

# ANNUAL REPORT 2023-24



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



# Annual Report 2023-24



**The National Academy of Sciences, India**

(The Oldest Science Academy of India)  
Established: 1930  
5, Lajpatrai Road, Prayagraj-211002 (India)

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## Prof. Meghnad Saha

Founder President, NASI

*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.*

*- Prof. Meghnad Saha on the Inaugural Session of the Academy*

India is justified in feeling proud for its unique contributions to science in ancient days. However, successive foreign invasions and alien rule for centuries pushed science in the background and the country went through what may be described as the 'Dark Age' for science. Western science attracted Indian intelligentsia after the establishment of the western system of education and the universities; and despite many constraints, the country could produce giants like Sir J.C. Bose and Acharya Prafulla Chandra Ray.

The first World War and the world-wide economic depression caused a setback to scientific research globally especially in India where the scientists found it difficult even to publish their research findings since they had to be almost entirely dependent on foreign journals. The post-World War India saw the rise of the freedom movement which incidentally drew attention to numerous problems of the Indian populace such as poverty, hunger, diseases, recurrent floods, droughts, famines etc. The patriotic scientists felt deeply concerned with these adversities.

It was at this juncture, in 1929, Prof. Meghnad Saha, a great scientist, patriot and the then Professor of Physics at the University of Allahabad, comprehended the idea of establishing a forum for scientists to deduce the scientific solutions to the problems of the country through collective discussions and sharing of their notable expertise / discoveries. His views were then published in an article, entitled 'A Plea for an Academy of Sciences' in the December 1929 issue of the University of Allahabad magazine.

The National Academy of Sciences, India was henceforth established in 1930 as the first Science Academy of this country.

# Vision and Mission

NASI envisions the cultivation and promotion of science & technology in all its branches through –





## Foreword

**T**he National Academy of Sciences, India (NASI) being a premier organization of Scientists, Engineers and Health professionals as its Fellows and Members, promotes Science & Technology in all its branches by organizing diverse scientific activities and the publication of journals and books addressing key socio-scientific issues, the Academy continues to contribute significantly to both scientific advancement and societal welfare.

The Academy founded with the noble mission to cultivate and promote Science & Technology across all its branches, continues to play a pivotal role in fostering scientific knowledge that serves the broader goals of societal progress.

The guiding philosophy of the Academy is '**Science and Society**'. The Academy strongly feels that scientific education and research are essential not only to inspire scientific temper but also to address the pressing issues faced by the common masses.

Over the years, NASI has extended its reach through the establishment of 22 Local Chapters across the country, thereby ensuring that the impact of its scientific initiatives is felt at the grassroots level. These chapters facilitate vibrant scientific interactions, promote the exchange of ideas, and foster the development of Science & Technology in diverse regions.

In alignment with the visionary initiatives of the Hon'ble Prime Minister of India, NASI has undertaken numerous activities, including those aligned with the Swachha Bharat Mission, Swasth Bharat Mission, Women Empowerment, and Capacity Building, etc. These efforts underscore the Academy's commitment to national development through the lens of Science & Technology.

This year, we take inspiration from the profound legacy of Bharat Ratna Prof. M.S. Swaminathan, whose groundbreaking contributions to agricultural science have shaped modern India. As the Past President of the Academy (1989-90), the Academy is dedicating its 94<sup>th</sup> Annual Session and paying its tribute to Prof. Swaminathan. The upcoming session, hosted by IISER Bhopal, will feature a symposium on '**Accelerated R&D towards a Viksit Bharat**', a theme of timely and critical importance for fostering

innovation and advancing research. This event is anticipated to serve as a landmark in knowledge dissemination, fostering dialogue, and driving the implementation of innovative ideas that will have a lasting impact on the nation's scientific landscape.

The achievements of the Academy are made possible through the unwavering commitment of its Fellows and Members, who actively participate in all its scientific programs and successfully brought together to researchers, innovators, and policymakers to collectively shape the future of Science & Technology in India.

We extend our gratitude to the Department of Science & Technology, Government of India, for its continued support, which is vital to the success of our initiatives.

I hope, as we move forward, we remain resolute in our mission to contribute meaningfully to the scientific ecosystem, advancing knowledge for the betterment of society and the future of Science & Technology in India.

With all good wishes

**(Prof. Balram Bhargava)**

President, NASI

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# 1. Executive Summary

## **A brief sketch of the NASI Initiatives; and Important Highlights of the Year 2023-24**

**T**he National Academy of Sciences, India (NASI), is the first Science Academy of country having mandate *Science and Society* as coined by its founder Prof. Meghnad Saha, a great scientist, visionary, social reformer and the then Professor of Physics at the University of Allahabad. The Academy has been implementing several programmes on Science Education/ Communication, Promotion, Popularization, Awareness, Training, Skill development and Capacity building for the people of society all across the country, in pursuit of its mandate since its inception. The Past Presidents, viz. Late Prof. MGK Menon, Late Prof. M S Swaminathan, Late Prof. V P Sharma, Late Prof. VP Kamboj took keen interest in the dissemination of science in general and the development of the Academy, in particular. Other Past Presidents, viz. Prof. (Mrs.) Manju Sharma, Prof. Ashok Misra, Prof. Asis Datta, Prof. J P Mittal, Dr. K Kasturirangan, Prof. Akhilesh K Tyagi. Prof. Anil Kakodkar, Prof. G Padmanabhan, Prof. Ajoy Ghatakare also making concerted efforts and contributions towards propagating science awareness for the masses in general and the growth of the Academy, in particular. Every year the Academy (NASI) organizes various activities under the valuable guidance of its President, Past Presidents, Fellows, Members and major (financial) support of the DST, New Delhi. The major initiatives of NASI; and a few related activities/ programmes undertaken by the Academy under the guidance/ supervision of its President, Prof. Balram Bhargava, with the kind and major (financial) support of the DST, New Delhi during the year of report (2023-24) as well as the main highlights are as follows:

- ***Programme for the Rural Development of the society***

More than 65% of Indian population represents the rural society. Every year, NASI organizes awareness/training programmes for the rural people and women. In the year 2023-24, NASI organized a few awareness programmes for the people of the rural area around Prayag Raj. The rural people interacted with the experts/ scientists for their local problems which were addressed by the experts.

- ***NASI-Health & Nutrition Awareness Programme***

The programme was initiated by NASI in four states, viz. Uttar Pradesh, Rajasthan, Odisha & Karnataka during Covid-19 Pandemic. The awareness programme was implemented considering the needs of the society, life style and customs of the people and the local issues etc. Further, the other issues viz. the overall sanitation, preventive & protective measures of health by considering the nutrition related aspects as per the local availability and literacy of the rural, semi-urban, peri-urban, and urban-slum population were also the focused points during the implementation of the programme.

NASI organized an awareness programme on September 27, 2023 in joint collaboration with SSKGDC, Prayagraj to commemorate the *Poshan Maah*. The experts/ nutritionists mainly discussed the problems/ diseases related with malnutrition and suggested scientific ways/ solutions to deal with such health related issues. NASI Local Chapters also organized such programmes in and around their respective regions. By organizing events on nutrition/POSHAN, NASI could spread the message/awareness on these issues, so that a large number of people could learn the importance of nutrition for maintaining good health by adopting a collaborative, integrated and participatory approach towards reducing big problems having socio-scientific relevance.

- ***Programme on Self-sufficiency (Atmanirbhar Bharat)***

NASI implemented an important National Mission announced by the Hon'ble Prime Minister of India in the year 2020 to achieve 'self-sufficiency' (*Atmanirbhar Bharat*). In the current year also, NASI organized awareness programmes, panel discussions on 'Entrepreneurship Development', especially for the youngsters for inculcating entrepreneurial skill and making them self-reliant.

- ***Activities under Science Communication Programme***

*Science Communication* is an essential component of NASI's mandate (Science & Society). The activities include *Children Science Meet, Teachers' Training Workshops, Vigyan & Health Chaupals and Seminars* focusing on scientific awareness, skill development and capacity building as well as some other programmes of national relevance such as Celebration of the *National Science Day, World Earth Day, National Technology Day, International Yoga Day, World Environment Day, National Constitution Day, National Mathematics Day* etc. The NASI-HQ and its 22 Local Chapters spread across the country organized a few science communication programmes/ activities as well as the national events by holding activities and sessions based on scientific awareness, quiz competitions, writing/ drawing competitions, quiz programmes to commemorate these national events in and around their respective regions to spread awareness among the youngsters. Also, several popular lectures, panel discussions were organized by the Chapters. A Programme on 'Popularization of Science with special reference to Biodiversity' was organized in joint collaboration with NASI HQ, NER Local Chapter and Sikkim State Council of Science & Technology (SSCS&T), Govt. of Sikkim on May 2, 2023 at Gangtok, Sikkim. NASI also participated in an International Conference organized by the Department of Physics at University of Allahabad to commemorate the Centenary of the Physics Department established by Prof. Meghnad Saha.

- ***Summer Research Fellowship***

NASI, together with other two Science Academies, viz. Indian National Science Academy, New Delhi and Indian Academy of Sciences, Bangalore jointly sponsors Summer Research Fellowship under the joint *Science Education Panel*.

- ***Activities/Meetings under Joint Women Panel IAP on WiSTEMM (Inter Academy Panel on Women in STEMM) of three National Science Academies***

The nationwide programme on 'Technological Empowerment of Women' is one of the major initiatives of NASI being executed under the Chairmanship of Prof. Manju Sharma, Chairperson, NASI New Initiatives, Past President, NASI & Former Secretary to the Govt. of India. NASI has organized several sensitization programmes for rural as well as urban women and covered 21 states all across the country. The HQ organized / coordinated several meetings of the IAP on WiSTEMM during the period of report joined by the distinguished members of the panel and representatives of the Govt. Departments. Further, the IAP on WiSTEMM organized a programme on '*SWATI (Science for Women: A Technology & Innovation) Portal Launch*' on February 11, 2024 at INSA, Delhi to commemorate ***International Day of Women and Girls in Science***. The event was inaugurated by the Principal Scientific Advisor to the Govt. of India and graced by the Presidents of three Science Academies, President, TWAS, Director, NIPGR, Former Secretaries to the Govt. of India and several eminent women scientists, the IAP members, women researchers, entrepreneurs, start-ups etc. NASI HQ organized science awareness programmes for Women with special reference to the entrepreneurship development in the state of Chhattisgarh, H.P., Rajasthan and Uttarakhand.

- ***Annual Session/Symposia/Seminars & Scientific Discussions***

Every year, the Academy organizes an Annual Session and a Symposium on a subject of national relevance to spread scientific awareness among the students (PG level), researchers and young scientists from all over the country. The **93<sup>rd</sup> Annual Session of the NASI** and a symposium on '**India Secure@75**' (an endeavor to celebrate and support 'Atmanirbhar Bharat') was organized on December 3-5, 2023 at BARC, Mumbai. The event inaugurated by Dr. R. Chidambaram, Chairman, School for Advanced Studies in Nuclear Science & Technology, BARC; Former PSA to Govt. of India & Former Chairman, AEC, was graced by more than 300 dignitaries and the participants. The scientists spoke on Agriculture & Food Security, Drug-Pharmacy & Bio-applications for Security, Forest, Climate & Environmental Security, Energy Security, Space Security, Medical & Health Security@75. Several scientific/ research papers were also presented by the researchers/young scientists in the session.

- ***Fellowship/Membership***

Every year, the Academy awards its prestigious Fellowship/Membership to some of the distinguished scientists all across the country and abroad to recognize their outstanding scientific contributions. A Total of 143 scientists (83 Fellows and 60 Members) working in different areas of Science & Technology were selected from all across the country in the year 2023. Five Foreign Fellowships were also awarded to the scientists (in the year 2023) who are working in different countries and have collaborated with the scientists from India.

- *NASI-Singhania Library*

NASI Library has already been digitized and its services have been enhanced through subscribing more books every year. The library having a conducive environment is connected to National Knowledge Network (NKN). The students and the research scholars from various academic and scientific institutions in and around the city visiting on a regular basis are provided with Internet facility, free of cost. This year also, several researchers from the Scientific / Engineering Institutions, University of Allahabad, PG Colleges, other academic institutions of Prayagraj and those from the nearby areas visited the Academy Library where they were provided with good learning environment along with the resources reading material on diverse subjects/ learning needs which actually helped them not only in their research work, but also in accessing large amount of information as well as improve their self-learning skills.

- *River Galleries*

Rivers are basic natural resources, profoundly associated with religious, social and scientific aspects of human life and have a major role to play in supporting ecosystems. The Academy (NASI), in pursuit of its mandate established the **Ganga Gallery** in the year 2011 at NASI Headquarters, Prayagraj. It established another river gallery on **Brahmaputra River** in Guwahati, Assam in 2015, which has been handed over to the Govt. of Assam (but, it will remain as the joint property of NASI and Assam Govt). The third gallery on **River Cauvery** has been inaugurated at Mysuru, Karnataka. The Ganga Gallery in Academy is visited by more than 5,000 people every year. This year also, around 5200 visitors including research scholars, faculty members from various colleges including Shyama Prasad Mukherjee Girls PG College, Prayagraj, University of Prayagraj and nearby institutions including the students (girls) from Kaushambi, Prayagraj as well as from other places visited Academy's Ganga Gallery and appreciated various artefacts related to the Ganges River.

- *Publications*

NASI published the internationally recognized Research Journals in collaboration with Springer Nature:

1. National Academy Science Letters in VI parts (IF-1.2)
2. Proceedings of NASI, Sec. A in IV parts (IF-0.8)
3. Proceedings of NASI Sec. B in IV parts (Cite Score-2.4)

## **S &T Activities (Organized by the Academy)**



## 2. S &T Activities

### 2.1. Activities organized by NASI (2023-24)

- *Popular Science Lecture on Mathematics*

A popular science lecture on April 21, 2023 at Maharshi Patanjali Vidya Mandir, Prayagraj was organized under the Science Communication programme of NASI. The illustrative lecture was delivered by Mrs. P Sarada Devi, Science Communicator; Researcher in History of Indian Mathematics and Former Mathematics teacher St. Xavier's College, Mumbai. The topic of the lecture was 'Overview of our Mathematical Treasure - Our Heritage'. Mrs. Sarada spoke about the Golden era of Indian Mathematics and its treasure e.g. Works from 14<sup>th</sup> to 19<sup>th</sup> century by Kerala School, Mathematics from Malabar region, Guru Parampara at the banks of River 'Nila'. She explained about 'Kerala School of Astronomy and Mathematics' where scholars were able to know about 'Infinite series and calculus'; even some of the basic ideas of calculus were known in India many centuries before Newton. Many of the formula, equations and interesting facts like 'Garland Product' Brahmagupta's Spectacular piece of work (Area of cyclic quadrilateral), Bhavana (method to solve indeterminate equation), Pingala-sutras etc. were discussed and explained to the students. The students were also given questionnaires to provide their feedback and answers on the topics discussed; and they responded enthusiastically. Prof. Punita Batra, Professor and Scientist 'H' from HarishChandra Research Institute (HRI), Prayagraj presided over the function. Prof. Batra told about the career opportunities in theoretical physics and mathematics. Dr. Santosh Kr Shukla, AES, NASI coordinated the programme. The Principal of the College, Mrs. Alpona Dey, expressed her gratitude and appreciated the efforts of NASI for developing a scientific temperament among her students and teachers.

- *Workshop on 'Popularization of Science with special reference to Biodiversity'*

The National Academy of Sciences, India (NASI) organized a day-long workshop on 'Popularization of Science with special reference to Biodiversity' as part of its Science & Society mission on May 02, 2023 at Gangtok, Sikkim. A large number of students, researchers, faculty members from Sikkim University as well as other (nearby) colleges of Sikkim; and several Senior Scientists, Fellows, Members and officials of the NASI participated in this event. The event commenced with the *Welcome Address* delivered by Shri B. P. Pradhan, IFS, Secretary, Department of Science & Technology, Govt. of Sikkim. Several other informative & illustrative lectures focusing on the subjects related to diverse areas of Biodiversity were delivered by the eminent scientists from all across the country. The programme was designed by Prof. Manju Sharma, Chairperson, NASI-New Initiatives. Prof. S. R. Joshi, Secretary, N-E Chapter of the NASI

was instrumental in getting the event organised successfully. Prof. S K Barik, former Vice-President, NASI represented the NASI-HQ there; and Ms Archana Pant, YWS, NASI coordinated the event from NASI-HQ, Prayagraj.

- ***National Technology Day***

Every year, NASI organizes the *National Technology Day* on May 11 to commemorate the accomplishment of scientists, technologists, engineers and others and also spread the awareness about India's achievements for successfully testing nuclear bombs in Pokhran. The National Technology Day **demonstrates the need for an entrepreneurial spirit that offers a cost-effective solution to India's development challenges. This year also, the NTD was celebrated in the Academy at Prayagraj on May 11, 2023; and also by its Local Chapters.** Around 300 participants including the young researchers, scientists, teachers, NASI Fellows & Members attended the programme. Prof. Ashok Misra, the Past President of NASI & former Director, IIT Bombay and Prof. Jayesh R Bellare, GS (OS), NASI, were the Conveners of the programme.

- ***Local Chapters Meet***

The Academy organized its *Local Chapters Meet* (12th in continuation) on May 12, 2023 attended by 18 Local Chapters. The Chairmen/ Secretaries of the respective Chapters presented the Annual Reports on the activities organized throughout the year, which were very encouraging, as about more than 250 programmes were organized by these Chapters in a year, to pursue the mandate of the Academy- 'Science & Society'.

- ***Annual Meeting of the Editorial Board of the NASI***

An *Annual Meeting of the Editorial Board of the NASI* was also held on May 12, 2023, in which several important policy decisions were taken to enhance the status of the NASI's journals qualitatively & quantitatively. More than 25 Members participated in the meeting from all across the country, including the representative of the Springer India Pvt. Ltd., New Delhi. Several important decisions were taken.

- ***World Biodiversity Day***

The *World Biodiversity Day* was celebrated by some of the DNA Clubs earlier established by the NASI.

- ***World Environment Day***

NASI celebrated the *World Environment Day* on June 5, 2023 at its headquarters at Prayagraj, U.P. on a theme - 'Solution to Plastic Pollution'. The programme was well attended by more than 200 students/teachers and other participants. They witnessed very informative, illustrative & thought provoking lectures during the programme.



- *International Day of Yoga (IDY)*



India is the master/creator of Yoga, and its descriptions are evident in our Veda/Vedanta. NASI HQ celebrated the 9th *International Yoga Day* to spread the message of the general well-being i.e. physical/mental health, unity and peace. The employees/staff along with a few students practiced yoga along with breathing exercises with great enthusiasm. This year the theme of the day was '*Yoga for Vasudhaiva Kutumbakam*' effectively encapsulating our collective efforts and aspirations for '*One Earth One Family*'. A short discussion on

'How it took India about hundreds of years to make the Yoga, a science of practices and convince the western and modern world that Yoga is a science' was held among the staff members and others. They discussed the importance of Yoga stating that the references on the research based on Yoga are now available in hundreds of books, magazines and journals of international repute.

- *Observation of 'Angdaan Mahotsav'*

An awareness campaign on *Angdaan Mahotsav* was organized as per direction of the *National Organ and Tissue Transplant Organization (NOTTO)* under the Department of Health and Family Welfare and the Ministry of Health and Family Welfare, Govt. of India, after receiving the letter from the esteemed DST, GoI. More than 200 students from various schools & colleges of Prayagraj invited by NASI HQ, participated in the awareness campaign for such pious cause. The local medical doctors including Prof. Ashish Tandon, Senior Chest Specialist of national repute delivered popular medical lectures on the concluding day on August 3, 2023; the speakers also interacted with the students and answered to their queries on health related issues.



- ***Celebration of Azadi ka Amrut Mahotsav***

NASI, Prayagraj organized scientific lectures to observe *Azadi ka Amrut Mahotsav* on Aug 11, 2023 at NIPGR, New Delhi to commemorate the 95<sup>th</sup> birthday of Prof. P. N. Tandon, the Past President of NASI & father of neurosurgery in India and also to felicitate him on this occasion. The programme was inaugurated by Hon'ble Professor Murli Manohar Joshi, former Union Minister; several eminent scientists, students and teachers were also present on this occasion.



- ***Independence Day Celebration***

The National Academy of Sciences, India (NASI), Prayagraj, celebrated the *Independence Day* on August 15, 2023 with great enthusiasm. The programme was based on the theme, 'Nation First, Always First'. This theme was part of 'Azadi Ka Amrut Mahotsav', a Govt. of India Initiative to commemorate 75 years of country's independence which actually began in 2021 and ended on August 15, 2023.

- ***Students Science Meet***

The National Academy of Sciences, India (NASI), Prayagraj, successfully organized the *Students Science Meet* on August 25, 2023 in the NASI Auditorium, Prayagraj. The event dedicated to Prof. U. S. Srivastava, Past President of NASI, was organized to pay tributes and honour the scientific contributions made by him; and featured a series of insightful lectures. Prof. Manju Sharma, the Past President of NASI paid heartfelt tributes to Prof. U. S. Srivastava by highlighting his immense contributions to the field of science; and the legacy of his scientific achievements as a source of inspiration for generations to come. Prof. Balram Bhargava, the President of NASI, provided the Presidential Remarks emphasizing the importance of nurturing young scientific minds and the role of NASI in fostering a vibrant scientific

community. The *Students Science Meet* served as a platform to honor Prof. U. S. Srivastava's legacy for inspiring the next generation of scientists and fostering a spirit of scientific inquiry and collaboration among the students and scientific fraternity. The event was well-attended and received positive feedback from the participants.

- **Workshop organized by NASI & CSIR- IHBT**

A two-day workshop on the 'Role of Women Scientists in S&T based Entrepreneurship Development' was jointly organized by NASI & CSIR- IHBT on September 18 & 19, 2023 at IHBT, Palampur (H.P.). Around 400 researchers, faculty members, scientists from IHBT, H.P.K.V. and other affiliated colleges of H.P. University (off line) including some Senior Scientists, Fellows, Members including those from H.P. region and officials of NASI participated in this event. Several lectures focusing on the subjects, related to the diverse areas of entrepreneurship were addressed by the eminent scientists from all across the country. The event also highlighted and focused on the role of *Women in Science* with special reference



to S&T based entrepreneurship. It also stressed on the need and importance of commemorating the *International Day of Women and Girls in Science* as well as the contributions of some pioneering Women in Science viz. Dr. Manju Sharma, former Secretary, Department of Biotechnology, Govt. of India and a Padma Bhushan awardee. Dr. N Kalaiselvi, the currently appointed and the first women director general of CSIR, Dr. Renu Swaroop, former Secretary, Department of Biotechnology, Govt. of India, Dr. Soumya Swaminathan, former Deputy Director General of Programmes (DDP) at the WHO. Ms. Kiran Mazumdar Shaw, the Executive Chairperson and founder of Biocon Limited and Biocon Biologics Limited; Ms. Suchitra Ella, Co-Founder and Director of Bharat Biotech International Limited and Dr. Florida Tilton, Head, Biozone Research Technologies Pvt. Ltd.

- **Celebration of 'Poshan Maah'**

Following the announcement by the Hon'ble Prime Minister of India, NASI implemented a nationwide programme on POSHAN, i.e. NUTRITION and every year the month of September is celebrated

as the 'Poshan Maah'. NASI organized several events for the students, researchers and faculty members of the local schools and colleges as well as from nearby areas and also the general mass, as well as organized discussion/ debate for its staff members. A one-day lecture workshop on 'Nutrition and Health: Celebrating Poshan Maah' was successfully held on September 27, 2023. The event was organized jointly by NASI, Prayagraj, and S.S. Khanna Girls' Degree College, Prayagraj. This initiative was supported under the Science Communication Programme of NASI in joint collaboration with SSKGDC. Prof. Lalima Singh, Principal and the Guest of Honour addressed the gathering. She emphasized the role of educational institutions in promoting nutritional awareness and the critical importance of integrating health education into the curriculum to foster healthier lifestyles among the students. Prof. U.C. Srivastava, the National Coordinator of the Science Communication Program at NASI, was the Chief



Guest of the programme, who delivered an insightful keynote address. He discussed the significance of **Poshan Maah** in raising awareness about malnutrition and the importance of balanced nutrition. Prof. Srivastava also highlighted NASI's initiatives in science communication and its efforts to educate the public on critical health issues. The workshop was attended by a large audience, including students, educators, and community members. It successfully raised awareness about the importance of nutrition and provided valuable insights into making informed dietary choices. The primary objective of the workshop was to raise awareness about nutrition and health, aligning with the nationwide observance of Poshan Maah. The event aimed to disseminate knowledge on the importance of balanced nutrition, its impact on overall health, and to promote healthy dietary practices among students and the community.

- ***Celebration of the 130th Birth Anniversary of Prof. Meghnad Saha***

The National Academy of Sciences, India (NASI) celebrated the *130th Birth Anniversary of its Founder President, Prof. Meghnad Saha* at NASI, Prayagraj on October 6, 2023. The event was a tribute to Prof.

Saha's immense contributions to science and his pivotal role in establishing NASI. The celebration began with a solemn tribute to Prof. Saha, highlighting his pioneering work in astrophysics, particularly the *Saha Ionization Equation*, which actually revolutionized the field. The eminent speakers including senior academicians, past presidents and distinguished members of NASI remembered Prof. Saha not only as a brilliant scientist, but also as a visionary who contributed significantly to the development of scientific infrastructure in India including the establishment of NASI in 1930. The event highlighted Prof. Saha's manifold contributions to science and his relentless efforts to promote scientific education and research in India. The speakers highlighting Prof. Saha's scientific contributions and his legacy towards integrating science into national planning and policy, reflected his profound thoughts that scientific progress is essential for national development. The speakers underscored the importance of continuing to honor his contributions and efforts by advancing the mission of NASI and supporting scientific inquiry and education across the country. The celebration reinforced NASI's commitment to fostering scientific research and education, inspired by the vision and values of its esteemed Founder President. The 130th birth anniversary of Prof. Meghnad Saha was not just a commemoration of his birth anniversary, but also a celebration of his enduring influence on 'science and society'.

- ***Workshop entitled 'From Harappa to Harish Chandra: Our Mathematical Heritage & Legacy'***

The National Academy of Sciences, India (NASI), in collaboration with Prof. B.L. Sharma Higher Mathematics Trust and other institutions of Prayagraj, celebrated the birth centenary of the distinguished mathematician Prof. Harish-Chandra. A one-day workshop on 'From Harappa to Harish Chandra: Our Mathematical Heritage & Legacy' was organised by the NASI on October 10, 2023 on the eve of the birth



centenary of a legendary Mathematician. The event aimed to honor the profound contributions of Prof. Harish-Chandra and to celebrate the rich legacy of Indian mathematics from ancient times to the present. Prof. R. P. Shukla, Head of the Department of Mathematics, UoA, and Treasurer of the B.L. Sharma Higher Mathematics Trust, provided a brief introduction to the theme, outlining the profound influence of Indian mathematicians from the Indus Valley civilization to modern times. Prof. Punita Batra from the Harish Chandra Research Institute, Prayagraj, was the Chief Guest delivered the keynote address, focusing on Prof. Harish-Chandra's pioneering work and his lasting impact on the field of mathematics. Prof. Batra provided the life sketch of Prof. Harish-Chandra and his contributions and detailed overview of Prof. Harish-Chandra's mathematical journey, and his groundbreaking contributions to representation theory and Lie groups. Prof. S. S. Khare, Former Pro-Vice Chancellor of NEHU, Shillong, and President of the B.L. Sharma Higher Mathematics Trust, emphasized the importance of remembering and honoring the contributions of Indian mathematicians. He urged the younger generation to draw inspiration from the lives and works of these great scholars. Prof. Khare discussed the evolution of mathematics in India, (Topic: Indian Mathematics from Indus Valley to Brahmagupta) highlighting significant milestones from ancient texts to medieval scholars like Brahmagupta, demonstrating the enduring legacy of Indian mathematics. Prof. Swapnil Srivastava delivered lecture on the 'Contributions of Great Indian Mathematicians' and shed light on the works of prominent Indian mathematicians, tracing the influence of their contributions on contemporary mathematical thought. An interactive session with the speakers provided participants the opportunity to engage with the experts, ask questions, and delve deeper into the topics discussed. The celebration successfully honored the centenary of Prof. Harish-Chandra and highlighted the extensive contributions of Indian mathematics. It fostered an appreciation for the historical and contemporary relevance of mathematical studies and inspired attendees to contribute to this illustrious legacy. The event was a fitting tribute to the enduring impact of Prof. Harish-Chandra and the rich heritage of Indian mathematics.

- ***National Conference on 'Science & Technology for Women Empowerment and Rural Development'***

The National Academy of Sciences, India (NASI), in collaboration with Pt. Ravishankar Shukla University, Raipur, organized a two-day workshop on '*Science & Technology for Women Empowerment & Rural Development*' on October 13-14, 2023, at Raipur. The workshop aimed to explore the role of science and technology in empowering women and promoting sustainable rural development. The inaugural session commenced with a warm welcome to the dignitaries, participants, and guests by the organizing committee.





The session was chaired by *Prof. Manju Sharma*, Past President, NASI, who highlighted the crucial role that education and skill development play in enhancing the socio-economic status of women in rural areas.

The keynote address was delivered by *Prof. Pratibha Jolly*, who spoke on the theme “Leveraging Technology for Women’s Empowerment”. The speaker outlined the significance of digital literacy, access to technological resources, and the creation of entrepreneurial opportunities for women as vital steps toward empowerment.

Throughout the two days, the workshop featured multiple technical sessions, focusing on various aspects of science and technology’s role in women’s empowerment and rural development. The second day was dedicated to interactive sessions, where participants engaged in discussions, hands-on

activities and practical demonstrations of technological tools that can aid in rural development. There were also exhibitions showcasing innovations developed by women entrepreneurs and researchers. A panel discussion was held on “Challenges and Opportunities in Women Empowerment through Science and Technology”, featuring experts from academia, industry, and non-governmental organizations. The panelists shared insights into overcoming barriers and leveraging resources to maximize impact. The last session of this conference was the *Valedictory Function*. All the dignitaries from NASI joined this ceremony in online mode. This session was chaired by **Padma Bhushan Dr. Manju Sharma**. In her concluding remarks she spoke about different technical sessions and congratulated the University for Successful Organization of the conference, and also spoke about future collaboration. Brief remarks about the conference were given by the convener of the conference Prof. Keshav Kant Sahu who thanked all the invited speakers and team NASI for sparing their precious time and their active participation and involvement in the conference. A few of the participants shared their experiences and gave feedback of the conference. At the end, ‘Best Poster Presentation Award’ was given to the winner. Ms. Archana Pant of NASI proposed a vote of thanks on behalf of NASI, while Prof. Keshav Kant Sahu thanked all

those persons who were contributed directly and indirectly in the organization of this conference. The conference ended on a fruitful note and lunch was served to all afterwards.

- ***Celebration of 100<sup>th</sup> year of foundation of the Department of Physics, University of Allahabad by Prof. Meghnad Saha***

The National Academy of Sciences, India (NASI) actively participated in an International Conference organized by the Physics Department, University of Allahabad, held in Prayagraj. The conference was convened to commemorate the centenary of the department's establishment by the distinguished scientist Prof. Meghnad Saha. **Prof. Ajoy K. Ghatak**, Immediate Past President of NASI, delivered an inspiring address paying tribute to Prof. Meghnad Saha. *He highlighted Prof. Saha's remarkable contributions to the field of science, his pioneering work in astrophysics, and his profound influence on the development of the Physics Department at the University of Allahabad.* In his address, Prof. Ghatak reflected on the manifold contributions of Prof. Saha to science and the significant role he played in founding NASI. He emphasized that Prof. Saha's vision and scientific rigor laid a strong foundation for the Academy and inspired generations of scientists. Prof. Saha's work on thermal ionization, which led to the Saha Ionization Equation, revolutionized the understanding of stellar atmospheres and remains a cornerstone in astrophysics. The conference celebrated the 100-year journey of the Physics Department, which has been a cradle of scientific innovation and excellence. Prof. Ghatak acknowledged the department's pivotal role in nurturing scientific talent and its contributions to advancing research and education in India. The conference not only celebrated a century of achievements but also set the stage for future endeavors in scientific research and education, honoring the spirit and vision of Prof. Saha.

### ***93rd Annual Session of the Academy***

NASI organized its 93<sup>rd</sup> Annual Session and a symposium on '**India Secure @75**' during December 3-5, 2023 in joint collaboration with Bhabha Atomic Research Centre (BARC), Mumbai with an endeavor to celebrate and support '**Atma Nirbhar Bharat**'. The programme was inaugurated by the Chief Guest **Dr. R. Chidambaram**, Chairman, School for Advanced Studies in Nuclear Science & Technology, BARC; Former PSA to Govt. of India & Former Chairman,



*Lighting of the lamp by the dignitaries*

AEC. The other dignitaries present on the occasion include **Sri Somanath**, Chairman, ISRO; **Shri Vivek Bhasin**, Director, BARC, Mumbai; **Dr. Ajit Kumar Mohanty**, Secretary, Department of Atomic Energy & Chairman, AEC, Govt. of India. The programme was presided over by **Prof. Balram Bhargava**, President, NASI & Former DG, ICMR and Secretary to the Govt. of India. **Dr. S. M. Yusuf**, Director, Physics Group, BARC, Mumbai was the Convener of the programme.



*A view of the participants*



*Cover Page of the Book on 'Wild Edible Greens'*



*Dignitaries releasing the book during the Inaugural Session*

A coffee table book on 'Wild Edible Greens', a record of several wild species of plants used as edible greens, edited by Prof. Balram Bhargava, Prof. Arun K Pandey & Prof. Latha Rangan and published by NASI, was also released on this occasion. The book provides information on wild herbs and vegetables that are native to India and also contains some recipes using as ingredients. These indigenous vegetables are packed with powerful molecules and more importantly they help in resolving the issues of nutritional security in India while enhancing biodiversity across the world.

Several eminent scientists delivered their talks on various topics of national relevance such as Agriculture & Food Security, Drug-pharmacy & Bio-application, Forest, Climate & Environment, Energy, Electronics & Cyber Security, Space, and Medical & Health. They discussed about the achievements of India in the last 75 years as well as the challenges ahead. The *Foundation Day of NASI* was also commemorated on Dec 4, 2023. It was Chaired by **Prof. Balram Bhargava**, President, NASI and Co-Chaired by **Prof. Ashok Misra**, Past President, NASI. The young researchers and scientists presented their papers in their respective areas of research during the Annual Session.



*Dr. Somnath addressing the audience*



*Felicitation of Dr. Chidambaram*

An exhibition of various scientific models and exhibits showcasing the scientific activities of the Local Chapters of NASI was inaugurated by Dr. R. Chidambaram. Further, the scientific presentations in Physical and Biological Sciences were made by the researchers. A total of 20 young researchers were selected for certificate to be given for excellent presentation. The students, researchers and professionals actively participated for making the event a successful and impactful initiative in celebrating India's scientific legacy and future potential.



*Dr. Chidambaram inaugurating the Exhibition of Scientific Models The dignitaries visiting the exhibition area*

The symposium underscored NASI's commitment to advancing scientific knowledge and fostering innovation through the convergence of diverse scientific disciplines, ultimately contributing to the vision of 'AtmanirbharBharat'.

### **Recommendations:**

The event while focusing on the issues viz. Agriculture & Food Security, Drug-pharmacy & Bio-application, Forest, Climate & Environment, Energy, Electronics & Cyber Security, Space, and Medical & Health also underlined their relevance; and emerged with fruitful recommendations for creating a roadmap towards making India *Atmanirbhar Bharat*:

### **Agriculture and Food security@ 75:**

Nurture research activities in the field of 'Crop Phenomics' that encompass relevant high end research and development in the fields of agronomy, information science, life sciences, mathematics, engineering, high performance computing and artificial intelligence, to attain higher yields more than what is achievable by employing genotyping alone, to meet the ever increasing food and feed supply needs.

- Efforts to create awareness among farmers about the regional imbalance in fertilizer usage and employ high tech communication to convince the farmers to take recourse to the remedial measures as suggested through Soil health Cards.
- Incentivizing agricultural mechanization for in-situ management of crop residue in order to mitigate problems that arise due to burning of rice residue.
- Supporting research & implementation of integrated farming system that includes raising livestock, aquaculture and agroforestry in addition to crop production for livelihood improvement and sustainability.
- Initiation of research activities for identification of genes for multiple stress tolerance in plants and development of smart bioregulator to understand the stress mechanism in plants.

### **Drug-Pharmacy & Bio-applications for Security@75:**

- Percentage of GDP towards R&D in government sector needs enhancement. With improved financial support, R&D units can feed the industry with original and innovative ideas thereby strengthening the PPP model to the benefit of the society.
- Boosting private R&D sector and encouraging entrepreneurship in drug development by way of subsidies, research grants, tax holidays, awards and ease of functioning can in turn be a boon to the government itself by improving the country's economy via sales of highly effective and sought-after drugs by the associated production firms.
- Providing support to *Pharma Industry* by way of funding for innovation; and establishing *Training Centres* for upskilling the work force.

## Forest, Climate & Environmental Security@75:

- Participation of student community in the capacity building of human resources for the Carbon Capture Use and Storage (CCUS) initiative of DST, Govt. of India to inculcate awareness in the young minds and instil responsibility.
- Incentivising climate champions (NGOs and individuals) and implementing deterrent measures to prevent tampering with biodiversity serving as natural defence against climate change.
- Encouraging decarbonisation activities in the sectors of power generation, transport, industry, construction activities, agriculture and land usage by improving funding and ease of operation.
- Formulation of regional climate models through an integrated approach utilizing satellite data to focus on suitable Aerosol Radiative Forcing mechanisms for overall favourable climate change.

## Energy Security@75:

- Adapting deep decarbonization strategies in the Oil & Gas sectors for achieving Net Zero Emission.
- Exploitation of the complete Crude to Chemicals cycle by Indian refineries.
- Synergistic alignment of Bio-refineries -with conventional oil and gas process technologies.
- Reconfiguration of Ethanol refineries to act as hub for 2<sup>nd</sup> as well as 3<sup>rd</sup> generation production.
- Exploration of Solar interventions in refineries for CO<sub>2</sub> emission reduction.
- Adaptation of alternate battery chemistry for efficient energy recycling.
- Implementation of multiple vehicles for Nuclear Power programme on a larger scale which include 700 MWe PHWRs fleets by multiple PSUs of DAE & JVs with energy PSUs (NTPC, IOC, ONGC, NALCO).
- Establishing 220 MWe Captive power + H2 plants for hard to abate industries.
- Availability of *Made in India* SMRs for leveraging retiring coal plant sites.
- Building Thorium -HALEU fuelled PHWRs for exports.
- Developing metallic fuelled fast reactor for rapid 2nd stage capacity growth as well as for actinide burning.
- Establishing High Temperature Reactors for hydrogen production through direct route.
- Enabling large scale thorium utilisation in the third stage of nuclear program by building Molten Salt Reactors.
- Establishing micro modular nuclear reactors.
- Building Fusion Reactors for ultimate green energy solution.

