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
www.hbni.ac.in

Placement Cell

HBNI

CONTENTS

MESSAGE FROM VICE CHANCELLOR

The Homi Bhabha National Institute (HBNI) is one of the unique institutes in India which provides exposure to its students by training them in ongoing projects in the frontier areas of science and technology. HBNI cater interdisciplinary basic and applied research in various facets of nuclear science and engineering and facilitate their translation into technology development and applications through various academic programs. The Institute now offers **44** academic programmes and have around **4339** students, of whom nearly 2000 are doctoral students, spread over eleven campuses as the constituent Institutions(CES) and off-campuses centre (OCC) of HBNI across the country.

HBNI organizes many events for placement activities, inviting leading industrial R&D scientists to interact with the doctoral and post-graduate students, to create awareness regarding the opportunities in the industry and their requirements. Lecture series are also conducted for the students by the well-known entrepreneurs. HBNI organizes 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 brings together the faculty from across all its CIs/OCC in discussion meetings to provide an overview of the ongoing research programs and available research infrastructure in their respective institutions, and organize theme-based discipline-specific meetings to boost collaborations among the faculty members and students.

We highly value our partnership with the industry and alumni of HBNI and remain committed to the recruitment of our well-trained post-graduate and doctoral students to take on future challenges in the industry. HBNI invites recruiting organizations, industries and academic institutes for placement of and Ph.D. students to work on finding the best match between the expectations of the recruiters and the aspirations of the students. HBNI will provide all logistics support for the smooth functioning of the recruitment process at the HBNI campus in Mumbai.

Wish you all the best!

Prof. U. Kamachi Mudali

ABOUT THE INSTITUTE

The Homi Bhabha National Institute (HBNI) was established in 2005 under section 3 of the UGC Act 1956. The role of HBNI is to nurture in-depth capabilities in nuclear science and engineering and to serve as a catalyst to accelerate the pace of basic research and facilitate its translation into technology development and applications through academic programs, viz., Master's and Ph.D. degrees in Engineering, Physical, Chemical, Mathematical, Life and Medical & Health Sciences while encouraging inter-disciplinary research. Additionally, academic programs in the domain of Applied Systems Analysis have also been identified to ensure the availability of adequate qualified human resources to address issues pertaining to nuclear law, the economics of nuclear power, nuclear security, nuclear proliferation, intellectual property rights, etc. HBNI has been accredited by NAAC with a score of 3.4, as a category 'A+' University in 2021. In the MHRD's National Institutional Ranking Framework (NIRF) - India ranking 2023, HBNI secured 17th rank in the University category, 15th position in Research Institution category and placed at 30th position among 1657 institutions in the overall category. HBNI has the following Centres as its Constituent Institutions (CI's)/Off-Campus Centre (OCC) spreaded all over India.

- Bhabha Atomic Research Centre (BARC), Mumbai
- Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam
- Ramanna Centre for Advanced Technology (RRCAT), Indore
- Variable Energy Cyclotron Centre (VECC), Kolkata
- Saha Institute ofNuclear Physics (SINP), Kolkata
- Institute for Plasma Research (IPR), Gandhinagar
- Institute of Physics (IoP), Bhubaneswar
- Harish-Chandra Research Institute (HRI), Prayagraj
- Institute of Mathematical Sciences (IMSc), Chennai
- Tata Memorial Centre (TMC), Mumbai
- National Institute of Science Education and Research (NISER), Bhubaneswar (OCC)

nirf

15th Rank Research Institution
17th Rank University
30th Rank Overall

NAAC

A+ Grade
Score 3.4

nature index

2nd Rank In
Nature Index

STUDENTS ACHIEVEMENTS

Miss. Debarati Das, BARC, received Best Poster award in the Conference on Electrochemistry for Industry, Health and Environment, Mumbai,7-11 Feb, 2023.

Miss Sudipa Manna, BARC, received Best Poster award at 1st HBNI interaction meeting in Chemical Sciences, NISER, Bhubaneswar, 18-20 Jan, 2023.

Miss Swarnima Rawat, PhD (Chem. Sci.), BARC, was Popular Science Stories-PhD Category Award by AWSAR-DST (DST) in March 2023.

Dr. Neena G. Shetake, BARC, has received Asian Association for Radiation Research Young Scientist Award, 2022.

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

Miss Ritu Parashar, BARC, received the Mrs. Chinnamaul Memorial Prize by Indian Institute of Chemical Engineers, at the proceeding Annual Session of the Institute in December 2022.

Shri Rajath Alexander, BARC, has received Young Scientist in Material Science Award by Indian Science Congress Association.

Miss Sanchita Ghosh, BARC, received Best Oral Presentation Award in the International Conference on "Emerging Smart Materials in Applied Chemistry" held at KIIT Deemed to be University, Bhubaneswar, during December 20-22, 2022.

Mr. Gaurav Mukherjee, BARC, Mr. Apar Agarwal, VECC and Mr. Devesh Kumar VECC received Best Poster Presentation Awards in the 66th DAE-BRNS symposium on Nuclear Physics, held at Cotton University, Dec. 2022.

Miss Himanshi Singh & Shri Sajan Kumar, BARC, has received one of the Best Poster at 66th DAE Solid State Physics Symposium held at BIT, Mesra, Ranchi, Jharkhand, Dec. 18- 22, 2022.

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.

STUDENTS ACHIEVEMENTS

Shri Deepak, BARC, has received the Best Thesis Award held at Birla Institute of Technology Mesra, Ranchi, Jharkhand, during December 18- 22, 2022.

Shri Amit Kumar Sharma, BARC, received Best Poster American Chemical Society (ACS) in the Conference on Electrochemistry for Industry, Health and Environment.

Shri K. Sandeep Rao & Shri Atanu Jha, Shri Meghnath Sen & Shri Bikash Chandra Saha BARC, received Best Poster Award in the Interdisciplinary Symposium on Materials Chemistry, Mumbai, December 7-10, 2022.

Shri Meghnath Sen & Shri Bikash Chandra Saha, BARC, received Best Poster Award in the Interdisciplinary Symposium on Materials Chemistry,Mumbai, December 7-10, 2022.

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".

Ms. Ilina 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.

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.

Miss C. Teena Mouni received the Best Paper Award 2022 (Young Category) from the IIM Kalpakkam Chapter.

Dr. Shreyasi Acharya, VECC has received ALICE Thesis Award 2022.

Mr. Krishna Kumar Yadav received Best Oral Presentation Award in National Symposium (AMALGAM- 2023) on Recent Trends in Metallurgy & Material Science.

Shri Surendra Yadav, RRCAT, has received ISPA Best Thesis Presentation Award, 2023.

Mr. Dheeraj Kumar Sharma, IPR received First Prize of the "PSSI- Z.H. Sholapur Wala Award for Fusion Research at 37th National Symposium on Plasma Science & Technology (Plasma-2022), during 12-14 December 2022.

STUDENTS ACHIEVEMENTS

HBNI Outstanding Student Award: 4 Students from Health & Medical Sciences 1 in DM, 2 in MD, 1 in M.Ch

HBNI Outstanding M. Tech Student Award: 2 Students from Engineering Sciences

HBNI Outstanding Doctoral Student Award: 4 Students from Physical Sciences, 2 in Chemical Sciences,2 in Life Sciences, 3 in Engineering Sciences

J.B. Joshi Innovation Award
4 HBNI Ph.D Students

FACULTY ACHIEVEMENTS

2023

Prof. S. M. Yusuf, BARC, elected as a Fellow of Indian National Science Academy. He also received the Distinguished Lectureship Award of the Materials Research Society of India (MRSI). He has been elected as the President of Indian Physics Association (IPA).

Prof. Aditi Sen De, HRI, has been elected as a fellow of Indian National Science Academy.

Prof. Bedangadas Mohanty,NISER, has been appointed as Deputy Spokesperson of the ALICE experiment at the Large Hadron Collider in CERN. 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).

Prof. Archana Sharma, BARC, has been elected as Governing Council Member of INAE. She has also been got recognised as "Torch Bearer of Indian Women in STEM" by IW3D Printing Organization and by Indian National Academy of Engineering (INAE)-Vigyan Prasar. Her name also features in the book, Women Engineers of India.

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.

2022

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.

Prof. Sandip Dhara, IGCAR, has become a Senior Member of OPTICA (Optical Society of America).

Prof. Arup Dasgupta, IGCAR, has been elected as a Fellow of IIM.

FACULTY ACHIEVEMENTS

Dr. Sugam Kumar, BARC, has been selected as an Associate of Indian Academy of Sciences (IASc) and a Member of The National Academy of Sciences, India. He has also been awarded DAE-SSPS Young Achiever Award.

Dr. Veerendra K. Sharma, BARC, received Buti Foundation Award from Indian Physics Association.

Dr. Shamik Banerjee, IoP, has been awarded the INSA Young Scientist Award.

Dr. Amit Kunwar, BARC, has been elected as a Fellow of Maharashtra Academy of Sciences.

Dr. Pratap Roy, VECC, has been awarded the IPA "Aswini Kumar Rath Memorial Award" in Nuclear Physics.

Dr. Ponneri C. Ravikumar, NISER, has been awarded with CRSI Bronze Medal. He is also recognized by American Chemical Society (ACS) as Top 3% highly cited ACS Author from India.

Dr. B. B. Lahiri, IGCAR and Dr. Amaresh Jaiswal, NISER, has received Young Achiever Award at the DAE Symposium on Nuclear Physics.

Dr. Shiba Prasad Acharya, SINP, received "International Best Researcher Award" in the field of nonlinear dynamics and plasma physics.

