



chapters



Chapters of the Academy

The Academy has 17 chapters, located at Ahmedabad, Allahabad, Bangalore, Bundelkhand Extended Region, Chandigarh, Chennai, Delhi, Hyderabad, Jammu, Kharagpur, Kolkata, Lucknow, Mumbai, N.E. Chapter (Shillong), Patna, Uttarakhand and Varanasi. These Chapters also organized lectures and science communication activities for the students of schools and colleges in their cities/regions.

(1) Allahabad Chapter has organized the following activities –

Workshop on Computational Methods in Physical Geological Modelling and Drug Designing (29 Sep -01 Oct)

A three day workshop on Computational Methods in Physical Geological Modelling and Drug Designing was inaugurated on Thursday in D.D.Pant Auditorium of Botany Department at Allahabad University. It is being jointly organized by National Academy of Sciences India, (NASI), Allahabad Chapter and National Centre for Experimental Mineralogy and Petrology (NCEMP), Allahabad University. The inaugural session started with Saraswati Vandana sung by the students of Ganga Gurukulam School. It was followed by the lighting of the lamp by Prof. G.N. Sastri (Recipient of Shanti Swarup Bhatnagar Award 2011), Prof. S.D.Dixit, Director, NCEMP, Prof. G.K.Srivastava (President, NASI, Allahabad Chapter), Dr. G.N. Pandey (Deptt. Of Atomic Energy), Prof. Pankaj Srivastava, (Secretary NASI, Allahabad Chapter) and Mr. A.K.Srivastava (Deputy Executive Secretary).



Releasing souvenir of workshop

In his welcome address, Prof. S.D. Dixit welcomed the guests and gave a brief introduction of NCEMP. After that Prof. G.K. Srivastava said that the main function of Allahabad Chapter is to promote Science and create interest in young students about the latest developments of science. Allahabad Chapter started functioning more than 10 years ago. He gave details of its activities. Dr. Devesh Kumar said that the main objective of the workshop is to give basic information about computer modeling software.



Prof. G.K. Srivastava addressing participants during inaugural function

Mr. A.K.Srivastava told about the facilities being provided by NASI to its fellows and members. Prof. G.N. Sastri said that there is no dearth of resources for budding scientists in our country. In the past, we could not make much scientific progress inspite of having noted scientists of worldwide fame like Prof. C.V.Raman, Prof. Meghnad Saha, Prof. J.C. Basu, Dr. Raja Ramanna, Dr. H.J. Bhabha etc. In a shocking revelation, he told that India provides more funds than European and American Countries to its scientists.



Prof. Narhari Sastri delivering his lecture

Dr. Pankaj Srivastava, Secretary NASI, Allahabad Chapter, informed the delegates about the series of programs organized under the aegis of Allahabad Chapter since January 2011. He also talked about the forthcoming workshop on Soft Computing and its Interdisciplinary Approach, Biomathematical Modelling and Ramanujan's Mathematics. He also told that NASI will organize some basic computer workshop in remote villages of Allahabad and Kaushambi. The Function concluded with the Vote of Thanks by Dr. Kamlesh Pandey, Convener of the Workshop. The program was successfully conducted by Nidhi Paliwal and Tanvi Jain.



Mrs. Sastri, (Schrodinger's D.E. Shaw India Software Ltd., Hyderabad) during hands on session

The second day of workshop began with Lecture by Prof. Mihir Roy Chaudhary, DDU Gorakhpur University, on Model, Computing and Simulation. The enthusiasm shown by the participants on the first day was also visible on the following day as seen by the large number of audience for all the lectures. With the help of simple examples, he elaborated the relationship between computational modeling, its necessity and its applications towards principals of chemistry.



Prof. Mihir Roy Chaudhary (DDU Gorakhpur)



Dr. Anoop Ayappan(IIT Kharagpur)

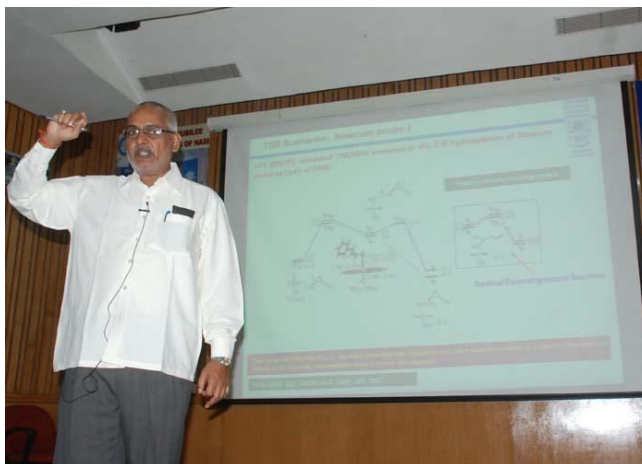
In the next lecture Dr. Anoop Ayappan of IIT Kharagpur delivered his talk on quantum mechanics and hybrid quantum mechanics/ molecular mechanics. He demonstrated how one can use precision of quantum mechanics for active region of biomolecular

system with effect of environment handle by molecular mechanic. After him Dr. H.K.Srivastava from IICT Hyderabad discussed the drug development process and the application of QSAR in it. He told about its application in anti- cancer, anti- HIV, anti – fungal and other drug discovery processes. He presented various validation methods and explained the necessary conditions and precautions to be taken in Quantitative Structure Activity Relationship (QSAR) research. He also suggested a web site from where students can download free software for QSAR.



Dr. Sami Mukhopadayaay (VLife Sciences, Pune) during hands on practice session

The last lecture of the day was given by Dr. Sami Mukhopadayaay from VLife Sciences,Pune. He elaborated about computer aided drug design being used successfully by his company. In the post lunch session; He also conducted a marathon session of hands on practice for the participants. He also organized one week trial version of MDS software.



Dr. Devesh delivering lecture on Drug designing and modeling

On the concluding day of workshop on computational method in Physical Geological Modeling & Drug designing was stated with lecture of Dr. Devesh Kumar. He discussed about the P450 structure & its use in drug designing & modeling. After his talk, he also discussed about software Autodock & its use in drug designing & modeling. He also gave same Hands on practice on Autodock software. In this

session participants are engaged in hands on practice on Autodock software. Dr. Umesh Yadav, DDU Gorakhpur University has discussed the Autodock software application. He also demonstrated the Docking procedure for the different molecules in the hands on practice session.



Dr. P.V. Bharatam (NIPER, Chandigarh) delivering his lecture

In the last session of workshop Dr. P.V. Bharatam, Department of Medicinal chemistry, National Institute of Pharmaceutical Education and Research, SAS Nagar, Punjab were give lecture on three types of receptors which have discovered and identified as important targets for the treatment of metabolic disorders such as types 2 diabetes, dyslipidemia, atherosclerosis etc. Using these drugs which available in the market the diabetes can be reduces. The main theme of Dr. Bharatam talk was to reduce time and cost for designed drugs. Recently, the role of PPAR γ has been established in the treatment of inflammatory conditions and cancer, thus providing more therapeutic value of this target. He said that the recent study has been found to increase the incidences of heart attack among patients. He said that if diabetes will not control then it will be enhanced 251 percent in next 20-30 years.



Prof G. K. Srivastava honoring Dr. P.V. Bharatam

In the valedictory function of workshop, student expressed his views about workshop. They said their own experiences about lectures, training session & software knowledge. Dr. Pankaj Srivastava, Secretary NASI, Allahabad Chapter talked about how this workshop has been organized & he also expressed his view about the benefits of workshop to the Young Scientist and promised the participants to organize such workshop next year. After this Dr. Devesh Kumar Co-convener has

explained the detailed outcome of workshop. He also explained the benefits of the hands on session with the lecture. Prof. G.K. Srivastava, President NASI Allahabad Chapter has given his blessing to participants and he was honored by Dr. Kamlesh Pandey, coordinator of workshop, with a token of memento. Dr. Pandey shares his experience about the workshop. He explained that all the participants (about 100) has loaded the complete software package provided by the experts of Schrodingers, D.E. Shaw India Software Ltd. Hyderabad & Vlife Sciences, Hyderabad. These companies provided all the students/ participants three days working license. He also informed that organizers are trying to extend these license for one month by which participant can be practice on the software.



Valedictory function of workshop



Prof. S.D.Dixit, Director, NCEMP distributing certificates of participation

Participants said that this Workshop provided an opportunity to faculty members and research scholars of all the engineering disciplines to enhance their knowledge base by getting exposed to recent advances in science and Technology and have hands on experience of user friendly software related to Molecular Modeling and Drug designing.



Vote of Thanks by Dr. M.M. Diwedi, NCEMP, Allahabad

After this, Prof. S.D. Dixit Director NCEMP Allahabad University has given certificates of workshop to all the participants. The function concluded with vote of thanks by Dr. M.M. Diwedi, NCEMP, University of Allahabad. The program was successfully conducted by Ms. Astha Gupta.

Extension Lecture at M.V. Inter College, Sulem Sarai, Allahabad on 30 September 2011

Allahabad chapter organized Extension lectures on 30th September at M.V. Inter College, Sulem Sarai, Allahabad . Dr. Narhari Sastri (IICT Hyderabad), Mrs Sastri (Schrodingers D.E. Shaw India Software Ltd. Hyderabad), Dr. Deva Kumar (IIIT, Hyderabad) visited the school. Mr. Mahesh Srivastava (Principal) welcomed the guests and introduced students and teachers about the distinguished guests. Dr. Narhari Sastri introduced the students about the drugs and its role in medical science. Later on Mrs. Sastri informed the students about the software"s applicable in biological sciences and in last Dr. Deva kumar (IIIT Hyderabad) shared his views with the students. About 500 students were present during the programme. Students raised their queries to know about current development in science and technology. Sri Vachaspati MLA and Manager of college honored the distinguished guest and in the end of programme Sri Trivedi (Vice Principal) proposed the vote of thanks.