## Electronics & Cyber Security@75:

- Formulating policies and mechanisms for defining responsibilities of individuals and government to gear up for the security of enormous future data traffic.
- Setting up of alert and dedicated cells of intelligence agencies to identify fraudulent cyber threats targeted towards government officials and general public and timely dissemination of awareness information.

- Improving the use of the flow chart of Prevention, Detection, Investigation and Response towards enhancing cyber security.
- Promoting usage of artificial intelligence and machine learning for ensuring data security.

### Space Security@75:

- Aiming for Cis-lunar space development, asteroid mining, space tourism and hypersonic aviation.
- Developing new capabilities, such as high thrust propulsion systems, space docking, nuclear propulsion, air breathing engines and in-situ resource utilisation.

### Medical & Health Security@75:

- Implementation of National Cancer Grid.
- Availability of affordable medicines for cancer treatment.
- Implementation of *Digital Ayushman Bharat* Mission.
- Implementation of big data Acquisition & Analysis for genomics & Epidemiology.
- Development of indigenous & repurposed medicines.
- Establishing palliative care facility.

### Launch of 'SWATI' Portal

The National Academy of Sciences, India (NASI), Prayagraj actively organized the meetings of Inter Academy Panel for Women in Science. The three Science Academies viz. INSA, NASI & IASc joined hands to organize an event for celebrating the launch of the SWATI Portal, which is a complete interactive database and the first-of-its-kind in India- developed, hosted and maintained by the National



Institute of Plant Genome Research (NIPGR), New Delhi. The event was organized to commemorate *International Day of Women and Girls in Science* on February 11, 2024 at Indian National Science Academy (INSA), New Delhi with a view to focusing on the importance of *Science for Women & Women in Science* as well as emerging opportunities and inclusiveness of women in S&T endeavors and also to address the role/importance of innovation and entrepreneurship development in strengthening the backbone of Atmanirbhar Bharat. **Prof. Ajay K Sood**, Principal Scientific Adviser (PSA) to the Government of India was the Chief Guest on the occasion.

More than 300 participants including several eminent scientists, technocrats, research scholars from different scientific institutions and universities and PG Colleges as well as the industries all across the country including the participants from various S & T institutions and the Universities of Delhi as well as the Fellows/members and staff of the three academies joined to witness the day-long event. The event was also graced by the distinguished scientists of national and international repute viz. Prof. Quarraisha Abdool Karim, President TWAS; Presidents of the three Science Academies; Dr. Manju Sharma, Former Secretary to the Govt. of India, DBT, Prof. Chandrima Shaha, Former President, INSA including other distinguished women scientists viz. Dr. Renu Swarup, Former Secretary

to the Govt. of India, DBT; Prof. Rohini Godbole, Vice President, IASc, IISc, Bangalore and Prof, Shobhona Sharma, Former Senior Professor, TIFR Mumbai and Chair, INSA 'Women in Science' Panel; Dr. Soumya Swaminathan, Former DG, ICMR & Chief Scientist, WHO; Prof. Paramjit Khurana, Delhi University, South Campus.







**Activities  
of  
NASI-Local chapters**



## 2.2 Activities of NASI-Local Chapters

**T**he National Academy of Sciences, India has been effectively pursuing its mandate 'Science & Society' since its inception through various scientific programmes/activities to disseminate and communicate the scientific knowledge in different regions/ parts of the nation by involving a large number of scientists, academicians, educationists and industrialists from all across the country with the support of its **Local Chapters**.

The Fellows/Members present in the respective regions constitute the Local Chapters with the approval of the NASI Council. There are **22 Local Chapters** spread all across the country as mentioned below:

1. Ahmedabad
2. Bangalore
3. Bhopal
4. Chandigarh
5. Chennai
6. Delhi
7. Hyderabad
8. Jammu&Kashmir
9. Jharkhand
10. Kerala
11. Kharagpur
12. Kolkata
13. Lucknow
14. Mumbai
15. Nagpur
16. North-EasternRegion
17. Odisha
18. Patna
19. Pune
20. Rajasthan
21. Uttarakhand
22. Varanasi

## Activities organized by the Chapters during the year 2023-2024

### Bangalore Chapters

- *Debate on 'Decoding Biology Across the Tree of Life'*



**The National Academy of Sciences, India**

In Association with



**Department of Studies in Biochemistry  
University of Mysore, Mysuru**

Organizing a One Day Symposium on **DEBATE**

**DECODING BIOLOGY ACROSS THE TREE OF LIFE**

| Time                                | Speakers  | Title  |
|-------------------------------------|---|--|
| 9:45 AM to 10.15 AM<br>Inauguration | <b>Inauguration and Presided by Prof. Muzaffar H. Assadi</b><br>Honorable Vice Chancellor, University of Mysore, Mysuru |  |
| 10.30 AM to 11.15 AM                | <b>Prof. Anjana Badrinarayanan</b><br>Department of Cellular Organization and Signaling<br>NCBS, Bangalore.             | Preserving the Bacterial Genome: Diverse Mechanisms, Unifying Function.              |
| 11.25 AM to 11:45 AM                | <b>Tea/Coffee Break</b>   |  |
| 11:45 AM to 12:30 PM                | <b>Prof. Kaustuv Sanyal</b><br>Molecular Biology & Genetics Unit, JNCASR, Bangalore.                                    | Life: Its Origin, Forms and Propagation with an Emphasis on the Fungal Kingdom.      |
| 12:35 PM to 1:20 PM                 | <b>Prof. Utpal Nath</b><br>Department of Microbiology and Cell biology<br>IISc, Bangalore.                              | Keeping It Simple: Genetic Regulation of Complexity in Organ Shape.                  |
| 1:20 PM to 2.20 PM                  | <b>Lunch Break</b>  |  |
| 2.25 PM to 3.10 PM                  | <b>Prof. K. S. Girish</b><br>DOSR in Biochemistry<br>Tumkur University<br>Tumakuru.                                     | Blood Cells and Redox System: Key Players in Regulating Human Diseases.              |
| 3.15 PM to 4.00 PM                  | <b>Prof. N. Ganesh</b><br>Department of Biochemistry<br>IISc, Bangalore   | Genome Maintenance and Tumor Suppression: Lessons from DNA Damage Response Proteins. |
| 4.10 PM to 4:45 PM                  | <b>Panel Discussion with Students</b><br><b>Vote of thanks</b>  |  |
| 4:45 PM to 5.15 PM                  | <b>High Tea</b>   |  |

**Place:** Auditorium, Vijnana Bhavan, Manasagangotri, University of Mysore, Mysuru.

**Date:** 17<sup>th</sup> March, 2023.

- *A one-day symposium at the Mysore University*

The NASI-Bangalore Chapter, in association with the Department of Biochemistry, University of Mysore, organized a one-day symposium entitled 'DEBATE- Decoding Biology Across the tree of Life' on March 17, 2023 at Vijnan Bhavan in the University of Mysore. The meeting was attended by more than 250 participants from various streams of Life Sciences including Bachelor's and Master's students and young investigators, in addition to students from Manasagangothri; many students from Maharani's Mahajana's and JSS College, Mysore also participated in the symposium. The audience of the symposium was welcomed by Prof. K.Kempraju, Chair Department of Biochemistry; and the event was inaugurated by Hon'ble Vice Chancellor of the Mysore University. Later, Prof. Kaustuv Sanyal, Secretary, NASI-Bangalore Chapter, addressed the gathering emphasizing the Science & Society activities of NASI in promoting science in India.



*View of participants attending the symposium*

The symposium had distinguished speakers from Jawaharlal Nehru Center for Advanced Scientific Research, Indian Institute of Science, National Center for Biological Science and Tumkur University covering topics from bacteria, yeast, plant, and animal systems. Each speaker had a long fruitful interaction with students during and after the presentation. The symposium was concluded by having a panel discussion with students. In this one-day symposium, the speaker had very informal discussions with the students related to the importance of pursuing science in the best institutions and enrolment in the Ph.D. Programme in various institutions. The meeting was concluded with a vote of thanks from Prof.

Kemparaju. Overall the event was a great success and well received with active participation by the students, the early career investigators.



*Symposium underway*

- *Seminar on 'Artificial Intelligence for Everyone'*

The poster features a stylized human head profile on the left, composed of a complex network of purple and blue lines representing neural connections. The background is dark blue with faint grid lines and data points.

 and 

Cordially invite you to

# LET'S GET AIed

A Seminar on Artificial Intelligence for Everyone

Saturday, September 30, 2023

9.00 am to 5.00 pm

IIT Alumni Centre, Bengaluru  
Building No. 60, Sy No. 265,  
Bommasandra Village Attibele Hobli,  
Anekal Taluk Bengaluru 560 099

Location link : <https://bit.ly/iitacb-maps-location>

**CLICK TO REGISTER**



and



PRESENT

# LET'S GET **AI**ed

A Seminar on Artificial Intelligence for Everyone

SEPTEMBER 30, 2023 | BENGALURU

## UP **NEXT**: SESSION 1



**CHAIR:**  
Prof. Jayesh Bellare

**9.15 AM TO 9.45 AM :**  
**AI AND DRONES FOR  
PRECISION AGRICULTURE**



Padma Shri Dr. Kota Harinarayana,  
Chairman, Board of governors, IIT(BHU) and  
Chairman, Design division of Aeronautical Society of India

**9.45 AM TO 10.15 AM :**  
**AI IN AEROSPACE  
RESEARCH**



Prof. Suresh Sundaram,  
IISc Bangalore

**10.15 AM TO 10.45 AM :**  
**AI AND HEALTHCARE**



Mr. Girish Krishnamurthy,  
Tata Medical & Diagnostics Ltd.



## UP NEXT: SESSION 2



CHAIR:  
Prof. K. S. Narayan

**11.00 AM TO 11.30 AM :**  
**ML FOR CHALLENGING DATASETS  
FROM CHEMICAL SPACE**



Prof. R. B. Sunoj,  
IIT Bombay

**11.30 AM TO 12.00 PM :**  
**ML ADVANCES FOR  
NEUROIMAGING**



Dr. Neelam Sinha, IISc,  
Bangalore

**12.00 PM TO 12.30 PM :**  
**AI IN BIOMEDICAL RESEARCH**



Prof. N. R. Jagannathan,  
Chettinad Academy of  
Research and Education,  
Chettinad University

**12.30 PM TO 1.00 PM :**  
**AI FOR PUBLIC GOOD**



Dr. Vivek Raghavan,  
Co-Founder,  
Stealth Startup



## UP NEXT: SESSION 3



CHAIR:  
Prof. Kaustuv Sanyal

**2.00 PM TO 2.30 PM :**  
**AI IN ART AND HUMANITY**



Harshit Agrawal,  
IIT Guwahati Alumnus

**2.30 PM TO 3.00 PM :**  
**AI IN MANUFACTURING**



Mr. Sivaramakrishnan  
Narayanan,  
Bristlecone

**3.00 PM TO 3.30 PM :**  
**AI IN SUPPLY CHAIN**



Sudipta Ghosh,  
PWC

# UP NEXT: SESSION 4



**CHAIR:**  
Shri. Ashok Kamath



## 3.45 PM TO 4.15 PM : AI IN DIAGNOSTICS



Dr. Dhanajay Dendukuri,  
Achira Labs

## 4.15 PM TO 4.45 PM : AI IN MATERIALS DEVELOPMENT



Prof. Abhishek Singh,  
IISc Bangalore

### THE FOLLOWING TOPICS ARE ENVISAGED TO BE COVERED:

**TRANSFORMING  
INDIA'S HEALTHCARE –  
DIGITAL TODAY & AI TOMORROW**  
- Mr. Girish Krishnamurthy,  
Tata Medical & Diagnostics Ltd.

**AI & DRONES FOR  
PRECISION AGRICULTURE**  
- Dr. Kota Harinarayan, Ex ADA

**AI FOR PUBLIC GOOD**  
- Dr. Vivek Raghavan, Ex UID

**AI IN AEROSPACE RESEARCH**  
- Prof. Suresh Sundaram, IISc Bangalore

**AI IN MANUFACTURING**  
- Mr. Sivaramakrishnan Narayanan,  
Bristlecone

**AI IN SUPPLY CHAIN**  
- Sudipta Ghosh, PWC

[CLICK TO REGISTER](#)

### THE FOLLOWING TOPICS ARE ENVISAGED TO BE COVERED:

**AI IN DIAGNOSTICS**  
- Dr. Dhanajay Dendukuri, Achira Labs

**ML ADVANCES FOR  
NEUROIMAGING**  
- Dr. Neelam Sinha, IISc, Bangalore

**AI IN MATERIALS DEVELOPMENT**  
- Prof. Abhishek Singh, IISc Bangalore

**ML FOR CHALLENGING DATASETS  
FROM CHEMICAL SPACE**  
- Prof. RB Sunoj, IIT Bombay

**AI IN BIOMEDICAL RESEARCH**  
- Prof. N R Jagannathan, Ex AIIMS

**AI IN ART & HUMANITY**  
- Harshit Agrawal, IIT Guwahati alumnus

[CLICK TO REGISTER](#)

Event on 'STEM Powered by WOMEN' held on 9th March, 2024



and



present

**S.T.E.M.**  
**POWERED BY WOMEN**

Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

UP NEXT:

**OPPORTUNITIES AND CHALLENGES FOR WOMEN'S LEADERSHIP IN HEALTH**



Prof. Prabhdeep Kaur, Professor  
Isaac Centre for Public Health,  
Indian Institute of Science, Bengaluru



and



present

**S.T.E.M.**  
**POWERED BY WOMEN**

Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

UP NEXT:

**GENERATIVE AI: PIONEERING THE NEW ERA OF INTELLIGENCE**




Dr Saigeetha A. J.,  
Chief Data Scientist and AI-ML Leader,  
AI & Analytics, IBM Consulting



and

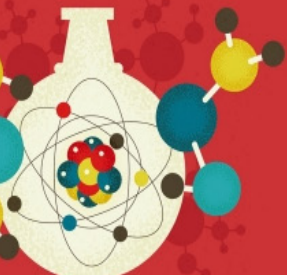


present



**S.T.E.M.**

**POWERED BY WOMEN**



Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

## UP NEXT:

### ASTRONOMY: AN ANCIENT SCIENCE DRIVEN BY TECHNOLOGY




Prof. Annapurni Subramaniam  
Director & Senior Professor,  
Indian Institute of Astrophysics



and

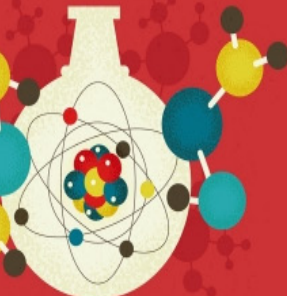


present



**S.T.E.M.**

**POWERED BY WOMEN**



Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

## UP NEXT:

### DUSTY FLOWS IN NATURE



Prof. Rama Govindarajan  
International Centre for  
Theoretical Sciences  
Tata Institute of Fundamental Research



and

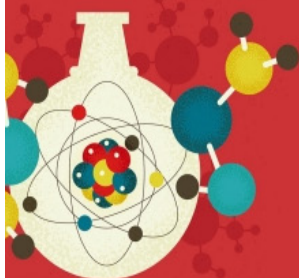


present



S.T.E.M.

POWERED BY WOMEN



Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

UP NEXT:

MOLECULAR BASIS OF ENZYME FUNCTION



Prof. Hemalatha Baram  
Professor, JNCASR Bengaluru



and

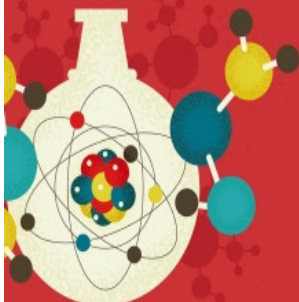


present



S.T.E.M.

POWERED BY WOMEN



Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

UP NEXT:

SCIENTIFIC AND REGULATORY CONSIDERATIONS OF BIOSIMILAR DEVELOPMENT



Dr Anita Krishnan  
Associate Vice President,  
Biocon Biologics



and

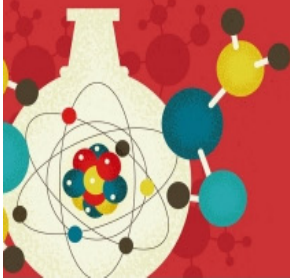


present



# S.T.E.M.

## POWERED BY WOMEN



Celebrating Women in Science and Technology

March 9, 2024 | Bangalore

### UP NEXT:

## PHOTONIC QUANTUM SCIENCE AND TECHNOLOGIES



Prof. Urbasi Sinha,  
Raman Research Institute,  
Bengaluru

### SESSIONS AND SPEAKERS



**ASTRONOMY: AN ANCIENT SCIENCE DRIVEN BY TECHNOLOGY**

Prof. Annapurni Subramaniam  
Director & Senior Professor,  
Indian Institute of Astrophysics



**PHOTONIC QUANTUM SCIENCE AND TECHNOLOGIES**

Prof. Urbasi Sinha,  
Raman Research Institute,  
Bengaluru



**OPPORTUNITIES AND CHALLENGES FOR WOMEN'S LEADERSHIP IN HEALTH**

Prof. Prabhdeep Kaur, Professor  
Isaac Centre for Public Health,  
Indian Institute of Science,  
Bengaluru



**MOLECULAR BASIS OF ENZYME FUNCTION**

Prof. Hemalatha Balaram  
Professor, JNCASR Bengaluru

### SESSIONS AND SPEAKERS



**DUSTY FLOWS IN NATURE**  
Prof. Rama Govindarajan  
International Centre for  
Theoretical Sciences  
Tata Institute of Fundamental  
Research



**SCIENTIFIC AND REGULATORY CONSIDERATIONS OF BIOSIMILAR DEVELOPMENT**

Dr Anita Krishnan  
Associate Vice President @  
Biocon Biologics



**GENERATIVE AI: PIONEERING THE NEW ERA OF INTELLIGENCE**

Dr Saigeetha A. J.,  
Chief Data Scientist and AI-ML Leader,  
AI & Analytics, IBM Consulting



**A PANEL DISCUSSION**

# Bhopal Chapter

The Chapter successfully organized following activities during the year 2023-24:

| S.No. | NASI-Bhopal Chapter Activity  | Institution Associated with  | Date of Activity  |
|-------|---|--|-------------------|
| 01    | ZSI National Webinar on 'Biodiversity and its Conservation'   | Government Autonomous P.G. College Satna (M.P).                              | 21 Aug 2023.      |
| 02    | Inter District level School level competitions and prize distribution   | Saraswati Vidyapeeth, Satna (M.P.)   | 27 Oct 2023.      |
| 03    | International Conference on 'Advances and Innovations in Biotechnology for Sustainable Bioresources and Bioeconomy'                 | Faculty of Life Science, AKS University, Satna (M.P.)                        | 22-25, Nov 2023   |
| 04    | National Workshop (Hybrid Mode) on 'Multi disciplinary Approaches on Recent Trends and Emerging Opportunities in Career Growth'     | Mata Gujri Mahila Mahavidyalaya (Autonomous), Jabalpur (M.P.)                | 24-31, Jan 2024   |
| 05    | National Research Conference on 'Impact of human activities on Ecosystem and Climate change'  | Godavari Self-Employment Centre, Nahdora, Dt. Chhatarpur, (M.P).             | 28 to 29 Jan 2024 |
| 06    | National Conference on 'Horticulture in India: Emerging trends, Challenges and Opportunities'                                       | Mansarovar Global University Bhopal (M.P.)                                   | 09-10 Feb 2024    |
| 07    | National Science Day Programme 2024   | Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot Satna (M.P.) | 27-28 Feb 2024    |
| 08    | ZSI National Workshop on 'Biodiversity and its Conservation'  | Central Regional Office Zoological Survey of India, Jabalpur (M.P)           | 9-10 Mar 2024     |
| 09    | International Conference on 'Advances in Science & Technology for Sustainable Development'  | Faculty of Basic Science, AKS University, Satna (M.P.)                       | 11-12 Mar 2024    |
| 10    | Training cum Workshop on 'Entrepreneurship development through Vermi composting, Mushroom Production and Kadaknath Poultry farming' | DRI Arogyadham Chitrakoot, Satna (M.P)                                       | 22, Mar 2024      |
| 11    | National Workshop on 'Intellectual property rights in order to sensitize scientific, technical and management fraternity'           | Mahatma Gandhi Chitrakoot Gramodaya Vishwavidyalaya, Chitrakoot Satna (M.P.) | 22-23, Mar 2024   |

- National Webinar on 'Biodiversity and its Conservation' organized by Government Autonomous Post Graduate College Satna (M.P). In Collaboration with Zoological Survey of India, Kolkata (W.B) and National Academy of Sciences India (NASI) Bhopal chapter was held on August 21, 2023. Around 1800 participants from across India joined in the on line National Webinar.



The Chief guest of this National webinar was Dr. Dhriti Banerjee, Director ZSI Kolkata (W.B), Special Guest was Dr. Niraj Kumar, Executive Secretary NASI Prayagraj (U.P.) and Eminent speakers were Dr. Basudev Tripathy, Scientist E, ZSI Western Regional Centre Pune; Dr. Navneet Singh, Scientist E, ZSI Kolkata (W.B); Dr. Anil Kumar, Scientist E, ZSI Northern Regional Centre Dehradun (U.K) and Dr. Devanshu Gupta, Scientist D, ZSI Kolkata.



- Inter District level School level competitions and prize distribution held at Saraswati Vidyapeeth, Satna (M.P.) on October 27, 2023.

# सरस्वती विद्यापीठ में विज्ञान वार्ता व विज्ञान प्रश्नोत्तरी आयोजित

**“रमन विज्ञान परिषद्” सरस्वती विद्यापीठ उतैली, सतना**  
**राष्ट्रीय विज्ञान अकादमी - भोपाल चैम्बर के सहयोग से**  
**“विज्ञान वार्ता एवं विज्ञान प्रश्नोत्तरी कार्यक्रम”**  
**27 अक्टूबर 2023**  
**आयोजक**  
**सरस्वती विद्यापीठ आवासीय उ.मा. विद्यालय, सतना**



## सरस्वती विद्यापीठ में विज्ञान वार्ता एवं विज्ञान प्रश्नोत्तरी



**सतना @ पत्रिका.** सरस्वती विद्यापीठ उतैली सतना में 27 अक्टूबर को शंकर सभागार में वैज्ञानिक वार्ता एवं विज्ञान प्रश्नोत्तरी का आयोजन किया गया। जिसमें मुख्य अतिथि डॉ. संजय कुमार पाठक, वरिष्ठ वैज्ञानिक अधिकारी, भाभा एटॉमिक रिसर्च सेंटर, ट्राम्बे, मुंबई, कार्यरत म के अध्यक्ष डॉ. आर.एस. गुप्ता, विभागाध्यक्ष भौतिक शास्त्र रनातकोत्तर महाविद्यालय, सतना एवं विशिष्ट अतिथि डॉ. शिवेश प्रताप सिंह, विभागाध्यक्ष, प्राणी विज्ञान

शा. रनातकोत्तर महाविद्यालय थे। इस विज्ञान वार्ता में कक्षा 10,11 एवं 12वीं के 350 छात्र एवं छात्राओं ने भाग लिया, जिले के कुल 8 विद्यालय सम्मिलित हुए। जिसमें शा. उत्कृष्ट उ.मा. वि. वेंकट र .1, की टीम प्रथम रही, सरस्वती, मैहर द्वितीय स्थान एवं सरस्वती, उचेहरातृतीयस्थानपर रही कार्यरत म में डॉ. रामानुज पाठक वेंकट र मांक एक, राजेंद्र सिंह सी एम राजू बगहा, शिवेंद्र सिंह सरस्वती विद्यालय नागौद आदि की उपस्थिति रही।



## विज्ञान वार्ता में व्यंकट वन ने मारी बाजी, रहा विजेता

सतना। सरस्वती विद्यापीठ उतैली स्थित 'शंकर सभागार' में वैज्ञानिक वार्ता एवं विज्ञान प्रश्नोत्तरी का आयोजन किया गया। विज्ञान प्रश्नोत्तरी का कार्यक्रम 5 राउंड अडिक्च एवं विद्युत्त प्रोजेक्टर के माध्यम से अडिक्च किया गया। जिसमें शा. उत्कृष्ट उमा. वेंकट क. 1, की टीम प्रथम रही, सरस्वती, मैर द्वितीय स्थान एवं सरस्वती, उचेहरा तृतीय स्थान पर रही। कार्यक्रम में मुख्य अतिथि के तौर पर वरिष्ठ वैज्ञानिक अधिकारी भाषा एटॉमिक रिसर्च सेंटर डॉ. संजय कुमार पाठक मौजूद रहे जबकि विभागाध्यक्ष भौतिक शास्त्र रनातकोत्तर महाविद्यालय डॉ. आर.एस. गुप्ता ने कार्यक्रम को अत्यन्त ही उत्साह से संबोधित किया। इस अवसर पर विभागाध्यक्ष, प्राणी विज्ञान शा. रनातकोत्तर महाविद्यालय व प्राचार्य डा. शिवेश प्रताप सिंह विशिष्ट अतिथि के तौर पर मौजूद रहे। कार्यक्रम का संचालन श्रीरंजित सिंह, विद्यालय प्रमुख ने किया। कार्यक्रम में मुख्य रूप से डॉक्टर रामानुज पाठक, राजेंद्र सिंह शिवेंद्र सिंह आदि की उपस्थिति उल्लेखनीय रही।



**साढ़े 3 सौ से अधिक छात्रा हुए शामिल**  
 इस विज्ञान वार्ता में कक्षा 10,11 एवं 12 वीं के

### सरस्वती विद्यापीठ में विज्ञान वार्ता एवं विज्ञान प्रश्नोत्तरी

विभागाध्यक्ष नागौद, सरस्वती उमा विद्यालय आ विद्यालय माधवगढ़ एवं स (आवासिय विद्यालय), औरी की टो एवं छात्राओं ने पान लिया।  
**मुख्य अतिथि ने दी परमाणु उर्जा**  
 इस अवसर पर मुख्य अतिथि वरिष्ठ वैज्ञानिक भाषा एटॉमिक रिसर्च सेंटर डॉ. संजय कुमार पाठक ने परमाणु उर्जा के बारे में मुख्य अतिथि ने परमाणु उर्जा के बारे में मुख्य अतिथि के सवाल में भी छात्रों को उत्तर दे कर प्रशंसा की। कार्यक्रम की सफलता पर विभागाध्यक्ष भौतिक शास्त्र रनातकोत्तर महाविद्यालय डॉ. आर.एस. गुप्ता ने कार्यक्रम को अत्यन्त ही उत्साह से संबोधित किया। इस अवसर पर विभागाध्यक्ष, प्राणी विज्ञान शा. रनातकोत्तर महाविद्यालय व प्राचार्य डा. शिवेश प्रताप सिंह विशिष्ट अतिथि के तौर पर मौजूद रहे। कार्यक्रम का संचालन श्रीरंजित सिंह, विद्यालय प्रमुख ने किया। कार्यक्रम में मुख्य रूप से डॉक्टर रामानुज पाठक, राजेंद्र सिंह शिवेंद्र सिंह आदि की उपस्थिति उल्लेखनीय रही।

**सरस्वती विद्यापीठ आवासीय उ.मा. विद्यालय**  
 उतैली, सतना (म.प्र.)  
**“विज्ञान वार्ता एवं विज्ञान प्रश्नोत्तरी कार्यक्रम”**  
**प्रमाणपत्र**  
 प्रमाणित किया जाता है कि श्री.....ने  
 उतैली, सतना (म.प्र.) द्वारा आयोजित “विज्ञान वार्ता एवं विज्ञान प्रश्नोत्तरी” प्रतिस्पर्धा में भाग लिया एवं.....स्थान प्राप्त किया।  
 विद्यालय परिचारक आपके उज्जवल भविष्य की कामना करता है।  
 गौरवशाली  
 संजय कुमार पाठक  
 कार्यक्रम प्रमुख  
 सतना, दिनांक 27.10.2023

- International Conference on Advances and Innovations in Biotechnology for Sustainable Bioresources and Bioeconomy: The conference was organized at AKS University, Satna(M.P.) November 22-25, 2023. In this International Conference (AI-BSBB2023) 600 participants from 120 institutional organizations with more than 100 Invited Speakers from 16 countries witnessed the glorious inauguration.



- 7day National workshop (hybridmode) on 'Multidisciplinary approaches on recent trends and emerging opportunities in career growth' held on January 24-31, 2024 at mata gujri mahila mahavidyalaya'(autonomous), Jabalpur(M.P.)



### सात दिवसीय राष्ट्रीय कार्यशाला का समापन

जबलपुर। माता गुजरी महिला महाविद्यालय में 24 जनवरी से 31 जनवरी 2024 तक सात दिवसीय राष्ट्रीय कार्यशाला का आयोजन हुआ। जिसका विषय नवीनतम रुझानों पर बहुआयामी दृष्टिकोण और करियर विकास में उभरते अवसर (हाइब्रिड मोड) रहा। विशिष्ट आतिथि के रूप में स्टार्टअप रुझान मेंटोर, मैनेज स्मार्ट सिटी इंक््यूबेशन सेंटर जबलपुर से केता नारदेव पथारी। मुख्य आतिथि के रूप में क्षयरेकर कापो डिजाइन इन्वेंशन सेंटर राठौड़वि जबलपुर से प्रो. शारद सिंह संधु पथारी, उन्होंने स्वागत भाषण में नवाचार प्रकृति के समाधान से लेकर जटिल समस्याओं तक की प्रेरणा विषय पर अपना व्याख्यान दिया। इस अवसर पर बहूदलीप सिंह बेसल, जलिनदर सिंह मैनी, वैबिन्दर सिंह गुरूदू एवं गुरुदेव सिंह उपास्थित थे।



### अभूतपूर्व दिवसीयों की भी शुरुआत थी

माता गुजरी महाविद्यालय की भी शुरुआत थी। सात दिवसीय कार्यशाला के दौरान माता गुजरी महाविद्यालय की शुरुआत के 100 वें वर्ष के अवसर पर आयोजित कार्यक्रमों में शामिल होने के लिए माता गुजरी महाविद्यालय के प्राचार्य प्रो. अशोक शर्मा ने कार्यशाला में भाग लेने का अवसर प्रदान किया।

### रहस्यपूर्ण विचारों की आवश्यकता

कार्यशाला के दौरान माता गुजरी महाविद्यालय के प्राचार्य प्रो. अशोक शर्मा ने कार्यशाला में भाग लेने का अवसर प्रदान किया।



### कार्यक्रम में विभिन्न छात्राओं को पुरस्कार का वितरण

कार्यशाला के दौरान माता गुजरी महाविद्यालय के प्राचार्य प्रो. अशोक शर्मा ने कार्यशाला में भाग लेने का अवसर प्रदान किया।

- Prof. Akhilesh Kumar Pandey, Hon'ble Vice Chancellor, Vikram University Ujjain (M.P) was the Chief Guest, Prof. Vishal Mishra, BHU (IIT), Varanasi, U.P. was the Keynote Speaker. The event continued for seven days and attended by more than 1200 participants both offline and online mode followed by their Oral Presentations of their research works.
- The workshop had 14 Technical sessions of various themes of workshop including Special session (Onlinemode) and Poster presentation session to encourage UG & PG Students.
- National research conference on 'impact of human activities on ecosystem and climate change' held at Godavari Self-Employment Centre, Nahdora, district Chhatarpur, M. P. on January 28-29, 2024. The chief guest, Dr. Virindra Nath focused on environmental protection and solution of global warming and climate change. Dr. Kanhaiya Tripathi, Dr. B. D. Ahirwar and Mr. Harishchandra Patel threw light on different related aspects of theme. The executive director, and organizing secretary of the conference dr. ashwanikumar dubey, highlighted the activities of the society.



- National Conference on 'Horticulture in India: emerging trends, challenges & opportunities' organized by Mansarovar Global University, Bhopal (M.P.) on February 9 & 10, 2024.





- International Conference on 'Advances in Science & Technology for Sustainable Development' held at Faculty of Basic Science, AKS University, Satna (M.P.) on March 11-12, 2024 : The Faculty of Basic Science at AKS University, Satna organized International Conference on 'Advances in Science & Technology for Sustainable Development' from 11-12 March, 2024 that witnessed participation from 10 distinguished delegates representing countries like USA, Saudi Arabia, Fiji, Tanzania and Nepal. The conference showcased a diverse range of research topics and fostered global collaboration in the field of science. This event has served as a valuable opportunity for networking, knowledge sharing, and promoting inter disciplinary research initiatives.



- Training cum workshop on 'Entrepreneurship development through vermicomposting, Mushroom, production and Kadaknath Poultry farming' at DRI, Aíogyadham Chitíakoot, Satna on March 22, 2024: Workshop was specially organized for College Students for spreading awareness on Entrepreneurship development through Vermi composting, Mushroom Production and Kadaknath Poultry farming training by subject experts.
- A two-day National Workshop on 'Intellectual Property Rights' in order to sensitize scientific, technical and management fraternity organized by M.G.C. G Vishwavidyalaya, Chitrakoot, Satnawas held on March 22-23, 2024.



**ग्रामोदय विश्वविद्यालय में बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला**



**ग्रामोदय में बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला का**

**विश्व जल दिवस 22 मार्च**

ग्रामोदय विश्वविद्यालय में बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला का उद्घाटन हुआ।

कार्यशाला में विभिन्न विभागों के अधिकारियों और छात्रों का सहभाग था।

**विश्व जल दिवस पर भी हुए व्याख्यान, जल संरक्षण के सार्यक उपायों को प्रदर्शित किया जायेगा**

**ग्रामोदय विश्वविद्यालय में बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला का उद्घाटन**

कार्यशाला में विभिन्न विभागों के अधिकारियों और छात्रों का सहभाग था।

**ग्रामोदय में बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला**

**विश्व जल दिवस पर भी हुए व्याख्यान**

कार्यशाला में विभिन्न विभागों के अधिकारियों और छात्रों का सहभाग था।

**बौद्धिक संपदा अधिकारों पर दो दिवसीय राष्ट्रीय कार्यशाला का उद्घाटन**

कार्यशाला में विभिन्न विभागों के अधिकारियों और छात्रों का सहभाग था।

# Chandigarh Chapter

The activities of Chandigarh Chapter of NASI during the year 2023-24 have been broadly divided into four categories:

1. Nobel Prize Series
2. Popular Lecture Series from Eminent scientists
3. Panel discussions
4. Institutional Vision in run to 2047

## ● Nobel Prize Series

The first category being the Nobel Prize Series (04 Online lectures), the second being the Popular Lecture Series from Eminent Scientists (02 Online and 07 Physical mode lectures), the third being the Panel discussions(02 online) and the fourth being the Institutional Vision in run to 2047 (07 online lectures). The first noble Prize lecture was arranged on Physiology or Medicine on November 6<sup>th</sup>, 2023. The title of the talk was Physiology or Medicine-2023 mRNA vaccines: A promising idea. Prof. Javed N. Agrewala, FNASc, FNA, FASc, Centre for Biomedical Engineering, IIT Ropar Shanti Swarup Bhatnagar Prize Awardee (2005) was the key note speaker while Prof. Harsh Nayyar, Director Research & Development Cell Panjab University, Chandigarh was the guest of honor.



Prof. Javed N. Agrewala  
FNASc, FNA, FASc  
Centre for Biomedical  
Engineering, IIT Ropar  
Shanti Swarup Bhatnagar  
Prize Awardee (2005)



Drew Weissman      Katalin Karikó



Prof. Harsh Nayyar  
Director Research &  
Development Cell  
Panjab University,  
Chandigarh

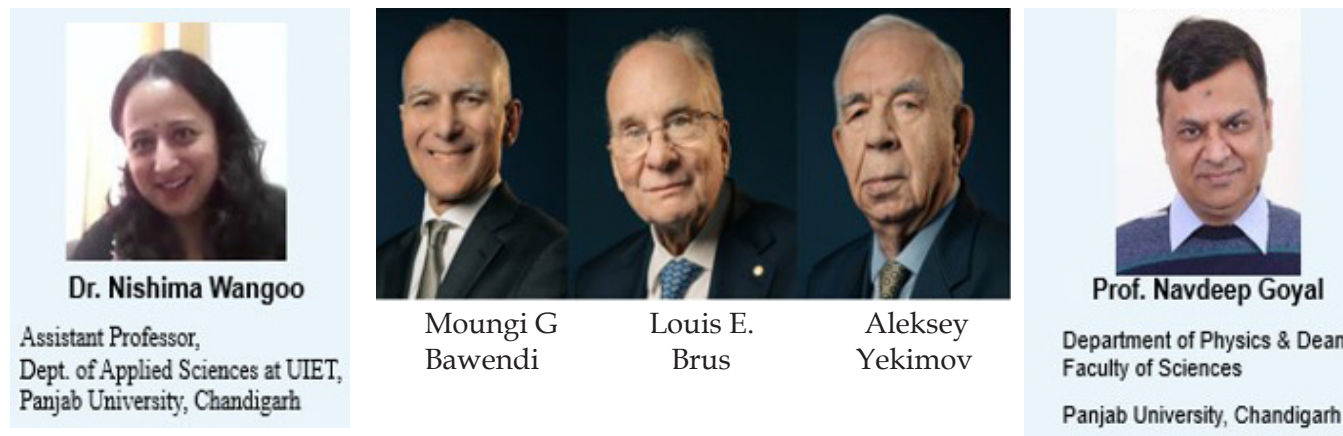


Prof. Pushpinder Syal  
Professor (Retd.),  
Dept of English & Cultural Studies  
Panjab University, Chandigarh.

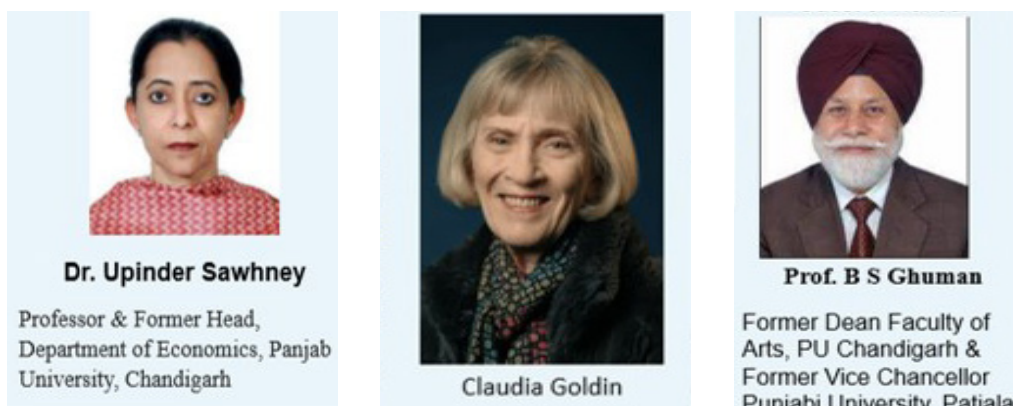
The second Noble Prize lecture in the series was arranged on Literature on Nov 20, 2023. Prof. Pushpinder Syal, Professor (Retd.), Department of English & Cultural Studies Panjab University, Chandigarh was the keynote speaker. The Nobel Prize in Literature 2023 is awarded to the Norwegian author Jon Fosse, for his innovative plays and prose which give voice to the unsayable. His immense oeuvre written in Norwegian Nynorsk and spanning a variety of genres consists of a wealth of plays, novels, poetry collections, essays, children's books, and translations.