Dr. V. G. Gupta, Dr. B. P. Mandal, and Dr. Jitendra Bahadur, BARC, have been awarded Society for Materials Chemistry (SMC) Bronze Medal.

Dr. R. S. Ningthoujam, BARC, has been awarded MRSI medal for the year 2022.

Prof. Ranjan Mittal and Prof. V. Sudarsan, BARC, has been awarded Society for Materials Chemistry (SMC) Silver Medal.

FACULTY ACHIEVEMENTS

Dr. Sunita Sonawane, RMC-BARC, has won Women Researcher Award in the International Scientist Award on Engineering, Science and Medicine, held during Oct 7-8, 2022, organised by VDGOOD Professional association.

Prof. Venkatesh Raman, IMSc. has been elected as the President of ACM India.

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.

Prof. Manimala Mitra, IoP, has received Subham Memorial Award, by the NGO AWTE, Bhubaneswar.

Dr. Debasish Chaudhuri, IoP was invited to visit LPTM CY Cergy Paris University, Paris, France with a Visiting Professorship.

Dr. Anandkumar, Surdharshan, Mr. T. Nandakumar, Ravishankar and J. Philip, IGCAR have received the Best Poster award at CORCON held at Udaipur, Sept 19, 2022.

Prof. V.Gopika, BARC, has been elected as a Fellow of Indian National Academy of Engineering (INAE).

Dr. Sangram Bagh, SINP, and Dr. Dirtha Sanyal, VECC, has been elected as a Fellow of the Royal Society of Chemistry.

Dr. Sharmistha Dutta Choudhury and Dr. Amit Kunwar, BARC, has been elected as a member of Maharashtra Academy of Sciences.

Prof. B. Venkataraman, has been conferred the Honorary Fellowship of the Indian Society of Analytical Scientists, Mumbai.

PROGRAMS AT A GLANCE

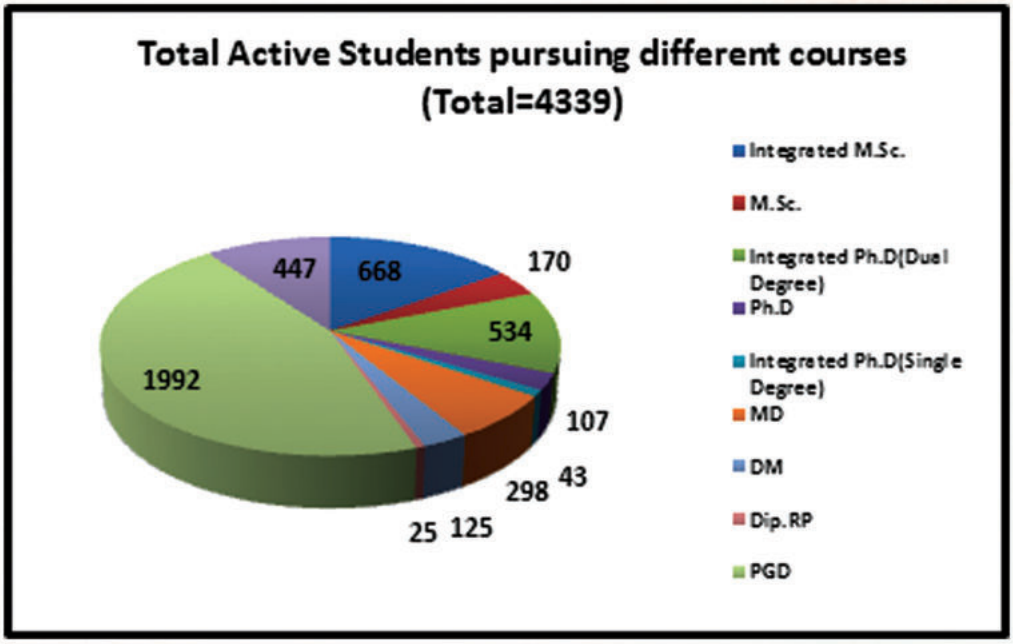
1. Post Graduate Degrees				
S. No.	**Programme Name**	**Subject**	**Program Code**	**CI/OCC**
The HBNI-NISER Integrate 5 years M.Sc. Programme offered in the biological, chemical, mathematical, physical sciences. It aims to train some of the brightest young minds of our country, through some of the best practitioners of science in India. HBNI 2 years M.Sc. programme admits the best of the science graduates of the country.				
1	Integrated M.Sc.	Physical Sciences	PHYS13	NISER
2	Integrated M.Sc.	Chemical Sciences	CHEM13	NISER
3	Integrated M.Sc.	Mathematical Sciences	MATH13	NISER
4	Integrated M.Sc.	Life Sciences	LIFE13	NISER
5	M.Sc.	Physical Sciences	PHYS08	HRI
6	M.Sc.	Medical and Radiological Physics	PHYS26	NISER
7	M.Sc.	Engineering Sciences	ENGG03	BARC, IGCAR, RRCAT, VECC, IPR
8	M.Sc.	Nursing	HLTH15	TMC
9	M.Sc.	Clinical Research	HLTH17	TMC
10	M.Sc.	Nuclear Medicine and Molecular Imaging Technology	HLTH19	BARC, RMC, TMC
11	M.Sc.	Hospital Radio Pharmacy	HLTH20	BARC, RMC
12	M.Sc.	Public Health and Epidemiology	HLTH21	TMC
13	M.Sc.	Occupational Therapy in Oncology	HLTH22	TMC
2. MD/DM/MCh/Dip RP				
14	MD		HLTH09	BARC, TMC
15	DM		HLTH10A	TMC
16	M Ch		HLTH10B	TMC
17	Dip. RP		HLTH11	BARC
3. M.Tech/PGD				
18	M.Tech	Engineering Sciences	ENGG01	BARC, IGCAR, RRCAT, IPR
19	PGD	Physical Sciences	PHYS00	BARC, IGCAR, RRCAT
20	PGD	Chemical Sciences	CHEM00	BARC, IGCAR
21	PGD	Engineering Sciences	ENGG00	BARC, IGCAR, RRCAT, IPR
22	PGD	Life Sciences	LIFE00	BARC

PROGRAMS AT A GLANCE

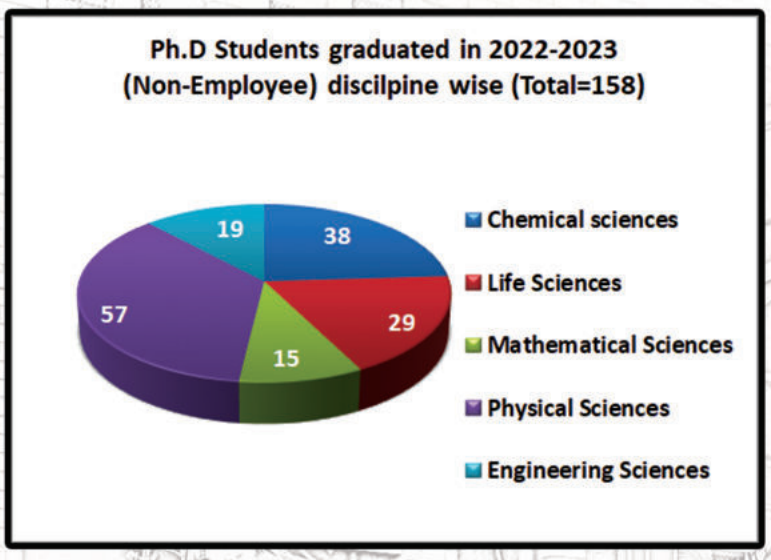
4. Ph.D.				
S. No.	Programme Name	Subject	Program Code	CI/OCC
23	Integrated Ph.D. (Dual Degree)	Physical Sciences	PHYS05	NISER, HRI, IMSc
24	Integrated Ph.D. (Dual Degree)	Chemical Sciences	CHEM05	NISER
25	Integrated Ph.D. (Dual Degree)	Mathematical Sciences	MATH05	NISER
26	Integrated Ph.D. (Dual Degree)	Life Sciences	LIFE05	NISER
27	Integrated Ph.D. (Dual Degree)	Engineering Sciences	ENGG05	BARC, IGCAR, RRCAT, VECC, IPR
28	Integrated Ph.D. (Dual Degree)	Theoretical Computer Sciences	MATH30	IMSc
29	Ph.D.	Physical Sciences	PHYS04	BARC, IGCAR, RRCAT, VECC, IPR, SINP, NISER, IoP, HRI, IMSc
30	Ph.D.	Earth and Planetary Sciences	PHYS25	NISER
31	Ph.D.	Chemical Sciences	CHEM04	BARC, IGCAR, NISER, SINP
32	Ph.D.	Mathematical Sciences	MATH04	NISER, IMSc, HRI
33	Ph.D.	Computer Sciences	MATH28	NISER
34	Ph.D.	Theoretical Computer Sciences	MATH29	IMSc
35	Ph.D.	Life Sciences	LIFE04	BARC, NISER, SINP, TMC, IMSc, RRCAT
36	Ph.D.	Computational Biology	LIFE24	IMSc
37	Ph.D.	Engineering Sciences	ENGG04	BARC, IGCAR, RRCAT, VECC, IPR
38	Ph.D.	Medical and Health Sciences	HLTH04	BARC, RMC, TMC
39	Ph.D.	Applied System Analysis	APSA04	BARC, IGCAR, NISER
40	Ph.D.	Humanities and Social Sciences	APSA27	NISER
41	Integrated Ph.D. (Single degree)	Computational Biology	LIFE18	IMSc
42	Integrated Ph.D. (Single degree)	Engineering Sciences	ENGG18	BARC, IGCAR, RRCAT, VECC, IPR
43	Integrated Ph.D. (Single degree)	Applied System Analysis	APSA18	BARC, IGCAR
44	Integrated Ph.D. (Single degree)	Physical Sciences	PHYS18	IMSc

