



# अणुविद्या

## HBNI NEWSLETTER

*Issue No: 10 | December 2023*



होमी भाभा राष्ट्रीय संस्थान

**Homi Bhabha National Institute**

( परमाणु ऊर्जा विभाग की एक सहायता प्राप्त संस्था और यूजीसी अधिनियम 1956 की धारा 3 के तहत विश्वविद्यालय माना जाता है )

( An aided institution of the Department of Atomic Energy and a Deemed to be University under section 3 of the UGC Act, 1956 )

## Location of HBNI Central Office, Constituent Institutions & Off Campus Centre



**HRI, Allahabad**



**IPR, Gandhinagar**



**RRCAT, Indore**



**BARC, Mumbai**



**TMC, Mumbai**



**HBNI Central Office**



**VECC, Kolkata**



**SINP, Kolkata**



**IoP, Bhubaneswar**



**NISER, Bhubaneswar**



**IMSc, Chennai**



**IGCAR, Kalpakkam**

## *HBNI Newsletter*



# **Homi Bhabha National Institute**

**( An aided institution of the Department of Atomic Energy and  
a Deemed to be University under section 3 of the UGC Act, 1956 )**



# Council of Management

(As on December 31, 2023)

|   |                 |
|---|-----------------|
| ◆ Prof. A. K. Mohanty, Secretary DAE & Chairman, AEC  | <b>Chairman</b> |
| ◆ Prof. U. Kamachi Mudali, Vice Chancellor, HBNI  | Member          |
| ◆ Shri Vivek Bhasin, Director, BARC   | Member          |
| ◆ Ms. Seema Jain, Member (Finance), AEC   | Member          |
| ◆ Shri Shankar V. Nakhe, Director, RRCAT  | Member          |
| ◆ Prof. Sudeep Gupta, Director, TMC   | Member          |
| ◆ Prof. Gautam Bhattacharyya, Director, SINP  | Member          |
| ◆ Prof. V. Ravindran, Director, IMSc  | Member          |
| ◆ Prof. Mustansir Barma, Professor Emeritus, TIFR Centre for Inter-Disciplinary Sciences, Hyderabad | Member          |
| ◆ Prof. Surendra Prasad, Former Director, IIT, Delhi  | Member          |
| ◆ Prof. P. D. Naik, Dean, HBNI  | Member          |
| ◆ Prof. P. C. Selvin, Registrar, HBNI   | Secretary       |



# Academic Council

(As on December 31, 2023)

|   |                    |
|---|--------------------|
| ◆ Prof. U. Kamachi Mudali, Vice Chancellor, HBNI                  | <b>Chairperson</b> |
| ◆ Prof. P. D. Naik, Dean, HBNI                                    | Member             |
| ◆ Shri Vivek Bhasin, Director, BARC                               | Member             |
| ◆ Prof. B. Venkatraman, Director, IGCAR                           | Member             |
| ◆ Shri Shankar V. Nakhe, Director, RRCAT                          | Member             |
| ◆ Prof. Sumit Som, Director, VECC                                 | Member             |
| ◆ Prof. Gautam Bhattacharyya, Director, SINP                      | Member             |
| ◆ Prof. Shashank Chaturvedi, Director, IPR                        | Member             |
| ◆ Prof. Karuna Kar Nanda, Director IOP                            | Member             |
| ◆ Prof. V. Ravindran, Director, IMSc                              | Member             |
| ◆ Prof. Pinaki Majumdar, Director, HRI                            | Member             |
| ◆ Prof. Sudeep Gupta, Director, TMC                               | Member             |
| ◆ Prof. H. N. Ghosh, Director, NISER                              | Member             |
| ◆ Prof. Indranil Manna, IIT Kharagpur                             | Member             |
| ◆ Prof. Siva Umapathy, IISC, Bengaluru                            | Member             |
| ◆ Prof. Manoj K. Tiwari, IIM, Mumbai                              | Member             |
| ◆ Prof. Devang Khakhar, IIT, Bombay                               | Member             |
| ◆ Prof. S. M. Yusuf, Convenor, BoS (Physical Sciences)            | Member             |
| ◆ Dr. Pankaj Chaturvedi, TMC, Mumbai                              | Member             |
| ◆ Prof. A. Srinivasan, NISER, Bhubaneswar                         | Member             |
| ◆ Prof. R. B. Grover, Convenor, BoS (Applied Systems Analysis)    | Member             |
| ◆ Prof. Bedangadas Mohanty, Convenor, BoS (Physical Sciences)     | Member             |
| ◆ Prof. R. Tewari, Convenor, BoS (Engineering Sciences)           | Member             |
| ◆ Prof. Partha Saha, Convenor, BoS (Life Sciences)                | Member             |
| ◆ Prof. Meena Mahajan, Convenor, BoS (Mathematical Sciences)      | Member             |
| ◆ Prof. S. D. Banavali, Convenor, BoS (Medical & Health Sciences) | Member             |
| ◆ Prof. P. K. Mohapatra, Convenor, BoS (Chemical Sciences)        | Member             |
| ◆ Prof. C. Gunanathan Convenor, BoS (Int. Master's Programme)     | Member             |
| ◆ Prof. P. C. Selvin, Registrar, HBNI                             | Secretary          |

# Planning & Monitoring Board

(As on December 31, 2023)

|  |                    |
|--|--------------------|
| ◆ Prof. U. Kamachi Mudali, Vice Chancellor, HBNI                                   | <b>Chairperson</b> |
| ◆ Shri Vivek Bhasin, Director, BARC  | Member             |
| ◆ Prof. P. D. Naik, Dean, HBNI   | Member             |
| ◆ Prof. R. B. Grover, Professor Emeritus, HBNI                                     | Member             |
| ◆ Prof. B. Venkatraman, Director, IGCAR  | Member             |
| ◆ Prof. S. Chaturvedi, Director, IPR   | Member             |
| ◆ Prof. G. Bhattacharyya, Director, SINP   | Member             |
| ◆ Prof. Devang Khakhar, Department of Chemical Engineering, IIT Bombay             | Member             |
| ◆ Dr. Praveen Chaddah, Former Director, UGC-DAE Consortium for Scientific Research | Member             |
| ◆ Prof. Jayaram N. Chengalur, Director, TIFR                                       | Member             |
| ◆ Prof. P. C. Selvin, Registrar, HBNI  | Secretary          |



## From the Vice Chancellor's Desk



I am immensely delighted to present December 2023 issue of Anuvidhya showcasing the events and happenings at HBNI Central Office and its CIs/OCC.

In continuation to the organization of online courses for the benefit of doctoral students and faculty members of higher education institutes all over India, HBNI organized three online courses during the period July 2023-December 2023. The courses include, (i) Advanced Materials Chemistry, (ii) Advanced NMR Spectroscopy-Part-II, and (iii) Disaster Management-Challenges in CBRN Emergencies-Part-I. The course on Disaster Management is unique and specific to Chemical, Biological, Radiological and Nuclear (CBRN) disasters, and is going to be very useful to the students in enhancing their career growth, and to those professionals from industries in handling any chemicals, hazardous substances and /or radiological substances and in crisis management.