The third noble Prize 2023 lecture in Chemistry was arranged on December 18, 2023. The Nobel Prize in Chemistry 2023 was given to Dr. Nishima Wangoo, Assistant Professor Department of Applied Sciences UIET, Panjab University, Chandigarh was the key-note speaker and Prof. Navdeep Goyal Department of Physics & Dean Faculty of Sciences Panjab University, Chandigarh was the Guest of Honour.

The Nobel Prize in Chemistry 2023 was awarded to Mounji G. Bawendi, Louis E. Brus, and Aleksey Yekimov for the discovery and development of quantum dots. These tiny particles have unique properties and now spread their light from television screens and LED lamps. They catalyze chemical reactions, and their clear light can illuminate tumor tissue for a surgeon.



The fourth noble Prize lecture in Economics 2023 was arranged on January 30, 2024. Dr. Upinder Sawhney, Professor & Former Head, Department of Economics, Panjab University, Chandigarh was the Keynote Speaker and Prof. B. S. Ghuman, Former Dean Faculty of Arts, P.U. Chandigarh & Former Vice Chancellor, Punjabi University; Patiala was the Guest of Honor.



- **Popular Lecture Series from Eminent scientists**

A Popular and State of the Art Lecture was arranged on September 5, 2023 on ChatGPT in Teaching & Research.

Prof. Rajat Sandhir, Department of Biochemistry, Panjab University, and Chandigarh was the Keynote Speaker while Prof. Jai Rup Singh FIMSA, FAMS, FPAS, Founder Vice Chancellor, Central University of Punjab, Bathinda & Former Vice Chancellor, GNDU, Amritsar, Honorary Professor, Panjab University, Chandigarh and Former President, Indian Society of Human Genetics was the guest of honor.



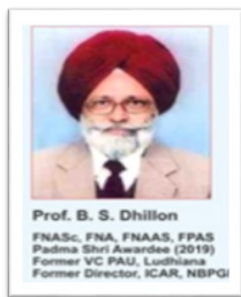


ChatGPT is a powerful large language model developed by OpenAI. It has the potential to be used as a valuable tool for educators & researchers in many ways. Educators can take advantage of using it for devising new technologies, lecture planning, preparing algorithms and data structure, data retrieval, personalized learning support, rapid assessment, and evaluation. For researchers, it can effectively support the writing process of research by finding and correcting typographical errors, improving grammatical inconsistencies, providing advanced vocabulary, and recommending improvement strategies. It can also summarize published work and research ideas by analyzing and helping the researchers.

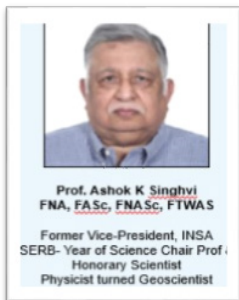


Another popular lecture was arranged on September 15, 2023 on the title: From Galileo to James Webb Space Telescope. Prof. Ajit Kembhavi, FNASc, FASc, Former Director (IUCAA), Pune was the Keynote Speaker. Prof. Ajit Kembhavi delivered the lecture on the topic "From Galileo to James Webb Space Telescope". In this lecture, he talked about the problems and solutions of creating a telescope in space. He shared how the segmented mirror telescope with a large number of mirrors can help in creating the tool. Scientists developing the telescope at the Indian Institute of Astrophysics, Bangalore use the property of scattering of light. He also talked about the Wide-Field Radio Imaging of the Galactic Centre, and Hubble Space Telescope, and made the audience understand Explanatory Eclipses.

A special lecture was arranged on Legendary Dr. M.S. Swaminathan, FRS: An Accessible Intellectual Giant on October 28, 2023



Prof. B. S. Dhillon, FNASc, FNA, FNAAS, FPASc, Padma Shri Awardee (2019) Former VC PAU, Ludhiana Former Director, ICAR, NBPGR was the keynote speaker. Monkombu Sambasivan Swaminathan was born on August 7, 1925 in Kumbakonam in Tamil Nadu. He is known for his basic research related to potato, wheat, and rice, in areas such as cytogenetic, ionizing radiation, and radio sensitivity. His work on wheat that led to the Green Revolution made him famous world-over. He was president of so many Scientific Bodies and was recognized among the 20 most influential Asian people of the 20th century by Times. He was recipient of various awards including the Shanti Swarup Bhatnagar Award, the Ramon Magsaysay Award, and the Albert Einstein World Science Award apart from being an FRS, FNA, FNASc, FTWAS.



A series of special lectures were delivered by Prof. Ashok K Singhvi, FNA, FNASc, FNA Sc, FTWAS, Former Vice-President, INSA SERB-Year of Science Chair, Prof. Honorary Scientist Physicist turned Geoscientist

Dr. A.K. Singhvi is a Physicist turned Geophysicist who had his education from Jodhpur University and Ph.D. from IIT Kanpur talked on hyperfine interaction, Mossbauer Spectroscopy and nuclear reactions. He joined PRL Ahmedabad and

used his knowledge of spectroscopy study paleoclimates. He worked at the University of Oxford as a Ford Foundation Fellow and learned thermoluminescence dating of sedimentary deposits in desert sands.

- **Lecture 1: Suggestion for a Successful Career Navigation in a Competitive World**

This lecture was mainly focused for the career-conscious students, guiding them how to access their potential and interests. He motivated the students to focus on their marks as well as concentrate on their passion. “Every field is good provided you excel in it”, was his loud and clear message.

- **Lecture 2: Social Dimensions of Geosciences**

The speaker discussed the reasons for the mass extinction of Biota and the possibility of the sixth mass extinction and the gradual collapse of civilizations while focusing on the economic, socio-political and conditions. He also touched upon the UN Sustainable Development Goals through very simple illustrations and pictorial representation.

- **Lecture 3: Ethics and its practice in Scientific Research**

Keeping in view his book on ‘Ethics in Research’ published by INSA, the organizers requested him for a lecture on this topic. This was felt necessary given the fact that most of the faculty members are young and at their initial stages of doing and guiding independent research.

An inspiring lecture was arranged on December 22, 2023 on **Divisibility Test-one test to fit them all** by Prof. Apoorva Khare IISc Bangalore. Professor Apoorva Khare of IISc Bangalore is an Indian mathematician who works in matrix positivity and analysis, combinatorics and discrete mathematics, and representation theory. He was awarded the Shanti Swarup Bhatnagar Prize for 2022, the Swarnajyanti Fellowship & Ramanujan Fellowship of SERB-DST. He is a fellow of IASC. He is also listed as one of the 75 scientists aged below 50 who are shaping today’s Bharat (India).



A special lecture was arranged on January 5, 2024 on Climate-Smart Agriculture for a Sustainable and Resilient Future by Prof. Shibu Jose, Associate Dean Research Director, MO Agricultural Experiment Station College of Agriculture, Food & Natural Resources, University of Missouri, Columbia, USA.



The agriculture enterprise is facing many challenges, including a changing climate and associated extreme weather events. Climate-smart agriculture, driven by three main goals such as sustainable intensification, enhanced resilience and reduced greenhouse gas emissions, is seen as one of the ways to address the impacts of a changing climate. Efforts are currently underway in the US to provide farmers the resources and tools needed for the adoption of climate-smart practices such as conservation tillage, cover cropping, nutrient management, rotational grazing, agro forestry, digital and precision farming, and other practices to reduce GHG emissions.

This effort will expand markets for America’s climate-smart commodities, leverage the greenhouse gas benefits of climate-smart commodity production, and provide direct, meaningful benefits to production agriculture, including for small and underserved producers. The program is expected to reach more than 60,000 farms, encompassing more than 25 million acres of working land with the potential to sequester over 60 million metric tons of carbon. Nearly 100 universities are involved in this effort, including the University of Missouri.

● **Panel discussions**

The first panel discussion entitled ‘Towards More Harmony and Inclusiveness’ was held on May 27, 2023 in HEI Campuses. The panelists shared their experiences of their respective campuses of Higher Education Institutions with respect to students, faculty, and staff. The problems of the young students and their aspirations are similar irrespective of the place. How they handled and brought harmony through a student-centric approach was shared. The second panel discussion was held on January 24, 2024 on Global warming. Global Warming, the Challenges Ahead for India and Possible Workable Solutions: A Panel discussion. The panelists discussed the reasons for climate change, the science behind it, and the challenges being faced in addition to the strength of India in forecasting the changes in weather predicting the expected disasters, and estimating the damage control possibilities. It also discussed the steps taken at the government level towards mitigating the issue.



Sh. Ashok Thakur  
Former Secretary  
Higher Education  
MHRD, Govt of  
India

Dr. Girish Sahni  
FNASC, FNA  
Former Director  
General CSIR (2015-  
18), Former Director,  
CSIR-IMTech (2005-  
15)

Prof. Furqan Gamar  
Centre for  
Management  
Studies Jamia Millia  
Islamia University  
Former VC. Central  
University of HP,  
Dharamshala

Dr.S S Mantha  
Former Chairman  
AICTE (2009-15)  
CEO of  
ManaPetStartUp  
Knowledge Centre  
(MSC) Govt  
of Maharashtra

Dr. Meena Singh  
Director AIIMS,  
Rishikesh

Prof. Suguna  
Sathyamurthy  
Former Student  
Advisor SER  
Mohali

They also advised the common man to help in the efforts of the government by reducing the production of greenhouse gases at their end and devising methods of self-safety against disasters.



Dr. Laxman Singh Rathore  
Former Director General  
Indian Meteorological  
Department, Govt. of India

Dr. M Mohapatra  
Director General  
Indian Meteorological  
Department, Govt. of India

Dr. S Paul  
Scientist F and Director  
Regional Meteorological  
Centre, Shimla

A memorial meeting was arranged in the Chemistry Department, Panjab University Chandigarh on February 7, 2024 to honour Dr. Nitya Anand, an alumnus of Panjab University. Dr. Nitya Anand, FNA, Padma Shri (2012) and Vigyan Rattan awardee (2014) was Director CDRI, Lucknow (1974-84) and Chairman, Scientific Committee of Indian Pharmacopoeia Commission (IPC) (2005). In his memory, a memorial meeting was organized on February 7, 2024, on the campus of the Panjab University of which he was an alumnus. Another interesting lecture was delivered on April 3, 2023 on The Vision of CSIR-Central Scientific Instruments Organization (Estd 1959) by Dr. S. Anantha Ramakrishna Director CSIR-CSIO, Chandigarh and S.S. Bhatnagar awardee (2016). Prof. Dr. Girish Sahni, FNASc, FNA, FASc Former DG CSIR, Former Director IMTECH, Bhatnagar Fellow of CSIR was the Guest of Honour.

The delegates appreciated and talked about the vision of Dr. Nitya Anand who played a great role in carrying out research in niche areas of measurement sciences and innovative instrumentation technology for strategic and societal applications; to provide quality services and human resource development in advanced instrumentation and to emerge as a global player in the field of instrumentation sciences.

A state-of-the-art talk on 'The Vision of INST Mohali (Estd. 2013)' was arranged on April 29, 2023. Dr. Amitava Patra FNASc, FRSC, Director, INST Mohali was the keynote speaker while Prof. Ashok K. Ganguli, FNASc, FASc, FRSC, Former Deputy Director, IIT Delhi and Founding Director, INST Mohali was the Guest of Honor.



To emerge as globally competitive India's foremost research institution in Nano Science & Technology and to contribute to the society through application of Nano science and nanotechnology in the field of agriculture, medicine, energy, and environment.

A special lecture on the 'The Vision for IIT Ropar (Estd. 2008)' was arranged on May 11, 2023. Prof. Rajeev Ahuja, Director, Indian Institute of Technology, Ropar was the Keynote Speaker while Prof. Renu Vig, Vice Chancellor, Panjab University, Chandigarh & President CRIKC was the Guest of Honour.

To be a trendsetter among the technology, universities have born in this millennium. It is with a mission to foster a transformative learning environment and a culture of excellence enabling creation of knowledge and development of socially responsible, enterprising leaders contributing significantly to national progress and humanity.

Another lecture in the series Institutional Vision in run to 2047 was arranged on July 1, 2023 on the topic The Vision of Amity University Punjab, Mohali (Estd 2021). Prof. R. K. Kohli, FNASc, FRS-B, FRS-C, FNA, FASc, FNAAS, FPASc, Vice Chancellor, Amity University, Mohali was the Keynote Speaker,

while Prof. Jai Rup Singh, FIMSA, FAMS, FPAS, Founder Vice Chancellor, Central University of Punjab, Bathinda and former Vice Chancellor, GNDU, Amritsar, Honorary Professor, Panjab University, Chandigarh, Former President, Indian Society of Human Genetics was the Guest of Honor.



*Institute of Nano Science and Technology*

● **The Vision of Amity University Punjab, Mohali (Est. 2021)**



Amity University Punjab in Mohali is a multi-disciplinary university offering UG, PG and Doctoral Programmes. It envisions being a top-notch academic institution committed to excellence in higher education and research and producing the finest human beings with the highest quality scientific minds engaged in the eternal quest for infinite knowledge. It proposes to activate creative instincts, motivate independent thinking; develop



questioning minds, and nurture a sense of integrity, ethics, uncompromising honesty, democratic liberal values respect for human rights and deep concern for the disadvantaged sections of society. It intends to build top-quality intellectual capital and to make AUP a highly reliable and accessible solution centre for tackling the problems of mankind by imparting world-class education and conducting cutting-edge research involving regional genius.



Another interesting talk was arranged by Prof. Dheeraj Sanghi, Vice Chancellor, J K Lakshmi Pat University Jaipur on July 22, 2023. The lecture was based on the theme ‘**The Vision of JK Lakshmi Pat University (Estd. 2011)**’. Prof. Sanjeev Sofat, Department of Computer Science & Engineering, Punjab Engineering College (Deemed to be University) Chandigarh was the guest of Honour. To be one of India’s most innovative higher education institutions as learning is a continuous process and academic excellence a way of life; As today’s world is evolving at a fast pace, we at JKLU strongly feel the need to

remain in sync with this process of constant change and transformation to make our students not only job-ready, but also future-ready by empowering them with new age life skills.



### LAKSHMIPATUNIVERSITYJKLUज्ञानम्अमृतम्

Another interesting talk was delivered on **Vision of NABI & CIAB (Estd 2010)** on July 29, 2023. Prof. Ashwani Pareek, FNA, FNASc, FNAAS, Executive Director, National Agri-Food Biotechnology Institute (NABI), Mohali was the Keynote Speaker while Prof. Rakesh Tuli, FNA, FASc, FNASc, FNAAS, Former Senior Research Advisor & JC Bose Fellow, Panjab University Chandigarh and Executive Director NABI were the Guest of Honor. The Vision of NABI is Food and nutritional security for all through agri-food biotechnology research and innovation with a mission to be a centre of excellence and provide leadership in agri-food biotechnology research.

# Chennai Chapter

The Chapter organized Science & Society activities under the 'Science & Society' banner of NASI. In many cases, Chennai Mathematical Institute (CMI) and the Institute of Mathematical Sciences (IMSc) co-sponsored the events.

- **Summer Training School in Mathematics**

A Programme on 'Summer Training School in Mathematics' was conducted at Vellore Institute of Technology (VIT), Vellore. The program was basically organized for the UG-III year students. The event was graced by the distinguished scientists from different institutions viz. Prof. Surjit Kumar (IIT-M), Prof. G. P. Youvaraj (RIASM Retd.) and Prof K. N. Raghavan (IMSc.), who conducted fifteen sessions on the topics viz. Sequences and Series, Convergence and Divergence, Solution of Systems of Linear Equations. The sessions were attended by 50 students from various colleges.

- **Lecture Programme**

A Lecture Programme was organized by the Chapter at Chennai Mathematical Institute (CMI), Chennai on July 14th & 15<sup>th</sup>, 2023. A total of six lectures were organized at CMI for the school students of class XI and XII. On the first day (July 14, 2023) of the event, Prof. Shailender Swaminathan, Krea University talked about 'Deciphering the Human Brain and Mind Through the Lens of the Economic, Environmental, and Social Dynamics of the 21st Century', Prof. Sitabhra Sinha, IMSc spoke on 'How to make an animal from "0"', Prof. Amit Kumar Sinhababu of CMI spoke on 'The joy and pain of factoring'. On the second day of the event (July 15, 2023), Prof. Madhavan Mukund, CMI spoke on 'Will stochastic parrots take over the world?'; Prof. Tarun Souradeep, RRI talked about 'LIGO-India: Frontier megascience@home' while Prof. Viswanathan K S, Krea University shared his views on 'The Art of Studying Chemistry'. About 50 students from different schools in and around Chennai participated in the lecture sessions.

- **Scientific Session**

The Chapter organized a Scientific Session on October 14, 2023 at Sankara Vidyalaya Matriculation School, Tambaram. The session was conducted by Prof. H S Mani (CMI). Simple & basic questions on Astronomy were discussed. The session lasted for about 2 hours. A total of 60 students from different Sankara Schools participated in the event.

- **Third Winter Training Programme in Mathematics**

The Chapter organized a *Winter Training Programme* (third) on December 07-20, 2023 at RIASM, University of Madras. A total of 13 resource persons from various institutes conducted ten sessions on the topics such as Number Theory, Algebra, Differential Equations, Complex Analysis, Linear Algebra

and Real Analysis. A total of 35 students from various colleges and scientific/ research institutes in and around Chennai attended the lecture sessions. The event was graced by the eminent scientists Prof. Rajeeva Karandikar (CMI), Prof. R Balasubramanian (IMSc Retd.), Prof. G Arun Kumar (IIT Madras), Prof, Anirban Mukhopadhyay (IMSc), Prof. Krishna Hanumanthu (CMI), Prof. Satyajit Roy (IIT Madras), Prof. R Sahadevan (RIASM), Prof. K Parthasarathy (RIASM), Prof. Amritanshu Prasad (IMSc), Prof. Soumen Sarkar (IIT Madras), Prof, G P Youvraj (RIASM), Prof. S Sundar (IMSc), Prof. Jaya Iyer (IMSc) who were the resource persons.

- **Workshop on Basic Undergraduate Mathematics**

The Chapter organized a workshop on Basic Undergraduate Mathematics on December 14-16, 2023 at VIT, Vellore. The eminent scientists/ resource persons from various institutes conducted fifteen sessions on the topics viz. Complex Analysis, Algebra, Ordinary Differential Equations. A total of 56 undergraduate students (of III year) from colleges in and around Vellore attended the lecture sessions. Prof. C. G. Venketasubramanian (IISER, Tirupathi), Prof. G. P. Youvaraj (RIASM Retd.), Prof K. N. Raghavan (IMSc.) and Prof. Thirupathi Gudi (IISc) were the resource persons.

- **Algebra, Analysis and Number Theory (WAANT-2024)**

The Chapter organized an event called WANNT-2024 on January 25--27, 2024 at The Gandhigram Rural Institute. The programme was organized to focus and address the concepts used in Algebra, Analysis, and Number Theory. The resource persons (four) from various institutes conducted twelve sessions on the topics such as Complex Analysis, Algebra, Real Analysis and Number Theory. A total of 50 students from various colleges enthusiastically participated in the lecture sessions. The resource persons included Prof R. Balasubramanian (IMSc, Retd.), Prof. G. P. Youvaraj (RIASM Retd.), Prof K. N. Raghavan (IMSc.) and Prof. P Veeramani (IIT-M).

- **Physics Day**

The Chapter celebrated the Physics Day at Chennai Mathematical Institute. A total of 50 school students of 6th to 8th standard from various schools in and around Chennai participated in the event. Ms. Lisha, an external expert, engaged the students in *Telescope Building Activity*. Dr. Dimple (CMI) gave a talk on 'Telescopes of India'.

- **Science Day**

The Chapter observed Science Day at Chennai Mathematical Institute. Three lectures on science and a talk on 'career guidance' were organized at CMI for the school students of class XI and XII. Prof. Siddhi Pathak, CMI spoke on 'The Densest Sphere Packing in 8D', Prof. S P Suresh, CMI spoke on 'Programming and Shlokas', Dr. Dimple, CMI talked about 'Imaging and Photometric Tools in Astronomy' while Prof. Usha Mahadevan, CMI, and Mr. V Raghu, external experts spoke on 'Career Guidance'. A total of 100 school students of 6th to 8th standard from different schools in and around Chennai participated in the event.

- **The Dindivanam Thai Tamizh School Science & Mathematics Workshop**

The Chapter organized a 'Science & Mathematics Workshop' on February 17, 2024 at Dindivanam Thai Tamizh School. The event comprised four sessions on Science and Mathematics. Dr. Subbaih Pandi, Madras University (Retd.) spoke on 'Learning science through demonstration' and conducted 2 sessions; Dr. R. Sivaraman, D G Vaishnav College, Kalippuutum Kanitham conducted 2 sessions. A total of 70 school students of classes 7th, 8th and 9th from 12 Government and Government-aided schools in and around Dindivanam participated in the event.

- **Events on 'Dispelling Scientific Myths Among School Children'**

The Chapter along with the Central University of Tamil Nadu (CUTN) conducted six events on 'Dispelling Scientific Myths among School Children' in the months of February & March 2024. The activities were sponsored by CMI, Chennai. The awareness camps were held in seven government schools. Prof. V Madhurima, Prof. Kavya Bakka, Prof. K Biju, Ms. Varsha Venugopalan, Ms. Swathi P V, Ms. Rugmini R and Mr. A Sulthan Ibrahim were the resource persons.

# Jammu Chapter

The following activities were organized by the Chapter:

- **World Environment Day**

The Chapter organized the World Environment Day on June 05, 2023. The programme was organized in the Department of Botany, University of Jammu. Besides, an interactive lecture on the main theme and a quiz competition were also organized on this occasion. The Staff members, research scholars and students from different Departments of the University and other colleges participated in the event. The PG students from five Departments participated in the quiz competition.



- **Successful landing of Chandrayaan-3 on August 25, 2023**

An event to celebrate the remarkable success of the *Chandrayaan-3 mission* was organized by the Local Chapter. The programme was well prepared and fully organized by the PG students and research scholars. The event portrayed all the relevant information about ISRO. A documentary film was screened



and projected. The students shared their views about the scientific capabilities of our country in space exploration and put forth their suggestions for future expectation. The event was also addressed by the Prof. Veenu Kaul, Head, Department of Botany, University of Jammu.



# Kolkata Chapter

- NASI and INSA-Kolkata Chapter & The People's Association for Science and Environment (PASE) jointly organized three lectures and several Student's Activity Programs.
- Dr. Chitra Mandal, Dr Amit Ghosh, Dr. Hemanta K Majumder & Dr. Asoke Kanti Sanyal discussed on the main theme i.e. 'Science and Technology for a Sustainable Future'; they also shared their views on the topic: 'A sketch on Prof. C V Raman's Life'.
- More than 150 students from this college and neighboring Bengali medium Government schools & teachers participated in this program.

## Report on Science-Society Outreach Programme sanctioned by NASI in 2022

| Programme Details   | P.I./Co PI/ Coordinators  | Amount (Rs) | Status    |
|---|---|-------------|-----------|
| Preparation of Soft Toys, Jewelry from Junk items, Decorative materials using waste plastic bags                        | PI- Mrs Maitrayi Dey<br>Coordinators: Dr. H K Majumder & Dr. Chitra Mandal; Adviser: Dr. Amit Ghosh   | 1.75 Lakhs  | Completed |
| Post-harvest management, processing and storage of raw fruits/vegetables  | PI: Dr. Animesh Naskar,<br>Prof. Sourav Baxi (PI at local site)<br>Coordinators- Dr. H K Majumder & Dr. Chitra Mandal; Adviser: Dr. Amit Ghosh                            | 1.75 Lakhs  | Completed |
| Screening of cervix of the rural underprivileged women for early detection of cervical cancer and their follow-up study | PI- Dr. Ramdas Chatterjee & Dr. R K Mandal, Chittaranjan National Cancer Inst, Kolkata<br><br>Coordinators: Dr. H K Majumder & Dr. Chitra Mandal, Adviser: Dr. Amit Ghosh | 3.0 Lakhs   | Completed |
| Livelihood Development Programme of Underprivileged people devastated by Natural Calamities in Sunderban Area           | PI- Dr. T K Giri<br>Coordinators- Dr. H K Majumder & Dr. Chitra Mandal;<br>Adviser: Dr. Amit Ghosh  | 3.85 Lakhs  | Completed |

Several EC meetings were held for proper implementation of these four workshops as well as preparation and submission of three NEW projects. All the meetings/ programmes were graced by Dr. Amit Ghosh, Advisor of NASI-Kolkata chapter, who gave his valuable suggestions for implementing the programmes.

## Plan for some future Activities (2024-2025)

- Out Reach Program atleast at 4 District and Local Schools
- Cancer Awareness Program
- Women Education Program
- Celebration of World Environment Day
- Observance of World Water Day
- National Science Day



# Lucknow Chapter

The Chapter has undertaken several programmes to promote and disseminate NASI's mission of fostering scientific awareness as a catalyst for societal advancement. Through outreach initiatives, educational programs, collaborative programmes with other institutions, and engagement with diverse stakeholders, our endeavour is to create a culture that values scientific inquiry and evidence-based thinking, ultimately leading to a more informed, resilient, and equitable society.

- **Celebration of World Environment Day**

The National Academy of Sciences (NASI) - Lucknow Chapter in collaboration with, the Department of Botany at Feroze Gandhi College, Raebareli, celebrated the *World Environment Day on June 5, 2023*, under the theme of '#Beat Plastic Pollution'. The event commenced with a warm welcome address by Dr. Tuneera Bhadauria from the Zoology department, followed by an enlightening introductory lecture on the significance of *World Environment Day* delivered by Prof. Anil Kumar from the Botany department. Prof. Pramod Tandon, in his presidential address, provided insights into NASI's objectives and highlighted the societal efforts toward science awareness. Prof. Tandon underscored the urgency for humanity to adopt sustainable living practices, stressing that human health and well-being hinge upon a healthy and sustainable environment. The guest speaker, Dr. Suchitra Banerjee, Secretary, NASI Lucknow Chapter (former Chief Scientist at CIMAP and Honorary Secretary of NASI), delivered a



*Celebration of World Environment Day at Feroze Gandhi College, Raebareli*

comprehensive lecture entitled 'The Journey of Plastic: From Invention to Pollution - Current Consensus and Future Trends'. Dr. Banerjee emphasized the importance of reducing, recycling, and controlling plastic waste to mitigate environmental pollution effectively. In the concluding remarks, Chief Guest Dr. V.P. Kamboj, the Past President of NASI, emphasized the imperative of water conservation and its prudent utilization to safeguard the environment from the adverse effects of water scarcity. Dr. Kamboj warned about the jeopardy faced by future generations if water resources are not managed responsibly by the present generation. The vote of thanks was delivered by the Principal of the college, Prof. Manoj Tripathi. Additionally, a Model/Poster competition was organized during the World Environment Day function, with a total of 31 presentations by PG and UG students. The judging panel, comprised of Prof. Veena Tandon and Dr. Suchitra Banerjee, awarded Mr. Ayushmani's MSc. IV-semester group model on the theme '#Beat Plastic Pollution' with the first prize. Ms. Umme Aimen and Mr. Abhya Mishra of MSc. II and BSc. IV semesters, received the second and third prizes respectively for their poster presentations. The event witnessed active participation from college faculty members and students number over 200. The event concluded with a tea session, fostering camaraderie and exchange of ideas among attendees.

- **Science & Society Programme at C.B. Gupta Agriculture P.G. College, Lucknow**

The Programme was jointly organized by NASI Lucknow Chapter and C.B. Gupta Agriculture P.G. College, Lucknow on August 5, 2023. The event began with a ceremonial Deep Prajawalan and Saraswati Vandana, followed by garlanding portraits of Saraswati Maa and the College Founder. Dr. Fida Hussain Ansari, College President, extended a warm welcome to the chief speaker and guests. Dr. Manvendra Tripathi discussed NASI's initiatives promoting science among students and faculty. Prof. Pramod



*Science & Society Programme at C.B. Gupta Agriculture P.G. College, Lucknow*

Tandon delivered a comprehensive lecture on 'Bioeconomy, Bioresources, and Entrepreneurship' which covered the intersection of innovation, sustainability and economic development. He discussed on the utilization of biological resources to create value, foster entrepreneurship and address global challenges such as food security, healthcare, and environmental sustainability. This dynamic field harnesses the power of biotechnology, sustainable practices, and business acumen to drive forward-thinking solutions that benefit society and the planet. The talk was followed by an interactive session. Dr. Rishi Shankar spoke on 'Challenges in Entrepreneurship' which encompassed navigating uncertainty, securing funding, market competition, managing growth, and balancing risk. Overcoming these hurdles demands resilience, adaptability, and strategic decision-making in a dynamic business landscape. Both the lectures ignited students' interest and enthusiasm towards entrepreneurial endeavours, inspiring them to explore innovative opportunities and contribute to economic and societal advancement.

The vote of thanks was proposed by Sri S.P. Singh, the Senior Management Committee member. The programme had 165 student participants, including B.Sc. (Ag.) Hons. Ist semester and B.Sc. Science Ist semester students along with 35 faculty members and guests.

- **Debate Competition on 'Genetically Modified Crops: Future of Agriculture'**

A debate Competition took place at CSIR-NBRI, Lucknow on August 18, 2023 held at CSIR-NBRI, Lucknow as part of the *One Week-One Lab Program*. A total of 35 students from various universities including Lucknow University, Integral University and Baba Bhim Rao Ambedkar University participated. The competition comprised three rounds: two preliminary rounds on August 12th and 16th, 2023 with 21 participants advancing to the finals. The jury for the preliminary rounds included



*NASI Debate Competition at CSIR-NBRI, Lucknow*

Dr. Arvind Jain, Dr. Mehar H. Asif, and Dr. Debasis Chakrabarty, all Senior Principal Scientists at CSIR-NBRI. The final round, held on August 18th, 2023, in the CSIR-NBRI auditorium, featured debates on 'Genetically Modified Crops: Future of Agriculture' with participants presenting compelling arguments for and against the motion. Prize winners were determined by a jury led by Prof. Pramod Tandon, along with Dr. Huma Mustafa and Dr. Sumit Ghosh, distinguished scientists from various institutions. All participants received participation certificates, and the prize distribution ceremony took place during the valedictory function on August 19th, with Shri Brajesh Pathak Ji, Deputy Chief Minister and Cabinet Minister of Medical Education, Health and Family Welfare in the Government of Uttar Pradesh, as the chief guest. The winners of the Debate Competition were:

- Ms. Vidushi Tiwari, Lucknow University: 1st Place:
- Ms. Shatakshi Shukla, Mahila Vidhyalaya & Ms. Sonali Seth, Lucknow University: 2nd Place (tie)
- Ms. Neethu Singh, Lucknow University : 3rd Place

The Cash prizes of Rs. 4500/-, Rs. 2000/- and Rs. 1500/- were awarded to the winners holding the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> positions respectively. Dr. Vidhu Sane, the Chief Scientist at CSIR-NBRI, coordinated the event.

### ● **The 'Vigyan Prasar aur Prachar' Programme (विज्ञान प्रचार एवं प्रसार कार्यक्रम)**

The 'Vigyan Prasar aur Prachar' Programme was organized by NASI Lucknow Chapter at Shri Badri Prasad Kanya Inter College on September 5, 2023 in the Village and Post-Baoli, District Jalaun. The event conducted by the organization 'Abhilasha' took place at the auditorium of Akshay Jeevan Hospital. The program began with the ceremonial lighting of lamps and offering of flowers to the statues of Maa Bharti and Maa Saraswati. Mrs. Kalpana Maheshwari, Principal of Shri Badri Prasad Girls Inter College, introduced Padma Shri awardee Prof. Pramod Tandon, Chairman, NASI Lucknow Chapter, Dr. R. D. Tripathi, Advisor, NASI Lucknow Chapter and Senior Entomologist Dr. Manvendra Tripathi. The Principal also underscored the organization's dedication to promoting girls' education in rural areas. On Teachers' Day, Prof. Tandon reminisced about Sarvepalli Radhakrishnan, a Bharat Ratna recipient renowned as an Indian politician, philosopher, and statesman. Radhakrishnan served as India's Second President from 1962 to 1967 and previously as its First Vice President from 1952 to 1962. A distinguished scholar in comparative religion and philosophy, he held prestigious academic positions at the University of Calcutta and the University of Oxford. Since 1962, his birthday on September 5th has been celebrated in India as Teachers' Day in recognition of his contributions to education. Prof. Tandon delivered a talk entitled 'आत्मनिर्भरता और उद्यमिता: युवाओं की भूमिका'. He elaborated on use of bioresources that offer great opportunities for entrepreneurship, fostering innovations in sustainable agriculture, biotechnology, and healthcare, driving economic growth and environmental stewardship. Dr. R. D. Tripathi discussed science's role in addressing natural problems, citing arsenic's dual role in cancer and medicine, and a rice variety detoxifying arsenic-contaminated land. Dr. Manvendra Tripathi focused on mosquito-borne diseases advocating prevention over cure, and acknowledging science's limitations in eradication. Dr. Jitendra Maheshwari, General Secretary, 'Abhilasha', thanked all the the experts. More than 300 girl students participated at the event.

## ● Science Awareness & Communication Programme

A programme on 'Science Awareness & Communication' was organized at Kalicharan P.G. College, Lucknow on December 7, 2023. The Coordinator of the Science Departments of the College welcomed the guests from NASI Lucknow Chapter. Er. V.K. Mishra, the College Manager, stated that Kalicharan P.G. College offers students high-quality educational experiences and support services, ensuring successful degree completion and skill proficiency. The management and faculty promote academic and career success of students by nurturing critical thinking, effective communication, creativity, and cultural awareness in a safe, accessible, and affordable learning environment. Prof. Pramod Tandon, Chairman, NASI Lucknow Chapter informed the audience that the aims and objectives of the Academy are to advance Science & Technology by promoting research for societal welfare, publishing relevant works, organizing discussions, undertaking significant scientific projects, cooperating with similar organizations nationally and internationally, securing funds, managing a Science Library, river galleries, and establishing chapters nationwide. Prof. Veena Tandon, NASI Honorary Scientist introduced the speakers namely, Prof. Ramesh Sharma and Dr. Manvendra Tripathi. Prof. Sharma spoke on the topic 'Nutrition and its role in human health and longevity' and highlighted on the role of nutrition for achieving healthy aging, particularly, on the beneficial effects of dietary restriction in maintaining healthy old age. He also mentioned about the unhealthy impact of overeating in obesity and many other age-related lifestyle diseases. Dr. Tripathi delivered a lecture entitled 'Dengue and its containment'. Vector-borne diseases like Dengue, Zika, and Chikungunya, transmitted by *Aedes* mosquitoes, are escalating rapidly. These mosquitoes prefer urban



*Science Awareness & Communication Programme at Kalicharan P.G. College, Lucknow*

areas, breed in stagnant water, and exhibit daytime biting behaviour. Controlling urban malaria vectors like *Anopheles stephensi* also aids in reducing Dengue transmission. *Aedes* mosquitoes have resilient eggs, gregarious larvae, and are vectors for potentially fatal Dengue haemorrhagic fever and shock syndrome. Prevention through measures like bed nets, mosquito-proofing homes, and community education is crucial. Principal Prof. Chandra Mohan Upadhyay proposed a vote of thanks. About 150 students participated and benefitted by the programme.

- **Awareness Programme on Health, Hygiene, Nutrition and Vermi-composting for Women and Children**

An Awareness Programme on Health, Hygiene, Nutrition and Vermi-composting for Women and Children was organized by the Chapter in Village Peernangar, Block Mall, District Lucknow on December 17, 2023. About 100 women, men and young boys and girls from the Village participated in this awareness programme. Prof. Pramod Tandon informed in simple vernacular language about the aims and objectives of NASI Lucknow Chapter. Dr. Manvendra Tripathi informed the participants that Vector-borne diseases, driven by unplanned urbanization and population influx, are escalating in Lucknow and rural areas adding that the diseases like dengue, chikungunya, and malaria thrive due to abundant breeding sites like drains, water collection in fields and desert coolers etc. Prevention, early detection, prompt treatment, and community education are essential due to the lack of specific treatment or vaccines. The role of villagers is very important in avoiding these diseases. Prof. Veena Tandon, NASI Honorary Scientist portraying the pictorial charts explained created awareness about worm infections. Worm and parasitic infections are very much prevalent and the major health concerns in many villages. Poor sanitation, limited access to clean water and inadequate healthcare infrastructure further contribute to the spread of these infections which consequently, lead to various health issues ranging from gastrointestinal problems to malnutrition and impaired cognitive development, particularly in children. She highlighted the importance of effective public health interventions focusing on improved sanitation, hygiene education, access to clean water, and regular deworming programs are crucial for reducing the burden of worm and parasitic infections in rural communities. Women and children were immensely benefitted by this interactive programme. Prof. Ramesh Sharma emphasized the importance of balanced nutrition intake for keeping good health among young children and mothers. The health benefits of variety of vegetables and 'mota anaaj' (like millets and other whole grains) was emphasized during the interaction with villagers. Mr. Vijay Verma (through a demonstration) informed the villagers that vermicomposting is vital for sustainable waste management, converting organic waste into nutrient-rich compost using earthworms. It improves soil fertility, promotes plant growth, reduces greenhouse gas emissions, and mitigates environmental pollution.

- **Health and Hygiene Awareness programme**

The Health and Hygiene awareness program was organized at Primary School, Village Hamirpur, Dhrawa, adjacent to Ataria, Lucknow on December 23, 2023. The speakers emphasized on the need



*Village Peernagar, Block Mall,  
District Lucknow on December 17, 2023  
100 women and men*



*Village Hamirpur, Dhrawa, adjacent to Ataria,  
Lucknow on December 23, 2023  
89 student and 25 villagers*

for hand washing, oral hygiene and nail trimming with demonstrations by Sri Vijay Verma and Mrs. Luxmi. The event was attended by 89 students and coordinated by the Senior Teacher Ms. Rashmi. The prizes were also awarded to the participants for their best hygiene practices. The program was graced by the presence of the Gram Pradhan, former Pradhan, and 25 villagers. Vermi Compost activity was showcased by Sri Vijay Varma and Sri Anoop Misra in the village Pradhan's farm area. Dr. Manvendra Tripathi coordinated the entire program.