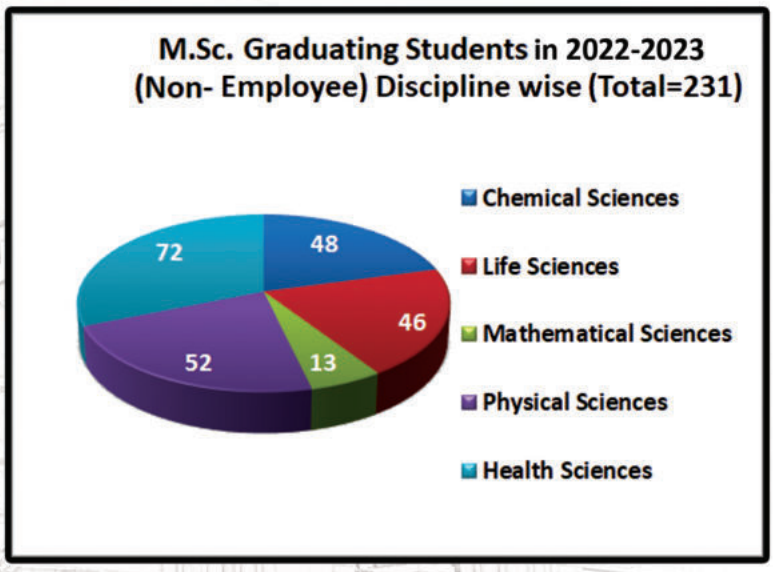
STUDENT'S STATISTICS

Students' Statistics as on Aug 2023



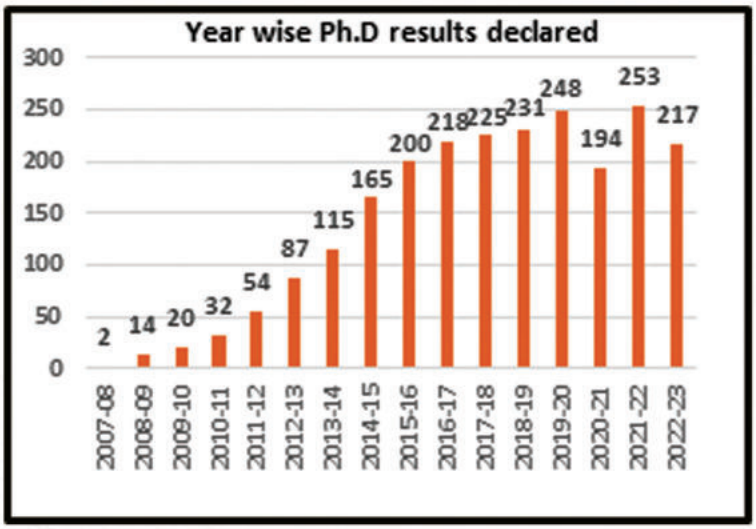
Graduating Batch (Students aspiring for Placement)

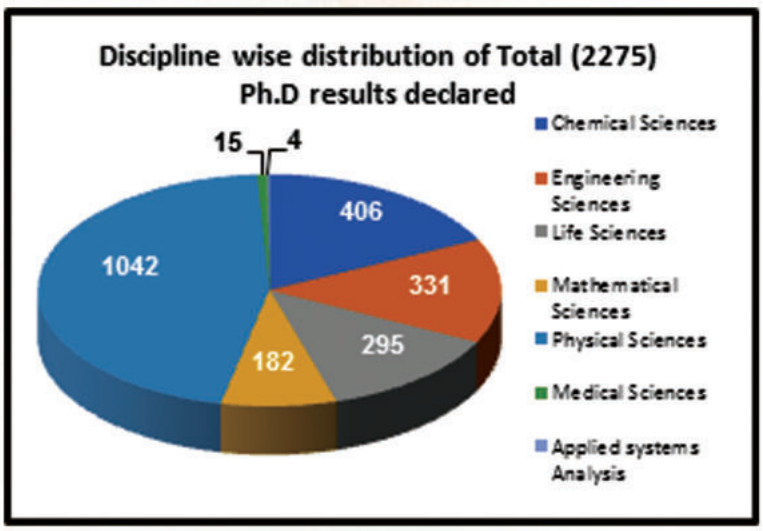


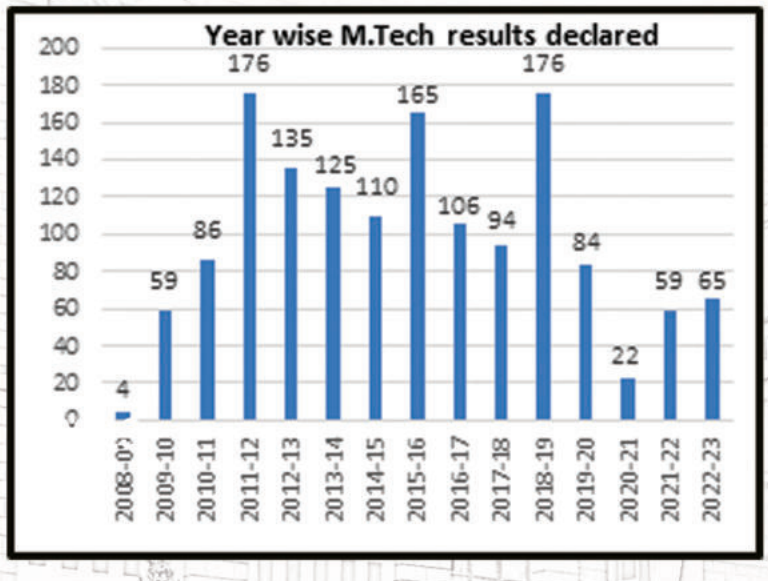


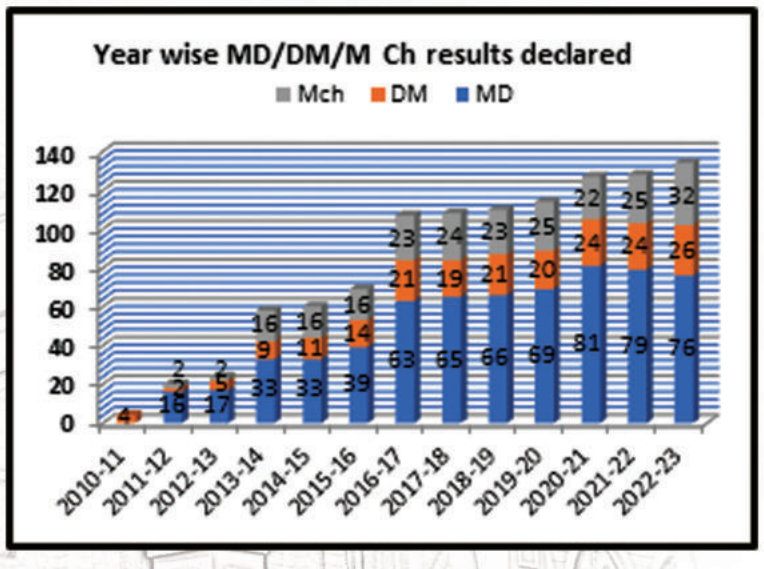
STUDENT'S STATISTICS

Students' Statistics Year wise









ACADEMIC PROGRAMS

The role of HBNI is to nurture in-depth capabilities in nuclear science and engineering and to serve as a catalyst towards assimilation of new ideas generated through basic research into technology development. HBNI is one of its kind institute in India which provides exposure to its students by training them in ongoing projects in the frontier areas of nuclear technology.

HBNI offers following programmes

Natural Sciences

Major Disciplines

- Chemical Sciences
- Earth and Planetary Sciences
- Life Sciences
- Mathematical Sciences
- Physical Sciences

Programs

- The 5-year integrated M.Sc.
- M.Sc.
- Integrated Ph.D. (Single Degree)
- Integrated Ph.D. (Dual Degree)
- Ph.D.
- PGD

Engineering Sciences

Major Disciplines

- Mechanical Engineering
- Chemical Engineering
- Electrical Engineering
- Electronics Engineering
- Instrumental Engineering
- Computer Science & Engineering
- Civil Engineering
- Metallurgical Engineering

Programs

- M.Tech
- PGD
- M.Sc
- Ph.D
- Integrated Ph.D. (Single Degree)
- Integrated Ph.D. (Dual Degree)

ACADEMIC PROGRAMS

Health/Medical Sciences

Programs

- M.Sc.
- DM/MD/MCh
- Dip. Rp
- Ph.D.

