	<b>Dr. Ashok Giri</b> INSA-Senior Scientist, Indian Institute of Chemical Biology, Kolkata Email: <a href="mailto:akgiri15@yahoo.com">akgiri15@yahoo.com</a>
<b>Title</b>	<b>Arsenic Contamination in Ground Water in India and its Impact on Human Health and Rural Development</b>
<b>Speaker</b>	<b>Dr. Ajay Parida</b> Director, Institute of Life Science, Bhubaneswar Email: drajayparida@gmail.com
<b>Title</b>	<b>Bioresources and Sustainable Development</b>
<b>Speaker</b>	<b>Dr. T R Nayak</b> National Institute of Hydrology (NIH), Govt. of India Email: trnayak.nihr@gov.in
<b>Title</b>	<b>Challenges of Sustaining Small Water Bodies in Rural Areas</b>

*Tea Break (11:30 am – 12:00 noon)*

## Session 5: **Entrepreneurship, Skill Development and Employment Opportunities** (12:00 noon – 1:30 pm)

<b>Chairman</b>	<b>Prof. J P Mittal</b> BARC, Mumbai; Past President, NASI Email:mittaljp2003@yahoo.co.in
<b>Co-chair</b>	<b>Dr. Shashi Bala Singh</b> Formerly Director General (Life Sciences), DRDO, Govt. of India Email: drshashisingh@gmail.com
<b>Speaker</b>	<b>Dr. Anil Prakash Joshi</b> Founder Himalayan Environmental Studies and Conservation Organization (HESCO), Dehradun Email: dranilpjoshi@gmail.com
<b>Title</b>	<b>Ecology inclusive Economy for Rural India</b>
<b>Speaker</b>	<b>Prof. Abhay Karandikar</b> Director, IIT, Kanpur Email: director@iitk.ac.in
<b>Title</b>	<b>"Challenges in Broadband Connectivity in Rural India: Frugal 5G"</b>
<b>Speaker</b>	<b>Dr. Vijay Kumar Chaudhary</b> South Campus, Delhi University, New Delhi Email: vkchaudhary@south.du.ac.in
<b>Title</b>	<b>Antibodies in Diagnostics: Rapid Tests for Rural India</b>
<b>Speaker</b>	<b>Dr. Usha Barwale Zehr</b> Director, Maharashtra Hybrid Seeds Company Private Limited (Mahyco), Maharashtra Email: usha.zehr@mahyco.com
<b>Title</b>	<b>New initiatives in Agriculture</b>

*Lunch (1:30 - 2:00 pm)*

## Session 6: **Discussions and Recommendations (2:00– 3:00 pm)**

<b>Chairman</b>	<b>Prof. Manju Sharma,</b> NASI-DST Distinguished Woman Scientist Chair; Formerly Secretary, DBT, Govt. of India Email : manjuvps@gmail.com
<b>Co-chair</b>	<b>Prof. Paramjit Khurana</b> Head, Department of Plant Molecular Biology, South Campus, DU, New Delhi Email: param@genomeindia.org
<b>Speaker</b>	<b>All Chairmen and Co-chairs of the Session 1-6</b>  5 minutes each

## Annual Session Activities

### ➤ Addresses by the Sectional Presidents (3.00- 4.30 pm)

Physical Science Section	Dr. Pradeep Kumar Gupta Visiting Professor, IIT Delhi, New Delhi Email: pkgupta54@gmail.com
<b>Title</b>	<b>Photonics for health care</b>
Biological Science Section	Prof. Madhoolika Agrawal Department of Botany, B.H.U., Varanasi Email: madhoo.agrawal@gmail.com
<b>Title</b>	<b>Air Pollution: A cause of concern for plants</b>
Evening Lecture	Prof. Anurag Sharma Department of Physics, IIT, New Delhi Email: <a href="mailto:asharma@physics.iitd.ac.in">asharma@physics.iitd.ac.in</a>
<b>Title</b>	<b>Gandhi &amp; Science</b>

*Tea Break (4:30- 5:00 pm)*

### ➤ Evaluation of the Posters (5.00– 6.30 pm)

**Fellow's Meeting – 5:30 pm & Annual General Body Meeting – 6:00 pm**

**Council Meeting (8:00 - 9:00 PM); followed by Dinner**  
(Exclusively for the Members of the NASI Council & Special Invitees)

**Day 3: 8<sup>th</sup> December, 2018**

Scientific Sessions of the 88<sup>th</sup> Annual Session (09:30– 11:30 am)

