



Annual Report
2022-23

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Council of Management

Shri K. N. Vyas, Secretary DAE & Chairman, AEC	Chairman
Prof. P. R. Vasudeva Rao / Prof. P. D. Naik, Vice Chancellor	Member
Shri Talleen Kumar, Member (Finance), AEC	Member
Prof. A. K. Mohanty, Director, BARC	Member
Shri Shankar V. Nakhe, Director, RRCAT,	Member
Prof. R. A. Badwe, Director, TMC	Member
Prof. Gautam Bhattacharyya, Director, SINP	Member
Prof. V. Ravindran, Director, IMSc	Member
Prof. Surendra Prasad, Former Chairman NBA & Former Director, IIT Delhi	Member
Prof. Mustansir Barma, Professor Emeritus, TIFR Centre for Inter-Disciplinary Sciences, Hyderabad	Member
Shri S. S. Sandhu, IAS, Additional Secretary, Department of Higher Education, MHRD, New Delhi / Shri Rakesh Ranjan, Additional Secretary (TE) Dept. of Higher Education, Min. of Education	Member
Prof. P. D. Naik, Dean, HBNI	Member
Prof. P. C. Selvin, Registrar, HBNI	Secretary

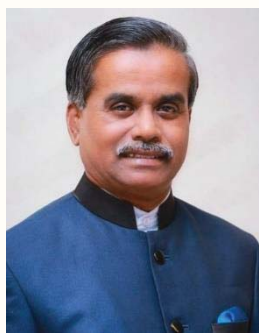
Academic Council

Prof. P. R. Vasudeva Rao / Prof. P. D. Naik, Vice Chancellor	Chairperson
Prof. A. K. Mohanty, Director, BARC	Member
Prof. B. Venkatraman Director, IGCAR	Member
Prof. R. A. Badwe, Director, TMC	Member
Prof. Sudhakar Panda, Director, NISER	Member
Prof. K. K. Nanda, Director, IoP	Member
Shri Shankar V. Nakhe, Director, RRCAT	Member
Dr. Sumit Som, Director, VECC	Member
Prof. Shashank Chaturvedi, Director, IPR	Member
Prof. Gautam Bhattacharyya, Director, SINP	Member
Prof. Pinaki Majumdar, Director, HRI	Member
Prof. V. Arvind / Prof. V. Ravindran, Director, IMSc	Member
Prof. Indranil Manna, VC, BIT Mesra	Member
Prof. J. B. Udgaonkar, Director, IISER Pune	Member
Prof. E. D. Jemmis, IISc, Bangalore	Member
Prof. Shishir Deshpande, Director, ITER-IPR	Member
Prof. P. K. Pujari / Prof. Vivekanand Kain, BARC	Member
Prof. P. D. Naik, Dean, HBNI	Member
Prof. R. B. Grover, Convenor, BoS (Applied Systems Analysis)	Member
Prof. S. M. Yusuf, Convenor, BoS (Physical Sciences)	Member
Prof. A. P. Tiwari, Convenor, BoS (Engineering Sciences)	Member
Prof. Prasanna Venkatraman, Convenor, BoS (Life Sciences)	Member
Prof. Meena Mahajan, Convenor, BoS (Mathematical Sciences)	Member
Prof. S. D. Banavali, Convenor, BoS (Medical & Health Sciences)	Member
Prof. S. Kannan, Convenor, BoS (Chemical Sciences)	Member
Prof. Bedangadas Mohanty, Convenor, BoS (Integrated Masters Programme)	Member
Prof. P. C. Selvin, Registrar, HBNI	Secretary

Planning & Monitoring Board

Prof. P. R. Vasudeva Rao/Prof. P. D. Naik, Vice Chancellor	Chairperson
Prof. A. K. Mohanty, Director, BARC	Member
Prof. P. D. Naik, Dean, HBNI	Member
Prof. R. B. Grover, Professor Emeritus HBNI	Member
Prof. A. K. Bhaduri / 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. S. Ramakrishnan, Director, TIFR	Member
Prof. P. C. Selvin, Registrar, HBNI	Secretary

From the Vice Chancellor's Desk



It gives me great pleasure to present the annual report of Homi Bhabha National Institute (HBNI) for the year 2022-23. We now offer 44 academic programmes and have around 3660 students of whom nearly 2000 are doctoral students, spread over eleven campuses across the country.

During the period, HBNI organized many events to commemorate “Azadi Ka Amrit Mahotsav.” The HBNI-DAE iconic week was celebrated (August 22-28, 2022) **with** the HBNI faculty visiting various colleges in and around Mumbai, and delivering talks on "Career opportunities in science". They have interacted with the graduate and post-graduate science students to create awareness regarding the opportunities in the fields of Physics, Chemistry and Biology in employment, and encouraged them for a research career. A similar lecture series was conducted for engineering students via online. HBNI organized special lectures by eminent speakers on the current research areas and future challenges for the benefit of students/faculty of educational institutes all over India. HBNI also organized a special webinar to celebrate the birth centenary year of Dr. G. N. Ramachandran, and Prof. P. Balram, DST-YOS Chair Professor, National Centre for Biological Sciences, Bengaluru and Former Director, IISc, Bengaluru delivered a lecture on August 5, 2022, on the topic “G. N. Ramachandran and the Birth of Molecular Biophysics and Structural Biology in India”. The talk traced the life and times of Dr. G. N. Ramachandran, a pioneer in the field of biomolecular structure and conformation, and highlighted the trail of his research work that has illuminated the understanding of protein structures.

To commemorate the International Year of Basic Sciences for Sustainable Development, HBNI brought together the faculty from across all its CIs/OCC in a discussion meeting during April 6-8, 2022, to provide an overview of the research programs and research infrastructure available in their respective institutions. The meeting witnessed very enthusiastic participation by the faculty members. HBNI also organized theme-based discipline-specific meetings, Condensed Matter Physics at SINP (June 23-24, 2022), Life Sciences at RRCAT (September 7-10, 2022) and SINP (February 16-17, 2023), and Chemical Sciences at NISER (January 18-20, 2023) to boost collaborations among the faculty members and students of constituent Institutions and the Off-Campus Centre of HBNI.

During the year, HBNI took the initiative to create course material for the Swayam-NPTEL platform and recently developed courses by HBNI. The courses on “Accelerator Physics,” “Neutron Scattering for Condensed Matter Studies,” and “Nuclear and Radiochemistry” are available on the Swayam-NPTEL platform. All the courses are approved by AICTE as Faculty Development Programme courses. Many learners have enrolled for the courses and benefitted, including about 2000 enrolled learners for the Accelerator Physics Course.

I would like to express my sincere thanks for the guidance and support from various bodies of HBNI. I thank the Chairman and members of the Council of Management, members of the Academic Council and the Planning and Monitoring Board for their guidance, support and encouragement in every activity of HBNI. I also thank my colleagues at the Central office for their devoted efforts towards the achievement of the Institute's objectives and goals.



(U. Kamachi Mudali)

❖ Academic Programmes of the Institute

HBNI brings together the academic and research programmes conducted by the following eleven premier institutions of DAE, as its Constituent Institutions (CIs) / Off Campus Centre (OCC) under a common academic framework.

1. Bhabha Atomic Research Centre (BARC), Mumbai
2. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam
3. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
4. Variable Energy Cyclotron Centre (VECC), Kolkata
5. Saha Institute of Nuclear Physics (SINP), Kolkata
6. Institute for Plasma Research (IPR), Gandhinagar
7. Institute of Physics (IoP), Bhubaneswar
8. Harish-Chandra Research Institute (HRI), Allahabad
9. Institute of Mathematical Sciences (IMSc), Chennai
10. Tata Memorial Centre (TMC), Mumbai and
11. National Institute of Science Education and Research (NISER), Bhubaneswar

The HBNI offers a range of academic programmes in chemical sciences, engineering sciences, medical & health sciences, life sciences, mathematical sciences, and physical sciences. It also has a programme in Applied Systems Analysis. All institutions, except NISER, conduct academic programmes for which entry level qualification is a Bachelor's degree or a higher degree. NISER admits Higher Secondary passed students for its five years Integrated M.Sc. programme.

- **Ph.D.** degrees in varied disciplines are offered by HBNI, as listed below, under the preview of seven Board of Studies:
 - ✓ Physics
 - ✓ Chemistry
 - ✓ Mathematics
 - ✓ Engineering
 - ✓ Life Sciences
 - ✓ Medical & Health Sciences
 - ✓ Applied Systems Analysis
 - ✓ Computer Science
 - ✓ Theoretical Computer Science
 - ✓ Earth & Planetary Sciences
 - ✓ Computational Biology
 - ✓ Humanities & Social Sciences

- HRI, IMSc and NISER also offer an integrated Ph.D. programme where students study M.Sc. which is followed by Ph.D.
- **Integrated Ph.D.** (Double Degrees) in Engineering is offered at BARC, IGCAR, IPR and VECC. Integrated Ph.D. (Double Degrees) in Mathematics is offered at IMSc, HRI and NISER; in Physics is offered at NISER and HRI; in Life Sciences and Chemical Sciences at NISER. IMSc offers Integrated Ph.D. (Double Degrees) in Physics, Theoretical Computer Science and Computational Biology.

Research topics chosen for Ph.D. programmes are often multi-disciplinary in nature having guides and co-guides from different branches of science and engineering.

- **M. Tech** in Engineering Sciences is offered at BARC, IGCAR, RRCAT, VECC and IPR. These programmes consist of one year of course work and one year of project work. The course work is offered at all the campuses of BARC Training School. The project work is offered at BARC, IGCAR, RRCAT, VECC, IPR and other units of DAE. Those who are either not able to pursue or are not interested in pursuing higher degrees, have the option to get a post graduate diploma.
- **M.Sc. (Engg)** programme has more emphasis on research content as compared to M.Tech. programme. The duration of the project work under this programme is one and a half year, while the duration of the course work is up to one year. This programme is offered at BARC, IGCAR, VECC, RRCAT and IPR.
- **M.Sc. (Physics)** is offered at HRI. **Integrated M.Sc.** in Chemical Sciences, Life Sciences, Mathematical Sciences and Physical Sciences are offered at NISER.

Super Specialty courses offered in Medical & Health Sciences at TMC include:

- **Doctor of Medicine (D.M.)** in Medical Oncology, Pediatric Oncology, Gastroenterology, Critical Care, Oncopathology and Interventional Radiology.
- **Master of Chirurgiae (M.Ch)** in Surgical Oncology, Gynecological Oncology, Head & Neck Surgery, and Plastic and reconstructive Surgery.
- **Certified Fellowship Programmes in Medical & Health Sciences** are offered at TMC. These value added courses are of two years duration and are offered with specialization in Orthopedic Oncology, Breast Oncology, Thoracic Oncology, Uro Oncology, Interventional Radiology, Surgical Pathology, Haematopathology, Dental & Prosthetic Surgery, Onco-Anaesthesia and Pain, Cancer Imaging, Radiation Oncology (IMRT, IGRT), Haemato-Oncology, Preventive Oncology, Infectious Diseases & HIV Medicine, Gastroenterology and HPB Oncology, Pulmonary Oncology, Molecular Haemato-Oncology, Oral Oncology with Reconstructive

Surgery, Plastic and Reconstructive Oncology, Solid Tumor Oncology and Pediatric Oncology.

Post Graduate Courses in Medical & Health Sciences, offered at TMC & Radiation Medicine Centre of BARC, include:

- **MD** (Pathology, Anesthesia, Radio-diagnosis, Radiation Oncology, Microbiology, Nuclear Medicine, Palliative Medicine, Immuno-Hematology and Blood Transfusion) at TMC
- **MD** (Nuclear Medicine) at BARC-RMC
- **M.Sc.** (Hospital Radiopharmacy) and **M.Sc.** (Nuclear Medicine and Molecular Imaging Technology) at BARC-RMC
- **M.Sc.** (Nursing), **M.Sc.** (Clinical research) and **M.Sc.** (Nuclear Medicine and Molecular Imaging Technology) at TMC
- **M.Sc.** (Public Health and Epidemiology) and **M.Sc.** (Occupational Therapy in Oncology) at TMC.

Following PG Diploma Courses are offered at BARC and TMC:

- ✓ Diploma in Radiological Physics (DipRP) at BARC
- ✓ PG Diploma in Nuclear Science and Engineering (PGDNSE) at BARC Training School

❖ Major Decisions Taken by Governing Bodies of HBNI During the Year

• **Council of Management**

The Council of Management (CoM) held meetings twice during the year. Important decisions taken by the CoM are the following:

- (i) CoM approved the proposal of conferring the Assistant Professor title to the scientific officers in the grade of SO(D), who satisfy the HBNI criteria to become a Ph.D. guide.
- (ii) CoM approved the proposal for instituting the “Distinguished Professor Emeritus” in HBNI.
- (iii) CoM approved the proposal of reframing the present HBNI Ordinances in two updated documents, viz., the ‘Academic Ordinances’ and “Academic Codes of

Practices. The former will be approved by CoM and the latter will be approved by Academic Council, HBNI.

- (iv) CoM approved the formation of Single Apex Committee for the functioning of HBNI Research and Development Cell (HBNI-RDC) as per UGC guidelines.



Screenshot of 35th CoM Meeting held on January 25, 2023

- **Academic Council**

The Academic Council met thrice during the year. Important decisions taken by the Academic Council during the year are as follows:

- (i) The Council approved the proposal that the HBNI guidelines/directions for various academic processes are to be considered as the minimum standards.
- (ii) The Council accorded the approval to retain “April to March” as the academic year for preparing academic related reports for submission to various statutory bodies.
- (iii) The Council approved the proposal to issue ‘Migration Certificate (MC)’ on request only to those students who had submitted the MC from their previous Institute/University while enrolling at HBNI.



Photograph of the 30th Academic Council Meeting held on October 7, 2022

❖ Academic Collaborations of HBNI

To obtain the benefits from the mutual expertise in various research areas, teaching and learning, to facilitate collaborative research among the faculty members, and to enrich the knowledge-base of the students, HBNI has signed MoUs with the following eminent academic institutions in the country.

1. Indian Institute of Science, Bengaluru
2. Indian Institute of Technology, Bombay
3. Indian Institute of Technology, Kharagpur
4. Indian Institute of Technology, Kanpur
5. Indian Institute of Technology, Madras
6. Indian Institute of Technology, Indore
7. Indian Institute of Technology, Roorkee
8. Institute of Chemical Technology, Mumbai
9. Chennai Mathematical Institute, Chennai
10. Jadavpur University, Kolkata
11. Jawaharlal Nehru University, New Delhi
12. Panjab University, Chandigarh
13. Tata Institute of Fundamental Research, Mumbai
14. The Commissariat a l'energie atomique et aux energies alternatives, France
15. Ghent University, Belgium

❖ **Academic and Technical Achievements**

• **Rankings in the National Institute Ranking Framework (NIRF) India Ranking-2022**

HBNI obtained **11th rank** in the Research Institution Category, **17th rank** in the University category and **33rd rank** in the overall category under NIRF India ranking 2022.

• **Publications**

The total number of journal publications with HBNI affiliation during the calendar year 2022, as indexed by Scopus, was 2585. Based on the high-quality of publications in the Nature Group of Journals, the Nature Index 2023 has placed HBNI in the third position among all institutions in India, and in the second position with regard to the publications in physical sciences.

• **Patents Granted/Filed Based on the Inventions of the HBNI Faculty Members and Students**

(a) **Patents Granted During the Year**

1. Dr. V. K. Suri, PED, BARC, “A Method for making single integrated cut-through artistic design on metallic foil, Indian Patent No. 394243 dated April 5, 2022.
2. Mr. Akkireddy Satyaprasad, Dr. Rane Ramakrishna, Dr. Joseph Alphonsa, and Dr. Subroto Mukherjee, IPR, “Plasma enhanced jet vapour deposition of metallic films”, Indian Patent No. 403977 dated August 19, 2022.
3. Dr. Arun K. Chakraborty, Dr. Chadramouli Rotti and Mr. Jaydeep Joshi (ITER-India, IPR, Gandhinagar), “An improved Method of Manufacturing Actively Cooled Accelerator Grid with full penetration Weld Configuration”, European Patent No. (validated in France, Germany & Italy) 3424635 dated August 31, 2022.
4. Dr. Manoj Kumar Gupta (IPR, Gandhinagar), Dr. Bishnu Prasad Panda, Dr. Smita Mohanty and Dr. Sanjay Kumar Nayak (CIPET, Odisha), “Epoxy Resin based Adhesive and Preparation Method thereof”, Indian Patent No. 407521 dated September 26, 2022.
5. Mr. Dharendra Kumar Sharma, Ms. Gargi Bindal, Ms. Reema Chaudhary, Dr. Yogendra Singh Rajpurohit, Dr. Devashish Rath and Prof. Hari Sharan Misra (BSG, MBD, BARC), “Escherichia coli Cell Factory for Producing Recombinant Phosphopeptides”, Indian Patent No. 407999 dated September 29, 2022.
6. Dr. Asim K. Ghosh, Mr. Vijay Mamtani and Dr. R. C. Bindal (Membrane Development Section, ChEG, BARC), “A Method of Preparation of Forward Osmosis Membrane using Synthesized Poly(sulfone-co-amide) Polymer”, Indian Patent No. 408427 dated October 3, 2022.
7. Mr. Vishal Jain, Mr. Anand Visani, Mr. Sanghariat Adam, Dr. Nema Sudhir Kumar, Dr. Mukherjee Subroto, IPR, “A system to generate high power density dielectric

barrier discharge plasma in ambient air medium”, Indian Patent No. 408755 dated October 10, 2022.