Disciplines of M.Sc

- Nursing
- Clinical Research
- Nuclear Medicine and Molecular Imaging Technology
- Hospital Radio Pharmacy
- Public Health and Epidemiology
- Occupational Therapy in Oncology

Humanities/Applied System Analysis

Programs

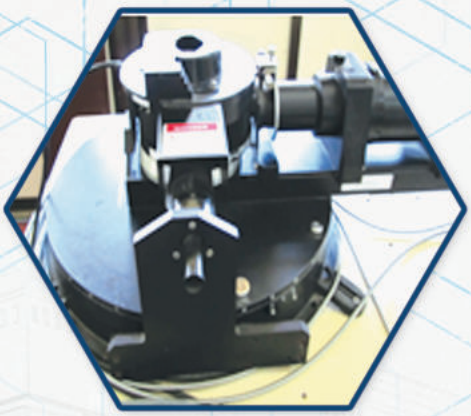
- Ph.D (APSA)
- Integrated Ph.D. (APSA)
- Ph.D (Humanities and Social Sciences)

CHEMICAL SCIENCES

Research & Development Activities

- o Nanomaterials & Nanotechnology
- o High temperature materials
- o Metal Organic Frameworks
- o Cancer therapeutics
- o Radiation detection technology
- o Hydrogen generation and storage
- o Energy storage devices (Li/Na ion battery/ Super capacitor)
- o Transition metal catalysis
- o Supramolecular chemistry
- o Radiation and Photochemistry
- o Polymer chemistry
- o Electrochemistry
- o Computational & Theoretical chemistry
- o Ultrafast Spectroscopy
- o Single molecule spectroscopy (Fluorescence correlation spectroscopy)
- o Laser induced breakdown spectroscopy (LIBS)
- o Positron Annihilation spectroscopy
- o Radiopharmaceuticals
- o Interfacial Spectroscopy
- o Nuclear Fuel
- o Atmospheric Chemistry

Time Correlated Single Photon Counting Fluorometer



DLS & Zeta potential

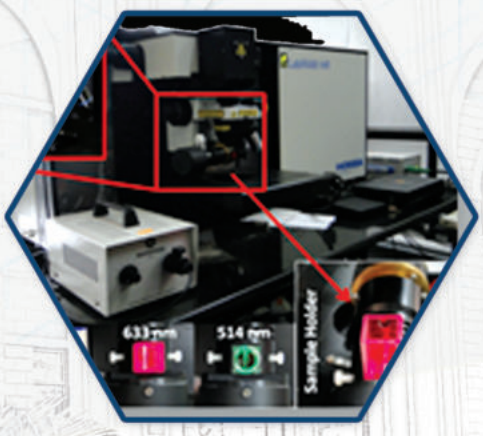
Heterodyne-Detected Vibrational Sum Frequency Generation (HD-VSFG) Spectrometer

CHEMICAL SCIENCES

Industrial Skills

- o Analysis of IR/EPR/NMR spectroscopy
- o Analysis of time resolved emission data (TCSPC and Fluorescence upconversion)
- o Analysis of atomic spectroscopy data (F-AAS/GF-AAS/ICP-OES)
- o Analysis of GC-MS/GC-TCD data
- o Analysis of XRD/XRF/XPS data
- o LINAC facility (10 MeV)
- o Morphological characterization of nanoparticles (SEM/AFM)
- o Voltammetry techniques (ASV/LSV/CV)
- o Analysis of particle size (DLS/Particle size Analyser)
- o Zeta potential
- o Inorganic and organic compound synthesis
- o Synthetic tools: Synthetic tools mechano chemistry, Sonochemistry, microwave heating
- o Synthesis of Drug Molecules
- o Synthesis of Organometallic and Organic Compounds
- o Energy storage devices
- o Analysis of IR/EPR/NMR spectroscopy

Surface Enhanced Raman Spectroscopy (SERS) Setup

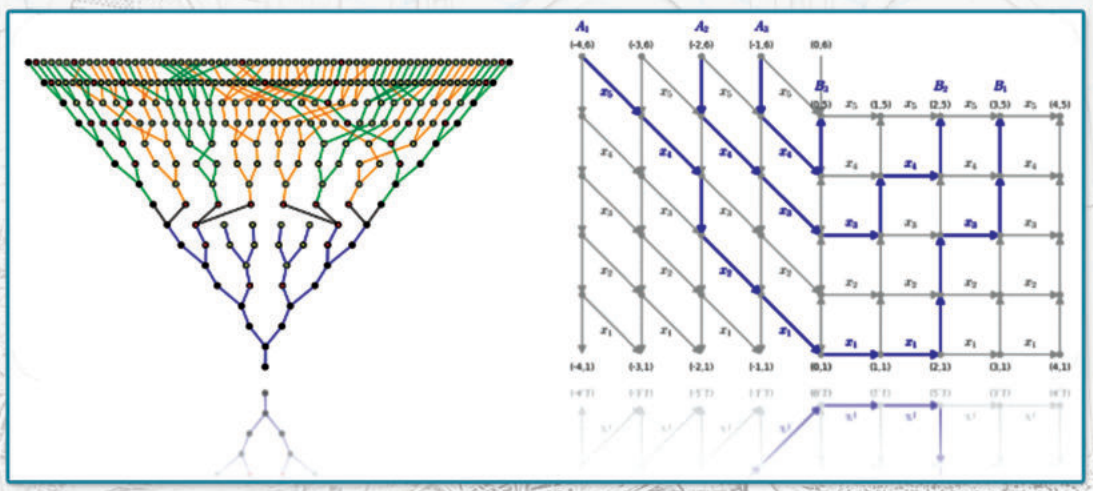


Electrochemical Surface Plasmon Resonance

MATHEMATICAL SCIENCES

Research & Development Activities

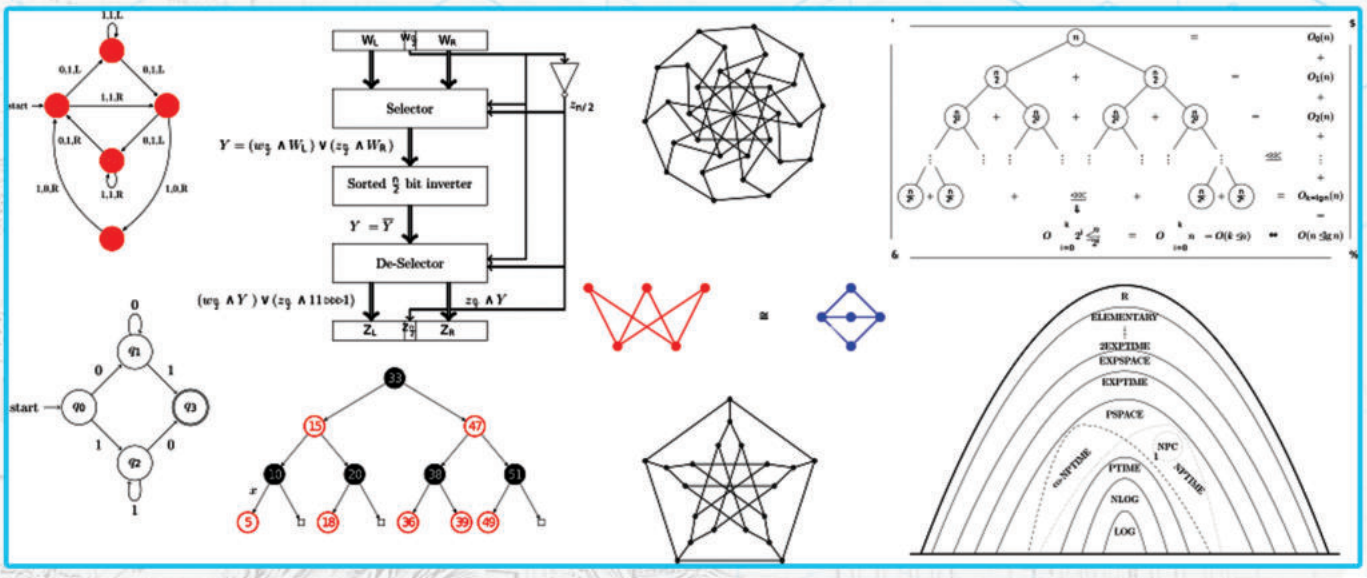
- Probability and Statistics
- Combinatorics, Discrete Mathematics and Graph Theory
- Elementary Number Theory
- Real and Complex Analysis
- Ordinary Differential Equations
- Partial Differential Equations
- Measure and Integration
- Functional Analysis
- Linear Algebra
- Abstract Algebra
- Commutative Algebra
- Algorithms and Complexity
- Logic
- Representation theory
- Number theory
- Lie groups and Lie Algrebra
- Ergodic Thoery
- Numerical Analysis
- Geometry and Topology
- Algebra Topology
- Differentials Manifolds
- Differential Geometry of Curves & Surfaces
- Algebraic Geometry
- Riemannian Geometry
- Operator Thoery & Operator Algebras
- Harmonic Analysis
- Coding Theory
- Cryptology



MATHEMATICAL SCIENCES

Industrial Skills

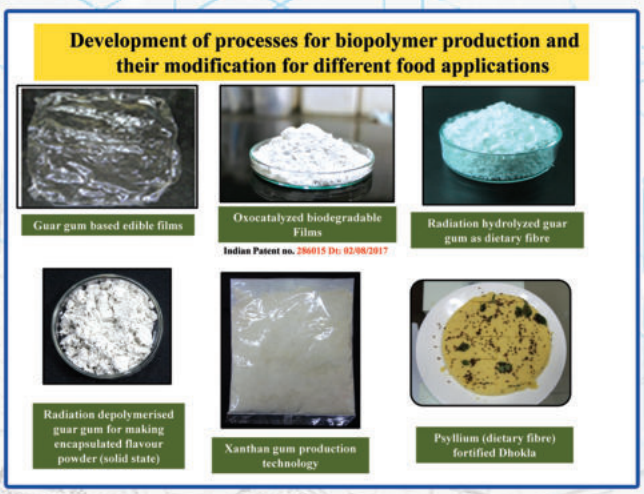
- Advanced Numerical Skills
- Statistical Analysis, Pattern Finding
- Applied optimization techniques
- Critical and Analytical Thinking
- Complex Problem Solving
- Quantitative Reasoning
- Constructing mathematical Logical Arguments
- Dealing with Abstract Concepts
- Cryptography
- Coding Theory
- Design and Analysis of Algorithms
- Formal Verification Systems
- Strong Analytic and Numerical Skills



