

# **PROGRAM SCHEDULE**

**86<sup>th</sup> Annual Session of  
The National Academy of Sciences, India (NASI)**

**Symposium**

**on**

**“Science, Technology and Entrepreneurship for Human  
Welfare in The Himalayan Region”**

**Venue: -Vigyan Dham, UCOST, Dehradun.**

**Date: - 2<sup>nd</sup> -4<sup>th</sup> Dec 2016**

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**2<sup>nd</sup>December 2016**

**Inaugural Session (Venue: Auditorium of IGNAF, Dehradun)**

**10:00 am to 11:30 am**

**Lighting of Lamp**

**Invocation**

Welcome	:	Dr. Rajendra Dhobal, DG, UCOST
About the Symposium	:	Dr. Manju Sharma, Convener
Chairman Address	:	Prof. A.N Purohit, Chairman, NASI, UK Chapter
Presidential Address	:	Prof. Akhilesh Tyagi, President, NASI, Allahabad
Inaugural Address	:	Prof. G Padmanaban, Former Director, IISC
Felicitations and awards	:	Dr. Niraj Kumar, Executive Secretary, NASI, Allahabad
Vote of thanks	:	Prof. Veena Tandon, General Secretary, NASI, Allahabad

**National Anthem**

**Tea Break & Transportation to Vigyan Dham**

**(11.00 AM to 12.30 PM)**

**Session 1(Venue: Vigyan Dham, UCOST)**

**12:30 to 2.00 pm**

**Connecting Academia and Industry**

- Chairman : **Dr. V P Kamboj, Former Director, Central Drug Research Institute, Lucknow.**
- Co-chair : **Dr. Pramod Tandon, CEO, Biotech Park, Lucknow.**
- Speaker No. 1 : **Dr. Anil Tripathi, Director, CIMAP, Lucknow**  
Title : Bio resources including medicinal and aromatic plants; orchids, mushrooms, plants used for herbal medicines etc
- Speaker No. 2 : **Dr. Sanjay Kumar, Director, IHBT, Palampur**  
Title : Agriculture – Bio-fertilizers, Bio-control agents
- Speaker no. 3 : **Dr. Partha Roy, Head, Dept. of Biotechnology, IIT, Roorkee**  
Title :
- Speaker no. 4 : **Dr. Manoj Nesari, Advisor, AYUSH**  
Title : Ayurveda

**Lunch (2:00 to 2:30 pm)**

**Session 2 (Venue: as above)**

**2:30 to 3:30 pm**

**Agricultural Tools and New Technologies**

- Chairman : **Dr. S Ayyappan, Secretary, DARE and Director General, ICAR**
- Co-chair : **Dr. Jitendra Khurana, Prof., Dept. of Botany, Delhi University.**
- Speaker no. 1 : **Dr. R K Gupta, Directorate Wheat Research**  
Title : Bioremediation
- Speaker no. 2 : **Dr. T R Sharma,**  
Title : Present Status of Marker Assisted Breeding in Different Crops in India

### **Session 3 (Venue: as above)**

**3:30 to 4:30 pm**

#### **Industry – Technology Development and Adaptation**

- Chairman : **Dr. Ashok Mishra, Former Director, IITB**
- Co-chair : **Dr. Shashi Bala Singh, Director, Defence Institute of Physiology & Allied Sciences (DIPAS), DRDO.**
- Speaker No. 1 : **Dr. Usha Zehr, Mahyco**  
Title :
- Speaker No. 2 : **Dr. Ravi Chanrda Beeram**  
Title : **Crossing the barriers-Enzymes for improving health and productivity of livestock**

### **Tea Break (4:30 to 5:00 pm)**

#### **Session 4(Venue: as above)**

**5:00 to 6:00 pm**

#### **Clean Technologies**

- Chairman : **Dr. S K Joshi, Former Director General, CSIR, New Delhi**
- Co-chair : **Dr. Dutta Roy**
- Speaker no. 1 : **Dr. Arvind Lali, ICT Mumbai**  
Title :
- Speaker no. 2 : **Prof. Arun Kumar, IIT, Roorkee**  
Title : **Renewable Energies**

**3<sup>rd</sup> December 2016**

### **Session – 5(Venue: as above)**

**9:30 to 11:00 am**

**Promoting Entrepreneurship and Human Welfare: Focus on Himalayan Region**

Chairman : **Prof. P N Tandon, President, NBRC, Haryana.**  
Co-chair : **Dr. P K Seth**  
Speaker no. 1 : **Dr. Rohit Srivastava IIT, Mumbai**  
Title : Skill Development – Training,  
Speaker no. 2 : **Dr. Prem Nath, Venture Centre NCL, Pune**  
Title : Infrastructure Requirements  
Speaker no. 3 : **Dr. Renu Swarup, Sr. Advisor, DBT**  
Title : Financial Requirements

