THE NATIONAL ACADEMY OF SCIENCES, INDIA

(The Oldest Science Academy of India)

84th Annual Session and Symposium on 'Desert Science - Challenges and Opportunities'

December 04-06, 2014

Organized by

Jai Narain Vyas University, Jodhpur – 342 001, India
NASI: A Brief Profile - The idea of establishing a forum for Indian scientists, which would help them in publishing their researches and bring 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 entitled ‘A Plea for an Academy of Sciences’ in December 1929 issue of the University of Allahabad magazine; and 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 must to generate scientific temperament as well as to solve several societal problems through scientific education and research. Since its inception in 1930, the Academy is pursuing its objectives as evident from the fact that all its endeavor and achievements are well recognized by the scientific fraternity and the leadership of the country. Being the oldest Science Academy of this country, NASI has carved a niche in science promotional and popularization activities, following the mandate coined by its founder Prof Meghnad Saha. Presently, the President of the Academy is Hon’ble Dr. K. Kasturirangan, Former Member, Planning Commission, Govt. of India. The Past Presidents as Prof M G K Menon, Prof M S Swaminathan, Prof (Mrs.) Manju Sharma, Prof A K Sharma, Prof V P Sharma, Prof S K Joshi, Prof Ashok Misra, Prof Asis Datta and others are also taking keen interest in the development of the Science in general and the Academy, in particular.

NASI - envisons the cultivation and promotion of Science & Technology in all its branches. The Academy (NASI, Allahabad) 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-Sec. A & B) and one bi-monthly journal (National Academy Science Letters); (2) holding an Annual Session in a scientific and academic institution, every year. The sessions were held (since 2000) at Allahabad, Pune, Shillong, Ahmedabad, Jaipur, Pondicherry, Mumbai, Mysore, Chandigarh, Kolkata, Jaipur, Trivandrum, Varanasi and Goa. These Annual Sessions provide an opportunity for presentation of research papers by the young researchers. The sessions are popular and draw young and senior scientists alike from far and wide; (3) organizing symposia, seminars, and workshops on subjects of current national and scientific interest. More than 70 such programmes were held in last about ten to twelve years; (4) planning and executing programmes of science communication, like Science Extension Lectures, State Level Science Contests (Quiz, Debate, Oration, Exhibition, Essay, etc), Talent Search, Teachers’ Workshop, Summer School, Vacation Training Programmes, Winter School, National Level Scientific Creative Writing Contest, Celebration of National Technology Day, National Science Day and World Environment Day, etc. About lacs of students/teachers have been benefitted by such programmes in last twelve years; (5) recognizing the significant contributions of the scientists at every level by honoring them with Fellowship/Membership/Lecture Awards/ NASI-Reliance Awards/ NASI-SCOPUS Awards/NASI-Young Scientist Awards and so. About 2000 scientists have been awarded in last 10-12 years; (6) instituting prestigious Research Fellowships/Chairs/Senior-Scientist Fellowship etc. to honor the distinguished scientists. More than 60 eminent scientists have been awarded with such prestigious Chairs/Fellowships; (7) holding a well organized library known as Dr. Sir Padampat Singhania Library in which there are two sections, one for the research students and teachers and the other for school students. Library services were enriched through digitization of the library, subscribing more books and by providing 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 has been connected to National Knowledge Network (NKN). It is also having the direct access of several international journals of repute; and (8) maintaining 17 Chapters all across the country to organize scientific activities in and around their respective regions. Thus, during eight decades of its existence, the Academy has attained a niche in promoting science with the involvement of a large number of its fellowship and membership from all the areas of science and technology.

Apart from these activities, it is also organizing several other activities jointly with other two National Science Academies. NASI is jointly sponsoring the Summer Research Fellowship under the joint Science Education Panel to provide opportunities to bright under-and post-graduate students and teachers to usefully spend their summer/winter vacations, at a research laboratory for a period of two months. It is worth mentioning that a large number of Fellows of NASI have opted to mentor students and teachers under this programme.
The picturesque and amazing Rajasthan is known as the land of desert. The arid Thar Desert, or the Great Indian Desert, is the world's 9th largest desert and is located in Western India, bounded on the northwest by Sutlej River, on the east by Aravalli Range, on the south by salt marshes known as the Rann of Kutch, and on the west by Indus Valley. Spread across 800 km in length and 490 km in width, three-fifth of the desert lies mostly in the state of Rajasthan, covering the districts of Jaisalmer, Barmer, Bikaner and Jodhpur, but stretches slightly in states of Gujarat, Punjab, and Haryana as well.