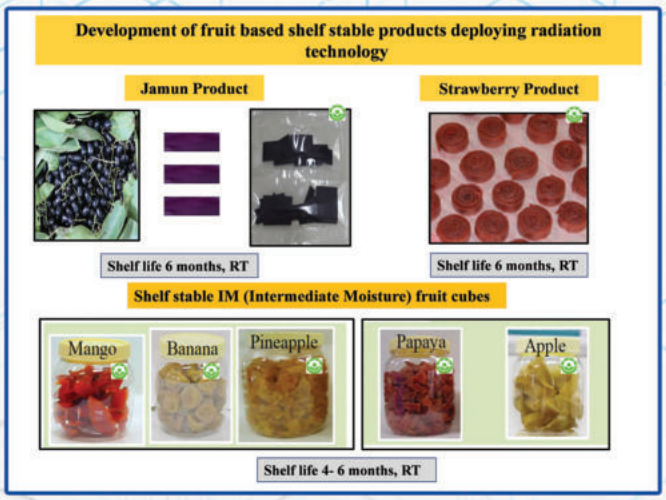
BIOLOGICAL SCIENCES

Research & Development Activities

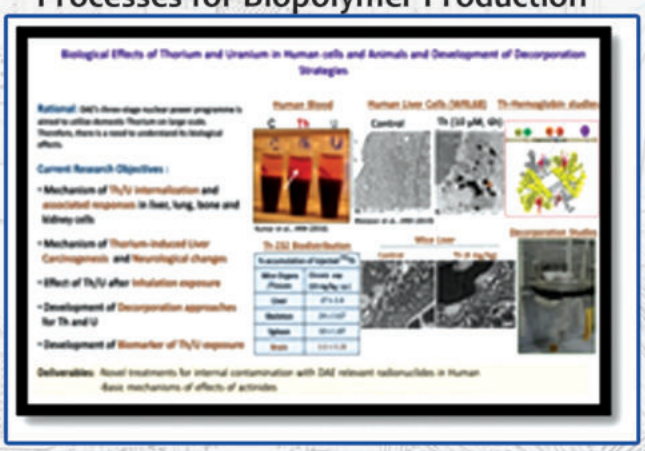
- Nuclear Medicine
- Food technology
- Structural Biology
- Radiation Biology
- Biochemistry
- Bioinformatics and Biostatistics
- Bioinstrumentation
- Computational Biology
- Synthetic Biology
- Disease Biology
- Cell Biology
- Epigenetics
- Microbiology
- Immunology
- Molecular Biology
- Nuclear Agriculture
- Pharmaceutical biology
- Behaviour ecology



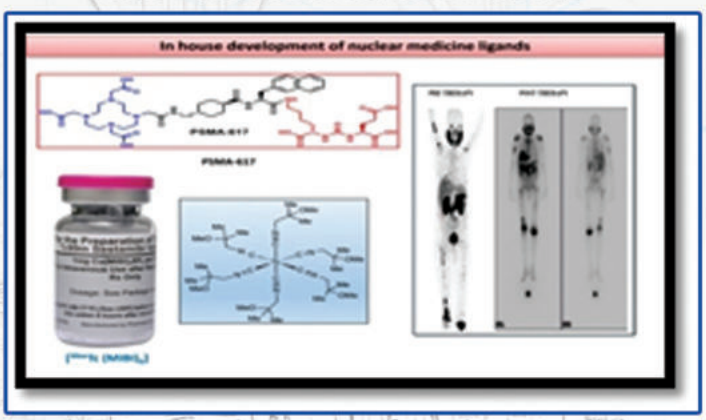
Processes for Biopolymer Production



Fruit Based shelf stable Products"



Biological Effects of Thorium and Uranium in Human Cells

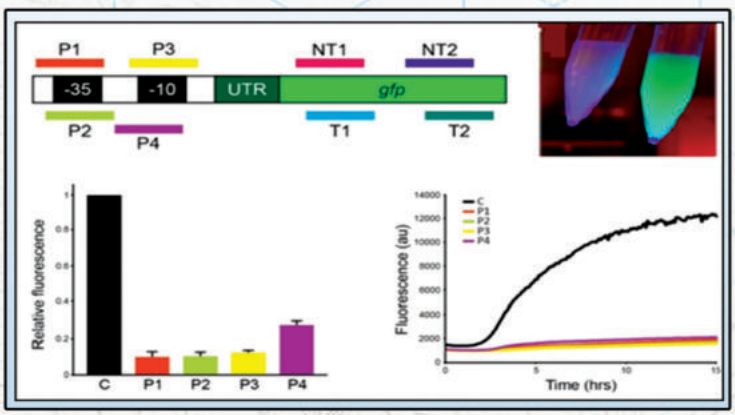


In house development of Nuclear Medicine ligands

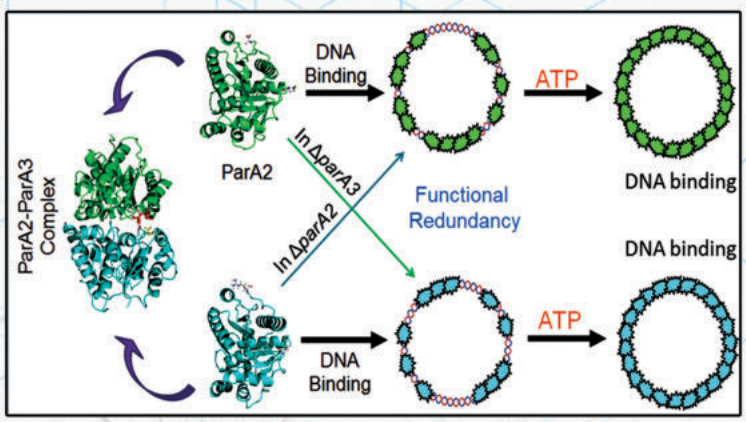
BIOLOGICAL SCIENCES

Industrial Skills

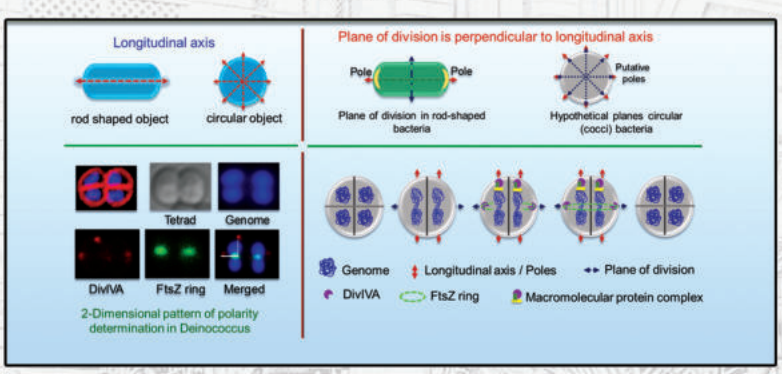
- Cell Biology
- CRISPR/Gas genome editing
- Electrophysiology, machine learning approaches
- Molecular cloning, molecular biology
- Biochemistry
- Mammalian cell structure
- Bacterial culture, Yeast culture
- PCR, RT-PCR, quantitative PCR
- Epitope tagging
- Pulldown based approaches
- Protein purification, affinity purification
- Plant phenotyping
- Genotyping and transformation
- Ultracentrifugation
- Electrophoresis-based techniques
- Western blotting, immunoblotting
- Microscopy
- Fluorescence microscopy
- Confocal microscopy
- Proteomic and genomic skills
- Flow cytometry



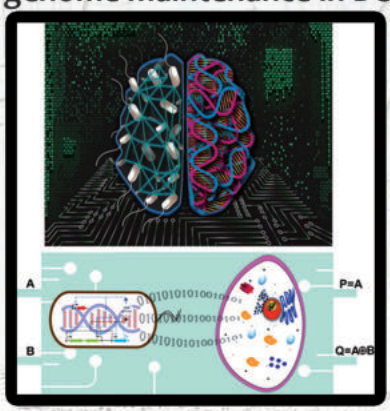
CRISPR



Multipartile genome maintenance in Deinococcus



Round Shaped cocci

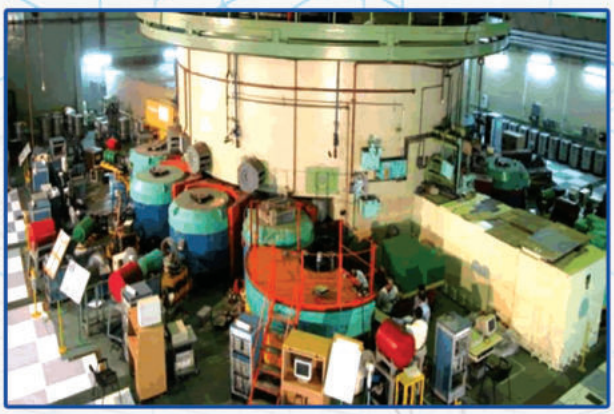


Building biocomputers and AI with engineered cells

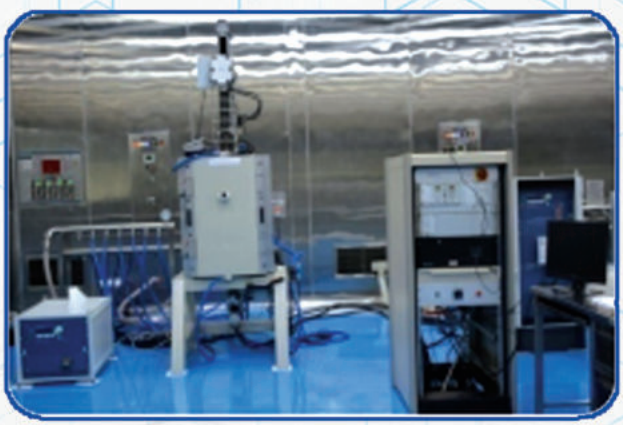
PHYSICAL SCIENCES

Research & Development Activities

- Atomic and Molecular Physics
- Laser & Plasma Physics
- Reactor Physics
- Astrophysics
- Magnetism & Superconductivity
- Non-Linear Dynamics & Chaos
- Nuclear And Particle Physics
- Quantum Computing & Information
- Soft Condensed Matter
- Ultrafast Optics and Spectroscopy
- High Pressure Physics
- Thin film and multi layers
- Materials Characterization