8. Dr. Mukesh Ranjan, Dr. Tapan Barman, Mr. Samirsinh Chauhan, Mr. Akshay Vaid and Dr. Subrato Mukherjee, IPR, Gandhinagar, “Splitted Plasma Anode Fire-ball based Ion Source for both Nanopatterning and Thin Film deposition”, Indian Patent No. 413565 dated December 5, 2022.
9. Dr. Vinok Kumar Suri, Dr. R. Balasubramanian. Mr. Shivam Mishra, Ms. Shrinkhla Ghildiyal (PED, BARC), Mr. Girish Pai, Dr. D. S. Joshi, Dr. Mansee Rathore (MGM, Kamothe), Dr. Sunil Bhand, and Mr. Souvik Pal (BITS, Pilani Goa Campus), “A Micro-Trench based Biochip Device for Screening of Infectious Diseases using Metal Nano Particles / Nano Coating”, Indian Patent No. 415484 dated December 26, 2022.
10. Mr. Vishal Jain, Mr. Anand Visani, Bhupendra Patel, Mr. Chirayu Patil, Dr. Sudhir Kumar Nema and Dr. Pradyumansinh Jhala, IPR, “An apparatus for treating matter using inductively coupled plasma”, Indian Patent No. 426773 dated March 24, 2023.
11. Dr. A. B. Mukherjee, Head LWRD, BARC, “A transitional joint comprising of dissimilar metal joint and a diffusion bonding shrink fit process for producing the same”, Indian Patent No. 418098 dated January 16, 2023.
12. Dr. V. K. Jain (IIT Kanpur), Dr. P. Ranjan, Dr. V. K. Suri and Dr. R. Balasubramaniam (BARC), “A Finishing Device”, Indian Patent No. 418577 dated January 19, 2023.
13. Dr. S. M. Yusuf, Dr. J. V. Yakhmi (BARC), and Dr. K. R. Balakrishnan (Fortis Hospital, Chennai), “A flexible magnetic membrane-based actuation system and devices involving the same”, Indian Patent No. 425538 dated March 16, 2023.

(b) Patent Applications Filed During the Year

1. Dr. Ladola Yogesh S., Mrs. Paik Shrishma, Mrs. Makwana Archana T., Mr. Chowdhury S., Mr. Sonawane D. V., Mr. Sahu M. L. (UED, BARC) and Dr. Bhattacharya S. (RPG, BARC), “Compact Hydraulic Pinned Jaw Crusher System with High Size Reduction Ratio”, Indian Patent No. 202221026845.0 dated May 9, 2022.
2. Dr. Kaushik Sengupta, Ms. Chandrayee Mukherjee (SINP, Kolkata), Mr. Avijit Kundu, Mr. Raunak Dey, Dr. Shuvojit Paul and Dr. Ayan Banerjee (IISER, Kolkata), “A System for Carrying Out Active Microrheology to Probe Viscoelasticity of Protein”, Indian Patent No. 202231030594.0 dated May 27, 2022.
3. Dr. Ladola Yogesh S., Mrs. Paik Shrishma, Mrs. Makwana Archana T., Mr. Chowdhury S., Mr. Sonawane D. V., Mr. Sahu M. L. (UED, BARC) and Dr. Bhattacharya S. (RPG, BARC), “Compact Hydraulic Pinned Jaw Crusher System with High Size Reduction Ratio”, Australian Patent No. 2022215159.0 dated August 8, 2022
4. Dr. Ladola Yogesh S., Mrs. Paik Shrishma, Mrs. Makwana Archana T., Mr. Chowdhury S., Mr. Sonawane D. V., Mr. Sahu M. L. (UED, BARC) and Dr. Bhattacharya S. (RPG, BARC), “Compact Hydraulic Pinned Jaw Crusher System with

High Size Reduction Ratio”, South African Patent No. 2022/09557 dated August 26, 2022.

5. Dr. Kaushik Sengupta, Ms. Duhita Sengupta (SINP), Mr. Sk Nishan Ali, Mr. Aditya Bhattacharya, Mr. Joy Mustafi (MUST Research Trust, Hyderabad) & Dr. Asima Mukhopadhyay (Chittaranjan National Cancer Institute, Kolkata), “System for Executing Nuclear Morphology based Analytics for Accurate Diagnosis / Prognosis of Cancer including Ovarian Cancer”, Indian Patent No. 202231061023.0 dated October 26, 2022.
 6. Dr. Indira Priyadarshni (BARC), Prof. M. K. Unikrishnan, Dr. Prabhakar K. R., Dr. Veeresh V. P., Dr. Piya Paul, and Dr. Punit Bansal (Manipal University), “Innovative, inexpensive and viable method for the isolation of novel antioxidant flavonoids from the weed, *Coronopus Didymus*”, Indian Patent No. 410220 dated October 28, 2022.
 7. Dr. Amit Kunwar, Dr. Manoj K. Pal, Dr. Vishwa V. Gandhi, Dr. Sandip Dey, Mr. Ram P. Das, Dr. Beena G. Singh, and Mr. Amey P. Wadawale, “Deuterated-3-3'-Diselenodipropionic Acid (D-DSePA) and Its Use as an Anticancer or Radioprotective Agent”, USA Patent No. 18/087427 dated December 22, 2022.
 8. Mr. M. Balamurugan, Dr. N. K. Pandey, Mr. Shekhar Kumar (from IGCAR) and Prof. J. B. Joshi (HBNI), “Annular Centrifugal Extractor with Solid Separation Part to Separate Solid Particles Present in Solvent Extraction Fluid and A Process for the Same”, European Patent No. 21851859.5 dated December 14, 2022.
 9. Dr. Ramkrishna Rane, Dr. Akshay Vaid, Dr. Alphonsa Joseph, Dr. Nirav Jamnapara, Institute for Plasma Research (IPR), “A Plasma based System for Generating Antibacterial Coating on Flexible Polymeric Substrates and Process Thereof”, Indian Patent No. 202321003767.0 dated January 19, 2023.
 10. Mr. M. Balamurugan, Dr. N. K. Pandey, Mr. Shekhar Kumar (from IGCAR) and Prof. J. B. Joshi (HBNI), “Annular Centrifugal Extractor with Solid Separation Part to Separate Solid Particles Present in Solvent Extraction Fluid and A Process for the Same”, Japanese Patent No. 2023-513891 dated February 24, 2023.
 11. Mr. M. Balamurugan, Dr. N. K. Pandey, Mr. Shekhar Kumar (from IGCAR) and Prof. J. B. Joshi (HBNI), “Annular Centrifugal Extractor with Solid Separation Part to Separate Solid Particles Present in Solvent Extraction Fluid and A Process for the Same,” USA Patent No. 2023-513891 dated February 24, 2023.
- **Recognitions, Awards and Honours Received by HBNI Faculty**
 1. Prof. Sudhakar Panda, NISER has been conferred the coveted, “Biju Patnaik Award for Scientific Excellence” for the year 2020, in recognition of his outstanding life-time contribution in the field of Science and Technology, by Odisha Bigyan Academy, Govt. of Odisha
 2. Prof. B. Venkataraman, has been conferred the Honorary Fellowship of the Indian Society of Analytical Scientists, Mumbai.

13. Prof. Arup Dasgupta, IGCAR, has been elected as a Fellow of IIM for the year 2022. He has also received “The above and beyond appreciation for Editorial Leadership” award from Springer for the year 2022.
14. Dr. Sudip Chakraborty, HRI has been appointed as a member Editorial Advisory Board of Energy Advances, a journal of Royal Society of Chemistry (RSC), UK.
15. Prof. Shikha Verma, IoP, has become Endowment Chair Professor of Dr. K. C. Patel Research & Development Center (KRADLE), CHARUSAT, Gujarat.
16. Dr. Ajit C. Balram, IMSc., has been elected as an Associate of Indian Academy of Sciences.
17. Dr. Sangram Bagh, SINP, has been elected as a Fellow of the Royal Society of Chemistry.
18. Dr. Sugam Kumar, BARC, has been selected as an Associate of Indian Academy of Sciences (IASc), in 2022 and a Member of The National Academy of Sciences, India. He has also been awarded DAE-SSPS Young Achiever Award-2022.
19. Dr. Dirtha Sanyal, VECC, has been elected as a Fellow of the Royal Society of Chemistry.
20. Dr. Sharmistha Dutta Choudhury, BARC, has been elected as a member of Maharashtra Academy of Sciences.
21. Dr. Veerendra K. Sharma, BARC, received Buti Foundation Award 2022 from Indian Physics Association.
22. Dr. Shamik Banerjee, IoP, has been awarded the INSA Young Scientist Award 2022.
23. Dr. K. R. S. Chandrakumar, BARC, has been awarded CRSI Bronze Medal by Chemical Research Society of India.
24. Prof. V. Sudarsan, BARC, has been awarded Society for materials Chemistry (SMC) Silver Medal.
25. Dr. V. G. Gupta, Dr. B. P. Mandal, and Dr. Jitendra Bahadur, BARC, have been awarded Society for materials Chemistry (SMC) bronze medal.
26. Dr. Amit Kunwar, BARC, has been elected as a Fellow of Maharashtra Academy of Sciences in 2022.
27. Prof. T. Som, IoP, has become a member of the Review Committee for the IEST Solar PV Hub at IEST, Shibpur.
28. Prof. Sanjib Kumar Agarwalla, IoP, has been appointed as an Honorary Fellow of the Physics Department, University of Wisconsin-Madison, Madison, USA.

29. Dr. Pratap Roy, VECC, has been awarded the IPA "Aswini Kumar Rath Memorial Award" in Nuclear Physics for the year 2022. He has also received Young Achiever Award at the DAE Symposium on Nuclear Physics -2022.
30. Dr. Ponneri C. Ravikumar, NISER, has been awarded with CRSI Bronze Medal, 2022. He is also recognized by American Chemical Society (ACS) as Top 3% highly cited ACS Author from India.
31. Dr. Amaresh Jaiswal, NISER, has received Young Achiever Award, at the DAE Symposium on Nuclear Physics 2022.
32. Dr. B. B. Lahiri, IGCAR, has received Young Achiever Award, at the DAE Symposium on Nuclear Physics 2022.
33. Dr. R. S. Ningthoujam, BARC, has been awarded MRSI medal for the year 2022.
34. Prof. Ranjan Mittal, BARC, has received MRSI Materials Science Annual Prize for the year 2021. He has also been awarded Society for Materials Chemistry (SMC) silver medal, 2022.
35. Dr. M. Vasudevan, IGCAR is a co-recipient of W. H. Hobart Memorial Award from the American Welding Society National Award for the year 2021. Dr. Vasudevan has also been selected as a Fellow of Indian Institute of Metals (FIIM) and as an Editorial Board Member of Engineering Failure Analysis Journal from Elsevier Publishers.
36. Dr. Rubel Chakravarty, BARC, has received SMC Bronze medal for the year 2022.
37. Dr. Shiba Prasad Acharya, SINP, received "International Best Researcher Award" in the field of nonlinear dynamics and plasma physics. The award has been instituted by ISSN International Science & Technology Awards and Congress (IISTAC-2022) in association with World Research Council (WRC).
38. Dr. Sunita Sonawane, RMC-BARC, has won Women Researcher Award in the International Scientist Award on Engineering, Science and Medicine, held during October 7-8, 2022, organised by VDGOOD Professional association.
39. Dr. Kinshuk Dasgupta, BARC has received distinguished alumnus award, ICT from UAA-ICT.
40. Prof. B. N. Pandey, BARC, has become Vice President, Asian Association for Radiation Research.
41. Prof. Venkatesh Raman, IMSc. Has been elected President of ACM India for the year 2022.
42. Prof. Arnab Pal, IMSc has been awarded SERB Start-Up Research Grant (2022-24) by DST SERB to work on applications of first passage processes in natural sciences.
43. Dr. Subhankar Bedanta, NISER, has been appointed as Associate Editor for the journals Frontiers in Physics and Frontiers in Nanotechnology.

44. Dr. Kirtiman Ghosh, IOP, has received prestigious MATRICS (Mathematical Research Impact Centric Support) grant funded by the Science and Engineering Research Board (SERB) for the theoretical research and development of some specific new variants of Extra dimensional model
45. Prof. Manimala Mitra, IoP, has received Subham Memorial Award, 2022 by the NGO AWTE, Bhubaneswar.
46. Dr. Debasish Chaudhuri, IoP was invited to visit LPTM CY Cergy Paris University, Paris, France with a Visiting Professorship from 26 September to 7 October, 2022.
47. Dr. Kishore Kanti Mishra and Dr. Mainak Bandyopadhyay, IPR, received the IOP 2021 Outstanding Reviewer Award for the year 2021 for the journal Plasma Physics and Controlled Fusion.
48. Dr. Sarveshwar Sharma, IPR, received the IOP 2021 Outstanding Reviewer Award for the year 2021 for the journal Plasma Science and Technology. (Notified in the Month of May 2022).
49. Dr. Himansu Sekhar Biswal, NISER, has become an affiliate member of the Royal Society of Chemistry, UK. He also holds post of Member, Board of Studies, Chemistry, HBNI, Member Project Assessment Committee, DST, Govt. of Odisha, Member, Board of Studies, Chemistry, CET, Odisha, Member, Board of Studies, Chemistry, Berhampur University, Odisha.
50. Dr. Palok Aich, NISER, has been elected as Editor-in-Chief, *Microenvironment and Microecology Research*, TMR publishing Group, New Zealand and as Guest Editor, Special issue on Role of Microbial Metabolites in the Regulation of Host Immunity and Metabolism, *Metabolites*, MDPI, Basel, Switzerland.
51. Dr. Asima Bhattacharyya, NISER has been appointed Editorial Board Member, *Current Research in Physiology* (Elsevier), Guest Editor, *Frontiers in Microbiology* (Frontiers) and Handling Editor, *Frontiers in Oncology* (Frontiers).
52. Dr. Manjusha Dixit, NISER, has been appointed as Guest Editor, *Journal of Visualized Experiments*, Cambridge.
53. Dr. Debasmita P. Alone, NISER has become a Co-opted Member, *Expert committee in Life Sciences on SRG, NPDF & ECRA schemes in SERB*, New Delhi, India.
54. Dr. Sutanu Roy, NISER, has been selected as a CNRS visiting researcher, *Laboratoire de mathématiques de Besançon*, France.
55. Dr. Anandkumar, Surdharshan, Mr. T. Nandakumar, Ravishankar and J. Philip, IGCAR received the Best Poster Award for their poster titled “Development of silane-based epoxy hybrid coating on water transporting pipeline materials for enhanced

microbiologically influenced corrosion protection performance” at CORCON 2022 held at Udaipur during Sept 19-22, 2022.

- **Awards Received by HBNI Students**

1. Dr. Neena G. Shetake, BARC has received Asian Association for Radiation Research Young Scientist Award for the year 2022 during the 5th Asian Congress of Radiation Research and 3rd Biennial Meeting of Society for Radiation Research (SRR) held at DAE Convention Centre, Anushaktinagar, during November 17-20, 2022.
2. Shri Sourab Kumar Das, BARC received best Poster Prize during the 5th Asian Congress of Radiation Research and 3rd Biennial Meeting of Society for Radiation Research (SRR) held at DAE Convention Centre, Anushaktinagar, during November 17-20, 2022.
3. Miss Ritu Parashar, BARC, received the Mrs. Chinnamaul Memorial Prize for her paper titled, “Composite palladium-based membranes for separation and recovery of hydrogen in bio-jet fuel production unit,” by Indian Institute of Chemical Engineers, at the proceeding Annual Session of the Institute in December 2022.
4. Shri Rajath Alexander, BARC has received Young Scientist in Material Science award by Indian Science Congress Association for his paper titled, “Synthesis of three-dimensional self-assembled carbon nanotube aerogel and its application as a high-performance virus filter.”
5. Shri Lokesh Kumar, BARC has received Sekhar Basu Memorial award for his work, “Estimation of environmental release of tritium from heavy water moderated reactor and feasibility study of online monitoring.”
6. Shri Bikash Chandra Saha, BARC has received one of the Best Poster awards in the Interdisciplinary Symposium on Materials Chemistry held at DAE Convention Centre, Mumbai during December 7-10, 2022.
7. Miss Himanshi Singh, BARC has received one of the Best Poster awards for her poster titled, “Probing stability of charged colloids in re-entrant phase,” at 66th DAE Solid State Physics Symposium 2022 held at Birla Institute of Technology Mesra, Ranchi, Jharkhand, during December 18- 22, 2022.
8. Shri Sajan Kumar, BARC has received one of the Best Poster awards for his poster titled, “Li-ion Diffusion in amorphous LiAlGeO₄ using AIMD,” at 66th DAE Solid State Physics Symposium 2022 held at Birla Institute of Technology Mesra, Ranchi, Jharkhand, during December 18- 22, 2022.
9. Shri Deepak, BARC has received the Best Thesis Award at 66th DAE-Solid State Physics Symposium (SSPS) -2022, held at Birla Institute of Technology Mesra, Ranchi, Jharkhand, during December 18- 22, 2022.
10. Shri Amit Kumar Sharma, BARC received Best Poster Award for his poster titled, “Comparative Study of Radiopeptides, ¹⁷⁷Lu-DOTA-A9 and ¹⁷⁷Lu-DOTA-PEG4-

A9 Targeting HER2-receptors in breast cancers”, at 1st HBNI interaction meeting in Chemical Sciences, NISER, Bhubaneswar, 18-20 Jan, 2023. He also received Best Poster award given by American Chemical Society (ACS) for his poster titled, “Electrochemical and Spectroscopic Investigation of HER2-Targeting Peptide”, in the Conference on Electrochemistry for Industry, Health and Environment, Mumbai, 7-11 Feb, 2023.

11. Shri K. Sandeep Rao, BARC received Best Poster Award for his poster titled, “Iron oxide modified separator for enhanced performance in lithium sulphur battery”, in the Interdisciplinary Symposium on Materials Chemistry held at DAE Convention Centre, Mumbai during December 7-10, 2022.
12. Shri Atanu Jha, BARC received Best Poster Award for his poster titled, “Breathable water repellent cotton fabric using radiation technology” in the Interdisciplinary Symposium on Materials Chemistry held at DAE Convention Centre, Mumbai during December 07-10, 2022.
13. Miss Debarati Das, BARC received Best Poster Award for her poster titled, ‘Defect and valence engineering in CeO₂ through aliovalent ion doping for enhanced activity towards ORR catalysis”, in the Conference on Electrochemistry for Industry, Health and Environment, Mumbai, 7-11 Feb, 2023.
14. Miss Sudipa Manna, BARC received Best Poster Award for her poster titled, “BiVO₄ and 3D graphene nano composite photoanodes for improved photoelectrocatalytic splitting of water,” at 1st HBNI interaction meeting in Chemical Sciences, NISER, Bhubaneswar, 18-20 Jan, 2023. She also received ACS Best Oral Presentation Award for her paper titled, “Catalyst-carbon nanocomposites for enhanced electrochemical & photoelectrochemical water splitting”, in the Conference on Electrochemistry for Industry, Health and Environment, Mumbai, 7-11 Feb, 2023.
15. Miss Swarnima Rawat, Ph.D. (Chem. Sci.), BARC has been selected as one of the winners of Popular Science Stories-Ph.D. Category Award by AWSAR-DST (Department of Science and Technology) in March 2023.
16. Miss Sanchita Ghosh, BARC received Best Oral Presentation Award for her paper titled, “Gum Arabic Coated Ga₂O₃:69Ge nanoparticles as an intrinsically radiolabeled PET probe”, in the International Conference on “Emerging Smart Materials in Applied Chemistry” held at KIIT Deemed to be University, Bhubaneswar during December 20-22, 2022.
17. Shri Meghnath Sen, BARC received Best Poster Award for his poster titled, “Development of Al₅BO₉:Ce³⁺ for high intensity thermal neutron dosimetry applications,” in the Interdisciplinary Symposium on Materials Chemistry held at DAE Convention Centre, Mumbai during December 7-10, 2022.
18. Dr. Geetisubhra Jena, IGCAR, received the Best Thesis Award by NACE International India Section – during CORCON 2022, held at Udaipur during September 19-22, 2022 for her thesis titled “Development of graphene oxide based composite coating with improved corrosion resistance and antibacterial properties”.

