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अणुविद्या

HBNI NEWSLETTER

होमी भाभा राष्ट्रीय संस्थान

Homi Bhabha National Institute

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

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

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





Homi Bhabha National Institute

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

Council of Management

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Shri Talleen Kumar, Member (Finance), AEC	Member
Shri Shankar V. Nakhe, Director, RRCAT	Member
Prof. R.A. Badwe, Director, TMC	Member
Prof. Gautam Bhattacharyya, Director, IMSc	Member
Prof. V. Ravindran, Director, IMSc	Member
Prof. Mustansir Barma, Professor Emeritus, TIFR Centre for Inter-Disciplinary Sciences, Hyderabad	Member
Prof. Surendra Prasad, Former Director, IIT Delhi	Member
Shri Rakesh Ranjan, Additional Secretary (TE), Department of Higher Education, Min. of Education	Member
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Prof. D.K. Maity, Officiating Registrar, HBNI	Secretary

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Prof. R.A. Badwe, Director, TMC	Member
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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. Ravindran, Director, IMSc	Member
Prof. Indranil Manna, IIT Kharagpur	Member
Prof. J.B. Udgaonkar, IISER Pune	Member
Prof. E.D. Jemmis, IISc, Bangalore	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. D.K. Maity, Officiating Registrar, HBNI	Secretary

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Prof. P.D. Naik, Dean, HBNI	Member
Prof. R.B. Grover, Professor Emeritus, HBNI	Member
Prof. B. Venkatraman, Director, IGCAR	Member
Prof. S. Chaturvedi, Director, IPR	Member
Prof. G. Bhattacharyya, Director, SINP	Member
Prof. Devang Khakhar, Department of Chemical Engineering, IIT Bombay	Member
Dr. Praveen Chaddah, Former Director, UGC-DAE Consortium for Scientific Research	Member
Prof. S. Ramakrishnan, Director, TIFR	Member
Prof. D.K. Maity, Officiating Registrar, HBNI	Secretary

Obituary



Prof. Arun Mallojirao Jayannavar

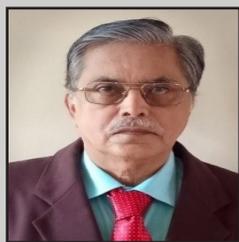
22 July, 1956 - 22 November, 2021

Prof. Arun Mallojirao Jayannavar was born in Belgaum, Karnataka on 22nd July 1956. He obtained his PhD degree from Indian Institute of Science (IISc), Bangalore in 1982 under the supervision of late Prof. N. Kumar. After completing his post-doctoral work at International Centre for Theoretical Physics (ICTP), Italy and University of Ulm (as an Alexander von Humboldt Fellow), he joined Institute of Physics (IoP), Bhubaneswar as a faculty member in 1991.

He made significant scientific contributions in the field of mesoscopic systems, disorder physics, non-equilibrium statistical mechanics and stochastic processes. He has supervised around 10 graduate students who are now faculty members of notable Indian academic institutes like SNBNCBS, HRI, NISER, BITS etc. For his substantial contribution in the field of theoretical condensed matter physics, he had been awarded prestigious ICTP Prize (1996), Shanti Swarup Bhatnagar Prize (1998), and G. D. Birla Award (2004). He was also the recipient of prestigious J. C. Bose Fellowship and had been elected the fellow of all three major Indian science academies (INSA, NASI and IASc). He was also the editorial board member of Current Science and Pramana. He held the Director position of IoP from November 2009 to May 2013. After spending around 30 years at IoP with his scientific legacy, he retired from the institute in July 2020 as a Senior Professor. He passed away on 22nd November 2021.

Prof. Jayannavar was among the eminent faculty members of HBNI. As the Director of IoP, he was also a member of Academic Council of HBNI during November 2017 to May 2013. He was a very friendly and approachable person to the students and his other colleagues. He contributed immensely to the academic and administrative matters at the IoP and beyond. His sudden demise is a great loss to the scientific community in India and worldwide and particularly to IoP & HBNI.

From the Vice Chancellor's Desk



It is a great pleasure to meet you all through this medium of communication and share with you some news, plans and perspectives. We are delighted that Dr. Anil Kakodkar, Chairman, Rajiv Gandhi S&T Commission and former Secretary, DAE, whose vision saw the establishment of HBNI, has taken over as Chancellor, HBNI. Under his able guidance, I am sure

that HBNI will chart a new course and further climb the ladder of excellence. The impetus given to online programs, thanks to the pandemic, has provided great opportunities to the faculty and students to listen to eminent speakers through the webinar program, and especially the eminent lecture series as part of the celebration of Azadi ka Amrit Mahotsav. A number of value added courses have also been organised, and one particular program that deserves a special mention is a joint course on corrosion in light water reactors, organised with faculty from HBNI as well as INSTN, France. Our students and faculty have continued to make a mark in the international arena through high-quality publications from outstanding research work. In particular, our publications in physical sciences have earned us the recognition of being the first ranked institution in Nature Index among all Indian institutions. We are also extremely happy that a number of our faculty have received national / international honours.

The coming year is bound to see a number of important initiatives as part of the implementation of the National Education Policy. One of the first steps that have already been taken by HBNI is to evolve an industrial linkage policy that will enable students to have a taste of industrial research through collaboration and internship schemes. As we go to press, the country is witnessing another tense period due to the concerns related to Omicron virus. We hope that this phase of the pandemic will not seriously affect the academic progress.

As always, we look forward to your comments and suggestions for further improving the newsletter.

A handwritten signature in black ink, appearing to read 'P.R. Vasudeva Rao'.

(P.R. Vasudeva Rao)

Welcome to our New Chancellor



Dr. Anil Kakodkar

Dr. Anil Kakodkar joined the Bhabha Atomic Research Centre (BARC) in 1964, following the one year post graduate Training with top rank in Nuclear Science and Technology in the training school of the then Atomic Energy Establishment, Trombay. He became the Director of BARC in the year 1996 and was the Chairman, Atomic Energy Commission and Secretary to the Government of India, Department of Atomic Energy, during the years 2000-2009. He was DAE Homi Bhabha Chair Professor during January 2010 - January 2015 and INAE Satish Dhawan Chair of Engineering Eminence during January 2015 to January 2017. Currently, He is AICTE Distinguished Chair Professor.