- **Awareness Programme on Health, Nutrition and Vermi-composting for Women and Children of Village Vidhuni, Block Ikauna, District Shravasti**

The Chapter organized an Awareness Programme on 'Health, Nutrition and Vermi-composting for Women and Children' of Village Vidhuni, Block Ikauna, District Shravasti on January 5, 2024. About 80 women and children of the remote village participated in this programme. Prof. Pramod Tandon informed the villagers that the awareness program is sponsored by NASI, an organization dedicated to promotion of science for welfare of urban and rural populations. Prof. Ramesh Sharma emphasized on the role of eating variety of food rather than restricting the dietary intake of only few food items. The role of fruits and Indian spices was also told to the gathering of villagers. The speakers emphasized on the benefits of phytonutrients and consumption of protein diet from pulses and dairy products. Prof. Veena Tandon interacted with women and talked about soil and food-borne worm infections and suggested simple measures and precautions to avoid them. Through pictorial charts, she created an awareness of common worm and parasites causing infections among the rural population. Mr. Vijay Verma distributed earthworms to farmers and gave a practical demonstration on vermi-composting that transforms organic waste into nutrient-rich compost using earthworms, promoting sustainable waste management and enhancing soil fertility.

- **Awareness Programme on Health, Hygiene and Nutrition for children from underprivileged and slum communities of Lucknow**

NASI Lucknow Chapter organized a programme for children on January 27, 2024. The event called “Roots & Wings - हंसताबचपन” is being organized every Saturday by Dr. Rita Sharma, former Agriculture Secretary to the Government of India. Dr. Sharma organizes programmes on inculcating patriotism amongst the kids and simple learning with the help of films. NASI fellows and members joined the 76th session of ‘Roots & Wings हंसताबचपन’! NASI Lucknow Chapter members introduced the concepts of better hygiene and cleanliness in an interactive and delightful manner, which is crucial for instilling lifelong habits in children. By engaging the children thoroughly and providing attractive hygiene kits, Prof. Veena Tandon and Dr. Manvendra Tripathi not only made the learning experience enjoyable but also ensured that the lessons will stick with the children. While this approach educates the children about the importance of hygiene also empowers them to take responsibility for their own health and well-being. More than 380 children from ages 2-12 years participated in this programme. Dr. Rita Sharma thanked the entire team of NASI Lucknow Chapter for their innovative and effective methods.

- **Popular Science Lecture**

A popular science lecture entitled ‘The Science, Sociology, and Ecology of Sustainable Development: An Indian Context’ was held on February 1, 2024 at Regional Science City, Lucknow. The event was jointly organized by NASI Lucknow Chapter and Regional Science City, Lucknow. Prof. Rana Pratap Singh, Former Dean of Academic Affairs at Babasaheb Bhimrao Ambedkar University, Lucknow, delivered the lecture to approximately 300 participants, including school children, teachers, and members of the scientific community. Shri Swarup Mandal, Project Coordinator of Regional Science City, Lucknow,



*A Popular Science Lecture organized by the Chapter at Regional Science City, Lucknow*

welcomed the guests and expressed gratitude to The National Science Academy, Lucknow Chapter, for collaboration. During the event, Chief Guest Prof. Pramod Tandon, Chairman, NASI Lucknow Chapter encouraged the students to think creatively, foster a scientific mindset, and pursue opportunities in various scientific disciplines. A science quiz contest was also held for students on this occasion in which more than 125 students took part actively. Dr. R. D. Tripathi, Advisor, NASI Lucknow Chapter extended thanks, followed by a prize distribution ceremony where winners of the quiz were honoured by the Chief Guest. Prof. Ramesh Sharma and other distinguished scientists were also present.

### ● National Science Day Celebration

Every year, on February 28th, National Science Day is celebrated across India in honour of Sir C.V. Raman's discovery of the 'Raman Effect,' which earned him the Nobel Prize in Physics in 1930. NASI Lucknow Chapter, in collaboration with Regional Science City, Lucknow, organized a series of events on February 27th and 28th, 2024, to promote science. Over 900 students and teachers from various schools participated actively in the celebration. Events included poster-making contests, experimental science quizzes, science film screenings, and sky-watching programs. Dr. Anand Akhila, former Senior Scientist at CIMAP, Lucknow, delivered a popular science lecture on the theme 'Contribution of Young Generation in Nation Building.' During the concluding address, Chief Guest Professor Rana Pratap Singh, Dean of Baba Saheb Bhimrao Ambedkar University, emphasized the philosophical aspect of science, urging children to understand its essence and its significant technological advancements. He simplified the concept of the Raman Effect and shared intriguing facts about C.V. Raman's life. Additionally, two



*National Science Day Celebration*

science park exhibits, 'Newton Disk' and 'Periscope,' were inaugurated, along with the launch of a new science demonstration kit on 'Astronomy'. Shri Swarup Mandal, Project Coordinator of Regional Science City, thanked the guests and students, highlighting the collaboration with the NASI Lucknow Chapter. He encouraged children to draw inspiration from Indian scientists and emphasized the importance of using science for human welfare despite limited resources. The program concluded with the vote of thanks proposed by Dr. R. D. Tripathi, Advisor NASI Lucknow Chapter followed by a prize distribution ceremony where the chief guest awarded winners of various competitions. Top of Form

# Mumbai Chapter

The Chapter organized several Science & Society activities for spreading scientific awareness and drawing up a future roadmap for setting future directions/ goals. During the period under consideration, the Chapter participated in the activities as mentioned below:

- **NASI - Prof. Prafulla Chandra Ray Memorial Lecture Award-2022**

The Award function viz. 'NASI-Prof. Prafulla Chandra Ray Memorial Lecture Award-2022' was organized on April 06, 2023 at IIT Bombay for conferring the award to Prof. Pratim Kumar Chattaraj, IIT Kharagpur for his outstanding contributions to several aspects in theoretical chemistry.



*A glimpse of the NASI-Prof. Prafulla Chandra Ray Memorial Award Lecture -2022*

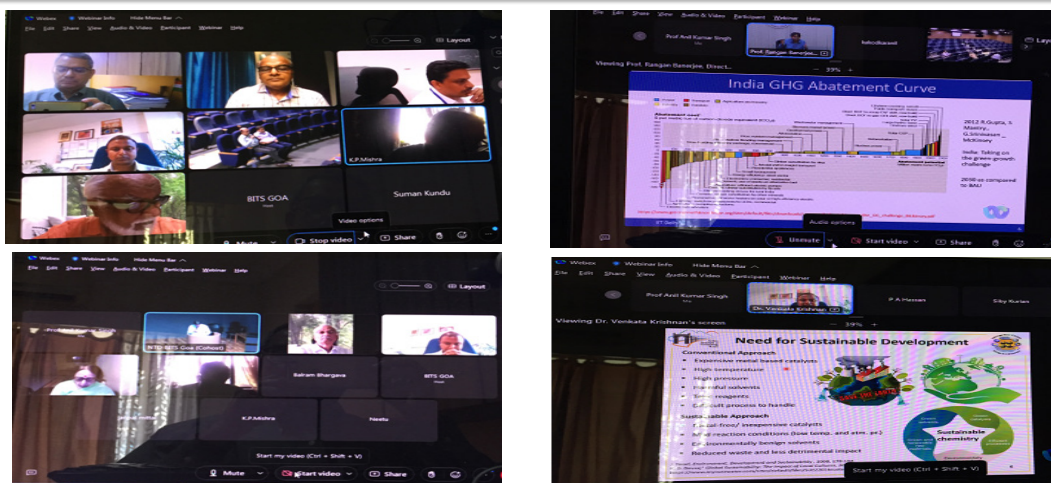
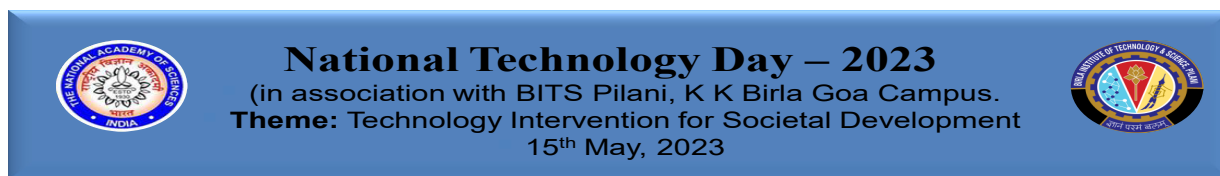
- **Celebration of National Technology Day-2023**

The Chapter commemorated the National Technology Day-2023 on May 15, 2023 by organizing a seminar cum-panel discussion in hybrid mode in association with BITS Pilani, K K Birla Goa Campus. The theme of the event was 'Technology Intervention for Societal Development'. Prof. SumanKundu, Director, BITS Pilani, K K Birla Goa Campus delivered the *Welcome Address*. *Opening Remarks* were made by Prof. A K Singh, Chairman, NASI-Mumbai Chapter. *Presidential Remarks* were made by Prof. Balram Bhargava, President, NASI. The Guests of Honour and the Past Presidents of NASI viz. Prof. J P Mittal, Prof. Manju Sharma, and Prof. Anil Kakodkar shared their views and talked on various aspects related to technological advancement. The technical session consisted of the following invited talks.

- i) Prof. Rangan Banerjee, Director, IIT Delhi (Topic: India's Energy Transition & Net Zero Technology Interventions for Social Development);
- ii) Dr. Siby Kurian, NIO Goa (Topic: Biogeochemistry of the Northern Indian Ocean);
- iii) Dr. A. K. Tyagi, Dir, Chem Group, Bhabha Atomic Research Centre (BARC) Mumbai (Topic: Non-Power Applications of Nuclear Technologies);

- iv) Prof. Venkat Krishnan, IIT Mandi (Topic: Green Chemistry & Heterogeneous Catalysis to Achieve Sustainable Development Goals);
- v) Prof. Samit Chattopadhyay, BITS Goa (Topic: Innovations of New Generation Affordable Healthcare Diagnostics & Therapeutics);
- vi) Dr. S Neetu, NIO Goa (Topic: Influence of Air-Sea Coupling on Indian Ocean Tropical);
- vii) Dr. B. N. Pandey, RBHSD, BARC Mumbai (Topic: Emerging Excitements in Non-Targeted Radiobiology for Improvements of Cancer Radiotherapy).

The invited talks were followed by a panel discussion, which was moderated by Prof. K P Mishra (FNASc). The panellists included Dr. Anil Kakodkar, Prof. J P Mittal, Prof. A K Singh, all the invited speakers, Chairpersons of the sessions and a few (selected) participants from the audience.



*A glimpse of the National Technology Day- 2023 Celebrations organized by Mumbai Chapter at BITS Pilani, K K Birla Goa Campus*

### **‘Innovation and Research in Basic and Applied Sciences for the Benefit of Society’ – A Seminar-cum-Panel Discussion, Students Science Projects Demonstration**

On July 15, 2023, a seminar-cum-panel discussion on the theme ‘Innovation and Research in Basic and Applied Sciences for the Benefit of Society’ was organized in hybrid mode, in association with B K Birla Autonomous College of Arts, Science and Commerce, Kalyan (Thane). The *Opening Remarks* were made by Prof. A K Singh, Chairman, NASI-Mumbai Chapter. Prof. R K Shevgaonkar (Provost, Somiya Vidya Vihar Univ Mumbai; Ex-Vice-Chancellor, Savitribai Phule Pune University and Ex-Director, IIT Delhi) delivered the *Chief Guest’s Address*. The technical session included the following invited talks.

- i) Prof. Yogendra Sharma, Biological Sciences, Dean, IISER Berhampur (Topic: The Microscopes of the 21st Century);

- ii) Prof. Arnab Dutta, Chemistry Department and Inter-disciplinary Programme in Climate Studies, IIT Bombay (Topic: Current Advances in CO<sub>2</sub> Capture & its Utilization);
- iii) Prof. Padmnabh Rai, School of Physical Sciences, UM-DAE Centre of Excellence in Basic Sciences, Mumbai (Topic: Diamond for Scientific and Industrial Applications);
- iv) Dr. Soumitra Kar, Scientific Officer-G, Desalination Div, BARC, Mumbai (Topic: Water purification);
- v) Dr. Atul Goel, Chief Scientist, CSIR-Central Drug Research Institute, Lucknow (Topic: Development of Fluorescent Probes for Diagnostics & Biomedical applications).

Subsequently, UG and PG students demonstrated their science projects. Thereafter a panel discussion was held. The panellists included invited speakers, session chairpersons, and select audience participants. Dr. J P Mittal (Past-President, NASI) chaired the panel discussion and also delivered concluding remarks.





## Seminar-cum-Panel Discussion on: Innovation & Research in Basic & Applied Sciences for the Benefit of Society'

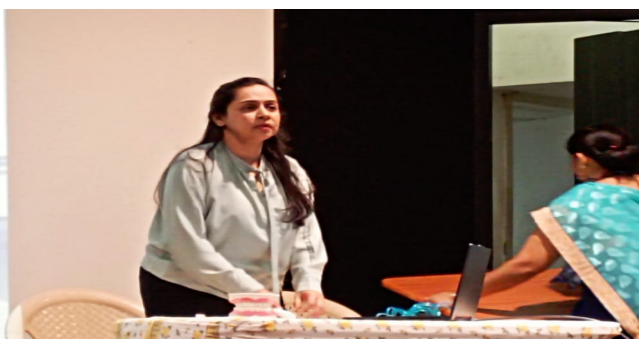
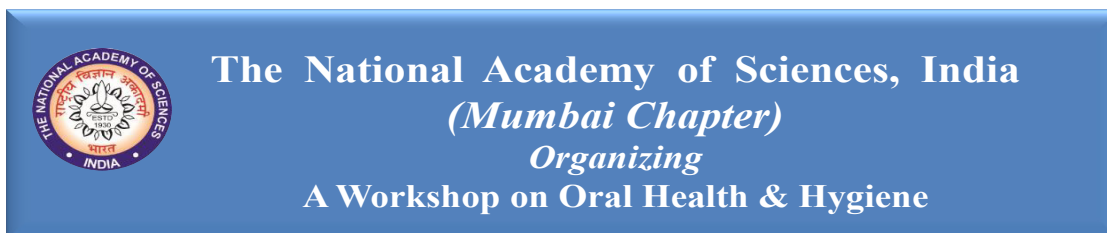


Organized by  
**The National Academy of Sciences, India**  
*Mumbai Chapter*  
 in association with  
 B K Birla Autonomous College of Arts,  
 Science & Commerce, Kalyan  
 July 15, 2023  
 Venue: New Seminar Hall, BKBC, Kalyan  
 Join Virtually on : <http://surl.li/iylrg>

*A glimpse of the Seminar-cum-Panel Discussion and Demonstration of Students Science Projects at B K Birla Autonomous College of Arts, Science and Commerce, Kalyan, Thane*

## ● **Workshop on Oral Health and Hygiene**

A workshop on Oral Health and Hygiene was conducted in P C Saxena Auditorium, IIT Bombay on August 21, 2023. Dr. Vanashree P. Saple, Head, Dental Unit, BARC Hospital, Mumbai was the key speaker. The event was organized with the active support of IIT Bombay KG School. Children and their parents from nearby schools participated and benefitted from the event.



**Speaker: Dr Vanashree P Saple (Head, Dental Unit, BARC Hospital, Mumbai)**

**Venue: 21<sup>st</sup> August, 2023 (P C Saxena Auditorium, IIT Bombay)**

Workshop on 'Oral Health and Hygiene' underway

## ● **Seminar on 'Artificial Intelligence'**

A seminar on Artificial Intelligence was organized on September 30, 2023 jointly with the Bangalore local chapter of the NASI. The event comprised the following 12 invited talks.

- i) Transforming India's Healthcare-Digital Today & AI Tomorrow (Speaker: Mr Girish Krishnamurthy, Tata Medical & Diagnostics Ltd.)
- ii) AI & Drones for Precision Agriculture (Speaker: Dr. Kota Harinarayan, Ex-AAD (Aeronautical Development Agency))
- iii) AI for Public Good (Speaker: Dr. Vivek Raghavan, Ex-Unique Identification Authority of India)
- iv) AI in Aerospace Research (Speaker: Prof. Suresh Sundaram, IISc Bangalore)
- v) AI in Manufacturing (Speaker: Mr Sivaramakrishnan Narayanan, Bristlecone)
- vi) AI in Supply Chain (Speaker: Mr Sudipta Ghosh, PWC India (PricewaterhouseCoopers))
- vii) AI in Diagnostics (Speaker: Dr. Dhanajay Dendukuri, Achira Labs)
- viii) ML Advances for Neuro-imaging (Speaker: Dr. Neelam Sinha, IISc Bangalore)

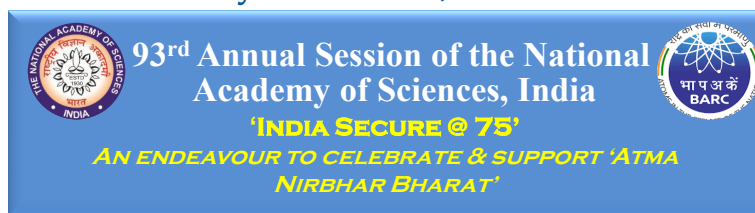
- ix) AI in Materials Development (Speaker: Prof. Abhishek Singh, IISc Bangalore)
- x) ML for Challenging Datasets from Chemical Space (Speaker: Prof. RB Sunoj, IIT Bombay)
- xi) AI in Biomedical Research (Speaker: Prof. N R Jagannathan, Ex-AIIMS)
- xi)) AI in Art & Humanity(Speaker: Dr. Harshit Agrawal, IIT Guwahati alumnus)

**A Seminar on Artificial Intelligence (September 30, 2023)**



- **The 93<sup>rd</sup> Annual Session of the National Academy of Sciences, India**

The 93<sup>rd</sup> Annual Session of the Academy together with *Azadi Ka Amrit Mahotsav (Atma Nirbhar Bharat)* with special focus on ‘*India Secure at 75*’ was organized on December 03-05, 2023 at the DAE Convention Centre, Bhabha Atomic Research Centre, Mumbai. The Mumbai Chapter was involved in shaping up of this event from the beginning till its conclusion. Several learned Fellows and Members of the NASI-Mumbai Chapter actively participated in this event to ensure its successful completion. The Chapter also displayed posters uncovering its recent activities aimed at promoting scientific and technological research related to the problems of societal welfare.



Jointly organized by NASI & BARC Mumbai  
DAE Convention Centre, Mumbai  
December 03-05, 2023

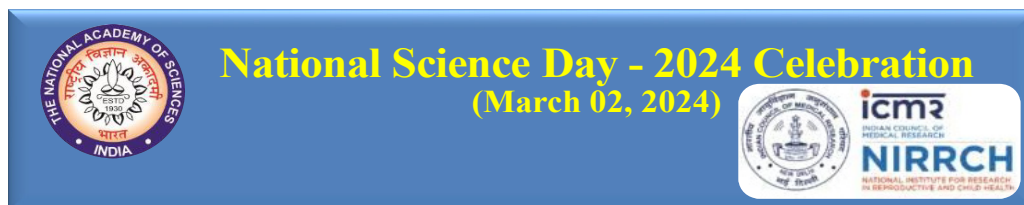


*A glimpse of the 93<sup>rd</sup> Annual Session of the Academy and Azadi Ka Amrit Mahotsav (Atma Nirbhar Bharat) with special focus on ‘India Secure at 75’, at DAE Convention Centre, BARC, Mumbai*

## ● Celebration of National Science Day-2024

The National Science Day-2024 was celebrated in association with the ICMR-National Institute for Research in Reproductive and Child Health (ICMR-NIRRCH), Mumbai on March 02, 2024. The event was held in hybrid mode and the theme of the event was 'Indigenous Technologies for Viksit Bharat'. Dr. Geetanjali Sachdeva, Director, ICMR-NIRRCH delivered a welcome address. Opening remarks (about the Programme and the NASI-Mumbai Chapter) was made by Prof. K P Mishra (FNASc, Advisor, NASI-MC). Thereafter, following invited talks were delivered:

- i) Prof. Debjani Paul, Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay (Topic: Shape Dx: A Point of Care Test to Differentiate Between Sickle Cell Disease and Trait);
- ii) Prof. A C Bhasikuttan, Radiation & Photochemistry Division, Bhabha Atomic Research Centre, Mumbai (Topic: Exploiting Structure Specific DNAs and Proteins for Therapeutic and Sensor Applications)
- iii) Dr. Saurabh Joshi, Sun Pharma Pvt. Ltd., Vadodara (Topic: Career Opportunities for MSc. /PhD. Students).
- iv) The invited talk session was chaired by Chairpersons: Dr. Nilima Kshirsagar, Dr. Smita Mahale and Dr. Srabani Mukherjee. The Chapter also organized an event comprising a painting/ essay competition on the National Science Day.



- **Venue:** ICMR-National Institute for Research in Reproductive & Child Health, Parel, Mumbai
- **Theme:** Indigenous technologies for Viksit Bharat



*The National Science Day- 2024 celebration organized at ICMR-NIRRCH, Mumbai*

All the above events were well-attended by the students, teachers, researchers, policy makers of the academic and research institutions, industries, R&D centers and civil society members from Mumbai / Greater Mumbai. Several Fellows and Members of NASI also attended these events. All events concluded with a Vote of Thanks by Prof. P A Hassan (Secretary, NASI-Mumbai Chapter).

### ● **Submission of the Project Proposals under Academy's 'Science & Society Specific Programmes' Initiative**

In pursuance of the Academy's 'Science & Society Specific Programmes' initiative, the Chapter submitted following project proposals for consideration of the Academy for financial support:

- i) Workshop on 'Integration of Aquaculture & Culture-Based Fisheries in Existing Farming Systems for Fuelling Rural Economy'.(Thematic area: S&T Interventions for SC/ST Population); PC: Dr. Kishore Krishnani (MNASc, ICAR-Central Institute of Fisheries Education, Mumbai).
- ii) Workshop on 'Start-ups in Healthcare: Inspiring to be Entrepreneurs' (Thematic area: Training for Entrepreneurship Development); PC: Dr. N R Singh (FNASc, BARC Mumbai).
- iii) Workshop / Seminar on 'Role of S&T in Health & Hygiene in Rural Areas'(Theme area: Sensitization Workshops Especially in Rural Areas); PC: Dr. Naresh Chandra (MNASc, Director Education, B K Birla College (Autonomous), Kalyan, Thane).
- iv) Workshop / Seminar on 'Technological Interventions to Mitigate Climate Change & its Impact on Society(Theme area: Scientific Program/ Workshops/ Symposia/ Seminars on different aspects of Science & Society / Any other related subject); PC: Dr. Naresh Chandra (MNASc, Director Education, B K Birla College (Autonomous), Kalyan, Thane).

# Nagpur Chapter

The NASI Nagpur Chapter and the Tribal Department, Nagpur Division (Gadchiroli) organized a few activities by holding Science-Society interactions amongst the tribal students of Ashram Schools Gadchiroli (District) leading to the popularization of Science Programs during 2023-2024:

- **'School Science Exhibition cum Demonstration' Program at Tribal Ashram English Schools Gadchiroli (Dist.) held on 25-26 September, 2023**

The National Academy of Sciences India (NASI), Nagpur Chapter conducted detection; robots: autonomous and remote controlled; wind velocity meter; IoT based home security, control of household devices such as fans, lights, street lights have been conducted. More than 500 Ashram school students have attended the program and actively participated in activities that are specially designed on the basis of the models. The program created scientific curiosity and excitement among the Tribal students. NASI Nagpur Chapter thanks to these teachers for helping in Scientific Guidance and motivating the young Children. The Chapter expressed its gratitude to Commissioner, 'Tribal Department Nagpur Division (Gadchiroli)' for his efforts and keen interest to make this program successful. Tree plantation in the school campus was also conducted; few glimpses of the program are displayed below:



*Tree plantation at Tribal school at Gadchiroli*



*Presentation and demonstration by S A Acharya and Dr Singh*

*Distribution of Certificate to the students for their active participation*

## Schedule of event held on September 25&26, 2023:

| Day 1: September 25, 2023 (Govt. Ashram English Schools, Gadchiroli)       |   |   |
|--|---|---|
| Time   | Event   | Expert person name  |
| 11:00-12:00  | Inauguration Function & Tree Plantation               |   |
| 12:00-13:00  | Physics Experiments & Demonstration                   | Dr Smita Acharya, Physics Dept., RSTM Nagpur University                   |
| 14:00-15:00  | Electronic Devices models, Exhibition / Demonstration | Dr Satish Sharma, Dept. Of Electronics & Computer Sciences, RTMNU, Nagpur |
| 15:00-16:00  | Paleobotany / Taxonomy Nomenclature                   | Dr. Subhash Somkuwar, Head Dr Babasaheb Ambedkar College, Nagpur          |
| Day 2: 26 <sup>th</sup> September, 2023 (Govt. Ashram Schools, Gadchiroli) |   |   |
| 10:30 -11:30   | Counting Numbers for Cosmic Mathematics               | Dr G. P. Singh, Head Maths Department, VNIT Nagpur                        |
| 11:30 -13:00   | Chemistry Experiments & Demonstration                 | Dr. Suresh Umare, Chemistry Department, VNIT- Nagpur                      |
| 14:00-15:00  | Nutrition & Health Care                               | Dr Shambarkar, Mata Kacheri Nagpur  |
| 15:00-16:00  | Fundamental Constants k to h                          | N S Gajbhiye, NASI Nagpur Chapter   |
| 16:00 -16:30   | Concluding Session and Feedback from Participants     |   |

### ● **School Science Exhibition cum Demonstration Programme**

The National Academy of Science India (NASI), Nagpur Chapter & Tribal Development Department Nagpur Division (Gadchiroli) organized program to popularize science and technology amongst Tribal students of Ashram School of Gadchiroli district during September 25-27, 2023. The programme was organized at the Tribal Girls Ashram School in Sode, Gadchiroli district. The primary objective of the program was to promote basic science and cutting-edge technology among students attending Ashram schools. During the event, the students from the department showcased a variety of working models designed to demonstrate different scientific phenomena prevalent in our surroundings. Live demonstrations aimed to ignite scientific curiosity among the students and deepen their understanding of the world around them through these models effectively explained natural phenomena such as the blue color of the sky, the appearance of mirages, and concepts like reflection, refraction, scattering etc. The senior teachers from various departments of University & Institutes such as Physics, Chemistry, Maths, Biology and technology of RTMNU Nagpur, VNIT-Nagpur, SGBU Amravati, Gadchiroli Tribal University have shown enthusiasm & participated to Experiment cum demonstration programme. Live

demonstrations were shown through models to explain natural phenomena like the blue color of the sky, amazing experiments of Chemistry ‘The Clock Reactions (Redox)’, our colorful natural surroundings, the mirages Appearance, reflection, refraction, scattering, electronic devices etc. To make the Ashram school students more curious and conscious about the cutting edge technology demonstration on proximity sensors for social distance, fire alarms, intruder detection; robots: autonomous and remote controlled; wind velocity meter; IoT based home security, control of household devices such as fans, lights, street lights have been conducted. More than 500 Ashram school students have attended the program and actively participated in activities that are specially designed on the basis of the models. The program created scientific curiosity and excitement among the Tribal students.

The program witnessed active participation from over 500 Ashram girls school students who enthusiastically engaged in activities specifically designed around the showcased models. The interactive nature of the program succeeded in fostering scientific curiosity and excitement among the tribal students, contributing to their holistic educational experience.

As part of the initiative, a tree plantation drive was also conducted within the school campus, emphasizing the importance of environmental conservation and sustainable living practices.

### Schedule of the event:

| <b>Day 1: 26<sup>th</sup> Sept., 2023 Govt. Girls School, Sode, Tal: Sode, Dist. Gadchiroli</b>  |   |   |
|--|---|---|
| 10:00 -11:00   | Inauguration Function & Tree Plantation               |   |
| 11:00 -12:00   | Paleobotany / Texonomy Nomenclature                   | Dr. Subhash Somkuwar, Dr Ambedkar College, Nagpur                         |
| 14:00 -15:00   | Electronic Devices models, Exhibition / Demonstration | Dr Satish Sharma, Dept. Of Electronics & Computer Sciences, RTMNU, Nagpur |
| 15:00 -16:00   | Counting Numbers for Cosmic Mathematics               | Dr G. P. Singh, Head Maths Department, VNIT Nagpur                        |
| <b>Day-2 : 27<sup>th</sup> Sept., 2023 Govt. Girls School, Sode, Tal: Sode, Dist. Gadchiroli</b> |   |   |
| 10:30 - 11:30  | Nutrition & Health Care                               | Dr Shambarkar Mata Kacheri Nagpur   |
| 11:30 - 13:00  | Physics Experiments & Demonstration                   | Dr Smita Acharya, Physics Dept., RTM Nagpur University                    |
| 14:00-15:15  | Chemistry Experiments & Demonstration                 | Dr. Suresh Umare, Chemistry Department, VNIT- Nagpur                      |
| 15:15 -16:30   | Fundamental Constants k to h                          | N S Gajbhiye, NASI Nagpur Chapter (TBA)                                   |
| Concluding Session and Feedback from Participants  |   |   |

The following teachers also participated in plantation activity:

1. Dr. Smita Acharya, Physics, RTMNU, Nagpur
2. Dr. Satish Sharma, Electronics & Computer Sciences, RTMNU, Nagpur
3. Dr. Suresh Umare, Chemistry Department, VNIT- Nagpur
4. Dr. Shambarkar Mata Kacheri Nagpur
5. N B Singh, Sharada University, Noida, Delhi
6. Dr. G P Singh Head, Maths Dept. VNIT Nagpur
7. Dr. Subhash Somkuwar, Paleobotany / Texonomy Dr B.R.Ambedkar College, Nagpur
8. Dr. Namdeo S Gajbhiye, NASI Nagpur Chapter



*Tree plantation of various medicinal plants at Sode Tribal School, Gadchiroli*



*Tree plantation at Sode Tribal School, Gadchiroli*





*Demonstration of science experiments by Dr. S A Acharya and Dr. Umare*

## ● State-level Student Seminar Competition

A State-Level Seminar Competition (SLSSC) was organized by the Department of Chemistry, M. G. College, College Armori, in collaboration with the National Academy of Science India (NASI), Nagpur Chapter, held at M. G. College Armori, District Chandrapur on October 7, 2023. The purpose of the competition was to give students from various institutions the opportunity to demonstrate their talent and presentation skills on a specific topic. The competition received 41 entries from institutions across the state, each of which presented a seminar in front of the jury. The event was graced by the presence of prominent dignitaries, including the Chief Guests viz. Prof. N. S. Gajbhiye, Chairman, NASI, Nagpur Chapter; Prof. S.S. Umare, Adviser, NASI, Nagpur Chapter; Dr. L. H. Khalsa, Principal, M. G. College Armori; Dr. Chayan Das, Associate Professor, Department of Chemistry, VNIT, Nagpur; and Dr. W.B. Gurnule, Associate Professor, Department of Chemistry, Kamla Nehru College, Sakkardhara, Nagpur. Prof. N. S. Gajbhiye delivered an enlightening speech during the *Inaugural Session* emphasizing the significance of research and innovation in the modern world and introducing the mission of NASI. Prof. S. S. Umare delivered a very informative lecture entitled 'Climate Change, Corrective Action, and Human Responsibility' followed by the scientific presentations made by the students. Dr. L. H. Khalsa, Principal of M. G. College, Armori, Mr. S. M. Sontakke, Convener of SLSSC, Dr. N. D. Bansod, Co-Convener of SLSSC, Dr. S. S. Kola, IQAC Coordinator, M. G. College Armori, Dr. C. D. Mungmode, Head, Research and Development Committee, M. G. College Armori, Ms. Divya, Dr. C. D. Mungmode and Dr. S. S. Kola coordinated the opening ceremony and also proposed a vote of thanks. The competition was evaluated by a panel comprising eight experts/judges in three distinct sections. After thorough consideration by the judging panel, the winners were announced.

Martina R. Ghonmode, M. G. College Armori, won the first prize, Mr. Jatin Chhatrawani, S. P. College Chandrapur, won the second prize, and Ms. Archana H. Rai, S. P. College Chandrapur, won the third prize in the Postgraduate (PG) division. Payal Rajendra Chinchilla of R. M. G. College Nagbhid, Laxmi Bhatti of S. P. College Chandrapur, and Shraddha Sharma of M. G. College Armori won the first, second, and third prizes, respectively, in the B. Sc. III division. Divya Vilas Bawane of M. G. College Armori, Himanshu R. Kotrange of S. P. College Chandrapur, and Anamika S. Kuthe of M. Z. College Wadsa placed first, second, and third, respectively, in the state-level student seminar competition for the B. Sc. II year group. The winners were awarded cash rewards, certificates, and mementos, while all participants received a participation certificate. Dr. S. S. Kola announced the results. The seminar competition at the state level was a huge success with the students demonstrating outstanding knowledge and presentation skills. The competition was an enriching experience for the competitors as well as the organizers; it also provided a valuable place for the exchange of information, recognition of aptitude and interaction with the college students from other institutions. The Chapter expressed its gratitude to everyone who contributed to the success of the seminar competition at the state level.

# State-Level Students' Seminar Competition Brochure and Program Schedule



## STATE-LEVEL STUDENT'S SEMINAR COMPETITION

Organized by  
"Manoharabhai Shikshan Prasarak Mandal Armori's"  
**DEPARTMENT OF CHEMISTRY, MAHATMA GANDHI ARTS, SCIENCE, & LATE N. P. COMMERCE  
COLLEGE, ARMORI Dist.-GADCHIROLI (M.S.),**  
NAAC Reaccredited with 'A' Grade with C.G.P.A - 3.24

IN COLLABORATION WITH  
**THE NATIONAL ACADEMY OF SCIENCE (NASI), INDIA NAGPUR CHAPTER**

**7<sup>th</sup> October 2023**

**Competition Theme: Current Trends in Chemical Science**

**About Our College:** Mahatma Gandhi Arts, Science & Late Nazaruddinbhai Panjwani Commerce College Armori was established on 4th June 1981, under the flagship of Manoharabhai Shikshan Prasarak Mandal Armori. The college is recognized by UGC under section 2(f) and 12(B) and NAAC re-accredited 'A' Grade (3.24 CGPA, 2022) college in Gadchiroli district. For more details visit: <http://mgcollegearmori.ac.in>

**About NASI:** The National Academy of Sciences, India (initially called "The Academy of Sciences of United Provinces of Agra and Oudh") was founded in the year 1930, with the objective of providing a national forum for the publication of research work carried out by Indian scientist and provide opportunities for exchange of view among them. For more details visit: <http://www.nasi.nic.in>

### Competition Glimpses

- State-level seminar competition
- Open for all **UG & PG (Chemistry)** basic science students
- PowerPoint presentation on the any topic in chemistry pertaining to your syllabus.
- Separate prizes for each semester students.
- Certificate of participation

### Rules and Instructions

- Seminar competition is open only for basic science (Chemistry subject) students.
- Institutional participation is restricted to a maximum of two students, from each semester.
- Students can select any topic in their stream pertaining to the Current Trends in Chemical Science.
- Participants need to pay Rs. 100 for registration and participation
- A PowerPoint presentation for seminar competition is a mandatory
- Time duration: 7 minutes for presentation and 3 minutes for interaction
- The decision of the judges will be final and binding.

### Inaugural Talk

**Prof. Suresh Umare,**  
Adviser NASI Nagpur Chapter

First Prize: 1500 Rs.  
Second Prize: 1000 Rs.

### Organizing Committee

|  |   |
|--|---|
| <b>Patron</b>  | <b>Principal</b>  |
| Smt. <b>Sunitatai M. Wammali</b><br>President, M.S.P.M., Armori. | Dr. L. H. Khalsa<br>M. G. College. Armori                 |
| Sri. <b>Manojbhan W. Wammali</b><br>Secretary, M.S.P.M., Armori. | <b>Convener</b>   |
| <b>Chairman NASI</b>   | <b>Adviser NASI</b>                                       |
| Dr. N. S. Gajbhiye<br>Nagpur Chapter                             | Prof. Suresh Umare<br>Nagpur Chapter                      |
| <b>Co-Convener</b>   | <b>Organizing Secretary</b>                               |
| Dr. N. D. Banod<br>Asst. Prof.<br>Dept. of Chem., M. G. C.       | Dr. S. S. Kola<br>IQAC Co-ordinator.<br>M. G. C.          |
|  | Dr. C. D. Mungmode<br>Head of R & D Committee<br>M. G. C. |


### Payment Details

Registration Fee: Rs. 100/-  
Last date for registration: **3<sup>rd</sup> October 2023**  
Link for registration: <https://forms.gle/bSvAu7bqWB8YTrVaA>

### Students Co-ordinator

Miss. **Dimpal Sonekar (B. Sc.III)**  
Miss. **Divya Bawane (B. Sc. II)**  
Contact us (10 am to 5 pm): [rdmge2020@gmail.com](mailto:rdmge2020@gmail.com); +91 9049029199; +91 8698856936  
Venue: **M. G. College, Armori**

Pay UPI/ NEFT/RTGS  
A/C Name: Principal M. G. College  
A/C No. 9601101000017139;  
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IFSC Code: BKID0009601





## STATE-LEVEL STUDENT'S SEMINAR COMPETITION

Organized by

"Manoharbhair Shikshan Prasarak Mandal Armori's"

DEPARTMENT OF CHEMISTRY, MAHATMA GANDHI ARTS, SCIENCE, &  
LATE N. P. COMMERCE COLLEGE, ARMORI Dist.-GADCHIROLI (M.S.),

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IN COLLABORATION WITH

THE NATIONAL ACADEMY OF SCIENCE (NASI), INDIA NAGPUR  
CHAPTER



### PROGRAM SCHEDULE

7<sup>th</sup> October 2023

|                          |   |
|--------------------------|---|
| Time 9 am. To 10 a.m.    | Registration  |
| Time 10 am. To 11 a.m.   | Inauguration Programme  |
| Patron                   | Hon'ble Smt. Sunitatai M. Wanmali<br>President, Manoharbhair Shikshan Prasarak Mandal Armori.<br>&<br>Hon'ble Shri Riddheshwar Wamanraoji Wanamali<br>Secretary Manoharbhair Shikshan Prasarak Mandal Armori. |
| Chief Guest              | Prof. N. S. Gajbhiye<br>Chairman NASI, Nagpur Chapter.<br>(Ex-Voice Chancellor of Sagar University)<br>&<br>Dr. Anil Chitade<br>Dean Faculty of Science & Technology<br>Gondwana University, Gadchiroli.      |
| Chairperson              | Dr. L. H. Khalsa<br>Principal<br>M. G. College Armori   |
| Guests of Honour         | Prof. S.S. Umare<br>Adviser NASI, Nagpur Chapter.<br>(Department of Chemistry VNIT, Nagpur)<br><br>Dr. Chyan Das<br>Associate Prof.<br>Department of Chemistry VNIT, Nagpur.                                  |
| Time 11 am. To 11.45 am. | Guest Lecture by<br>Prof. S.S. Umare<br>Topic: Climate Change, Corrective Action and Human<br>Responsibility  |
| Time 11.45 am. to 2 pm.  | Technical Session (Seminar Competition)<br>Group I: B. Sc. Sem. III (Geography Laboratory)<br>Group II: B. Sc. Sem. V (Chemistry Laboratory)<br>Group III: M. Sc. Sem. I & II (Physics Laboratory)            |
| Time 2 pm to 3 pm.       | Lunch   |
| Time 3 pm to 4 pm.       | Valedictory Programme   |



*Glimpses of State-Level Students' Seminar Competition*



*Laboratory demonstration for the students*

# कलात्मक स्पर्धांमुळे विद्यार्थ्यांमध्ये वाढते स्पर्धावृत्ती माजी कुलगुरू डॉ. गजभिषे यांचे प्रतिपादन : महात्मा गांधी कॉलेजमध्ये सेमिनार

लोकमत न्यूज नेटवर्क  
**आमोरी :** विद्यार्थ्यांच्या कलागुणांना विकसित करणारे कार्यक्रम महाविद्यालयात सर्वच विभागांत आयोजित केले जातात. अशा प्रकारच्या आयोजनांमुळे विद्यार्थ्यांच्या मनात स्पर्धावृत्ती निर्माण होते. त्यांच्या कलागुणांना लवत करणाऱ्या संधी प्राप्त होते. म्हणून असे सेमिनार नेहमी आयोजित केले पाहिजे, असे प्रतिपादन महाविद्यालयातील सारंग विद्यानिहाळे माजी कुलगुरू डॉ. एन. एस. गजभिषे यांनी केले.