Extension Lectures at Madhu Vachaspati Institute of Engineering and Technology, Puramufti, Kaushambi on 30 September 2011

Allahabad chapter organized Extension lectures on 30th September at Madhu Vachaspati Institute of Engineering and technology, Puramufti, Kaushambi. Dr. Narhari Sastri (IICT Hyderabad), Mrs Sastri (Schrodingers D.E. Shaw India Software Ltd. Hyderabad), Dr. Deva Kumar (IIIT, Hyderabad) visited the Institute. Mr. Manish Srivastava (Director) welcomed the guest and Sri Vachaspati MLA, Kaushambi and Chairman MVIET Puramufti Kaushambi honored the distinguished guest by mementoes and shawl. In the beginning of programme Sri Vachaspati ji briefed the guest about the aim and mission of institute and invited Dr. Narhari Sastri (Bhatnagar awardi 2011) to interact with the students. Dr. Sastri expressed his views about the interdisciplinary approach of science and technology with main focus on medical science; later on Mrs. Sastri interacted with the students on the role of software development in the field of biological sciences and in the last Dr. Deva Kumar (IIIT Hyderabad) discussed on the role of information technology in drug designing and molecular modeling. During the programme about 800 students were present in the Multi Purpose Hall of the Institute.

Extension lecture at M.V. convent school Allahabad on 28th October

On 28th October extension lectures were organized at M.V. convent school. Prof. Pankaj Srivastava delivered a lecture on "Role of Mathematics in the field of Medical science and Engineering "and during interactive session advised students that good knowledge of mathematics will be helpful in enhancing their analytical ability. The next lecture was delivered by Mr.Ashutosh Kumar(I.C.A .) on " Computer Programming Languages" . At the end of the programme Mahesh Kumar Srivastava Principal M.V. convent school expressed his sincere thanks to NASI, Allahabad and requested to organize such programmes in future for the benefit of students.

Extension Lectures at Jaunpur during 18-11-2011 to 2011-11.

The extension lecture series organized at jaunpur during 18th November 2012 to 20th November 2012. Dr. Major Aslam introduced the speakers and informed audience about the importance of such type of lectures series and shared his experiences during his college days. All the speakers Prof. Pankaj Srivastava, Dr. Abhay Panday, Meenakshi Srivastava and Amit Srivastava were honored by

garlands. The inaugural lecture was delivered by Prof Pankaj Srivastava on “Mathematics and its applications in the field of information technology”.



Dr. Abhay Panday delivered lectures and “Biotechnology and its applications” respectively. In the second half Meenakshi Srivastava delivered lecture on “Social sites and security aspects” on 18th November 2012.



View of Audience at Shia Inter College, Jaunpur on 18th November 2012



Dr. Meenakshi (Amity University) & Dr. Abhay Panday (Allahabad University) during lecture

On 19th of November 2012 Dr. Abhay Panday delivered an interesting lecture on "Nucleic acid structure and genetic engineering". He said DNA is a long polymer made from repeating units called nucleotides. As first discovered by James D. Watson and Francis Crick, the structure of DNA of all species comprises two helical chains each coiled round the same axis. The DNA double helix is stabilized primarily by two forces: hydrogen bonds between nucleotides and base-stacking interactions among the aromatic nucleobases. The four bases found in DNA are adenine, cytosine, guanine and thymine. These four bases are attached to the sugar/phosphate to form the complete nucleotide. DNA is a nucleic acid that contains the genetic instructions used in the development and functioning of all known living organisms (with the exception of RNA viruses). The DNA segments that carry this genetic information are called genes, but other DNA sequences have structural purposes, or are involved in regulating the use of this genetic information. Along with RNA and proteins, DNA is one of the three major macromolecules that are essential for all known forms of life. The sequence of nucleobases along the backbone that encodes information is read using the genetic code, which specifies the sequence of the amino acids within proteins. DNA is copied into RNA in a process called transcription. Within cell's DNA is organized into long structures called chromosomes. Within the chromosomes, chromatin proteins such as histones compact and organize DNA.

Genetic engineering involves the introduction of foreign DNA or synthetic genes into the organism of interest. E. coli is commonly used bacteria for genetic engineering. An organism that is generated through the introduction of recombinant DNA is considered to be a genetically modified organism. Insulin-producing bacteria were commercialized in 1982 and genetically modified food has been sold since 1994. Genetic engineering techniques have been applied in numerous fields including research, biotechnology, and medicine. Medicines such as insulin and human growth hormone are now produced in bacteria. Genetically engineered plants and animals are capable of producing biotechnology drugs more cheaply than current methods. Genetic engineering has applications in medicine, research, industry and agriculture and can be used on a wide range of plants, animals and micro organism. All important structural and functional aspects of nucleic acids were discussed during presentation.

Later on Amit Srivastava MNNIT Allahabad introduced audience about Biomedical engineering and its future prospects. He discussed about the role of Biomedical engineering in human life and said how everything in today's life is connected with biomedical field whether we are talking about medical facilities, medical instruments and various tests like MRI, ultrasound, ECG, EMG, EEG or biomechanical study of human body. A lot of queries were made by the teachers and students of both disciplines.



(From L- R) Dr. Major Aslam, Amit Srivastava and Dr Abhay Panday



Dr. Narendra Nayak (Mangalore) demonstrating experiments

During the post lunch session, Prof. Narendra Nayak (Mangalore) demonstrated a number of experiments based on scientific phenomenon to create scientific awareness among the students and their parents. He shown some of the Chemical experiments which are usually performed by Self Styled Saints under the name of God Gifted Supernatural powers to mesmerize common people. A lot of queries were made by the parents, students and teachers with satisfactory response from Prof. Nayak.



View of Audience on 19th Nov 2012



Dr. Major Aslam honoring Dr. Mohd. Masood on 20th November 2012



View of Audience on 20th Nov 2012

On 20th November, Dr. Mohd. Masood made participants and teachers aware about the food adulteration and its effect on human health. He demonstrated a number of experiments related with purity and possible adulteration in various food items like turmeric, milk, tea, mustard oil, pure ghee, black pepper, clove, chilli powder, flour, pulse and etc. At last Major Dr. Aslam, Principle, Shia Inter College expressed his sincere thanks to NASI, Allahabad chapter for organizing such a wonderful scientific programme and on behalf of management committee; he made a request to arrange such type of programme in forthcoming years for the benefit of students and common people.

Extension Lectures at Ganga Gurukulam, Phaphamau, Allahabad on 23-11-2011.



On 23rd November 2011 Allahabad chapter organized lecture series at Ganga Gurukulam School, Phaphamau. Principal Mrs. Alpono Dey welcomed Major General M.P. Singh (Chairman, SSB- Allahabad), Major Balwan Singh (Kargil fame -Mahavira chakra awardi) and Prof. Pankaj Srivastava.



Major General M.P. Singh delivering lecture at Ganga Gurukulam, Allahabad

Major General M.P. Singh interacted with students and delivered lecture on “Role of science and technology in Army”. He quoted several examples of arms and ammunitions and elaborated their functioning with the concept of science and technology. He also shared his experience in army and explained queries raised by the students.



Major Balwan Singh delivering lecture at Ganga Gurukulam, Allahabad

After that Major Balwan Singh interacted with students and shared his experience during Kargill war and explained that how he developed strategies based on the scientific calculations to counter the attacks of Pakistani army during reoccupying the Tiger Hill.



Prof. Pankaj Srivastava Concluding the lecture series at ganga gurukulam, Allahabad.



From (R-L) Major Balwan Singh, Mrs. Alpano Dey, Major General M.P.Singh and Prof. Pankaj Srivastava



Memorable moment at Ganga Gurukulam, Phaphamau

Extension LECTURE at Bishop Johnson Girls School, Near Collectorate, Allahabad on Dec 01, 2011 (World AIDS Day)

Dr. Abhay K. Pandey Allahabad University delivered lecture on Infectious diseases and their prevention. He said Infectious disease results from the interplay between those few pathogens and the defenses of the hosts they infect. The appearance and severity of disease resulting from any pathogen depends upon the ability of that pathogen to damage the host as well as the ability of the host to resist the pathogen. Infection with most pathogens does not result in death of the host and the offending organism is ultimately cleared after the symptoms of the disease have waned. This process requires immune mechanisms to kill or inactivate the inoculums of the pathogen. Specific acquired immunity against infectious diseases may be mediated by antibodies and/or T lymphocytes. Several antibiotics such as tetracycline, amikacin, meropenem, cefalexin etc. are used for treatment of bacterial diseases. These drugs kill bacteria by different mechanisms. Antiviral drugs also inhibit viral growth and proliferation. 1st December is celebrated as world AIDS day. So it was pertinent to talk about AIDS. Human Immunodeficiency Virus (HIV) kills its victims very slowly by attacking their immune system. As a result, many of its victims transmit the virus to other individuals before even realizing that they are carrying the disease. Also, the relatively low virulence allows its victims to travel long distances, increasing the likelihood of an epidemic. Many aspects related with HIV-AIDS were also discussed.

Dr. Shonali Chaturwadi, Asstt. Professor, Ewing Christian College, Allahabad delivered lecture on Biodiversity. Students of class 10th and 12th participated and had interactive session with the Speakers.

Two days workshop on Experimental Physics for undergraduate students at Iswar Sharan Degree College, Allahabad (December 13-14, 2011)

NASI Allahabad chapter organized a workshop on experimental physics for undergraduate students at Iswar Sharan Degree College, Allahabad. Prof. G.K.