19. Dr. B. B. Lahiri, IGCAR received Young Achiever Award in the 66th DAE Solid State Physics Symposium (DAE-SSPS 2022).
20. Miss C. Teena Mouni, IGCAR received the Best Paper Award 2022 (Young Category) from the IIM Kalpakkam Chapter.
21. Mr. Krishna Kumar Yadav received Best Oral Presentation Award in National Symposium (AMALGAM- 2023) on Recent Trends in Metallurgy & Material Science.
22. Mr Sachin Aditya Ramesh-and Ms P Rajani, IGCAR won the Best Poster Awards in SESTEC 2022 held at ICT, Mumbai in November 2022.
23. Miss T. S. Reshma, IGCAR received one of the Best Poster Award (Gold Medal) for her poster titled, “Selective Adsorption and Fast Photocatalytic Degradation of Mixture of dyes by Uncapped SnO₂ QDs,” at International Conference on Frontiers for Technological Applications (FIMTA 2022) held at CSIR-IMMT, Bhubaneswar during August 3-5, 2022.
24. Mr Omkar Kinkar, RRCAT received Second Prize in Oral Presentation of his research work at 37th MP Young Scientist Congress held during 14-17 March, 2022.
25. Shri Chiranjit Debnath, Shri Tirtha Mandal, and Shri Arup Ratan Jana of RRCAT received Best Thesis Award by Indian Laser Association, DAE-BRNS National Laser Symposium (NLS-31) held during Dec 03-06, 2022 at IIT Kharagpur.
26. Shri Surendra Yadav, RRCAT, has received ISPA Best Thesis Presentation Award, 2023.
27. Dr. Shreyasi Acharya, VECC has received ALICE Thesis Award 2022 for her thesis titled, “Multiparticle production in proton–proton collisions at the LHC energies.”
28. Miss Chandrani Sen, VECC has received Best Poster Award for her poster titled, “Investigation of odd-even effect in giant dipole resonance width in medium mass nuclei” in the 66th DAE-BRNS symposium on Nuclear Physics, held at Cotton University, Guwahati.
29. Mr. Devesh Kumar VECC received one of the Best Poster Presentation Awards in the 66th DAE-BRNS symposium on Nuclear Physics, held at Cotton University, for the poster, entitled “Lifetime measurements in neutron rich ^{133,135}Xe.”
30. Mr. Apar Agarwal, VECC has received Best Poster Award for his poster titled, “Preliminary test results of real size gem modules in nucleus-nucleus collisions at mCBM campaign,” in the 66th DAE-BRNS symposium on Nuclear Physics, held at Cotton University, Guwahati.
31. Mr. Sudipta Moshat, VECC received one of the Best Poster Presentation Awards for his poster titled, “Defect mediated functional properties of organic-inorganic perovskite materials,” at the 66th DAE Solid State Physics Symposium, held at Birla Institute of Technology Mesra, Ranchi during 18-22 December 2022

3. Prof. John Philip, IGCAR, has been conferred the Honorary Fellowship of the Indian Society of Analytical Scientists, Mumbai. Prof. Philip has been appointed as Associate Editor of Frontiers in Nanotechnology (Nanomaterials), Frontiers Publishing, UK, and Hybrid Advances, Elsevier Publications. He has also been selected as an Editorial board member of Smart Materials in Medicine, Elsevier, Netherland and, Materials Futures, Institute of Physics (IOP), UK.
4. Prof. S. M. Yusuf, BARC, has been elected as a Fellow of Indian National Science Academy w.e.f. 01.01.2023. He has also received the Distinguished Lectureship Award of the Materials Research Society of India (MRSI). He has been elected as President of Indian Physics Association (IPA).
5. Prof. Aditi Sen De, HRI, has been elected as a fellow of Indian National Science Academy w.e.f. 01.01.2023.
6. Prof. Bedangadas Mohanty of the School of Physical Science, NISER has been appointed as Deputy Spokesperson of the ALICE experiment at the Large Hadron Collider in CERN for a period of three years from January 2023. He has also been appointed as Editorial Board Member, Journal of Superconductivity and Novel Magnetism (Springer), Associate Editor, Frontiers of Physics in Condensed matter physics (Frontiers) and Associate Editor, Frontiers in Nanotechnology in the Section of Nano electronics (Frontiers).
7. Prof. Archana Sharma, BARC, has been elected as Governing Council Member of INAE for the period 2023-24. She has also got recognition as “Torch Bearer of Indian Women in STEM” by IW3D Printing Organization and by Indian National Academy of Engineering (INAE)-Vigyan Prasas. Her name features in the book, Women Engineers of India-Vol.1, 2023.
8. Prof. A. K. Tyagi, BARC, has become a Fellow of Indian National Academy of Engineering. He has received Honorary Professorship from Jawahar Lal University, Delhi and also received NETZSCH - ITAS Award from Indian Thermal Analysis Society in 2022 and A.V. Rama Rao Foundation Lecture Award in Chemistry.
9. Prof. Awadhesh Kumar, BARC has been elected as a fellow of National Academy of Sciences (NASI).
10. Prof. V. Gopika, BARC, has been elected as a Fellow of Indian National Academy of Engineering (INAE).
11. Prof. Sandip Dhara, IGCAR, has become a Senior Member of OPTICA (Optical Society of America) in 2022.
12. Prof. J. Mohanty, BARC, has become a member of Royal Society of Chemistry. She has also been selected for Science and Engineering Research Board (SERB) POWER Fellowship from SERB, DST. She has also received IUPAC 2023 Distinguished Award for Women in Chemistry.

32. Mr. Sanu Varghese, IoP has been selected as convener of STEAM group (Level-2 convener in CMS Trigger coordination) for the period September 2022 to August 2024.
33. Ms. Rojaline Padhan, IoP has received prestigious Fulbright-Nehru Doctoral Research Fellowship 2022-2023.
34. Shri Santosh Kumar Sahoo, NISER received Chanakya Fellowship from i-Hub Quantum Foundation, Pune to pursue his Master's thesis on the topic, "Spin-Seebeck Effect in manganite LSMO/Pt heterostructure."
35. Shri Pushpendra Gupta, NISER won the Best Poster Award for his poster titled, "Frequency dependent inverse spin Hall effect in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3/\text{Pt}$ bilayer system," in the Conference on "Frontiers in Materials for Technological Applications (FIMTA 2022)," held at CSIR-IMMT, Bhubaneswar during August 03-05, 2022.
36. Ms. Iina Bhattacharya, NISER received Best Poster Award at the 1st HBNI theme meeting on Life Sciences by HBNI, held at RRCAT, Indore from September 7-10, 2022.
37. Ms. Sukiriti Hans, IPR got the Best Oral Presentation Award for her paper titled "Role of Ion Beam Parameters in the Evolution of Self-organized Nanoripple Superimposed by Triangular Features" in the prestigious 22nd International Conference on Ion Beam and Materials Modifications held at Lisbon, Portugal during July 10-15, 2022.
38. Mr. Ankit Dhaka, IPR, received Best Poster-III Award for his poster presentation on "Experimental Estimation of Transport Parameters using Microscopic Density Fluctuations of Dusty Plasmas" at the National Conference on Recent Developments and Evolving Trends in Plasma Science and Technology & Pre-conference Workshop on Modelling and Simulation of Industrial Plasmas, jointly organized by Department of Physics Bharathiar University, Coimbatore and Beam Technology Development Group, Bhabha Atomic Research Centre (BARC), Mumbai in association with the Power Beam Society of India (PSI), Navi Mumbai, during 22-24 September 2022.
39. Mr. Vishal Gupta, IPR received Best Paper Award for his poster presentation on "Development of Cryopump to evacuate large throughput under high heat load condition for SST-1" at the 28th National Symposium on Cryogenics and Superconductivity (NSCS-28), held at IIT Kharagpur during October 19-21, 2022.
40. Mr. Dheeraj Kumar Sharma, IPR received First Prize of the "PSSI- Z. H. Sholapur Wala Award for Fusion Research for his talk, titled, "Manufacturing Experience of Indigenously Developed Dished Head-Sub Assembly (DH-SA) for High Voltage Bushing (HVB) of Indian Test Facility (INTF)" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, during 12-14 December 2022.
41. Mr. Shishir Biswas, IPR, received PSSI Best Poster Award 2022 for his talk, titled, "Effect of flow shear on the onset of dynamo" at 37th National Symposium on Plasma Science & Technology (Plasma-2022), Plasma Science Society of India (PSSI) and the Indian Institute of Technology, Jodhpur, during 12-14 December 2022.

42. Mr. Jaydeep Joshi (ITER-IPR) has been adjudged as the Winner of the Fronius India Best Welding Engineer Competition for the year 2022.

❖ Digital Initiatives

New modules have been added to the IMS software to make it more flexible for assessing all the relevant data of the students and faculty by the staff of the HBNI Central office. New modules for submission of enrolment data / synopsis and result declaration for the PhD/M.Tech students of HBNI have been added to the Anuvidhya website. HBNI offered three unique courses on the Swayam-NPTEL platform which include, (i) Neutron Scattering for Condensed Matter Studies and (ii) Accelerator Physics and (iii) Nuclear and Radiochemistry.

❖ Courses Conducted by HBNI

During the year, three online courses were organized by HBNI. Details of these courses are given below.

(a) Online Course on Advanced Materials Chemistry

An online course on “Advanced Materials Chemistry” was conducted by HBNI from June to August 2022. 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, chemical, major, trace and ultra-trace 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.

(b) Online course on Research Methodology, Research and Publication Ethics for HBNI Students

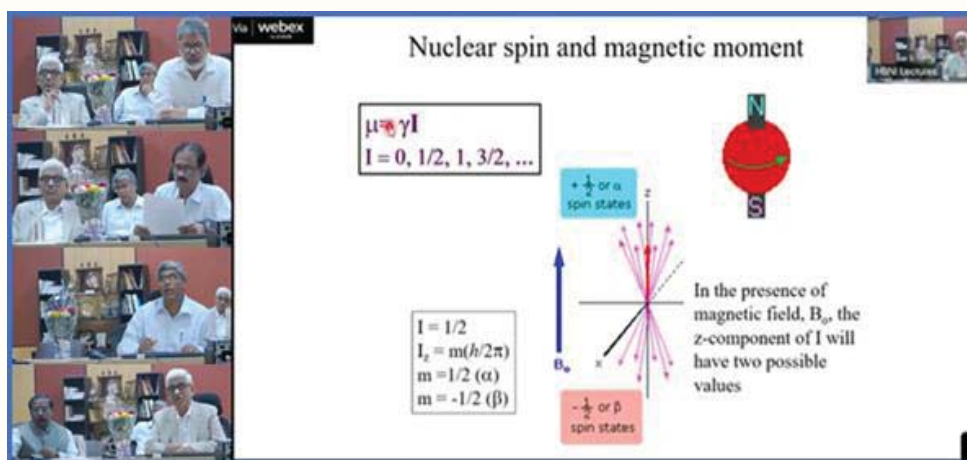
As per University Grants Commission guidelines applicable from December 2019, two credit Courses for the awareness about publication ethics and publication misconducts entitled “Research and Publication Ethics (RPE)” is mandatory for all Ph.D. students for their pre-registration course work. Accordingly, a 30-lecture course on Research Methodology, encompassing the RPE course, was conducted by HBNI Central Office during January-March 2023. The course had three modules, namely, (i) Module A: Research design and methods (15 lectures), and (ii) Module B: Research and Publication ethics (15 lectures). The lectures on Module A and B were delivered by Prof. B. S. Tomar, Prof. Prabuddha Ganguli, Prof. B. K. Nayak (Module A), and Prof. V. Siruguri (Module B). The course was attended by 389 Ph.D. students from different CIs/OCC of HBNI and was well received.

(c) Online Course on Advanced NMR Spectroscopy

An online course on “Advanced NMR Spectroscopy” is being conducted by HBNI presently. The course is formulated into two parts, Part-I and Part-II. The Part-I of the course was conducted during January 2023 to May 2023. The course is coordinated by Prof. Haridas Pal, Associate Dean HBNI and Raja Ramanna Fellow. The course was formally inaugurated by Padma Shri Prof. R. V. Hosur, Former Director, Centre for Excellence in Basic Sciences

(CEBS), Mumbai, on January 23, 2023. In his inaugural address, Prof. Hosur gave an overview on the NMR spectroscopy and its applications.

The major topics covered in the Part-I of the Advanced NMR Spectroscopy course included basic understanding of NMR spectroscopy and NMR instrumentation, heteronuclear NMR, multi-dimensional NMR, NMR for chiral and spin decoupled systems, NMR for diffusive systems, and solving of molecular structures using NMR studies. Research scholars and scientists from a variety of academic institutes and industrial establishments across the country participated in the Part-I of the course and got the benefit thereof. The Part-II of the course, which will cover the advanced aspects of NMR spectroscopy, will be conducted during July 2023 to September 2023.



Screenshot of the inaugural function of Advanced NMR Spectroscopy Course

❖ NPTEL Courses Introduced by HBNI

(a) Course on Neutron Scattering for Condensed Matter Studies

The course on “Neutron Scattering for Condensed Matter Studies” is curated by Prof. Saibal Basu, Ex-Associate Dean, HBNI. The course deals with the applications of neutron scattering to various condensed matter related problems. The short-range strong interaction of neutron with matter and the inherent magnetic moment of neutron, makes neutron scattering a unique probe in condensed matter research. Wavelength and energy of thermal neutron match with the lattice spacing and excitations in condensed matters and makes it an indispensable tool to study both structure and dynamics associated with condensed matters.

(b) Course on Accelerator Physics

The course on “Accelerator Physics” is curated by Prof. Pitamber Singh. The course discusses in details about the physics of direct current (DC), Linear and Cyclic accelerators, applications of accelerators in research, industry, medical science, national security, and environmental science, etc. and reviews high energy accelerators. A total of 1996 learners enrolled for the course and benefited from it.

(c) Course on Nuclear and Radiochemistry

The course on Nuclear and Radiochemistry is curated by Prof. B. S. Tomar, Former Institution Chair Professor, HBNI. This course deals with the study of nuclear properties of elements using chemistry as a tool. The course covers the fundamental aspects of radioactivity, nuclear decay, nuclear structure and stability, nuclear models, nuclear reactions including fission, radiochemical practices, and chemistry of actinides. A total of 767 learners enrolled for the course and benefitted from it

❖ Note on Persons with Disabilities

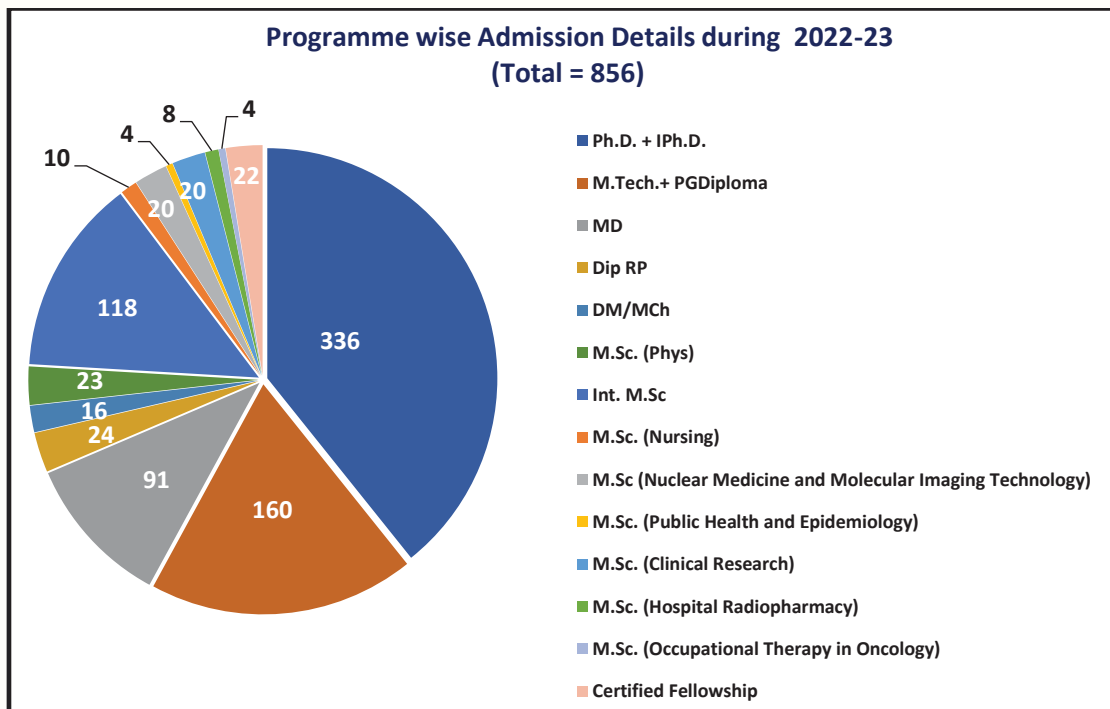
Homi Bhabha National Institute is deemed to be a university and is a Grant-in-Aid institution of the Department of Atomic Energy. HBNI is a research university that educates students at the doctoral and master's level, and pursues research in accordance with its mandate. It has ten Constituent Institutions (CIs) and an Off-Campus-Centre (OCC) and they submit their annual reports. Faculty, students, functionaries, and non-teaching staff are on the rolls of CIs/OCC. In HBNI, there are only three sanctioned posts. These are Vice Chancellor, Dean and Registrar. The institute is sensitive to the subject of recruitment of persons with disabilities and would support such persons as and when the occasion arises.

❖ Vigilance

HBNI is always vigilant to maintain the sanctity and integrity of the institute. It is to be noted that there is no issue to report from vigilance point of view for the period April 1, 2022 to March 31, 2023.