आमोरी येथील महात्मा गांधी कला, विज्ञान व स्व. न. चं. बाणिक्य महाविद्यालयात सायनायुक्त विभाग व राष्ट्रीय विज्ञान परिषद नागपूर यांच्या संयुक्त विद्यमाने राज्यस्तरीय सेमिनार



मार्गदर्शन करताना माजी कुलगुरू डॉ.एस.एस. गजभिषे, सौभत प्रचार्य खालसा.

## विद्यार्थी केंद्रित कार्यक्रम

विद्यार्थ्यांच्या कलागुणांना वालना देण्यासाठी महात्मा गांधी महाविद्यालयात विविध कार्यक्रमांचे आयोजन केले जाते. यामध्ये कलात्मक स्पर्धा, परीक्षांना अनुसरून स्पर्धा परीक्षा तसेच क्षेत्र भेद वाढवणे विविध कार्यक्रमांचे उद्देश्य असते.

स्पर्धा विभागात आली सेमिनार सुरुवात उपस्थित कार्यक्रमांना डॉ. गजभिषेने संबोधित केले. कार्यक्रमात राष्ट्रीय विज्ञान परिषद नागपूर विभागाचे सहाय्यक डॉ. एस. एस. उमरे, डॉ. डब्ल्यू. व्ही. सूर्यदे, प्रचार्य डॉ. लालसिंग खालसा, प्रा. डॉ. रघुनंदन, प्रा. सत्येंद्र सोमनकर आदी उपस्थित होते.

श्रेष्ठ स्पर्धीच सध्या आहे. कार्यक्रमाचे संचालन प्रा. डॉ. छान मुंगमोडे यांनी केले तर आचार्य डॉ. सतीश कोला यांनी मार्गदर्शन केले. यासोबत प्रचार्य डॉ. लालसिंग खालसा, महाविद्यालयात विद्यार्थी केंद्रित कार्यक्रम अंशकालाने सारतयाने राबविते जाताना, महाविद्यालयाला मिळालेले 'ए'

Helio Gadchiroli  
 Page No. 2 Oct 14, 2023  
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# Armori college holds State-level seminar on Chemistry

District Correspondent  
 GADCHIROLI, Oct 14



Dr N S Gajbhiye, former Vice-chancellor of Sagar University, speaking at the seminar while Principal Dr Lalsingh Khalsa and others look on.

DEPARTMENT of Chemistry of Mahatma Gandhi Arts, Science and Commerce College Armori and National Science Council, Nagpur, had organised a State-level seminar on Chemistry. The seminar was inaugurated at the hands of Dr N S Gajbhiye, former Vice-chancellor of Sagar University, Dr Lalsingh Khalsa, Principal of Mahatma Gandhi College, Gadchiroli, Dr S S Umre, Adviser of National Science Council Nagpur Division, Dr W V Gurnulle Chemistry Department Head, Kamla Nehru College Nagpur, Dr Chelan Das, Associate Professor, Nagpur, Prof Satyendra Sontakke, Head of the Department of Chemistry

Singh Khalsa told about the programmes being conducted by the college. He explained that the college has received 'A' grade because of its activities. He congratulated the organisers of the seminar for bringing together Chemistry students from across the State and providing a common platform. In his introductory guidance, Prof Satyendra Sontakke said that the Chemistry seminar had been organised to promote scientific approach among the students.

Dr S S Umre also guided at the seminar. In his presidential address, Principal of the college Dr Lal Singh Khalsa, former Vice-chancellor of Sagar University, speaking at the seminar while Principal Dr Lalsingh Khalsa and others look on.

Dr Chhagan Mungmode conducted the programme and Dr Satis Kola proposed a vote of thanks. Professor Dilly Chhonmode extended help to make the programme successful. Faculty members and students of the college were present on the occasion.

- Green Chemistry and Sustainability: State-level Students' Seminar Competition (SLSSC) organized at Rashtrapita Mahatma Gandhi Arts & Science College Nagbhid, District Gadchiroli on February 26, 2024.

Manoharabai Shikshan Prasarak Mandal Armori's

## Rashtrapita Mahatma Gandhi Arts & Science College Nagbhid

Accredited with 'B+' Grade by NAAC  
 (Affiliated to Gondwana University, Gadchiroli)  
 In collaboration with

### THE NATIONAL ACADEMY OF SCIENCE (NASI), INDIA, NAGPUR CHAPTER

Organizes

# State Level Student Seminar Competition

26 February 2024

**About Our College:** Rashtrapita Mahatma Gandhi Arts and Science College, Nagbhid (NAAC 'B+' Grade) was established in 2008 by Manoharabai Shikshan Prasarak Mandal Armori. Today, the Society is running 10 institutions including colleges, schools, a kindergarten and hostel. The institutions of the Society are progressing remarkably and making their mark in the field of education under the able leadership of Executive Secretary, Ms. Manoharabai Wansare (Woman's). Institution is affiliated to Gondwana University, Gadchiroli. Institution has an excellent infrastructure and faculty for imparting highest quality of holistic education and emphasis on inculcating the right values through discipline from academics to sports and from spiritual development to personality development. Stress is laid on character building and all round development of the student's personality. Special attention is paid to the students coming from economically backward and other backward classes as well as scheduled caste and tribes. In a short period, the College has grown into a full-fledged degree college. It is a matter of pride that the College also has University approved research guides in various fields. For more details visit: [www.rmgcollege.nagbhid.in](http://www.rmgcollege.nagbhid.in)

**About NASI:** The National Academy of Sciences, India (initially called "The Academy of Sciences of United Provinces of Agra and Oudh") was founded in the year 1930, with the objective of providing a national forum for the publication of research work carried out by Indian scientists and provide opportunities for exchange of view among them. For more details visit: <http://www.nasi.ac.in>

**Inaugural Talk :-** Prof. Suresh Umare, Adviser NASI Nagpur Chapter

**Topic:-** Green Chemistry and Sustainability

## State Level Student Seminar Competition

**ZOOLOGY**

**Theme:-**

- Immunology
- Animal Biotechnology
- Aquatic Biology
- Developmental Biology
- Animal Physiology

1<sup>st</sup> Prize:- Rs. 2000/-  
 2<sup>nd</sup> Prize:- Rs. 1500/-  
 3<sup>rd</sup> Prize:- Rs. 1000/-

**BOTANY**

**Theme:-**

- Mycology
- Plant Biotechnology
- Plant Biochemistry
- Plant Diversity & Conservation
- Plant Ecology
- Plant Physiology
- Genetics & Mol. Biology

1<sup>st</sup> Prize:- Rs. 2000/-  
 2<sup>nd</sup> Prize:- Rs. 1500/-  
 3<sup>rd</sup> Prize:- Rs. 1000/-

**CHEMISTRY**

**Theme:-**

- Stereochemistry
- VBT & CFT
- XRD, IR, NMR, Vibrational & Rotational Spectroscopy
- Nano Materials
- Chemical Kinetics

1<sup>st</sup> Prize:- Rs. 2000/-  
 2<sup>nd</sup> Prize:- Rs. 1500/-  
 3<sup>rd</sup> Prize:- Rs. 1000/-

**PHYSICS**

**Theme:-**

- Fundamental concept in Modern Physics
- Experimental Techniques & Instrumentation
- Applications of Physics in Everyday Life

1<sup>st</sup> Prize:- Rs. 2000/-  
 2<sup>nd</sup> Prize:- Rs. 1500/-  
 3<sup>rd</sup> Prize:- Rs. 1000/-

**Register here - <https://forms.gle/6aR9nMJ6LWU5BvS6>**

**Terms and Conditions:-**

- Only UG (B.Sc.) students can participate.
- Students have to present their seminar using PPT only.
- Time for presentation will be 7 + 2 min.
- Submission of college ID proof is compulsory.
- Students have to register through registration link.
- Maximum 2 students per subject from a college is allowed.
- Juries decision will be consider to be final decision.
- Last date of registration is 20 February 2024.
- Student can participate in more than one subject by paying relevant registration fee.

**Registration Fee 150/-**  
 (Per Subject / Per Student)

Scan & Pay UPI/ NEFT/ RTGS  
 A/C Name: Dr. R. N. Chavhan  
 A/C No. 31035304317  
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 IFSC Code: SBIN0000338

**Patron**

Hon'ble Manojbhai W. Wanmali  
 Secretary, M.S.P.M., Armori.

**Convener**

Prof. N. S. Gajbhiye  
 Chairman NASI  
 Nagpur Chapter

Prof. Suresh Umare  
 Adviser NASI  
 Nagpur Chapter

Dr. G. D. Deshmukh  
 Principal  
 RMG College, Nagbhid

**Organizing Committee**

Dr. V. M. Mohitare      Mr. N. G. Gode  
 Dr. R. N. Chavhan      Dr. M. B. Mathe



## ● **Celebration of the National Science Day :Exhibition Cum demonstration, Poster Presentation and Scientific Model Competition**

The District Level 'Exhibition Cum demonstration and Poster and Scientific Model Competition' was organized by the National Academy of Science India (NASI) Nagpur chapter on February 28, 2024 in Association with Bodhisatva Dr. Babasaheb Ambedkar Public School Pulgaon, District Wardha. The purpose of the competition was to provide a platform for students from various schools to show their research and presentation skill on a particular topics. There were maximum of schools participate having different streams of Biology, Chemistry and Physics. The main theme of the competition was current trends in Basic Sciences. The competition got the participation of 40 entries from school across the town Pulgaon. The function was presided by respected Mr. Vishwanath Meshram, retired Chemical Engineer from Canada. Prof. N.S. Gajbhiye, Chairman of NASI (Nagpur Chapter) Prof. Suresh Umare adviser of NASI (Nagpur Chapter) and Dr. Deepa Panhekar Madam Vice Principal, Dr. Ambedkar College Dikshabhumi, Nagpur graced the function. Our school Secretary Engineer Bharat Rangari, Trustees Respected Chandrasen Dongre, Rajkumar Belsare, Devanand Gaigawali and Ramesh Gaikwad were present. The Inauguration Function was graced by a lecture of Prof. S.S. Umare, Advisor of NASI Nagpur Chapter, Prof. Umre Sir delivered his talk on 'Basic Scientific method to know the object and its uses'. He told the information about Sir C.V. Raman, one of the great Indian Scientist. He shows some experiment before the students like Titration, Test of acid and basic showing litmus paper and chemical. All students attended the lecture it was interactive session and is followed by presentation of students. The competition was evaluated by a total 3 judges from different streams viz. Dr. Deepa Panhekar, Vice Principal, HOD, Chemistry, Dr. Ambedkar College, Diskshabhumi, Nagpur, Mr. Nilesh Raut, Lecturer, Dhyanbharti High School & Jr. Collge, Pulgaon, Mr. Sachin Bhongade, B.E., Pulgaon. After careful evaluation by the Panal of Judges, the winners were announced presented certificates and Momentum while participation certificates were provided to all. The students and teachers from different schools viz. Matoshree Convent, St. John Convent, Saraswati Convent, R.K. Dhyanmandiram, Gandhi City School Pulgaon and Budhisatva Dr. Babasaheb Ambedkar Public School participated enthusiastically in the event. Results were announced by Mr. Vishwanath Meshram (Retd. Chemical Engineer from Canada). Prof. N.S. Gajbhiye, Chairman of NASI (Nagpur Chapter) and Pr. Deepa Panekar, Vice Principal Head, Department of Chemistry, Dr. Ambedkar College, Diskshabhumi, Nagpur, The valedictory programme was anchored by Ms. Pragati Meshram, Assistant Teacher while Mrs. Arti Pawar proposed the vote of thanks. The programme was supervised by the Principal Mrs. Kalpana Tiwaskar. The District Level Competition was a great success with students displaying excellent research and presentation skill. The competition provided a platform for students to learn and show their skills and interact with students from other schools. Over all, the competition was an enriching experience for all the participants and the organizer.

The winners of Exhibition/Demonstration, Chart Paper Presentation and Model competition were announced as:

1st Rank - St. John High school ( organ Donation) ; 2nd Rank - Matoshri English School ( work & Energy) ;3rd Rank - Bodhisatva Dr Babasaheb Ambedkar Public School ( Respiratory system) Model competition winners: 1st Rank - Gandhi City School ( Alcohol Detector), 2nd Rank - R. K. Dyan Mandiram ( Eco Friendly Material) , 3rd Rank - Sarswati English Medium school ( Acid Rain).



*Students demonstrating the Scientific Models in Science Exhibition*



*The winners (students) of Competitions with their Certificates of Merit/ Appreciation*

- **National Workshop on ‘Modern Approaches in Material Research’**

A Two-day National Workshop on ‘Modern Approaches in Material Research’ was jointly organized by the National Academy of Sciences, India (NASI) and Department of Chemistry, G. S. Tompe Arts, Commerce and Science College, Chandur Bazar, Dist. Amravati on March 15 & 16, 2024. There was an overwhelming response to this workshop through the participation of more than 220 delegates. Dr. Milind Bharahate, Vice-Chancellor, Sant Gadage Baba Amravati University, Amravati, was the Chief Guest on the occasion. Prof. N.S. Gajbhiye, the Former V.C., Dr. H.S. Gour University, Sagar, Former V.C. DDU Gorakhpur University, Dr.Smita Acharya, RTMU, Nagpur and Prof. A.S. Aswar also graced the occasion. The *Inaugural Session* was followed by a Plenary Talk on ‘Piezo Electric Effect’ delivered by Dr. Smita Acharya, RTM Nagpur University Nagpur.



- **The Inaugural Session underway Audience for the conference**

There were three technical sessions of the workshop on the first day; the first and second session of this workshop were chaired by Dr. M.M. Kodape, Assistant professor, Department of Chemistry, SGBAU Amravati and Third Session was chaired by Dr. A.S. Aswar, former Head, Department of Chemistry, SGBAU, Amravati. Dr.P. N Dave, S.P.University,Vallabh Vidynagar, Dr. Hitesh Kulhari



*Prof.Gajendra Dixit delivering the Invited Talk*



*Prof.P.N.Dave interacting with the audience*

School of Nano Sciences, Central University of Gujarat, Gandhinagar , Dr.D.D. Dhavale, Distinguished Professor, Department of Chemistry, S.P.Pune University, Pune, Dr.Dinesh Kumar, School of Chemical Sciences, Central University of Gujarat, Gandhinagar, Dr. KamleshKumarShrivastava, School of Studies in Chemistry, Pt. Ravishankar Shukla University, Raipur, delivered their talks. A grand cultural event was also organized at the end of the first day.

There were two technical sessions of the workshop on the second day; the First Session was Chaired by Prof. N.S. Gajbhiye, Former V.C.Dr. H.S. Gour University, Sagar, Former V.C.,DDU, Gorakhpur University and the Second Session was Chaired by Dr. J.M. Barabade, Assistant Professor, Department of Chemistry, SGBAU Amravati, Amravati.

Dr. Gajendra Dixit, Senior Professor, Department of Mechanical Engineering, MANIT, Bhopal, talked on 'innovation and start-ups'. Dr.(Mrs.) Uma Sharma, Dean, Prof. & Head, School of Studies in Chemistry & Biochemistry, Vikram University, Ujjain, Dr.Savita Dixit, Professor, Department of Chemistry, MANIT, Bhopal, Dr.Shailish S.Sable, Senior Scientific Officer, University of Alberta,Edmonton, Alberta, Canada and Dr. Ravindra



*A student giving her feedback during the event*

P.Jumde, Senior Scientific Officer, GARDP, Geneva, Switzerland also delivered their talks and interacted with the participants. The *Valedictory Session* was Chaired by the Principal, Dr. R. S. Ramteke, G.S.Tompe Arts,Commerce & Science College, Chandur Bazar. Dr. Vijay Tompe, Secretary, G.S. Tompe Mahavidyalaya Sarwajanik trust, Chandur Bazar, Prof. N.S. Gajbhiye, Former V.C., Dr. H.S. Gour University, Sagar, Former V.C, DDU Gorakhpur University, Nagpur also graced the occasion. Prof. A.S. Aswar was the Chief Guest on the occasion. Dr. M.M. Kodape, Assistant professor, Department of Chemistry, SGBAU Amravati, Amravati and Dr. J.M. Barabade, Assistant professor, Department of Chemistry, SGBAU Amravati, Amravati were the Guests of Honour. The event was well received with the encouraging response by the participating delegates viz. Dr. N. D. Gawhale, Convener of Workshop, Dr. P.P. Chaudhari, Co-Convener, Dr. S. S. Ubarhande, Organizing Secretary, Dr.N.S. Dixit and Mr.P.R. Yawale, Joint Secretary. The workshop concluded with a vote of thanks proposed by the Dr. S. S. Ubarhande, the Organizing Secretary.

## Schedule of Scientific Programme

|                                  |                      |  |  |
|----------------------------------|----------------------|--|--|
| Day-1: March 15, 2024 (Friday)   |                      |  |  |
| 9:30-10:30AM                     | Registration         |  |  |
| 10:30-11:30AM                    | Inaugural Function   |  |  |
| 11:30-12:15PM                    | PL-1                 | Prof.P.P. Wadgaonkar,<br>CSIR-NCL, Pune                                    | Title of Talk: Sustainability in the Chemical Industry.  |
| 12:15-12:45PM                    | IL-1                 | Prof.Dinesh Kumar<br>CUG,Gandhinagar                                       | Title of Talk: From the Lab to Life: How Nanomaterials are Shaping Our Future.   |
| 12:45-01:15PM                    | IL-2                 | Dr. Hitesh Kulhari<br>CUG, Gandhinagar                                     | Title of Talk: Designing Nanobiomaterials for Therapeutic Applications.  |
| 01:15-02:15PM                    | LUNCH                |  |  |
| 02:15-03:00PM                    | PL-2                 | Prof.D.D. Dhavale,<br>S.P.Pune University,<br>Pune                         | Title of Talk: Synthesis of Iminosugars as glycosidase inhibitors and sugar amino acids derived Linear/Cyclic Peptides as ion transporters.                        |
| 03:00-03:30PM                    | IL-3                 | Prof.P. N Dave<br>S.P.University,<br>VallabhVidynagar                      | Title of Talk: From Urea Synthesis to Quantum synthesis: Unravelling the Evolution of Synthetic Routes in Chemical Sciences.                                       |
| 03:30-03:45PM                    | Tea Break            |  |  |
| 03:45-04:15PM                    | IL-4                 | Prof.KamleshShrivastava<br>Pt. Ravishankar<br>Shukla University,<br>Raipur | Title of Talk: Design and Development of Nanoparticles-based Colorimetric Chemical Sensors.  |
| Day-2: March 16, 2024 (Saturday) |                      |  |  |
| 10:30-11:15AM                    | IL-5                 | Prof.(Mrs.) Uma<br>Sharma,Vikram<br>University, Ujjain                     | Title of Talk: Molecular Recognition - Fundamentals of Nanosensors and Advanced Devices.   |
| 11:15-12:00 AM                   | PL-3                 | Prof.Gajendra Dixit,<br>MANIT, Bhopal                                      | Title of Talk: Innovation, Creativity & Start Up   |
| 12:00-12:30PM                    | IL-6                 | Prof.Dr.Savita Dixit,<br>MANIT ,Bhopal                                     | Title of Talk: Change, Creativity, and Innovations for Social Scientific Reforms.  |
| 12:30-01:30 PM                   | LUNCH                |  |  |
| 01:30-02:00 PM                   | IL-7                 | Dr.ShaileshS.Sable<br>Alberta, Canada                                      | Title of Talk: Performance and mechanism in the degradation of contaminants of emerging concerns (CECs) from water and wastewaters by catalytic oxidation process. |
| 02:00-02:30PM                    | IL-8                 | Dr.RavindraP.Jumde<br>Geneva, Switzerland.                                 | Title of Talk: Role of Chirality in Drug Discovery   |
| 02:30-03:00 PM                   | IL-9                 | Dr.Gaurav<br>Gupta,G.T. Patil<br>College,Nandurbar                         | Title of Talk: Ionic liquids; a sustainable bridge between science of molecules in materials Science.  |
| 03:15-03:45 PM                   | VALIDICTORY FUNCTION |  |  |
| 03:45-04:00 PM                   | TEA                  |  |  |

# देशोन्नती

## सागर सवळे न्युज

### टोम्पे महाविद्यालयात उद्यापासून रसायनशास्त्र विषयाची 'राष्ट्रीय कार्यशाळा'

▶ देश-विदेशातील तज्ज्ञ मंडळी करणार मार्गदर्शन ▶ पत्रकार परिषदेत आयोजकांची माहिती

देशोन्नती वृत्तसंकलन...

**जसापूर** ■ चांदूरबाजार येथील गो. सी. टोम्पे कला, वाणिज्य व विज्ञान महाविद्यालयात रसायनशास्त्र विभागातर्फे राष्ट्रीय परिषदेचे आयोजन करण्यात आले. ही परिषद 'रीसेंट अप्रोचेस इन मटेरियल रिसर्च' या विषयावर असून सदर कार्यशाळा नॅशनल अॅक्झिमी ऑफ सायन्सेस आणि रसायनशास्त्र विभाग यांच्या संयुक्त विद्यमानाने होणार आहे. या कार्यशाळेच्या उद्घाटनासाठी कुलगुरू डॉ. मिलिंद बाराहाते यांची उपस्थिती लाभणार



आहे. कार्यशाळेत देश आणि विदेशातील बारा तज्ज्ञ मार्गदर्शकांची अभ्यासपूर्ण अतिथी व्याख्याने होणार आहेत.

या कार्यशाळेत डॉ. पी. पी. बडगावकर, नॅशनल केमिकल लॅबोरेटरी, पुणे डॉ. डी.डी. ढवळे पुणे विद्यापीठ, पुणे, प्रोफेसर गजेन्द्र दीक्षित भोपाल, प्रोफेसर उमा शर्मा, उज्जैन

यूनिव्हर्सिटी, प्रोफेसर दिनेश कुमार, सेंट्रल गुजरात युनिव्हर्सिटी, प्रोफेसर सविता दीक्षित भोपाल, प्रोफेसर पी. एन. दवे, एसपी युनिव्हर्सिटी, विद्यानगर, प्रोफेसर कमलेश कुमार, श्रीवास पंडित रवीशंकर शुक्ला यूनिव्हर्सिटी, रायपूर, प्रोफेसर हितेश कुल्हारी, सेंट्रल यूनिव्हर्सिटी ऑफ गुजरात, डॉ. रवींद्र जुमडे, सीनियर

सायंटिफिक ऑफिसर जिनेव्हा, डॉ. एस. एस. साबळे, सीनियर सायंटिफिक ऑफिसर युनिव्हर्सिटी ऑफ अल्बर्टा, कॅनडा, आणि डॉ. गौरव गुप्ता, आर्ट्स कॉमर्स अॅण्ड सायन्स कॉलेज नंदुरबार आदि तज्ज्ञ मंडळी उपस्थित राहून विविध नावीन्यपूर्ण विषयावर संशोधनात्मक विचार सादर करणार आहेत. या कार्यशाळेसाठी अमरावती विद्यापीठातील व महाराष्ट्रातील जवळपास २०० विद्यार्थी संशोधक मार्गदर्शक व प्राध्यापक उपस्थित राहणार आहेत.

कार्यशाळेच्या आयोजनासाठी नाशिक चाप्टर नागपूर यांनी मदत केली आहे. यावेळी नाशिक चाप्टर नागपूर मधील डॉ. एन. एस. गजमिये अध्यक्ष, प्राचार्य सचिव व प्रोफेसर उंबरे, प्रोफेसर अस्वार यांचे मोलाचे सहकार्य लाभले. सदर कार्यशाळेस संस्थेचे अध्यक्ष भास्कर टोम्पे, संस्थेचे सचिव विजय टोम्पे, प्राचार्य डॉ. राजेंद्र रामटेके, डॉ. नंदकिशोर गवळे यांनी परिसरातील व जिल्हातील संशोधक, अभ्यासक, प्राध्यापक, विद्यार्थ्यांनी मोठ्या संख्येने उपस्थित राहून कार्यशाळेचा लाभ घेण्याचे आवाहन केले आहे.

# North Eastern Region (NER)

- **Drug Awareness Programme & Street Play**

A one-day awareness programme on *Drug Abuse* entitled 'Say No to Drugs' was organized on 22nd April 2023 by NASI NER Local Chapter in collaboration with Seng Samla Katholik Sub-District Lum Mawthuh, Mawtarwar, Lummawsing, East Khasi Hills District, Meghalaya. The major theme of the programme was a street play by School children on 'Awareness and Abuses of Drug among Young Children'.



The programme started with a welcome speech by the President of the Seng Samla Mr Jeffrey S. Thangkhiew. It was followed by a briefing the activities of NASI NER Chapter by Prof. S.R. Joshi, Secretary of the Chapter.



The welcome song was presented by the members of the Seng Samla (Youth Organization) entitled 'Let's make a better world'. It was followed by a talk on 'Parents and importance of time with Children: Negligence and Problems' by Mr. Tonny Syiemlieh, Director, Manbha Foundation.

The Foundation works on reformation and rehabilitation of drug abusers and alcoholics. This was followed by a street play by the school children from the locality who beautifully presented on how a child



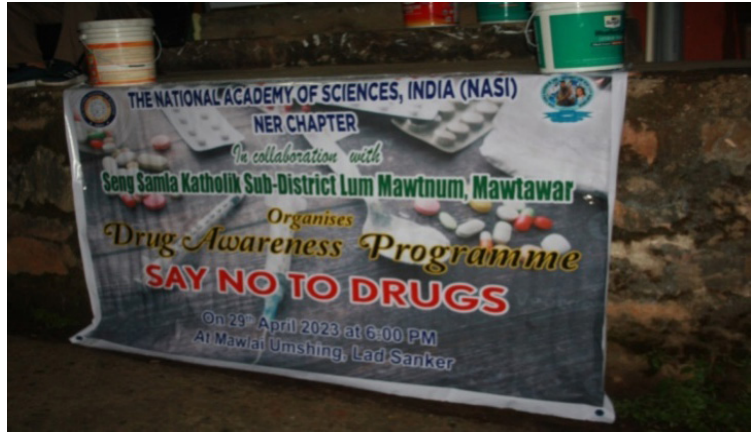
if neglected by family and friends can turn to using drugs due to peer pressure and coupled frustration. The young and the old lined up in the street to witness the play which was very well appreciated. Sister Helen Puwein from *Bellfonte Community Centre* who works on providing support and avenues to less-fortunate spoke on how parents can play a vital role in educating children on evils of drugs when abused. This was followed by vote of thanks and prayer by Mr Ridamon Synnah and Mr Richard Rani, the members of the *Seng Samla (Youth Organisation)*.



The general public (about 80 participants) in the programme made an appeal to organize similar programme in another locality as such street plays convey deeper meaning and understanding to the locals on the menaces of drug abuse.

- **Street Play-cum-Awareness Programme**

An Evening Street Play-cum-Awareness Programme on 'Substance Abuse' with special emphasis on 'Say No to Drugs' was organized on April 29, 2023 by NASI NER Local Chapter in collaboration with Seng Samla Katholik Lum Mawthuh, Mawtaraw, East Khasi Hills District, Meghalaya at Mawlai Lad Sanker, Shillong. The major theme of the programme/ street play by the Youth Organization (*Seng Samla*) was



'Substance Abuse by Youths'. The programme started with a welcome speech by the President of the Seng Samla Mr Jeffrey S. Thangkhiew. It was followed by brief description of the activities of NASI NER Chapter by Prof. S.R. Joshi, Secretary of the Chapter. The welcome song was presented by the members of the *Seng Samla* entitled 'Let's make a better world'. It was followed by a talk on 'Substance Abuse and the Easy Targets' by Mrs. Samantha Khar noir, a representative from *Manbha Foundation*, Shillong. The *Manbha* Foundation works on reformation and rehabilitation of Drug Abusers and Alcoholics. This was followed by a street play by the members of *Seng Samla*, a youth organization who beautifully presented on how a child if neglected by family and friends can turn into a Substance Abuser.



The young and the old people including the students in the street witnessed and very much appreciated the play. Sister Helen Puwein from Bellfonte community Centre spoke on the challenging roles of parents in the modern days while bringing up their kids. This was followed by *Vote of thanks* proposed by Ms Lisa M Thabah and a prayer cited by Mr. Richard Rani, the members of the *Seng Samla* (a Youth Organization). The local participants appreciated the programme and lauded the efforts of the NASI Local Chapter and the local organization for holding such programme. The programme ended with a summing up and *Vote of thanks* by Prof. S.R. Joshi.



### Programme on 'Popularization of Science with special reference to Biodiversity'

The programme on 'Popularization of Science with special reference to Biodiversity' was organized by National Academy of Sciences, India (NASI) NER Local Chapter in collaboration with Sikkim State Council of Science and Technology, Government of Sikkim at *Chintan Bhawan* in Gangtok on May 2, 2023.



The day-long event started with the *Inaugural Session* Chaired by Prof. S K Barik, Centre for Advanced Studies in Botany, Department of Botany, NEHU, Shillong and Former Director, CSIR- NBRI, Lucknow, as the chief guest. The programme was graced by the eminent speakers and scientists viz. Dr. Manju Sharma (virtually), Chairperson, NASI's New Initiatives, Former President, NASI, Shri B.P. Pradhan IFS, Secretary, Department of Science & Technology, Government of Sikkim, Prof. Avinash Khare, Vice Chancellor, Sikkim University, Prof. S. R. Joshi, Department of Biotechnology & Bioinformatics NEHU,



Shillong: Secretary NE Chapter of NASI, Prof. Partha Pratim Baruah, Department of Botany, Guwahati University, Prof. T. C. Bora, Vice Chancellor, Krishnaguru Adhyatmik Visvavidhyalaya, Prof. Utpal Bora, IIT, Guwahati, Shri Dhiren G. Shrestha, Principal Director, Science and Technology Department, Government of Sikkim, Dr. Bharat Kumar Pradhan, Sikkim Biodiversity Board, Government of Sikkim. Around 250 students from different schools of Gangtok, research scholars, members of NASI, teachers, students from different educational institutions and dignitaries also participated in the event.

The *Welcome Address* was delivered by the Secretary, Department of Science & Technology, Government of Sikkim, Shri B.P. Pradhan IFS. Extending a warm welcome to all the speakers and participants, he provided an overview of the state's flora and fauna, its biodiversity and emphasized the importance of addressing the growing issue of global warming. The *Brief Introduction of Women's Program of NASI* was presented by Prof. Paramjit Khurana, JC Bose Fellow from Department of Plant Molecular Biology, Delhi University, South Campus. During her presentation, she provided an overview of the initiatives that NASI has undertaken across different rural and state-level platforms. Additionally, she conveyed NASI's mission to raise awareness about women's participation in the preservation of sustainable biodiversity and shared information about various programs in which NASI has participated. She expressed hope that the insights shared by the speakers would prove to be beneficial in context of the biodiversity hotspot.



A *Brief Introduction of the Local Chapter Activities* was given by Prof. S R Joshi, the Secretary of NE Chapter of NASI. He expressed his delight at witnessing the participation of students from various educational institutions in the program, and said that the youth hold the key to shaping India's future. He emphasized the significance of science and the need to popularise its study among the younger generation. Further, he provided insights into the sustainable utilisation of resources, emphasizing the importance of conserving and utilising natural resources in a sustainable manner. He acknowledged the delegates' contributions to promoting science and urged the students to take advantage of the workshop. The *Vote of Thanks* for the Inaugural session was delivered by Dr. Archana Pant, Young Woman Scientist at NASI HQ, Prayagraj.

*The First Technical Session* on 'Conservation and Utilization of Biodiversity' was Chaired by Prof. Avinash Khare VC, Sikkim University Co-Chaired by Prof. Paramjit Khurana, JC Bose National Fellow Department of Plant Molecular Biology, Delhi University, South Campus. Prof. Arun K. Pandey, VC, Mansarovar Global University, Bhopal, M.P spoke on 'Himalayan Flowering Plants: Diversity and Strategies for Conservation and Sustainable Utilisation' and mentioned about the major threats to Himalayan biodiversity. Prof. Utpal Bora, IIT, Guwahati spoke on 'Popularization of Science with special reference to Insect Biodiversity'. He focused on the relevance and role of insects in the environment and our life. Prof. S. K. Barik, Centre for Advanced Studies in Botany, Department of Botany NEHU, Shillong; Former Director, CSIR-NBRI, Lucknow, discussed the significance of biodiversity in depth, highlighting the importance of enhancing its value. Additionally, he talked about the successful initiatives undertaken by NASI and encouraged students to explore the biodiversity sector, emphasizing the necessity of studying flora and fauna for preservation of biodiversity. The Second Session focused on 'Women Involvement in Protecting Ecosystem', was Chaired by Prof. Tarun Chandra Bora VC, Krishnaguru Adhyatmik Visvavidyalaya Nasatra, Barpeta, Assam and Co-Chaired by Dr. Suchitra Banerjee, NASI Senior Scientist, CSIR-CIMAP, Lucknow. Dr. Rajendra Dobhal, Former DG, UCOST, Dehradun spoke on the 'Role of women in safeguarding the ecosystem of the Indian Himalayan Region'. He mentioned about several movements led by Indian women; and also highlighted their achievements by portraying various women who have been recognized with the UN awards. Prof. Latha Rangan, Department of Biosciences and Bioengineering, IIT Guwahati spoke on the 'Ecosystem of North East India and the Conservation Efforts'. She put forth some examples where the women came forward and took steps towards the sustainable conservation practices. She specified the roles of women in Ecosystem Conservation viz. as managers of natural environment; as rehabilitators in sustainable development; and as innovators in the use of appropriate technology in the new environment. Dr. Bharat Kumar Pradhan, Sikkim Biodiversity Board, Forest Department, Government of Sikkim, provided a comprehensive account of the 'Connection between women, biodiversity conservation, and livelihood'. He discussed the sustainable techniques implemented by women and the movements led by them.

The Third Session on the 'Flora and Fauna of North East' was Chaired by Prof. Pramod Tandon, NASI Honorary Scientist and Former Vice-Chancellor, NEHU, Shillong & CEO, Biotech Park, Lucknow while Dr. G. Narahari Sastry Director, North-East Institute of Science & Technology, Jorhat was the Co-Chair. The first speaker, Dr. A. A. Mao, Director, BSI, Kolkata delivered a detailed presentation on 'Plant diversity in the Northeastern region of India and its potential for the development of a bio-based economy'. The second speaker, Prof. Partha Pratim Baruah, Department of Botany, Guwahati University, highlighted on the diversity of algae found in the region on North East India and their importance in biodiversity.

The Concluding Session was Chaired by Dr. Manju Sharma and Co-Chaired by Prof. Paramjit Khurana. Dr. Amit Ghosh, Chief Editor, NASI Publication, Prof. Anupam Chatterjee, Department of Biotechnology & Bioinformatics, NEHU, Shillong; Chairman, N-E Chapter of NASI, Dr. Bharat Basistha,

Principal Director, Department of S&T, Govt. of Sikkim and Prof. S R Joshi, Secretary, NE Chapter of NASI provided brief remarks on the respective sessions and the event as a whole. The students had an opportunity to interact with senior research officials during the *Interactive Session*.

The Vote of thanks was proposed by Dr. Santosh K Shukla, Assistant Executive Secretary, NASI HQ, Prayagraj.

### ● Programme on 'Dental Health and Hygiene'

The National Academy of India (NASI) NER Chapter organized a programme on 'Community Dental Health' in collaboration with the Indian Dental Association Meghalaya State Branch at Nonmensong Dorbar Sec. School, Nongmensong, EK Hills, Meghalaya on May 11, 2023. The programme started with a welcome speech from the Headmistress of the school who briefed about the mission and activities of the school. She explained that Nongmynsong Dorbar Secondary School was established by the Dorbar Shnong Nongmynsong in the year 1998 with a purpose to provide free education to the school children belonging to the underprivileged communities and those living below poverty line. The school provides free education to the students coming from underprivileged community.



A brief description on the activities of NASI was given by Prof. S.R. Joshi with the special focus on less privileged/ tribal students of the region followed by a *Popular Talk* and demonstration by Dr. Freddie Kharmawlong on 'Oral Hygiene' which was attended by 120 students. The demonstration was given on phase-wise manner attended by 300 students.



The school teachers along with Prof S. R. Joshi distributed the dental kit (comprising tooth brush and a tooth paste) to the students of primary classes after the lecture and demonstration.



Dr. Freddie Kharmawlong spoke on the 'Ill effects of tobacco' and also mentioned about the role of dental hygiene in maintaining the overall health of an individual. The programme ended with extending sincere thanks to all concerned from the Secretary of NASI NER Chapter.

● **Popular Lecture on 'Emerging Viruses and Human Health'**

A popular lecture on 'Emerging Viruses and Human Health' was organized by NASI NER Local Chapter on May 16, 2023 at School of Life Sciences, NEHU.



The lecture entitled 'Lessons learnt from SARS coronavirus outbreak' was delivered by Dr. Stalin Raj, Associate Professor at School of Biology, IISER, Thiruvanthapuram, Kerala.'

The programme was attended by the students and research scholars of NEHU having Life Sciences background. The lecture started with a short description about NASI's activities and introduction of the speaker by Prof. S.R. Joshi, Secretary, NASI NER Local Chapter. He emphasized on certain health aspects, cleanliness, and protection from emerging diseases and the importance of safety protocols to be followed. Dr. Stalin in his talk provided an elaborate presentation on emerging diseases, virus discovery and virus-human interactions along with the zoonotic carriers.

He started with the history of coronavirus (until the Covid-19) and the human response to the outbreak. He talked about the vaccines and how India led the development in such a short span of time. He also mentioned about the scope of virus research available in our country and the avenues to be explored to pursue it. The talk was followed by question-answer session with queries coming from the students which were responded by Dr. Stalin Raj. The programme ended with vote of thanks proposed by Prof. S.R. Joshi who expressed his gratitude to Dr. Stalin Raj for having made it to NEHU besides his assignment at IIT, Guwahati.



