

**Collaborated Publications of HBNI and institutes with whom HBNI has MoU
published in 2020**

Institute with whom MoU signed	No. of HBNI Collaborated papers	No. of individual HBNI Faculty collaborated
Chennai Mathematical Institute	12	12
ICT	28	20
IIT Bombay	76	71
IIT Kanpur	13	21
IIT Kharagpur	13	19
IIT Madras	92	13
Indian Institute of Science	10	10
Jadavpur University, Kolkata	8	10
Jawaharlal Nehru University	2	3
Panjab University	34	16
The Commis+14:16sariat a l'energieatomique et aux energies alternatives, France (CEA / INSTN France)	Could not be identified	
Ghent University,Belgium	5	3
Tata Institute of Fundamental Research, Mumbai	41	47
IIT Indore	22	20

Source of Data: Scopus

For relevant supporting documents visit: www.hbni.ac.in/aqar/2021/C3/m3_7_2/

3.7.2 Number of functional MoUs with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the year

Organisation with which MoU is signed	Name of the Institution/ Industry/ corporate house	Year of signing MoU	Duration	List the actual activities under each MOU year wise	Number of students/teachers participated under MoUs
Canosix GmbH, Germany	Canosix GmbH, Germany	2021	2 + 1 year etc	Yr-1: optimizing the Raman spectroscopy parameters for different blood cells (cancer and non-cancerous). Yr-2 :Optimizing the Surface Enhanced Raman spectroscopy (SERS) activities on those cells, Yr-3: Development of algorithm to know early stage of cancers using the machine learning App	4 (PI- Dr. Pratap Kr. Sahoo, SPS, Co-PI- MUDr. Thaddaus Hooetz, Research Scientist: Dr. Binay K. Sahu)
CSIR NML Jamshedpur	CSIR NML Jamshedpur	2019	2 years	Exchange of information amongst two national laboratories vide methodology of copolymer product preparation and characterization of materials for waste recycling. NML provided procedures for utilization of industrial wastes while BARC provided information on characterization vide radio assay, neutron methods and x-ray tools for assaying the monolith.	8
ONGC-Gandhinagar	ONGC-Gandhinagar	2020	2 years	Shock plasma tool qualification for well (2km below the ground surface)	2 (Dr. Archana Sharma and Dr. Rohit Shukla (PEEMD-V))
Collaborative research activity	Andhra University Vizag	2020	3 years	Magnetic pulsed welding for SS/Ti metals and characterisation	5 (Dr. Surender K. Sharma, two students and two faculties)
Collaborative research activity	IITPE, Vizag	2021	3 years	Shock pulse generator characterisation and optimisation for various medium/rock conditions	5 (Dr. Rohit Shukla (PEEMD-V) two students and two faculties)
RVSKVV, Ovasior	College of Agriculture, Sehor	2019	till 2024	Development and evaluation of chickpea lines for thermotolerance and nutritive traits	5
AAU, Assam	Regional Research Station, Shillongani	2021	2024	Evaluation of trombsay chickpea genotypes suitable for NE region	5
MGM medical College Indore	RRCAT	2021		To enhance the collaborative research	50
IIT-Madras	HBNI	2020	2019-20	To enhance the collaborative research	20
International Advanced Research Centre for Powder Metallurgy and new materials (ARCI), Hyderabad	IPR, Gandhinagar	2021	30 months	Development of tungsten fiber reinforced-tungsten composite (W/W) having fracture toughness atleast 2 times that of pure W for use as plasma facing material. Phase 1 of MoU (involves optimization of experiments & characterization) will be completed in 18 months while Phase 2 (involves characterization, fatigue testing & analysis) will be completed by end of 30 months. Refer MoU for more details.	2
Centre for cellular and molecular platforms (CCAMP), Bengaluru	IPR, Gandhinagar	2021	60 months	Year 1: to identify societally relevant techs. Out of these, to conceive commercializable technologies for deployment in society. Year 2: Market assessment & societal impact evaluation. Identify steps required for chosen technology to convert to innovative market ready solution. Year 3: develop and optimize / modify technology based on translational inputs Year 4: raise funds to carryout translational work Year 5: Create & secure IP rights for developed innovations, commercialize technology to relevant industries.	2
Indian Council of Medical Research, National Institute for research in Tuberculosis	IPR, Gandhinagar	2020	60 months	Phase 1 having a tenure of 18 months will involve optimization trials using available data of normal and abnormal chest x-rays. Subsequently the Phase 2 will involve validation trials of the developed DeepCXR tool at different institutions/hospitals.	2
Chennai Mathematical Institute	HBNI	2015	5 years	Course work & credit transfer, part of research work, joint guideship	20
ICT	HBNI	2018	5 years	Course work & credit transfer, part of research work, joint guideship	20
IIT Bombay	HBNI	2017	5 years	Course work & credit transfer, part of research work, joint guideship	75