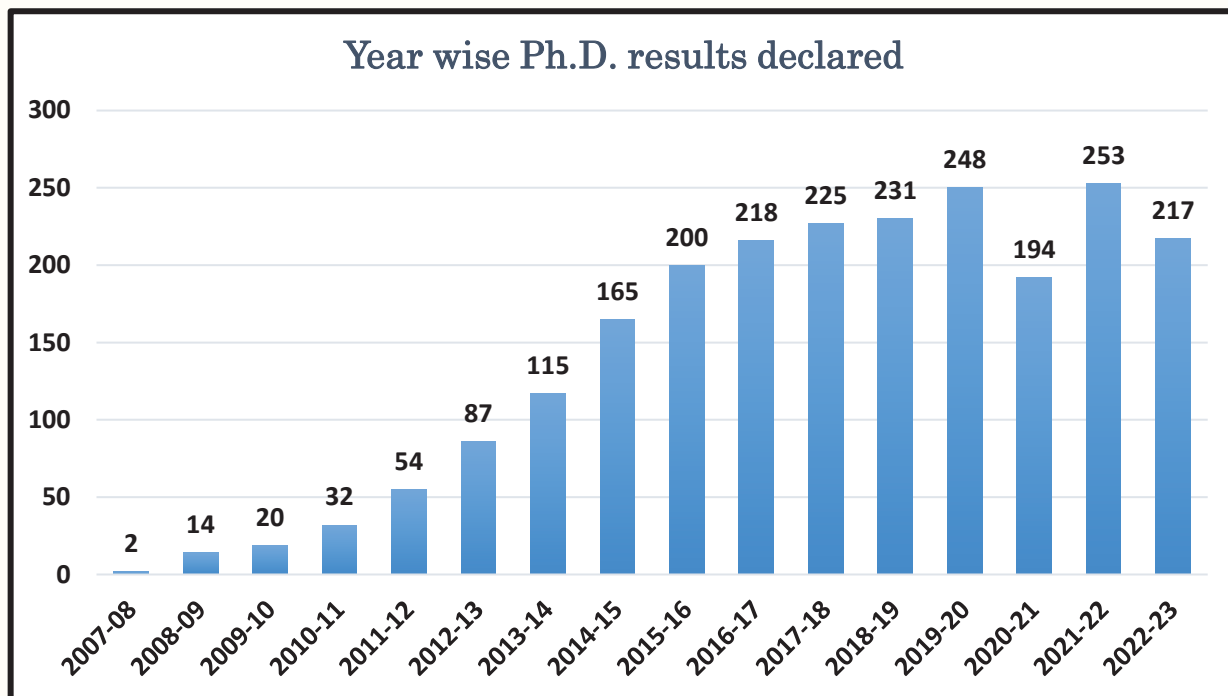
❖ HBNI At a Glance

During the year 2022-23, eight hundred and fifty-six students were admitted in different academic programmes at HBNI, out of which 336 students were enrolled for Ph.D. program. HBNI has awarded 217 Ph.D. degrees, 55 M.Tech. degrees, 149 M.Sc. degrees (in various disciplines), 134 post-graduate & super specialty medical degrees (with specializations in Oncology), 8 Post Graduate Diploma degrees (in Nuclear Science and Engineering), and 25 Diploma degrees (in Radiological Physics). Fifty-two HBNI students attended international conferences abroad with financial support from HBNI during the period April 2022-March 2023.



CIs/OCC wise enrolment data for 2022-23

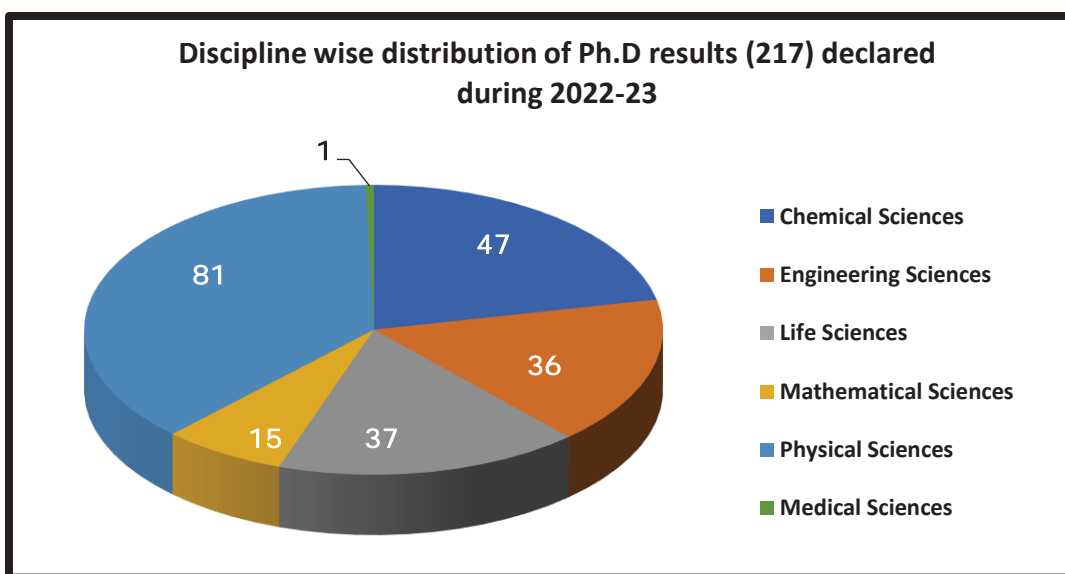
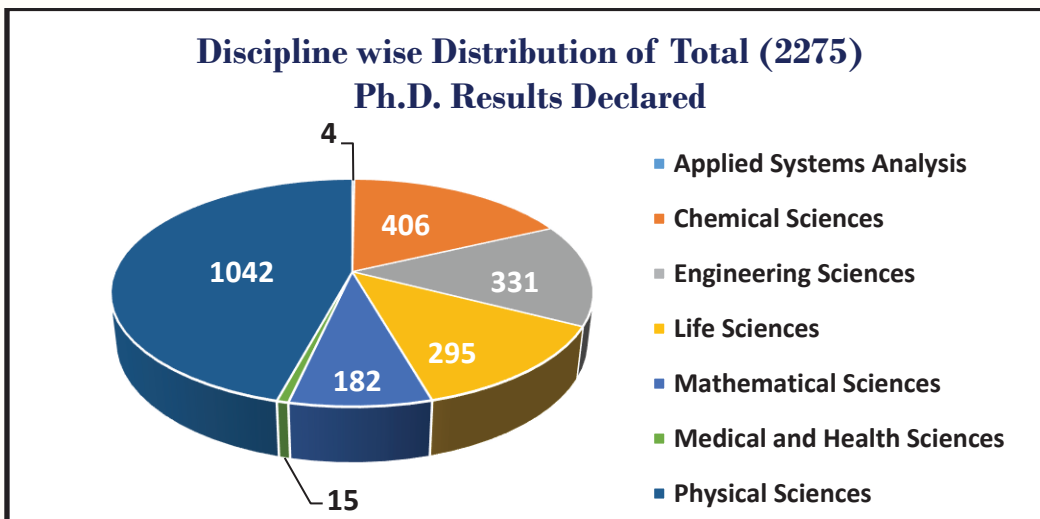
Academic Programme	BARC	IGCAR	RRCAT	VECC	SINP	IPR	TMC	IoP	IMSc	HRI	NISER	Total
Ph.D. + Integrated Ph.D	36	44	16	6	30		25	61	19	12	87	336
M.Tech + PG Diploma	115	29	7	....	....	9	....	....	....	....	....	160
M.D.	....	....	....	....	....	....	91	....	....	....	....	91
Dip RP	24	....	....	....	....	....	....	....	....	....	....	24
D.M./M.Ch	....	....	....	....	....	....	16	....	....	....	....	16
M.Sc. (Physics)	....	....	....	....	....	....	....	....	....	14	9	23
Integrated M.Sc.											118	118
M.Sc. (Nursing)	....	....	....	....	....	....	10	....	....	....	....	10
M.Sc (Nuclear Medicine and Molecular Imaging Technology)	10	....	....	....	....	....	10	....	....	....	....	20
M.Sc. (Public Health and Epidemiology)	....	....	....	....	....	....	4	....	....	....	....	4
M.Sc. Clinical Research							20					20
M.Sc. (Hospital Radiopharmacy)	8	....	....	....	....	....	....	....	....	....	....	8
M.Sc. (Occupational Therapy in Oncology)	....	....	....	....	....	....	4	....	....	....	....	4
Certified fellowship	....	....	....	....	....	....	22	....	....	....	....	22
Total	193	73	23	6	30	9	202	61	19	26	214	856



CIs/OCC wise total Ph.D. results declared since inception

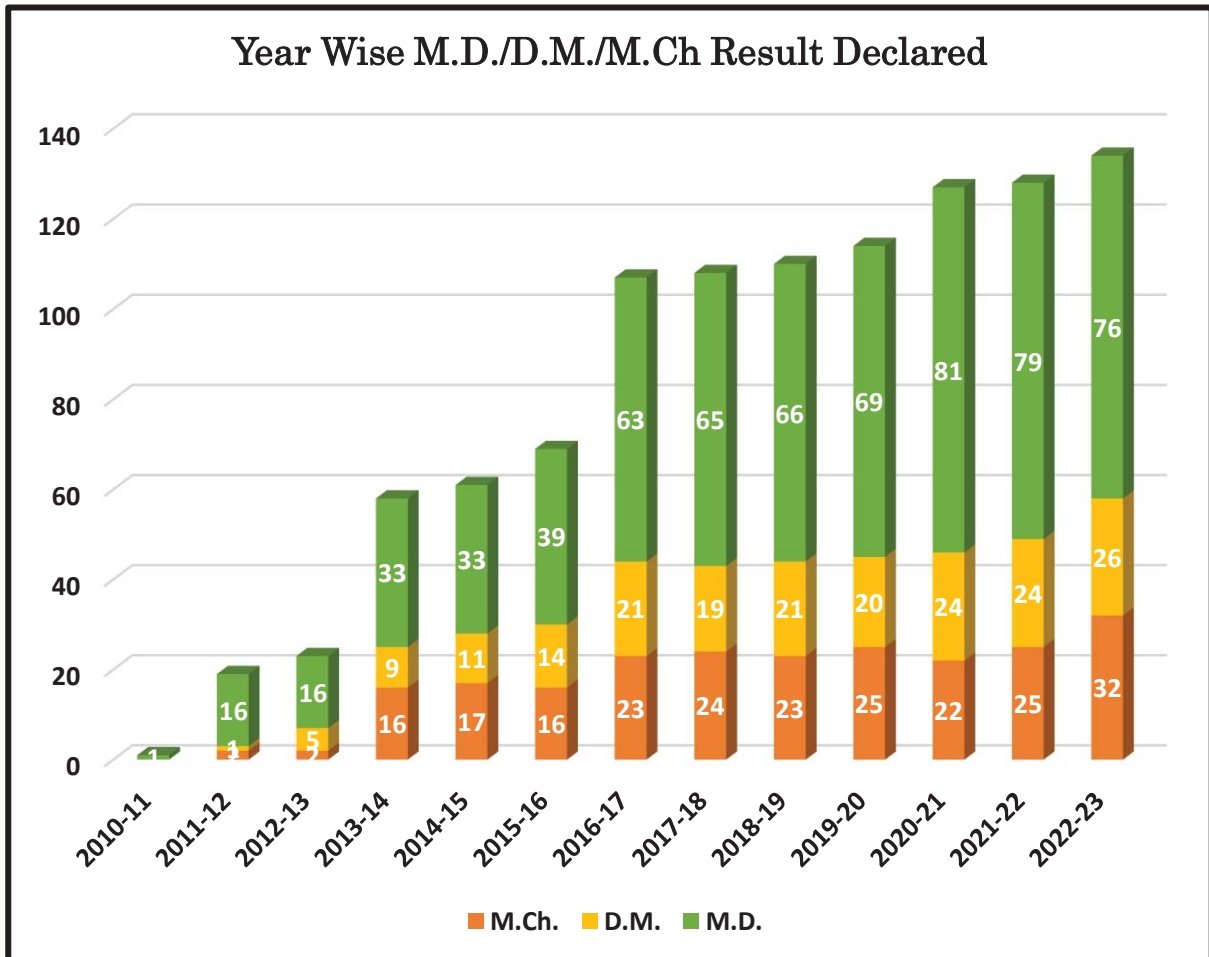
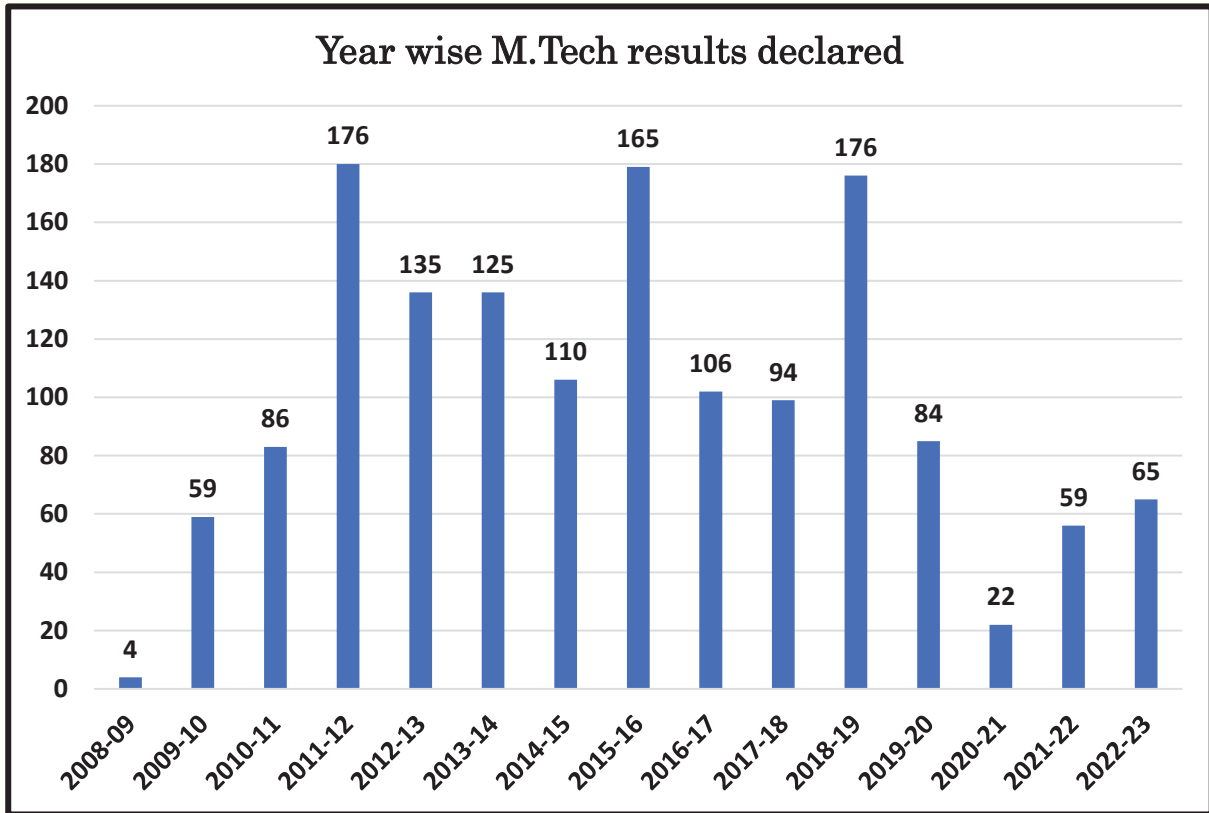
YEAR	BARC	IGCAR	RRCAT	VECC	SINP	NISER	IPR	IOP#	HRI	TMC	IMSc	TOTAL
2007-08	....	....	....	....	....	....	....	2	....	....	....	2
2008-09	....	....	....	....	1	....	....	4	2	....	7	14
2009-10	....	....	....	....	1	....	....	2	7	....	10	20
2010-11	5	....	....	....	2	....	....	6	9	....	10	32
2011-12	15	2	2	....	1	....	5	3	9	....	17	54
2012-13	45	7	4	8	2	....	3	4	5	4	5	87
2013-14	34	23	2	7	6	....	8	9	4	6	16	115
2014-15	62	33	15	6	8	....	1	8	5	14	13	165
2015-16	86	29	13	7	13	....	5	10	11	18	8	200
2016-17	71	33	5	10	11	16	7	5	14	23	23	218
2017-18	71	27	10	11	18	16	13	8	16	15	20	225
2018-19	75	30	16	10	13	27	8	10	15	11	16	231
2019-20	68	39	14	16	15	22	12	8	21	13	20	248
2020-21	57	24	12	3	21	23	9	4	10	14	17	194
2021-22	75	42	13	9	25	30	7	3	10	15	24	253
2022-23	50	33	10	7	21	47	7	4	11	11	16	217
TOTAL	714	322	116	94	158	181	85	90	149	144	222	2275

Includes NISER Results till 2015



CIs/OCC & Discipline wise Ph.D. results declared during 2022-23

Academic Program	BARC	IGCAR	RRCAT	VECC	SINP	NISER	IPR	IOP	HRI	TMC	IMSc	Total
Chemical Sciences	9	8	....	....	....	30	....	....	....	....	....	47
Engineering Sciences	19	14	1	1	....	....	1	....	....	....	....	36
Medical & Health Sciences	....	....	....	....	....	....	....	....	....	....	....	....
Life Sciences	9	....	....	....	7	6	....	....	....	11	4	37
Mathematics	....	....	....	....	....	1	....	....	7	....	7	15
Physical Sciences	12	11	9	6	14	10	6	4	4	....	5	81
Applied System Analysis	1	....	....	....	....	....	....	....	....	....	....	1
Total	50	33	10	7	21	47	7	4	11	11	16	217



❖ **Events at the HBNI Central Office**

• **Discussion Meeting on Basic Sciences (DiMBS-2022)**

The year 2022 has been declared by the United Nations as the International Year of Basic Sciences for Sustainable Development. Towards commemorating the International Year, a Discussion Meeting on Basic Sciences (DiMBS - 2022) was organized by HBNI in hybrid mode during April 6-8, 2022 at the DAE Convention Centre, Anushaktinagar. The meeting saw participation from Directors, Dean Academics, Dean-students affairs and faculty members of Constituent Institutions/Off-Campus Centre of HBNI both in online and offline mode.

During the ten technical sessions over a period of three days, Dean-Academics and faculty members in the disciplines of Chemistry, Engineering, Life Sciences, Physics, Mathematics and Medical & Health Sciences from various constituent institutions and off campus centre of HBNI gave presentations on the research activities, research facilities and research infrastructure in their institutions.

The meeting was well received by all the participants and all agreed that the meeting was unique and useful and will pave the way for useful collaborations among different CIs/OCC of HBNI.