### ● Programme on 'Communicable Diseases'

A one-day event on 'Communicable Diseases' was organized by the National Academy of India (NASI) NER Chapter on July 7, 2023 at Nongrim Nongladow, RiBhoi District, Meghalaya.

The programme started with a welcome speech from Dr. Macmillan Nongkhlaw in the presence of the local Syiem Mr. Pherbiang Shadap of Raid Iapnagar as the guest, Dr. Amazinling Kharjana from Lawmali



Hospital, Shillong as the resource person of the day and Mr. K Rynghang who were present together at the programme. It was followed by a short briefing on the programme and the activities of NASI by Prof. S.R. Joshi, Secretary, NASI NER Chapter. The programme then had the popular lecture in local language by Dr. Amazinglin Kharjana who spoke on different kinds of communicable diseases and their prevention along with proper dietary interventions. The programme was attended by tribal ladies in particular who were home makers as well as leaders of the traditional societies.



Later at the end of the lecture, the participating women made lot of queries on health related issues which were responded by the doctor.



The programme continued with the medical check-up. The participants came forward for consultation (with the doctor) on their health issues; the prescriptions were also provided. Dr. Amazinglin Kharjana was appreciated and thanked for her expertise and the meaningful lecture from which every one of the participants benefitted. The Syiem (Head of the Clan) Mr. Pynbiang Shadap appealed for more such programmes in future to benefit larger population of the remote villages.



- **Science Exposure Programme-‘Excitement in Science’ (for School Children)**

The National Academy of Sciences, India (NASI) NER Chapter organized a one-day ‘Science Exposure Programm’e for school children on July 21, 2023at Science Centre, NEHU Campus Shillong. Around 50 students and teachers form the rural setup including the Pomlakrai Presbyterian Secondary school participated in the programme.



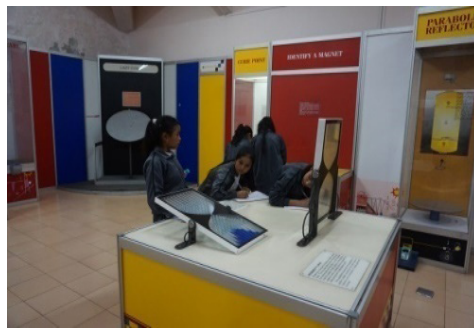
The programme commenced with a *Welcome Address*with a brief description on NASI’s activities by Prof. S.R. Joshi and Shri S. Lamare from Pomlakrai Presbyterian Secondary School. They highlighted the importance of such visits that encourage *Excitement in Science*among the children.The students were taken to the planetarium by Mr. Remiki Dkhar who guided the visit of the students to the centre. Mr. Remiki Dkhar briefed and interacted with the students about astronomy and explained about the solar system.



Mr Remiki Dkhar later took the student to the auditorium were he explained about the civilization of life which began close to the river and there he continued with all other activities in which the student received valuable information and enjoyed their interaction; and noted down the important points as they visited different exhibits in the Science Centre.After the visit to the different sectors of the Science Center, the students were offered lunch and a vote of thanks was proposed by Prof. S.R. Joshi.



*Mr. Remiki Dkhar interacting with the school student*

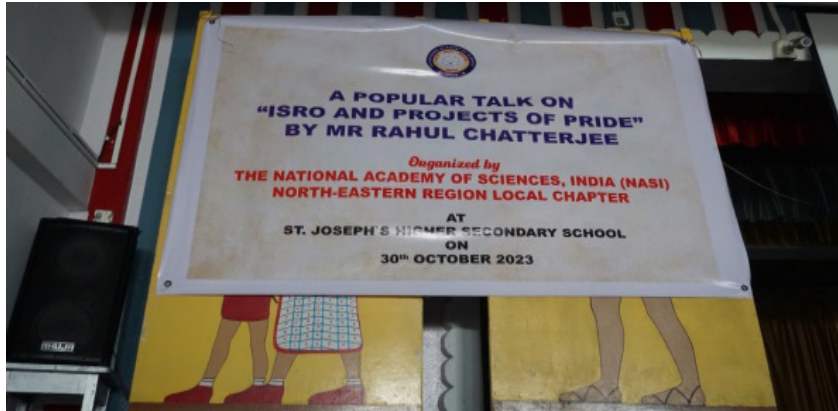


*Students visiting the Science Centre*



- **A Popular Lecture on 'ISRO and the Project of Pride'**

The National academy of Science India (NASI) NER Local Chapter organized a Popular talk on 'ISRO and the Project of Pride' on October 30, 2023 at St. Joseph Higher Secondary School, Shillong.



The program commenced with the *Welcome Address* by Prof S.R. Joshi, Secretary, NASI NER Local Chapter. A brief overview about NASI and its chapters was also presented by him during his talk.



A popular talk on 'ISRO and the Project of Pride' was delivered by Mr. Rahul Chatterjee, Assistant Lecturer of Jail Road Boys Higher Secondary School and a National Teacher Awardee. The programme was attended by about 150 students of class IX and Class X. Mr. Chatterjee spoke on the *Successful Landing of Chandrayan-3* on the south pole of the moon. He mentioned about some specific reasons for Indian Space Research Organisation (ISRO) choosing to land Chandrayaan in the south pole of moon. He also





shared his experience and the information received by him on various related aspects during his visit to NASA. The programme ended with gratitude and thanks to the St. Joseph`s Higher Secondary School for participating and providing the logistics for organizing the awareness programme.

● **‘An Open day to University Laboratories’ for JNV students**

A Science exposure programme called ‘An Open Day to Science laboratories’ for school children from PM Shri School- Jawahar Navodaya School, Mukhla, West Jaintia Hills Meghalaya was organized at NEHU on November 29, 2023.



A total of 393 students comprising 172 boys and 221 girls of Class VIII to XII accompanied by 18 teachers participated in the programme. The students were exposed to the laboratory facilities available in the campus of North-Eastern Hill University, Shillong.



The event included visit to various departments of the university namely, Chemistry, Biochemistry, Botany, Geology and Biotechnology & Bioinformatics etc. Apart from this, the students were also taken to Sophisticated Analytical Instruments Facility (SAIF) where high end equipments are housed such as Electron Microscopes, AAS, FTIR and NMR; they were briefed on the role of such instruments in conducting the scientific research.

- **Exposure Visit for Vigyan Jyoti Student Group of JNV**

A Science exposure visit for the students under *Vigyan Jyoti Programme* of JNV was organized on November 30, 2023 by NASI NER Local Chapter. The students from JNV Mukhla (10), JNV Mawphlang (13), JNV Nongstoin (10) and KV EAC Upper Shillong (17) accompanied by 4 Teachers participated in the programme. The students also visited different Science laboratories and exposed to the facilities available in the NEHU Campus, Shillong including various departments of the university namely, Chemistry, Biochemistry, Botany, Geology and Biotechnology & Bioinformatics etc.



- **Exposure Visit to Shillong Science Centre**

The National academy of Science India (NASI) NER Local Chapter organized a one- day *Science Exposure Programme* on December 4, 2023 at Science Centre NEHU, Shillong. Mr. Mansan Rynghang from Department of Biotechnology & Bioinformatics, NEHU briefed about NASI and its Local Chapters.



The student were divided into two group in which one group was introduce to the planetarium by Mr. Rimiki Dkhar the Educational Assistant who explain about the function of the planetarium and the solar system in which the student were make them understand the basic idea about the solar system and the properties of the individual planet where explain in order to make them simplify the concept of planet in the solar system.



The other group was taken to the innovation hub which was introduced by Mr. Banjop K. Nongbri. He explained about the use/function and mechanism of the robotic and other devices etc. This programme, attended by 70 students of class IX and class X accompanied by the teachers ended with gratitude and thanks to the Principal of St. Peter Secondary School Iongkaluh Khliehriat for taking the responsibility and motivating the students to participate in the scientific awareness programme.

# Rajasthan Chapter

The Local Chapter organized a few activities during the year of report:

- **EcoSDG Summit: Navigating a Greener Future through Water and Waste Management Organized by Dr. B. Lal Institute of Biotechnology, Jaipur in collaboration with National Academy of Sciences, India, Rajasthan Chapter on World Environment Day, 5<sup>th</sup> June, 2023.**

The **EcoSDG Summit 2023** was a dynamic and enlightening gathering with the distinguished presence of Dr. Rajendra Singh, a renowned environmentalist and widely recognized him as the 'Water-Man of India'. Mr. Ajitabh Sharma, an esteemed IAS officer, graced the occasion as the Guest of Honor and motivated the audience to drive positive change. Esteemed speakers such as Prof. H. N. Verma, Chairman, NASI-Rajasthan Chapter, Pro-Chancellor JNU, Jaipur; Prof. N. K. Lohiya, Secretary, NASI Rajasthan Chapter; Emeritus Professor-NAMS, University of Rajasthan, Jaipur and Dr. Meghendra Sharma, Secretary, Vigyan Bharati Rajasthan (VIBHA) shared their invaluable insights and expertise. The welcome address was delivered by Dr. Sudipti Arora, Research Scientist & Assistant Director at Dr. B. Lal Institute of Biotechnology, Jaipur and Dr. Manju Sharma, Chairperson NASI New Initiatives, former Secretary DBT & President NASI, provided an online address, further enriching the event.



(a)



(b)



(c)

*(a) The distinguished speakers on the dais; (b) Invited guests and; (c) A view of the participants*



Rajasthan Chapter

**National Seminar on Priority Health Issues for Senior Citizens**  
*Organized by*  
**Narayana Multispeciality Hospital, Jaipur**  
*in collaboration with*  
**Rajasthan University Pensioners Association (RUPA) &**  
**National Academy of Sciences, India (NASI)-Rajasthan Chapter**

Held on June 25,2023



**Dr. Devendra Kumar Shrimal**  
 Director  
 Cardiology



**Dr. Vijay Sharma**  
 Senior consultant  
 Orthopaedics and Joint Replacement



**Dr. Rohit Swami**  
 Consultant  
 Medical Oncology

**● National Seminar on Women Empowerment and Entrepreneurship Development with S & T Interventions**

A National seminar on ‘Women Empowerment and Entrepreneurship Development with S & T Interventions’ was organized by National Academy of Sciences, India (NASI) & its Rajasthan Chapter in collaboration with Pacific Academy of Higher Education & Research University, Udaipur on November 3& 4, 2023. The event was graced by Prof. Balram Bhargava, President, NASI and Former Director General, ICMR/Secretary DHR and currently, Chief of the Cardio thoracic Unit, AIIMS, New Delhi, Dr. (Mrs.) Manju Sharma, Former Secretary, DBT, GOI and Chairperson, NASI New Initiative, Prof. Paramjit Khurana, Delhi University, South Campus, Prof. H. N. Verma, President NASI Rajasthan Chapter; Pro-



Chancellor, Jaipur National University, Jaipur, Prof. N. K. Lohiya, Secretary, NASI Rajasthan Chapter; Emeritus Professor-NAMS, University of Rajasthan, Jaipur, Dr. Santosh K Shukla, Executive Secretary, NASI, Prof. B. P. Sharma, Group President, Pacific Group of Institutions, Udaipur, Prof. K. K. Dave, President, Pacific Academy of Higher Education & Research University, Udaipur, Prof. S. D. Purohit, Organizing Secretary, Former Head, Department of Botany, Mohanlal Sukhadia University, Udaipur and Prof. Hemant Kothari, Dean, Post-Graduate Studies and Advisor Pacific University, Udaipur. The speakers shared their expertise on various aspects of entrepreneurship and efforts made by NASI to spread awareness and inculcate entrepreneurial spirit among the youngsters including the young girls and women. The event was joined by the different sections of society including the faculty members, school teachers, research scholars, college and school students and invited guests from civil society. The presentations by all the eminent speakers were excellent and in consonance with the theme of seminar.

The interaction with tribal women, entrepreneurs and scientists provided an opportunity for meaningful discussion.







**Narayana Multispeciality Hospital, Jaipur**  
is organizing



## Health Symposium

in collaboration with  
**National Academy of Medical Sciences (NAMS)-Rajasthan Chapter &  
 National Academy of Sciences, India (NASI)-Rajasthan Chapter**

On  
**Sunday, 17<sup>th</sup> December, 2023 at 11.00 am**



**Dr. Vaibhav Mathur**  
 Consultant  
 Neurology(Brain)



**Dr. Ravi Kumar**  
 Consultant Nephrologist  
 and Renal Transplant Physician





● **Sarp Shiksha Abhiyan**

Various activities were conducted by Prof. K. K. Sharma, Former Vice-Chancellor, Maharshi Dayanand Saraswati University, Ajmer and his team during the current year viz. International Conference organized by the RR College, Alwar, National Conferences at Pacific University Udaipur, Agarwal College Jaipur, Subodh Mahila Mahavidhyalay Jaipur, SKG, Jaipur, Jail Training Institute, Ajmer, Rajasthan Police Training Centre, Kishangarh, East Point School Ajmer, JDB Girls College Kota and many other Institutions. Further, on 22<sup>nd</sup> January 2024, an event called ‘Sarp Shiksha Abhiyan’ (सर्प शिक्षा अभियान) was launched to campaign for the initiative ‘Snake Bite Death Free India’, which is a *National Action Plan for Snakebite Envenoming*. The snakes entered in the house are being rescued by the volunteers assisting Police and Forest Departments. Therefore, the efforts were made to spread awareness about identification of snakes as venomous, non-venomous and mildly venomous through posters having such images. The Pressure Immobilization Technique and some dos and don’ts to be followed after the snake bite is also demonstrated offline.



## ● National Science Week 'SciFi-2024'

The 'Science Week SciFi-2024' was jointly organized by Jaipur National University (JNU), Internal Quality Assurance Cell & Centre for Excellence in Quantum Science in association with Rajasthan Chapter of NASI at Jaipur National University during February 21-28, 2024. The main objective to organize such event was to make the students aware of indigenous technologies promoting sustainable development of India. The students of JNU, Jaipur participated with great enthusiasm in various competitions such as poster-making, model-making, quiz, photography, short movie making, debate, lecture and quiz based on the story of universe, scientific rangoli, review paper writing, slogan writing etc. organized during the event. Shri Ravi Kumar, All India Executive Member of RSS Contact Department graced the occasion as the Chief Guest. The Program Chairman, Shri Madan Dilawar, Cabinet Minister (School Education and Panchayati Raj Department), Govt. of Rajasthan and Shri Swant Ranjan, All India Intellectual Head of RSS, participated as the Special Guests.



**दैनिक भास्कर** जयपुर सिटी भास्कर 29-02-2024

### 'साईफाई' प्रोग्राम में स्टूडेंट्स ने पोस्टर, मॉडल और शॉर्ट मूवी बना दिखाया टैलेंट



सिटी रिपोर्टर । स्टूडेंट्स स्वदेशी तकनीकों से अवगत होकर उनका उपयोग करें। इसी उद्देश्य से जयपुर नेशनल यूनिवर्सिटी में साईस वीक के तहत 8 दिवसीय 'साईफाई' कार्यक्रम हुआ। इस दौरान पोस्टर और मॉडल मेकिंग, क्विज, फोटोग्राफी, शॉर्ट मूवी, डिबेट जैसी प्रतियोगिताएं हुईं। मुख्य अतिथि रवि कुमार ने कहा कि मेहनत, अनुशासन और आत्म श्रद्धा से काम करने पर विकास के रास्ते खुलेंगे। कैबिनेट मंत्री मदन दिलावर ने कहा कि स्टूडेंट्स में प्रतिस्पर्धा की भावना उन्हें आगे बढ़ाने में सहायक होगी। आरएसएस के अखिल भारतीय बौद्धिक प्रमुख स्वांत रजन ने कहा कि

आज स्वदेशी तकनीक से मिसाइल टैंक, लड़ाकू विमान और कई रक्षा उपयोगी उपकरणों का आविष्कार कर भारत आत्मनिर्भर बन रहा है। जेएनयू के चांसलर डॉ. संदीप बक्शी ने कहा कि 2035 तक भारत विश्व की तीसरी सबसे बड़ी अर्थव्यवस्था बन जाएगा। इसमें आज के शिक्षित युवाओं का योगदान और राष्ट्रीय मिशन के साथ भागीदारी जरूरी है। जेएनयू के डायरेक्टर, रिसर्च एंड एकेडमिक्स के प्रो डॉ. योगेश चंद्र शर्मा ने कहा कि आईक्यूएसी सेल का उद्देश्य यूनिवर्सिटी के विभिन्न विभागों जैसे तकनीकी, वैज्ञानिक, कला, प्रबंधन आदि सभी शैक्षणिक प्रतिभागों को बढ़ावा देना है।

*Glimpses of the event & press coverage*

- **National Workshop on ‘Research Methodology & Biostatistics, Research Proposals and Paper Writing’**

The Chapter organized a National Workshop on ‘Research Methodology & Biostatistics, Research Proposals and Paper Writing’ on March 6, 2024. A total of 75 participants registered for the workshop including the faculty members, PG and PhD scholars of Swasthya Kalyan Group. Dr. (Mrs.) Manju Sharma, Former Secretary to Government of India, Department of Biotechnology; Chairman, NASI-New Initiatives, New Delhi, delivered the *Inaugural Address* online. Dr. V. M. Katoch, Former Secretary, DHR & DG-ICMR presented *Keynote Address* and Prof. N. K. Lohiya, Dr. Arun Chougule, Dr. Vinod Kumar SV, Dr. Anoop Khanna and Dr. D. P. Singh delivered invited talks related to the theme of the conference.



- **Awareness program under ‘Sarp Shiksha Abhiyan’**

An awareness program was organized under ‘Sarp Shiksha Abhiyan’ on March 29, 2024. Prof. K. K. Sharma demonstrated how incidents of snakebite can be reduced with timely treatment and awareness. He described various strategies to achieve Snake Bite Free India.





# Uttarakhand Chapter

The following activities were organized by the Chapter:

- **Brainstorming Session on Potential focus areas for research**

A brainstorming session was jointly organized by NASI-UK Chapter & Swami Rama Himalayan University (SRHU), Jolly Grant, Dehradun, Uttarakhand on June 2, 2023 at Swami Rama Himalayan University. The event was graced by Padma Bhushan Dr. Manju Sharma, Former Secretary, Department of Biotechnology, Govt. of India, New Delhi and Chairman, NASI New Initiatives and Prof. Paramjit Khurana, J.C. Bose National Fellow, Department of Plant Molecular Biology, Delhi University, South Campus, Delhi. The



purpose of this session was to gather insights, generate ideas, and priorities areas of research that align with the University's Vision & Mission and contribute to academic excellence and societal impact. In this session Hon'ble Vice Chancellor, Director of Strategic Planning and Research & Development, Directors and Principals interacted with the experts/ speakers who identified and discussed the potential focus areas for research at the University.

- **National Conference on 'Environment, Water, Agriculture, Sustainability & Health (EWASH-2023) Strategizing a Greener Future'**

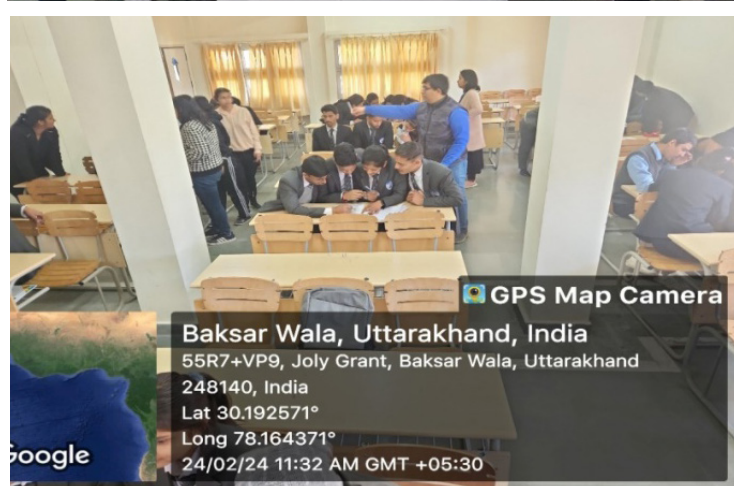
The Chapter organized a national conference in joint collaboration with National Academy of Sciences India (NASI), Swami Rama Himalayan University (SRHU), Save The Environment (STE), (A Society for Research Awareness & Social Development), Kolkata/ Gurugram and DAV(PG) College, Dehradun on December 22 & 23, 2023. The sub-themes included 1. Biotechnological Advancement in Sustainable Technology; 2. Biological treatment of Sewage & Wastewater; 3. Microplastics in Water; 4. Biodegradable Plastic Waste; 5. Biotechnology and Health; 6. Water and wastewater management; 7. Smart technologies and use of AI for water conservation; 8. Transformative technology for water harvesting; 9. SDG for

environment: managing climate change; 10. Application of modern technologies for agriculture development; 11. Nanotechnology for cleaner water and greener earth; 12. Assessment of implementation of existing environmental policies and the need for amended or new policies; 13. Geodiversity assessment and its impact on environmental factors; 14. Economics for environmental development: scope and options; 15. Green Chemistry for designing a sustainable future; 16. Health advancement by mitigation of pollution; 17. Repurposing traditional medicines as therapeutics Biofuels as environment-friendly strategy. The event concluded with following recommendations/ outcomes:

- i. Enhanced collaboration: Stakeholders across sectors unified for sustainable solutions.
- ii. Innovative strategies: Novel approaches devised to safeguard environment, water, agriculture, and health.
- iii. Policy recommendations: Frameworks proposed to ensure a greener future and pristine Earth.
- iv. Public awareness: Increased understanding and commitment to protecting blue and green environments for long-term sustainability.

### ● National Science Day

The Chapter observed the 'National Science Day' on February 28, 2024 in joint collaboration with the National Academy of Sciences, India (NASI & Swami Rama Himalayan University (SRHU), Jolly Grant, Dehradun. Dr. Jitendra Singh released the theme for the 'National Science Day 2024', as 'Indigenous Technologies for Viksit Bharat'. The activities continued for several days. A Quiz Competition was also organized for which a total of 16 teams of participants were formed for the Screening Round held on March 24, 2024. A total of 6 teams were selected for the final round held on March 28, 2024. The participants from Himalayan School of Biosciences were declared as the First winner team, the Second winner team included the participants from Himalayan School of Pharmaceutical Sciences while the Third winner team included the participants from Himalayan Institute of Medical Sciences.



- Training Workshop on 'Water Safety planning to prevent Microbiological Contamination in Rural Drinking water Supply Schemes' organized by Uttarakhand Chapter





सूचना प्रसारण सेवा की शक्ति  
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# बिंदास अक्स

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## पेयजल सुरक्षा प्रशिक्षण कार्यक्रम का आयोजन अजीतपुर ग्राम में हुआ

**विश्व जल संरक्षण दिवस**  
अजितपुर, जिला कुशीन

हो ए. बी. कार्यक्रम का आयोजन अजितपुर में हुआ। कार्यक्रम में ग्रामीणों को पेयजल सुरक्षा के महत्व के बारे में बताया गया। कार्यक्रम में ग्रामीणों को पेयजल सुरक्षा के महत्व के बारे में बताया गया।



कार्यक्रम में ग्रामीणों को पेयजल सुरक्षा के महत्व के बारे में बताया गया। कार्यक्रम में ग्रामीणों को पेयजल सुरक्षा के महत्व के बारे में बताया गया।



**अमर उजाला**



पृष्ठ 4:53  
दिनांक 20.02.2024  
अमर उजाला

24° 10°  
अमर उजाला

## पेयजल की गुणवत्ता बनाए रखने पर दिया जोर



**रुड़की।** डीएवी महाविद्यालय देहरादून की ओर से उत्तराखंड जैव प्रौद्योगिकी परिषद से वित्त पोषित शोध परियोजना के तहत एक कार्यक्रम आयोजित किया जा। भगवानपुर के सिरचंदी गांव में ग्रामीण पेयजल आपूर्ति में जैविकीय प्रदूषण रोकने के लिए एक दिवसीय प्रशिक्षण कार्यशाला का आयोजन किया गया। जिसमें विशेषज्ञों ने पेयजल की गुणवत्ता बनाए रखने और उसकी जांच किए जाने संबंधी उपाय भी बताए। कार्यशाला में डीवीएस कालेज देहरादून, हर्ष विद्या मंदिर महाविद्यालय रायसी, स्वामी राम हिमालयन यूनिवर्सिटी जौलीग्रंट व राष्ट्रीय विज्ञान अकादमी (नासी, प्रयागराज) का संयुक्त रूप से सहयोग रहा। कार्यशाला समन्वयक व डीएवी महाविद्यालय देहरादून के रसायन विज्ञान विभाग के प्रोफेसर प्रशांत सिंह ने कार्यशाला के उद्देश्यों पर प्रकाश डाला। मुख्य अतिथि एवं डीएवी महाविद्यालय देहरादून के प्राचार्य प्रो. एसके सिंह ने कहा कि सभी को जल के महत्व को समझना होगा। संवाद

Media/ Press Coverage of the event

## National Workshop on 'Women Empowerment in Uttarakhand through Science and Technology'

The workshop on 'Women Empowerment in Uttarakhand through Science and Technology' was jointly organized by the National Academy of Sciences, India (NASI), UK Chapter, Dehradun & Swami Rama Himalayan University, Jolly Grant, Dehradun held on March 29 & 30, 2024 and hosted by Swami Ram Himalayan University (SRHU). The event emerged as a proactive response to the challenges faced by the women of Uttarakhand. The workshop sought to harness the transformative power of science and technology to advance gender equality and foster regional development in Uttarakhand. By focusing on empowering women in STEM, the workshop aimed to create a more inclusive and equitable society where women have equal opportunities to contribute to the advancements in science and technology and also get benefitted from the same. At its core, this workshop acknowledged the multifaceted nature of women's empowerment. It aimed to challenge traditional gender roles and stereotypes, promote women's leadership and decision-making roles, and ultimately contribute to a more just and equitable society by empowering women in STEM. By focusing specifically on women's empowerment in STEM, the workshop aligned with NASI's broader mission of leveraging science and technology for inclusive and sustainable development of society. In summary, the significance of women's empowerment in Uttarakhand through the transformative potential of science and technology had much potential to promote gender equality, foster regional development, and create a more inclusive and equitable society through targeted interventions in STEM education and careers for women. The following recommendations/ suggestions were made:



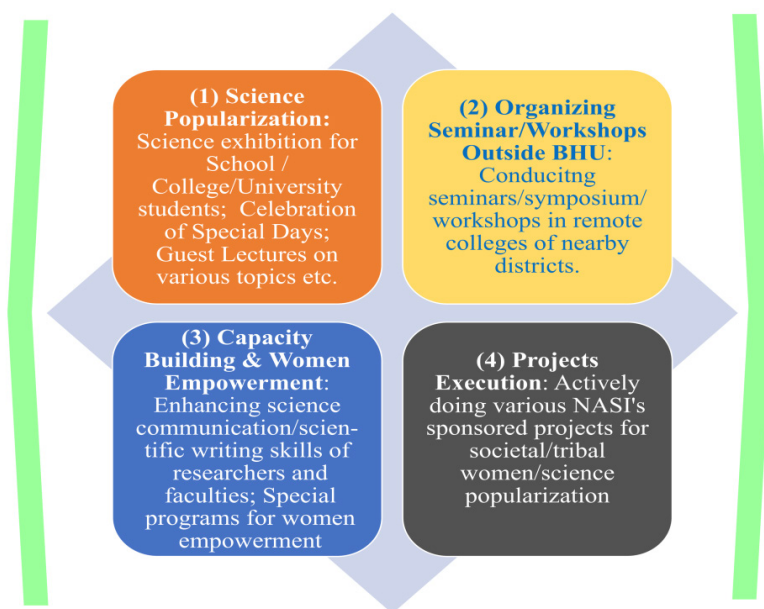
Spreading more and more awareness about the importance of women's participation in science and technology.

- b. Facilitating networking opportunities for women in Uttarakhand interested in STEM fields.
- c. Strategies and best practices to be developed for promoting women's empowerment in STEM and addressing gender disparities.
- d. Collaboration between academia, industry and government organizations to be made to support women in STEM.

Dr. Rajendra Dobhal, the Vice Chancellor of SRHU, underscored the institution's proactive stance in advancing research endeavors, highlighting the allocation of dedicated funds for research purposes. Dr. Santosh Kumar Shukla, ES, NASI elaborated on the Science & Society programmes being organized by the National Academy of Sciences, India (NASI), since its inception and the various activities within the domains of science and technology.

# Varanasi Chapter

The NASI-Varanasi Chapter is actively involved in various science popularization and societal well-being activities of NASI, two of the key mandates of NASI. For this, the Local Chapter is organizing four kind of activities such as (i) Science Popularization by organizing science exhibition for School/College/University students, celebration of special days such as ‘World Environment Day’, ‘World Biological Diversity Day’ etc.; and Guest lectures on various topic; (2) Seminar/workshops / symposia / in and around Varanasi, remote colleges of nearby districts; (3) Workshops for *Capacity Building* such as enhancing scientific writing skills of researchers and faculties and also conducting special programs for women empowerment; (4) NASI’s sponsored projects for societal/tribal women/science population.



*The schematic representation of various activities being done by the NASI-Varanasi Local Chapter*

During the financial year 2023-24, the local chapter conducted a total of 19 programs including a special lecture on ‘Advances in Millet Genomics for Food and Nutritional Security’ at the Department of Botany, ISc, BHU, by Dr. Manoj Prasad, NIPGR (May 20, 2023); conducted an essay competition for Masters and PhD scholars on ‘World Environment Day’ (June 5, 2023); conducted a webinar on Sustainable Agriculture and UN-SDGs” for the BSc Agriculture Students of , Krishak PG College, Rajgarh, Mirzapur (July 7, 2023); A special lecture on ‘A Crosstalk Between Light and MAP Kinase Signaling in Arabidopsis Seedling Development’ was delivered by Dr. Alok Krishna Sinha, Scientist, NIPGR, New Delhi at the Department of Botany, Institute of Science, BHU on (August 1, 2023); Special Lecture on Anusandhan National Research

Foundation by Dr. Akhilesh Gupta, Secretary SERB at SS Joshi Hall, Department of Chemistry, ISc (October 16, 2023); Science awareness Lecture on 'Thermal Processing of Food and Biological Materials' conducted at Bansal Institute of Engineering and Technology, Lucknow (October 27, 2023); Science Popularization Lectures (November 4, 2023); Sr CV Raman Memorial Lectures (November 7, 2023); Science popularization lecture on 'Environmental Challenges in the Anthropocene' conducted at Indian Institute of Carpet Technology, Bhadohi, U.P. (November 8, 2023); Workshop on 'Understanding Chemistry via Experimental Approach' conducted at Govt. Polytechnic, Ghazipur, U.P. (November 21, 2023); 93<sup>rd</sup> Annual Session of NASI (December 3-5, 2023); Science Exhibition conducted at Govt. Girls School, Jamalpur (December 18, 2023),



*Special Lecture on 'Anusandhan National Research Foundation' by Dr. Akhilesh Gupta, Secretary, SERB*



*Science popularization lecture on 'Environmental Challenges in the Anthropocene' conducted at Indian Institute of Carpet Technology, Bhadohi, U.P.*

Workshop on 'Understanding Chemistry via Experimental Approach', conducted at PDND Inter College, Chunar Mirzapur, U.P. (December 19, 2023); Special Lecture on 'Navigating Exam Stress: Strategies for Mental Well-being and Stress Management'



for B.Sc. Students delivered by Prof. Achyut Kumar Pandey, Department of Psychiatry, IMS, BHU (January 31, 2024); Dr. Eklabya Sharma, FNA, FNASc , Padma Sri Awardee, Ex DDG at ICIMOD, Kathmandu delivered a lecture entitled, 'Transformation from resilience and sustainability in Hindu Kush Himalaya (HKH)' (March 28, 2024).



*Science Exhibition conducted at Govt. Girls School, Jamalpur, Mirzapur*



*Dr. Eklabya Sharma, Padma Sri Awardee, Ex DDG at ICIMOD, Kathmandu delivered a lecture on 'Transformation from resilience and sustainability in Hindu Kush Himalaya (HKH)'*

## 2.3. Activities related to Scientific Research

Prof. Ajay Kumar

Department of Mathematics, University of Delhi

### 1. Brief Summary of the Scientific Achievements:

We have shown the existence of inductive limit in the category of  $C^*$ -ternary rings. It is proved that the inductive limit of  $C^*$ -ternary rings commutes with the functor  $A$ . Next, we initiate a study of ternary rings of unbounded operators (TRUOs) which are local version of ternary rings of bounded operators. Abstract definition of ternary Pro  $C^*$ -rings is also proposed. A one-to-one correspondence between representations of TRUO and its linking Pro  $C^*$ -algebra is obtained. It is proved that there is a one to one correspondence between

representations of  $C^*$ -ternary ring  $M$  and  $C^*$ -algebra  $A(M)$ . We discuss primitive and modular ideals of a  $C^*$ -ternary ring. Pitt's inequality for exponential solvable Lie groups with non-trivial center, connected nilpotent Lie groups with non-compact center, Heisenberg motion group and diamond Lie groups has been proved.

The paper investigates Haagerup tensor product of  $C^*$ -ternary rings. We prove that for a TRO  $M$  and a  $C^*$ -algebra  $B$ , the embedding  $\zeta$  of  $M^{**} \otimes_h B^{**}$  into  $(M \otimes_h B)^{**}$  is an isometry,  $\otimes_h$  being the Haagerup tensor product. Next, we study the maximal tensor product  $\otimes_{\max}$  for  $C^*$ -trings and compare Haagerup norm with the  $t_{\max}$  norm.. Finally,  $\varepsilon$ -ideals of  $B(H, K) \otimes_h B(L)$  have been characterized.

In the present work, we estimate sensitive population mean at current occasion in presence of measurement error at both occasions in two occasion successive sampling. Asymptotic properties of estimators are derived.. A natural population related to COVID-19 infection has been considered to validate the theoretical findings. We characterize the maximal, prime and primitive ideals of Haagerup tensor product  $M \otimes_h B$  of a TRO  $M$  and a  $C^*$ -algebra  $B$ .

### 2. Papers published (during 2023)

1. Arpit Kansal, Ajay Kumar and Vandana Rajpal (2023) "Inductive limit in the category of  $C^*$ -ternary rings" Bull. Korean Math. Soc. 60, No. 1, pp. 137-148 Available online <https://doi.org/10.4134/BKMS.b210939>. Mathematical Reviews 4542606. Zentralblatt fur Mathematik 07688131.
2. Surbhi Beniwal and Ajay Kumar (2023) "Ternary rings of unbounded operators" Banach Journal of Mathematical Analysis 17:2 <https://doi.org/10.1007/s43037-022-00227-0>. Mathematical Reviews 4502915. Zentralblatt fur Mathematik 07615871.
3. Arpit Kansal, Ajay kumar and Vandana Rajpal (2023) "Representations of  $C^*$ -ternary rings" Comm. Korean Math. Soc. 38, No. 1, pp. 123-135 Available online <https://doi.org/10.4134/CKMS.c210437>. Mathematical Reviews 4542627. Zentralblatt fur Mathematik 07741872
4. Piyush Bansal, Ajay Kumar and Ashish Bansal (2023) "Uncertainty Inequalities for Certain Connected

Lie Groups” *Annals of Functional Analysis*. 14, No.3, Article number: 57 Available online <https://doi.org/10.1007/s43034-023-00280-2>. Mathematical Reviews 4592382. Zentralblatt fur Mathematik 07699580.

5. Arpit Kansal and Ajay Kumar (2023) “Haagerup tensor product of  $C^*$ -ternary rings” *Journal of Mathematical Analysis and Applications*.528 no. 1, Paper No. 127482.Available online <https://doi.org/10.1016/j.jmaa.2023.127482>. Mathematical Reviews 4602983. Zentralblatt fur Mathematik 07725218.
6. Kumari Priyanka, Pidugu Trisandhya and Ajay Kumar (2023) “Evaluating the Effect of Measurement Error under Randomized Response Techniques of the Sensitive Variable in Successive Sampling” *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences* 93 no. 4, 631-644.Available online <https://doi.org/10.1007/s40010-023-00836-w>. Mathematical Reviews 4666441.
7. Arpit Kansal and Ajay Kumar (2023) “Ideals in Haagerup tensor product of  $C^*$ - ternary rings and TRO’s ” *Operators and Matrices* 17 Number 3, 731-748.Available online doi:10.7153/oam-2023-17-48. Mathematical Reviews 4667170.

### Other Activities

- Supervision of Ph.D. students
- Delivered invited lectures for Jammu University; Babasaheb Bhimrao Ambedkar University, Lucknow; Hans Raj College, University of Delhi; Ramjas College, University of Delhi
- Reviewed and referred several research papers and expert for several selection committees
- Taught Ph.D. students of University of Delhi and Satyawati College, University of Delhi course on ‘Advanced Functional Analysis’.
- Reviewed and referred several research papers

**Dr. Ashok Kumar Giri**  
**Indian Institute of Chemical Biology, Jadavpur**

**Title of the work:**

**a) The probable reasons of arsenic susceptibility in a chronically exposed population of West Bengal Ashok Kumar Giri, Nilanjana Banerjee**

Arsenic is a potent human carcinogen which affects millions of people across the globe. Arsenic induced pre-cancerous and cancerous skin lesions are hall marks of chronic arsenic toxicity. Even then, only 15%–20% of the population manifest arsenic-induced skin lesions but the rest do not, the reason for which is not very clear. Not only that, conjunctival irritations of the eyes, peripheral neuropathy and respiratory distress are the non-dermatological health effects which are often manifested in them in addition to the cancers of skin and other internal organs. In this work we have considered 233 arsenic exposed individuals with skin lesions and 205 arsenic exposed individuals without skin lesions from the highly arsenic affected Murshidabad district of West Bengal. We have compared arsenic exposure in the two groups through drinking water. Both the study groups have similar levels of arsenic exposure, drinking same arsenic laden water. Results show that higher amounts of arsenic were retained in the nails and hair of the skin lesion group compared to the no skin lesion group. Significant higher amounts of chromosomal aberration and micronucleus formation were found in the skin lesion group, than the no skin lesion group. Incidences of conjunctival irritations of the eyes, peripheral neuropathy and respiratory distress were much higher in the former group compared to the later. We, thus found that one group was more susceptible than the other, even with similar levels of arsenic exposure. We have tried to identify and discuss the probable reasons for this observation with reference to our previous works in the exposed population from West Bengal, India.

**b) Targeting 'histone mark': Advanced approaches in epigenetic regulation of telomere dynamics in cancer, Ankita Das, Ashok K. Giri, Pritha Bhattacharjee**

University of Calcutta, Indian Institute of Chemical Biology (CSIR), India

The integrity of telomeres is required for the maintenance of genomic stability and prevention of oncogenic transformation of cells. Recent evidence suggests the presence of epigenetic modifications as an important regulator of mammalian telomeres. Telomeric and subtelomeric regions are rich in epigenetic marks that regulate telomere length through subtelomeric DNA methylation and telomeric histone modifications. Specific histone modifying enzymes (histone methyltransferases and demethylases) play an integral role in forming telomeric histone codes necessary for maintaining the structural integrity for telomeres. Alterations of crucial histone moieties of histone modifiers regulate the subsequent changes in chromatinization of telomeric DNA and may lead to cancerous outcomes. Herein, our review highlights

the role of telomeric post-translational modifications of histones in relation to various diseases, especially cancer. The development of potential targeted epitherapeutic interventions in telomere deregulations is the key area of research that might provide new opportunities in the near future.

