



# होमी भाभा राष्ट्रीय संस्थान Homi Bhabha National Institute

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

(A Deemed to be University u/s 3 of UGC Act 1956 and a Grant-in-Aid Institute of the Department of Atomic Energy, Govt. of India)



**Information Brochure  
2020**

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





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## ABOUT HOMI BHABHA NATIONAL INSTITUTE (HBNI)

HBNI was established in 2005 as a Deemed to be University under section 3 of the University Grants Commission (UGC) act 1956 and was recognized as Grant-in-aid Institution of Department of Atomic Energy in 2014. It has been accredited as Grade 'A' institution by National assessment and Accreditation Council (NAAC). The institute was placed at 14<sup>th</sup> position among the Universities of India in National Institute Ranking Framework (NIRF)-2020 exercise by Ministry of Human Resource Development, Govt. of India. Based on high-quality publications in Nature Group of Journals, the Nature Index 2020 placed HBNI in the fourth position among all institutions in India, and in the first position with regard to publications in physical sciences.

HBNI brings together ten premier DAE institutions established as Research and Development Centres and grand-in-aid autonomous centres as Constituent Institutions, under a single research driven framework. NISER, Bhubaneswar, set up in 2006, is an Off Campus Centre (OCC) of HBNI. The 10 constituent institutions (CIs) and one Off-Campus Centre (OCC) of HBNI are:

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. Tata Memorial Centre (TMC), Mumbai and
10. Institute of Mathematical Science (IMSc.), Chennai
11. National Institute for Science Education and Research (NISER), Bhubaneswar

## MISSION

The Mission of HBNI is to encourage the pursuit of excellence in sciences (including engineering sciences) and mathematics in a manner that has major significance for the progress of indigenous nuclear technological capability.

## VISION

**The Vision of HBNI is articulated below:**

- To provide an academic framework for integrating basic research with technology development.
- To encourage inter-disciplinary research.
- To nurture an environment for attracting high-quality manpower in the sciences including engineering sciences to take up a career in nuclear science and technology and related areas.

## HBNI: A UNIQUE UNIVERSITY

HBNI Is a unique research University in many ways as listed below:

- Availability of a wide range of academic programmes in varied disciplines aiming at broadening scientific knowledge as well as skill development.
- Only University in the country offering research opportunities in the field of nuclear science and engineering, giving a unique opportunity to students to participate and contribute in nuclear energy program of the nation.
- Offers opportunity to do innovative research in unique areas that cannot be attempted in most other universities in the country (e.g., molten salt chemistry, applications of radiation technologies in the fields of agriculture, medicine, industry, high-temperature thermodynamics, irradiated material properties, etc.) using the world-class infrastructure available at its CIs.

- Feasibility to do research in frontier areas of all branches of science and engineering as well as Interdisciplinary research with national/international collaboration.
- HBNI conducts unique specialty and super-specialty courses in Oncology and related fields at Master's and Doctoral level through its CI, TMC, giving students an opportunity to acquire knowledge and skills to provide quality cancer care to society.
- Teaching and guidance by nationally and internationally renowned faculty members who have won prestigious national awards like S.S. Bhatnagar award, Civilian awards and honors like fellowships of national/international academies.
- Students have access to wide range of facilities starting from table top instruments to mega facilities such as research reactors, accelerators, tokamaks and excellent support facilities such as well equipped libraries, high performance computational facilities and modern laboratories at par with global standards.
- All Ph.D students get DAE fellowships on par with UGC guidelines or higher
- No tuition fee is charged for most of the academic programmes run by HBNI
- Foreign travel assistance is provided to doctoral students for participation in International Conferences, Symposia, and Scientific meetings.

## **MANAGEMENT OF HBNI**

The Council of Management is the principal organ for the management of the Institute. All academic issues are handled by Academic Council which functions on the advice of the Board of Studies constituted for guiding various academic programs in different disciplines as follows:

- Chemical Sciences
- Engineering Sciences
- Medical and Health Sciences
- Life Sciences

- Mathematical Sciences
- Physical Sciences
- Applied System Analysis

A separate Board of Studies looks after the Integrated Masters Programme at NISER.

To manage the affairs of the Institute at the level of Constituent Institutions, each CI/OCC has one or more Deans-Academic and a university cell. CIs/OCC have also established a robust framework of admission, evaluation of performance and monitoring the progress of research by the students.