Dr. Kakodkar has worked for the development of the atomic energy programme in India throughout his professional life. Focus of his work has been on self-reliant development of nuclear reactor systems to address the Indian programme requirements. He led the development of various systems for the pressurized heavy water reactor, built the Dhruva reactor, rehabilitated Madras Atomic Power Station Units 1&2 and developed the Advanced Heavy Water Reactor concept that realizes the next generation objectives through innovative configuration of present day technologies besides use of thorium. He has created a roadmap for shaping the third stage of India's nuclear power programme aimed at tapping vast energy potential of our thorium resources not only as source for electricity production but also as a primary source for other forms of energy use.

Dr. Kakodkar has been a key contributor to India's strategic programme. He was involved in the first successful Peaceful Nuclear Explosion Experiment that India conducted on May 18, 1974 at Pokhran. He also played a key role in the series of successful Nuclear Tests conducted during May 1998, again at Pokhran. India also demonstrated nuclear submarine powerpack technology under Dr. Kakodkar's leadership.

Dr. Kakodkar's sterling leadership led to a significant boost to India's nuclear power programme notwithstanding the uranium supply constraints through several technological as well as strategic initiatives. There is hardly any aspect of India's atomic energy programme that has not seen a significant impact of Dr. Kakodkar's leadership. Besides energy these cover radiation processing of food and agro-products, agriculture with emphasis on oilseeds and pulses, healthcare particularly related to cancer, urban and rural waste management and desalination of water.

Most importantly, it was Dr. Kakodkar's visionary approach to human resource development that was responsible for the establishment of HBNI, as well as NISER and DAE-Mumbai University Centre for Basic Sciences.

Dr. Kakodkar was Chairman, Solar Energy Corporation in its formative stage. He was also Chairman of Inter University Centre for Astronomy and Astrophysics (IUCAA) during 2006-2012, Chairman, Governing Board, Inter University Accelerator Centre, New Delhi, and Chairman, Board of Governors of the Indian Institute of Technology, Bombay during 2006-2015.

Dr. Kakodkar presently devotes his time primarily on issues related to energy, education and societal development. He has been propagating the concept of CILLAGE, a knowledge based ecosystem for bridging city and village gaps for technology enabled sustainable development in rural areas

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Events at Central Office

Valedictory Function of Advance Online Course on Nuclear Science and Technology

HBNI had organised an advanced online Course on ‘Nuclear Science & Technology’ during February 2021 to May 2021. The course was coordinated by Prof. B.S. Tomar, Institute Chair Professor, HBNI and was well received by the students and faculty of CIs/OCC and other DAE units. The valedictory function of the course was held in hybrid mode on June 11, 2021. Prof. R.B. Grover, Emeritus Professor, HBNI was the Chief Guest on the occasion. He delivered a special talk on the topic “The role of Nuclear Energy in Managing the Transition to a Low-Carbon Energy Mix.” He also presented the certificates to the participants physically present on the occasion.



Dignitaries present during the valedictory function of online course on Nuclear Science & Technology



Prof. R.B. Grover, Chief guest for the function addressing the gathering (left) and presenting the certificate to one of the participants of the course (right)

Online Course on Advanced Materials Chemistry

An online course on “Advanced Materials Chemistry” was conducted by HBNI during June to August 2021. The course was designed by Prof. A.K. Tyagi, Associate Director, Chemistry Group and Senior Professor HBNI and coordinated by Dr. (Mrs). Anshu Singhal, Associate Professor, HBNI. The course program was formally inaugurated by Prof. Sandeep Verma, Secretary, Science and Engineering Research Board, Government of India on June 14, 2021, who also delivered inaugural address. In his address, Prof. Verma spoke about the New R&D initiatives of Science and Engineering Research Board relevant to the field of material science, viz., Energy transformation and storage and Water climate and geohazards.

The broad topics covered under the course included general materials chemistry, characterization techniques, chemical, major, trace and ultratrace analysis techniques and functional materials. The course saw good participation from a variety of educational institutes across the country.

Valedictory Function of Online Course on Nuclear Law and Policies

HBNI organized an online course on “Nuclear Law and Policies” during May to July 2021. Prof. R.B. Grover, Emeritus professor, HBNI and Prof. K.L. Ramkumar, Former Head, NCPW, DAE were the course directors. The course consisted of forty one lectures delivered by Prof. Grover, Prof. Ramkumar and several other serving and retired experts from DAE units and law firms. The topics covered by the course included nuclear safeguards, export controls, civil nuclear liability, resumption of civil nuclear trade and cooperation, atomic energy act, role of nuclear energy in India’s electricity mix, choice of nuclear fuel cycle, importance of following a closed fuel cycle, uranium exploration and mining, uranium resources in India, back end of the nuclear fuel cycle, radiation protection in practice, nuclear safety, nuclear security, economics of nuclear power, and disaster management to senior and middle level managers in the department. More than 150 participants from NPCIL, BARC, AERB, IGCAR, NFC, HWB, BRIT, and DAE in addition to three participants from Hyderabad campus of TISS attended the course

The valedictory function of the course was held in hybrid mode on August 10, 2021. Shri S.K. Sharma, Chairman and Managing Director, NPCIL was the Chief Guest on the occasion. In his valedictory address, Shri Sharma lauded the efforts of HBNI to conduct the course meticulously for the benefit of professionals in various DAE units. He also informed the gathering about the Sarabhai Management Development Programme for senior executives of DAE organisations for which MoU has been signed between HBNI and Institute of Management Studies, Ahmedabad (IIM-A)



Dignitaries present during the valedictory function of online course on Nuclear Law and Policies



Prof. P.R. Vasudeva Rao (left) and Shri S.K. Sharma (right) addressing the gathering on the occasion of valedictory function of the online course on Nuclear Law and Policies

Online course on Emerging Trends in Biophysics

An online course on “Emerging Trends in Biophysics” was conducted by HBNI during August to November 2021. The course was coordinated by Prof. Abhijit Chakraborty and Prof. Partha Saha, Saha Institute of Nuclear Physics. The course program was formally inaugurated by Prof. Jayant Udgaonkar, Director, IISER, Pune on August 12, 2021, who also delivered inaugural address. In his address, Prof. Udgaonkar emphasized on the importance of doing research in biophysics and remarked that the course curriculum of the online course will provide a strong foundation for students to conduct the research in biophysics.