**c) Association of ABCC4 G559T single nucleotide polymorphism with arsenic-induced precancerous hyperkeratosis, Tamalika Sanyal<sup>1,7</sup> · Sunandini Ghosh<sup>1,7</sup> · Ashok K. Giri<sup>2</sup> · Elaine M. Leslie<sup>3,4,5</sup> · Mayukh Banerjee<sup>3,5,6</sup> · Pritha Bhattacharjee<sup>1</sup>**

Chronic arsenic toxicity, a global health issue, leads to multiple skin cancers. Only 15–20% of exposed individuals ever develop arsenic-specific skin lesions highlighting the role of genetic polymorphisms in inter-individual susceptibility. Multidrug resistance proteins (MRPs), encoded by ATP binding cassette transporter subfamily C (ABCC) genes are demonstrated to efflux arsenic metabolites. MRP4 encoded by *ABCC4* is a high-affinity efflux transporter of diglutathionylated monomethyl arsonous acid [MMA(GS)<sub>2</sub>] and dimethyl arsenic acid (DMAV). The association of *ABCC4* polymorphisms with arsenic disease susceptibility is unknown. The possible association of five previously characterized non-synonymous *ABCC4* SNPs with arsenic-induced premalignant hyperkeratosis was examined in the study. A total of 230 study participants were recruited from the highly arsenic-exposed district of Murshidabad in West Bengal, India (136 cases with arsenic-induced premalignant hyperkeratosis; 94 controls with no arsenic-specific skin lesions). Cases and controls were matched in exposure status and demographic variables apart from age. Exposure assessment was performed by total arsenic content analysis of water and urine, while genotyping was performed employing PCR-Sanger sequencing or PCR-RFLP. Our population was monomorphic for 4 of the 5 SNPs studied. Age-adjusted Odds ratio showed the presence of at least one T allele for *ABCC4* codon polymorphism confers protection against premalignant hyperkeratosis [OR (95% CI): 0.994 (0.888–0.998)].

**d) Very recent work done in AICGG:**

Very recently I invited Dr. Manju Sharma for the memorial lecture in the inaugural day of the 21<sup>st</sup> AICGG conference to talk about Prof. A. K. Sharma. Since a large number of International and National speakers was present in this conference. More than 200 people attended this inaugural function including delegates from abroad. She, Dr. Sharma, took about 40 minutes to deliver her precious lecture in this seminar. We were very thankful to Dr. Manju Sharma.

**E) Publication in Book Chapters:**

1. Bhattacharya, U and Giri, A. K. (2012) Antimutagenic effects of tea and its polyphenol in bacterial test systems. *In Tea and Health in Disease Prevention*. ed. V. Preedy. Academic Press, D0-539-55 2.
2. Banerjee M and Giri A. K (2011) Toxicogenomics: An Overview and with Special Reference to Genetic and Genomic Approaches to Identify the Toxic Effects. *A Handbook of Systems Toxicology*, 1<sup>st</sup> edn (John Wiley & Sons Ltd.) pp 1-16

3. Polya, D.A., Polizzotto, M.L., Fendorf, S., Rodriguez-Lado, L., Hegan, A., Lawson, M., Rowland, H.A.L., Giri, A.K., Mondal, D., Sovann, C., Al Lawati, W.M.M., van Dongen, B.E., Gilbert, P. and Shantz, A. (2010) Arsenic in Groundwaters of Cambodia in Irvine, K., Murphy, T., Vanchan, V. and Vermette, S. (Eds) *Water Resources and Development in South-East Asia*, SE Asia Centre, New York, pp. 31-56.
4. Polya, D.A., Mondal, D. And Giri, A.K. (2009) Quantification of deaths and DALYs arising from chronic exposure to arsenic in ground waters utilized for drinking, cooking and irrigation of food crops in Preedy and Watson (Eds) *Handbook of Disease Burdens and Quality of Life Measures*, Springer-Verlag, ISBN: 978-0-387-78665-0, pp. 702-728.

## Prof. R.D. Tripathi

CSIR-National Botanical Research Institute, Lucknow

### Proforma for Brief summary of the Scientific/Research Achievements of the Distinguished NASI-chairs/NASI-Senior Scientists

#### 1. Brief summary of the Scientific achievement in 250 words:

Rice is particularly efficient in Arsenic (As) accumulation and thus causes reduced yield and diminishes the nutritional quality of grain. As contamination is threatening the sustainability of food production as well as food quality. Selenium (Se) deficiency affects globally a billion of people where the level of Se in the soil is naturally low, including areas in India. Plants are the ultimate source of dietary Se intake for humans and other animals. The interaction between As and Se is a critical factor for a detailed systematic understanding of the transportation, environmental fate, and associated toxicological effects of these metalloids in plants. Biological interactions between As and Se depend on specific chemical forms because As and Se are metalloids with similar chemical properties that are intensely alike with different biological effects. Pot experiments were performed to find out the role of Se in amelioration of As toxicity in rice plants. Selenite (SeIV) supplementation to rice plants improved the growth parameters such as root, shoot length and dry weight under AsIII exposure. AsIII and As exposure reduced the root and shoot length as compared to control plants. Supplementation of SeIV during AsIII and AsV exposure significantly enhanced the shoot length in comparison to AsIII and AsV exposure. SeIV supplementation during AsIII and AsV exposure improved the dry weight of rice plants as compared to alone exposure of AsIII and AsV. Additionally, SeIV supplementation also improved the yield of rice grain during various exposure of As. SeIV supplementation decreased the As accumulation approximately 50% in root, 54% in shoot and 40% in grain AsIII exposed plants. On the other hand, SeIV supplementation decrease the As accumulation approximately 40% in root and only 5% in shoot, as a result As accumulation does not decrease significantly in grains of AsV exposed plants. Supplementation of SeIV+AsIII significantly enhanced the antioxidant enzyme activity in comparison to AsIII alone exposure. Results highlighted that the SeIV supplementation efficiently mitigated AsIII toxicity by modulating plant growth, biomass, antioxidant activity, differential metalloid accumulation and translocation in root, shoot and grain of rice plants. Results highlighted that SeIV supplementation efficiently mitigated AsIII toxicity by modulating plant physical and antioxidant activity as compared to AsV.

#### 2. Paper Published:

- a) Awasthi, S., Chauhan, R., Indoliya, Y., Chauhan, A. S., Mishra, S. K., Agrawal, L.,... & Tripathi, R. D. (2022). Comprehensive illustration of transcriptomic and proteomic dataset for mitigation of arsenic toxicity in rice (*Oryza sativa* L.) by microbial consortium. *Data in Brief*, 43, 108377.

- b) Srivastava, S., Dhankher, O. P., & Tripathi, R. D. (2022). Towards the Nano-future to Deal with Metal and Metalloid Contamination. INTERNATIONAL JOURNAL OF PLANT AND ENVIRONMENT, 8(01), 38-43.
- c) Singh, P. K., Dubey, S., Shri, M., Dwivedi, S., Chakrabarty, D., & Tripathi, R. D. (2022). Biomarkers of arsenic stress in plants. In New Paradigms in Environmental Biomonitoring Using Plants (Editors: Tiwari S. and Agrawal S.) (pp. 245-270). Elsevier.
- d) Chauhan, R., Awasthi, S., Singh, P. K., Dwivedi, S., Srivastava, S., & Tripathi, R. D. (2022). Selenium and Nano-Selenium-Mediated Arsenic Stress Tolerance in Plants. In Selenium and Nano-Selenium in Environmental Stress Management and Crop Quality Improvement (Editors: Hossain M.A., Ahammed G.J., Kolbert Z., El-Ramady H., Islam T., Schiavon M.) (pp. 191-207). Cham: Springer International Publishing.

### 3. Patent obtained and processes developed:

Nil

### 4. New product introduced:

Nil

### 5. Awards and Prizes received:

Nil

### 6. Any other information

#### *Conference attended: Delivered Plenary Lecture*

R.D. Tripathi\*, P.K. Singh, R. Chauhan, S. Awasthi, M. Shri, S. Verma, S. Dwivedi, S. Mishra, P.K. Srivastava, S. Mallick, B. Adhikari, D. Chakrabarty, P.K. Trivedi “**Novel Strategies For Low Grain Arsenic Rice Crop For Sustainable Environment And Agriculture**” at “**Environmental Sustainability and Biotechnology: Opportunities and Challenges**” conference organized by Ponda Education Society’s Ravi S. Naik College of Arts & Science, Farmagudi, Ponda, Goa in collaboration with Society for Environmental Sustainability (SES) held at Goa from 16 to 19 November 2022. (Abstract number P-6, Page number: 4)

**Dr. Santosh K Gupta**  
Department of Chemical Engineering  
Indian Institute of Technology (IIT) Kanpur

**Report of Calendar Year 2022 (January - December)**

*Instructor for Summer Course*

Course Code ChE 312

Course Title: *Heat Transfer and its Applications*

No. of registered students: 11

Classes: Mon, Wed and Thursday 8 am to 10 am

Duration: 20 May 2022 to Jul 19 2022

The course Heat Transfer and its Applications is designed to provide an in-depth understanding of the fundamental principles and applications of heat transfer. Key topics that were covered in the course included:

- Conduction: The study of heat transfer through solids, including the formulation and solution of conduction problems in one, two, and three dimensions, and the use of analytical and numerical methods.
- Convection: Examination of heat transfer in fluids, both natural and forced convection, with a focus on boundary layer theory, empirical correlations, and dimensional analysis.
- Radiation: Understanding of thermal radiation, properties of radiative surfaces, blackbody radiation, and the laws governing radiative heat transfer between surfaces.
- Heat Exchangers Design and analysis of different types of heat exchangers, including shell-and-tube, plate, and finned-tube heat exchangers, and the use of effectiveness-NTU and LMTD methods.
- Boiling and Condensation Study of phase change phenomena, including the mechanisms and heat transfer characteristics of boiling and condensation.
- Applications Practical applications of heat transfer principles in various engineering systems and processes, such as chemical reactors and cooling of electronic equipment.

I was the sole instructor of the course, supported by an assigned teaching assistant (TA). The course spanned only 16 weeks, requiring me to design and deliver 2-hour lectures thrice a week. I was responsible for creating and organizing assignments, ensuring they were both challenging and aligned with the course material. Additionally, I meticulously prepared the question papers for both the mid-term and final examinations, carefully considering the learning objectives and required student competencies. I also handled the grading of the midterm and final exams, along with the submission of final grades, ensuring the course's successful completion.

## *Tutor for a Core course Course*

Code ESO204

Course Title: Fluid Mechanics

No. of registered students: 506

Class days: Mon, Wed and Friday 11:00 am to 12:00 pm

Tutorial group: 16

Number of students in tutorial: 38

Tutorial time and day: Thursday 11 am to 12 pm

Number of tutorials: 12

Duration: 31 Jul 2022 to 2 Dec 2022

ESO204 is a fundamental course offered to undergraduate students, typically in their second year, in various engineering disciplines at IIT Kanpur. This course provides a comprehensive understanding of the principles and applications of fluid mechanics, covering topics such as fluid statics, fluid dynamics, flow through pipes, and boundary layer theory, which is essential for various fields in engineering such as mechanical, civil, chemical, and aerospace engineering etc.

Apart from taking the tutorial for the 38 students once a week, I played a crucial role in the academic operations of the course. I was part of the team that helped in designing and setting up the assignments, ensuring they were both rigorous and relevant to the course material. I was involved in meticulously preparing the question papers as well as the solution keys for both mid-term and final examinations, thoroughly considering the learning objectives and the competence level of the students. Additionally, I actively participated in the grading process, providing detailed feedback that helped students understand their mistakes and improve their knowledge. My involvement in invigilation during exams ensured that the assessment process was fair and smooth. As a tutor, I actively engaged with students, addressing their queries and enhancing their understanding of the subject matter. Moreover, though I was a tutor, I attended all the lectures, demonstrating my dedication to the students who were part of the course. Periodic feedback was also sought from me by the instructor on the lecture content and delivery. The feedback from the instructor towards my overall involvement with the course is attached below:

I have again been assigned as a tutor for ESO204 for SEMESTER 2024-25-1 in IIT Kanpur and will be actively involved in all course activities.



### *Invoivemens in Department Seminars and Meetings*

Throughout my tenure as a NASi Senior Scientist, I have been actively engaged in the department's activities. I frequently participated in faculty meetings, contributing to discussions and decisions that shape the department's direction. Additionally, I played an active role in the seminars regularly organised by the Department of Chemical Engineering . interacting with speakers and fostering networking and outreach opportunities.

One particular scminar series that holds special significance for me is the CV Sheshadri Seminar. As a key figure in its establishment, I have been passionately involved in its execution. My ongoing commitment to this seminar reflects my dedication to fostering a rich academic environment and promoting knowledge exchange within the department.

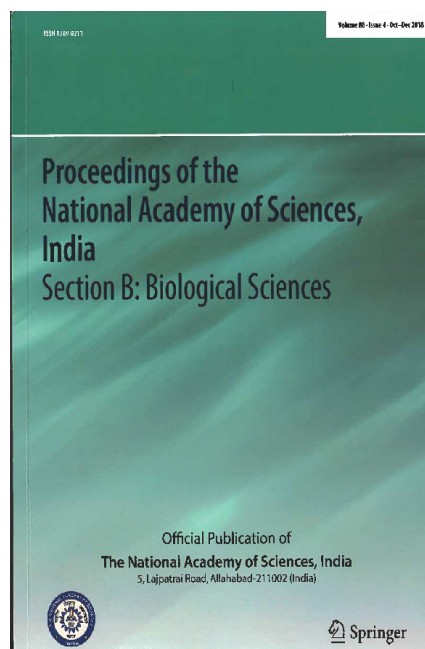
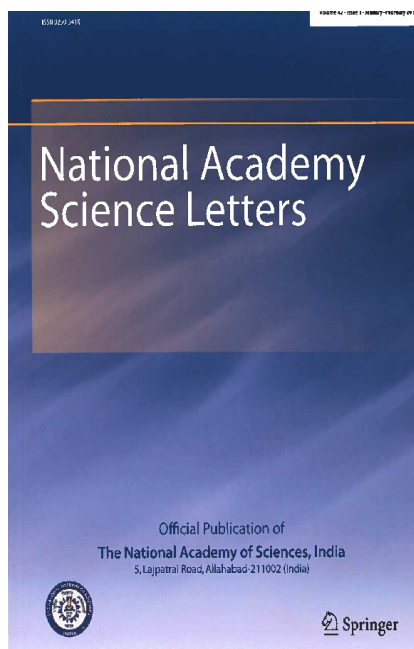
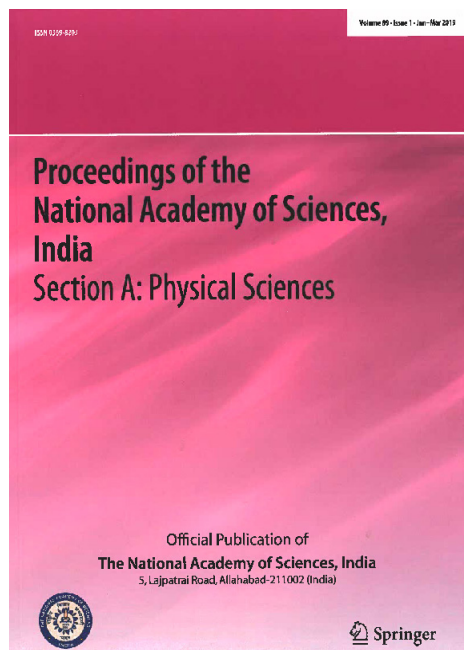
### *Mentoring Young Faculty*

As a NASi Senior Scientist, I also mentored young faculty, focusing on enhancing their academic and research capabilities. My mentorship included discussions on their research projects, teaching methodologies, as well as suggesting relevant awards and fellowships for them to apply for. I also nominated a few faculty members for such recognitions. Having been part of the department from 1973 to 2013, I possess extensive knowledge of its history, courses, and past faculty, which allowed me to share valuable insights and experiences. This historical perspective proved beneficial to many of the younger new faculty of the department.

In conclusion, I plan to remain actively engaged for the rest of the term under the Nasi Senior Scientist Platinum Jubilee Fellowship. Through this participation, I aim to both enrich the departments with my experience and continue growing through meaningful academic interactions.

## 3. Publications of the Academy

Journals published by the National Academy of Sciences, India (NASI) in collaboration with Springer Nature



<https://www.editorialmanager.com/nasa/>

<https://www.editorialmanager.com/nasb/>

<https://www.editorialmanager.com/scle/>

### Status of Publication of NASI's Periodicals

#### A) *Proceedings of the National Academy of Sciences, India, Section-A (Physical Sciences)*

Total No. of papers during above mentioned period =  $(289+69+10+42) = 410$

Total No. of papers under process =  $(66+109+81+33) = 289$

Total No. of accepted papers = 69

Total No. of rejected papers = 10

Total No. of withdrawn papers = 42

Total No. of papers with Editors = 66

Total No. of papers with reviewers = 109

Total No. of papers with authors = 33

Total No. of papers with office = 81

### *Significant Highlights:*

- PNASI, Sec.A received **Impact Factor (IF) as 1.1 (in 2023)** from Web of Science.
- 2023 h Index of the journal is 23.
- It was found that more than half (2021-2022) papers of PNASI, Sec.A were cited in different journals of the world in 2023 (web of Science).
- **Scimago Journal Ranking** (received in 2023) **is 0.189** for this journal.
- The journal received the **Cite Score** (received in 2023) **as 2.2** as per data of Scopus.
- All the manuscripts have been checked for plagiarism by a software “iThenticate”, before further processing.
- Around 400 papers were received in above mentioned period from 30 countries viz. Algeria, Australia, Bangladesh, China, India, Egypt, Ethiopia, Germany, Greece, Iran, Iraq, Nepal, Kazakhstan, Pakistan, Saudi Arabia, Swaziland, Turkey, Nigeria, South Africa, Mexico and Morocco etc.
- Overall rejection rate is 12.65%.

### **B) Proceedings of the National Academy of Sciences, India, Section-B (Biological Sciences)**

Total No. of papers = (295+213 +154 +154) = 816

Total No. of papers in-process = (55+94+30+81+35) = 295

Total No. of papers with Editors= 55

Total No. of papers with Reviewers= 94

Total No. of papers returned to Authors for formatting =30

Total No. of papers with Authors for Revisions =81

Total No. of papers with office = 35

### *Significant Highlights:*

- PNASI, Sec.B received **Cite Score as 2.4(in 2023)** from Scopus.
- 2023 h Index of the journal is 32.
- It was found that more than half (2021-2022) papers of PNASI, Sec.B were cited in different journals of the world in 2023.
- **Scimago Journal Ranking** (received in 2023) **is 0.312** for this journal.
- All the manuscripts have been checked for plagiarism by a software “iThenticate”, before further processing.
- Total **600 manuscripts** were received from more than **25-countries/regions** (Argentina, Australia, Bangladesh, Brazil, Cameroon, Canada, Colombia, China, Egypt, Ethiopia, Germany, India, Indonesia, Iran, Iraq, Korea, Malaysia, Morocco, etc.)
- Overall rejection rate is 41.96%.

### C) National Academy Science Letters

Total No. of papers during above mentioned period= (262+188+699+84) = 1233

Total No. of papers under process = (52+159+33+18) = 262

Total No. of accepted papers = 179

Total No. of rejected papers = 555

Total No. of withdrawn papers = 70

Total No. of papers with Editors = 52

Total No. of papers with reviewers =159

Total No. of papers with authors for revision = 18

Total No. of papers with office = 33

Total No. of papers proof read = 135

#### *Significant Highlights:*

- National Academy Science Letters received **Impact Factor (in 2023) (IF) as 1.0** from Web of Science.
- H Index (received in 2023) of the journal is 24.
- It was found that more than half (2021-2022) of National Academy Sciences Letters were cited in different journals of the world in 2023 (web of Science).
- **Scimago Journal Ranking is 0.218** (received in 2023) for this journal.
- The journal received **CiteScore as 1.0** (received in 2023) as per data of Scopus.
- All the manuscripts have been checked for plagiarism by a software “iThenticate”, before further processing.
- Around 1200 papers were received in above mentioned period from more than 35 countries viz. China, Egypt, India, Hungary, Iran, Iraq, Ireland, Kazakhstan, Korea, Malaysia, Pakistan, Poland, Russia, Saudi Arabia, Spain, Serbia, Taiwan and Turkey etc.
- Overall rejection rate is 78%.

## 4. Fellowship and Membership

Every year, the Academy awards its prestigious Fellowship/Membership to some of the distinguished scientists all across the country and abroad to recognize their outstanding scientific contributions; the scientists (Fellows and Members) participate in the activities of the Academy.

A Total of 143 scientists (83 Fellows and 60 Members) working in different areas of Science & Technology were selected from all across the country in the year 2023. Five Foreign Fellowships were also awarded to the scientists (in the year 2023) who are working in different countries and have collaborated with the scientists from India. (Annexures- I & II)

## 5. Obituary

The Academy condoled the sad demise of the following Fellows/Foreign Fellow(s)/Member(s):

1. Prof. Nitya Anand, Former Director, CDRI, Lucknow
2. Prof. Rameshwar Singh, JNU, New Delhi
3. Prof. C. R. Rao, New York
4. Dr. Bindeshwar Pathak, Delhi
5. Prof. M. S. Swaminathan, Past President, NASI
6. Prof. V. P. Kamboj, Past President, NASI

## 6. COUNCIL

### Council- 2023

#### President

1. **Prof. Balram Bhargava**, MBBS, MD, DM, FNASc, FACC, FAHA, FAMS, Former Secretary, GoI, Department of Health Research & DG, ICMR; Professor of cardiology, All India Institute of Medical Sciences, Ansari Nagar, New Delhi – 211029

#### Past Presidents

2. **Prof. Ajoy Kumar Ghatak**, PhD(Cornell), FNASc, Formerly MN Saha Distinguished Chair Professor, NASI, Prayagraj; Formerly Professor of Physics at IIT Delhi; Res. D-42, Hauz Khas, New Delhi-110016
3. **Prof. Manju Sharma**, PhD, FNASc, FNAAS, FTWAS, FIAWS, Former Secretary, DBT, GoI; NASI-DST Distinguished Woman Scientist Chair Professor, B9/6476 (FF), Vasant Kunj, New Delhi-110070

#### Vice-Presidents

4. **Prof. Madhu Dikshit**, PhD, FNASc, FNA, FASc, FAMS, JC Bose National Fellow, THSTI National Chair; C-95, Sector M, Aliganj, Lucknow – 226024
5. **Prof. Amit Roy**, PhD, FNASc, Former Director, IUAc; Flat 1A, Xenon Cooperative Housing Society, J 383 BP Township, Kolkata – 700094

#### Treasurer

6. **Prof. U.C. Srivastava**, D.Phil., Doctor of Neurophysiology (Pisa), FNASc, FIAN, Formerly Emeritus Professor, Department of Zoology, University of Allahabad, Prayagraj – 211002

#### Foreign Secretary

7. **Prof. Vinod Kumar Singh**, PhD, DSc, FNASc, FNA, FASc, FTWAS, Professor, Department of Chemistry, Indian Institute of Technology Kanpur, Kanpur – 208016

#### General Secretaries

8. **Prof. Jayesh R. Bellare**, PhD, FNASc, FNAE, FEMSI, FMAS, Institute Chair Professor, Department of Chemical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai- 400076
9. **Prof. Madhoolika Agrawal**, PhD, FNASc, FNA, FNAAS, J.C. Bose National Fellow, Dean, Faculty of Science, BHU; and Professor & Head, Department of Botany, Banaras Hindu University, Varanasi – 221005

## Members

10. **Prof. Anil Bhardwaj**, PhD, FNASc, FNA, FASc, JC Bose National Fellow, Director, Physical Research Laboratory, Navrangpura, Ahmedabad – 380009
11. **Prof. Dhruvajyoti Chattopadhyay**, PhD, FNASc, FASc, FWAScT, Vice Chancellor, Sister Nivedita University Kolkata, New Town, Kolkata – 700156
12. **Prof. Srinivasa Rao Cherukumalli**, PhD, FNASc, FNASI, FNAAS, FISSS, FISPRD, Director, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad – 500030, Telangana
13. **Prof. Pramod Kumar Garg**, MBBS, MD, DM, FNASc, FNA, FASc, FMAS, FRCP(Glasg), Executive Director, THSTI; 1273, B-1, Vasant Kunj, New Delhi
14. **Prof. Anup Kumar Ghosh**, PhD, FNASc, Professor, Centre for Polymer Science & Engineering, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016
15. **Prof. Vimal Kumar Jain**, PhD, FNASc, Former Director, UM-DAE Centre for Excellence in Basic Sciences, Nalanda Building, University of Mumbai, Kalina Campus, Santa Cruz (E), Mumbai- 400098
16. **Prof. Arun Kumar Pandey**, PhD, FNASc, FBS, FIAAT, FEHSST, Vice Chancellor, Mansarovar Global University, Kolar Road, Bhopal – 462042
17. **Prof. Anirban Pathak**, PhD, FNASc, FIETE, Professor, Department of Physics and Materials Science & Engineering, Jaypee Institute of Information Technology, Noida – 201309
18. **Prof. Sheo Mohan Prasad**, PhD, FNASc, Professor, Ranjan Plant Physiology & Biochemistry Lab, Department of Botany, University of Allahabad, Prayagraj – 211002
19. **Prof. Latha Rangan**, PhD, FNASc, FNABS, Professor, Department of Biosciences & Bioengineering, Indian Institute of Technology, Guwahati – 781039
20. **Prof. Vijayalakshmi Ravindranath**, PhD, FNASc, FASc, FNA, FTWAS, FAMS, Director, Center for Brain Research, Indian Institute of Science, Bangalore – 560012
21. **Prof. Rohit Srivastava**, PhD, FNASc, FRSC(London), FRSB(London), Professor & Head, Department of Biosciences and Bioengineering, IIT Bombay, Powai, Mumbai – 400076
22. **Prof. Nikhil Tandon**, PhD(Cantab.), FNASc, FRCP(London), FAMS, FASc, Professor, Department of Endocrinology & Metabolism, All India Institute of Medical Sciences (AIIMS), Ansari Nagar, New Delhi- 110029
23. **Prof. Seikh Mohammad Yusuf**, PhD, FNA, FNASc, FASc, FMASc, Director, Physics Group, Bhabha Atomic Research Centre, Trombay, Mumbai – 400085
24. **A nominee of the Secretary, DST, GoI**

# Council-2024

## President

1. **Prof. Balram Bhargava**, MBBS, MD, DM, FNASc, FACC, FAHA, FAMS, Former Secretary, GoI, Department of Health Research & DG, ICMR; Professor of Cardiology, All India Institute of Medical Sciences, Ansari Nagar, New Delhi - 211029

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2. **Prof. Ajoy Kumar Ghatak**, PhD(Cornell), FNASc, Formerly MN Saha Distinguished Chair Professor, NASI, Prayagraj; Formerly Professor of Physics at IIT Delhi; Res. D-42, Hauz Khas, New Delhi-110016
3. **Prof. Manju Sharma**, PhD, FNASc, FNAAS, FTWAS, FIAWS, Former Secretary, DBT, GoI; NASI-DST Distinguished Woman Scientist Chair Professor, B9/6476 (FF), Vasant Kunj, New Delhi-110070

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4. **Prof. Madhu Dikshit**, PhD, FNASc, FNA, FASc, FAMS, JC Bose National Fellow, THSTI National Chair; C-95, Sector M, Aliganj, Lucknow - 226024
5. **Prof. Amit Roy**, PhD, FNASc, Former Director, IUAc; Flat 1A, Xenon Cooperative Housing Society, J 383 BP Township, Kolkata - 700094

## Treasurer

6. **Prof. Rama Shanker Verma**, PhD, FNASc, Director & Professor, Department of Biotechnology, Motilal Nehru National Institute of Technology Allahabad, Prayagraj - 211004  
Foreign Secretary
7. **Prof. Vinod Kumar Singh**, PhD, DSc, FNASc, FNA, FASc, FTWAS, Professor, Department of Chemistry, Indian Institute of Technology Kanpur, Kanpur - 208016

## General Secretaries

8. **Prof. Jayesh R. Bellare**, PhD, FNASc, FNAE, FEMSI, FMAS, Institute Chair Professor, Department of Chemical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai- 400076
9. **Prof. Daya Shankar Pandey**, PhD, FNASc, FNA, FASc, Professor, Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi - 221005

## Members

10. **Prof. Mitali Chatterjee**, MD, PhD, FNASc, FNA, FASc, FAMS, FRCP(London), Professor & Head, Department of Pharmacology, Institute of PG Medical Education and Research, 244 Acharya JC Bose Road, Kolkata – 700020
11. **Prof. Srinivasa Rao Cherukumalli**, PhD, FNASc, FNASI, FNAAS, FISSS, FISPRD, Director, ICAR-National Academy of Agricultural Research Management, Rajendranagar, Hyderabad – 500030, Telangana
12. **Prof. Pramod Kumar Garg**, MBBS, MD, DM, FNASc, FNA, FASc, FMAS, FRCP(Glasg), Professor & Head, Department of Gastroenterology, All India Institute of Medical Sciences, New Delhi – 110029; Former Executive Director, THSTI.
13. **Prof. Anup Kumar Ghosh**, PhD, FNASc, Professor, Centre for Polymer Science & Engineering, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016
14. **Prof. Smita Dilip Mahale**, PhD, FNASc, FNA, ICMR Emeritus Scientist and Formerly Director, NIRRCH; Jehangir Merwanji Street, Parel, Mumbai – 400012
15. **Prof. Ranjan Kumar Mallik**, PhD, FNASc, FNA, FNAE, FASc, FIEEE, FIET(UK), FIETE, FTWAS, FIE(I), Professor, Department of Electrical Engineering, Indian Institute of Technology Delhi, Hauz Khas, New Delhi – 110016
16. **Prof. Chintalagiri Mohan Rao**, PhD, FNASc, FTWAS, FNA, FASc, FAPSc, Distinguished Scientist & JC Bose National Fellow, Centre for Cellular & Molecular Biology, Uppal Road, Hyderabad – 500007
17. **Prof. Anirban Pathak**, PhD, FNASc, FIETE, Professor, Department of Physics and Materials Science & Engineering, Jaypee Institute of Information Technology, Noida – 201309
18. **Prof. Manoj Prasad**, PhD, FNASc, FNA, FNAAS, Staff Scientist-VII & JC Bose National Fellow, National Institute of Plant Genome Research, Aruna Asaf Ali Marg, JNU Campus, New Delhi – 110067
19. **Prof. Sheo Mohan Prasad**, PhD, FNASc, Professor, Ranjan Plant Physiology & Biochemistry Lab, Department of Botany, University of Allahabad, Prayagraj – 211002
20. **Prof. Latha Rangan**, PhD, FNASc, FNABS, Professor, Department of Biosciences & Bioengineering, Indian Institute of Technology, Guwahati – 781039
21. **Prof. Rohit Srivastava**, PhD, FNASc, FRSC(London), FRSB(London), Professor & Head, Department of Biosciences and Bioengineering, IIT Bombay, Powai, Mumbai – 400076;
22. **Prof. Pramod Tandon**, PhD, FNASc, FBS, FLS, FISEB, NASI Honorary Scientist, Former CEO, Biotech Park, Lko; Res. D-802, Shalimar Gallant, Vigyanpuri, Mahanagar, Lucknow – 226006
23. **Prof. Seikh Mohammad Yusuf**, PhD, FNASc, FASc, FNA, FMASc, Director, Physics Group, Bhabha Atomic Research Centre, Trombay, Mumbai – 400085
24. **A nominee of the Secretary, DST, GoI**

## 7. Meetings

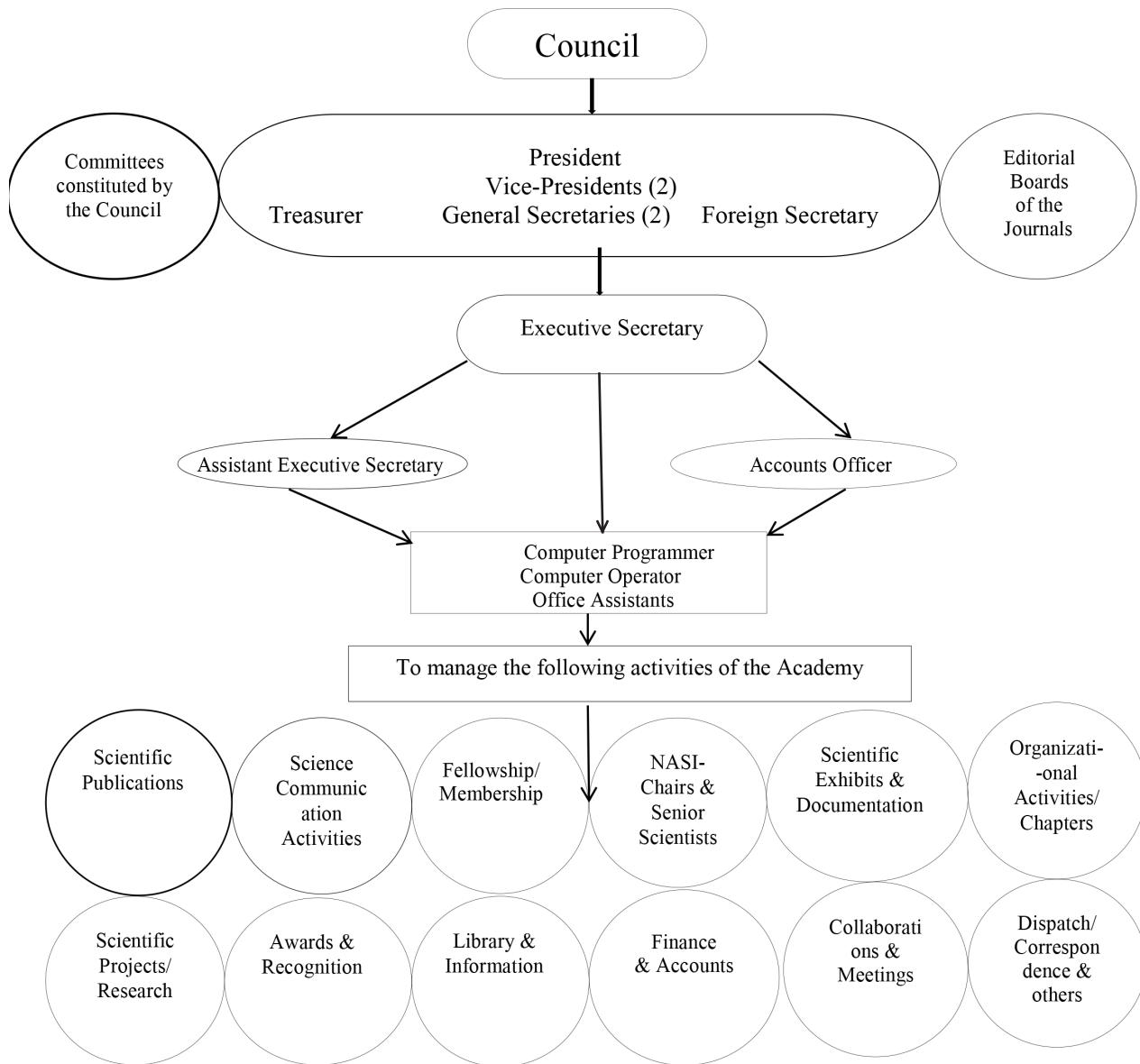
NASI organized four Council Meetings, two Meetings of the Fellows and one Annual General Body Meeting during the period of the report.

Several other meetings as of Fellowship Scrutiny Committee, Membership Scrutiny Committee, Editorial Board Meetings, Standing Committees of Finance and Purchase, Lecture Award Scrutiny Committees, Science Teacher Award Scrutiny Committee, Library Committee and other Sub committees were also held during the year.

The Academy also observed Vigilance Week and Hindi Diwas/Pakhwara during the period of report.

The Academy has received special recognition for its exemplary work in Hindi Rajbhasha.

# 8. Organizational Structure



## 9. Standing Committees (2023-24)

### (i) Standing Administration Committee

1. Prof. Balram Bhargava, President - Chair
2. Prof. Madhu Dikshit - Vice-President
3. Prof. Amit Roy - Vice-President
4. Prof. Vinod Kumar Singh - Foreign Secretary
5. Prof. R. S. Verma - Treasurer
6. Head, AI Division, DST, Govt. of India, or his/her nominee - Member
7. Prof. Daya Shankar Pandey - General Secretary (HQ)
8. Prof. Jayesh R. Bellare - General Secretary (Outstation)

### (ii) Standing Finance Committee

1. Prof. Balram Bhargava, President - Chair
2. Prof. Madhu Dikshit - Vice-President
3. Prof. Amit Roy - Vice-President
4. Addl. Secretary & Financial Advisor, DST, New Delhi or his/her nominee
5. Prof. R. S. Verma - Treasurer
6. Prof. Daya Shankar Pandey - General Secretary (HQ)
7. Prof. Jayesh R. Bellare - General Secretary (Outstation)

### (iii) Standing Purchase Committee

1. Prof. Daya Shankar Pandey, General Secretary (HQ) - Chairperson
2. Prof. R. S. Verma - Treasurer
3. Prof. Sheo Mohan Prasad
4. Prof. Ravindra Dhar
5. Prof. Jayesh R. Bellare - General Secretary (Outstation)

### (iv) Library Committee

1. Prof. Daya Shankar Pandey, General Secretary (HQ) - Chairperson
2. Prof. R. S. Verma - Treasurer
3. Prof. S.L. Srivastava
4. Prof. Sheo Mohan Prasad
5. Prof. Ravindra Dhar
6. Prof. D. K. Chauhan,
7. Prof. Jayesh R. Bellare - General Secretary (Outstation)

**Financial Position**

The financial position of the Academy for the year ended on March 31, 2024 is given in Annexure-III.

## 10. Academy Building & Sir Padampat Singhanian Library

**Building:** The Academy is functioning in its magnificent building, which has an auditorium having a capacity of about 200 persons, a Council Room, Committee Room, Rooms of the Office-bearers and the office space. An Annexe Block has now been added to this, having space for the Sir PadampatSinghanian Library and the Ganga Gallery. The office has networking with 2 mbps Internet Ports and National Knowledge Network connectivity of NIC, New Delhi.