Dignitaries on the dais during the inaugural session of DiMBS-2022



Prof. P. D. Naik, Prof. Vasudeva Rao, Prof. A. K. Mohanty, and Dr. R. Chidambram delivering their addresses in the inaugural session of DiMBS-2022 (from left to right)



Prof. Anil Kakodkar, Chancellor, HBNI delivering his talk (left) and interacting with audience during DiMBS-2022 (right)



Faculty from different CIs/OCC of HBNI giving their presentations during the technical sessions of DiMBS-2022



Dignitaries on the dais during the valedictory session of DiMBS-2022

- **Prof. Srikumar Banerjee Memorial Programme**

A Memorial Programme in the honour of Prof. Srikumar Banerjee, Former Chancellor, HBNI was organised by HBNI on May 10, 2022. Prof. (Dr.) Indranil Manna, JC Bose Fellow & Vice Chancellor, BIT Mesra, Ranchi was the chief guest on the occasion. Eminent personalities present on the occasion included, Prof. Anil Kakodkar, Chancellor, HBNI, Shri K. N. Vyas, Secretary, Department of Atomic Energy (DAE), Chairman, Atomic Energy Commission and Chairman, Council of Management, Prof. J. B. Joshi and Prof. R. B. Grover, Emeritus Professors, HBNI. Dr. N. Sai Baba, Former CE, Nuclear Fuel Complex, attended the program online. All the dignitaries present on the occasion paid humble tributes to Prof. Banerjee who was a great metallurgical scientist, academician par excellence, outstanding mentor and an institution builder.

Prof. Indranil Manna gave an informative talk on the topic “Microstructure: The Key to Designing and Developing Engineering Solids”. In his Talk, he elaborated on the influence of microstructural modifications on the properties of the engineering materials.



Dignitaries present on occasion of Prof. Srikumar Banerjee Memorial Programme



Prof. Anil Kakodkar (left), Chancellor, HBNI and Shri K. N. Vyas (right) Chairman, Council of Management, HBNI and Secretary DAE delivering their addresses on occasion of Prof. Srikumar Banerjee Memorial Programme



Prof. Indranil Manna delivering his talk

- **HBNI Foundation Day Celebration**

The Foundation Day of the Homi Bhabha National Institute (HBNI) was celebrated in hybrid mode at the DAE Convention Centre in Anushaktinagar, Mumbai on June 3, 2022. Shri S. Somanath, Secretary, Department of Space and Chairman, Indian Space Research Organization (ISRO) was the chief guest on the occasion. Dr. A. V. Rama Rao, Founder & Director, Avra Labs (Pvt.) Ltd. and Former Director, IICT was invited to deliver Prof. J. B. Joshi Research Foundation Endowment Lecture. Prof. A. K. Mohanty, Director, BARC and Member, Council of Management, HBNI presided over the function. Outstanding students of the institute in various academic programs and winners of Prof. J. B. Joshi Research Foundation innovation awards for the year 2021 were also honoured on the occasion. Chancellor, HBNI, Prof. Anil

Kakodkar, functionaries of HBNI at various CIs/OCC and Central Office, and a large number of faculty, alumni and students of HBNI participated in function in both online and offline mode.

Dr. A. V. Rama Rao presented J B Joshi Research Foundation Innovation awards. He delivered an inspiring lecture titled, “Reflections from a Personal Journey as Scientist, Technologist and Entrepreneur”, providing a detailed account of his journey from a world class academic researcher to a successful Entrepreneur running a multi-million-dollar pharmaceutical company (Avra Laboratories).

Shri S. Somanath distributed degree certificates and also presented awards to outstanding students of PhD, M.Tech, M.D., D.M. and M.Ch programmes. He delivered an address on the topic “Technology Disruptions in Space Sector - Our Opportunities”. In his address, he gave an overview of the futuristic and disruptive technologies for space sector where ISRO has initiated its research & development initiatives, viz., satellite-based quantum communication, space tech enabled drones, self-vanishing-rockets, self-healing materials, humanoid robotics, intelligent satellites and space-vehicles, artificial-intelligence based space applications, etc.

Following the formal program, a colourful cultural program was presented by the students of HBNI.



Prof. P. D. Naik welcoming the gathering



Prof. A. K. Mohanty (top left), Prof. Anil Kakodkar (top right) and Prof. Vasudeva Rao (bottom) addressing the gathering



Dr. A. V. Rama Rao delivering Prof. J. B. Joshi Endowment lecture



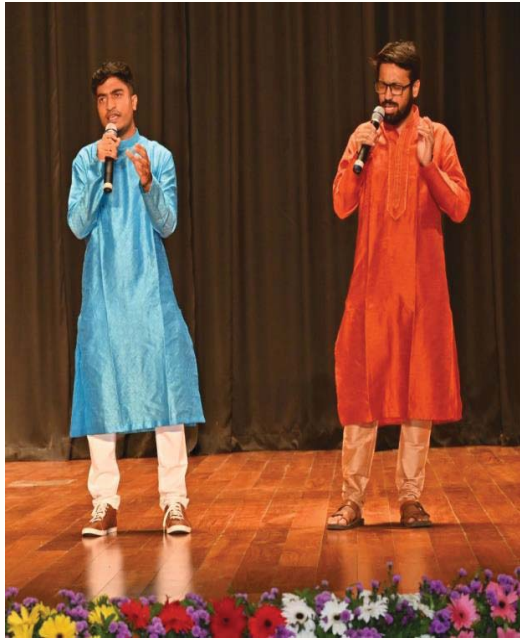
Shri S. Somanath delivering his address



J B Joshi Research Foundation Innovation Award winners receiving their awards from Dr. A. V. Rama Rao



Outstanding student award winners receiving their awards from Shri S. Somanath



Glimpses of the Cultural Program presented by HBNI students

- **Independence Day Celebration**

The 76th Independence Day was celebrated with enthusiasm and fervour at HBNI on August 15, 2022 by hoisting of the National Flag by Prof. P. R. Vasudeva Rao, VC, HBNI in the presence of HBNI functionaries and staff members. The honourable VC congratulated everyone on the special occasion of 75th anniversary of India’s independence and addressed the gathering. In his address, Prof. Rao recalled the great sacrifices made by freedom fighters and great national leaders which made it possible for us to live in a free India. He paid homage to pioneers and visionary leaders who by their untiring efforts took the country forward despite several challenges in the last 75 years and made it 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 remarked that though HBNI has been consistently enhancing its academic performance since its inception, there is a need to introduce innovative programs and policies which will help it to work towards achieving its mandate, respond to the emerging challenges not only related to the DAE programs but also in the other frontier areas of science and technology and allow it to contribute towards the economic and technological progress of our country. Prof. R. B. Grover, Emeritus Professor, HBNI and Prof. D. K. Maity, Associate Dean, HBNI also addressed the gathering. Prof. A. K. Dureja, Associate Dean, HBNI recited a patriotic poem titled “Azadi Ka Amrit Mahotsav,” on the occasion and the program ended with the recitation of National Anthem.



Prof. P. R. Vasudeva Rao, VC, HBNI hoisting the National Flag

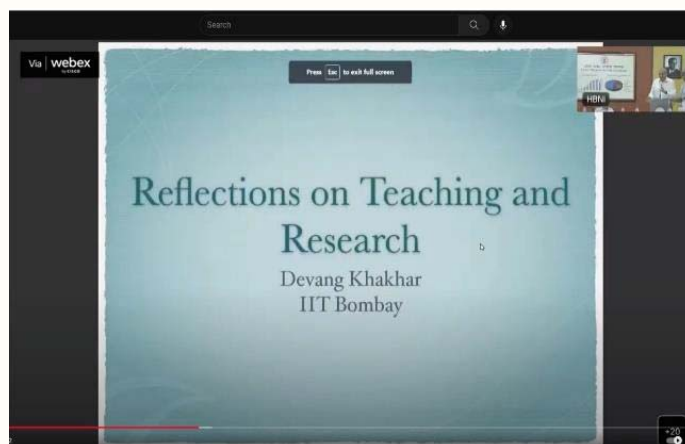
• **Teacher’s Day Celebration**

Teachers’ Day was celebrated at the Central Office on September 5, 2022, in a hybrid mode. Prof. Devang Khakhar, Professor, Department of Chemical Engineering, IIT Bombay and Former Director, IIT Bombay, graced the occasion as the chief guest. Professor R. B. Grover, and Prof. J. B. Joshi, Emeritus Professors, HBNI participated in the event besides other HBNI functionaries and faculty members.

Prof. P. D. Naik, Dean, HBNI welcomed the gathering. A PowerPoint presentation highlighting the life and works of Dr. S. Radhakrishnan, whose birth anniversary is celebrated as the Teacher’s Day every year on September 5 was shown on the occasion. Speaking on the occasion, in his address, Prof. Grover said that Dr. Radhakrishnan was a great teacher and visionary and expressed how the recommendation made by The Radhakrishnan Commission set up in 1948 under his chairmanship that *the “Universities must develop the qualities of synthesizing the knowledge – a ‘Samanavaya’ of the different items of the knowledge”* is even more relevant in the present scenario where the inter-disciplinary approach to research is essential for the advancement of science and technology.



Prof. P. D. Naik welcoming the gathering (left); Prof. P. R. Vasudeva (middle) and Prof. R. B. Grover (right) addressing the gathering



Prof. Devang Khakhar delivering his talk on the occasion of celebration of Teacher’s Day at HBNI

Prof. Devang Khakhar, the chief guest in the occasion, gave a very relevant talk on the topic, “Reflections on Teaching and Research.” In his talk, Prof. Khakhar highlighted the importance of teaching, elements of good teaching, the role of technology in education and discussed about

the close connection between teaching and research. He also talked about the increasing importance of computational approaches in research.

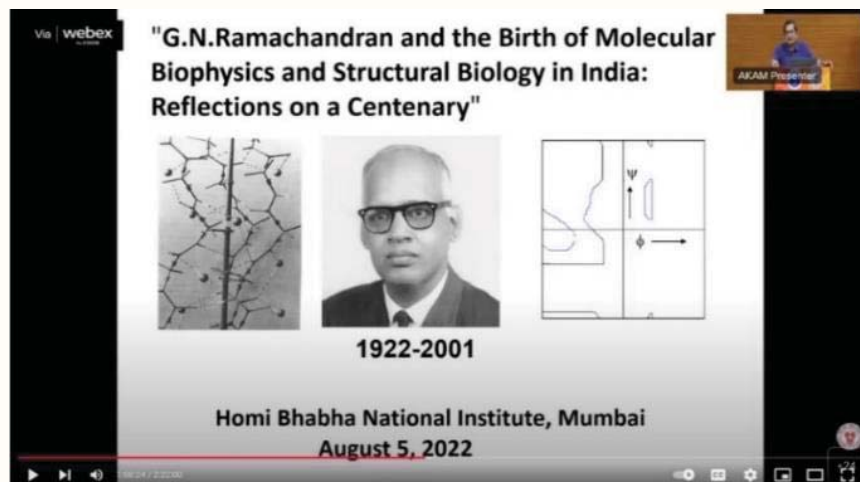
- **Events organized in Commemoration of Azadi Ka Amrit Mahotsav**

- (i) **Special Webinar on the topic “G. N. Ramachandran and the Birth of Molecular Biophysics and Structural Biology in India” as a part of HBNI Eminent Lecture Series**

HBNI has been organizing different activities from August 2021 onwards as a part of the celebration of “Azadi Ka Amrit Mahotsav,” a country-wide campaign launched by the Government of India, as India completes its 75 years of independence. The organization of special lectures/webinars by eminent scientists and engineers, and technologists in the country on various subject areas has been one such activity. In continuation of such activities, HBNI organized a special webinar by Prof. P. Balram, DST-YOS Chair Professor, National Centre for Biological Sciences, Bengaluru, and Former Director, IISc, Bengaluru on August 5, 2022, on the topic “G. N. Ramachandran and the Birth of Molecular Biophysics and Structural Biology in India.’ The talk traced the life and times of Dr. G. N. Ramachandran, a pioneer in the field of biomolecular structure and conformation and highlighted the trail of his research work that has illuminated the understanding of protein structures. Incidentally, 2022 is the birth centenary year of Dr. G. N. Ramachandran whose birthday falls on October 8, 2022.

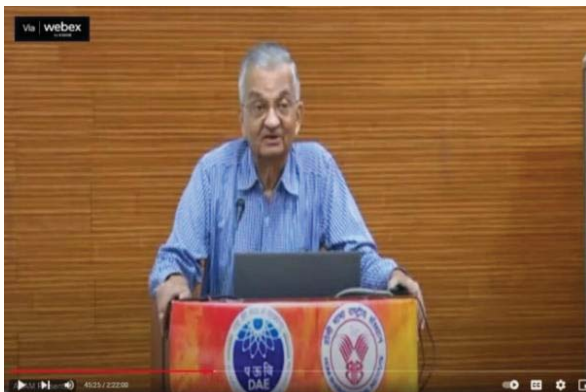


Prof. P. D. Naik welcoming the gathering (left) and Prof. P. R. Vasudeva Rao giving introductory remarks (right) on the special webinar by Prof. P. Balram



Prof. P. Balram delivering his talk

On the occasion, the results of the poster and essay competitions organized by HBNI as part of the “Azadi Ka Amrit Mahotsav” celebration were announced and an e-book titled “Atomic Energy in India: Achievements since Independence” was also released by Prof. Anil Kakodkar, Chancellor, HBNI. The book has been jointly edited by Prof. A. K. Tyagi, Director, Chemistry Group, BARC and Prof. P. R. Vasudeva Rao, Former Vice Chancellor, HBNI.



Prof. Anil Kakodkar giving his address (left); Results of Poster Competition conducted by HBNI as part of Azadi Ka Amrit Mahotsav being announced (right)



E-book, “Atomic Energy in India: Achievements since Independence,” being released by Prof. Anil Kakodkar, Chancellor, HBNI

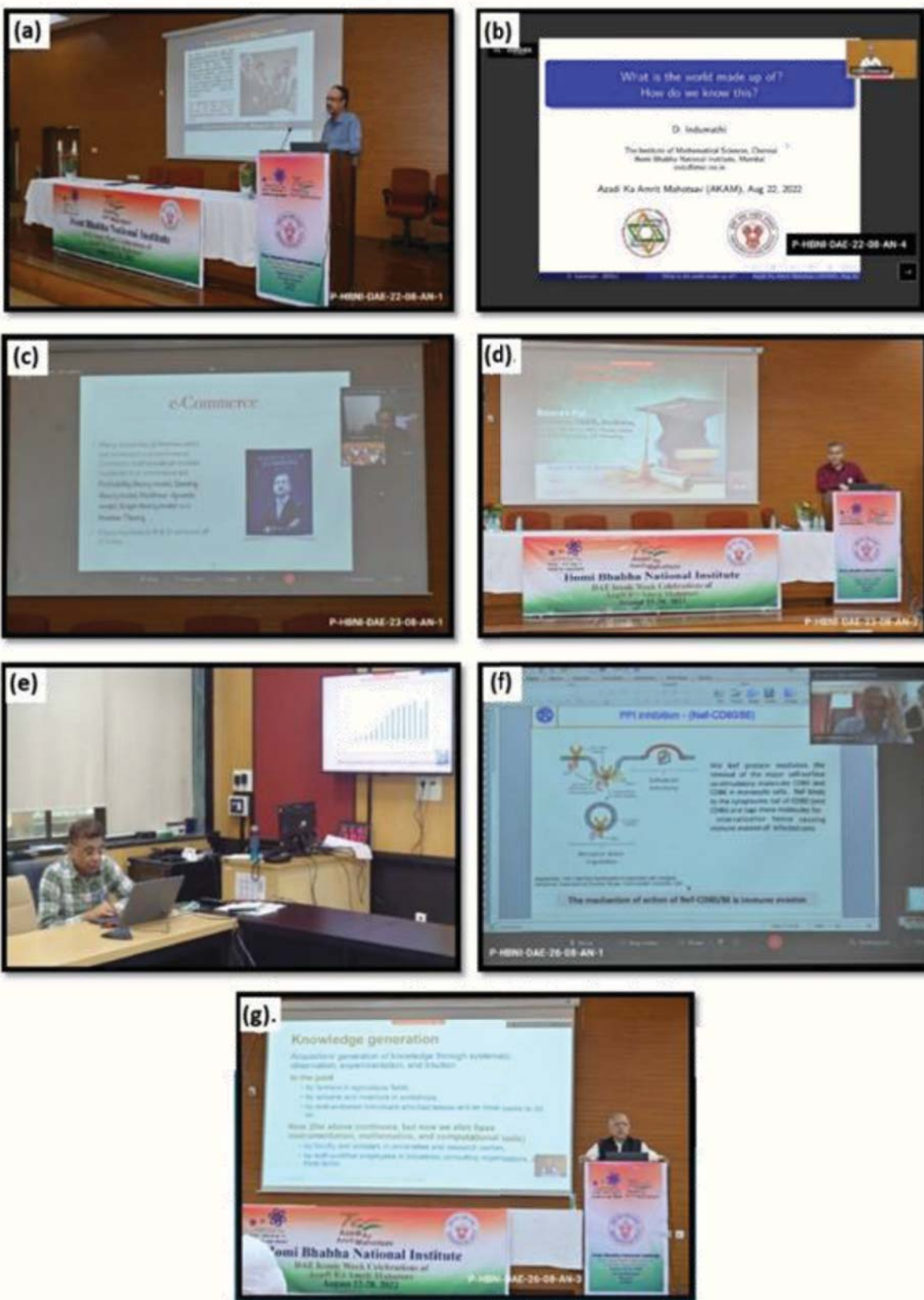
(ii) HBNI-DAE Iconic Week Celebrations of “Azadi Ka Amrit Mahotsav” (August 22-28, 2022)

As part of DAE iconic week celebration of “Azadi Ka Amrit Mahotsav”, HBNI organized special lectures by eminent speakers on the current research areas and future challenges for the benefit of students/faculty of educational institutes across all over India at the multipurpose hall of BARC Training School, Mumbai during August 22-28, 2022. The details are given in the table below. The talks were streamed live on the YouTube, and recordings of the talks are available on the YouTube channel of HBNI, [HBNI Webinar](#).

HBNI also organized talks for the popularization/promotion of science in association with four higher educational institutions in and around Mumbai city, viz., Birla College, Kalyan, VG Vaze College, Mulund, Sophia College, Cumballa Hill, and Wilson College, Chowpatty to create awareness among graduate and postgraduate science students regarding the career opportunities in basic science, i.e., physics, chemistry, biology and encouragement for a research career.