## ACADEMIC PROGRAMMES OF HBNI: PATHWAYS TO PROFESSIONAL CAREERS

HBNI offers a range of academic programmes in various disciplines of science at its CIs/ OCC and the details are given below:

- **Ph.D.** degrees in varied disciplines (Chemical Sciences, Engineering Sciences, Life Sciences, Mathematical Sciences, Medical & Health Sciences, Physical Sciences and Applied Systems Analysis)
- **PGD** in Engineering sciences, Chemical Sciences, Life Sciences and Physical Sciences
- **M.Sc.** (Engineering Sciences), **M.Sc. Physics**
- **M. Phil** (Chemical Sciences, Physical Sciences)
- **M.Sc.(Nursing)** and **M.Sc. (Clinical Research)**
- **M.Sc. (Public Health in Epidemiology)** and **M.Sc. (Occupational Therapy in Oncology)**
- **M.Sc (Nuclear Medicine and Molecular Imaging Technology)** and **M.Sc. (Hospital Radiopharmacy)**
- **Integrated M.Sc.** (five-year duration in Chemical Sciences, Life Sciences, Mathematical Sciences and Physical Sciences)
- **Post-Graduate Medical Degree, M.D.** in various broad domains of oncology



- **Super Specialty Medical Degree, D.M. and M.Ch.** in specialised domains of oncology
- **M.D. (Nuclear Medicine)**
- PG Diploma in Radiological Physics (**DipRP**)
- PG Diploma in Medical Radio Isotope Techniques (**DMRIT**)
- PG Diploma in Nuclear Science and Engineering (**DipNSE**)
- PG Diploma in Fusion Imaging Technology (**PGDFIT**)

More details about the courses and admission requirements are available on HBNI website: <http://www.hbni.ac.in/>.

## BEACONS THAT GUIDE



**Shri K.N. Vyas**  
Secretary, DAE and Chairman,  
Council of Management, HBNI



**Prof. Srikumar Banerjee**  
Chancellor, HBNI



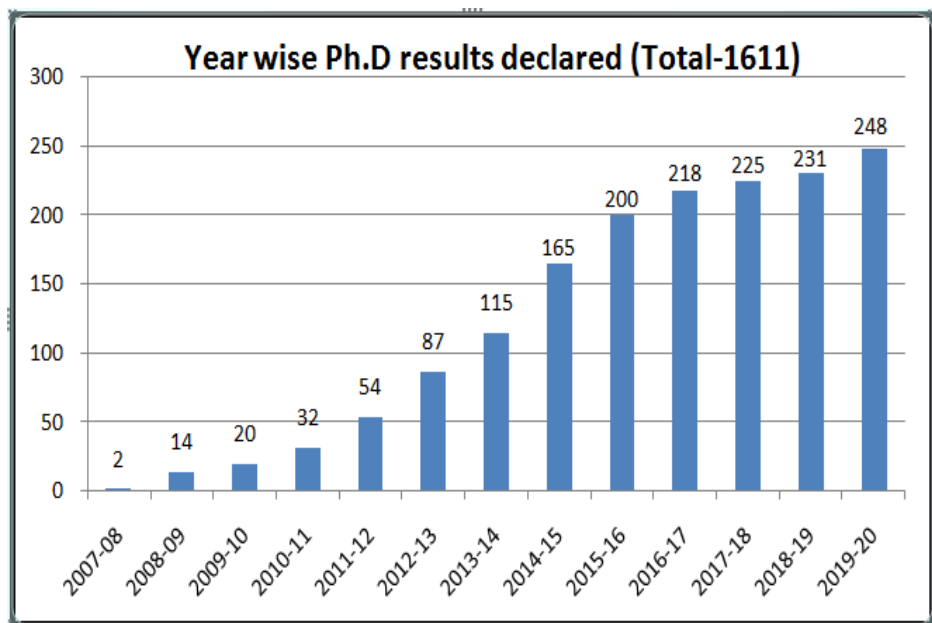
**Prof. P.R. Vasudeva Rao**  
Vice Chancellor, HBNI