Signature

प्रो. पी. डी. नाईक / Prof. P. D. Naik
 डीन, होमी भाभा राष्ट्रीय संस्थान
 Dean, Homi Bhabha National Institute
 प्रशिक्षण विद्यालय भवन, अणुशक्तीनगर, मुंबई - 400 094
 Training School Complex, Anushaktinagar, Mumbai - 400 094

Compilation of data as received from Dean-Academic of various CIS/OCC of HBNI.
Signature

IIT Kanpur	HBNI	2018	5 years	Course work & credit transfer, part of research work, joint guideship	21
IIT Kharagpur	HBNI	2017	5 years	Course work & credit transfer, part of research work, joint guideship, Academic/computing facility	19
IIT Madras	HBNI	2018	5 years	Course work & credit transfer, part of research work, joint guideship	13
Indian Institute of Science	HBNI	2010	10 years	Course work & credit transfer, part of research work, joint guideship	10
Jodhpur University, Kullata	HBNI	2016	5 years	Course work & credit transfer, part of research work, joint guideship	10
Jawaharal University	HBNI	2017	5 years	Course work & credit transfer, part of research work, joint guideship	3
Punjab University	HBNI	2017	5 years	Course work & credit transfer, part of research work, joint guideship	16
Ghent University, Belgium	HBNI	2019	5 years	Course work & credit transfer, part of research work, joint guideship	3
Tata Institute of Fundamental Research, Mumbai	HBNI	2018	5 years	Course work & credit transfer, part of research work, joint guideship	47
INSTN, France	HBNI	2018	3 years	Exchange of faculty, research scholars, students, Joint course work, Exchange of educational/research material & academic information	120
Centre for Academic Research, Sri Sathya Sai Inst. Of Higher Learning, Prasanthi Nilayam, AP	BARC	2018	3 years	Design and development of gamma-fluorescence dual imaging sentinel lymph node navigation surgery IO probe	2
Govt. VIT PG Autonomous College, Durg	BARC	2018	3 years	Radiation induced modification of Chitosan for adsorptive removal of Textile Organic Dyes	2
Indian Agricultural Research Inst., Mridgata, TN	BARC	2018	3 years	Study of biological effect of alpha irradiation in comparison with gamma rays on pollen of some field crops	2
Tamilnadu Agricultural Univ., Coimbatore	BARC	2018	3 years	Study of behaviour of radiolabelled 14-C Glutathion in soil and plants	2
University of Kashmir, Srinagar	BARC	2018	3 years	Estimation of Diffuse Extra Galactic Background Light through VHE Gamma ray Observation of Blazars	2
Institute of Genetics & Hospital for Genetic Diseases, Osmania University, Hyderabad	BARC	2019	3 years	Radio Sensitizing Effect of Inositol Hexaphosphate in Colon Cancer Cells by Targeting ErbB Signalling Pathway	2
Vikram Sarabhai Space Centre, Thiruvananthapuram, Kerala, India, Pin Code: 695022, Phone: 0471- 2564292	IPR, Gandhinagar	2019	1.5 years	Development of plasma erosion measurement facility and conducting experiments to study erosion rate of BN/Silica composite specimens	2
National Institute of Technology, Meghalaya	BARC	2018	2 years	Post-processing of NQR signals in digital domain in FPGA	2
Siksha O Anusandhan University, Bhubaneswar, Odisha	BARC	2019	2 years	Synthesis of Metal ferrite modified MCM-41 (FMCM) composites as adsorbent for remediation of Cr(VI)	2
Birla Institute of Technology and Science Pilani, KK Birla Goa campus, Zuarinagar, Goa	BARC	2019	2 years	Design and synthesis of smart supramolecular dyes based on TPE modified PDI cucurbituril conjugates	2
Division of cancer research, Regional cancer care centre, Medical college, Thiruvananthapuram, Kerala	BARC	2019	2 years	Development of antimicrobial porous polymeric bandage for skin tissue regeneration	2
Birla Institute of Technology, Mesa, Ranchi, Jharkhand	BARC	2019	2 Years	Development of Bismuth based materials for piezoelectric Microsystem in Robotic	2
BHU Varanasi	BARC	2019	3 years	Role of LexA in radiation and cadmium tolerance in <i>Escherichia coli</i> strain PCC7120	2

P. D. Naik

प्रो. पी. डी. नाईक / Prof. P. D. Naik
 डीन, होमी भाभा राष्ट्रीय संस्थान
 Dean, Homi Bhabha National Institute
 प्रशिक्षण विद्यालय भवन, अणुशक्तीनगर, मुंबई - 400 094
 Training School Complex, Anushaktinagar, Mumbai - 400 094

Compilation of data as received from Dean - Academic of various CIs/
 OCC of HBNI.