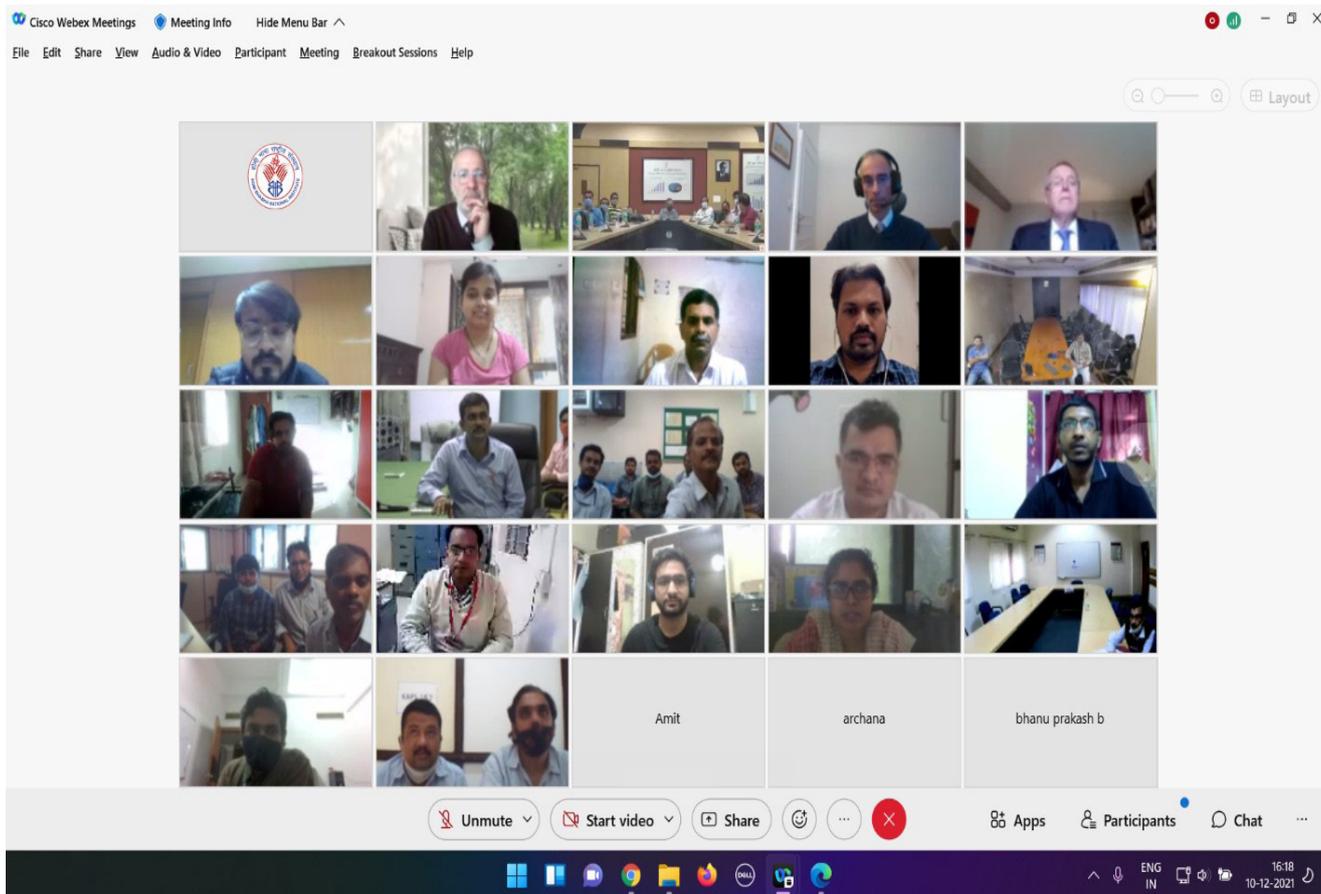
The major topics covered under the course included multi-dimensional NMR, macromolecular crystallography, multiscale modelling and simulations of biological systems, bioinformatics applications, single molecule spectroscopy, membrane biophysics & membrane proteins, X-ray & neutron scattering applications, mass spectrometry & Omics, space bioengineering & synthetic biology, mechanobiophysics and nanobiophysics. Students from a variety of educational institutes across the country participated and benefitted from the course.

Advanced course on Corrosion Degradation in Light Water Reactors (A Joint course by HBNI and INSTN during December 6 to December 10, 2021)

HBNI had entered into a Memorandum of Understanding (MoU) with INSTN, France on September 18, 2018 initially for three years and this was renewed for another three years up to September, 2024. As a part of the collaboration, an advanced course on “Corrosion Degradation in Light Water Reactors (LWRs)” was organized at HBNI Central Office during December 6-10, 2021. The course was inaugurated by Prof. A.K. Bhaduri, DAE Homi Bhabha Chair Professor. In his inaugural address, Prof. Bhaduri emphasized the importance of the course for both the countries as both India and France have robust nuclear power programme. He reiterated the necessity to fundamentally understand the basic mechanism of corrosion degradation in nuclear reactors.

The target students for the course were Masters-PhD students and young professionals. The course imparted ample knowledge on corrosion degradation in materials specific to LWRs. The topics covered under the course included materials of construction for main components of LWRs, introduction to corrosion problems in LWRs, water chemistry, stress corrosion cracking of austenitic stainless steels and nickel based alloys, intergranular corrosion of nickel based alloys, corrosion problems in zirconium alloy cladding, flow accelerated corrosion in carbon steel pipelines, water chemistry and its control to mitigate corrosion problems. The course was covered in eighteen lectures of ninety minutes duration each which were delivered over five days. Twenty four participants attended the course in person and sixty participants attended the course online. An evaluation was done at the end of the course through Klaxoon platform.

The valedictory function of the course was held on December 10, 2021. In the valedictory session, Prof. P. R. Vasudeva Rao, Vice Chancellor, HBNI and Dr. Xavier Perrette, Head of Development and Partnership Department, INSTN, expressed their satisfaction regarding the outcome of these joint courses and were very happy about the feedback of participants and faculty members regarding the knowledge transfer and interaction. Prof. Rao also distributed certificates to the participants physically present on the occasion. Both the sides agreed to identify more such topics of high relevance for planning joint courses in the future.