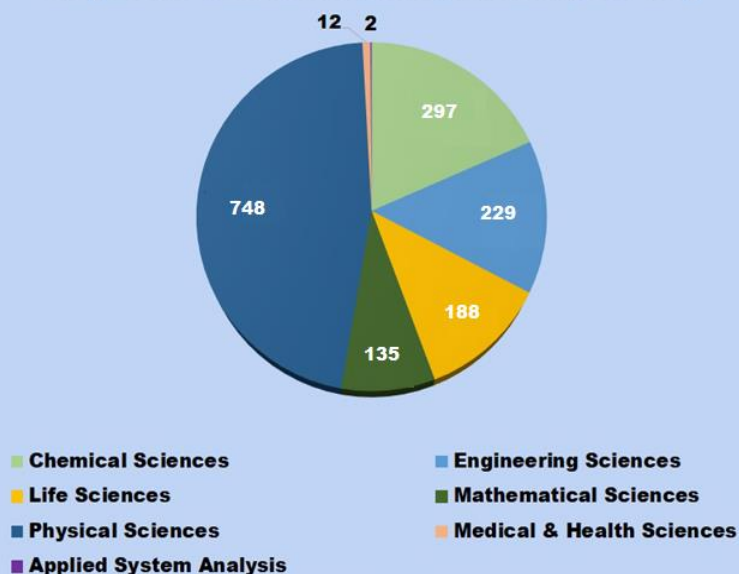
**Prof. P. D. Naik**  
Dean, HBNI

## HBNI PROGRESS SO FAR.....

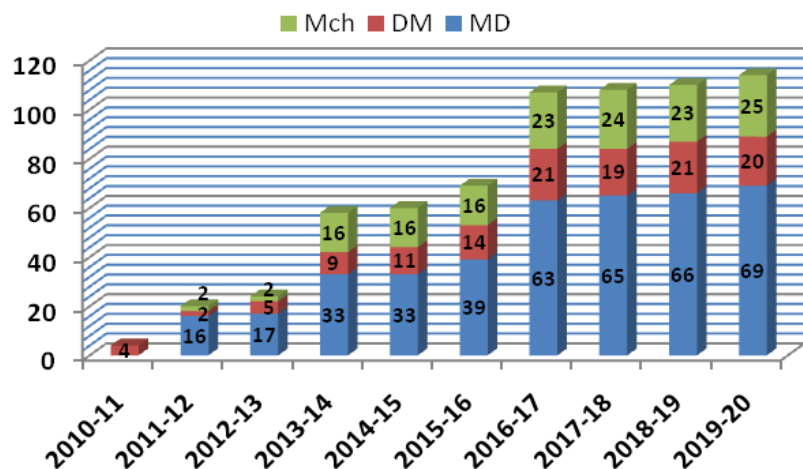
Since its inception in the year 2005 as a deemed to be university, HBNI has steadily grown in terms of its academic programs, the number of students and faculty, infrastructure and last but not the least academic vigour. The academic programs of the HBNI are leading to human resource development not only in core areas of nuclear science and engineering but also in several other areas of societal importance such as medical and health sciences. Till date, HBNI has awarded 1611 PhD, 401 MD, and 147 MCh and 126 DM degrees. The number of publications in reputed journals by HBNI faculty and students has been registering a healthy increase year after year. Based on high-quality publications in Nature Group of Journals, the Nature Index 2020 placed HBNI in the fourth position among all institutions in India, and in the first position with regard to publications in physical sciences. HBNI was placed in the 14<sup>th</sup> position among the Indian Universities in the 2020 exercise. NIRF ranks universities on parameters: (i) Teaching Learning and Resources, (ii) Research productivity, (iii) Graduation Outcome, (iv) Outreach and inclusivity and (v) Perception.



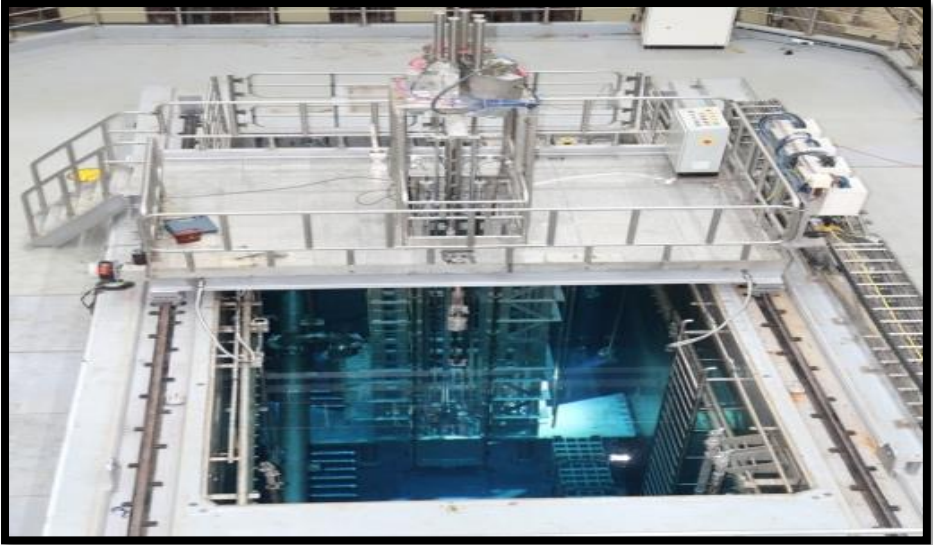
**Discipline wise distribution of Ph.D. results declared (Total : 1611)**