Srivastava, Chairman NASI Allahabad chapter, Prof. S.L. Srivastava (Coordinator , Science communication programme NASI) , Dr. Neeraj Kumar ,Executive Secretary, NASI, Allahabad, Principle, Iswar Sharan Degree College and faculty members were present during the inaugural function on 13th Dec 2011. These eminent speakers inspired students to learn Physics via experimental approach. On 14th of December a number of lectures on experimental Physics were delivered by the faculties of Department of Physics, Allahabad University. About 200 students participated in workshop. Prof. Raja Ram Yadav coordinated the entire programme with Dr. K.N. Uttam Department of Physics, Allahabad University. At the end of programme the participants were provided certificate of participation by Prof. Raja Ram Yadav.

Ramanujan's Mathematics workshop 22-12-11 to 23-12-11.

A Two days workshop on Ramanujan's Mathematics was inaugurated on Thursday in D.D.Pant Auditorium of Botany Department at Allahabad University. It is being organized by National Academy of Sciences India, (NASI), Allahabad Chapter.



Prof. M.A. Pathan addressing the audience during inaugural session



Honoring Prof. P.K Banerjee

Honoring Prof. M.A. Pathan

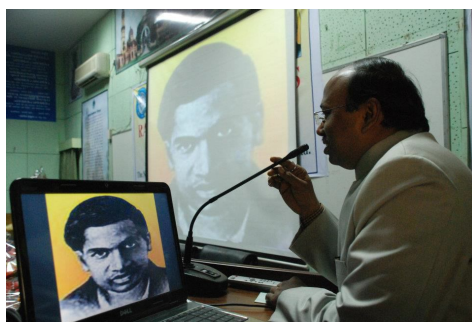


Honoring Prof. Pankaj Srivastava Honoring Mr. A.K.Srivastava



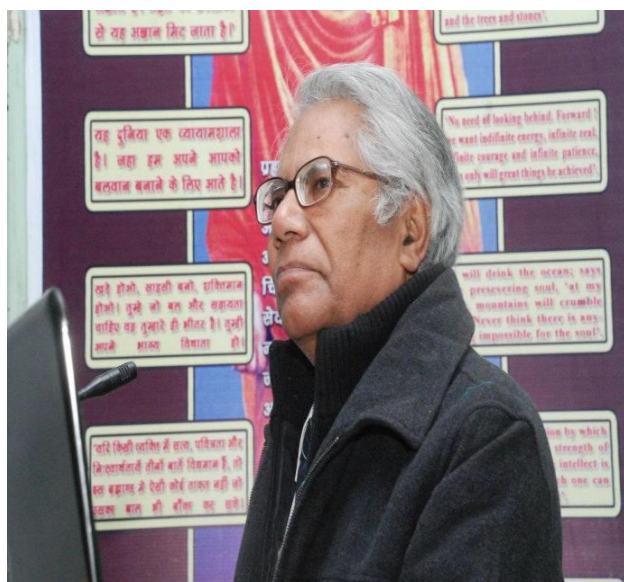
Prof. P.K. Banerjee lighting the inaugural lamp

The inaugural session started with lighting of the lamp by Prof. P.K Banerjee (President, Indian Mathematical Society), Prof. M.A. Pathan, (Ex President, Indian Mathematical Society and Ex Mathematics sectional President Indian Science Congress), Prof. S.N. Singh, VBS Purvanchal University, Jaunpur, Dr. Pankaj Srivastava, (Secretary NASI, Allahabad Chapter) and Mr. A.K.Srivastava (Deputy Executive Secretary).



Prof. Pankaj Srivastava addressing audience

In his welcome address, Prof. Pankaj Srivastava welcomed the guests and briefed the participants about the workshop as well as objectives of NASI Allahabad chapter. He said that the main function of Allahabad Chapter is to promote Science and create interest in young students about the latest developments of science. Allahabad Chapter started functioning more than 10 years ago. After that Parul Sirohi and Nidhi Paliwal provided History of NASI via power point presentation. Mr. A.K.Srivastava deputy executive secretary NASI, Allahabad chapter briefed the audience about Ganga gallery, NASI library and the facilities being provided by NASI.



Prof. M.A. Pathan during his inaugural speech

Prof. M.A. Pathan, University of Botswana chief guest of workshop, highlighted the Indian mathematical domain at international level. He also highlighted the contribution of the great Indian woman mathematician Lilawati and the works of Aryabhata. Citing famous mathematician Hardy he said that the genius Ramanujan was “A mathematician of the highest quality, a man of altogether originality and power”.



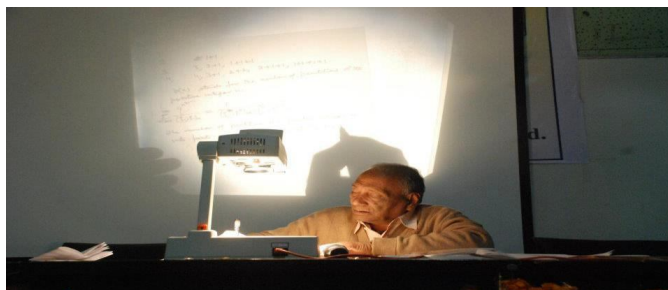
Prof. P.K. Banerjee delivering the speech

Prof. P.K. Banerjee expressed happiness over the continuation of the programme organized for the last few years. He shared with the audience the various contributions made by Ramanujan to the world of mathematics. Later, he delivered a lecture on “Fractional calculus terminology theorem” and threw light on their importance.

The Function concluded with the Vote of Thanks by Prof. Pankaj Srivastava, Convener of the Workshop. The program was successfully anchored by Nidhi Paliwal and Parul Sirohi.



Nidhi Paliwal anchoring the workshop



Prof. S.N. Singh delivering lecture

On the Concluding day of the workshop on Ramanujan's Mathematics Yesterday, Today and Tomorrow Prof.P.K.Banerji (President, Indian Mathematical society) said that the workshop provided an opportunity to young generation to pursue their mathematical understanding beside remembering Ramanujan and his achievements and contribution. He discussed various aspects of Fractional calculus and told participants that Fractional Calculus has found ample applications within Mathematics and in the Theoretical Physics and of the view that the Fractional Calculus is useful for the students of Pure Mathematics, Applied Mathematics and Statistics and finally his lecture ended with some tips to participants that they must do Mathematics instead of Reading Mathematics and suggested not to depend solely on Internet printouts, as this will never enhance the learning of Mathematics. He advised participants that they must find a good mentor in their carrier, who may teach them the methodology of Mathematics and Mathematical Research.

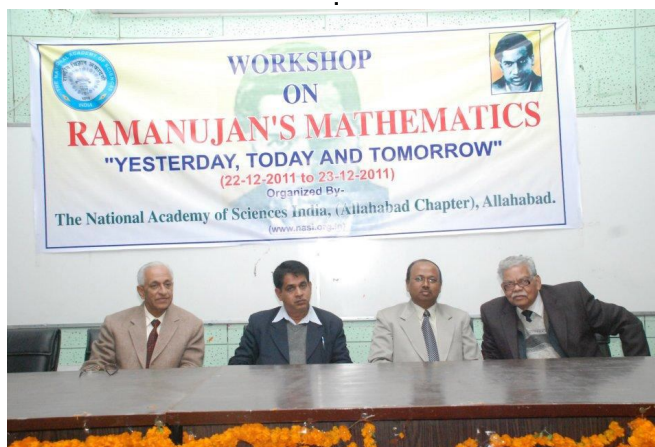


Prof.S.B.Joshi (Shivaji University Kolhapur)

In the post lunch lecture session Prof.S.B.Joshi (Shivaji University Kolhapur) introduced the Special functions which were relevant to Ramanujan's Mathematics and suggested participants to show their hard work and dedication and to study new research papers. Prof.S.N.Singh described various problems related to Ramanujan's work and advised participants to go through Ramanujan's LOST Notebooks.



A view of grouping of participants



From (L-R) Prof. P.K. Banerjee, Prof. S.B. Joshi, Prof. Pankaj Srivastava and Prof. G.K. Srivastava during the valedictory function

During the Valedictory function Prof.G.K.Srivastava (Chairman, NASI Allahabad) distributed the certificate of participation to the participants and in his speech told that NASI Allahabad Chapter organize a number of workshops and lectures every year to inspire students, research scholar and teachers and informed that workshop on Ramanujan's Mathematics is organized every year and it is now a permanent event of NASI Allahabad Chapter.



Prof. G.K. Srivastava Chairman NASI Allahabad Chapter addressing the participants during the validity function on 23 Dec 2011



Prof. S.B. Joshi distributing certificates of participation

Prof. Pankaj Srivastava on behalf of NASI Allahabad chapter honored Prof. P.K. Banerjee (President, Indian Mathematical Society), Prof. M.A. Pathan, (Ex President, Indian Mathematical Society and Ex sectional President Indian Science Congress), Prof. S.B. Joshi Shivaji University Kolhapur, Prof. S. N. Singh, VBS Purvanchal university, Jaunpur with token of NASI momentous.



Prof. Pankaj Srivastava honoring Prof. P.K. Banerjee (President, Indian Mathematical Society)

Participants were of the view that Workshop provided an opportunity to enhance their knowledge base about Ramanujan' Mathematics and got opportunity to interact with the eminent experts. At the end of the program Prof.Pankaj Srivastava (Secretary, NASI Allahabad Chapter) proposed the vote of thanks. The program was successfully anchored by Nidhi Paliwal, Richa singh and Parul Sirohi and well coordinated by Amit Srivastava and Amit Khandelwal.