HBNI organized a one-day workshop on “Publishing Books and Research Papers” for the benefit of all the students and faculty members of HBNI. Ms. Swati Meherishi, Editorial Director, Springer Nature gave a detailed overview of basic scientific writing principles and enlightened the participants about the publication process of the scientific books.

Towards the efforts to accelerate the academic collaborations with eminent academic institutions in the country, HBNI has signed a MoU with Defence Institute of Advance Technology, Pune and I am sure that the collaboration will lead to fruitful research and knowledge exchange between the institutes.

I had the opportunity to interact with HBNI faculty and students during my visits to several CIs during this period. I assure you that all the suggestions given by the faculty and students will be considered and implemented in due course of time. I also take this opportunity to congratulate HBNI faculty members and student who have received awards, academic honors and fellowship during this period.

We keenly look forward to your comments and suggestions for further improving the newsletter.



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## Events at the Central Office

### Independence Day Celebration

The 77<sup>th</sup> Independence Day was celebrated with great zeal and patriotic fervour at HBNI on August 15, 2023 by hoisting of the National Flag by Prof. U. Kamachi Mudali, VC, HBNI in the presence of HBNI functionaries and staff. In his address to the gathering, Prof. Mudali paid homage to the freedom fighters and great national leaders whose brave and untiring efforts liberated India from the clutches of slavery and paved the way to a prosperous and progressive nation making India a global leader in several domains. He also recalled the contributions of founders, mentors, and predecessors, who have been instrumental in the birth, growth, and successes of the Homi Bhabha National Institute (HBNI). He briefed about the achievements and initiatives taken by HBNI during the past year and said that as a VC of HBNI, he will ensure that the institute continues to enhance its academic performance and work towards achieving its mandate by introducing new innovative programs and policies. The program ended with the recitation of National Anthem.



*Prof. U Kamachi Mudali, VC, HBNI hoisting the National Flag (left) and addressing the gathering (right) on 77<sup>th</sup> Independence Day celebration at HBNI*

### Teachers' Day Celebration

Teachers' Day was celebrated at the Central Office on September 5, 2023 in a hybrid mode. Prof. J. B. Joshi, Distinguished Emeritus Professor, HBNI and Former Director, Institute of Chemical Technology, Mumbai graced the occasion as Chief Guest.

Prof. P. D. Naik, Dean, HBNI welcomed the gathering. Prof. U. Kamachi Mudali, VC, HBNI gave the opening remarks and emphasized the role of the teachers as “nation builders.”

Prof. J. B. Joshi gave an inspiring and motivating talk on the topic, “Generation of National Wealth through Science and Technology.” In his talk, he emphasized the need to develop

technologies for the growth of the nation and serving the society by converting scientific knowledge to wealth. He shared many innovative ideas and success stories from his own research work.

The program concluded with vote of thanks proposed by Prof. P. C. Selvin, Registrar, HBNI.



*Prof. J. B. Joshi delivering his talk on the occasion of celebration of Teacher's Day at HBNI*

### **Workshop on Publishing Books and Research Papers conducted at HBNI**

HBNI conducted a one-day workshop on the topic “Publishing Books and Research Papers” for the benefit of its students and faculty across all CIs/OCC in hybrid mode on September 12, 2023. The major aim of the workshop was to help in developing/enhancing skills for writing technical papers and books for the participants which included HBNI doctoral students, post-doctoral fellows, and faculty members across all its CIs/OCC. Ms. Swati Meherishi, Editorial Director at Springer Nature through her talk enlightened the participants about the publication process for publishing books. In her talk, she also gave an overview of basic scientific writing principles, a detailed description of the sections of an original research article, and practical recommendations for selecting a journal and responding to peer review comments. A large number of HBNI students and faculty members attended the workshop both in offline and online mode and benefitted from it.



*Ms. Swati Meherishi, Editorial Director, Springer Nature giving her talk*

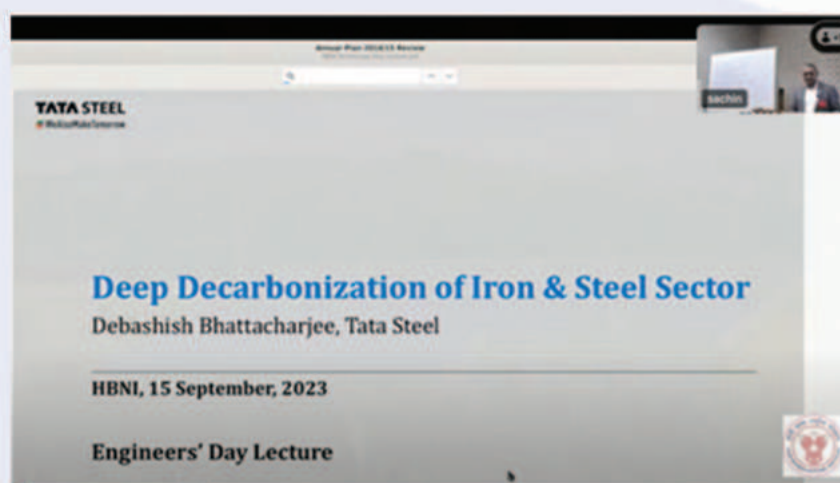
## Celebration of Engineer's Day at HBNI

HBNI celebrated the Engineer's Day on September 15, 2023 at D-Block auditorium, Bhabha Atomic Research Centre, Mumbai in hybrid mode. Dr. Debashish Bhattacharjee, Vice President, Technology and R&D, Tata Steel Limited was the Chief Guest on the occasion.

Prof. P. D. Naik, Dean HBNI welcomed the gathering. In his introductory remarks, Prof. U. Kamachi Mudali, VC, HBNI highlighted the importance of engineering and industry, in particular steel industry for the development and growth of the nation and fulfilling certain sustainable development goals. Dr. Bhattacharjee gave an interesting talk on the topic, "Deep Decarbonization of Iron and Steel," in which he elaborated upon the needs, challenges faced and strategies used for decarbonization of iron and steel.



*Prof. P. D. Naik welcoming the gathering (left); Prof. U. Kamachi Mudali giving Introductory Remarks (right)*



*Dr. Debashish Bhattacharjee delivering his talk*

Prof. Naveen Kumar, Associate Dean, HBNI, proposed the vote of thanks.