**Library:** NASI Library has been digitized and its services have been enhanced through subscribing more books every year. The library having a conducive environment is connected to National Knowledge Network (NKN). The Library exchanges its publications with 23 organizations and is receiving 20 journals (15 of Physical Sciences, 05 Biological Sciences and 8 miscellaneous) from India and abroad in exchange and/or gratis. 05 important journals and 19 scientific magazines are also being subscribed by the Library. The library has approx. 5800 bound volumes of journals. During the period under report 63 new books have been added.

A section in the Library, especially for science students of + 2 level has been maintained. A large number of books have been donated by Prof. H.S. Mani, Late Prof. U.S. Srivastava, Prof. Chandrika Prasad and others, besides those, which have been purchased. It is worth mentioning that a large number of students visit the Library daily and find it useful.

The students and the research scholars from various academic and scientific institutions in and around the city visiting on a regular basis are provided with Internet facility for educational purpose, free of cost.

## 11. Acknowledgements

We take this opportunity to thank all our Fellows and Members for their cooperation and useful suggestions. We are particularly grateful to the Prof. Balram Bhargava, President, NASI and all the members of the Council for their guidance and invaluable contribution.

We are thankful to the Chief Editors (Prof. J.P. Mittal, Prof. Amit Ghosh and Dr. Smita Mahale), the Managing Editors (Prof. S.L.Srivastava, Prof. U.C. Srivastava and Prof. S.S.Khare) and members of the Editorial Boards of the Proceedings of the National Academy of Sciences, India (Sections 'A' & 'B') and the Science Letters as well as the referees for their valuable suggestions and cooperation.

We also place on record our gratitude to the Secretary, DST; Director (AI Div.), DST and AS&FA, DST, New Delhi. We express our sincere thanks to both the General Secretaries of the Academy for their guidance.

We are also thankful to M/s Amit Ray and Co., Chartered Accountants, Prayagraj for auditing the Academy's accounts. Lastly, we acknowledge the contributions of Office Secretariat and other staff members of the Academy for their untiring assistance and cooperation in every possible way.

# 12. Annexures

## Annexure-I

### Fellows elected for the Year 2023

1. **ACHARYA, Narottam** (b. 1974), PhD, Scientist F, Infectious Disease Biology, Institute of Life Sciences, Nalco Square, Bhubaneswar - 751023
2. **AGARWAL, Vivek** (b. 1964), PhD, FASc, FNA, FNAE, Professor, Department of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai - 400076
3. **ANILKUMAR, Thapasimuthu Vijayamma** (b. 1961), PhD, FNAAS, Scientist G & Head, Division of Experimental Pathology, Sree Chitra Tirunal Institute for Medical Sciences & Technology, Poojappura, Thiruvananthapuram - 695012
4. **ARVIND** (b. 1968), PhD, Professor & Vice Chancellor, Punjabi University, Urban Estate Phase II, Patiala - 147002
5. **ASIF, Mehar Hasan** (b. 1973), PhD, Senior Principal Scientist, CSIR-National Botanical Research Institute, Rana Pratap Marg, PO Box 436, Lucknow - 226001
6. **BAJAJ, Avinash** (b. 1980), PhD, Professor, Regional Centre for Biotechnology, NCR Biotect Science Cluster, 3rd Milestone Faridabad Gurgaon Expressway, Faridabad - 121001
7. **BASU, Anupam** (b. 1957), PhD, FNAE, Pro Vice Chancellor, Sister Nivedita University, DG Block (Newtown), Action Area I, 1/2, Newtown, New Town, West Bengal - 700156
8. **BATRA, Punita** (b. 1970), PhD, Professor H, Mathematics, Harish-Chandra Research Institute, Chhatnag Road, Jhansi, Prayagraj - 211019
9. **BHAGAVATULA, Lakshmi Vara Prasad** (b. 1969), PhD, FASc, Director, Centre for Nano and Soft Matter Sciences (CeNS), Arkavathi, Survey No 7, Shivanapura, Dasanapura Hobli, Bengaluru - 562162
10. **BHANDARI, Rashna** (b. 1972), PhD, Staff Scientist VII, Centre for DNA Fingerprinting and Diagnostics, Inner Ring Road, Uppal, Hyderabad - 500039
11. **BHASKARAN, Prasad Kumar** (b. 1970), PhD, Professor & Head, Department of Ocean Engineering & Naval Architecture, Indian Institute of Technology Kharagpur, Kharagpur - 721302
12. **BISWAS, Debabrata** (b. 1974), PhD, Senior Principal Scientist, Molecular Genetics Division, Indian Institute of Chemical Biology, 4 Raja SC Mullick Road, Kolkata - 700032
13. **BISWAS, Ranjit** (b. 1969), PhD, Senior Professor, SN Bose National Centre for Basic Sciences, JD Block, Sector III, Salt Lake, Kolkata - 700106
14. **CHADA, Raji Reddy** (b. 1973), PhD, Chief Scientist & Chair, Department of Organic Synthesis & Process Chemistry, Indian Institute of Chemical Technology, Taranaka, Hyderabad - 500007
15. **CHANDRA, Poonam** (b. 1975), PhD, FASc, Associate Professor, National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Pune University Campus, Pune- 411008 (currently at National Radio Astronomy Observatory, 520 Edgemont Road, Charlottesville VA 23903, USA)

16. **CHATTOPADHYAY, Buddhadeb** (b. 1979), PhD, Associate Professor, Centre of Biomedical Research, SGPGIMS Campus, Raebareli Road, Lucknow - 226014
17. **CHATTOPADHYAY, Kalyan Kumar** (b. 1963), PhD, Professor & Head, Department of Physics, Jadavpur University, Kolkata - 700032
18. **CHATTOPADHYAY, Krishnananda** (b. 1970), PhD, Chief Scientist & Head, Structural Biology & Bioinformatics Div., Indian Institute of Chemical Biology, 4 Raja SC Mallick Road, Kolkata - 700032
19. **DAS, Amitava** (b. 1973), PhD, Senior Principal Scientist, Department of Applied Biology, CSIR-Indian Institute of Chemical Technology, Uppal Road, Tarnaka, Hyderabad - 500007
20. **DATTA, Simanti** (b. 1974), PhD, Professor, Centre for Liver Research, School of Digestive & Liver Diseases, Institute of PG Medical Education & Research, 244 AJC Bose Road, Kolkata- 700020
21. **DATTA, Sourav** (b. 1979), PhD, Associate Professor, Department of Biological Sciences, Academic Building 3, Room # 322, IISER Bhopal, Bhopal Bypass Road, Bhauri, Bhopal - 462066
22. **DEY, Abhishek** (b. 1977), PhD, FASc, Senior Professor, School of Chemical Sciences, Indian Association for the Cultivation of Science, 2A Raja SC Mullick Road, Kolkata-700032
23. **DUTTA, Sourabh** (b. 1967), MD, PhD, FAMS, Professor of Pediatrics, Neonatology Unit, Department of Pediatrics, PGIMER, Sector 12, Chandigarh - 160012
24. **GAUNS, Mangesh Uttam** (b. 1970), PhD, Senior Principal Scientist & Head, Biological Oceanography Division, National Institute of Oceanography (NIO), Dona Paula, Goa - 403004
25. **GEORGE, Subi Jacob** (b. 1977), PhD, FASc, Professor & Head, NCU & SAMat, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur PO, Bangalore - 560064
26. **GHOSH, Subimal** (b. 1979), PhD, Institute Chair Professor, Department of Civil Engineering, Indian Institute of Technology Bombay, Mumbai - 400076
27. **GHOSH, Sumit** (b. 1980), PhD, Senior Principal Scientist, Plant Biotechnology Division, CSIR-Central Institute of Medicinal and Aromatic Plants, PO CIMAP, Lucknow - 226015
28. **GOGATE, Parag Ratnakar** (b. 1975), PhD, FNAE, Professor, Department of Chemical Engineering, Institute of Chemical Technology, Matunga, Mumbai - 400019
29. **GONGOPADHYAY, Krishnendu** (b. 1978), PhD, Professor, Department of Mathematical Sciences, Indian Institute of Science Education and Research Mohali, Sector 81, SAS Nagar - 140306
30. **GOPALAN, Jagadeesh** (b. 1966), PhD, FASc, FNAE, Professor, Department of Aerospace Engineering, Indian Institute of Science, Bangalore - 560012
31. **GULATI, Sheffali** (b. 1971), MD, FAMS, Professor, Faculty I/C, Centre of Excellence & Advanced Research for Childhood Neurodevelopmental Disorders, Department of Pediatric, AIIMS, Ansari Nagar, New Delhi - 110029
32. **GUPTE, Neelima (Madhukar)** (b. 1956), PhD, Emeritus Professor, Department of Physics, IIT Madras, Chennai - 600036
33. **JAIN, Deepali** (b. 1975), MD, Professor, Department of Pathology, All India Institute of Medical Sciences, New Delhi - 110029

34. **JHA, Gopaljee** (b. 1980), PhD, Scientist V, Lab 207, National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi - 110067
35. **JHALA, Yadvendradev V.** (b.1962), PhD,FNA, Former Senior Professor,WildlifeInstituteof India, Dehradun; Res. Chandrabhuvan, Darbargarh, Wadhwan City, Gujarat - 363030
36. **KANEKAR, Nissim** (b. 1973), PhD, FASc, Professor H, National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, SP Pune University Campus, Pune - 411007
37. **KANUNGO, Suman** (b. 1967), PhD, Scientist E, Division of Epidemiology, National Instituteof Cholera & Enteric Disease, P-33, CIT Road Scheme XM, Belegkata, Kolkata-700010
38. **KAPUGANTI, Jagadis Gupta** (b. 1980), PhD, FNAAS, Scientist V, National Institute of Plant Genome Research, Aruna Asaf Ali Marg, New Delhi - 110067
39. **KAPUR, Manmohan** (b. 1975), PhD, Professor, 330 Academic Building 2, Department of Chemistry, IISER Bhopal, Bhopal Bypass Road, Bhauri, Bhopal - 462066
40. **KARTHIKEYAN, Ganesan** (b. 1970), MD, Professor of Cardiology, Cardiothoracic Sciences Centre, All India Institute of Medical Sciences, Ansari Nagar, New Delhi - 110029
41. **KEMPAIAH, Kemparaju** (b. 1964), PhD, Professor, Department of Studies in Biochemistry, University of Mysore, Manasagangotri, Mysuru-570006
42. **KHARWAR, Ravindra Nath** (b. 1967), PhD, Professor, CAS in Botany, Institute of Science, Banaras Hindu University, Varanasi - 221005
43. **KURPAD, Anura Viswanath** (b. 1959), MD, PhD, FASc, FAMS, FRCP, Professor, Department of Physiology, St. John's Medical College, Sarjapur Road, Bengaluru-560034
44. **LAISHRAM, Rakesh Singh** (b. 1979), PhD, Scientist F, Rajiv Gandhi Centre for Biotechnology, Thycaud PO, Poojappura, Near Jagathy Bridge, Trivandrum - 695014
45. **LUTHRA, Kalpana** (b. 1965), PhD, FAMS, Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi - 110029
46. **MALL, Rajesh Kumar** (b. 1965), PhD, Professor, Dean & Head, IESD, Banaras Hindu University, Varanasi - 221005
47. **MANDAL, Bhabani Prasad** (b. 1968), PhD, Professor, Department of Physics, Institute of Science, Banaras Hindu University, Varanasi - 221005
48. **MEHRA, Mani** (b. 1979), PhD, Professor, Department of Mathematics, Indian Institute of Technology Delhi, Hauz Khas, Delh - 110016
49. **MITRA, Rahul** (b. 1966), PhD, FNAE, Professor (HAG), Department of Metallurgical & Materials Engineering, Indian Institute of Technology Kharagpur, Kharagpur - 721302
50. **MUKHERJEE, Srabani** (b. 1964), PhD, Scientific G, Department of Molecular Endocrinology, National Institute for Research in Reproductive and Child Health, Jehangir Merwanji Street, Parel, Mumbai-400012
51. **MUKHERJI, Suparna** (b. 1966), PhD, FNAE, Professor, Environmental Science and Engineering Department, IIT Bombay, Powai, Mumbai - 400076

52. **MUKHOPADHYAY, Achintya** (b. 1968), PhD, Professor, Department of Mechanical Engineering, Jadavpur University, Kolkata - 700032
53. **MYLAVARAPU, Sivaram Venkata Satya** (b. 1974), PhD, Professor, Regional Centre for Biotechnology, NCR Biotech Science Cluster, 3rd Milestone Faridabad-Gurgaon Expressway, Faridabad-121001
54. **NANDI, Ashis Kumar** (b. 1967), PhD, Professor, Room No. 415, School of Life Sciences, Jawaharlal Nehru University, New Delhi - 110067
55. **NITTALA, Chalapathi Rao Venkata** (b. 1969), PhD(Hyd.), PhD(UK), FASc, FNA, Professor, Department of Geology, Institute of Science, Banaras Hindu University, Varanasi - 221005
56. **PANDEY, Jitendra** (b. 1962), PhD, Professor, Department of Botany, Institute of Science, Banaras Hindu University, Varanasi - 221005
57. **PATRA, Abhijit** (b. 1979), PhD, Associate Professor, Department of Chemistry, Indian Institute of Science Education & Research Bhopal, Bhaury, Bhopal - 462066
58. **PENMATSA, Aravind** (b. 1982), PhD, Associate Professor, Rm 111, Molecular Biophysics Unit, Indian Institute of Science, CV Raman Road, Bangalore - 560012
59. **RAJADURAI, Chandrasekar** (b. 1973), PhD, FASc, FRSC, Professor, School of Chemistry, University of Hyderabad. Prof. CR Rao Road, Gachibowli, Hyderabad - 500046
60. **RAKSHIT, Sujay** (b. 1970), PhD, FNAAS, Director, ICAR-Indian Institute of Agricultural Biotechnology, Garkhatanga, Ranchi-834003, JK
61. **RAMAMURTHY, P. Chandrashekarapura** (b. 1973), PhD, Professor, E311, Department of Materials Engineering, Indian Institute of Science, Bengaluru - 560012
62. **RAY CHAUDHURI, Shaon** (b. 1973), PhD, Professor, Department of Microbiology, Tripura University, Daycare Building, Suryamaninagar, Tripura West - 799022
63. **RAY, Manas Chandra** (b. 1963), PhD, FNAE, Professor (HAG), Department of Mechanical Engineering, Indian Institute of Technology Kharagpur, Kharagpur-721302
64. **ROY, Dipanjan** (b. 1977), PhD, Associate Professor, School of AIDE, IIT Jodhpur, NH 62, Surpura Bypass Road, Karwar, Rajasthan - 342030
65. **SAHOO, Bijaya Kumar** (b. 1977), PhD, Professor, Physical Research Laboratory, Navrangpura, Ahmedabad - 380009
66. **SAMANTA, Luna** (b. 1970), PhD, Professor, Redox Biology and Proteomics Laboratory, Department of Zoology, School of Life Sciences, Ravenshaw University, Cuttack - 753003
67. **SARKAR, Jaydeb** (b. 1976), PhD, Professor & Head, Statistics-Mathematics Unit, Indian Statistical Institute, 8th Mile, Mysore Road, RVCE Post, Bangalore - 560059
68. **SENGUPTA, Debarka** (b. 1983), PhD, Associate Professor, Department of Computational Biology, Indraprastha Institute of Information Technology, OIA, Phase 3, New Delhi - 110020
69. **SHARMA, Archana** (b. 1964), PhD, FNAE, Director, Outstanding Scientist, Beam Technology Development Group, Bhabha Atomic Research Centre, Mumbai - 400085
70. **SINGH, Divya** (b. 1975), PhD, Senior Principal Scientist, Division of Endocrinology, Central Drug Research Institute, Sector 10, Jankipuram Extension, Lucknow - 226031

71. **SINGH, Ravindra Pratap** (b. 1964), PhD, Senior Professor & Head, Atomic, Molecular & Optical Physics Division, Physical Research Laboratory, Navrangpura, Ahmedabad-380009
72. **SINGHAL, Rekha Satishchandra** (b. 1962), PhD, FNA, Professor, Food Engineering and Technology Department, Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai - 400019
73. **SUNDAR, Durai** (b. 1973), PhD, Institute Chair Professor, Department of Biochemical Engineering & Biotechnology, Indian Institute of Technology Delhi, Hauz Khas, New Delhi - 110016
74. **SURESH, KG** (b. 1968), PhD, Professor, Department of Physics, IIT Bombay, Mumbai - 400076
75. **TANDON, Vibha** (b. 1968), PhD, Professor, Special Center for Molecular Medicine, Jawaharlal Nehru University, New Delhi - 110067
76. **UPADHYAY, Ranjit Kumar** (b. 1967), PhD, Professor (HAG) & Head, Department of Mathematics&Computing,IndianInstituteofTechnology(IndianSchoolofMines),Dhanbad - 826004
77. **VERMA, Praveen Kumar** (b. 1966), PhD, Professor, School of Life Sciences, Jawaharlal Nehru University, New Delhi - 110067
78. **YADAV, Bal Chandra** (b. 1970), PhD, Professor &Head,Department of Physics, Babasaheb Bhimrao Ambedkar University, Raebareli Road, Vidya Vihar, Lucknow - 226025
79. **YADAV, Om Prakash** (b. 1963), PhD, FNA, FNAAS, Director, Central Arid Zone Research Institute, Jodhpur - 342003
80. **YADAVA, Devendra Kumar** (b. 1966), PhD, FNAAS, Assistant Director General (Seed), Indian Council of Agricultural Research, Room No. 101, Krishi Bhawan, New Delhi - 110001

## Science & Society

1. **GUPTA, Nivedita** (b. 1974), PhD, Scientist F & In-charge, Virology Unit, E&CD Division, Indian Council of Medical Research, V. Ramalingaswami Bhawan, Ansari Nagar, New Delhi- 110029
2. **KAILASAVADIVOO, Sivan** (b. 1957), PhD, FNAE, Former Secretary to GoI, Department of Space & Former Chairman, ISRO, ISRO Headquarters, Antariksh Bhavan, New BEL Road, Bangalore - 560231
3. **SOMANATH, Sreedhara Panicker** (b. 1963), ME, FNAE, Secretary to GoI, Department of Space & Chairman, Indian Space Research Organization, ISRO Headquarters, Antariksh Bhavan, New BEL Road, Bangalore - 560231

## Foreign Fellows

1. **ATTFIELD, John Paul** (b. 1962), DPhil, FNA, FRS, FRSE, FRSC, Chair, Centre for Materials Science at Extreme Conditions, University of Edinburgh, King's Building, Mayfield Rd., Edinburgh, EH9 3JZ, UK
2. **CHORGHADÉ, Mukund Shankar** (b. 1953), PhD, DSc, FRSC, President & CSO THINQ Phamra/ Adjunct Research Professor, Harvard University, 7 Jones Court, Hillsborough, New Jersey, NJ 08844, USA;
3. **CHOWDARI, B.V.R.**(b. 1943), PhD, DLitt(hc), DSc(hc), Senior Executive Director, Nanyang Technological University, President's Officer, 50 Nanyang Avenue, Administrative Building Level 3, Singapore 639798
4. **ECKERT, Jurgén** (b. 1962), PhD, FNAE, Director, Erich Schmid Institute of Materials Science JahnstraBe 12, 8700 Leoben, Austria
5. **GHOSH, Sankar** (b.1959), PhD, Professor & Chairman, Dept. of Microbiology & Immunology, Columbia University, College of Physicians & Surgeons, New York, NY 10032, USA

## Members elected for the year 2023

### Physical Sciences

#### *Chemical Sciences*

1. Dr. H S S Ramakrishna Matte, Central for Nano and Soft Matter Sciences, Karnataka
2. Dr. Kaustava Bhattacharya, BARC, Mumbai
3. Dr. Neetu Goel, Panjab University, Chandigarh
4. Dr. Prabhpreet Singh, Guru Nanak Dev University, Amritsar
5. Dr. Rubel Chakravarty, BARC, Mumbai
6. Dr. Suman Singh, CSIR-CSIO, Chnadigarh
7. Dr. Debdas Ray, Shiv Nadar University, Dadri, U.P.
8. Dr. Seraj Ahmad Ansari, BARC, Mumbai

#### *Earth Sciences*

1. Dr. Subhash Chandra, NGRI, Hyderabad
2. Dr. Shailendra Rai, University of Allahabad, Prayagraj

#### *Engineering Sciences*

1. Dr. Sushmee Badhulika, IIT Hyderabad
2. Prof. Manish Kumar Goyal, IIT Indore
3. Dr. Anuj Dhawan, IIT Delhi
4. Prof. Subho Das Gupta, IISc, Bangalore
5. Prof. Debabrata Das, IIIT, Bangalore
6. Dr. Upendra Pandey, S.N. University, Noida
7. Dr. M.S.Santosh, CSIR, CIMFR, Dhanbad

#### *Mathematical Sciences*

1. Dr. Anuj Jakhar, IIT Madras
2. Prof. Anbhu Swaminathan, IIT Roorkee
3. Dr. Sushil Kumar, Gautam Buddha University, Noida
4. Dr. Paritosh Bhattacharya, NIT Agartala, Tripura

#### *Physics*

1. Dr. C.M.Chandrashekar, Institute of Mathematical Sciences, Chennai
2. Dr. Bhaskar Kanseri, IIT Delhi

3. **Dr. Mohit Tyagi**, BARC, Mumbai
4. **Dr. Raavi Sai Santosh Kumar**, IIT Hyderabad
5. **Dr. Santosh Kumar Das**, IIT Goa
6. **Dr. Raman Sharma**, Himachal Pradesh University, Shimla
7. **Dr. Sayantan Choudhury**, Shree Guru Gobind Singh Tricentenary (SGT) University
8. **Dr. Pradipta Panchadhyayee**, Prabhat Kumar College, Contai

## **Biological Sciences**

### *Animal Sciences*

1. **Dr. Santosh Kumar Singh**, Institute of Medical Sciences, BHU, Varanasi
2. **Prof. Shweta Yadav**, Dr. Harisingh Gour Vishwavidyalya, Sagar
3. **Dr. Arti Parganiha**, Pt. Ravishankar Shukla University, Raipur
4. **Dr. Nishant Kumar**, ICAR-National Dairy Research Institute, Karnal ,Hayana
5. **Dr. Arnab Banerjee**, BITS Pilani, Goa
6. **Dr. Soumen Choudhary**, Pandit Deen Dayal Upadhyay Pashu Chikitsa Vigyan Vishwavidyalya Avam Anusandhan Sansthan, Mathura
7. **Dr. Partha Pratim Chakravorty**, Raja Narendra Lal Khan Women's College, Vidyasagar University, West Bengal

### *Biophysics, Biochemistry, Biotechnology*

1. **Dr. Sandip Kaledhonkar**, IIT Bombay
2. **Dr. Tanveer Ali Dar**, University of Kashmir, Srinagar
3. **Dr. Ved Prakash Dwivedi**, ICGEB, New Delhi
4. **Dr. Mithu Baidya**, IIT Jammu & Kashmir
5. **Dr. Sangeeta Singh**, IIT, Prayagraj
6. **Dr. Nidhi Gour**, Indrashil University, Rajpur, Gujarat

### *Medical & Forensic Sciences*

1. **Dr. Arpita Konar**, Institute of Health Sciences, Presidency University, Kolkata
2. **Dr. Rajiv Kumar**, Institute of Medical Sciences, BHU, Varanasi
3. **Dr. Rakesh Kumar Pilonia**, PGIMER, Chandigarh
4. **Dr. Adela Ramu**, NIPER, Guwahati
5. **Dr. Utpal Nandi**, CSIR-IIIM, Jammu
6. **Dr. Vijay Jain**, ABVIMS Dr. Ram Manohar Lohia Hospital, New Delhi
7. **Dr. Kuppan Gokulakrishnan**, National Institute of Mental Health & Neuro Sciences, Bengaluru

### *Plant & Agricultural Sciences*

1. **Dr. Aditya Pratap**, ICAR-IIPR, Kanpur
2. **Dr. Rakesh Kumar**, IHBT, Palampur
3. **Dr. Soumitra Paul**, Dept. of Botany, University of Calcutta
4. **Dr. Sundeep Kumar**, ICAR-NBPGR, New Delhi
5. **Dr. Koushik Chakraborty**, ICAR- National Rice Research Institute, Cuttack
6. **Dr. Rehna Augustine**, Kerala Agriculture University, Thrissur, Kerala
7. **Dr. Vipin Kumar**, IIT Dhanbad
8. **Dr. Dibyendu Chatterjee**, ICAR-National Rice Research Institute, Cuttack
9. **Dr. Dipak Gayen**, Central University of Rajasthan, Ajmer
10. **Dr. Vinita Gowda**, IISER, Bhopal

### **Science & Society**

1. **Dr. Vishal Mishra**, IIT-BHU, Varanasi

## Audited Statement of Accounts for the Year ending March 2024

**amit ray & co.**  
CHARTERED ACCOUNTANTS

H. O. : 5-B, Sardar Patel Marg,  
Prayagraj - 211 001  
Phone : 2402763, 2407258  
Fax : (0532) 2402763  
E-mail : allahabad@amitrayco.com  
Website : www.amitrayco.com

Ref. No.....

Dated.....

### INDEPENDENT AUDITOR'S REPORT

To,  
The Member(s),  
The National Academy of Sciences, India,  
5, Lajpat Rai Road, Prayagraj. 211002

#### Opinion

We have audited the financial statements of **The National Academy of Sciences, India** which comprise the Balance Sheet as on **31<sup>st</sup> March 2024**, Statement of Income & Expenditure and the Statement of Receipts & Payments for the year ended on that date read with explanatory notes annexed thereto.

In our opinion, and to the best of our knowledge and according to the explanations given to us the accompanying financial statements give a true and fair view of the financial position of the entity as on 31<sup>st</sup> March 2024, and of its financial performance for the year then ended in accordance with the Accounting Standards issued by the Institute of Chartered Accountants of India (ICAI).

#### Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) issued by ICAI. We are independent of the entity in accordance with the ethical requirements that are relevant to our audit of the financial statements in accordance with the Code of ethics issued by ICAI, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the Societies Registration Act, 1860, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.



**Also at : NEW DELHI, BANGALORE, KOLKATA, MUMBAI,  
CHITTORGARH, PUNE, DEHRADUN**

In preparing the financial statements, management is responsible for assessing the entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the entity's financial reporting process.

#### **Auditor's Responsibilities for the Audit of the Financial Statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional scepticisms throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the entity to cease to continue as a going concern.




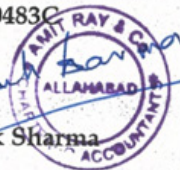
# amit ray & co.

CHARTERED ACCOUNTANTS

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Place: Prayagraj  
Date: 30.08.2024

For Amit Ray & Co.  
Chartered Accountants  
FRN: 000483C

  
  
Abhishek Sharma  
Partner  
M.No.: 403861  
UDIN: 24403861BKFSLK5105


Continuation Sheet

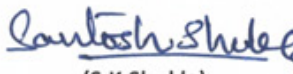
THE NATIONAL ACADEMY OF SCIENCES, INDIA

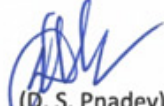
BALANCE SHEET AS AT MARCH 31, 2024


(Amount - Rs.)

|  | Schedule | Current Year<br>2023-2024 | Previous Year<br>2022-2023 |
|--|----------|---------------------------|----------------------------|
| <b><u>CORPUS/CAPITAL FUND AND LIABILITIES</u></b>                        |          |                           |                            |
| Corpus/Capital Fund  | 1        | 5,72,18,401.00            | 5,72,18,401.00             |
| Reserves and Surplus   | 2        | 2,52,04,663.40            | 2,52,04,663.40             |
| Earmarked Endowment Funds  | 3        | 25,68,32,321.85           | 24,60,11,420.22            |
| Secured Loans and Borrowings   | 4        | -                         | -                          |
| Unsecured Loans and Borrowings   | 5        | -                         | -                          |
| Deferred Credit Liabilities  | 6        | -                         | -                          |
| Current Liabilities and Provisions                                       | 7        | (57,12,987.64)            | 58,16,203.42               |
| <b>Total</b>   |          | <b>33,35,42,398.61</b>    | <b>33,42,50,688.04</b>     |
| <b><u>ASSETS</u></b>   |          |                           |                            |
| Fixed Assets   | 8        | 6,03,81,819.00            | 6,34,73,010.00             |
| Investments from Earmarked Endowment Funds                               | 9        | 25,72,56,162.85           | 24,64,35,261.22            |
| Investments - Others   | 10       | -                         | -                          |
| Current Assets, Loans and Advances etc.                                  | 11       | 1,59,04,416.76            | 2,43,42,416.82             |
| Miscellaneous Expenditure<br>(to the extent not written off or adjusted) |          |                           |                            |
| <b>Total</b>   |          | <b>33,35,42,398.61</b>    | <b>33,42,50,688.04</b>     |
| Significant Accounting Policies  | 24       |                           |                            |
| Contingent Liabilities and Notes on Accounts                             | 25       |                           |                            |

  
(A. K. Trivedi)  
Acting Accounts Officer  
NASI, Prayagraj


  
(S.K. Shukla)  
Acting Executive Secretary  
Acting Executive Secretary  
NASI, Prayagraj

  
(D. S. Pnadey)  
General Secretary  
General Secretary  
NASI, Prayagraj

  
(R. S. Verma)  
Treasurer  
Treasurer  
NASI, Prayagraj

Place: Prayagraj  
Date: 30.08.2024

Subject to our report of even date annexed  
Amit Ray & Co.  
Chartered Accountants  
FRN - 000483C

  
UDIN: 24403861BKFSLK5105



**THE NATIONAL ACADEMY OF SCIENCES, INDIA**


**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED ON MARCH 31, 2024**


(Amount - Rs.)

|  | Schedule | Current Year<br>2023-2024 | Previous Year<br>2022-2023 |
|--|----------|---------------------------|----------------------------|
| <b>(A) INCOME</b>  |          |                           |                            |
| Income from Sales/Services   | 12       | 96,927.00                 | 80,300.00                  |
| Grants/Subsidies   | 13       | 4,70,42,356.42            | 6,67,24,728.28             |
| Fees/Subscriptions   | 14       | -                         | 50,000.00                  |
| Income from Investments  | 15       | -                         | -                          |
| Income from Royalty, Publications etc.                                 | 16       | 35,83,641.00              | 29,22,507.00               |
| Bank Interest earned   | 17       | 2,03,592.00               | 28,19,426.00               |
| Other Income   | 18       | 2,77,637.00               | 8,63,647.00                |
| Increase/(decrease) in stock of Finished Goods and Work-in-progress)   | 19       | -                         | -                          |
| <b>Total (A)</b>   |          | <b>5,12,04,153.42</b>     | <b>7,34,60,608.28</b>      |
| <b>(B) EXPENDITURE</b>   |          |                           |                            |
| Establishment Expenses - Salary General                                | 20       | 2,18,16,409.00            | 1,92,26,667.00             |
| Other Administrative Expenses  | 21       | 3,22,92,794.00            | 4,38,43,771.00             |
| Expenditure on Grants,Subsidies etc.                                   | 22       | -                         | -                          |
| Bank Charges & Interest  | 23       | 9,176.06                  | 18,668.86                  |
| Interest earned refunded to DST, N. Delhi                              |          | -                         | 12,67,343.00               |
| Depreciation (Net total at the year end - corresponding to Schedule 8) |          | 30,91,191.00              | 36,01,145.00               |
| <b>Total (B)</b>   |          | <b>5,72,09,570.06</b>     | <b>6,79,57,594.86</b>      |
| <b>Balance being excess of Income over Expenditure (A-B)</b>           |          | <b>(60,05,416.64)</b>     | <b>55,03,013.42</b>        |
| Transfer to Special Reserves   |          | -                         | -                          |
| Transfer to General Reserve  |          | -                         | -                          |
| <b>Balance being Surplus (Deficit)</b>                                 |          | <b>(60,05,416.64)</b>     | <b>55,03,013.42</b>        |
| Significant Accounting Policies  | 24       |                           |                            |
| Contingent Liabilities and Notes on Accounts                           | 25       |                           |                            |

Unspent Balances as on 31.03.2024

|                            |                       |
|----------------------------|-----------------------|
| Salaries                   | (1,06,40,188.00)      |
| Creation of Capital Assets | 50,00,000.00          |
| Scheduled Tribes Projects  | 23,05,276.00          |
| General                    | (28,19,036.14)        |
| Symposia etc               | 1,48,531.50           |
|                            | <u>(60,05,416.64)</u> |

  
(A. K. Trivedi)  
Acting Accounts Officer  
Acting Accounts Officer  
NASI, Prayagraj

  
(S.K. Shukla)  
Acting Executive Secretary  
Acting Executive Secretary  
NASI, Prayagraj

  
(D. S. Pandey)  
General Secretary  
General Secretary  
NASI, Prayagraj

  
(R. S. Verma)  
Treasurer  
Treasurer  
NASI, Prayagraj

Subject to our report of even date annexed

Amit Ray & Co.

Chartered Accountants

FRN-000483C

Place: Prayagraj

Date: 30.08.2024



U DIN: 24403861BKFSLK51-5

The National Academy of Sciences, India

Receipts and Payments Account for the year ended on March 31, 2024

(Amount - Rs.)

| RECEIPTS                                | Current Year<br>2023-24 | Previous Year<br>2022-23 | PAYMENTS   | Current Year<br>2023-24 | Previous Year<br>2022-23 |
|---|-------------------------|--------------------------|--|-------------------------|--------------------------|
| <b>I. Opening Balances</b>              |                         |                          | <b>I. Expenses</b>   |                         |                          |
| a) Cash in Hand                         | -                       | -                        | a) Establishment Expenses (including SC Salaries)<br>(corresponding to Scheduled 20) | 2,18,16,409.00          | 1,92,26,667.00           |
| b) Bank Balances                        |                         |                          | b) Administrative Expenses<br>(corresponding to Scheduled 21)                        | 3,24,22,794.00          | 4,43,53,771.00           |
| i) In Current accounts                  | -                       | -                        | Scheduled Tribes Sub Plan<br>(corresponding to Scheduled 21)                         | -                       | -                        |
| ii) In Deposit accounts                 | 23,51,01,905.00         | 26,24,29,019.00          | <b>II. Payments made against funds<br/>for various projects</b>                      | -                       | -                        |
| iii) In Savings accounts                | 2,58,43,142.04          | 4,60,04,655.00           | <b>III. Investments and deposits made</b>  |                         |                          |
| <b>II. Grants Received</b>              |                         |                          | a) Out of Earmarked / Endowment Funds  | -                       | -                        |
| a) From Govt. of India                  |                         |                          | b) Out of own funds (Investments - others)   | -                       | -                        |
| DST, New Delhi                          | 4,13,35,395.00          | -                        | <b>IV. Expenditure on Fixed Assets and<br/>Capital Work-in-progress</b>              |                         |                          |
| b) From State Government                | -                       | -                        | <b>V. Refund of Surplus money / Loans</b>  |                         |                          |
| <b>III. Income on Investments from:</b> |                         |                          | a) To the Govt. of India (DST, New Delhi)  |                         |                          |
| a) Earmarked / Endowment Funds          | 1,09,68,579.00          | 1,17,51,614.00           | i) Unspent balances of Grant-in-aid for<br>SC Salaries                               | -                       | 2,90,532.00              |
| b) Own Funds (Other investments)        | -                       | -                        | Scheduled Tribes Sub Plan  | -                       | 23,25,902.00             |
| <b>IV. Interest Received</b>            |                         |                          | R/VSF Grant  | 12,258.00               | -                        |
| a) On Bank Deposits                     | 2,03,592.00             | 28,19,426.00             | ii) Interest earned during previous year   | -                       | 12,67,343.00             |
| In grant-in-aid SB a/c                  | 68,887.00               | -                        | b) To the State Government   | -                       | -                        |
| In PF Deposit SB A/C                    | 23,577.00               | -                        | c) To other providers of funds   | -                       | -                        |
| In GeM Pool SB A/C                      | 1,756.00                | -                        | <b>VI. Finance Charges (Bank Charges &amp; Interest)</b>                             | 9,303.43                | 18,721.96                |
| From Income Tax Dept.                   | 1,09,372.00             | -                        | <b>VII. Other Payments (Specify)</b>   |                         |                          |
| <b>Total</b>                            | <b>2,03,592.00</b>      |                          | Advances given for expenses  | -                       | 1,17,472.00              |
| b) On Loans, Advances etc.              | -                       | -                        | <b>VIII. TDS &amp; Advance Tax</b>   | -                       | 7,31,682.00              |
| <b>V. Other Income (Specify)</b>        |                         |                          | Miscellaneous Expenses   | 24090                   | -                        |
| <b>Advances Recovered</b>               |                         |                          | <b>VIII. Closing Balances</b>  |                         |                          |
| Advances for Expenses                   | 16,74,352.00            | -                        | a) Cash in Hand  | -                       | -                        |
| Festival Advance                        | -                       | 47,250.00                | b) Bank Balances   |                         |                          |
| <b>VI. Amount Borrowed</b>              | -                       | -                        | i) In Current accounts   | -                       | -                        |
| <b>VII. Any Other Receipts</b>          |                         |                          | ii) In Deposit accounts  | 24,29,38,154.00         | 23,51,01,905.00          |
| Ganga Gallery Receipts                  | 6,540.00                | 1,670.00                 | iii) In Savings accounts   | 2,23,34,850.61          | 2,58,43,142.04           |
| Royalty /Publications                   | 26,31,328.00            | 31,19,726.00             |  |                         |                          |
| Annual Session Regn. Fee                | -                       | 50,000.00                |  |                         |                          |
| Sale of Scraps                          | 96,927.00               | 80,300.00                |  |                         |                          |
| Gratuity receipt from LIC               | -                       | 8,61,333.00              |  |                         |                          |
| Interest in Chapters SB Account         | 2,845.00                | 2,314.00                 |  |                         |                          |
| Amount deposited by retired staff       | 2,74,792.00             | -                        |  |                         |                          |
| TDS (deducted & payable )               | -                       | 20,761.00                |  |                         |                          |
| TDS Recovered                           | 12,02,256.00            | -                        |  |                         |                          |
| Unspent balances of ST Projects         | 2,16,206.00             | 20,89,070.00             |  |                         |                          |
| <b>Total</b>                            | <b>31,95,57,859.04</b>  | <b>32,92,77,138.00</b>   | <b>Total</b>   | <b>31,95,57,859.04</b>  | <b>32,92,77,138.00</b>   |

Subject to our report of even date annexed

Place: Prayagraj  
Date: 18.06.2024

*(Signature)*  
(A. K. Trivedi)  
Acting Accounts Officer

*(Signature)*  
(S.K.Shukla)  
Acting Executive Secretary

*(Signature)*  
(D. S. Panjwani)  
General Secretary

*(Signature)*  
Amit Ray & Co.  
Chartered Accountants  
ERA: 000483C

Acting Accounts Officer  
NASI, Prayagraj

Acting Executive Secretary  
NASI, Prayagraj  
General Secretary  
NASI, Prayagraj

*(Signature)*  
AMIT RAY & CO.  
ALLAHABAD  
CHARTERED ACCOUNTANTS

UDIN: 24403861 BK FSLK 5105



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