One Day Computer workshop at Janta Inter College, Sikandara, Allahabad (5th January 2012)

NASI Allahabad chapter organized a one day workshop at Janta Inter College, Sikandara, Bahariya block, Allahabad on 5th January-2012. The aim of the Computer Workshop was to make aware students of rural background about the functioning and basic knowledge of computers. Mr. Shiv Murat Shukla, Science Teacher, introduced the resource persons and said that if students of rural background are made to learn computers right from their primary level then they may be good instructor at their village level to spread Computer awareness .Students of 8th,9th and 11th class provided on hand training under the supervision of Prof.Pankaj Srivastava, Mr.Adarsh kumar ,Mr.Ramesh Mishra, Arvind Singh and Prabhat Srivastava (M.N.N.I.T,Allahabad).The Workshop came to an end with the speech of Principal.

(2) Delhi Chapter has organized the following activities –

Interactive Session for Students during XXIX Annual Conference of Indian Academy of Neurosciences held at Defence Institute of Physiology and Allied Sciences, Delhi on October 31, 2011 : The Delhi chapter of NASI organized a special interactive session for students of Class 10, 11 and 12 of Delhi schools during the XXIX Annual Conference of Indian Academy of Neurosciences held at Defence Institute of Physiology and Allied Sciences, Delhi on October 31, 2011. The session was chaired by Professor P. N. Tandon and the students got an opportunity to interact with eminent neuroscientists and understand the recent trends of neuroscience research in the country. The students greatly enjoyed the interactive session.

Short course on EINSTEIN & SPECIAL THEORY OF RELATIVITY at Kendriya Vidyalaya No. 3, Naraina, Delhi Cantt on November 18, 2011 : A 3 hour short course on EINSTEIN & SPECIAL THEORY OF RELATIVITY was organized at Kendriya Vidyalaya No. 3 in Delhi Cantonment on November 18, 2011. The course was very nicely organized by their PG Teacher Ms Aparajita Acharya. The short course was delivered by Professor Ajoy Ghatak. It was attended by over 100 students and teachers. From the feedback received from the participants, it appears that the course was a great success.

Conference on OPTICS AND PHOTONICS (IONS-1) held at IIT Delhi during December 1-2, 2011 : IONS-1, Delhi was the first International OSA Network of Student (IONS) conference in Asia in a series of conferences for young scientists and researchers in OPTICS AND PHOTONICS. This conference was organized at IIT Delhi during December 1-2, 2011 and was actively supported by the Delhi chapter of NASI. The conference was very nicely coordinated by Ms Kanchan Gehlot and her colleagues.

IONS Project, since its launch in 2006 has grown into a large student-run conference cycle and has spread in many continents around the globe. IONS is a global network

for young scientists that enables mutual interactions, exchange of ideas, building network and experiencing new cultures. It provides an opportunity to visit leading institutes, learn from acknowledged leaders of science and industry and create a network and collaboration opportunities. IONS conferences are organized and managed by students with participation from undergraduates, graduates and post-docs, covering broad areas of Optics and Photonics.

Young researchers took part in the conference and 52 abstracts were received for the technical session of the conference. The list of plenary speakers (from both academics and industry) are given below:

Professor Chris Dainty, Professor of Applied Physics at National University of Ireland gave his plenary lecture on Adaptive Optics: Past and Future.

Professor Prem Kumar, Professor of Information Technology, Northwestern University, Evanston gave his plenary lecture on "Beam Me Up, Scotty." Fact or Fiction?

Professor Ajoy Ghatak, Formerly Professor of Physics at IIT Delhi and Secretary Delhi Chapter of NASI, gave his plenary lecture on Fiber Optics: A Brief History.

Professor Ajoy Kar, Professor of Physics Heriot-Watt University, Edinburgh gave his plenary lecture on Ultrafast Laser Inscription: Science Today and Technology Tomorrow.

Dr. Kumar N. Sivarajan, CTO, Tejas Networks, Bangalore gave his plenary lecture on Holistic Networking.

Dr. Atul Srivastava CTO, NTT Electronics, USA gave his plenary lecture on Integrated Photonics.

Dr. Ishwar D. Aggarwal, Research Professor at University of North Carolina gave his plenary lecture on Optical Research Challenges.



Photo above: Participants at IONS 1 held at IIT Delhi on December 1, 2012



Photo above: Professor Chris Dainty, Professor of Applied Physics at National University of Ireland delivering his plenary lecture on Adaptive Optics: Past and Future.

Lectures at Kendriya Vidyalaya in JNU on December 8 and 9, 2011 : A short course on POLARIZATION OF LIGHT was given by Professor Ajoy Ghatak at Kendriya Vidyalaya in JNU on December 8, 2011. In the same program, Dr. V.P. Sharma delivered a talk on POTABLE WATER in the context of water shortages and prevalence of water borne/related diseases; this talk was delivered on December 9, 2011. Both were attended by PG Teachers of different schools and were very well received. This talk was important as the awareness among the teachers will help the students of various schools/colleges in understanding the cause and effect relationship of unsafe water and undertake remedial measures.

Popular Lecture on Radio Astronomy by Professor R.K. Shevgaonkar, organized at IIT Delhi on February 22, 2012 : NASI Delhi Chapter & the Golden Jubilee Committee of IIT Delhi organized a special lecture on WHAT IS RADIO ASTRONOMY? by Professor R.K. Shevgaonkar, Director, IIT Delhi on Wednesday, February 22, 2012 at the Seminar Hall of IIT Delhi. The lecture was presided by Professor VP Sharma, President of the Delhi Chapter of NASI. Radio astronomy is truly multi-disciplinary in nature as it integrates the basic sciences and engineering. The Seminar Hall was packed and the talk beautifully covered the basic principles of radio astronomy and the contribution of radio observations to the advancement of astrophysics. The lecture was very nicely coordinated by Professor Anurag Sharma.



Photo above: Professor R.K. Shevgaonkar, Director, IIT Delhi delivering a talk on WHAT IS RADIO ASTRONOMY? to a packed Seminar Hall at IIT Delhi. The seminar was organized by the NASI Delhi chapter on Wednesday February 22, 2012 at IIT Delhi.



Photo above: Professor VP Sharma, President, NASI Delhi Chapter presenting a memento as a token of appreciation to Professor R.K. Shevgaonkar. Professor Ajoy Ghatak is on the left.

National Symposium on “Innovations in Polymers Towards Sustainability and Growth” at Bhaskaracharya College of Applied Sciences, University of Delhi in association with National Academy of Sciences (NASI) and Polymer Processing Academy (PPA) during March 2-3, 2012 : A two day national symposium on “Innovations in Polymers Towards Sustainability and Growth” was organized by the Department of Polymer Science, Bhaskaracharya College of Applied Sciences, University of Delhi in association with National Academy of Sciences (NASI) and Polymer Processing Academy (PPA) during March 2-3, 2012 in the college premises. Eminent scientists and professionals from various organizations and from a number of plastic industries delivered lectures in the symposium. The Chief Guests of the symposium Dr. R.K. Khandal (Director, Shriram Institute of Industrial Research), Prof. A. K. Bakhshi (VC, U.P.R.T. Open University, Allahabad) and Prof. V. P. Sharma (Chairman, NASI Delhi chapter) and the Chairman for the inaugural ceremony Prof. Monika Datta (DU, Chairman, Governing Body) along with the Principal of the college Dr. Jai Prakash inaugurated the seminar on March 2, 2012 at 9.30 am. Prof. V.P. Sharma spoke about the activities of NASI and Prof. A.K. Ghosh talked on the Vision & activities of PPA.



Photos above: Professor Anup Ghosh and Professor VP Sharma at the 2-day national symposium on “Innovations in Polymers Towards Sustainability and Growth” at Bhaskaracharya College of Applied Sciences, University of Delhi.

The 1st session was chaired by Prof. S.M.S. Chauhan, Head, Department of Chemistry, University of Delhi and the main attraction was the lecture of Dr. Khandal on ‘Innovation, Sustainability and Growth’ and the other lecture by Prof. Bakhshi on ‘Conducting Polymers’. The 2nd session was chaired by Prof. A. K. Ghosh, from IIT, Delhi and the lectures were delivered by Prof. N. B. Singh from Sardar University and Dr. P. Thavamani from IRMRA, Mumbai.

The second day also had two sessions. The 1st session was chaired by Dr. V. B. Lall, SCJ Polymers and there were two lectures on PU chemistry by Dr. Ruchin Shrivastava from Bayer Material Science Pvt. Ltd. and by Dr. Joseman Jacob from IIT Delhi. The 2nd session was chaired by Prof. G. L. Verma, Head, Department of Applied Chemistry and Polymer Technology, Delhi Technological University. The attractions of this session were the lectures of Dr. Kinkar Mukherjee from Reliance Industries and Dr. B. D. Malhotra from Delhi Technological University. There was a big response from various plastic Industries.

(3) Kolkata Chapter of the Academy has organized following activities –

1. Executive Committee meeting of NASI, Kolkata Chapter:

The members of the Executive Committee met several times and discussed various activities to be undertaken by the NASI Kolkata Chapter during the financial year 2011 – 12. However, the following activities were performed by the NASI, Kolkata Chapter –

2. Paper meetings / Popular Talks: The following paper meetings were organized.

Sl. No.	Speaker	Topic	Date & Time	Venue
1.	Dr. Amit Ghosh, Former Director, IMTEC, Chandigarh, & Emeritus Scientist, NICED, Kolkata.	Creativity and out of Box thinking	23rd June 2011 at 3.30 p.m.	Bose Institute Centenary Building Kakurgachi, Kolkata
2.	Dr. Mrs. Nahid Ali, Scientist 'G' IICB Kolkata	Cationic liposome based combinatorial therapy against experimental visceral leishmaniasis.	14th Sept. 2011 at 3.30 PM	Bose Institute Centenary Building Kakurgachi, Kolkata

3. Best Science Teacher Award 2011:

Like previous years, NASI Kolkata Chapter invited nominations from different schools (up to Higher Secondary level) of Kolkata & howrah for the best Science Teachers Award - 2011. Among 17 nominations received for Best Science Teacher's Award - 2011 by the Kolkata Chapter from different schools of Kolkata & Howrah the following seven teachers were recommended by the screening committee for final round of test for the selection of Best Science Teacher Award – 2011 sponsored by the NASI Kolkata Chapter.