## हिन्दी दिवस समारोह

हिन्दी दिवस के अवसर पर होमी भाभा परिषद कक्ष में दिनांक १४ सितम्बर 2023 को दोपहर 3:00 बजे एक समारोह का आयोजन किया गया। इस अवसर पर डॉ. वी. सी. साहनी, पूर्व निदेशक, आरआरसीएटी और पूर्व निदेशक, भौतिकी समूह, बीएआरसी मुख्य अतिथि थे।

समारोह की शुरुआत प्रोफेसर बी. के. नायक, अध्यक्ष, ओएलआईसी, एचबीएनआई द्वारा स्वागत भाषण देने के साथ हुई। तत्पश्चात्, प्रो. यू. कामाची मुदली, कुलपति, एचबीएनआई ने सभा को संबोधित किया और अपने भाषण में हिंदी भाषा के प्रचार एवं प्रसार के महत्व पर जोर दिया। मुख्य अतिथि डॉ. वी. सी. साहनी ने हिंदी दिवस के उपलक्ष्य पर सभा को सम्बोधित किया और आरआरसीएटी के निदेशक के रूप में अपने अनुभव और दिलचस्प किस्से साझा किए। उन्होंने 13 सितंबर को एचबीएनआई द्वारा आयोजित हिंदी श्रुतलेखन और अंग्रेजी-हिंदी अनुवाद प्रतियोगिता के विजेताओं को पुरस्कार भी वितरित किए। श्री बी. के. शर्मा, सचिव, ओएलआईसी, एचबीएनआई ने धन्यवाद प्रस्ताव प्रस्तुत किया और राष्ट्रगान के गायन के साथ कार्यक्रम का समापन हुआ।



परिषद कक्ष में हिंदी दिवस समारोह में भाग लेते एचबीएनआई के पदाधिकारी एवं कर्मचारी



सभा को सम्बोधित करते हुए डॉ. वी. सी. साहनी (बाएं) हिंदी प्रतियोगिता की विजेता डॉ. वी. सी. साहनी से पुरस्कार प्राप्त करते हुए (दाएं)

## Dr. Sekhar Basu Memorial Program

HBNI organized a Memorial Program in honor of late Dr. Sekhar Basu, Former Secretary, Department of Atomic Energy and Former Chairman, Council of Management, HBNI on September 25, 2023 in hybrid mode. Shri S. K. Sharma, Former Chairman and Managing Director, Nuclear Corporation of India Limited (NPCIL) was the chief guest on the occasion. The program was attended by Dr. R. Chidambaram, Former Principal Scientific Advisor, GoI and Former Secretary, DAE, Prof. R. B. Grover, Emeritus Professor, HBNI, Shri A. K. Anand, Former Director Reactor Projects Group BARC, and Mrs. Basu, wife of late Dr. Sekhar Basu along with all HBNI officials and staff.



*Dignitaries and HBNI staff present on Dr. Sekhar Basu Memorial Program (left);  
An audio-visual feature on Dr. Basu being shown on the occasion (right)*

The program began by Prof. P. D. Naik, Dean, HBNI welcoming the gathering. A power point presentation highlighting the life and works of Dr. Sekhar Basu was shown on the occasion. Shri S. K. Sharma delivered Dr. Sekhar Basu Memorial lecture titled, “Role of Nuclear Power in Decarbonization of Energy Mix.” The big takeaway from his talk was that the nuclear power has a vital role to play in decarbonization of power sector and thus helping to address the global climate emergency. While electricity generation is responsible for close to 40% of the global CO<sub>2</sub> emissions produced by the energy sector, the other 60% or so is generated primarily from the use of fossil fuels in industry, heating in buildings and transport. Hard-to-abate areas require us to shift to low carbon fuels such as hydrogen. Of all the low carbon energy sources, nuclear power is one of the few that can generate electricity, heat, and hydrogen. However, new innovative technologies need to be explored which would help nuclear power plants to operate safely, sustainably, and cost-effectively for nuclear power to play a critical role in reaching net zero by 2050.



*Prof. U. Kamachi Mudali addressing the gathering*



*Shri S. K. Sharma delivering his talk*

### **Observance of “Swachhata Hi Seva” Campaign**

HBNI organized various activities during the period from September 15 to October 2, 2023 under the “Swachhata Hi Seva” campaign. As a part of campaign, the Swachhata pledge was taken by all the staff and officials of HBNI on September 26, 2023 making a commitment to uphold cleanliness and environmental integrity. A street play titled, “Itne Se Kya Hoga,” was staged on September 27, 2023 to raise awareness about maintaining cleanliness in and around our surroundings to live healthy and better lives.

The institute also led a profound cleanliness drive on October 1, 2023 wherein HBNI officials and staff came together to clean the areas in and around HBNI administrative office, garden areas, and other common spaces. Flex banners with slogan “Swachhata Hi Seva” were displayed and a plantation drive was also carried out to plant herbal plants.



*Prof. P. C. Selvin, Registrar and Prof. H. S. Mishra administering Swachhata Pledge to HBNI Officials and staff on September 26, 2023*



*Street play titled “Itne Se Kya Hoga” being performed at HBNI on September 27, 2023*

### **Observance of Vigilance Awareness Week**

As per the directives of the Central Vigilance Commission, HBNI observed Vigilance Awareness Week from October 30 to November 5, 2023, on the theme of "Say No to Corruption, Commit to the Nation." The observance of Vigilance Awareness Week 2023 commenced with the integrity pledge being taken by HBNI officials and staff on October 30, 2023. During the awareness week, many events were held at the institute which included, (a) Essay writing competition in English and Hindi on the topic, “Say No to Corruption, commit to the Nation”, (b) Invited Talk by Shri Sanjeev Mishra, Assistant Director, Intelligence Bureau on “Ethics and Integrity in Governance”, (c) Slogan writing competition in English and Hindi



(d) Extempore speech on the topic, “Is Corruption Inborn or Learnt”, (e) Rangoli competition and (f) Poster competition. The prize distribution function to award the winners of each competition was held on November 3, 2023 and Prof. Tapan Kumar Ghanty, Director, Biosciences Group, Bhabha Atomic Research Centre gave away the prizes.



*HBNI officials and staff undertaking Integrity pledge on October 30, 2023*



*Talk by Shri Sanjeev Mishra in progress*



*Participants of Rangoli competition with their rangolis*



*Participants of poster competition displaying their posters*

## News Updates

- ◆ Shri Vivek Bhasin has assumed the charge of Director, Bhabha Atomic Research Centre, Mumbai with effect from December 1, 2023 and consequently become the member of the Council of Management, Academic Council and the Planning and Monitoring Board, HBNI
- ◆ Prof. Sudeep Gupta has assumed the charge of Director, Tata Memorial Centre, Mumbai with effect from December 1, 2023 and consequently become the member of the Council of Management, Academic Council and the Planning and Monitoring Board, HBNI
- ◆ Ms. Seema Jain has become Member (Finance), Atomic Energy Commission and consequently has become a member of the Council of Management, HBNI.
- ◆ Prof. Jayaram N. Chengalur Director, TIFR has been inducted as a member of the Planning and Monitoring Board, HBNI.
- ◆ Prof. Siva Umopathy, IISC, Bengaluru, Prof. Manoj K. Tiwari, Director, IIM, Mumbai, Prof. Devang Khakhar, IIT, Bombay, Prof. S. M. Yusuf, BARC, Dr. Pankaj Chaturvedi, TMC, Mumbai, and Prof. A. Srinivasan, NISER, Bhubaneswar have been inducted as the members of Academic Council, HBNI.
- ◆ HBNI has signed a MoU with Defense Institute of Advance Technology, Pune and renewed the MoUs with Institute of Science, Bengaluru and Indian for Chemical Technology, Mumbai.
- ◆ Consequent to the DAE according approval to HBNI for the construction of two additional wings in the existing Training School Complex, the work order for the construction work has been placed with M/s Renjin Constructions, Mumbai.