Talks held as part of Celebration of DAE Iconic Week (August 22-28, 2022)

Date	Topic of the Talk	Speaker
22.08. 2022	Opportunities and Challenges on Energy Storage Materials for Electric Vehicle Technology	Dr R. Gopalan, Regional Director, ARCI, Chennai
	What is the world made up of? How do we know this?	Prof. D. Indumathi, IMSc, Chennai
23.08. 2022	Challenges in Number Theory	Prof. R. Thangadurai, HRI, Prayagraj
	Challenges in Chemical Science	Prof. Saurav Pal, Director, IISER, Kolkata
24.08.2022	Research Opportunities Available in HBNI/DAE in the Area of Engineering Sciences	Prof. B. K. Dutta, ICP, HBNI & Team
26.08.2022	Opportunities in Life Science Research	Prof. Ram Viswakarma, Distinguished Scientist, CSIR
	Relating Research to National Development	Prof. R. B. Grover, Emeritus Professor, HBNI



Glimpses of the special lectures given by eminent speakers; (a) Dr. R. Gopalan (b) Prof. D. Indumathi (c) Prof. R. Thangadurai. (d) Prof. Sourav Pal (e) Prof. B. K. Dutta (f) Prof. Ram Viswakarma (g) Prof. R. B. Grover delivering their talks in the HBNI-DAE Iconic Week Celebrations of “Azadi Ka Amrit Mahotsav”



Glimpses of the college visits conducted by HBNI faculty members; (a) Talk by HBNI resource person at B.K. Birla College of Arts, Science and Commerce, Kalyan, (b) A student receiving Quiz Prize, (c) HBNI resource persons along with the Quiz competition winners of V. G. Vaze College, (d) Talk by HBNI resource person at Sophia College, (e) HBNI resource person delivering lecture at Wilson College, (f) HBNI resource persons along with student volunteers from Wilson College

• **Celebration of Engineer’s Day at HBNI**

HBNI celebrated Engineer’s Day on September 15, 2022, at Multipurpose Hall, Training School Hostel, Anushaktinagar in a hybrid mode. Shri B. C. Pathak, Chairman & Managing Director, NPCIL, was the Chief Guest on the occasion, and Shri G. Nageswara Rao, Chairman, AERB, presided over the function.



Prof. P. D. Naik welcoming the gathering (left); Prof. P. R. Vasudeva Rao giving Introductory Remarks (right) in the Engineer’s Day Celebration function

In his presidential address, Shri G. Nageswara Rao dwelled upon the challenges faced by engineers while executing the DAE mission programme related to the development of nuclear power & technology, viz., facing embargo, challenges faced during plant commissioning and operation and how they overcame them. He also spoke about the future challenges in nuclear power capacity enhancement and how these can be addressed.

Shri B. C. Pathak gave a talk on the topic “Role of Nuclear Power in the Development of Nation,” giving an overview of the Indian nuclear power program conceived by great visionary Dr. Homi Jehangir Bhabha to meet the security and energy demands of the country, its progress so far, the challenges faced in its execution, how to overcome them and the way forward.

Prof. A. K. Dureja, Associate Dean, HBNI proposed vote of thanks in the function.



Shri G. Nageswara Rao giving his Presidential Address



Shri B. C. Pathak giving his talk

- **Interactive Session on Gender Sensitization**

HBNI organized an interactive session on “Gender Sensitization” for HBNI doctoral students on September 29, 2022, with the major objective of raising awareness about gender-related issues and how to promote gender equality among the young generation.

The session was conducted by Prof. Meena Gopal, Advanced Centre for Women's Studies, School of Development Studies, Tata Institute of Social Sciences, Mumbai. The session was attended by fifty HBNI students pursuing their Ph.D. degrees in varied science disciplines.

Prof. Meena Gopal started the session by explaining the concept of gender, gender equality and inequality, major reasons for gender discrimination etc. and its variance etc. A lively interactive session followed in which students were divided into five groups and given case studies on different topics to discuss, deliberate and later share their views with all present. This group activity based on case studies opened up stimulating and engaging discussions on gender bias, social problems and how these can be handled.



Prof. Meena Gopal addressing the participants (left); HBNI students engaged in discussion (right)

• **Dr. Sekhar Basu Memorial Programme**

HBNI organized a Memorial Programme in the honour of Dr. Sekhar Basu, Former Secretary, Department of Atomic Energy and Former Chairman, Council of Management, HBNI, on September 23, 2022. Dr. K. Kasturirangan, Member, Atomic Energy Commission and Former Chairman, ISRO, was the chief guest on the occasion. Eminent personalities present on the occasion included, Dr. R. Chidambaram, Former Principal Scientific Advisor, GoI and Former Secretary, DAE, Prof. Anil Kakaodkar, Chancellor, HBNI, Prof. R. B. Grover, Emeritus Professor, HBNI, Shri A. K. Anand, Former Director Reactor Projects Group and Technology & International Relations, BARC, and Shri K. V. Ravi, Chief Executive, Nuclear Recycle Board. The program was also attended by Mrs. Basu, who has helped HBNI to institute the awards in memory of Dr. Sekhar Basu.



Dignitaries present on occasion of Dr. Sekhar Basu Memorial Programme (left); An audio-visual feature on Dr. Basu being shown on the occasion (right)



Prof. K. Kasturirangan delivering Dr. Sekhar Basu Memorial Lecture

Dr. K. Kasturirangan delivered Dr. Sekhar Basu Memorial lecture in the occasion. In his lecture Dr. Kasturirangan gave an overview of the Indian space program, highlighting the contribution of three pioneering and visionary Chairmen of ISRO, viz., Dr. Vikram Sarabhai, Dr. Satish Dhawan and Dr. U. R. Rao in shaping and evolving of the Indian space program from 1960-1990 and how it was carried forward by different successors. He also talked about the transformative nature of higher education as elucidated in National Education Policy (NEP) 2020 and its possible influence on the future evolution of HBNI. During the program, Dr. Sekhar Basu Memorial awards were also presented to the outstanding young engineers who have shown excellent performance in the Training School and M.Tech program and also made exemplary contributions to DAE projects.



Shri Bipin Nailwal, BARC



Ms. Sonal Gupta, BARC



Shri Sayantan D. Banik, BARC



Shri Ashish Kumar, IGCAR



Shri Lokesh Kumar, BARC

Prof. K. Kasturirangan presenting Dr. Sekhar Basu Memorial award to the awardees

- **Theme Meetings Conducted by HBNI**

HBNI organised several discipline specific interaction meetings during the year with an objective to provide a platform to the faculty members and research scholars of the different Constituent Institutions (CIs) and Off-Campus Centre (OCC) of HBNI to interact amongst themselves to facilitate knowledge and resource sharing in their respective disciplines and foster collaborative research between HBNI students and faculties of different CIs. These include (i) interaction meeting in Condensed Matter Physics at Saha Institute of Nuclear Physics (SINP), Kolkata, during 23-24th June 2022, (ii) Theme meeting on Life Sciences and Associated Technologies at Raja Ramanna Centre for Advanced Technology (RRCAT) Indore during September 7-10, 2022, (iii) interaction meeting in Chemical Sciences at NISER during January 18-20, 2023 and (iv) II-interaction meeting in Life Sciences at SINP during February 16-17, 2023. The details about the meetings are given below:

(a) Interaction Meeting on Condensed Matter Physics

The meeting on “Condensed Matter Physics,” was held at Saha Institute of Nuclear Physics (SINP) during June 23-24, 2022. The meeting was inaugurated by Prof Gautam Bhattacharyya, Director SINP and Prof. P. R. Vasudeva Rao, Former VC, HBNI. Prof J. V. Yakhmi graced the occasion as the Chief Guest. In his address, Prof. Yakhmi emphasized on carrying out interdisciplinary research in the areas of physics, chemistry and biology to come up with innovations and solutions for societal needs.



Inaugural session of the interaction meeting on “Condensed Matter Physics” in progress

The meeting was attended by faculty members and students from constituent institutions and an off-campus centre of HBNI, viz., BARC, IGCAR, RRCAT, VECC, SINP, IPR, IOP, HRI, IMSc, and NISER. During the scientific sessions held over two days, faculty members and doctoral students from different CIs/OCC of HBNI presented their research work in the area

of condensed matter physics. In addition, a poster session was also held in which young research scholars got the opportunity to showcase their research work to expert faculty from different CIs/OCC of HBNI and learn from them.



Participants of the interaction meeting on Condensed Matter Physics held at SINP

(b) Theme Meeting on Life Sciences

The first HBNI Theme Meeting in Life Sciences (HBNI-TM-LS) was held at Raja Ramanna Centre for Advanced Technology (RRCAT) Indore during September 7-10, 2022. The meeting was inaugurated by Dr. Shankar V. Nakhe, Director, RRCAT. Prof. Amlan J. Pal, Director, UGC-DAE Consortium of Scientific Research, Indore was the Chief Guest on the occasion.



Dignitaries on dais during the inauguration of the Theme meeting on Life Sciences

The four-day meeting had lectures by expert faculties invited from different CIs of the HBNI, viz., BARC, TMC-ACTREC, IMSC, SINP, RRCAT and Off-Campus Centre (OCC), NISER. The deliberations covered nearly all-important topics related to Life Sciences such as biophotonics, genomics and cell biology, novel research and clinical aspects related to

diagnostics as well as therapeutic modalities of diseases like cancer, and current research directions in the broad areas of basic and applied biological sciences. In addition, there were about 50 posters presented by young research scholars on the topic of their research in Life Sciences.



Poster Session in progress during the Theme Meeting on Life Sciences at RRCAT

(c) HBNI Interaction Meeting in Chemical Sciences at NISER Bhubaneswar

The first HBNI interaction meeting in Chemical Sciences was organized by the School of Chemical Sciences, NISER, Bhubaneswar during January 18-20, 2023 in hybrid mode. The three-day meeting had lectures by expert faculties invited from different CIs of the HBNI, viz., BARC, IGCAR, SINP and Off-Campus Centre (OCC), NISER. The talks covered nearly all research areas in Chemical Sciences, including Inorganic Chemistry, Organic Chemistry, Bioinorganic Chemistry, Nuclear Chemistry, Materials Chemistry, Photochemistry, Environmental & Analytical Chemistry, etc. In addition, there were about 50 posters presented by the young research scholars on the topic of their ongoing research in Chemical Sciences.



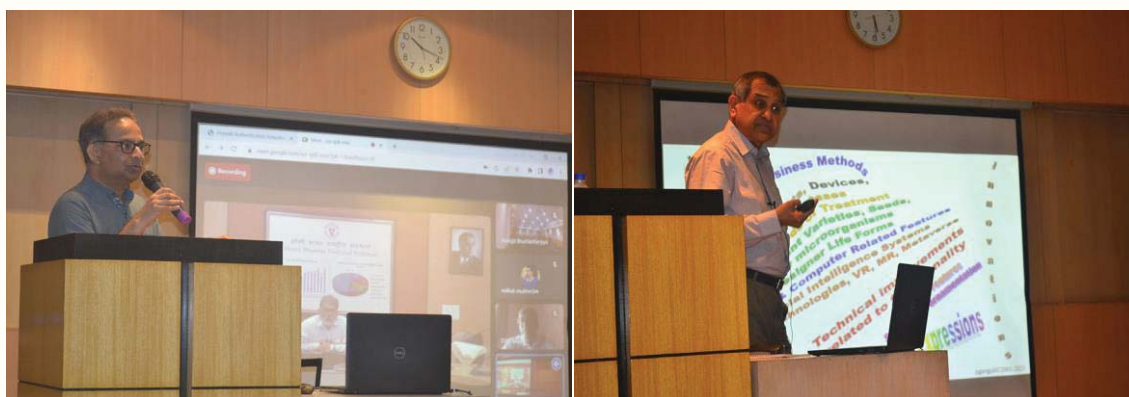
Participants of the interaction meeting on Chemical sciences held at NISER

(d) Second HBNI Theme Meeting on Life Sciences (HBNI-TM-LS2)

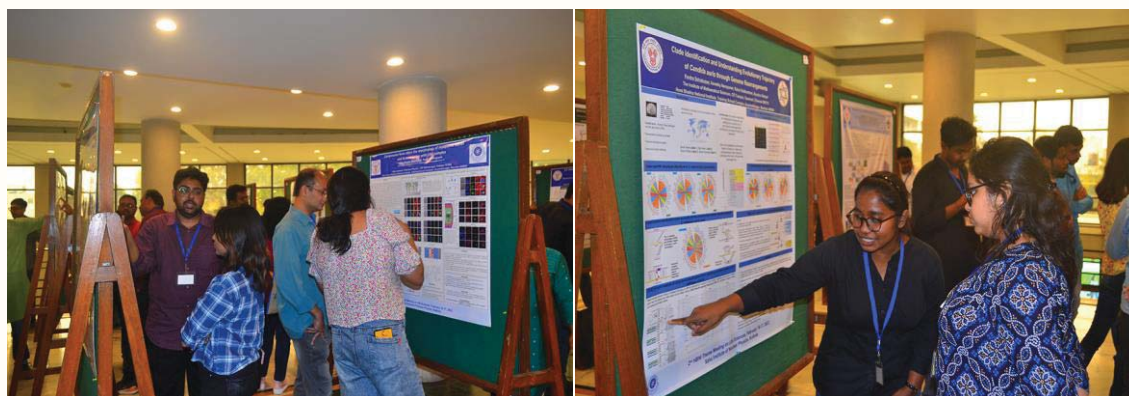
The Second Theme Meeting in Life Sciences was organized by SINP, Kolkata, during February 16-17, 2023 in hybrid mode. The meeting was attended by faculty members and research scholars from BARC, ACTREC, IISc, NISER, RRCAT and SINP, along with the distinguished members from HBNI central office.

During the scientific sessions conducted over two days, twelve faculty members from different CIs and OCC of HBNI delivered talks and twenty-eight Ph.D. scholars presented posters on diverse topics including disease biology, stress biology, metabolomics, waste water treatment, agriculture and theoretical biology. In a special session on Intellectual Property Rights, Prof. Prabuddha Ganguli, Honorary Professor of HBNI, delivered a very insightful lecture on “IPR-related strategic R&D for monetisation.” Prof. Ganguli pointed out the importance of patent literatures containing advanced information on diverse research fields.

It was noted that because of the two discussion meetings on Life Sciences held so far, several collaborations among faculty members of different CIs/OCC are evolving.



Prof. Gautam Bhattacharyya, Director, SINP welcoming the gathering at HBNI-TM-LS2 (left); Prof. Prabuddha Ganguli delivering lecture on IPR in the theme meeting (right)



Poster Session in Progress on the Second HBNI Theme Meeting on Life Sciences

- **Republic Day Celebration**

The 74th Republic Day was celebrated at HBNI on January 26, 2022. Prof. P. D. Naik, Officiating Vice Chancellor and Dean, HBNI unfurled the National Flag followed by singing of National Anthem by HBNI functionaries and staff members present on the occasion. Prof. Naik then addressed the gathering of the HBNI functionaries and staff members. In his address, Prof. Naik gave a brief account of the recent achievements of the HBNI, new academic programmes started, outreach activities and value-added courses conducted on NPTEL platform. This was followed by soulful performances of patriotic songs and poems by staff members and students of HBNI. It was a momentous occasion with the spirit of patriotism at the centre of it all.



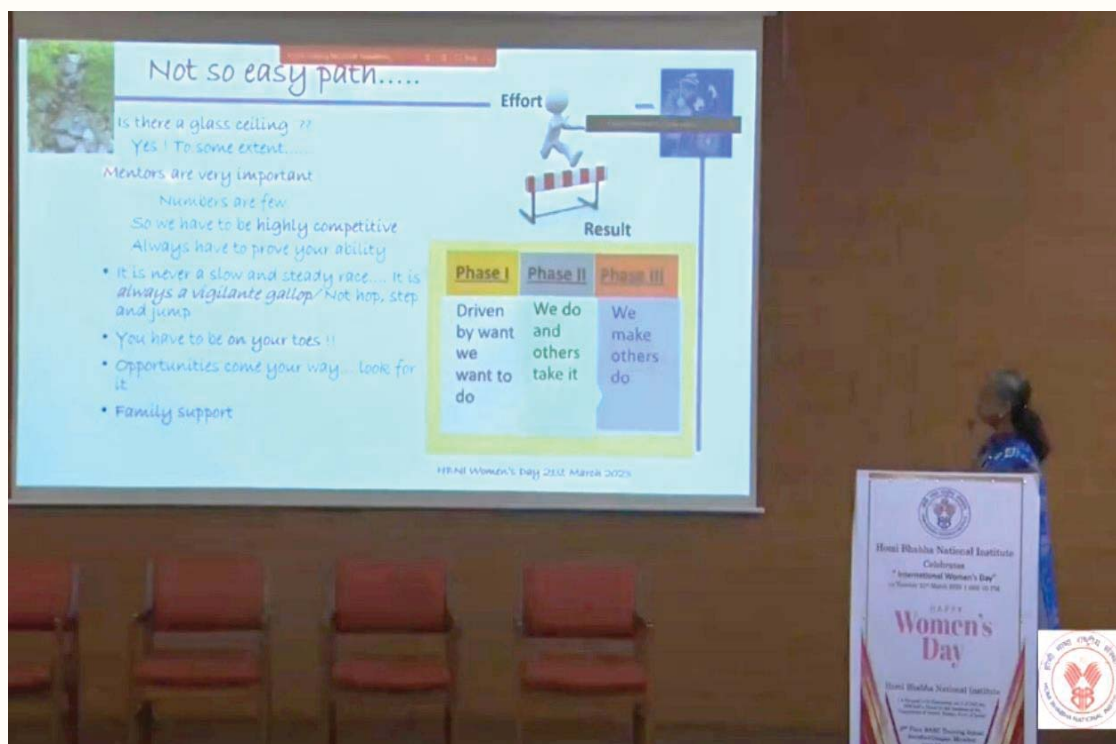
Prof. P. D. Naik, Officiating Vice Chancellor, and Dean HBNI saluting the National Flag after unfurling it at the 74th Republic Day function

- **International Women’s Day Celebration**

The Women Cell of HBNI organized International Women’s Day on March 21, 2023 at the central office by organizing a webinar titled “Reflections of a Nuclear Reactor Scientist,” by Prof. Umasankari Kannan, Head, Reactor Physics Design Division, BARC and Senior Professor, HBNI. The webinar was organized in hybrid mode and attended by a large no. of students, staff and faculty of HBNI. In her talk, Prof. Kannan first talked about the challenges and barriers faced by women in the field of science and technology and how to address these. She then gave glimpses of her professional journey as a physicist in BARC, dwelling upon the challenges and hurdles faced and how she overcame them all to build a successful career as a nuclear reactor scientist. The talk was followed by a cultural program by HBNI students and staff members showcasing the rich cultural heritage of India through dance and music.