Sl. No.	Name of School / College	Name & Ed. Qualification of Teacher	Teaching Experience
1.	Kendriya Vidyalaya Fort Williams	Mrs. Madhu Chopra, B.Sc., B.Ed.	30 years
2.	Modern High School for Girls	Mrs. Sarmistha Das, B.Sc., M.Sc., B.Ed.	17 years
3.	Lakshmi Pat Singhania Academy	Dr. Munmun Nath, PGT, M.Sc., B.Ed., Ph.D.	13 years
4.	Loreto Day School Sealdah	Ms. S. M. Cyril, B.Sc., M.Sc., Ph.D.	50 years
5.	Ashok Hall Girls H.S. School.	Mrs. Ajanta Ghosh, B.Sc., M.Sc., Ph.D.	31 years
6.	Kendriya Vidyalaya Ballygunge.	Mr. Ashok Kumar Gupta, M.Sc., B.Ed., M.Ed.	24 years
7.	Hariyana Vidya Mandir.	Mrs. Soma Nandi, B.Sc., M.Sc., B.Ed.,	17 years

In the final round of test the teachers were requested to make a Power Point presentation at a seminar held on 24.09.2011 at the Department of Biotechnology,

University of Calcutta, 35, Ballygunge Circular Road, Kolkata - 700019 on the topic – Importance of Water in human civilization. They were given 15 minutes time each for this presentation. The following dignitaries along with the Executive Committee members of NASI Kolkata Chapter were invited during the presentation as members of Panel of Judges in selecting the Best Science Teachers – 2011.

The following scientists acted as Judge in the selection of Best Science Teacher 2011.

1. Dr. H. K. Majumder - President, NASI, Kolkata Chapter
2. Dr. B.P. Chatterjee - Secretary, NASI, Kolkata Chapter
3. Dr. D.J. Chattopadhyay - Adviser, NASI, Kolkata Chapter
4. Dr. P. Sen - Adviser, NASI, Kolkata Chapter
5. Dr. R.C. Srivastava - Adviser, NASI, Kolkata Chapter
6. Dr. Maitrayee Dasgupta, Kolkata University, Kolkata,
7. Prof. K. Panda, Head, Dept. of Biotechnology, Calcutta University, Kolkata,
8. Prof. A. N. Lahiri Majumder, Bose Institute, Kolkata.

On the recommendation of Judges and approval from the NASI Head Office at Allahabad –

The following three teachers were selected for the Best Science Teacher Award 2011.

1. Mrs. Sarmistha Das, B.Sc., M.Sc., B.Ed., Modern High School for Girls, Kolkata
2. Dr. Munmun Nath, M.Sc., B.Ed., Ph.D., Lakshmipat Singhaia Academy, Kolkata
3. Mrs. Soma Nandi, B.Sc., M.Sc., B.Ed., Hariyana Vidya Mandir, Kolkata

4. Seminar / Workshop:

4.1. One-day seminar on **Science is the Fulcrum of Society** was organized by NASI Kolkata Chapter at Sarat Sadan, Howrah on 16th November 2011. Science students from several Secondary and Higher Secondary Schools along with their teachers were invited for the program.

Prof. Asis Datta, Founder Director of National Institute of Plant Genome Research, New Delhi and Prof Samir Bhattacharya, Senior Scientist at School of Life Science at the Centre of Advanced Study in Zoology, Vishwa Bharati University, Shanti Niketan were invited for the interactive session with the School children and also for honoring the teachers selected for the Best Science Teacher Award 2011 of NASI Kolkata Chapter.

The program started with the Welcome address by Prof. Parimal C. Sen, and Key Note Address by Dr. H. K. Majumder, President NASI, Kolkata Chapter. Prof. B. P. Chatterjee introduced the two invited speakers. The Chief Guest Prof. Asis Datta and the invited speaker Prof. Samir Bhattacharya spoke on the following topics followed by the interactive session. Prof. P. C. Sen coordinated the interactive session.

Sl. No.	Speaker	Topic
1.	Prof. Asis Datta	Dream to Bring Science to Society
2.	Prof. Samir Bhattacharya	How Can We Enjoy Science?

The Chief Guest, Prof. Asis Datta a Padma Shree and Padma Bhushan awardee & Founder Director of National Institute of Plant Genome Research, New Delhi, while delivering his talk told that thick volumes of theories and calculations will not hold the learner's interest unless it is made interesting. He spoke to about 170 odd students,

teachers and scientists gathered at Sarat Sadan Hall, how to use science for the betterment of society. Science today should aim to meet tomorrow's challenges. Most of the social problems can only be solved through Science and Education. He also spoke about his research work on transgenic crop plants including genetically modified (GM) potatoes, that is waiting to come to market shortly. Prof. Datta also gave away the prize to the Best Science Teachers – 2011 selected by the NASI Kolkata Chapter.

Prof. Samir Bhattacharya's session was more interactive. Prof. Bhattacharya a Senior Scientist at School of Life Science at the Centre of Advanced Study in Zoology, Vishwa Bharati University, Shanti Niketan told students that the American Cancer Society has predicted that by the year 2025 every one of us will suffer from Cancer. He also told that scientists have found out certain plants available at Himalayas have shown possibility to provide cure from the disease. Prof. Bhattacharya pointed that Science is an observation, many scientists in the world have made discoveries based on simple observations around them.

The interactive session was followed by the Award giving ceremony and the program ended with vote of thanks by Prof. B. P. Chatterjee.

4.2 Award giving ceremony for Best Science Teachers 2011 (NASI – Kolkata Chapter):

After the interactive session was over, the Best Science Teachers Award giving ceremony started. The following Three Teachers selected by the NASI Kolkata Chapter for the Best Science Teachers Award - 2011 were given the Award – i) Cash award of Rs. 10,000/- each, ii) a Citation and iii) a Certificate.

1. Mrs. Sarmistha Das,
2. Dr. Munmun Nath, &
3. Mrs. Soma Nandi.



Prof. Asis Datta addressing the school children during the seminar.



Dr Munmun Nath receiving the Best Science Teacher Award from Prof. Asis Datta.



Mrs. Soma Nandi receiving the Best Science Teacher Award from Prof. Asis Datta.

5. One day Workshop by Biotech Forum:

The Biotech Forum in association with the NASI Kolkata Chapter organized the 5th one day Workshop at the Kolkata University on Biotechnology for undergraduate students on 26th Nov 2011.

The 5th One Day Workshop on Biotechnology for Undergraduate Students of Physics, Chemistry and Mathematics is a unique event of its kind as it brings together under graduate students from the disciplines of physics, chemistry and mathematics and make them aware of the Biotechnological advancements and the role that these basic sciences are playing in the overall development of Biotechnology and modern biology. This workshop aims towards bridging the gap between the different disciplines sciences and encourage young students into pursuing inter-disciplinary research, which is the need of the present.

The workshop comprises primarily of two sessions. A short popular talk session in which we invite distinguished scientists to deliver talk and interact with students. This year's popular science lectures were delivered by Prof. Gauri Sankar Ghosh from

University of California and Prof. Nitai P. Bhattacharyya, Saha Institute of Nuclear Physics (SINP), Kolkata. The second session deals with hands on training regarding various techniques utilized in Biotechnological research, dealing in diverse fields like DNA and protein biochemistry, cell and molecular biology and biophysical chemistry.

Total 25 participants are attended this year's workshop. Among the colleges that participated in this year's even were Presidency University (Chemistry Dept.), RKM Narendrapur (Chemistry Dept.), Surendranath College (Chemistry Dept.) and Asutosh College (Physics Dept.).



Prof. D.J. Chattopadhyay, Pro-Vice Chancellor Kolkata University handing over certificate to a participant.



Prof. D. J. Chattopadhyay and Prof. K. Panda along with participants of the Workshop.

6. World Water Day 2012

NASI Kolkata Chapter observed World Water Day on 22nd March 2012 : The National Academy of Sciences, India Kolkata Chapter organized one-day seminar in collaboration with the Bengal National Chamber of Commerce & Industry on the occasion of WWD 2012 under the Chairmanship of Dr. G.K. Pandey, Director, All India Institute of Hygiene & Public Health, Kolkata. A Scientific Session was also organized on the theme of this years World Water Day "Water Security and Food Safety" on 22nd March 2012 at BNCCI House, 23, Sir R. N. Mukherjee Road, Kolkata - 700001. Prof K. J. Nath, a Fellow of NASI and Chairman, Arsenic Task Force, Govt. of West Bengal graced the occasion as Chief Guest and Dr. H. K. Majumder, President NASI Kolkata Chapter, Mr. Sandip Chatterjee, Engineer-in-Chief, PHED, Govt. of West Bengal and Dr. Kalyan Rudra, Adviser, Department of Environment, Govt. of West Bengal were invited as Guests of Honour.

Inaugural Session:

The Inaugural program started with the welcome address by Sri Tejomoy Roychowdhury, President BNCCI who highlighted the importance of the World Water Day being organized globally on 22nd March every year.