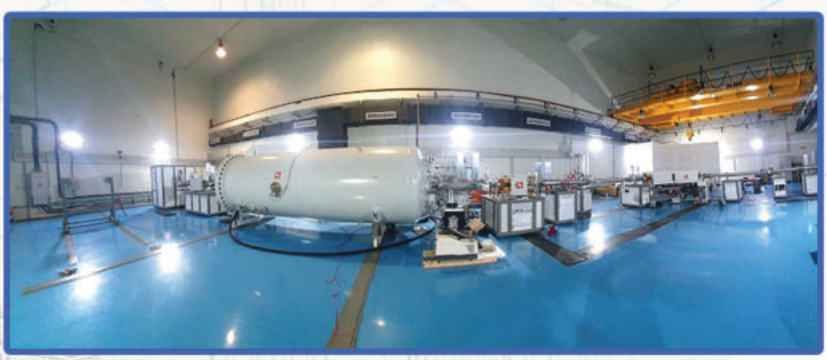


Neutron Scattering Facility at DHRUVA reactor



Crystal Growth Lab at BARC

Nuclear Physics Experimental Beam-lines at BARC_TIFR Pelletron-Linac Facility



FRENA Accelerator Facility at SINP

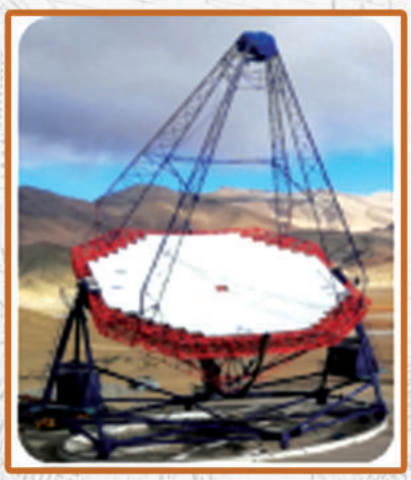
PHYSICAL SCIENCES

Industrial Skills

- Cryogenics
- Crystal Growth
- Quantum Computing & Sensing
- Nonlinear System Dynamics
- X-Ray Crystallography
- Raman Scattering
- Fluid Dynamics
- Laser and Optical Physics
- Optical Instrumentation
- Monte Carlo Methods
- Fast Fourier Transformation
- Numerical Programming
- Neutron Scattering
- Radiometry
- Neutron and X-ray imaging

Superconducting Cyclotron Facility at VECC

Beamline at Indus2 Facility, RRCAT



MACE Telescope at Hanley

Indian Scintillator Matrix for Reactor Anti-Neutrino (ISMRAN) at DHRUVA reactor

PHYSICAL SCIENCES

Research & Development Activities

MEDICAL AND RADIOLOGICAL PHYSICS

- Development of alternative technologies for medical imaging
- Micro-Pattern Gaseous Detectors for single photon detection
- Gaseous detectors for scanners, muon tomography, and radiography applications
- Silicon detectors for fast-timing medical imaging applications

ISO-6 cleanroom with dual pass box for assembly of detectors

Dark Box

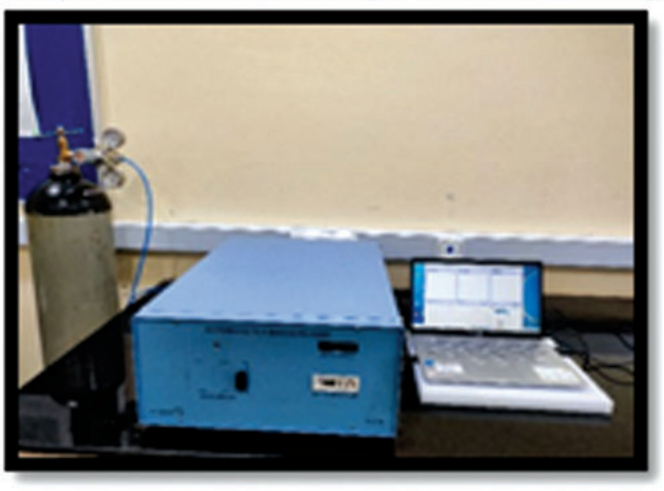
Silicon detector laboratory with IV, CV measurement devices and photon detectors

Gaseous detector laboratory with detectors for scanners, tomography and single photon medical imaging applications

PHYSICAL SCIENCES

Industrial Skills

- Quality Assurance of:
  - ♦ X-ray generating equipment
  - ♦ CT Scanners
  - ♦ Medical LINACs
  - ♦ Brachytherapy Units
- Treatment Planning in Radiotherapy
- Radiological Safety
- Radiation Biology
- Radiation detection and instrumentation
- Calibration and validation of radiation detectors
- Setting up Radiotherapy facility
- Personal monitoring services



TLD Badge reader for Personal Monitoring

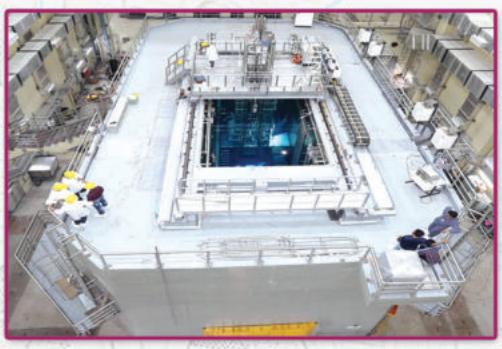
X-Ray QA kit & TLD Reader

ENGINEERING SCIENCES

Research & Development Activities

Material Science and Engineering

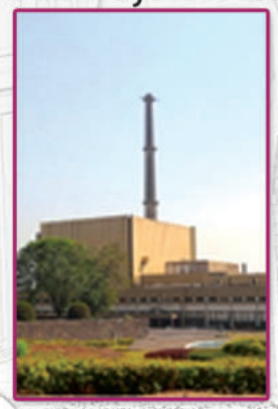
- Mineral Beneficiation
- Materials preparation synthesis and processing
- Production of Nuclear materials
- Development of nuclear materials
- Degradation, failure analyses and life management of nuclear structural materials
- Corrosion studies
- Novel solvents for recovery or separation of nuclear materials from waste
- Glass, ceramics and Advanced ceramics
- Advanced materials
- Surface engineering
- Simulation and Modelling
- Microstructural characterisation using 3D Atom probe, TEM, EPMA, SEM, EBSD



Apsara-U Reactor at BARC

Computer-based Control & Instrumentation System for PReFRe-II

Cesium recovery and Cesium glass pencil making system, WIP, Trombay



Dhruva Reactor

ENGINEERING SCIENCES

Research & Development Activities

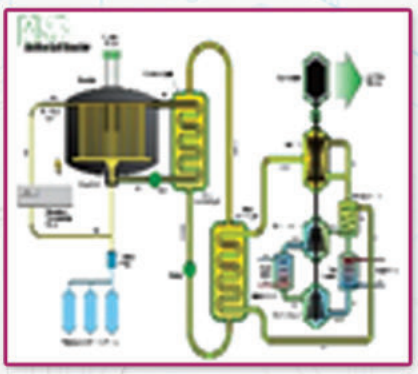
Management of Nuclear Waste

o Reprocessing of SNF o Caesium recovery and Caesium Glass Pencil Making

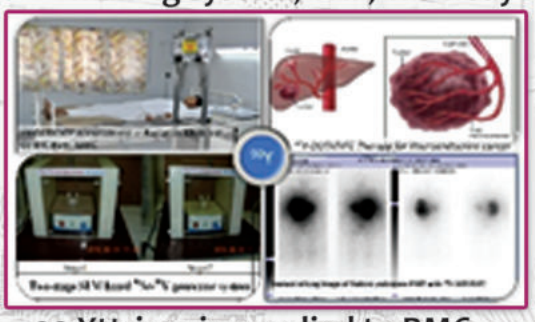
Chemical Engineering and Technology

- o Process modelling and stimulations
- o Chemical processing
- o Cryotechnology
- o Desalination and water purification technologies
- o Detector-grade Silicon technology
- o Heavy Water Technology
- o Hydrogen energy and hydrogen storage
- o Isotope separation technologies
- o Membrane technologies
- o Ore processing, refining of nuclear materials, nuclear fuel fabrication
- o Processes, equipment development and intensification
- o Synthesis and evaluation of novel extractants
- o Engineering of microsensors and microfluidic devices

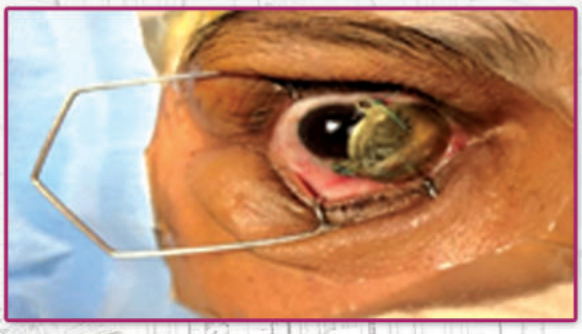
Cesium recovery and Cesium glass pencil making system, WIP, Trombay



Molten Salt Reactor (MSR)