Advanced course on Corrosion Degradation in Light Water Reactors: Session in Progress



Group photograph after feedback and conclusion session at HBNI Central Office, Mumbai

Sarabhai Management Development Programme for Senior Executives of DAE Organisations

Homi Bhabha National Institute (HBNI) and Institute of Management Studies, Ahmedabad (IIM-A) have recently signed a Memorandum of Understanding to offer the custom-designed 'Sarabhai Management Development Programme for senior executives of DAE organisations such as Nuclear Power Corporation of India Limited (NPCIL), Bhabha Atomic Research Centre (BARC), Indira Gandhi Centre for Atomic Research (IGCAR), and Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI). The week long program was inaugurated by Shri K.N. Vyas, Secretary, Department of Atomic Energy and Chairman, Council of Management, HBNI on August 30, 2021. The programme has been designed to provide the participants with an understanding of the latest business practices, management techniques and tools that will allow them to enhance efficiency and contribute to their respective organisations. Thirty-five participants from NPCIL attended the residential program from August 30 to September 2, 2021 and benefitted from it.



Inauguration of Sarabhai Management Development Programme for Senior Executives of DAE organizations at IIM Ahmedabad



Photograph of the participants and teaching faculty of 1st batch of Sarabhai Management Development Programme for senior executives of DAE organizations

Independence Day Celebration

The 75th Independence Day was celebrated with great zeal by HBNI on August 15 2021. The function was attended by HBNI functionaries and office staff. Prof. Vasudeva Rao, VC, HBNI hoisted the National Flag and addressed the gathering. In his address, Prof. Rao remembered about the great sacrifices of freedom fighters and also spoke about the several initiatives taken by HBNI to run the academic processing smoothly in testing times of COVID-19. Prof. Grover, Emeritus Professor, HBNI and Prof. Chandrasekar, Registrar, HBNI also addressed the gathering. Prof. Dureja, Associate Dean, HBNI recited a patriotic poem on the occasion and the program ended with the recitation of National Anthem.



Prof. Vasudeva Rao hoisting the National Flag at HBNI Central Office



HBNI staff members present on the occasion

Teacher's Day Celebration

Teachers' Day was celebrated at the Central Office on September 6, 2021 in a hybrid mode. Prof. V. Ramgopal Rao, Director, IIT Delhi graced the occasion as chief guest. Prof. Anil Kakodar, Former Secretary, DAE and Professor R.B. Grover, Emeritus Professor, HBNI participated in the event besides other HBNI functionaries.

Prof. P.R. Vasudeva Rao, Vice Chancellor, HBNI welcomed the gathering. A power point presentation highlighting the life and works of Prof. S. Radhakrishnan whose birth anniversary is celebrated as Teacher's Day every year on September 5 was shown on the occasion. Speaking on the occasion, Prof. Grover highlighted the contributions made by different education commissions to Indian education system in independent India and bringing it at par with the global standards.

Prof. Ramgopal Rao delivered a motivational talk on the topic "Catalysing science-based innovations into the high impact start ups" on the occasion. In his address, he remarked that though India ranks 3rd in the world in terms of the research output, the need of the hour is to apply the research knowledge to solve real-world problems, i.e. to focus on innovation and convert knowledge to wealth. He also discussed the road map to achieve this objective, e.g. choosing right kind of research problems (related to health, agriculture, water, energy, rural sector etc.), finding the solution and patenting it and using a start-up to deliver the solution to society.



 **Catalysing science-based innovations into high impact start-ups**

V Ramgopal Rao
IIT Delhi/Bombay

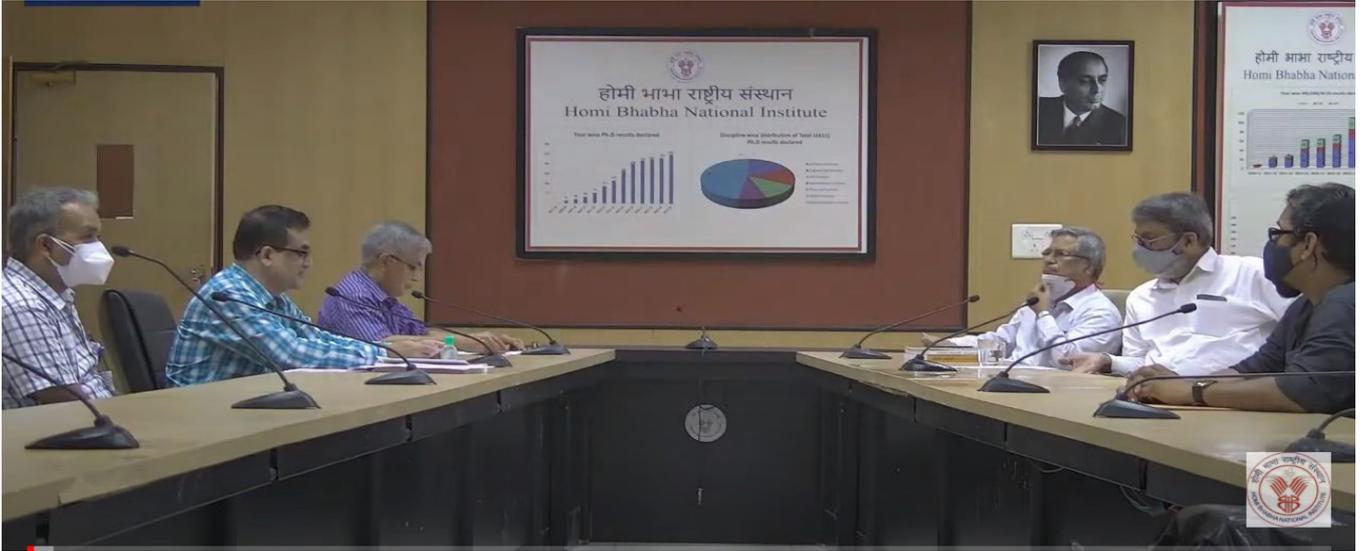
<http://www.ee.iitb.ac.in/~rrao>
Email: rrao@ee.iitb.ac.in
rrao@iitd.ac.in

Prof. V. Ramgopal Rao delivering his talk online on the occasion of Teacher's Day celebration at HBNI