Prof. P. D. Naik, Officiating VC and Dean, HBNI (left) and Prof. D. K. Maity, Associate Dean, HBNI (right) addressing the gathering on International Women's Day celebration at HBNI



Prof. Umasankari Kannan delivering her talk

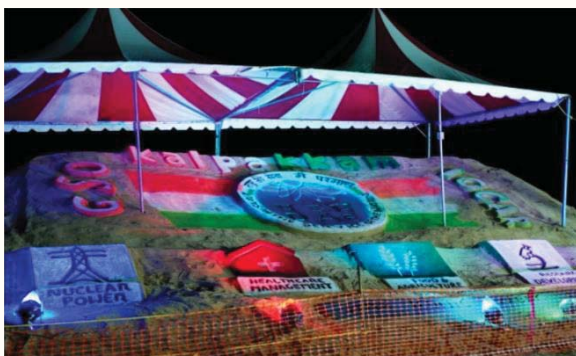


Cultural program presented by HBNI students and staff members on the occasion of International Women’s Day celebration at HBNI

❖ Events at the Constituent Institutions (CIs)/Off-Campus Centre (OCC)

• DAE Iconic Week Celebrations at CIs/OCC

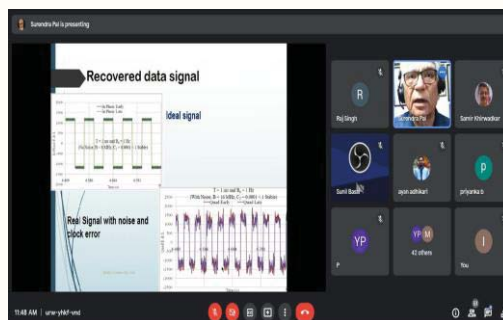
As part of DAE's iconic week celebrations, all the constituent institutions (CIs) and off-campus centre (OCC) organized a series of activities including (i) organization of lectures/popular science talks by eminent speakers for school, UG and PG students, (ii) educational visits of school, UG and PG students to CIs, (iii) outreach programs promoting awareness of nuclear power as a source of green energy and the applications of nuclear technologies for societal benefits including industrial applications, healthcare, environment and agriculture. In addition, CIs/OCC also organized tree plantations drive, blood donation and health camps, photo exhibitions, film shows, quizzes and several competitions, viz., essay competitions, poster competitions and poetry competitions etc. Glimpses of the DAE Iconic Week Celebrations by CIs/OCC of HBNI are given below.



Sand sculpture illustrating the contribution of the nuclear power created on the beaches of IGCAR (left); Visit of students to the Light Exploratorium at RRCAT (right)



Online lecture in progress at HRI (left); Health camp organized at SINP (right)



Academic program for junior college students organized at IOP (left); Lecture by Prof. Surendra Pal for students organized at IPR

• **Independence Day Celebrations at IPR**

The 76th Independence Day was celebrated at IPR on 15th August 2022. Director IPR received a guard of honour from the IPR security staff and hoisted the National Flag. He also addressed the gathering giving glimpses of some of the scientific achievements of IPR in the past year.



Shri S. Chaturvedi, Director, IPR addressing the gathering on the occasion of 76th Independence Day of India

- **Celebration of Bhartiya Bhasha Utsav at VECC**

VECC celebrated the Bhartiya Bhasha Utsav to mark the birth anniversary of Mahakabi Subramaniam Bharati. Dr. Sumit Som, Director-VECC inaugurated the event with the opening of a multi-lingual exhibition with a display of books in different Indian languages (Sanskrit, Bengali, Odiya, Santhali, Hindi, Marathi, Tamil, Telegu, Kashmiri, and English among others) and a beautiful flower-rangoli & alpna depicting Indian tradition of unity in diversity. The event saw enthusiastic participation from HBNI students and faculty members who took part in a multilingual cultural afternoon which saw the reverberations of songs, poetry recitations and skits in different Indian languages. The event was indeed a celebration of India’s rich linguistic harmony among diversity.



Celebration of Bhartiya Bhasha Utsav at VECC, December 12, 2022

- **Diamond Jubilee Celebration of Institute of Mathematical Sciences - IMSc 60**

The Institute of Mathematical Sciences (IMSc.) a constituent institution of HBNI, is celebrating its 60th foundation year in 2022-2023. To commemorate this momentous occasion, a virtual event, “IMSc60 celebration” was organized by IMSc. during Jan 2-5, 2023 with an aim to celebrate all areas of science and bring together the scientific community encompassing scientists, nation-builders, policy-makers and research scholars not only to honor and recognize remarkable scientific contributions from the past but also to strengthen India’s scientific vision for the next decade and help India lead the global research landscape. The event was inaugurated by Prof. V Ravindran, Director of the Institute on January 2, 2023. The four day event included lectures by eminent scientists on wide variety of topics encompassing mathematics, theoretical physics, theoretical computer science and computational biology, conferences and academic events across all research groups. A poster session, release of special stamp to commemorate IMSc60, release of special volumes of the Tamil Nadu Science Forum (TNSF) science outreach magazines Thulir and Jantar Mantar featuring the contributions of IMSc members over the years, panel discussions and a cultural dance event were also part of the celebrations.

❖ Scientific Outreach Activities by the CIs/OCC

• Scientific Outreach Activities at HRI, Prayagraj

HRI conducted the Summer Program in Mathematics (SPIM), a scheme for introducing basic mathematics in Master's level in an interesting way to the first year post graduates from various colleges/universities from June 27 - July 16, 2022. The programme involved intensive lectures on Algebra (Group Theory, Field Theory and Galois Theory), Analysis (Measure Theory, Basic Complex Analysis) and Topology (Set Topology up to homotopy theory). The institute also conducted NCM Workshop on Elliptic Curves, Elliptic functions and Transcendence (November 24, 2022 – December 3, 2022), Conference on Algebraic Geometry (December 12-16, 2022), Infosys Lecture Series by Prof. M. Ram Murty (December 10-19, 2022), Infosys lecture Series by Prof. Jean-Marc Deshouillers (February 22-25, 2023) and International Conference on Advances in Renewable Energy (CARE -2023) (February 2-4, 2023).

• Outreach Activities at IPR, Gandhinagar

IPR organized several campus visits for engineering students from various colleges in Gujarat, as a part of students' academic programme. IPR also organized several outreach activities for students of various schools all over India with the main objective to create awareness about plasma and its applications among the students.



Scientific outreach activity at Amreli, Gujarat, organized during July 4-8, 2022



Scientific outreach activity at Mandvi, Gujarat, organized during July 11-13, 2022



Scientific outreach program "Aurorae-2022", organized at Kochi, Kerala, during September 19-24, 2022

- **Outreach Activities at IMSc., Chennai**

IMSc organized Summer School for postgraduate students of mathematics from various colleges in Chennai, Online Lectures by eminent scientists, Vigyan Pratibha Discussion Seminars, Workshops for teachers, IMSc Distinguished and Heritage Lecture Series, etc. as a part of its outreach program.



Participants at the Summer School for postgraduate students of mathematics, organized at IMSc during July 11-27, 2022

**Financial Statement for the period
April 1, 2022 to March 31, 2023**



7028, 1 Aerocity, Andheri Kurla Road,
Kurla (West), Mumbai - 400 072.
Tel.: 022 6666 5295 / 6666 5296
Email : lbjhabom@lbjha.com

INDEPENDENT AUDITOR'S REPORT

NAME OF THE TRUST: HOMI BHABHA NATIONAL INSTITUTE

Opinion

We have audited the accompanying financial statements of **Homi Bhabha National Institute (HBNI)**, which comprise the Balance Sheet as at March 31, 2023, Income & Expenditure Account, Receipts & Payments Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

In our opinion and to the best of our information and according to the explanations given to us, the financial statements of HBNI for the year ended March 31, 2023 are prepared, in all material respects, in accordance with The Bombay Public Trusts Act, 1950 and the rules made thereunder, in the manner so required, in conformity with the accounting principles generally accepted in India give a true and fair view:

- (i) In the case of the Balance Sheet, of the state of affairs of the Trust as at 31st March, 2023 and
- (ii) In the case of Income and Expenditure Account, of the deficit for the year ended on that date
- (iii) A separate Report as required under Section 33(2) and Section 34 and Rule 19 of the Bombay Public Trusts Act, 1950 is annexed.

Basis of Opinion

We conducted our audit in accordance with Standards on Auditing (SAs). Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the entity in accordance with the ethical requirements that are relevant to our audit of the financial statements, and we have fulfilled our other 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 of the financial statements in accordance with the Bombay Public Trusts Act 1950 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. 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 Responsibility for the Audit of 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.

For L.B. Jha & Co.
 Chartered Accountants
 FRN: 301088E



Pratik Agarwal

Place: Mumbai
 Date: 23rd August 2023

Pratik Agarwal
 Partner
 Membership No. 301880
 UDIN:- 23301880BGVEYW1513

HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
Anushaktinagar, Mumbai - 400 094
BALANCE SHEET FOR THE YEAR ENDED 31/03/2023

	SCHEDULE	CURRENT YEAR	PREVIOUS YEAR
(Amount - ₹)			
LIABILITIES			
CORPUS/CAPITAL FUND			
OTHER EARMARKED FUND - ENDOWMENT FUND	1	52,57,249	49,57,420
RESERVES AND SURPLUS	2	8,88,32,294	5,12,02,495
CURRENT LIABILITIES AND PROVISIONS	3	2,36,808	1,99,631
TOTAL		9,43,26,351	5,63,59,546
ASSETS			
FIXED ASSETS	4	4,96,00,708	1,32,45,084
CURRENT ASSETS, LOANS & ADVANCES	5	4,47,25,643	4,31,14,462
TOTAL		9,43,26,351	5,63,59,546

SIGNIFICANT ACCOUNTING POLICIES
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS

Place: Mumbai
Date: 23/08/2023

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E



Finance Officer
[Signature]

Dean
मो. पी. डी. नाईक / Prof. P. D. Naik
टीए/Dean

Vice Chancellor
श्री. यू. कामाचि मुदाली
Prof. U. Kamachi Mudali
जुवळी / Vice Chancellor

Pratik Agarwal
Partner
Membership No. 301880
UDIN:- 233018809GVEVW1513

शैलेश कुमार जाखोटा
वित्त अधिकारी / Finance Officer
श्री. बी. एन. मुंबई HBNI, Mumbai.

होमी भाभा राष्ट्रीय संस्था, मुंबई
Homi Bhabha National Institute, Mumbai

श्री. जगदीश/ HBNI

HONI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
Anushaktinagar, Mumbai :- 400 094
INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31/03/2023

	SCHEDULE	CURRENT YEAR	PREVIOUS YEAR	(Amount -Rs)
INCOME				
Grants/Subsidies	6	6,30,63,270	2,60,37,097	
Fees/Subscriptions	7	1,25,17,048	1,02,16,056	
Interest Earned	8	19,62,959	18,14,006	
TOTAL = A		7,75,43,277	3,80,67,159	
EXPENDITURE				
Establishment Expenses	9	1,51,36,765	1,18,60,042	
Other Administrative Expenses	10	1,52,27,135	98,33,244	
Reimbursement of fees	11	3,11,800	85,650	
Academic Welfare Expenses	12	92,37,778	76,33,527	
Other Expenses	13		12,33,294	
TOTAL = B		3,99,13,478	3,06,45,757	
BALANCE BEING SURPLUS/ DEFICIT CARRIED TO RESERVES & SURPLUS =A-B		3,76,29,799	74,21,402	

SIGNIFICANT ACCOUNTING POLICIES
CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS

Place : Mumbai
Date : 23/03/2023

Finance Officer
शैलेष कुमार जाखोटेरा
Shailish Kumar Jakhotera
श्री. पी. डी. नाईक / Prof. P. D. Naik
Dean
श्रीम. श्रीमती सुशीला सुर्वे
Smt. Sushila Surve
Honi Bhabha National Institute, Mumbai


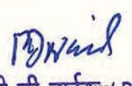
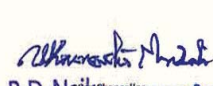
Vice Chancellor
श्री. यू. कामाचि मुदेली
Shri. Y. Kamachi Mudali
Honi Bhabha National Institute, Mumbai

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E
Pratik Agarwal
Partner
Membership No. 301880
UDIN:- 23301880BQVEYW1513



HOMI BHABHA NATIONAL INSTITUTE DEEMED UNIVERSITY UNDER UGC Act 1956. RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31ST MARCH 2023					
RECEIPTS	Current Year	Previous Year	PAYMENTS	Current Year	Previous Year
I. Opening Balances			I. Expenses		
a) Cash in hand	-	-	a) Establishment Expenses	1,51,36,765	1,18,60,042
b) Bank Balances			b) Administrative Expenses	1,22,56,339	77,63,417
i) In current accounts	32,72,437	28,28,746	c) Reimbursement of Fees	3,11,800	85,650
ii) In Fixed deposits	3,04,46,035	3,04,46,035	d) Academic welfare expenses	92,37,778	76,33,527
iii) In Endowment Fund	11,80,317	5,050	e) Expenses related to Endowment Fund	1,00,171	55,654
iv) In Saving A/c	-	-	f) Other Expenses (RRF Honorarium)	-	12,33,294
			II. Payments made against funds for various projects		
II. Grants Received			III. Investments and deposits made		
a) From Government of India - HBNI	6,30,63,270	2,61,53,803	a) Out of Earmarked/Endowment funds	44,60,000	39,19,000
- Raja Ramanna Fellowship	-	-1,16,706	b) Out of Own Funds (Investments)	-	-
b) From State Government	-	-			
c) From other sources	-	-	IV. Expenditure on Fixed Assets & Capital Work-in-Progress		
III. Income on Investments from			a) Purchase of Fixed Assets	51,56,453	17,09,742
a) Earmarked/Endowment Funds	-	-	b) Expenditure on Capital Work-in-progress	3,44,00,000	55,00,000
b) Own Funds	-	-	V. Refund of surplus money/Loans:		
IV. Interest Received			a) To the Government of India	-	-
a) On maturity of Bank deposits	-	-	b) To the State Government	-	-
b) On Saving Bank	-	-	c) To other providers of funds	-	-
c) Loans, Advances etc.	-	-	VI. Finance Charges (Interest)	-	-
c) Interest reinvested in new FD	-	-			
V. Other Income			VII. Other Payments		
a) Enrollment & Evaluation Fees	1,22,04,000	94,47,000	a) To Other Payments	-	-
b) Miscellaneous receipts	3,19,048	7,79,527	Sundry Creditors (Expenses)	9,326	600
Prepaid Expenses	1,30,381	1,40,045	Security Deposit	39,031	23,804
-ITR Refund	1,19,408	1,42,553	Sundry Creditors (Others)	32,800	32,800
			Temporary Advance	-	7,000
VI. Amount Borrowed/Liabilities			Advances (NAAC)	-	-
a) Statutory Liability	43,798	1,02,175	TDS on Professional fees Receivable	27,000	4,98,286
b) Security Deposit	70,201	39,031	VIII. Closing Balances		
c) Other outstanding Expenses	35,769	9,326	a) Cash in hand	-	-
d) Sundry Creditors (Others)	87,040	49,099	b) Bank Balances		
e) Temporary advance	7000	46000	i) In HBNI current account	27,39,060	32,72,437
VII. Any other receipts			ii) In Endowment Fund current account	1,36,375	11,80,317
a) Endowment Fund	35,16,229	51,49,921	iii) In Fixed Deposits - with bank	3,04,46,035	3,04,46,035
			iv) In savings accounts	-	-
Total	11,44,88,933	7,52,21,605	Total	11,44,88,933	7,52,21,605

Place: Mumbai
Date: 23/08/2023

Shailesh Kumar Jakhotiya प्रो. पी. डी. नाईक / Prof. P. D. Naik प्रो. यू. कामाची मुदली
 वित्त अधिकारी / Finance Officer डीन / Dean कुलपति / Vice Chancellor
 एच. बी. एन. आय. मुंबई HBNI, Mumbai Homi Bhabha National Institute, Mumbai हो. भा. रा. सं. / HBNI

As per our report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN - 301088E
Pratik Agarwal
Partner
Membership No. 301880
UDIN:- 23301880BGVEYW1513



HOMI BHABHA NATIONAL INSTITUTE Deemed University under UGC Act 1956 SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31/03/2023				
SCHEDULE 1 - OTHER ENMARKED FUND (ENDOWMENT FUND) (Amount-Rs)				
Particulars	Current Year		Previous Year	
Balance as per Last Balance sheet	49,57,420		29,13,074	
Add: Additions during the year				
- Endowment Fund	4,00,000		21,00,000	
	53,57,420		50,13,074	
Less: Current year expenses (21-22)	1,00,171	52,57,249	55,654	49,57,420
TOTAL		52,57,249		49,57,420
SCHEDULE 2 -RESERVES & SURPLUS (Amount-Rs)				
Particulars	Current Year		Previous Year	
Revenue Reserve				
As per last Account	5,12,02,495		4,37,81,093	
Add: Surplus / Deficit as per Income & Expenditure A/c	3,76,29,799		74,21,402	
Less : Transfer to Consolidated Fund of India	-		-	
Less : Interest received on amt transferred to CFI	-	8,88,32,294	-	5,12,02,495
TOTAL		8,88,32,294		5,12,02,495
<p>Place : Mumbai Date : 23/08/2023</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>(Signature)</i> Finance Officer शैलेश कुमार जाखोटिया Shailesh Kumar Jakhotiya वित्त अधिकारी / Finance Officer ३. बी. एन. आय, मुंबई HBNI, Mumbai</p> </div> <div style="width: 45%;"> <p><i>(Signature)</i> Dean प्रो. पी. डी. नाईक / Prof. P. D. Naik डीन/ Dean होमी भाभा राष्ट्रीय संस्था, मुंबई Homi Bhabha National Institute, Mumbai</p> </div> <div style="width: 45%;"> <p><i>(Signature)</i> Vice Chancellor प्रो. यू. कामाची मुदली Prof. U. Kamachi Mudali कुलसचिव / Vice Chancellor हो. भा. रा. सं. / HBNI</p> </div> <div style="width: 45%;"> <p>As per report of even date For L.B. Jha & Co. Chartered Accountants FRN No. 301088E <i>(Signature)</i> Pratik Agarwal Partner Membership No. 301880 UDIN:- 23301880BGVEYW1513</p> </div> </div>				