**Year wise MD/DM/M Ch results declared**



## UNIQUE RESEARCH FACILITIES



**APSARA-U, Research Reactor at BARC**



**Steady State Superconducting Tokamak (SST-1) at IPR**

## UNIQUE RESEARCH FACILITIES



**Neutron Scattering Facilities inside the Dhruva Reactor Hall at BARC**



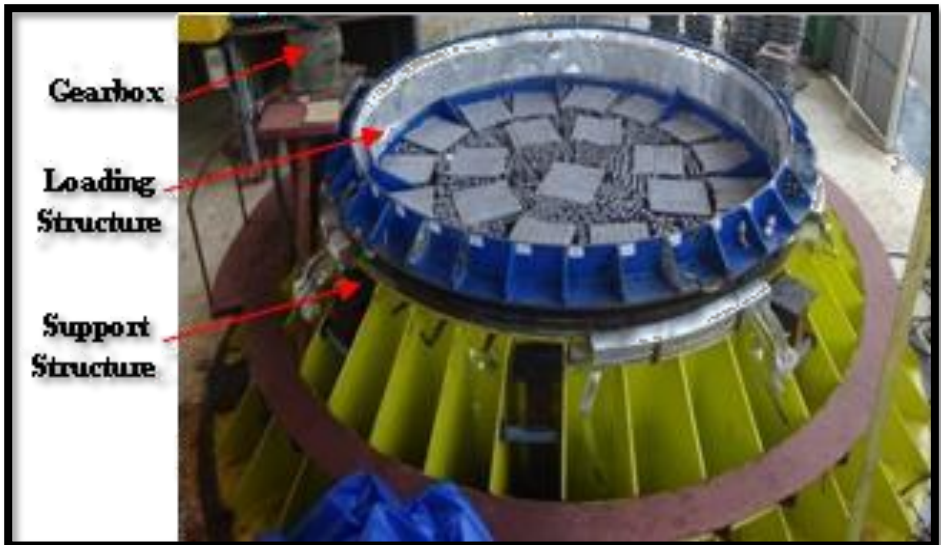
**Facility for Research in Experimental Nuclear Astrophysics, at SINP**