## Courses Conducted by HBNI

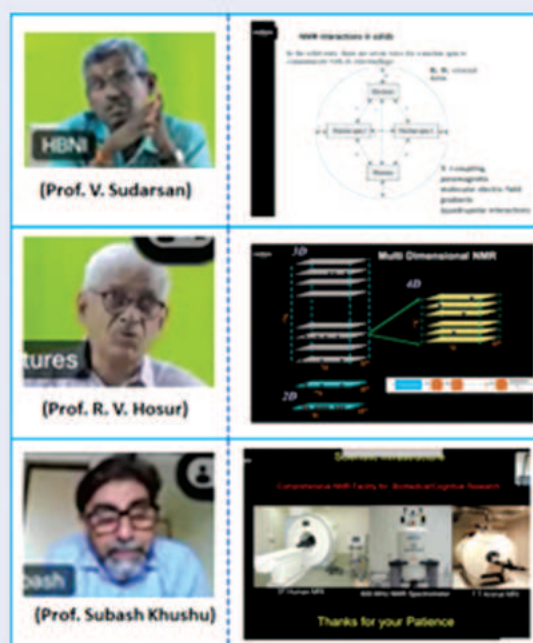
During the period of July 2023 to December 2023, three online courses were organized by HBNI. The details about these courses are given below.

### Online Course on Advanced Materials Chemistry

An online course on “Advanced Materials Chemistry” was conducted by HBNI from June 12 to September 14, 2023. Prof. A. K. Tyagi, Director, Chemistry Group and Senior Professor HBNI, was the course director. The broad topics covered under the course included general materials chemistry, characterization techniques, major trace and ultra-trace chemical analysis techniques, and functional materials. Sixty students from CIs/OCC of HBNI and other educational institutes from all over India attended the course and benefitted from it.

### Online Course on Advanced NMR Spectroscopy, Part-II

HBNI conducted Part-II of the online interactive course on “Advanced NMR Spectroscopy” during July to December 2023 (Part-I was conducted during January-May’23). The complete course was coordinated by Prof. Haridas Pal, Associate Dean HBNI and Raja Ramanna Fellow. Four major topics were covered in the Part-II of the Advanced NMR Spectroscopy course, namely, (i) the basic concepts and applications of solid state NMR, (ii) biomolecular NMR (iii) NMR in drug discovery and (iv) basics & clinical aspects of magnetic resonance imaging (MRI). Research scholars and scientists from different academic institutes across the country participated in this course to get benefit of it for their future scientific endeavours.



*Faculties delivering their lectures in the Advanced NMR Spectroscopy Course, Part-II*

## Online Course on Disaster Management - Challenges in CBRN Emergencies, Part-I

An online course on “Disaster Management-Challenges in CBRN Emergencies-Part-I” is being conducted by HBNI presently. Prof. H. S. Mishra, Raja Ramanna Fellow, HBNI is the course director. This course is intended to contribute to Chemical, Biological, Radiological & Nuclear Emergency Management (CBRN EM) by imparting education, knowledge, techniques, and the means to attain the right approach for accomplishing the CBRN Disaster Resilient set up. The course was formally inaugurated by Prof. Anil Kakodkar, Chancellor, HBNI and Former Chairman, AEC and Secretary, DAE on October 17, 2023. Prof. Kakodkar appreciated the HBNI initiative to conduct a course on CBRN Emergency Management and stressed for an in-depth research and risk analysis on the subject. Speaking on the occasion, Prof. U. Kamachi Mudali, VC, HBNI mentioned about the provisions of Disaster Management Act 2005 and the need for percolation of knowledge and information on a wider scale.

Eighty participants including science & engineering graduates, emergency handlers from nuclear plants, cement industries, professionals and scientists from CIs and OCC of HBNI and two foreign participants are attending the course presently.



*Prof. U. Kamachi Mudali giving introductory remarks (top);  
Prof. Anil Kakodkar giving inaugural address (bottom);*

## Events at CIs/(OCC)

### Interaction meeting of Prof. U. Kamachi Mudali, Vice Chancellor, HBNI with faculty and students at various CIs/OCC

During the period of July 2023 to December 2023, Prof. U. Kamachi Mudali, VC, HBNI held interaction meetings with HBNI faculty and students of various CIs of HBNI, viz., BARC, RRCAT, IGCAR, IMSc, IPR, SINP, TMC and VECC. Associate Deans in respective disciplines also accompanied him for the interaction sessions and gave a brief presentation about various aspects of HBNI academic activities and discussed how the faculty can support the functioning and growth of HBNI towards accreditation, ranking and overall performance. Prof. U. Kamachi Mudali addressed the gatherings of HBNI faculty and students and shared his words of wisdom with them. Later, Prof. U. Kamachi Mudali and associate deans satisfactorily addressed the queries of faculty members and students related to academic, research and the support (foreign travel assistance, internship, and industrial training, etc.) from HBNI. The faculty and students also suggested introduction of courses related to development of entrepreneurial skills among HBNI students and exploring the possibility of MoU between foreign universities and HBNI for the student exchange program. Glimpses of interaction meeting of VC, HBNI at various CIs/OCC of HBNI are given below.



*Glimpses of interaction meeting of Prof. U. Kamachi Mudali, VC, HBNI with HBNI faculty and students at various CIs of HBNI*

### 77<sup>th</sup> Independence Day celebration at RRCAT

On the 77<sup>th</sup> Independence Day 2023, Dr. Shankar V. Nakhe, Director RRCAT, hoisted the National Flag in the Central Lawn near the Administration Building, RRCAT. Dr. Shankar V. Nakhe also delivered a speech on the occasion. In his address, Dr. Nakhe spoke about recent scientific, technical, and other achievements of the Centre.



*Dr. Shankar V. Nakhe, Director RRCAT, hoisting the National Flag*

### Harish-Chandra Centenary Celebration at HRI

The centenary celebration of HRI was held during October 2-18, 2023 and the centenary celebration programs included (a) Workshop on “Representation Theory of Real Lie Groups and Automorphic Forms”, (b) International Conference on “Representation theory and Harmonic Analysis”, and (c) Physics Activity. The details of the events are given below.

#### (a) Workshop on “Representation Theory of Real Lie Groups and Automorphic Forms”

The workshop was organized at HRI from October 2, 2023 to October 7, 2023. There were around 75 participants from all over India including seven speakers from India and one international speaker. The topics covered in the workshop included: (1) Compact Lie groups, their representations and Weyl Character formula; (2) Classification of all irreducible representations of  $SL_2(\mathbb{R})$ , Plancherel theorem for  $SL_2(\mathbb{R})$ ; (3) Algebraic representation theory of real Lie groups through the introduction of  $(G;K)$  modules; (4) Admissibility theorems, Character theory, introduction to Harish-Chandra's works on discrete series, and their characters; (5) Cohomological induction and (6) Notion of Automorphic representations due to Harish-Chandra.