हिन्दी दिवस समारोह

हिन्दी दिवस के अवसर पर होमी भाभा परिषद् कक्ष में दिनांक १४ सितम्बर 2021 को दोपहर 3:00 बजे एक समारोह का आयोजन किया गया। इस अवसर पर परमाणु ऊर्जा आयोग के भूतपूर्व अध्यक्ष डॉ. रतन कुमार सिन्हा मुख्य अतिथि थे। वैज्ञानिक और तकनीकी शब्दावली आयोग (सीएसटीटी) के भूतपूर्व अध्यक्ष प्रो अवनीश कुमार इस अवसर पर विशिष्ट व्यक्ति थे।

हिन्दी दिवस समारोह में प्रो भूपेन्द्र तोमर, भूतपूर्व संस्थान चेअर प्रोफेसर ने स्वागत भाषण दिया व अतिथियों का स्वागत किया। तत्पश्चात्, प्रो वासुदेव राव, कुलपति, एचबीएनआई ने सभा को संबोधित किया और अपने भाषण में हिंदी भाषा के प्रचार एवं प्रसार के महत्व पर जोर दिया। उन्होंने 13 सितंबर को एचबीएनआई द्वारा आयोजित अंग्रेजी-हिंदी अनुवाद प्रतियोगिता के विजेताओं को पुरस्कार भी वितरित किए। मुख्य अतिथि डॉ रतन कुमार सिन्हा, पूर्व अध्यक्ष, परमाणु ऊर्जा आयोग ने हिंदी दिवस के उपलक्ष्य पर सभा को सम्बोधित किया एवं नाभिक्य शब्दावली का विमोचन किया। विभिन्न विषयों से संबंधित 11000 से अधिक शब्दों वाली इस शब्दावली को कई डी ए ई इकाइयों के सदस्यों की एक टीम द्वारा तैयार किया गया है। इस कार्य का समन्वयन प्रो. बी.एस. तोमर, भूतपूर्व संस्थान चेअर प्रोफेसर, एचबीएनआई ने किया। शिक्षा मंत्रालय के तहत वैज्ञानिक और तकनीकी शब्दावली आयोग (सीएसटीटी) द्वारा गठित एक विशेषज्ञ टीम द्वारा शब्दावली की समीक्षा की गई और अब यह शब्दावली परमाणु विज्ञान और प्रौद्योगिकी से संबंधित शब्दों के आधिकारिक संग्रह के रूप में काम कर सकती है। इससे हिंदी में रिपोर्ट और अन्य दस्तावेज तैयार करने में काफी सुविधा होगी। कार्यक्रम के अगले चरण में, विशिष्ट अतिथि डॉ अवनीश कुमार ने सभा में उपस्थित सभी व्यक्तियों को हिंदी दिवस पर और नाभिक्य शब्दावली के विमोचन पर बधाई दी और अपने विचार व्यक्त किये। उन्होंने संस्थान की नई वेबसाइट का उद्घाटन भी किया। प्रो पी डी नाईक, डीन ने धन्यवाद प्रस्ताव प्रस्तुत किया और राष्ट्रगान के गायन के साथ कार्यक्रम का समापन हुआ।



परिषद् कक्ष में हिंदी दिवस समारोह में भाग लेते एचबीएनआई के पदाधिकारी



सभा को सम्बोधित करते हुए डॉ. रतन कुमार सिन्हा(बाएं) एवं डॉ अवनीश कुमार (दाएं)



नाभिक्य शब्दावली का ऑनलाइन विमोचन



अंग्रेजी-हिंदी अनुवाद प्रतियोगिता के विजेता प्रो वासुदेव राव के हाथों पुरस्कार ग्रहण करते हुए

Celebration of Engineer's Day at HBNI

The Engineer's Day was celebrated at the Central Office on September 20, 2021 in a hybrid mode. Prof. Shashank Chaturvedi, Director, Institute of Plasma Research, Gandhinagar graced the occasion as chief guest.

Prof. P.R. Vasudeva Rao, Vice Chancellor, HBNI welcomed the gathering. A power point presentation highlighting the life and works of Sir M Visvesvaraya, a visionary Engineer, whose birth anniversary is celebrated as Engineer's Day every year on September 15, was shown on the occasion. Prof. Chaturvedi delivered an informative talk on the topic "Science Based Development of Plasma & Fusion Technologies: Achievements and Challenges" on the occasion. Prof. A.K. Dureja, Associate Dean, HBNI proposed the Vote of Thanks.



Glimpses of Engineer's Day celebration at HBNI. Prof. PRV Rao, VC, HBNI addressing the online gathering (top) and Prof. S. Chaturvedi, Director, IPR delivering his talk (bottom).

Dr. Sekhar Basu Memorial Program

HBNI organized a Memorial Program in honor of Dr. Sekhar basu, Former Secretary, Department of Atomic Energy and Former Chairman, Council of Management, HBNI on October 1, 2021. Dr.V.K. Saraswat, Member, NITI Ayog (Science & Technology) & Chancellor, Jawaharlal Nehru University, Delhi was the chief guest on the occasion. Eminent personalities present on the occasion included, Shri K.N. Vyas, Secretary, Department of Atomic Energy (DAE), Chairman, Atomic Energy Commission and Chairman, Council of Management, Prof. R.B. Grover, Emeritus Professor, HBNI, Shri A.K. Anand, Former Director Reactor Projects Group and Technology & International Relations, BARC, Shri K.V. Ravi, Chief Executive, Nuclear Recycle Board and Dr. Sujoy Bhattacharyya, Director, RPG, BARC. The program was also attended by Mrs. Basu, who has helped HBNI to institute awards in the memory of late Dr. Sekhar Basu.

Dr.V.K. Saraswat delivered Dr. Sekhar Basu Memorial lecture giving an overview of nuclear power in India including the path so far, nuclear and renewable penetration, SMR technology and long term energy strategy. 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 in M.Tech program and also made exemplary contributions to the DAE projects.