There are various views on the origin of the Thar Desert. Some consider it to be 4000 to 10,000 years old, whereas others state that aridity started in this region much earlier. Another theory states that area turned to desert relatively recently: perhaps around 2000 - 1500 BC. Around this time the Ghaggar-Hakra ceased to be a major river. It now terminates in the desert but at one time was a water source for the Indus Valley Civilization centre of Mohenjo-daro. It has been observed through remote sensing techniques that Late Quaternary climatic changes and neotectonics have played a significant role in modifying the drainage courses in this part and a large number of palaeo-channels exist.

Sand dunes, dune free plains, and the hills are the three principal landforms of the Thar Desert, which are responsible for its alluring landscape. Rainfall is sparse in the region averaging to 127 to 254 mm annually. The sand dunes in the southern desert region stand as high as 152 m, while the northern region has sand dunes as low as 16 m in height. All these characteristics make this Rajasthan desert the onliest and exclusive site to explore. The temperatures in the region are on extreme with summer temperature soaring as high as 53 °C and winter months dipping to as low as 10 °C or even below. The desert region also has a large number of saline lakes, locally known as dhands.

The diversified topography of the desert region has resulted in a rich flora and fauna at Thar. The rich but sparse vegetation includes tree species, small shrubs, and medicinal herbs. On hills, Gum Arabic acacia and euphorbia are easily found while Prosopis cineraria tree can be spotted in the plains. The desert is rich in animal and avian population, in fact, some endangered species of the fauna are found nowhere but in Thar region, like the blackbuck, Indian gazelle, Indian wild ass, and the Great Indian Bustard. Sand grouse, ducks, and geese are among the common migratory birds of the desert. This Rajasthan desert simply displays the abundant and unique diversity of nature dwelling in the scorching heat.

Agriculture and animal-husbandry are the two principal occupations of the region. However, due to sparse rainfall, agriculture takes a back seat and one finds more number of pastoralists in the region. Hide and wool Industries are also famous in the region. There has been an increase in the number of livestock lately which has led to overgrazing and affected the vegetation of the desert. One of the fast growing industries is eco-tourism which invites large number of populace to visit the sun-kissed Thar Desert, enjoy the Camel safari, and witness the heritage of Jaisalmer. These architectural marvels are a true lifetime experience!

**The Host** - Dr. S. Radhakrishnan, the then President of India, inaugurated the University of Jodhpur on 24th August, 1962. In his inaugural address, Hon'ble President revered Prof. Radha Krishnan desired and defined the goals and objective of the then Jodhpur University, now called as Jai Narain Vyas University (J.N.V.U.) - "That the young people, who will be educated in this university, will go forward not as prisoners of the past, but as pilgrims of the future; will develop in them a spirit of dedication, a spirit of renunciation, a spirit of whole-hearted, single-minded concentration on the advancement of the knowledge, whether in science or humanities."
Dear Sir/Madam,

We are happy to inform you that the 84th Annual Session of the National Academy of Sciences, India and Symposium on “Desert Science - Challenges and Opportunities” will be held during December 4-6, 2014 at Jai Narain Vyas University, Jodhpur – 342 001, India.

On behalf of The National Academy of Sciences, India, we have great pleasure in inviting you to attend these and participate in the deliberations.

Scientific Sessions

The Scientific Sessions will be held in two sections: Section of Physical Sciences and Section of Biological Sciences. The Physical Sciences Section will be presided over by Prof. Ajoy K. Ghatak, Formerly Emeritus Professor, IIT Delhi; Res. D-42, Hauz Khas, New Delhi-110016; Tel: (011) 26862998(R); Email: ajoykghatak@gmail.com; and Biological Sciences Section will be presided over by Prof. Ajay K. Parida, Executive Director, M.S. Swaminathan Research Foundation, III Cross Street, Institutional Area, Taramani, Chennai - 600113; Res. 13-F1, Jain Abhinavan, Murugu Nagar Extn.,Velacherry, Chennai - 600042; Tel: (044) 22541229, 65299022(O); Email: ajay@mssrf.res.in;

The scientific papers are presented by the selected researchers/scientists, in the scientific sessions; for which prior submission of the Abstract(s)/Paper(s) is necessary (for details please see the sub-heading “Abstracts”, given onleaf).

The National Academy of Sciences, India - Swarna Jayanti Puruskars, each comprising Rs.5000/= and citation, will be awarded to the young scientists (below the age of 35 years on 1.1.2015) presenting the best research paper(s) in the Sections of Physical and Biological Sciences.