*Participants of workshop on “Representation Theory of Real Lie Groups and Automorphic Forms”*

### **(b) International conference on “Representation Theory and Harmonic Analysis”**

The international conference on “Representation Theory and Harmonic Analysis” was organized at HRI from October 9, 2023 to October 14, 2023. Several eminent Mathematicians (national and international) attended the conference. This was an excellent exposure to the Indian mathematicians. Covered topics included Representation theory of Real Lie groups, Harmonic analysis, Automorphic forms, Langlands correspondence etc. There were around 100 participants including 4 Indian speakers and 17 international speakers.



*Participants of International conference on Representation Theory and Harmonic Analysis*

### **(c) Physics Activity under Harish Chandra Centenary Celebration**

Physics Activity Program was successfully organized in HRI under Harish-Chandra Centenary Celebration from October 16, 2023-October 18, 2023. The objective of the activity was to

promote/enhance the skill and knowledge related to physics among the students. Fourteen national and international speakers participated and shared their experiences. This program was very fruitful for the students as they learnt through experiments and improved their observation skills.

### **Theme Meeting on Super Conducting Cyclotron: Experiments & Applications at VECC**

VECC organised a two days theme meeting on “Superconducting Cyclotron: Experiments & Applications (SUCCESS- 2023)” during the period December 21-22 2023 to announce the availability of heavy ion beams from India's first Superconducting Cyclotron (SCC) commissioned at this centre. The meeting was held in hybrid mode where around 120 researchers participated which included PhD students, postdoctoral fellows, and faculty members from BARC, SINP, Inter University Accelerator Centre, UGC DAE CSR Kolkata, Tata Institute of Fundamental Research, Bose Institute, and ISM Dhanbad.

There were eighteen presentations from eminent experts in different fields which includes accelerator physics, nuclear Physics, material science, chemistry, and biology. VECC scientists gave presentations on the K500 Cyclotron, experimental facilities available and details of the experiments which are being carried out.

A special session was also organised for PhD students, postdoctoral fellows, and young faculty members (age below 35 years) to present new and innovative experimental proposals using SCC beam. Out of the seven proposals presented, three best proposals received from Visva Bharati, BARC and ISM Dhanbad were selected and awarded by a bench of experts.



*Participants of the theme meeting SUCCESS-2023*



## Conferences/Workshops/Schools organized at CIs/OCC

### (a) School on Glass in Nuclear Extremes (SGNE-2023) at BARC

An international workshop entitled “School on Glass in Nuclear Extremes (SGNE-2023)” was organized jointly by the Department of Atomic Energy, India and Engineering and Physical Sciences Research Council (EPSRC), UK, at the DAE Convention Centre, Anushaktinagar during 27-30 November 2023. The event was inaugurated by the Prof. U. Kamachi Mudali, Vice Chancellor, HBNI Mumbai as Chief Guest of the event, along with Sir Robin Grimes, BCH Steele Chair of Energy Materials, Imperial College, UK, Smt. Smitha Manohar, Director, Nuclear Recycle Group, BARC, and Dr G. Sugilal, Head, FRD and Convener, SGNE 2023. The workshop deliberated 22 lectures including two plenary lectures and 13 presentations from research students in thirteen technical sessions. More than 100 delegates including 30 delegates from various parts of India and 3 delegates from UK attended the event.



*Dr. Smita Manohar, Prof. U. Kamachi Mudali, Sir Robin Grimes and Dr. G. Sugilal (from left to right) releasing the proceedings of the workshop*

### (b) Annual Session of the National Academy of Sciences, India (NASI) at BARC

BARC organized the 93rd Annual session of the National Academy of Sciences, India (NASI) during December 3-5, 2023 with a theme of “India Secure @ 75” promoting “Atmanirbhar Bharat” in the domains of energy, space, cyber, health, food and agriculture, where pioneers and policymakers of the country in these areas participated and deliberated. Prof. S. M. Yusuf, Director Physics Group, BARC, and Council member of NASI served as the Convener of the event. A total of about 600 participants from various Indian universities and institutes have participated in this event. An exhibition of the BARC technologies having high societal importance was also showcased. Dr. Anil Kakodkar, Chancellor, HBNI delivered a keynote lecture on “Role of Nuclear energy in India's clean energy future” during this occasion.



*Dignitaries present during the Annual Session of NASI, Prof. S.M. Yusuf, Prof. B. Bhargava, President, NASI, Shri Viven Bhasin, Director, BARC, Dr. R. Chidambaram, Former PSA to GoI & Former Chairman, AEC, and Shri S. Somanath, Chairman ISRO (left); Prof. S. M. Yusuf welcoming the gathering (middle,) Prof. Kakodkar giving Keynote address (right)*

### **(c) Indian Conference on Carbon Materials 2023 (ICCM 2023) at BARC**

The "Indian Conference on Carbon Materials 2023 (ICCM 2023)" was held at the DAE Convention Centre, Anushaktinagar during November 30 to December 2, 2023 by the Maharashtra Chapter of the Indian Carbon Society, in partnership with the Materials Group of Bhabha Atomic Research Centre, Mumbai. The conference was inaugurated in the august presence of Prof. Ashutosh Sharma, President, INSA, as the Chief Guest and Prof. U. Kamachi Mudali, Vice Chancellor, HBNI, as the Guest of Honour, who delivered an enthralling address that underscored the profound significance of carbon materials in both societal and nuclear contexts. The conference provided an exceptional platform for researchers, scientists, engineers, and practitioners to exchange their ideas, to share their discoveries, and to forge collaborations. To encourage the students, American Chemical Society provided 8 best oral and poster presentation awards with certificates and cash prizes. The Indian Carbon Society presented Best Thesis Award in the field of carbon to two PhD scholars. The B. D. Bangur Award for the individual contribution in carbon science and the L.N.J. Award for the group achievement in developing technology for industries were presented by the President of Indian Carbon Society.



*Dignitaries lighting the lamp during the inaugural session of the conference (left) and releasing the conference proceedings (right)*

### (d) National Workshop on Atomistic Modeling of Molecules and Materials at BARC

A Four-day DAE-BRNS national workshop on “Atomistic Modeling of Molecules and Materials (AMMM-2023)” was organized at Multipurpose Hall, TSH, BARC, Mumbai during December, 11-14, 2023 by Chemical Engineering Group, BARC in association with Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE) and Society for Atomistic and Continuum Modeling (SACM). The welcome address was given by Dr. Sulekha Mukhopadhyay, Head, ChED. Shri K. T. Shenoy, Director, ChEG and Chairman, AMMM-2023 delivered the introductory remarks. Prof. A. K. Tyagi, Director Chemistry Group and Bio-science Group was the chief guest on the occasion and delivered the inaugural address. About 175 delegates from DAE and non-DAE institutes have participated in this meeting. Total 36 invited lectures and 56 flash presentation were delivered in the atomistic modeling field which comprises electronic structure calculations such as density functional theory, equilibrium and non-equilibrium statistical mechanics, molecular dynamics and Monte Carlo simulations. Machine Learning driven atomistic modelling was also discussed. Experts from various institutes like IISc, TIFR, IACS (Kolkata), JNCASR, IITs (Mumbai, Chennai, Patna, Hyderabad, Jodhpur), ICT (Bhubaneswar), IISER (Pune), CEBS (Mumbai), IGCAR (Kalpakkam) and BARC made the presentation on these various aspects of the atomistic modeling.