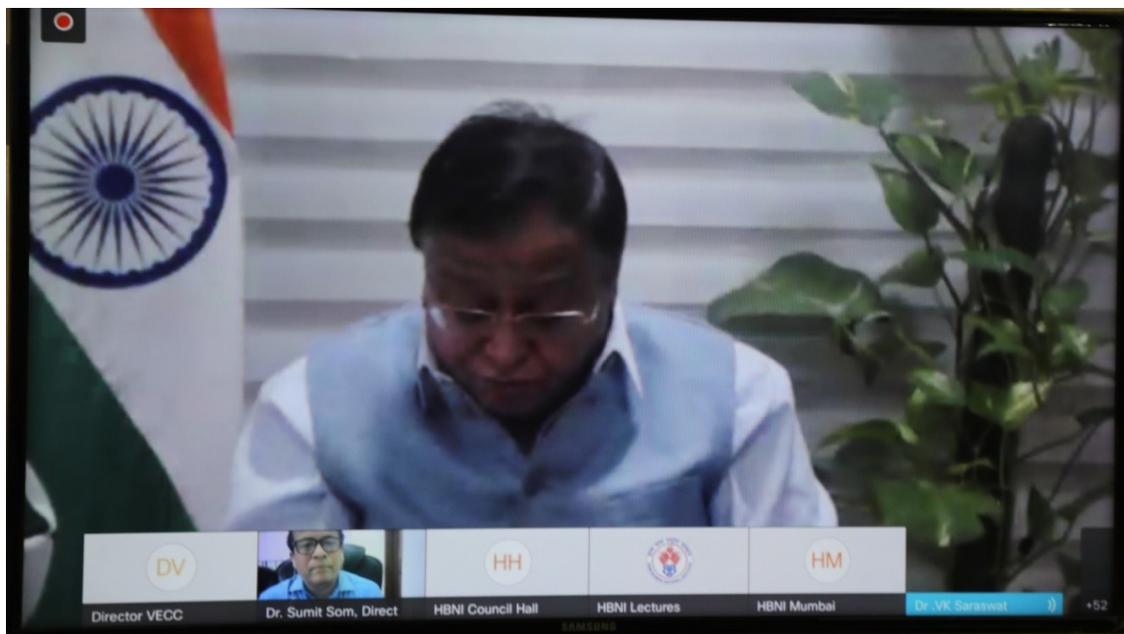
Dignitaries present on the occasion of Dr. Sekhar Basu Memorial Program



Shri K.N. Vyas welcoming Mrs. Basu on the occasion of Dr. Sekhar Basu Memorial Program



Shri K.N. Vyas (left) and Prof. P.R.V. Rao (right) addressing the gathering



Dr. V.K. Saraswat delivering his talk on the occasion of Dr. Sekhar Basu Memorial Program



Shri Soubhagya Karmakar, DCSEM



Ms. Riya Dey, BARC



Shri Shivam Agarwal, BARC



Shri N.L. Nidhin, RRCAT



Ms. Bharti Hariramani, BARC



Shri Sushmanth Upalancha, VIZAG

Shri K.N. Vyas presenting Dr. Sekhar Basu Memorial award to the awardees

News Updates

- ◆ Dr. Anil Kakodkar, Chairman, Rajiv Gandhi Science & Technology Commission (Govt. of Maharashtra) and Former Secretary, DAE & Chairman AEC has been appointed as a Chancellor of HBNI for a period of five years w.e.f October 26, 2021.
- ◆ Consequent to his resignation from the post of Registrar, HBNI, Dr. B.R. Chandrasekar has been relieved from HBNI w.e.f. September 1 2021. Prof. D.K. Maity, Associate Dean, HBNI is officiating as Registrar.
- ◆ Shri P.V. Jagadeesan, Deputy Finance Officer, HBNI superannuated in June 2021.
- ◆ Prof. B.S. Tomar, HBNI completed his tenure as Institute Chair Professor in September 2021.

Video-Conferencing Facility at Kanchanjunga, Anushakti Nagar

Continuing its efforts to take education far beyond classrooms, particularly in aftermath of Covid-19 pandemic, a new Video conferencing facility has been established by HBNI in addition to the existing facility at HBNI Council Hall. The facility is housed at Kanchenjunga building, Anushakti Nagar. The video conferencing facility can be used for conducting online classes, meetings, and dissertation and theses defenses.

Forthcoming events

HBNI is organizing a nationwide essay competition as part of DAE celebrates “Azadi Ka Amrit Mahotsav.” The competition will be held in February 2022 and is open for higher secondary, undergraduate and postgraduate students across all educational institutes in India.

Webinars conducted by HBNI during July 2021-December 2021

Sr. No.	Webinar Topic	Speaker	Date
1.	Phase Diagram Studies on Bi-Mo-O and Pb-Mo-O Systems	Dr. P.M. Aiswarya , Research Associate, Chemical Sciences, HBNI	06.07.2021
2.	Talking about Cancer : Prevention, Early Detection, Diagnosis and Treatment	Dr. S.D. Banavali , Director. (Academics), Head, Department of Medical Oncology, Tata Memorial Centre	09.07.2021
		Dr. Gauravi Mishra , Department of Preventive Oncology, Tata Memorial Centre	
3.	Focus, Learn, Apply, Grow and Enjoy.	Dr. A. Velumani , Creator, Thyrocare	29.07.2021
4.	Physics understanding (using neutron) of magnetization, compensation phenomenon and its correlation with structural, magnetic and charge transport properties	Ms. Madhu Ghanathe , Ph.D Student, HBNI	03.08.2021
5.	From Raman Effect to Nuclear Power (Talk as a part of HBNI Eminent Lecture Series celebrating 75 years of Independence)	Dr. R. Chidambaram , DAE Homi Bhabha Chair Professor, BARC	13.08.2021
6.	Academia-Industry Transition: Harnessing your Expertise in a Start-up	Dr. Nikhil Sangith , Chief Scientific Officer (CSO), Xact Diagnostek Pvt. Limited, UIC Bioincubator, Anna University & HBNI Alumni	23.08.2021
7.	Catalysing Science-based innovations into high impact start ups	Prof. V. Ramgopal Rao Director, IIT, Delhi	05.09.2021
8.	From Idea to commercially viable product - various stages and the role of anchor customer	Dr. Rachna Dave , Founder & CEO, MicroGo India & HBNI Alumni	17.09.2021
9.	Science based development of plasma and fusion technologies: Achievements and challenges	Dr. Shashank Chaturvedi Director, Institute of Plasma Research, Gandhinagar	20.09.2021
10.	India's energy security in a carbon constrained world (Talk as a part of HBNI Eminent Lecture Series celebrating 75 years of Independence)	Dr. Anil Kakodkar AICTE Distinguished Chair Professor, Chairman, Rajiv Gandhi Science & Technology Commission & Former Chairman, Atomic Energy Commission	24-09-2021