Prof. K. J. Nath, Chairman, Arsenic Task Force, Govt. of West Bengal, & Vice Chancellor, Sulabh International Academy of Environmental Sanitation in his address as Chief Guest emphasized more on sustainable projects based on surface water supply sources to tackle the growing problems of chemical and microbial pollutants. He also stressed on tapping the traditional water supply sources that require simple and less expensive treatment practices and the rain water harvesting.

Dr. G. K. Pandey gave the key note address and told that ever increasing population, rapid industrialization and bad management in handling public distribution system are key issues leading to denial of basic minimum necessity to a larger population and responsible for both food and water crisis which in turn enhances the possibility of malnutrition in this country.

Dr H. K. Majumder in his address told that NASI Kolkata Chapter has been regularly organizing and promoting this type of workshop to make the people aware about various environmental issues. He also appreciated the BNCCI for jointly organizing the workshop. The session was also addressed by Dr. Kalyan Rudra and Mr. Sandip Chatterjee.

The Inaugural Session was followed by Scientific Session in which five (5) speakers, experts from various sectors presented their technical papers related to the theme of World Water Day – 2012.

The Scientific Session was chaired by Prof. Dr. G. K. Pandey, Director, All India Institute of Hygiene & Public health, Kolkata.

Scientific Session – 3.00 pm to 5.30 pm**Speakers****Academician:**

1. Prof. P.C. Sen, Sr. Prof. & Head, Division of Molecular Medicine, Bose Institute, Kolkata.
2. Prof. R. C. Srivastava, Prof. & Head, Department of Environmental Sanitation & Sanitary Engineering, All India Institute of Hygiene & Public Health, Kolkata.
3. Prof. S. C. Santra, Prof. & Head, Dept. of Environmental Science, Kalyani University.

Government:

4. Sri Anjan Kumar Chatterjee, Secretary, Irrigation & waterways, Govt. of West Bengal.

Industry:

5. Dr. Asim Bhattacharya, Technical Head, Waste Water Management, Waterlife.

Approximately 120 persons attended the program. President and Secretary of BNCCI, Kolkata presented the NASI mementos to all the speakers. In the end Sri Somnath Chakraborty, Assistant Secretary, BNCCI offered vote of thanks to all the speakers and participants of the seminar.

7. Prof. U. S. Srivastava Memorial Lecture Award 2011:

Prof. U. S. Srivastava Memorial Lecture Award 2011 was conferred on Dr. K. Venkataraman, Director, ZSI by the NASI (HQ) Allahabad. The Kolkata Chapter organised the Lecture on 23.02.2012 at the IICB, Kolkata. On the occasion Dr. K.

Venkataraman, Director, ZSI delivered a talk on the topic “How much is known about Marine Ecosystem in India”.

The program started with welcome address and introductory remarks by Dr. H. K. Majumder, President, NASI Kolkata Chapter. He welcome the speaker Dr. K. Venkataraman, Director, ZSI, Kolkata and introduced him to the audience. The program was attended by the NASI Fellows and members of NASI, Kolkata Chapter, scientists, research scholars and officers from IICB and other renowned institutions of Kolkata. In the end Director, IICB handed over the award cheque, a citation and certificate received from NASI (HQ) to Dr. K. Venkataraman.



Dr H. K. Majumder, President, NASI Kolkata Chapter introducing Dr. K. Venkataraman



Director IICB, Kolkata handing over the award cheque & Medal to Dr. K. Venkataraman.

(4) Lucknow Chapter of the Academy has organized following activities -

Plasmonic Nanoparticles for Nanomedicine - Prof Wolfgang Fritzsche, Institute for Photonic Technology (IPHT) Jena, Germany delivered a lecture entitled “Plasmonic nanoparticles for nanomedicine” at the Indian Institute of Toxicology Research, Lucknow on April 8, 2011. He said that on interaction of noble metal nanoparticles with light, a resonant oscillation of the conduction electrons in these particles leads to the effect of localized surface plasmon resonance (LSPR), which can be used for sensorics as well as manipulation at the nanoscale. The sensoric ability is based on

the dependence of the LSPR on the immediate environment of the particle. In case of changes, e.g. due to pH-changes or molecular binding, a change in the resonance (peak shift) can be detected using spectroscopic readout. This can be demonstrated on a single particle level for DNA detection. On the other hand, light can induce a temperature increase up to destruction of the particle. This effect can be utilized for the release of DNA or RNA inside cells, or the selective destruction of cells or cell organelles upon specific binding, as demonstrated for metaphase chromosomes after in-situ-hybridization of labeled DNA probes. He concluded that plasmonic nanoparticles represent a material with promising properties for a wide range of applications including highly localized diagnostics as well as controlled nanoscale therapy that are foundations of nanomedicine. Dr. K.C. Gupta, Director, CSIR-IITR and Advisor, NASI, Lucknow Chapter honoured the speaker and Dr. Rishi Shanker, Area Coordinator, Environmental Toxicology Group, CSIR-IITR proposed the vote of thanks.



Prof. Wolfgang Fritzsche, Germany giving a lecture on Plasmonic nanoparticles for nanomedicine at CSIR-IITR, Lucknow

(5) Mumbai Chapter of the Academy has organized following activities -

Prof. R. C. Gupta Endowment History of Science Award Lecture (2010) was organized. Prof. Ramasubramanian, Cell for Indian Science & Technology in Sanskrit, Indian Institute of Technology Bombay was awarded Prof. R. C. Gupta Endowment History of Science Award Lecture (2010) for his significant contributions in the area of History of Science. Prof. Ramasubramanian delivered the award lecture on “*The origin and growth of Mathematics in India*” at IIT Bombay on 21st October, 2010.



The Mumbai Chapter arranged a lecture by Prof. J. Dasgupta, Department of Chemical Sciences at TIFR, Mumbai on 29th April, 2010 on the topic “*Femtosecond*”

Stimulated Raman Spectroscopy: Deciphering the code of Chemical Reactivity”.

The Mumbai Chapter organized a workshop with the title of “**Biophysics Paschim: Mumbai Pune Biophysics Club**” on 10th July, 2011 at Tata Institute of Fundamental Research (TIFR). The workshop was attended by a large number of participants and was followed by an interesting discussion session.

Prof. Meghnad Saha Memorial Lecture Award (2011) was organized. Dr. S. K. Sikka, Homi Bhabha Chair Professor, Bhabha Atomic Research Centre, Mumbai was awarded Prof. Meghnad Saha Memorial Lecture Award (2011) for his significant contributions. Prof. Sikka delivered the award lecture on the topic, “***Some Directed High Pressure Physics Research in BARC***” at the VMCC Hall of Indian Institute of Technology Bombay on 23rd February, 2012. The lecture was attended by a large number of participants and was followed by an interesting discussion session.



A new team has taken over the responsibility of the Mumbai chapter: Prof. Jayesh Bellare, Department of Chemical Engineering, IIT Bombay (nominated by NASI Headquarters as Chairman); Dr. K. V. R. Chary, TIFR as Secretary; and the following as committee members: Dr. Surinder M. Sharma, BARC; Prof. Dulal Panda, Department BioScience & Bio-Engineering, IIT Bombay; Prof. Sudhir Ghorpade, Department of Mathematics, IIT Bombay as Committee Members.

(6) NE Region Local Chapter of the Academy has organized following activities -

- H. **Annual Science Exhibition, sponsored by NASI, NER Local Chapter :**
The Annual Science Exhibition cum Popular Lecture was organised this year (2011) on the 11th and 12 of August 2011. The two-day event held at Shillong Jail Road Boys' Higher Secondary School saw participation from different schools of the city.



On the first day of the Science Exhibition, as is customary, after a brief inaugural ceremony in which the Principal of the school Mr G Das Purkayastha welcomed the invited schools, their teachers the invited Resource Person and other guests, the day's proceedings began with the popular talk by Prof Mrs Veena Tandon, Dept. of Zoology, North Eastern Hill University, Shillong, on the topic of parasites in our daily life titled “ ‘This Wormy World’: Diversity of Food-Borne Parasitic Zoonoses in Northeast India”.



Audience at the Popular Talk at Jail Road Boys HS School, Shillong

The extremely informative talk not only highlighted the risk factors that different foods pose when consumed without proper cooking, but also in many cases taught the audience how to choose un-infested food simply by the look of it! The talk replete with detailed figures and photographs caught the attention of all. The school feels privileged to have the presence of Prof Mrs Veena Tandon to give a popular talk.

As a mark of the school's profound feeling of gratitude, the Vice-Principal presented a shawl to Prof Mrs Veena Tandon, on behalf of the institution.

Other than the host school – Shillong Jail Road Boys' Hr Sec School, two other schools were also invited for the Popular Lecture. The schools were RB Anoopchand Hindi High School and Govt. Girls' Hr Sec School.

Prof Mrs Veena Tandon, in the presence of DR SR Joshi, Dept of Bio-Technology, North Eastern Hill University, who was the school's invited guest on that day then inaugurated the Science Exhibition in the Physics Laboratory of the school, where students of the school ranging from class VI to XII put up models or charts highlighting different scientific principles. Each class was looked after by a particular Science Teacher, thus making the entire exhibition a collaborative effort of the institution.

In the Afternoon Session on the 11th, students of classes IX to XII participated in a Science Seminar – an event organised for the first time in the school among the students. The results, the enthusiasm of the students and the quality of presentations were very encouraging, giving enough reason to making it a permanent feature. The students were assigned different science topics varying from “Stem Cells” to “A Journey to the Sun”, and “Chandrayaan” to “Semiconductors”, which the students handled with élan. Being the first time that such an event was being held, it was a demonstration and no prizes were announced.