90-Yttrium is supplied to RMC, Parel for radiopharmaceutical applications



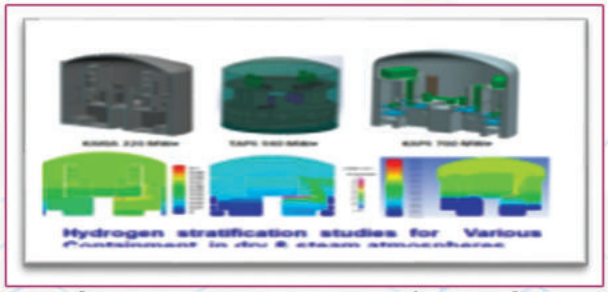
Inserting Ru-106 Plaque for eye cancer treatment

ENGINEERING SCIENCES

Research & Development Activities

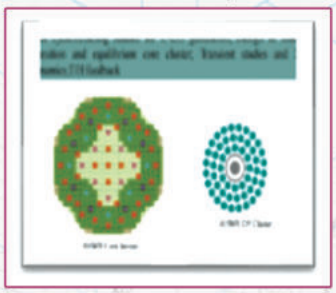
Mechanical Engineering

- o Thermal Hydraulic studies for Nuclear Power Plants
- o Safety Analysis of Nuclear Power Plants
- o Life management of Nuclear Power Plants
- o Robotics and Automation for Nuclear Systems
- o R&D pertaining to structures and Thermal Sc. applications
- o Safety studeis of Nuclear Power Plant facilities
- o Robotic and Automation Applications.
- o Void Fractio measurement
- o Reactor Physics simulation for Nuclear Reactors



Hydrogen Management in Nuclear Reactor Contaiment

Sensor Development



Physics Simulations for Heavy Water Reactors

Mobie Robot for Mapping Ambient Radiation Level

Electronics & Instrumentation

- o Development of indigenous technology in the areas of control and instrumentation systems for nuclear reactors (PHWRs, LWRs and Research Reactors), Nuclear fuel cycle facilities & accelerators.
- o High-performance computing and cyber security solutions.

High Precision Robot based Neurosurgery

PLC Platform

Development of Deep Brain Stimulator(DBS)

Development of External PIG

ENGINEERING SCIENCES

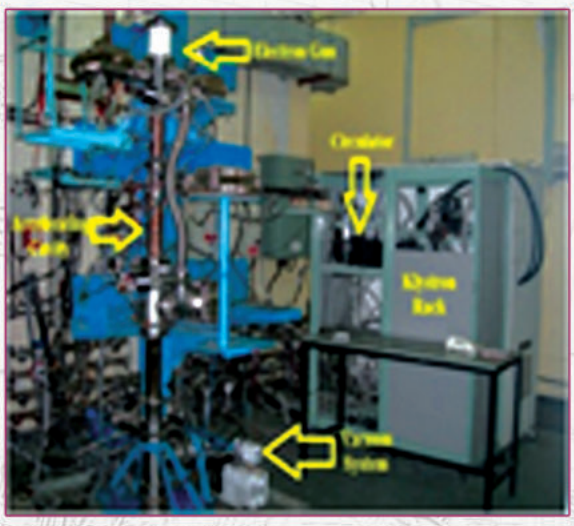
Research & Development Activities

Electrical Engineering

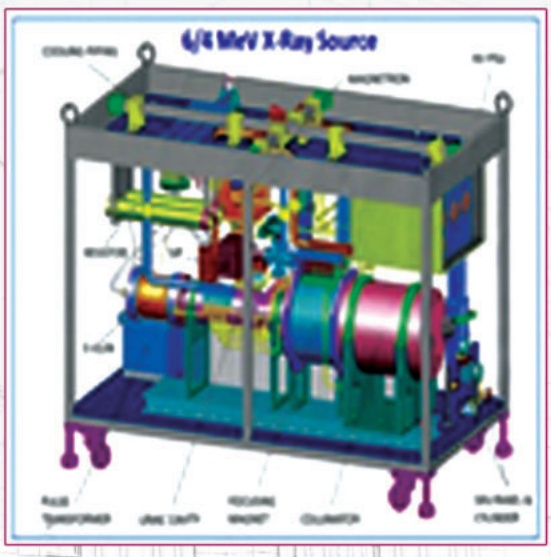
o Science of Beams, Plasma and Lasers

o Plasmas and Electron Beams for Direct Applications to the Indian Nuclear Program

10 MeV RF Linac Simulator



10 MeV RF Accelerator

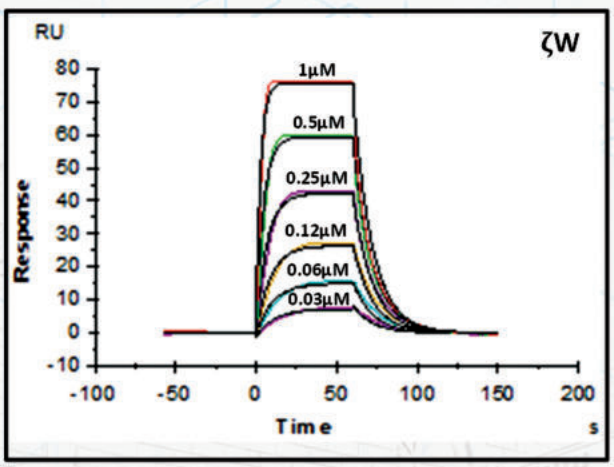


Indian Cargo Scanner

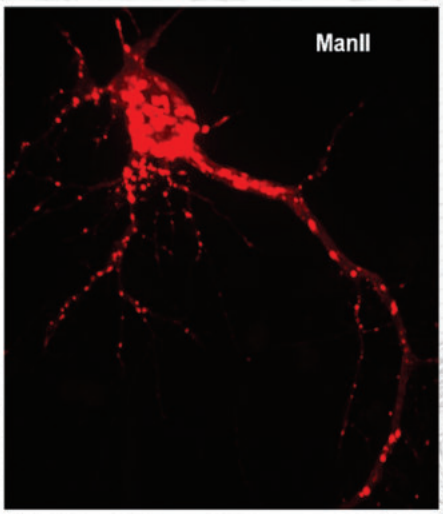
HEALTH SCIENCES

Research Activities

- Epidemiology with emphasis on assessing cancer Burden
- Assessing prevalence of risk factors
- Identifying risk factors related to life style and genetics
- Study risk factors for disease progression
- Bio-molecular Structure, Function and Alteration



SPR



Spinning Disk System

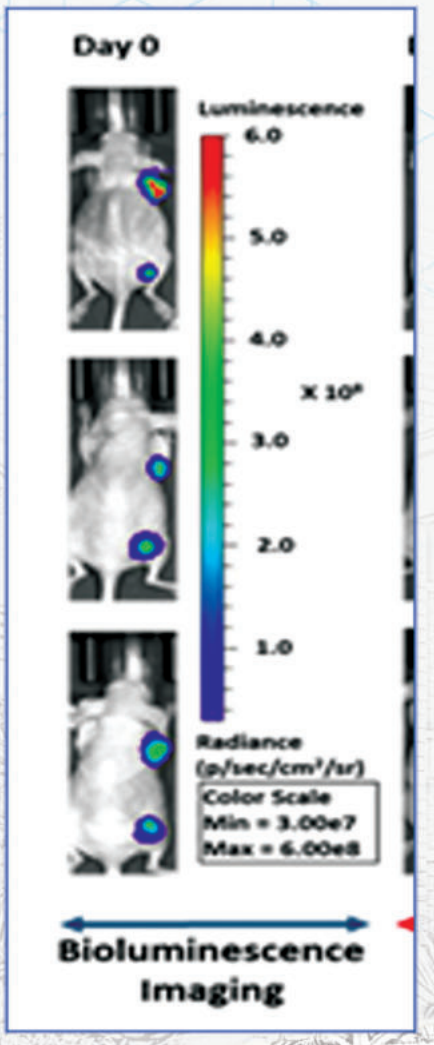
- Expose the Achilles heel in Proteasome associated proteins network in cancer
- Biochemistry and Biophysics
- Computational Tools and Mass spectrometry
- Cell and Tumor Biology
- Theraphy resistance and stem cell biol ogy
- Carcinogenesis
- Genome Biology, and Precision Medi cine
- Cancer Theranostics and Clinical Pharamacology
- Tumor Immunology & Immuotheraphy

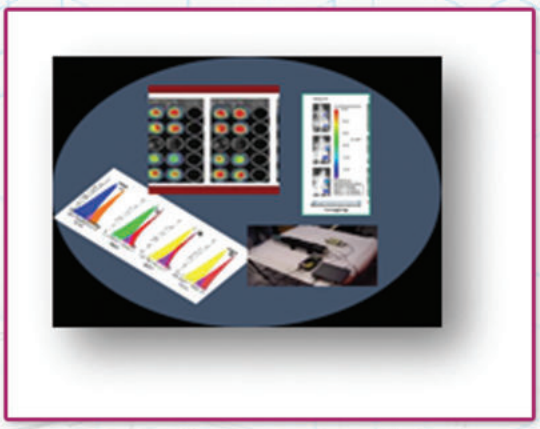
High Resolution Confocal Microscopy

HEALTH SCIENCES

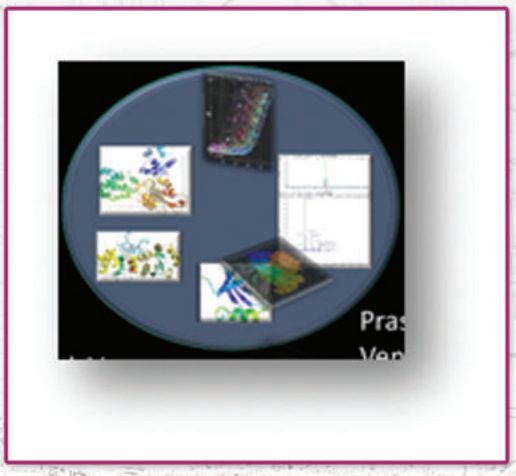
Industrial Skills

- Molecular Imaging
- Bioluminescence Based In vivo Imaging
- Surface Plasmon Resonance For Biomolecular Interaction
- High Resolution Confocal Microscopy
- Digital Imaging
- Electron Microscopy
- Mass Spectrometry for Proteomics
- Cell sorting and FACS
- Animal House
- Drug Screening Facility
- Small Animal Imaging
- Biophysics Facility and XRD
- Bioinformatics
- NGS and Mutation analysis