*Prof. A. K. Tyagi lighting the lamp during the inaugural session of the AMMM-2023*



*Participants of the National Workshop on AMMM-2023 organized at BARC Mumbai*

**(e) Inter IISER-NISER Math Meet at NISER**

The Inter IISER-NISER Mathematics Meet (IINMM) is a joint initiative of all the IISERs and NISER. The meet was organized at NISER during September 29-October 1, 2023 with an aim to bring together researchers from the IISERs and NISER on a common platform to exchange ideas and promote collaborative research in all areas of Mathematics. It also gave an opportunity to the PhD students and PDFs of these institutes to showcase their research works, interact with other researchers in related fields and explore the possibility of collaborative research.



*Participants of Inter IISER-NISER Math Meet*

**(f) Annual Conference on Quantum Condensed Matter at NISER**

The annual conference on Quantum Condensed Matter was held at NISER during November 27-30, 2023. Faculty members, postdoctoral researchers, and graduate students from educational institutes from all over India and working in the field participated in the conference. The conference included both invited and contributed talks, with parallel sessions running concurrently over three days. In addition, poster sessions were also held where young research scholars got the opportunity to showcase their research work to experts in the field and learn from them. The conference brought together a diverse group of researchers, providing opportunities for collaboration and networking, and inspiring new ideas and directions in the field of quantum condensed matter.



*Participants of Annual Conference on Quantum Condensed Matter*

### **(g) Advanced 21-Cm Cosmology School and Workshop at NISER**

The 21-cm line from the neutral hydrogen (HI) atom is an important observational probe of the evolution of the universe from about 0.4 million years after the Big Bang until today. Keeping in view of the ongoing global efforts for detecting the cosmological 21-cm signal, there is an active participation of the Indian community working on several aspects of theory, simulation, and observations of these epochs. In view of this, the Indian SKA Science Working Group in cosmology organized the “Advanced 21-Cm Cosmology School and Workshop” at NISER during December 11-21, 2023. The aim of the school and workshop was to facilitate the exchange of updates on ongoing research, foster new collaborations and encourage PhD students and early post-docs to share their work and gain exposure in the field. The school consisted of a series of theory lectures, hands-on demonstrations, and discussions on different methods of analytical modelling, simulations, observations, data reduction and statistical inference for multi-wavelength observations of the early phase of our Universe.

### **(h) 19<sup>th</sup> National Research Scholars Meet organized at ACTREC, TMC**

The doctoral students of batch 2020 at ACTREC organized “National Research Scholars Meet (NRSM)” during December 7-8, 2023 successfully. Prof. P. Balram, DST-YOS Chair Professor, National Centre for Biological Sciences, Bengaluru, and Former Director, IISc, Bengaluru was the Chief Guest on the occasion and other dignitaries present included Dr. Sudeep Gupta, Director, TMC, Dr. Prasanna Venkatraman, Deputy Director, CRI, Dr. Navin Khattry, Deputy Director, CRC, and Prof. P. D. Naik, Dean, HBNI. The Keynote lecture was given by Shri. Nilesh Desai, Director SAC, ISRO on “India’s Space Program and Historic

Journey to Moon: Chandrayan-3. The meet was attended by over 400 delegates from all over India and several eminent speakers, viz., Dr Deepa Subramanyam (NCCS, Pune), Dr. Arnab Mukhopadhyay (NII, Delhi), Dr. Saikat Chowdhury (CCMB, Hyderabad), Dr. Anita Borges (Raheja Hospital), Dr. Shubha Tole (TIFR, Mumbai), Dr. Roop Mallik (IIT Bombay), and international speakers from Kanazawa University delivered lectures in the meet. NRSM 2023 also had a special category of lectures by “Young Scientist Speakers” to encourage current PhD students and lectures were delivered by Dr. Indrajit Sahu and Dr. Divya Rathod in this segment. A colorful cultural program by doctoral students of the institute and artists was also a part of NRSM-2023.



*Dignitaries releasing the Souvenir for NRSM (left); Keynote lecture by Shri Nilesh Desai in progress (right)*

## Scientific Outreach Activities Conducted by CIs/OCC

### Scientific Outreach Activities conducted by IPR

During the period of July 2023 to December 2023, IPR organized academic visits to IPR and conducted outreach activities for students of various schools and science and engineering colleges all over India. IPR also organized plasma exhibitions at educational institutes all over India with an objective to create awareness about plasma and its applications among the students.



*Students of St. Francis School, Dhupdhara, Goalpara, Assam visiting CPP-IPR, July 5, 2023*



*Students of Ahmedabad University, Ahmedabad during their visit to IPR, October 25, 2023*



*Plasma exhibition at Periyar Science & Technology Centre, Chennai, during July 3-7, 2023*



*Plasma exhibition at Vivekananda College of Arts, Science and Commerce, Puttur, Karnataka during August 30-September 1, 2023*

## Awards and Academic Honors Received by HBNI faculty

1. Prof. U. Kamachi Mudali, VC, HBNI was honoured with Lifetime Achievement Award by Ministry of Steel, Government of India at the National Metallurgists Awards 2023. He has also been awarded Gold Medal of Society of Materials Chemistry (SMC), India.
2. Prof. A. K. Tyagi, BARC, has been elected as a Fellow of Indian National Science Academy. He has also been elected as a Fellow of The World Academy of Sciences (TWAS).
3. Prof. S. M. Yusuf, BARC has been awarded with J C Bose fellowship by Science and Engineering Research Board.
4. Prof. H. N. Ghosh Director, NISER has been elected as a Fellow of the Indian National Academy of Engineering.
5. Prof. Bedangadas Mohanty has been awarded with the "Honorary D.Sc. degree" as a testament to his dedication to the nation and pioneering research by the Governor of Odisha, who serves as the Chancellor of Sambalpur University.
6. Dr. Subhasis Chattopadhyay, VECC has been appointed as a member of the prestigious International Joint Scientific Council (JSC) of GSI and Facility for Antiproton and Ion Research (FAIR) at Darmstadt, Germany. FAIR is the largest upcoming International basic science facility and India is the 3rd largest contributor in construction of this facility.
7. Prof. Sandip Basu, RMC-BARC, HBNI, was conferred the 'Fellow of the National Academy of Medical Sciences' by the National Academy of Medical Sciences (NAMS), in recognition of his contributions in the field of Nuclear Medicine and towards the advancement of Medical Sciences.
8. Prof. Archana Sharma, BARC has been elected as a Fellow of National Academy of Sciences in the year 2023.
9. Dr. Raghvendra Tewari, BARC is the recipient of IIM G. D. Birla Gold Medal awarded by Indian Institute of Metals.
10. Prof. Sugilal Gopalakrishnan, BARC has been elected as a Fellow of Indian National Academy of Engineering.
11. Prof. Satyaranjan Santra, BARC has been elected as a Fellow, Maharashtra Academy of Sciences in December, 2023.
12. Dr. Dimple Dutta, BARC has been awarded with MRSI medal of Material Research Society of India. She also has been awarded with Silver Medal of the Society of Materials Chemistry (SMC) India. Her name features in the list of "75 women in Chemistry-She is" brought out in association with Office of Principal Scientific Adviser to Government of India and Royal Society of Chemistry, 2023.