Symposium

A Symposium on “Desert Science - Challenges and Opportunities” will be held during the Annual Session. Presentation of papers in the Symposium would only be through invitation. The Convener of the Symposium is Prof. (Mrs.) Manju Sharma, NASI Distinguished Woman Scientist Chair & former Secretary to the Govt. of India, DBT, New Delhi.

All interested persons are invited to attend the Symposium and Scientific Sessions of Physical and Biological Sciences; however, other facilities will be available only to those who get themselves registered with the host institution as well as enroll themselves as Sessional Members. Fellows and Members of the NASI are exempted from paying the registration fee as well as Sessional Membership fee; for all others, the Sessional Membership fee is Rs.50/= (for scientists & stipendiary researchers) or Rs.30/= (for non-stipendiary researchers).

The Sessional membership fee should be sent to the Executive Secretary, The National Academy of Sciences, India by a Bank Draft or Account Payee Local/Multicity Cheque drawn in favour of ‘The National Academy of Sciences, India’. Payment in Cash/I.P.O/Money Order/Outstation Cheque will not be accepted. Through the next Circular, the host institution (Jai Narain Vyas University, Jodhpur) would inform about the amount and date of receipt of Registration/Accommodation fee.
Privileges

Fellows and Members of the Academy and Sessional Members are entitled to attend the Session and other activities, submit papers for presentation in the Scientific Sessions, receive copies of Presidential Addresses, Abstracts of papers and other related material circulated during the Session. They will be entitled to rail travel at concessional rates as per Rules - scientists whose total emoluments/earnings do not exceed Rs.5,000/= per month are only entitled to the concession of return tickets in 2nd class. Those desiring to obtain Railway concession should write to the Executive Secretary referring the nature of their Membership.

Abstracts

The abstract(s) of paper(s) (not exceeding 200 words), along with one copy of full length paper for presentation in the Scientific Sessions should reach the Office of the Academy at 5, Lajpatrai Road, Allahabad – 211 002, India, latest by September 30, 2014. An author can submit up to a maximum of three papers including papers having more than one author. The advance copy of the abstract may also be sent by email on - nasi.84.session@gmail.com

Bonafide research scholars are required to get their abstract(s)/research paper(s) forwarded by the Supervisor and the Head of the Department/Institution. All abstracts/papers submitted for presentation will be screened. Authors whose papers are accepted will be informed about the mode of presentation (Oral or Poster) at the earliest. The decision of the Academy would be final for the acceptance/rejection; and also for the mode of presentation.

The Academy would pay, on production of Xerox copy of railway tickets, 2nd class rail fare, by shortest route (both ways) only, to the author who would present the paper provided his/her travel has not been subsidized by any other agency.

Publication of full length Papers

In case it is desired that a paper presented at the Annual Session be considered for publication in the journals of the Academy, viz. Proceedings of the National Academy of Sciences, India/National Academy Science Letters, it must be submitted online (for details please see the website of the Academy), as per prescribed procedure of submission. These papers will undergo the usual processing and refereeing as per rules of the Academy. Papers sent for the Session will not be automatically considered for publication in the journals of NASI.

Signing of the Fellow’s Register

The Fellows who have not signed the Fellow’s register so far can sign the register in the Fellow’s meeting, to be held during the 84th Annual Session.

We once again extend a very cordial invitation to you to participate in the 84th Annual Session and Symposium on “Desert Science – Challenges and Opportunities” at Jai Narain Vyas University, Jodhpur.

Yours truly

Sd/ U.C. Srivastava
Sd/ Veena Tandon
General Secretaries,
NASI, Allahabad

Phone : 0532-2640224; Fax : 0532-2641183; Email: nasi.84.session@gmail.com
Website : http://www.nasi.org.in; http://www.nasi.nic.in
LOCAL ORGANISERS AT JODHPUR

The 84th Annual Session of NASI and Symposium on “Desert Science - Challenges and Opportunities” will be held at Jai Narain Vyas University, Jodhpur.

Following persons will locally coordinate the major activities:

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<th>Name</th>
<th>Role</th>
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<tr>
<td>Prof. L.S. Rajpurohit</td>
<td>Local Organizing Secretary (Biological Sciences); 84th Annual Session, NASI</td>
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<td>Department of Zoology,</td>
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<td>Jai Narain Vyas University,</td>
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<td>Email : <a href="mailto:drlsrajpurohit@yahoo.in">drlsrajpurohit@yahoo.in</a></td>
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<td>Prof. S.C.Mathur</td>
<td>Local Organizing Secretary (Physical Sciences); 84th Annual Session, NASI</td>
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<td>Department of Geology,</td>
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Jai Narain Vyas University, Jodhpur – 342 001, India

A View of Thar Desert