Cancer Theranostics Clinical Pharmacology



Biomolecular Structure Function and Alteration

HUMANITIES AND SOCIAL SCIENCES, APPLIED SYSTEM ANALYSIS

Research Activities

- Science-Society Interface
- Public Policy
- Contemporary Social Issues
- Networks and Social Media,
- Institutions and the Psychology of Value, Disability and Impact,
- Environmental Economics
- Energy economics and energy policy studies
- Natural resource management and Human-wildlife interactions
- Science, Narrative and Text
- Performance and Sound Studies
- New Media Studies
- Social Justice and Figural Representations.
- Critical Theory, History and Fiction
- Organizational behaviour and Business ethics
- Digital technology

Psychology National Symposium on Disability 2020

Capacity Building Workshop NISER-Orissa Economics

National Conference on Science Technology and Society

STUDENT ACTIVITIES & CULTURAL PROGRAM

Students' participation in Theme Meetings conducted by HBNI

Students participated in HBNI organised theme meetings:

(i) Interaction meeting in Condensed Matter Physics at SINP, Kolkata, 23-24th June 2022.

(ii) Theme meeting on Life Sciences and Associated Technologies in RRCAT Indore, Sept. 7-10, 2022.

(iii) Interaction meeting in Chemical Sciences at NISER, Jan. 18-20, 2023.

(iv) II interaction meeting in Life Sciences at SINP, Feb. 16-17, 2023.

STUDENT ACTIVITIES & CULTURAL PROGRAM

Students' participation in Cultural Program of HBNI Foundation Day

PLACEMENT PROCEDURE

i) Interested Student register and upload their resume

ii) HBNI Placement Cell enquiring requirement of the Companies.

iii) Company register and express their interest in recruiting by filling JNF (Job Notification Form).

iv) JNF along with job description provided by the companies made available to the students

v) Student apply in the specific format to the recruiter

vi) Recruiters scrutinize the applications and update the HBNI with the details of shortlisted candidates

vii) Interview date with the recruitment will be fixed.

viii) Final offer letter will be sent to the final recruit within the next three weeks of the interview

ALUMNI AROUND THE GLOBE

72	*USA Canada & South America*
134	*Europe, UK & Israel*
872	*India*
24	*Australia & South East Asia*

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PAST RECRUITERS

Deloitte.

HOWMET AEROSPACE

enbiovi

NOMURA

JÜLICH Forschungszentrum

TATA ELXSI

SymphonyAI

XACT Diagnotek Pvt Ltd

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ÉCOLE NORMALE SUPÉRIEURE

nurture.farm

Syngene

Aurigene Oncology
Conquering Cancer

Autolus

GSSI
GRAN SASSO SCIENCE INSTITUTE

THE OHIO STATE UNIVERSITY 1870

PLACEMENT CELL

The Homi Bhabha National Institute (HBNI) constantly endeavors to help and fulfill students' aspirations by assisting them in realizing and choosing the appropriate career based on their expertise and interests through regularly arranging invited talks by distinguished personality from industry and academia.

Meet the Team

Prof. Dipanwitta Dutta
(Convener)
Associate Dean, HBNI

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(Member)
Associate Director
(Material Group), BARC

Dr. S. S. Laskar
(Member)
Dy. Director(Academics),
TMC

Dr. Harapriya Mohapatra
(Member)
NISER, Bhubaneswar

Dr. Prasanna Venkataraman
(Member)
ACTREC

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RRCAT, Indore

Prof. Suryakant Gupta
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SINP, Kolkata

Prof. A. Prasad
(Member)
Dean Student Affair, IMSc

Prof. R. Thangadurai
(Member)
HRI, Prayagraj

Shri Suresh Nair
(Member Secretary)
Dy. Registrar, HBNI

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Prof. U Kamachi Mudali
VC, HBNI

Prof. Ajit Kumar Mohanty
Director, BARC

Prof. S. Som
Director, VECC

Prof. B. Venkatraman
Director, IGCAR

Prof.Shankar Vinayak Nakhe
Director, RRCAT

Prof. A Srinivasan
Director, NISER

Prof. Gautam Bhattacharyya
Director, SINP

Prof. Shashank Chaturvedi
Director, IPR

Prof. Karuna Kar Nanda
Director, IoP

Prof. R. A Badwe
Director, TMC

Prof. V. Ravindran
Director, IMSc

Prof. Pinake Majumdar
Director, HRI

Student and Alumni Representative

Mr. Pasula Naresh
Alumni Representative.

Mr. Khitij Acharya
Student Representative

(Photo)

Present Affiliation: DDFS Research Scholar

Nuclear Engineering

Email Id: dummy@barc.gov.in, dummy@gmail.com

Contact No.: 9824430559

Key Technical Skills

LPBF-Metal Additive Manufacturing

Metallurgical characterization of materials

Computational modelling skills

Programming Language

C++

Python

Scientific/ Technical Tools

MATLAB

OpenFOAM

Links

C.V

Google Scholarship

Research Gate

Thesis/Symposis

Address for Communication

Your Address

NAME: KSHITIJ ASIT ACHARYA

Current Position: DAE Doctorate Fellow in the Reactor Physics Design Division at Bhabha Atomic Research Centre, Mumbai (BARC), under the aegis of Homi Bhabha National Institute (HBNI).

RESEARCH INTEREST

I work at intersection of Physics, Engineering and Computational science to solve reactor engineering problems.

RESEARCH EXPERIENCE

- Fuel Performance modelling of nuclear reactors
- Multiphysics simulation of nuclear reactors
- Uncertainty Quantification and Sensitivity Analysis

EDUCATION

2022 PhD Engineering Sciences: Nuclear Engineering (HBNI)

GATE 2019 Mechanical Engineering: 92 % percentile.

2021 M.Tech Nuclear Science and Engineering (PDEU, Gandhinagar) with 9.93 CGPA

2017 B.E. Mechanical Engineering (Gujarat Technological Uni.) with 8.34 CGPA

PROFESSIONAL EXPERIENCE

- Graduate research/Teaching Assistant at PDEU (2021-2023) on metal additive manufacturing for the nuclear reactor systems.
- Lecturer in the Mechanical Engineering Department at Silver Oak College of Engineering and Technology, Ahmedabad (2017-2018)

SCHOLARSHIP AND AWARDS

- University scholarship to study at Kansas State University, USA during B.E.
- Selected for DST Young scientist award - 2022.

EXTRA CIRICULAR ACTIVITY

- V.P. of INMM Student Chapter at PDEU
- Committee member of SPIC MACAY PDEU student chapter
- Indian Classical Musician: Vocalist and Instrumentalist (SAROD)

PUBLICATIONS (with links)

Homi Bhabha National Institute

Job Notification Form (JNF)

Company Details

- Name of the Company :
- Postal address :
- Telephone No. :
- Fax No. :
- Email Address :
- Website :
- Company Type (Please tick any) :

Private		Govt. Owned		PSU		MNC	
NGO		Public Sector		If Others, please Specify:			

- Industry Sector (Please tick any) :

Academic Institute		R&D Institute		Manufacturing		Product & Development	
If Others, please Specify:							

- Brief write up on the Company:

Contact Details

	Head HR	First Contact Person	Second Contact Person
Name			
Email			
Mobile			
Phone			
Fax			

Job Profile

- Job Designation:
- Place of Posting:
- Job Description:

cont...

Job Notification Form (JNF)

Salary Details (If available)

- Cost to Company :
- Gross :
- Bonus/Perks/Incentive *(if any)* :
- Bond or Service Contract : Yes/No
  (If yes, give details) :
- No. of offers you intend to make :

Selection Process

- Shortlist from Resumes : Yes/No
- Written Test (Technical, Aptitude) : Yes/No
  If yes, please specify likely topics, skill sets :
- Group Discussion : Yes/No
- Personal Interview : Yes/No
- Online Test : Yes/No
- PPT : Yes/No
- Eligibility Criteria :
- Preferred period of visit for recruitment :
- Eligible Departments :
  (Academic, R&D, Product & Development,
  Manufacturing, Others)

Deadlines

- Application Date :
- Interview Date :
- Joining Date :

Our office will work out all logistics and local arrangements for your visit.

Before filling the form kindly refer to the enclosed Placement Brochure. The completed form may be uploaded after registration of the company

CONTACT US

HBNI PLACEMENT CELL

2ND FLOOR, BARC TRAINING SCHOOL COMPLEX,
ANUSHAKTINAGAR,
MUMBAI-400094, INDIA
TELEPHONE: 022-25597578
Email: placement@hbni.ac.in

HBNI Central Office

Bhabha Atomic Research Centre

Indira Gandhi Centre for Atomic Research

Raja Ramanna Centre
for Advanced Technology

Variable Energy Cyclotron Centre

होमी भाभा राष्ट्रीय संस्थान

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)
www.hbni.ac.in

Institute of Mathematical Sciences

Institute of Physics

Institute for Plasma Research

Harish-Chandra Research Institute

Saha Institute of Nuclear Physics

Tata Memorial Centre

National Institute of Science
Education and Research

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

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Mumbai Maharashtra India -400094
Website: www.hbni.ac.in