**HOMI BHABHA NATIONAL INSTITUTE
DEEMED UNIVERSITY UNDER UGC Act 1956.
SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31/03/2023**


SCHEDULE 3 - CURRENT LIABILITIES AND PROVISIONS		(Amount-Rs)	
Particulars	Current Year	Previous Year	
A. CURRENT LIABILITIES			
1. Acceptances	-	-	-
2. Sundry Creditors			
a) For Goods	-	-	-
b) Others	87,040	49,099	49,099
c) Expenses	35,769	9,326	9,326
3. Advances Received	-	-	-
4. Interest accrued but not due on:			
a) Secured Loans/borrowings	-	-	-
b) Unsecured Loans/borrowings	-	-	-
5. Statutory Liabilities			
a) Overdue	-	-	-
b) TDS Payable	43,798	1,02,175	1,02,175
6. Other Current Liabilities			
a) Consolidated Fund of India	-	-	-
b) Security Deposits	70,201	39,031	39,031
B. LOANS, ADVANCES AND OTHER LIABILITIES			
TOTAL	2,36,808	1,99,631	1,99,631

Place : Mumbai
Date : 23/08/2023

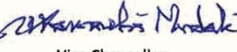
As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E


Finance Officer

शैलेश कुमार जाखोटिया
Shailesh Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
एच. बी. एन. आय, मुंबई HBNI, Mumbai



Dean
प्रो. पी. डी. नाईक / Prof. P. D. Naik
डीन/ Dean
होमी भाभा राष्ट्रीय संस्था, मुंबई
Homi Bhabha National Institute, Mumbai



Vice Chancellor
प्रो. यू. कामाची मुदली
Prof. U. Kamachi Mudali
कुलपति / Vice Chancellor
हो. भा. रा. सं. / HBNI



Pratik Agarwal
Partner
M No. 301880
UDIN:- 23301880BGVEYW1513

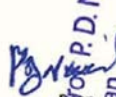


HOMI BHABHA NATIONAL INSTITUTE Deemed University under UGC Act 1956 SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31/03/2023		
SCHEDULE 4 - FIXED ASSETS		(Amount-Rs)
Particulars	Current Year	Previous Year
FIXED ASSETS		
1. Computers & Printers	13,11,144	14,96,714
Add : Additions during the Year	35,44,916	4,61,239
	48,56,060	19,57,953
Less : Depreciation	14,95,231	6,46,809
	33,60,829	13,11,144
2. LED Monitors & Projectors	6,85,557	2,52,473
Add : Additions during the Year	3,60,238	4,87,998
	10,45,795	7,40,471
Less : Depreciation	1,03,130	54,914
	9,42,665	6,85,557
3. Software	3,18,224	4,32,319
Add : Additions during the Year	12,27,000	66,316
	15,45,224	4,98,635
Less : Depreciation	4,97,071	1,80,411
	10,48,153	3,18,224
4. Furniture & Fixtures	27,70,517	26,86,532
Add : Additions during the Year	24,299	3,58,201
	27,94,816	30,44,733
Less : Depreciation	2,77,172	2,74,216
	25,17,644	27,70,517
5. Motor Car	9,28,707	10,92,596
Add : Additions during the Year	-	-
	9,28,707	10,92,596
Less : Depreciation	1,39,306	1,63,889
	7,89,401	9,28,707
6. Video Conference Facility	13,98,526	23,30,876
Less : Depreciation	5,59,410	9,32,350
	8,39,116	13,98,526
7. AV Conferencing System	3,18,589	3,19,992
Less : Depreciation	1,27,436	1,403
	1,91,153	3,18,589
8. Office Equipment	13,820	15,996
Less : Depreciation	2,073	2,176
	11,747	13,820
9. Capital Work in Progress		
Building Extension	55,00,000	55,00,000
Add : Additions during the Year	3,44,00,000	-
	3,99,00,000	55,00,000
TOTAL	4,96,00,708	1,32,45,084

Place : Mumbai
Date : 23/08/2023


Finance Officer

शैलेश कुमार जाखोटिया
Shailesh Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
एच. बी. एन आय, मुंबई II DNI, Mumbai



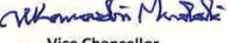

Dean
प्रो. पी. डी. नाईक / P.D. Naik
डीन / Dean
होमी भाभा राष्ट्रीय संस्था, मुंबई
Homi Bhabha National Institute, Mumbai


Vice Chancellor
प्रो. यू. कामाची मुदली
Prof. U. Kamachi Mudali
कुलपति / Vice Chancellor
हो. भा. रा. सं. / HBNI

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E


Pratik Agarwal
Partner
M No. 301880
UDIN:-
23301880BGVEYW1513



HOMI BHABHA NATIONAL INSTITUTE Deemed University under UGC Act 1956 SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31/03/2023		
SCHEDULE 5- CURRENT ASSETS, LOANS & ADVANCES (Amount-Rs)		
Particulars	Current Year	Previous Year
A. CURRENT ASSETS		
1. Cash Balances in Hand		
2. Investment		
- Fixed Deposits with bank	3,04,46,035	3,04,46,035
- Fixed Deposits - Endowment Fund	54,24,000	39,19,000
3. Bank Balances		
a) <u>With Scheduled Banks:</u>		
- On Savings Account		
- On Current Account	27,39,060	32,72,437
- On Endowment Fund	1,36,375	11,80,317
B. LOANS ADVANCES AND OTHER ASSETS		
1. Advances for Contracts		
2. Accrued interest on FDR with banks	40,46,056	25,02,982
3. Accrued interest on FDR- Endowment fund	2,09,237	1,46,889
4. TDS on Interest on FDR - with Banks	10,45,560	9,89,928
-Endowment fund	42,475	21,207
5. TDS receivable on Professional fees	5,25,286	4,98,286
6. Other Assets (Prepaid Exps. + Temp. Advance)	1,11,559	1,37,381
TOTAL	4,47,25,643	4,31,14,462
Place : Mumbai Date : 23/03/2023		As per report of even date For L.B. Jha & Co. Chartered Accountants FRN No. 301088E Pratik Agarwal
 Finance Officer	 Dean	 Vice Chancellor
शैलेश कुमार जाखोटिया Shailesh Kumar Jakhotiya वित्त अधिकारी / Finance Officer एच. बी. एन. आय, मुंबई	प्रो. पी. डी. नाईक / Prof. P. D. Naik डीन/ Dean होमी भाभा राष्ट्रीय संस्था, मुंबई HBNI, Mumbai.	प्रो. यू. कामाची मुदली Prof. U. Kamachi Mudali कुलपति / Vice Chancellor हो. बा. रा. सं. / HBNI
		Pratik Agarwal Partner M No. 301880 UDIN:- 23301880BGVEYW1513



HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

Particulars (Irrevocable Grants & Subsidies Received)	Current Year	Previous Year
1. Central Government - For HBNI - For Raja Ramanna Fellowship Honorarium	6,30,63,270	2,61,53,803
2. State Government	-	-1,16,706
3. Government Agencies	-	-
4. Institutions/Welfare Bodies	-	-
5. International Organisations	-	-
6. Others	-	-
TOTAL	6,30,63,270	2,60,37,097

(Amount-Rs)

Place : Mumbai
Date : 23/08/2023

Finance Officer
[Signature]
शैलेश कुमार जाखोडिया
Shailish Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
एच. बी. एन. मुंबई HBNI, Mumbai.

Dean
[Signature]
प्रो. पी. डी. नाईक / Prof. P. D. Naik
डीन / Dean
सोमो भगवत साहू
Homi Bhabha National Institute, Mumbai

Vice Chancellor
[Signature]
प्रो. यू. कामाची मुदली
Prof. U. Kamachi Mudali
विस. च. / Vice-Chancellor
एच. बी. एन. मुंबई HBNI

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E
[Signature]
Pratik Agarwal
Partner
M No. 301880
UDIN:- 233018808GWEVW1513



HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

Particulars	(Amount-Rs)	
	Current Year	Previous Year
1. Central Government	1,22,04,000	94,47,000
2. State Government	-	-
3. Government Agencies	-	-
4. Institutions/Welfare Bodies	3,13,048	-
5. Others	-	7,59,056
TOTAL	1,25,17,048	1,02,16,056

Place : Mumbai
Date : 23/08/2023

As per report of even date

For L.B. Jha & Co.

Chartered Accountants

FRN No. 301088E

Pratik Agarwal

Pratik Agarwal

Partner

M.No. 301880

UDIN:-

233018808GVEVW1513



S. J.
Finance Officer

Pratik Agarwal
Dean

Ukeshi Madhvi
Vice Chancellor

प्रो. पी. डी. नाईक / Prof. P. D. Naik

डीन / Dean

होमी भाभा राष्ट्रीय संस्था, मुंबई

Homi Bhabha National Institute, Mumbai

प्रो. यू. कार्नाची मुदाळी

उपनि / Vice Chancellor

हो. भा. रा. सं. / HBNI

शैलेश कुमार जाखोटािया
Shailesh Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
हो. भा. रा. सं. मुंबई HBNI, Mumbai

HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

Particulars	(Amount-Rs)	
	Current Year	Previous Year
SCHEDULE 8 - INTEREST EARNED		
On Savings Account:		
1. With Scheduled Banks	-	-
2. With Non-Scheduled Banks	-	-
On Fixed Deposits:		
1. With Scheduled Banks	17,14,529	16,37,813
2. With Endowment fund	2,48,430	1,76,193
TOTAL	19,62,959	18,14,006

Place : Mumbai
Date : 23/08/2023

As per report of even date
For L.B. Jha & Co.


Finance Officer


Dean


Vice Chancellor


Pratik Agarwal
Partner



शैलेश कुमार जाखोठिया
Shailash Kumar Jakhotiya
वित्त अधिकारी / Finance Officer - Homi Bhabha National Institute, Mumbai
एच. सी. एच. भाय, मुंबई HBNI, Mumbai.

प्रो. पी. टी. नरदक / Prof. P. D. Naik
डीन / Dean
होमी भाभा राष्ट्रीय संस्था, मुंबई

प्रो. यू. कामाची मुदली
Prof. U. Kamachi Mudali
कुलपति / Vice Chancellor
डी. आ. टा. सं. / HBNI

HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

Particulars	Current Year	Previous Year
1. Salaries	97,96,469	59,94,005
2. Contract Wages	53,40,296	58,66,037
3. Allowances and Bonus	-	-
4. Contribution to Provident Fund	-	-
5. Staff Welfare Expenses	-	-
6. Expenses on Employees Retirement and Terminal Benefits	-	-
7. Others	-	-
TOTAL	1,51,36,765	1,18,60,042

(Amount-Rs)

Place : Mumbai
Date : 23/08/2023

As per report of even date
For L.B. Jha & Co.

Chartered Accountants
FRN No. 301088E



Pratik Agarwal
Partner
M No. 301880
UDIN:- 23301880BGVEYW1513

Finance Officer

Dean

Vice Chancellor

Pratik Agarwal
Partner

शैलेष कुमार जाखोटिया
Shalish Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
Homi Bhabha National Institute, Mumbai
एच. बी. एन. अण्डा मुंबई HBNI, Mumbai


प्रो. पी. डी. नाईक / Prof. P. D. Naik
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प्रो. यू. कामाची मुदाली
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कुलपति / Vice Chancellor
बी. भा. रा. सं. / HBNI

HOMI BHABHA NATIONAL INSTITUTE Deemed University under UGC Act 1956 SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023		
SCHEDULE 10- ADMINISTRATIVE EXPENSES		(Amount-Rs)
Particulars	Current Year	Previous Year
1. Advertising and Publicity	93,523	89,898
2. Audit fees	53,100	53,100
3. AKAM Related Expenses	7,26,438	-
4. Bank Charges	9,925	8,253
5. Consultancy Charges	29,06,679	10,99,417
6. Conference and Training Expenses	5,83,924	4,50,000
7. DIMBS	3,93,948	-
8. Foundation Day	8,47,978	4,27,130
9. Hospitality Expenses	1,78,846	2,21,633
10. Honorarium	1,30,250	4,55,000
11. Insurance Expenses	28,943	6,165
12. Interest and Penalty charges	-	700
13. JRF/ RA Stipend and Contingency expenses	25,82,403	21,51,987
14. Minor Works	-	7,30,038
15. Office Expenses	3,39,480	3,35,002
16. Professional Fees	51,150	32,000
17. Printing and Stationery	9,52,153	5,17,081
18. Repairs & Maintenance	-	47,200
19. Software expenses	1,69,882	70,280
20. Telephone Charges	1,07,325	1,07,001
21. Travelling and conveyance	17,89,895	7,07,079
22. Training Course related expenditure	80,464	68,112
23. Depreciation	32,00,829	22,56,168
TOTAL	1,52,27,135	98,33,244

Place : Mumbai
Date : 23/08/2023


Finance Officer


Dean
प्रो. पी. डी. नाईक / Prof. P. D. Naik
डीन/ Dean

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होमी भाभा राष्ट्रीय संस्था, मुंबई
Homi Bhabha National Institute, Mumbai


Vice Chancellor
प्रो. यू. कामाची मुदली
Prof. U. Kamachi Mudali
कुलपति / Vice Chancellor
हो. भा. रा. सं. / HBNI

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E


Pratik Agarwal
Partner
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HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

SCHEDULE 11 - Expenses on Objects of the Trust (Amount-Rs)

Particulars	Current Year	Previous Year
1. Reimbursement of Tuition Fees	3,11,800	85,650
TOTAL	3,11,800	85,650

SCHEDULE 12 : Academic Welfare Expenses

Particulars	Current Year	Previous Year
1. Academic Welfare Expenses	92,37,778	74,85,497
2. Awards	-	-
3. Expenses on Institute Grading	-	1,48,030
4. Other Expenses	-	-
TOTAL	92,37,778	76,33,527

Place : Mumbai
Date : 23/08/2023

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E



Finance Officer 

Dean 

शैलेश कुमार जाखोडिया
Shalish Kumar Jakhotiya
वित्त अधिकारी / Finance Officer
HOMI Bhabha National Institute, Mumbai

श्री. पी. डी. नाईक / Prof. P. D. Naik
डीन / Dean
श्रीमती अनाम राष्ट्रीय संस्था, मुंबई
HOMI Bhabha National Institute, Mumbai

श्री. यू. कामाची मुदाली
Prof. U. Kamachi Mudali
कुलपति / Vice Chancellor
श्री. एम. ए. सी. / HBNI

Vice Chancellor 

Pratik Agarwal
Partner
M No. 301880
UDIN:- 23301880B6VEW1513

HOMI BHABHA NATIONAL INSTITUTE
Deemed University under UGC Act 1956
SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31/03/2023

SCHEDULE 13 : Other Expenses		Current Year	Previous Year
Particulars			
1. Raja Ramanna Fellowship - Honorarium		-	12,33,294
TOTAL		-	12,33,294

Place : Mumbai
Date : 23/08/2023

[Signature]
Finance Officer

[Signature]
Dean

[Signature]
Vice Chancellor

As per report of even date
For L.B. Jha & Co.
Chartered Accountants
FRN No. 301088E
[Signature]
Pratik Agarwal
Partner
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शैलेश कुमार जाखोठिया
Shalish Kumar Jakhotiya
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कुलपति / Vice Chancellor
हो. भा. रा. सं. / HBNI

HOMI BHABHA NATIONAL INSTITUTE
DEEMED UNIVERSITY UNDER UGC Act 1956.

SCHEDULES FORMING PART OF THE ACCOUNTS FOR THE PERIOD ENDED 31ST MARCH, 2023
SIGNIFICANT ACCOUNTING POLICIES

1. BASIS OF PRESENTATION

The Financial statements are prepared under the Historical Cost convention in accordance applicable accounting standards and in the format prescribed by the Committee of Experts for Central Autonomous Bodies. However, since HBNI is also registered under The Bombay Public Trusts Act, 1950, the Financial statements have also been separately prepared in the format prescribed under the The Bombay Public Trusts Act, 1950.

2. METHOD OF ACCOUNTING

The accounts are prepared on cash basis of accounting except for accrued interest on Fixed Deposits.

3. FIXED ASSETS

- (a) Fixed Assets are stated at cost.
- (b) Fixed assets are eliminated from financial statements, either on disposal or when retired from active use. Generally, such retired assets are disposed off soon thereafter.
- (c) Expenditure relating to existing fixed assets is added to the cost of the assets where it increases the performance/life of the assets as assessed earlier.

4. DEPRECIATION

Depreciation on assets purchased / sold during the year is proportionately charged on written down method as per rates under Income Tax Act, 1961.

NOTES TO ACCOUNTS :

1. The operations of the trust are conducted in the facility provided by Bhabha Atomic Research Centre.
2. The trust has been granted the status of "Grant in Aid Institution" under Department of Atomic Energy by the Hon'ble President of India.
3. The trust has been sanctioned Rs. 6,30,63,270/- as grant-in-aid by Department of Atomic Energy, Mumbai which have been utilized for operating expenses of the Institute.
4. Contingent Liabilities -NIL
5. Corresponding figures for the previous year have been regrouped/rearranged, wherever necessary.
6. Schedules 1 to 13 are annexed to and form an integral part of the Balance Sheet as at 31st March, 2023 and the Income and Expenditure account for the year ended on that date.
7. The Endowment fund i.e. received as donation, is maintained by the institution for a specific purpose only i.e. in the form of awards for promoting excellence, merit scholarship to needy students, organising lectures by renowned experts and such similar activities towards the welfare of the students or faculties and promotion of academic excellence etc. HBNI is maintaining separate bank account for endowment fund and as on 31.03.2023 balance in endowment fund. was Rs.1,36,375. Further Rs. 54,24,000 fixed deposit was done with State Bank of India from receipt of endowment fund.
8. During the financial year 2021-22, Department of Atomic Energy has sanctioned construction of additional wings for HBNI as part of a capital project at a estimated cost of Rs. 33.40 crore. The work is being executed through Directorate of Construction and Services Management as a deposit work. For carrying out preliminary work of construction a deposit of Rs.3,99,00,000/- was released to DCS&EM, Mumbai as on 31.03.2023. The amount was lying in capital work in progress because the construction is in progress as on 31.03.2023.
9. As per the direction issued by the Department, HBNI has implemented Treasury Single Account (TSA) as part of Public Financial Management System from July 2021. Accordingly HBNI has opened an account with Reserve Bank of India and all the Grants and payment against the grant are routed through the system. As on 31.03.2023 there was nil balance in the account maintained at Reserve Bank of India.





HBNI Ranked 11 in research institutions category

HBNI ranked 17 in university category



HBNI ranked 33 in overall category

Contact Details

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