**Tea Break -11:00 to 11:30 am**

**Session 6 (Venue: as above)**

**11:30 to 1:30 pm**

**Mentoring, Livelihood Security and Commercialization**

Chairman : **Dr. Rajendra Dobhal, Director General, UCOST.**  
Co-chair : **Dr. Renu Swarup, Sr. Advisor, DBT**  
Speaker no. 1 : **Dr. A K Joshi, HESCO, Dehradun**  
Title : Livelihood security  
Speaker no. 2 : **Dr. Mrityunjay Suar, KITT University, Bhuvneshwar**  
Title : Technology Transfer towards commercialization  
Speaker no. 3 : **Dr. Mudit Narayan, Bharat Fund**  
Title : Accessing Risk Capital  
Speaker no. 4 : **Dr. Bindu Day, TDB, DST, GOI, New Delhi**  
Title : Incubation

**Lunch – 1:30 to 2:00 pm**

**Concluding session (Venue: as above)**

**2:00 to 3:30 pm**

Chairman : **Dr. Manju Sharma, Former Secretary, DBT.**

Co-chair : **Dr. Ashok Mishra, Former Director, IITB**

Special Plenary Lecture: **Dr. Kiran Kumar, Chairman Space Commission**

Young Entrepreneurs

Speaker no. 1 : **Dr. Deepanwita Chattopadhyay, IKP**

Title : Entrepreneurial opportunities, challenges and  
Employment generation

Speaker no. 2 : **Dr. Amitabh Bandopadhyay, IIT Kanpur**

Title :

**Recommendations:-**

Chairman\Co-chair of each session – **Five minutes each**

**Concluding remarks**

Prof. Akhilesh Tyagi –President, NASI

**HIGH TEA**

**ANNUAL SESSION ACTIVITIES**

**Presidential Address BY the Sectional President\*(4.00 – 5.00 PM)**

- **Prof. S.P Mehrotra (Gandhinagar)** – For Physical Sciences Section\*
- **DR. Shashi Bala Singh (Delhi)** – For Biological Sciences Section

**Fellow's Meeting – 5.00 PM**

**Annual General Body Meeting – 5.30 PM**

**TEA**

**Cultural Programme (7.00 – 8.30 PM), Followed By Dinner**

**04 DECEMBER, 2016**

**Scientific Sessions of Annual Session**

**Oral Presentations - Parallel Session (8.30 - 11.00 AM)**

**TEA**

**(11.00 - 11.15 AM)**

**Physical Sciences & Biological Sciences**

(Parallel sessions (oral) Continued at the respective venues)

(11.15 - 1.45 PM)

**&**

**Children Science Meet (11.15 AM- 1.45 PM)**

**Lunch**

**Valedictory Session of the Annual Session**

**(2.30 - 3.30 PM)**

**Chairman:** Prof. Akhilesh k. Tyagi, President, NASI.

**Chief Guest:** Dr. Balram Bhargava

**Presentation of**

- a) NASI Young Scientist Platinum Jubilee Awards.
- b) NASI - Swarna Jayanti Puruskars for Best paper.

**Vote of Thanks - Dr. U.C Srivastava**

# Circular of The National Academy of Sciences (NASI)



## THE NATIONAL ACADEMY OF SCIENCES, INDIA (NASI)

*(The Oldest Science Academy of India)*



*86<sup>th</sup> Annual Session and Symposium on*

*“Science, Technology and Entrepreneurship for Human Welfare in The  
Himalayan Region”*

**December 02-04, 2016**

being jointly organized by

**Uttarakhand Technical University**

and

**Uttarakhand Council of Science & Technology, Dehradun**

***NASI: A Brief Profile*** - The idea of establishing a forum for Indian scientists, which would help them in publishing their researches and bringing them on one platform to discuss and find scientific solutions to the problems of the country, was mooted by **Prof. Meghnad Saha**, a great scientist, visionary and the then Professor of Physics at the University of Allahabad. His views were published in an article titled '**A Plea for an Academy of Sciences**' in December 1929 issue of the University of Allahabad magazine; in the very next year, The National Academy of Sciences, India was established as the first Science Academy of this country. Speaking in the inaugural session, Prof. Saha said:

*"An Academy of Science can do a great deal by educating public opinion, undertaking particular problems, and bringing out scientific workers in various fields for discussion and cooperative research. But the main function of the Academy should be towards cultural improvement by contributions to human knowledge."*

Therefore, NASI strongly feels that science-society programmes are a must to generate scientific temper as well as to solve many societal problems through scientific education and research. Presently, the programmes are being steered by **Prof. Akhilesh K. Tyagi**, President of the Academy, and former Director, NIPGR, New Delhi. The Past Presidents, namely **Prof M G K Menon, Prof M S Swaminathan, Prof (Mrs.) Manju Sharma, Prof A K Sharma, Prof S K Joshi, Prof Ashok Misra, Prof Asis Datta, Dr V. P. Kamboj, Dr. K. Kasturirangan** and **Dr V. P. Sharma** (unfortunately, he died in Oct. 2015) have been taking keen interest in the development of Science in general and the Academy, in particular.

NASI envisions the cultivation and promotion of Science & Technology in all its branches. The Academy is striving hard to promote Science & Technology by regularly organizing several activities, such as: (1) publishing two quarterly journals (Proceedings of the National Academy of Sciences, India- Section A (Physical Sciences) and Section B (Biological Sciences) and one bi-monthly journal (National Academy Science Letters); (2) holding an Annual Session in a scientific and academic institution every year; (3) organizing symposia, seminars and workshops on subjects of current national and scientific interest; (4) planning and executing science communication programmes like Science Extension Lectures, State level Science Contests (Quiz, Debate, Oration, Exhibition, Essay, etc), Talent Search, Teachers' Workshops, Summer/Winter Schools, Vacation Training Programmes, National level Scientific Creative Writing Contest, Celebration of National Technology Day, National Science Day and World Environment Day, etc.; (5) recognizing the significant contributions of scientists at every level by honoring them with Fellowship/Membership/Awards such as Lecture Awards, NASI-Reliance Awards, NASI-SCOPUS



Awards, NASI-Young Scientist Awards etc., (6) instituting prestigious Research Fellowships/Chairs/Senior-Scientist Fellowships etc. to honor distinguished scientists; (7) organizing sensitization programmes for women researchers/scientists and conducting DISHA programme; (8) conducting the 'Safe water' project; (9) organizing/conducting other projects and schemes, such as Nutrition Programme for eradicating malnutrition, Science Awareness Programme for Army Personnel, and a joint programme of NASI & ICAR on Farm Mechanization/Implementation, etc.; and (10) establishing river galleries.

Besides the fore-mentioned activities, the Academy also organizes several other activities jointly with other two National Science Academies-INSA and IASc- all through the year. Since the year 2000, the annual sessions have been held at places such as Allahabad, Pune, Shillong, Ahmedabad, Jaipur, Pondicherry, Mumbai, Mysore, Chandigarh, Kolkata, Jaipur, Trivandrum, Varanasi, Goa, Jodhpur and Bhubaneswar. These annual sessions provide an opportunity to young researchers to present their research papers before a gathering of esteemed scientists. The sessions are popular and draw young and senior scientists alike from far and wide.

The Academy holds a well-organized library known as Dr. Sir Padampat Singhania Library in which there are two sections, one for research students and teachers and the other for school students. Library services have been enriched through digitization of the library indents, and by providing enhanced facilities of storage, reading room, microfilming, citation index etc. Internet facility for educational purpose is also being provided to the students free-of-cost. In the year 2011 the library was connected to National Knowledge Network (NKN). The Academy is maintaining 18 Chapters all across the country to organize scientific activities in and around their respective regions. The Academy also organized more than a dozen workshops on Technological Empowerment of Women at different centers of the country in the past five years; also organized meetings of DISHA (DST Scheme) for selecting women scientists/researchers under SoRF Scheme. About 2500 women scientists/researchers were sensitized through this programme; a booklet dealing with pragmatic solutions to the problems of women scientists/researchers has been published. Also, the NASI decided to adopt ways to make the people aware for the conservation and restoration of the holy River Ganga by establishing a Ganga Gallery with well-defined objectives in order to highlight the religious, cultural, socio-economic and scientific aspects of the holy river. After the establishment of Ganga Gallery at Allahabad, the Academy established another river gallery on Brahmaputra River in Guwahati, Assam. The work on the third gallery (on River Cauvery) has been started at Mysore, Karnataka.