Webinars conducted by HBNI during July 2021-December 2021

11.	IPR Enabled Productive Innovations	Prof. Prabuddha Ganguli CEO, Vision-IPR, Advisor and Adjunct Faculty, IIT Jodhpur, Co-Principal Investigator, National Digital Library of India, IIT Kharagpur, Emeritus Professor, Vishwakarma University, Pune & Honorary Visiting Professor, JNU, New Delhi	14-10-2021
12.	Managing public perceptions of public risks (Talk as a part of HBNI Eminent Lecture Series celebrating 75 years of Independence)	Prof. V.S. Ramamurthy, Emeritus Professor, National Institute of Advanced Studies, Bengaluru	21.10.2021
13.	Application of isotopes in the exploration of geothermal areas	Dr. Sitangshu Chatterjee, IRAD, BARC	11.11.2021
14.	Stronger public-private partnerships for India to achieve Global Leadership	Dr. Ajit Sapre, Group President, Reliance Technology Group	25.11.2021
15.	<u>Special Webinar on Nuclear Energy</u> PHWR Program in India: Indigenous Program of World-class Standards	Shri B.C. Pathak, Director (Projects), NPCIL	02.12.2021
	Societal Applications of Nuclear Science and Technology	Prof. P.K. Pujari, Director, RC&IG, BARC	
	Indian Experience in Radiation and Isotope Technology	Prof. H.J. Pant, Head, I&RD, BARC	
	Safety Regulations for Nuclear Reactors and Radiation Facilities	Shri S.A. Bhardwaj, Former Chairman, AERB	
	Nuclear Power: An Essential Component of Green Energy Mix	Prof. R.B. Grover, Emeritus Professor, HBNI	
16.	Saga of Heavy Water Production in India	Shri. Surendra Sharma, Former Chairman and Chief Executive, Heavy Water Board	28.12.2021

Events at CIs/OCC

Founder's Day Celebration at BARC

The 112th birth anniversary of Dr. Homi Jehangir Bhabha was celebrated as Founder's Day on October 29, 2021 at BARC. Shri S.A. Bhardwaj, Former Chairman, Atomic Energy Regulatory Board was the Chief Guest on the occasion.

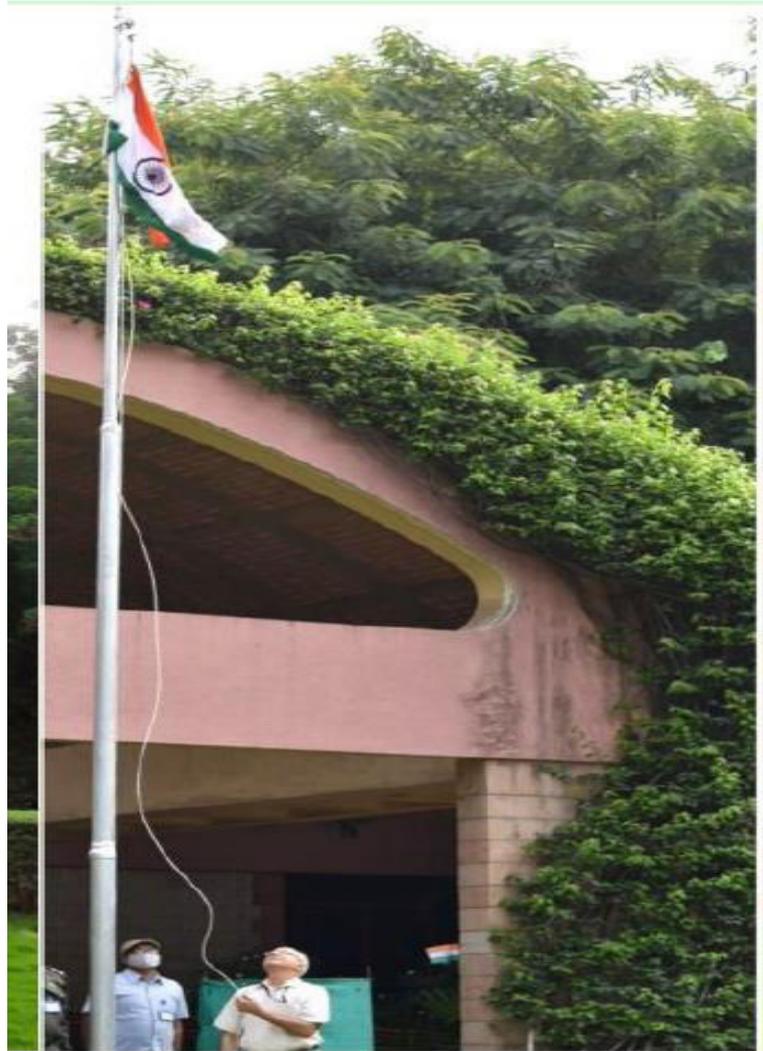
Dr. A.K. Mohanty, Director, BARC welcomed the gathering. In his address, he highlighted the recent achievements of the centre in several sectors which are core as well as spin off areas of nuclear energy applications. In his address, Shri K.N.Vyas, Chairman Atomic Energy Commission and Secretary, DAE gave a detailed account of the recent achievements of the Department in nuclear energy sector, health care sector, mega science projects as well as basic science and engineering. He also highlighted the contributions made by Tata Memorial Centre, a CI of HBNI in cancer research and cancer care. Shri S.A. Bhardwaj, Chief Guest on the occasion addressed the gathering and gave away the DAE (Excellence in Science, Engineering & Technology) Awards for the year 2019.



Founder's Day Celebration at BARC. Dignitaries on dais (top left); Shri K.N. Vyas giving Founder's Day address (top right); Prof. A.K. Mohanty giving Founder's Day address (bottom left); DAE Homi Bhabha Science and Technology Award winners posing with their awards (bottom right)

Independence Day Celebration at IPR

The 75th Independence Day was celebrated at IPR main campus on 15th August, 2021, observing Covid protocols. Director, Dr Shashank Chaturvedi hoisted the national flag, which was followed by singing of the national anthem by the staff members present at the occasion. Dr. Shashank Chaturvedi addressed the gathering and spoke in detail about scientific achievements and technologies developed by IPR despite of testing times of COVID -19.