13. Dr. Santosh Kumar Gupta, BARC has been elected as a Fellow of Maharashtra Academy of Sciences, and Indian Chemical Society He has been admitted as a Fellow of Royal Society of Chemistry.
14. Dr. Ashish Kumar Srivastava, BARC has been awarded with Fulbright-Nehru Academic and Professional Excellence Fellowship for 2023-24.
15. Dr. Dhruv Kumar Singh, BARC has received Vaswik Award.
16. Dr. Mayanak K. Gupta, BARC has become INSA Associate Fellow 2023.
17. Dr. Prabhat K. Singh, BARC has been elected as a Fellow of Indian Chemical Society, Fellow of Maharashtra Academy of Sciences, Associate Fellow of Indian National Science Academy. in the year 2023. He has also been admitted as a Fellow of Royal Society of Chemistry and elected as a Young Affiliate of the Third World Academy of Sciences.
18. Prof. Debanik Roy, BARC has received WAAH Science Laureate Awards 2023 for his project titled, "Development of an Indigenously-Designed feeding Robotic Arm for the Indian Old Age People: A Synchronization of Kinematics, Machine Vision, and 3D Printing Technology. He shares this award with Dr. Reena Trivedi and Shri Priyam Parikh.
19. Prof. Punita Batra, HRI has been elected as a Fellow of National Academy of Sciences, India.
20. Dr. Nirav I. Jamnapara, IPR has received a Fellow award from ASM International, USA, bearing the citation "For sustained contributions to the field of plasma materials processing, coatings and promotion of plasma technologies for use by industry and society" on 17th October 2023.
21. Prof. Palok Aich, NISER is inducted as one of the Directors of MicrobioTx Health Pvt. Ltd.
22. Prof. Chidambaram Gunanathan, NISER has become Editorial Board Member of Journal of Chemical Sciences for the period Jan-2023 to Dec-2025.
23. Dr. Subhadip Ghosh, NISER has received honor as Early Career Advisory Board Member of Chemical Physics Impact, an Elsevier Journal.
24. Dr. Pranay Kumar Swain, NISER has been inducted to the Editorial Board of Educational Research and Evaluation (Taylor and Francis) in October 2023.
25. Dr. Bishnu Prasad Biswal, NISER has been selected for the "Odisha Young Scientist Award" for the year 2021. He has also received Prof. R. C. Tripathi Memorial Award by OCS, Odisha.
26. Dr. Rekha Biswal, NISER has been selected for the "Odisha Young Scientist Award" for the year 2022.

27. Dr. Pankaj Chaturvedi, TMC has received Lifetime Achievement Award from Association of Maxillofacial Surgeons of India. He has also received Global Medicine Oration, American Head and Neck Society, and Best Poster Award at AHNS 11th International Conference on “Head and Neck Cancer” held at Montreal, Canada, during July 8-12, 2023.
28. Dr Jyoti Anand Kode, ACTREC-TMC received scholarship from Women Graduates Union, Mumbai as partial support to attend and present work on "Immunoectoenzyme CD26 expression in donor harvest and specific immune subsets correlate with clinical outcomes post ASCT: Cues for improved transplantation therapeutics" at the 18th International Congress of Immunology (IUIS Congress 2023), held at Cape Town, South Africa, during 27th November to 2nd December, 2023. She has also received recognition as "Outstanding Editorial Board Member" and was chosen as the cover person for the latest issue of World Journal of Stem Cells (WJSC) by Baishideng Publishing Group (BPG) Inc., USA, 11th August, 2023.
29. Dr. Manasi Bavaskar, TMC has received Best Video Presentation Award for her video titled “Transfacial approach for retromolar trigone tumors and reconstruction with Nasolabial flap” at MIDCOMS conference held at Loni, Maharashtra in July 2023. She has also received appreciation for her oral Presentation on ‘Treatment of Adenoid Cystic Carcinoma (ACC) of Head & Neck with Distant Metastasis: A Retrospective Analysis’ at International Academy of Oral Oncology, held at South Korea in November 2023.
30. Dr. Asawari Rath, BARC has received Best Presentation Award in Physical Sciences Category for her poster titled, “Laser based Isotope Production towards Self-reliance in Nuclear Medicine” presented at The National Academy of Science (NASI) conference held at Mumbai during December 3-5, 2023.
31. Dr. D. K. Chandraker, BARC has received Best Poster Award for his poster titled “Integral Thermal-hydraulic Test Facilities for Design Validation of Advanced Nuclear Reactors,” presented at Indian Nuclear Society’s International Conference (INSIC) held at Mumbai during December 12-15, 2023.
32. Dr. Gunjan Verma, BARC, has received Best Poster Award for her poster titled, “Silver-Impregnated Zeolite for Mitigation of Iodine,” presented at Indian Nuclear Society’s International Conference (INSIC) held at Mumbai during December 12-15, 2023.

## Awards and Academic Honors Received by HBNI Students

1. Shri Ramandeep Gandhi, BARC has received one of the Best Thesis Award for his thesis titled, "Surrogate reactions relevant for fission and fusion reactors" at 67<sup>th</sup> DAE Symposium on Nuclear Physics (SNP - 2023) held at Indian Institute of Technology Indore on December 9-13, 2023.
2. Ms. Laxmi Priya Meher, BARC received "Best Poster Award" for her poster titled, "Radiative lifetime of Lu I energy levels using Pump-Probe Spectroscopy" presented at the international Conference ICAMNOP-2023 held at Delhi Technological University, Delhi during December 20-22, 2023.
3. Ms. Richa Agrawal, BARC has received Best Poster Award from Royal Society of Chemistry in Material Advances for her poster titled, "Synthesis of Dual State Emissive b-Carboline Boron Complexes" presented at the International Conference on Optoelectronic and Bio-inspired Nanomaterials (ICOBIN) 2023, held at Indian Institute of Technology Roorkee during 4-6 Dec, 2023.
4. Ms. Niharika Nema Baijal, BARC has received the best participant award in the 4th hands on workshop on "Integrated OMICS" (Genomics, Proteomics and Bioinformatics) held at National Centre for Biological Sciences (NCBS), TIFR, Bengaluru, during August 28 to September 2, 2023.
5. Ms. Swati Bagul, BARC has received second prize for her oral talk titled, "Is Heart to Lung Ratio alone a reliable measure for cardiac amyloidosis in <sup>99m</sup>Tc-PYP scan," presented at 3<sup>rd</sup> World Congress on Cardiac Imaging & Clinical Cardiology held at Mumbai during October 6-8, 2023.
6. Ms. Pooja Negi, BARC has received New-Phytologist International Travel Grant award and presented a poster and oral talk titled, 'Physio-biochemical and metabolic reprogramming improved tolerance against combined heat and salt stress in radiation-induced sugarcane mutant M4209\*' at the New Phytologist Next Generation Scientists conference held at National university of Singapore, Singapore July 2-5, 2023.
7. Shri Krishna Kumar Yadav, IGCAR received first prize in SEM microscopy competition organized by The National Facility for Atom Probe Tomography (NFAPT) held at Indian Institute of Technology, on 16th July, 2023.
8. Ms. Charu Sharma, IGCAR has received Best Poster Award for her poster titled, "Thermal Neutron Irradiation Testing of a Cots Microcontroller," at the Indian Nuclear Society's International Conference, INSIC-2023, held at Mumbai, India during December 12-15, 2023.
9. Ms. Sandhyarani Sahoo, IoP has received Best Poster Award at the International Conference on Thin Film and Nanotechnology (ITCN-KCL23) held at Indian Institute of Technology, Madras during July 6-8, 2023.