## **Symposium on 'Science, Technology and Entrepreneurship for Human Welfare in The Himalayan Region'-**

The Himalayas stretch in an arc across northern India and her neighboring countries, covering an area of more than half a million sq. km. and inhabited by more than 65 million people. The isolation resulting from steep gradients and topographical variations have contributed to the rich biological and cultural heritage of the region and helped preserve it, making it among the last bastions of globally significant biodiversity and cultural heterogeneity. The region is a globally recognized biodiversity hotspot with high degree of endemism in all of Asia. Its great heights are a storehouse of the most rare and valuable species of medicinal and food plants that are an integral part of the culture of the local communities, woven into their lives in innumerable ways. The Himalayas are also endowed with natural beauty beyond compare, innumerable lakes and verdant forests, and rare and beautiful animal species in several protected areas. A number of tribes and ethnic groups live on the slopes and valleys of this mountain range, and have given the region a cultural wealth of great richness and diversity, with each tribe/clan possessing its own distinctive cultural heritage of architecture, arts and crafts; sports, dress and food; customs and traditions; social structure and religion, and traditional knowledge systems.

It needs multidimensional analysis, which only science can do, and technological intervention amalgamated with entrepreneurial ventures for sustainable development ensuring welfare of the region. Science & Technology- as a method, tool, process or modification- work as a support element for entrepreneurship development. The process of entrepreneurship involves the use of technology at every step whether it is idea generation, idea selection, resource assemblage, production and services, marketing, customer satisfaction or any other aspect related to development of enterprise. It is the dynamic process of creating incremental wealth. To understand the role of Science & Technology as a facilitator of entrepreneurship, that too in the difficult terrain of mighty Himalayas, one must examine various aspects of the region, e.g., bio resources including medicinal and aromatic plants, orchids, mushrooms, livestock and other animal resources; water-wealth; minerals; art and craft; and overall and above- the human resource.

Science & Technology can facilitate entrepreneurship development in several ways, as in identifying new innovative ideas and opportunities, facilitating selection for venturing, helping in assemblage of resources, bridging the gap between research and development (R&D) and commercialization, facilitating entrepreneurial training, education and awareness, optimum utilization of resources, easy operations and easy financial services, better marketing and commercialization and easy storage and improved sharing of Information. Therefore, the National

Academy of Sciences, India, after having organized three successive symposia on 'Biodiversity', 'Desert Ecology' and 'Aquatic' ecosystem at three distinct Centres of Excellence in last few years, planned as a sequel to these activities, to organize a symposium on '**Science, Technology and Entrepreneurship for Human Welfare in the Himalayan Region**', focusing on harnessing the resources of Himalayan ecosystem. **Prof Manju Sharma, former Secretary to the Govt. of India**, Department of Biotechnology, who has a wide knowledge and experience of implementing biotechnological enterprise for sustainable development, was the automatically the right choice of the NASI-Council to be the Convener of the symposium; **Dr Ashok Misra, former Director, IIT Bombay**, was nominated as the Co-convener. A well planned programme has been chalked out to address different aspects of the issue.

### **The host city & institutions:**

Dehradun is made up of two words: 'Dehra' is derived from the word "dera", deriving from griha and meaning home; "Doon" is a term for the valley that lies between the Himalayas and the "Shivaliks". The city is famous for its picturesque landscape and slightly milder climate and provides a gateway to the surrounding region. It is well connected and in proximity to popular Himalayan tourist destinations such as [Mussoorie](#), and [Auli](#) and the [Hindu](#) holy cities of [Haridwar](#) and [Rishikesh](#) along with the Himalayan pilgrimage circuit of [Chhota Char Dham](#). Dehradun is renowned for its natural resources, publishing services and particularly for its educational institutions. It is one of the highest rain receiving areas of North India.

The host institutions are Uttarakhand Technical University and Uttarakhand Council of Science & Technology, Dehradun. Uttarakhand Technical University is a public university at Dehradun, set up by the Government of Uttarakhand on January 27, 2005, through the Uttarakhand Technical University Act 2005, while Uttarakhand Council of Science & Technology is an autonomous body of Government of Uttarakhand. Both the institutions are striving hard to promote science & Technology in all its branches.

### **Chairman of the Organizing Committee for 86<sup>th</sup> Annual Session of NASI at Dehradun –**

**Dr Rajendra Dobhal, Ph.D; FAFESc; FNASc; Director General, Uttarakhand State Council for Science & Technology (UCOST),** Department of Science & Technology, Government of Uttarakhand, Vigyan Dham, Jhajra, Dehradun- 248007 (Ph.+91-135-2102770/2102769).



**UTTARAKHAND TECHNICAL UNIVERSITY**

**उत्तराखण्ड तकनीकी विश्वविद्यालय**

A State Government University



Uttarakhand Technical University



Vigyan Dham, UCOST

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