Prof. Chaturvedi, Director, IPR hoisting the National Flag on 75th Independence day

Awards and Honors

1. Dr. R.A. Badwe, Director, TMC, Mumbai has been conferred Nelson Mandela Noble Peace Prize 2021 and Honorary Doctorate of Philosophy for Humanitarian Services.
2. Dr. Saket Saurabh, Institute of Mathematical Sciences, Chennai has been awarded Shanti Swaroop Bhatnagar award in Mathematical Sciences for 2021.
3. Prof. Bedangadas Mohanty, School of Physical Sciences, NISER has been awarded Infosys prize for Physical Sciences for the year 2021.
4. Dr. Satyaprasad Senanayak, School of Physical Sciences, NISER has become an Associate of the Indian Academy of Sciences (IASc).
5. Dr. Najmul Haque, School of Physical Sciences has been awarded INSA Medal for Young Scientists, 2021.
6. Prof. A.K. Tyagi, Chemistry Group, BARC has been elected as a fellow of World Academy of Ceramics.
7. Dr. H.N. Ghosh, BARC has been selected to receive Chemical Research Society of India (CRSI) silver medal for the year 2022.
8. Dr. R.S. Ningthoujam, BARC has been selected to receive Chemical Research Society of India (CRSI) bronze medal for the year 2022.
9. Dr. U. Lourderaj, School of Chemical Sciences, NISER has been selected to receive the Chemical Research Society of India (CRSI) Bronze Medal for the year 2022.
10. Dr. Prasun K. Mukherjee, BARC has been elected as a fellow of Indian National Science Academy (INSA).
11. Dr. V. Sudarsan, BARC has been elected as a fellow of National Academy of Sciences (NASI).
12. Prof. P.R. Vasudeva Rao, VC, HBNI was invited to deliver the prestigious Dr. H.L. Roy Memorial Lecture - 2021 by the Indian Institute of Chemical Engineers (IICChE) during the CHEMCON conference held at IMMT, Bhubaneswar during Dec. 26-30, 2021. He delivered the lecture on the topic, "Separations Science and Nuclear Energy".
13. Prof. Venkatraman, Director, IGCAR has been conferred the Degree of Doctor of Science, Honoris Causa, in recognition of his outstanding contributions in Nuclear Science and Technology, by Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai.
14. Prof. Sandip Kumar Dhara, Materials Science Group, IGCAR has been elected as a Fellow of the Institute of Physics, England.
15. Prof. Anish Kumar, Head, NDED, IGCAR has been selected as the Editorial Board member of journal Research in Nondestructive Evaluation (American Society for Nondestructive Testing).
16. Dr. Chandrima Das, SINP has been selected for the prestigious Central Drug Research Institute (CDRI) Awards 2021 for Excellence in Drug Research in Life Sciences category.
17. Dr. Shamik Banerjee, IOP has been awarded Swaranajayanti fellowship by DST, Govt. of India in Physical Sciences for the year 2020-21.
18. Dr. G. Sainath and Assoc. Prof. A. Nagesha, IGCAR have been awarded Best Poster Award for their poster, "Atomistic simulations of twin boundary effect on the crack growth behaviour in BCC Fe" in the 8th International Conference on Creep, Fatigue and Creep-Fatigue Interaction (CF-8) held during August 24-27, 2021 at Indira Gandhi Centre for Atomic Research, Kalpakkam.
19. The essay titled "Application of laser, plasma and accelerator techniques during Covid pandemic" by Mr. Santosh Sourav Sahoo, Student, Integrated MSc, School of Physical Sciences, NISER has been selected as one of the best 10 essays from all over India in the 33rd DAE essay contest-2021.

Core Values of Homi Bhabha National Institute

Student-Centric Approach

Keep in mind the good of the student in designing processes and programs

Ethical Conduct

Adhere to code of ethics in teaching, research and service

Resist and relegate dishonesty

Science for Society

Encourage application of advanced knowledge in sciences including medical and health sciences, to address needs of society



Promote Excellence

Devise mechanisms to recognize, encourage and reward Excellence

Use merit as the only consideration in every process

World Class Education and Research

Nurture human resources in sciences (including Engineering sciences) and Mathematics

Provide access to world class experimental facilities and research problems in frontier areas

Focus on National Mission

Use education and research as tools to meet the needs of the nation in various domains and particularly nuclear science and technology



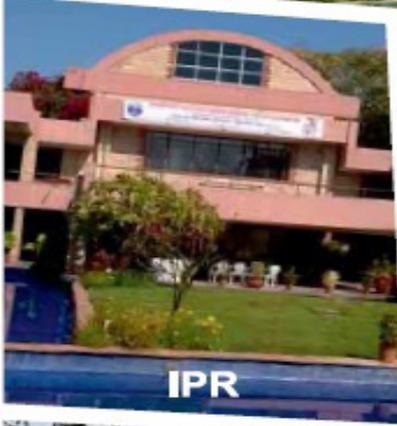
HRI



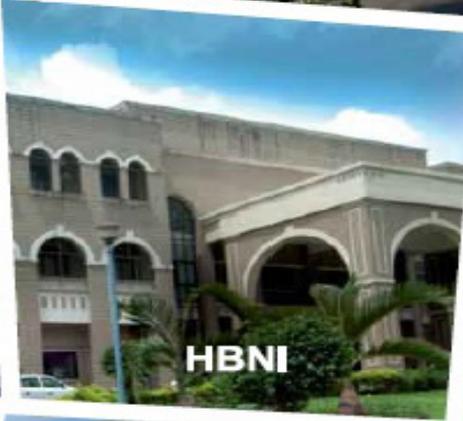
VECC



RRCAT



IPR



HBNI



SINP



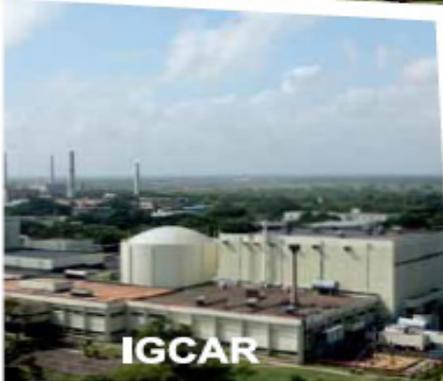
IoP



BARC



TMC



IGCAR



NISER



IMSc

होमी भाभा राष्ट्रीय संस्थान Homi Bhabha National Institute

(परमाणु ऊर्जा विभाग की एक सहायक संस्था और यूजीसी
अधिनियम 1956 की धारा 3 के तहत विश्वविद्यालय माना जाता है)
(An aided institution of the Department of Atomic Energy and
a Deemed-to-be University under section 3 of the UGC Act. 1956)