10. Ms. Manisha Jha, IPR, has received "Shrimati Ranjana Pal Memorial Award" for the category "Best Paper in Antennas by Woman Researchers" for the paper titled "Pattern reconfigurability using plasma for beamsteering application at S-band" at the IEEE Microwaves, Antennas and Propagation Conference held at Ahmedabad during December 11-14, 2023.
11. Dr. Harshita Raj, IPR has received Best Poster Award for her poster entitled "Capacitor Bank-Based Power Supply Used for Shaped Plasma Operation in Aditya-U Tokamak, A Milestone in Indian Fusion Program" presented at DAE-BRNS National Symposium on High Voltage- Energy Storage Capacitors and Applications, held at Mumbai, during June 22-24, 2023.
12. Ms. Swarnima Singh, IPR has been awarded the 2023 PPCF/EPS/IUPAP Student Poster Prize for her poster titled, "Experimental observation of a triple point for a complex (dusty) plasma" presented at European Plasma Physics Conference 2023 (EPS 2023) held at Bordeaux, France during 3-7 July 2023.
13. Shri. Ram Krushna Mohanta, IPR has received Best Paper Award for his talk titled, "Effect of chamber pressure on the output properties of a DC plasma spray torch for VLPPS application" presented at the 12<sup>th</sup> edition of Asian Thermal Spray Conference (ATSC) held at IIT Madras from 2-4 November 2023. The talk was awarded the Best Paper Award at the ATSC 2023.
14. Shri Saptarshi Datta, NISER has received Best Poster Award in the experimental category at the 4<sup>th</sup> Heavy Flavour Meet, held at Indian Institute of Technology, Goa.
15. Ms. Sasmita Behera, NISER has received Best Poster Award at the 6<sup>th</sup> International Eco Summit held at Gold Coast, Australia.
16. Shri Abhisek Mishra, NISER has received Best Poster Award at the International Conference on Materials for Advanced Technologies 2023, held at Singapore.
17. Shri Varun Manilal and Ms. Dibya Pradhan Int-MSc students, NISER have received 1<sup>st</sup> and 3<sup>rd</sup> best poster prizes, respectively, for their posters presented at International Exoplanet Conference in Pune in August 2023.
18. Shri Swadhin Satapathy, NISER has received a special mention for his poster presentation on "Retrieval of sea surface temperature and atmospheric profiles from INSAT-3DR Comparing Bayesian Inference, 1D-Var, and Machine Learning" at the International SST Users' Symposium and Science Team Meeting organized by the Group for High-Resolution Sea Surface Temperature (GHRSSST) at Ahmedabad during October 16-20, 2023.
19. Ms. N Sneha, Integrated MSc student, NISER has won the second prize of Rs.20,000/- at the 35<sup>th</sup> All India DAE Essay Contest 2023 after being qualified to give an oral presentation at BARC on October 27, 2023 on the topic, "Applications of Laser and Plasma Technologies in Nuclear Fusion."

20. Ms. Nivedita Mitra, NISER, has secured first prize in poster presentation under the theme “Phages for Biotechnological and Industrial Applications” with the title, “Polymerisation of SopA requires the conformational change to SopA-ATP state and is mediated by the last C-terminus helix” at the International conference organized by Centre for Advanced Studies in Botany, University of Madras, in association with Water and Steam Chemistry Division, Bhabha Atomic Research Centre Facilities, Department of Atomic Energy, and Society for Bacteriophage Research and Therapy during September 28-30, 2023.
21. Ms. Avantika Gautam, RRCAT has received Best Poster Presentation award at the International Conference on Materials for Energy and Sustainable Development, held at Jawaharlal Nehru University, New Delhi, during October 27-29, 2023.
22. Ms. Sonali Pradhan, RRCAT has received Best Poster Award (Gold) for her poster titled, “Polymer based ferroelectric nanocomposite film for solar energy harvesting application,” at the 7<sup>th</sup> International Conference on Advanced Electromaterials, held at South Korea during October 31, 2023-November 3, 2023.
23. Shri Saleem Khan, RRCAT has received Best Poster Award for his poster titled, “A glimpse of exciton dynamics in Two-dimensional MoS<sub>2</sub>,” at Ultrafast Sciences – 2023 (UFS-2023) DAE-BRNS 10<sup>th</sup> Theme Meeting, held at CSIR-NPL, New Delhi during November 25-27, 2023.
24. Ms. Ranjana Rathore, RRCAT has received Best Poster Award for her poster titled, “Investigation of heat transport at GaP/Ge interface using ultrafast x-ray diffraction,” at the UFS-2023 (DAE-BRNS 10<sup>th</sup> Theme Meeting), held at CSIR-National Physical Laboratory, New Delhi, India during November 25-27, 2023.
25. Ms. Manasi Nagare, ACTREC-TMC has received Best Poster Award for her poster titled, “Delineating the crosstalk between innate immune inflammasome pathway, AML blasts and Bone Marrow microenvironment,” at the 50<sup>th</sup> Annual Meeting of Indian Immunology Society IMMUNOCON 2023, held at New Delhi, during October 5-8 October 2023.
26. Ms. Akhila George, ACTREC-TMC has received Best Poster Award for her poster titled, “Exploring ginger-derived phytochemical in regulating Inflammasome pathway in oral cancer management,” at the 1<sup>st</sup> National Symposium of Integrating traditional medicine with evidence-based medicine, held at ACTREC-TMC, Navi Mumbai, during September 21-22 2023.
27. Ms. Sneha Das, VECC has been awarded with one of the Best Poster Award for her poster titled, “In beam Spectroscopic Study of <sup>209</sup>At” at the DAE Symposium on Nuclear Physics, held at IIT Indore during December 9-13, 2023.

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# Core Values of Homi Bhabha National Institute





## होमी भाभा राष्ट्रीय संस्थान

### **Homi Bhabha National Institute**

( परमाणु ऊर्जा विभाग की एक सहायता प्राप्त संस्था और यूजीसी अधिनियम 1956 की धारा 3 के तहत विश्वविद्यालय माना जाता है )

( An aided institution of the Department of Atomic Energy and a Deemed to be University under section 3 of the UGC Act, 1956 )