Packed snacks were distributed to every audience – invited students, school students, escort teachers, school teachers and volunteers.

The second day i.e. the 12th of August saw the introduction of yet another first time event as part of the Annual Science Exhibition – the “Inter-School Science Quiz Competition”.



In the morning session the Junior Level Inter-School Science Quiz was held in which the participating schools were Pine Mount School, Lady Keane Girls' Hr Sec School, RB Anoopchand Hindi High School and the host school Shillong Jail Road Boys' Hr Sec School. The Quiz Master for the session was Mrs Sharmila Bhattacharjee, Asst Teacher. Pine Mount School emerged winners with Lady Keane School as runners-up.



Junior Quiz- Participating Teams

In the afternoon session, the Senior Level Inter-School Science Quiz was held. The quiz competition was very special and the first of its kind in the city (and maybe even the region) as two rounds of experiment based questions were included, where the Quiz Master performed live experiments and questions based on the experiments performed were asked. The participating institutions were Pine Mount School, RB Anoopchand Hindi High School, Lady Keane Girls' Hr Sec School and the host school. The Quiz Master for the session was Mr Rahul S Chatterjee, Asst Lecturer. Pine Mount School emerged winners with the host school as runners-up.



Senior Quiz-Quiz Master (Mr Rahul Chatterjee) in Action

All the participating schools were also requested to bring another twenty five students to cheer their school team. During the break between the morning session and the afternoon session, packed lunch was provided to all the audience, volunteers, escort teachers and school teachers.



Senior Quiz- Participating Teams

It must be mentioned here that the entire arrangement for hospitality, snacks and lunch during the two days was organised by the non-science teachers – making it an event of total involvement of the teachers.

In fine, the year's Annual Science Exhibition was a very successful one providing encouragement for more innovation and fuelling the desire to reach out to greater heights and more uncharted territory.

II. One-day Science Awareness Programme for School Children : As part of NASI NER Local Chapter's efforts to bring science closer to the students, a one-day Science Awareness Programme for School Children was organised at Ramakrishna Mission Higher Secondary School, Cherrapunjee, with the active support of the Secretary Ramakrishna Mission and the Principal on the 18th of June 2011. About five hundred students drawn from different institutions from around the area attended the programme.



A view of dignitaries during the Inaugural session at RK Mission, Cherrapunjee

During the session, three resource persons from diverse backgrounds presented popular talks after Prof VP Sharma and Prof Veena Tandon presented the background and relevance of the programme .



A view of the audience at RK Mission, Cherrapunjee

Dr SK Barik, Dept of Botany, North Eastern Hill University spoke at length on the rich source of medicinal plants that Meghalaya in general and Cherrapunjee in particular boasts of. Prof Barik also highlighted the areas of medicinal science which derive benefit from these indigenous plants.

Dr Gaurangi Maitra spoke very passionately on the ethics of science and started the day's session on a note that left everyone thinking. While the understanding of biology can lead to the discovery of cures to ailments afflicting mankind, it can also be used to make biological bombs in war situations! Same is the case with nuclear energy in physics. Dr Maitra brought up the fine distinction between science for the sake of science and science with a pre-determined purpose.

Mr Rahul Chatterjee spoke for a short while on the then recent lunar eclipse – the longest of the century and explained the physics and geometry behind such occurrences.



Mr Rahul Chatterjee delivering his talk

The occasion was made special as the “Best Science Teacher Award” was also handed over on the occasion to Mr Subrata Ghosh of Nongtalang Govt Secondary School, Meghalaya.

The Science Awareness programme was graced by Dr VP Sharma, Meghnad Saha Distinguished Fellow of NASI from New Delhi who handed over the Best Science Teacher award to Mr Subrata Ghosh.

Among others who were present are Prof P Tandon, Former VC of NEHU, Prof R. Sharma, Dept of Biochemistry, NEHU , Prof BBB Gupta, Dr A Yadav and Dr BK Roy of Dept of Zoology, NEHU and Prof NK Churungoo, Dept of Botany, NEHU, Shillong.



Resource Persons at RK Mission, Cherrapunjee, Meghalaya with the Science Teacher Awardee, 2010 Mr Subrata Ghosh

Later, an open interactive session was held when students clarified their doubts.

During the Annual Session 2011 of NASI held at Kerala University, Kariavottam Campus, Trivandrum, a Children's Science Meet was organised. During the meet member from NER Local Chapter Mr Rahul S Chatterjee was invited to give a talk. The title of his talk was "The Sun: Our Star in the Neighbourhood", wherein Mr Chatterjee gave a lively presentation on the sun and how it affects life on earth, which included discussions on coronal mass ejections, solar prominences, sun spots, the sun's magnetic field, its differential rotation etc.

The other speakers were Prof P Tandon, Prof SK Barik, and Prof NK Churungoo, all from the Department of Botany, NEHU, Shillong

(7) Uttarakhand Chapter of the Academy has organized following activities during April 2011 to march 2012 –

The chapter observed change in office bearer with Dr. Rajendra Dobhal, Director General Uttarakhand State Council for Science & Technology, Dehradun taking over the charge of Secretary, UK chapter from Dr. G.S. Rawat, Scientist-G, Wildlife Institute of India, Dehradun on 9 Aug 2011. The Chapter of the Academy is affiliated to the UCOST for execution of various activities. Following is the summary of various activities undertaken by the Chapter during April 2011 to March 2012.



NASI Best Science Teachers Award-2011

Like previous years, nominations for the Academy's Best Science Teacher award were invited from prospective candidates serving in the state of Uttarakhand. The award was advertised in the Hindi Dailies which have wider circulation in the state i.e., Amar Ujala, DainikJagaran and Hindustan in the month of August 2011. In addition, circulars were sent to the Director, Secondary Education, Government of Uttarakhand and District Inspector of Secondary Education. Last date for the receipt of application was September 15th 2011. Based on a critical review of all the nominations received (20), Mr. Alakh Narayan Dubey was selected for NASI Best Science Teacher for the state of Uttarakhand during 2011.

Illustration: Mr. A.K. Dubey is currently teaching Science at Govt. Higher Secondary School, Aagar, Tehri Garhwal since 2001. Earlier to joining this school, he was teaching at Govt. higher secondary school Beddhar, TehriGrawal for more than five years. With 15 years of experience in education, he has achieved great laurels during this period. He has inspired students of the school towards developing scientific temper and motivated them to participate in scientific activities and competitions. He has also initiated various programmes like science seminars, exhibitions, fairs, drama in the school premises. During the first state level INPIRE award exhibition, among the three candidates selected, two students were from his school and working under his guidance. He has also been appointed as District Science Coordinator by District Education Officer for Tehri Garhwal. He is also involved with Galileo Science Club, coordinating activities on Science day, earth day, Ozone day by sensitizing the masses of the district about their importance in our lives. In 2004, Vigyan Prasar established seven centers in the district for the astronomical extravaganza of Venus, where Mr.Dubey actively participated. ShriDubey was given a cash award of Rs. 10,000/- and a certificate on the occasion of inaugural session of VIth Uttarakhand Science and Technology Congress on 21th November 2011 by Dr. A.N. Purohit, a noted scholar and Fellow of NASI.



NASI Popular Lecture during VIth Science & Technology Congress, 2011:

The Chapter organized a special lecture during the State Science & Technology Congress (November 14 -16, 2011), held at Kumaon University, S.S.J. campus, Almora. The lecture, entitled "Genetic diversity in Indian populations and its health implications" was delivered by Dr. Lalji Singh, Vice Chancellor, Banaras Hindu University, Varanasi & Bhatnagar Fellow (CSIR) and Former Director, Centre for Cellular and



Molecular Biology, Hyderabad, India. He gave an in-depth analytical overview of the Indian human biodiversity pool which is one of the largest in the world. He proclaimed that there is a strong evidence for two ancient and genetically divergent populations

that are ancestral to most Indian groups today. The “Ancestral North Indians” (ANI), are genetically close to Middle Easterners, Central Asians, and Europeans, while the “Ancestral South Indians” (ASI), are not close to any group outside the subcontinent. By introducing methods that can estimate ancestry without accurate ancestral populations it was shown that ANI ancestry ranges from 39-71%, and is higher in traditionally upper caste groups and Indo-European speakers. Groups with only ASI ancestry may no longer exist in mainland India. Many groups in modern India descend from a small number of founding individuals, and have since been genetically isolated from other groups for thousands of years. It has medical implications for Indian populations. Recessive hereditary diseases are likely to be common in populations descended from so few ‘founder’ individuals. This helps to explain why the incidence of genetic diseases among Indians is different from the rest of the world. For example, an ancient deletion of 25 bp in the cardiac myosin-binding proteins-C gene (MYBPC3) is associated with heritable cardiomyopathies as well as with an increased risk of heart failure. Its prevalence is high (~4%) in the general populations from the Indian subcontinent. However, this mutation is completely absent among the people from the rest of the world.

NASI-USERC-UCOST-Five brainstorming sessions at VIth State Science Congress:

1. Session title: Hill Agriculture: Tryst with Challenges and Beyond

Venue: Vivekanand Parvatiya Krishi Anusandhan Sansthan (VPKAS), Almora,

Prominent personalities: Dr. Mangla Rai (Chairman), Agriculture Advisor to the Chief Minister, Govt. of Bihar and Former Secretary, DARE & DG, ICAR, New Delhi, Dr. J.C. Bhatt (Session Convener), Director, VPKAS (ICAR), Almora, Dr. Lakshmi Kant (Session Coordinator), Scientist, VPKAS, Dr. H.S. Gupta, Director, IARI, New Delhi, Dr. B.S. Bisht, Vice Chancellor, G.B. Pant University of Agriculture & Technology, Pantnagar.