**Physical Sciences & Biological Sciences (Oral Presentations) - Parallel Sessions including the Invited Talks by NASI-Reliance Industries Platinum Jubilee Awardees (2018)**

#### **Invited Talks: Physical Science Section**

Speaker	Prof. Navakanta Bhat Centre for Nano Science and Engineering, IISc, Bangalore Email: navakant@ece.iisc.ernet.in
Speaker	Prof. Rohit Srivastava Department of Biosciences and Bio-engineering, IIT, Mumbai Email : rsrivasta@iitb.ac.in
Speaker	Prof. Pralay Maiti School of Material Science & Technology, IIT, (BHU), Varanasi Email : pmaiti.mst@itbhu.ac.in

#### **Invited Talks: Biological Science Section**

Speaker	Dr. C. Anandharama Krishnan Director, Indian Institute of Crop Processing Technology, Thanjavur Email : director@iicpt.edu.in
Speaker	Prof. Nandini Chatterjee Singh Professor, National Brain Research Centre, Manesar Email : nandini@nbrc.ac.in

<b>Speaker</b>	<b>Dr. Pulok Kumar Mukherjee</b> Head, Department of Pharmaceutical Technology; Director, School of Natural Product Studies, Jadavpur University, Kolkata Email : pulokm@gmail.com
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*Tea Break (11:30 am - 12:00 noon)*

## Physical Sciences & Biological Sciences (Oral Presentations) & Invited Talks\* Parallel Sessions continued (12.00 noon – 1.30 pm)

### \* Invited talks- In Biological Sciences

#### 1. Prof. Rakhi Chaturvedi

Department of Biosciences and Bioengineering, IIT Guwahati, Guwahati  
email: rakhi\_chaturvedi@iitg.ac.in

#### 2. Prof. Rana Pratap Singh

School for Environmental Sciences, Babasaheb Bhimrao Ambedkar Central University, Lucknow  
Email: dr.ranapratap59@gmail.com

### In Physical Sciences

#### 1. Dr. D K Aswal, Director, NPL, New Delhi; Email:dkaswal@yahoo.com

#### 2. Prof. A Datta, Department of Chemistry, IIT Bombay, Mumbai; Email:adutta@iitb.ac.in

## ➤ Children Science Meet (parallel session) (12.00 noon – 1.30 pm)

<b>Chairman</b>	<b>Dr. Anil Kakodkar</b> President, NASI; Formerly Chairman AEC & Secretary, DAE, Govt. of India; DAE Homi Bhabha Chair Professor & Member AEC, Bhabha Atomic Research Center, Trombay, Mumbai
<b>Moderator</b>	<b>Prof. Manju Sharma</b> NASI-DST Distinguished Woman Scientist Chair; Formerly Secretary, DBT, Govt. of India
<b>Speakers</b>	<p>▪ <b>(Prof. Saligram Sinha Memorial Lecture Award-2018)</b> <b>Prof. Arun Kumar Pandey</b> Vice-Chancellor, Mansarovar Global University, Bhopal Email: arunpandey79@gmail.com; arunkpandey@botany.du.ac.in</p>
<b>Title</b>	<b>Diversity, Conservation &amp; Sustainable Utilization of Himalayan Flowering Plants</b>
<b>Speakers</b>	<p>▪ <b>(Prof.R.C. Gupta Endowment History of Science Lecture Award 2018)</b> <b>Prof. Satya Deo</b> General Secretary (HQ); Formerly Vice-Chancellor, APS University, Rewa, MP Email: sdeo94@gmail.com</p>
<b>Title</b>	<b>"Role of proofs in mathematical sciences"</b>

*Lunch (1:30 - 2:15 pm)*

## Valedictory Session of the 88<sup>th</sup> Annual Session (2.15 – 3.30 pm)

<b>Welcome</b>	Prof. U.C.Srivastava, Treasurer, NASI
<b>Address by the Chief Guest</b>	Shri Abhay Mahajan, Secretary, DRI, Chitrakoot
<b>Presentation of the Awards</b>	<ul style="list-style-type: none"> <li>▪ NASI Young Scientist Platinum Jubilee Awards (2018)</li> <li>▪ NASI - Swarna Jayanti Puruskars(2018)</li> <li>▪ NASI - Springer Young Scientist Awards(2018)</li> </ul>
<b>Concluding Remarks</b>	Prof. Manju Sharma, Convener of the Annual Session
<b>Presidential Remarks</b>	Dr. Anil Kakodkar, President, NASI
<b>Vote of thanks</b>	Dr. Niraj Kumar, Executive Secretary, NASI