## UNIQUE RESEARCH FACILITIES

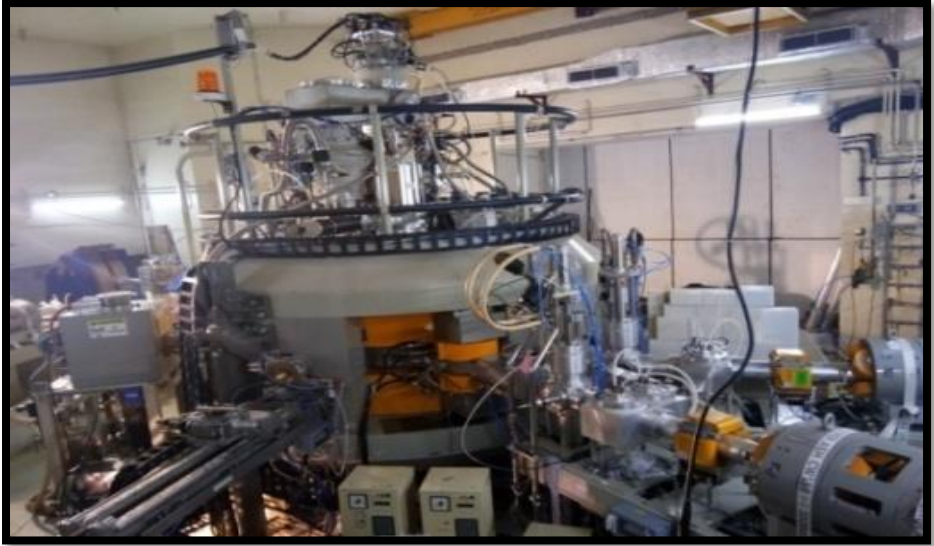


**Infrared Free Electron Laser Developed at RRCAT**



**Facility for functional testing and qualification of large diameter bearing at IGCAR**

## UNIQUE RESEARCH FACILITIES



**Medical Cyclotron facility cyclone-30 at VECC**



**Electron Cyclotron Resonance (ECR) ion Source-based low-to-medium energy ion-beam facility at IOP**

## UNIQUE RESEARCH FACILITIES



**Hot cell facility at BARC for handling radioactive samples**



**Glove Box facility at IGCAR**



## UNIQUE RESEARCH FACILITIES



**High performance computation Facility at HRI**



**ANUPAM AtulyaPetaFLOP Class Supercomputer at BARC**

## UNIQUE RESEARCH FACILITIES



**Laboratory Animal Facility at TMC-ACTREC**

## Academic Collaborations

To obtain the benefits from the mutual expertise in various research areas, teaching and learning, to facilitate collaborative research for the faculty and to enrich the knowledge of 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. **Institute of Chemical Technology, Mumbai**
7. **Chennai Mathematical Institute, Chennai**
8. **Jadavpur University, Kolkata**
9. **Jawaharlal Nehru University, New Delhi**
10. **Punjab University, Chandigarh**
11. **Tata Institute of Fundamental Research, Mumbai**
12. **The Commissariat a l'energie atomique et aux energies alternatives, France**
13. **GHENT University, Belgium**

These MoUs enable HBNI students to attend courses at above mentioned institutes and earn course credits. Research Collaborations are also possible between HBNI and institutes under MoU and HBNI students can avail research facilities of these institutes. Faculty of such institutes can also be co-guides of HBNI students

## Key Officials

<b>Shri K.N. Vyas,</b>	<b>Secretary DAE &amp; Chairman, Council of Management</b>
<b>Prof. S. Banerjee</b>	<b>Chancellor</b>
<b>Prof. P. R. Vasudeva Rao</b>	<b>Vice Chancellor</b>
<b>Prof. P.D. Naik</b>	<b>Dean</b>
<b>Prof. B.K. Dutta</b>	<b>Institute Chair professor</b>
<b>Prof. B.S. Tomar</b>	<b>Institute Chair professor</b>
<b>Prof. D.K. Maity</b>	<b>Associate Dean</b>
<b>Prof. A.K. Dureja</b>	<b>Associate Dean</b>
<b>Prof. Saibal Basu</b>	<b>Associate Dean</b>
<b>Dr. B. Chandrasekar</b>	<b>Registrar</b>
<b>Shri Shailesh K. Jakhotiya</b>	<b>Finance Officer</b>

**For any information, please contact us:**

➤	<b>Vice Chancellor</b>	<b><a href="mailto:vcoff@hbni.ac.in">vcoff@hbni.ac.in</a></b>
➤	<b>Dean</b>	<b><a href="mailto:deanhbni@hbni.ac.in">deanhbni@hbni.ac.in</a></b>
➤	<b>General queries</b>	<b><a href="mailto:registrar@hbni.ac.in">registrar@hbni.ac.in</a></b>
➤	<b>Our web</b>	<b><a href="http://www.hbni.ac.in">www.hbni.ac.in</a></b>



Government of India  
Ministry of Human Resource Development



*Certificate*

**NATIONAL INSTITUTIONAL RANKING FRAMEWORK**

**INDIA RANKINGS 2020**

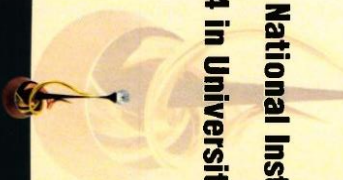
**Homi Bhabha National Institute, Mumbai**  
**Ranked 14 in University Category**

*Kusum*

CHAIRMAN, NBA

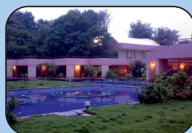
*Shubra*

MEMBER SECRETARY, NBA





HRI, Allahabad



IPR, Gandhinagar



IGCAR, Kalpakkam



RRCAT, Indore



BARC, Mumbai



IMSc, Chennai



NISER, Bhubaneswar



TMC, Mumbai



VECC, Kolkata



SINP, Kolkata



IoP, Bhubaneswar

# HOMI BHABHA NATIONAL INSTITUTE

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