2. Session title: Emerging Issues in Forestry Research in the Himalayan Mountains

Venue: G.B. Pant Institute of Himalayan Environment and Development (GBPIHED), Kosi-Katarmal, Almora

Prominent personalities: Dr. L.M.S. Palni, (Session Coordinator) Director, GBPIHED, Dr. G.C. S. Negi, (Session Convener) Scientist, GBPIHED, Prof. S.P. Singh Ex. Vice Chancellor, Garhwal University, Srinagar Advisor, State Planning Commission, Govt. of Uttarakhand, Dr. G.B. Pant Ex- Director, Indian Institute of Tropical Meteorology, Pune, Dean, Doon Open University, Dehradun, Dr. O.P.S. Bana, Professor, G.B. Pant University of Agriculture & Technology Pantnagar, Uttarakhand graced the session.



3. Session title: Science and Society

Venue: Uttarakhand Seva Nidhi Paryavaran Shiksha Sansthan (USNPSS), Almora

Prominent personalities: Dr. Lalit Pande, (Session Convener), Director, USNPSS, Almora, Dr. H.C. Pande, (Session Chairman), Vice Chancellor Emeritus, BIT, Ranchi, Sh. Ranjan Joshi, (Session Rapporteurs), USNPSS, Almora, Smt. Sangeeta Pawar, (Session Rapporteurs), Kumaun University, Nainital, Dr. Trilochan Sastry, Professor and Dean (Academic), Indian Institute of Management, Bangalore were some of the personalities who contributed.



4. Session title: Measures to be taken for the Development of Mathematical Sciences in Uttarakhand

Venue: Department of Mathematics, SSJ Campus, Kumaun University, Almora

Prominent personalities: Prof. S. Kumaresan (Session Chairman) HOD, Department of Mathematics & Statistics, University of Hyderabad, Hyderabad, Prof. H. S. Dhama (Session Coordinator) Head, Department of Mathematics, Kumaun University, SSJ Campus Almora, Prof. C.S. Aravinda, Tata Institute of Fundamental Research Center, Centre for Applicable Mathematics, Bangalore, Prof. Jugal Verma, Department of Mathematics, Indian Institute of Technology Bombay, Mumbai., Prof. Mohan C. Joshi, Department of Mathematics, IIT Bombay, Mumbai participated in the discussion.



5. Session title: Development of Uttarakhand State Spatial Data Infrastructure (SDI) for Decentralized Governance

Venue: Department of Forestry, SSJ Campus, Kumaun University, Almora

Prominent personalities: Some of the personalities who participated were Prof. V. P. S. Arora (Session Chairman), Vice Chancellor, Kumaun University, Nainital, Prof. J.S. Rawat (Session Coordinator), SSJ Campus Almora, Kumaun University, Shri. P. S. Acharya, Director, Department of Science and Technology, Government of India, New Delhi, Sri Rajeev Chandra, Former Secretary Science & Technology, Government of Uttarakhand. Prof. D. N. Pant Retd. Professor Indian Institute of Remote Sensing, Dehradun

National Science Day Celebration 2012

On the occasion of the national science day, a function was held at the ONGC, Dehradun where 400 students participated. Prof A.N. Purohit, Former VC HNB Garhwal University, Dr. Rajendra Dobhal, Director General, UCOST and Dr. M.O. Garg, Director, CSIR-IIP, Dehradun graced the occasion. Dr. Garg gave a popular lecture on 'Fuel evaporation in retail sector' while Prof A.N. Purohit briefed the audience about the impacts of Climate change and how its harmful repercussions

were being felt across the globe. He exhorted the young students to follow the path shown by Nobel laureate Late CV Raman.

(8) Varanasi Chapter of the Academy has organized following activities –

The following activities were organized by the Varanasi chapter of NASI:

- (1) **Brain Awareness Week (BAW)** was held on 5th April 2011 at Senate Hall, Swatantrata Bhawan, Banaras Hindu University, Varanasi. This program was sponsored by National Academy of Sciences (India) Varanasi chapter and National Brain Research Centre (Haryana) and organized by Prof MK Thakur. More than 150 students from different schools of Varanasi and its surrounding participated in this program. A number of booklets and study materials were distributed among the participants to make them understand the brain, its functions and how to keep brain healthy and sharp. In the pre-lunch session of this program, three popular lectures by eminent neuroscientists were delivered on different aspects of brain. Prof. Thakur delivered a talk on “Understanding of brain, an organ of destiny”. The role of brain in learning and memory was explained nicely by Prof SB Deshpande (Institute of Medical Sciences, BHU). Dr C Tulsi, Director, DEVA International Society for Child Care, Varanasi, talked about tips to overcome performance anxiety and improve confidence. After the lectures, a panel discussion was organized for students to ask questions and queries and clarify their doubts from the speakers. There was also a poster display for making students aware about the brain and its functions. In post-lunch session, an “Oral Presentation contest” was organized and graduate students made power point presentation on the theme “brain and behavior: from mind to molecules”. A large number of students submitted the abstract of their presentation, but only 15 students were selected for presentation on the basis of merit. At the end of the program, a DVD was displayed to make the audience aware about the progress in brain research. For the oral presentation, the first prize was given to Ms Smriti Gupta, second prize to Ms Priyanjali Banerjee and third prize to Ms Aparna Ghildiyal. For the panel discussion, first prize was given to Mr. Abhisek Gupta, second prize to Mr. Gorakhnath Yadav and third prize to Ms Akriti. In summary, the BAW program was very successful and appreciated by everyone.



- (2) **NASI Workshop on “Writing Research Papers”** was held from June 10-11, 2011 at Banaras Hindu University, Varanasi. A major goal of the workshop was to train young research scholars and faculty members for developing and improving effective technical skills for writing scientific research papers. Young researchers (85) with at least 2 years of research experience were selected for the workshop. They were from different streams of Basic, Agricultural, Biological and Medical

Sciences. Outside participants were from different institutions of UP, MP, AP, WB, Rajasthan and Delhi. The details are given in the activities head.

- (3) On 26th Nov 2011, a workshop on “Life in view of Science” was organized at the Government Girls Post Graduate College, Rewa, Madhya Pradesh. It was attended by over 500 students and 50 teachers from the college. It was formally inaugurated by Dr. RN Tewari, Assistant Director, Higher Education, and presided over by Dr. Vinod Shrivastav, Principal, Sanskrit College, Rewa. Convener of the program, Dr. Nivedita Agrawal, highlighted the objectives of the workshop. The inaugural session was followed by lectures by Prof. DS Pandey (Department of Chemistry), Prof. SK Trigun (Department of Zoology) and Prof. MM Tripathi (Department of Mathematics, BHU). Prof. Pandey spoke on “Symmetry in our Life” and correlated beauty, stability and activity with symmetry and stressed on how symmetry plays a vital role in our daily life. Prof. Trigun talked on ‘Molecular Logic of Life, Death & Indian Culture’ and stressed on molecular basis of life and correlated with the Indian culture. Prof. Tripathi spoke on “What is infinity” and highlighted the role of infinity in our life. At the end, participants interacted with the speakers.
- (4) During April 2011- March 2012, three guest lectures were organized by NASI Varanasi chapter. On 29th Nov 2011, Dr. Pravir Kumar, Assistant Director, Centre for Medical Engineering, Associate Professor of Biotechnology, VIT University, Vellore, delivered a lecture on “Stress Proteins and Ubiquitin Proteasome System (UPS) in Neurodegenerative Disorders” at the Dept of Zoology, BHU. Another lecture on “Biochemical Links of Neurodevelopmental and Neurodegenerative disorders: APP, FMRP and mGluR5 are molecular links” was delivered on Dec 22, 2011 by Prof DK Lahiri, Department of Psychiatry and of Medical & Molecular Genetics, Indiana University School of Medicine, Institute of Psychiatric Research, USA. On 12th March 2012, Prof K. Subba Rao, INSA Hon. Scientist, Center for Biotechnology, Institute of Science & Technology, Jawaharlal Nehru Technological University, Hyderabad, delivered a lecture on “Beneficial effects of Amlaki Rasayana Therapy in attenuating the age dependent changes in DNA damage and DNA repair”.
- (5) On 24th Jan 2012, National Girl Child day was observed and a brain storming meeting on “Girl child development: bottlenecks and possibilities” was convened by Prof YB Tripathi at the Dept of Medicinal Chemistry, Institute of Medical Sciences, BHU. About 200 students participated in this program and discussion was focused on the development and education of girl students. On this occasion, painting and slogan writing competition was also organized.
- (6) On 28th Feb 2012, National Science Day was organized at the Dept of Zoology, BHU. The program was attended by a large number of students and faculty members. On this occasion, oral presentation contest was organized for graduate students on the theme entitled “My Dream Project for Pursuit in Science”. Eleven contestants from different backgrounds of Science and Technology made power point presentation and expressed their views elegantly. Every participant received a certificate and the best presentation was awarded prizes. The first prize was given to Ms Ekta Singh and the second prize to Ms Adayasha Nayak. Prof MK Thakur (Convener, National Academy of Sciences, India, Varanasi chapter) introduced the program, Prof CM Chaturvedi (Head, Dept of Zoology, BHU) welcomed, Prof BM Shukla (Former VC, Gorakhpur University) was the chief guest and Prof BK Ratha (Dean, Faculty of Science, BHU) presided over

the function. Prof SK Trigun, Dept of Zoology, BHU conducted the program and Prof S Prasad, Dept of Zoology, BHU presented a vote of thanks.



The Reports from Bangalore, Chandigarh, Chennai, Hyderabad, Jammu, Kharagpur, Patna and Uttarakhand Chapters are awaited.