Annual Report
2019-20

Indian Institute of Technology (BHU) Varanasi

ANNUAL REPORT 2019-20

भारतीय प्रौद्योगिकी संस्थान
काशी हिन्दू विश्वविद्यालय

IIT

INDIAN INSTITUTE OF TECHNOLOGY
BANARAS HINDU UNIVERSITY

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1. Director's Report

Prof. Pramod Kumar Jain

Director, INDIAN INSTITUTE OF TECHNOLOGY (BHU), VARANASI

The Indian Institute of Technology (Banaras Hindu University) owes its existence to Bharat Ratna Mahamana Pandit Madan Mohan Malviya, the founder of the first residential University of modern India, Banaras Hindu University (BHU), who could foresee the vital role of technical education in strengthening independent India. Engineering education in BHU started in 1919 with the establishment of Banaras Engineering College (BENCO). The next stage of development saw the establishment of College of Technology (TECHNO) and College of Mining & Metallurgy (MINMET). In 1968, the erstwhile engineering colleges of BHU, namely BENCO, MINMET, and TECHNO, were merged to form the Institute of Technology (IT-BHU). IT-BHU has been admitting students through the JEE conducted by the IITs since 1972. The erstwhile IT-BHU was ranked consistently amongst the top engineering institutions of the country. IT-BHU became IIT (BHU) on June 29, 2012, by an Act of Parliament. Following conversion to IIT, the Institute engaged itself in taking up the mammoth task of putting many of the procedures and practices similar to those of IITs.

Centenary Celebration Closing Function

The centenary celebrations started from Basant Panchami day of 2018 (22 February 2018) to commemorate the glorious journey of 100 Golden years of the institute and was continued up to the Basant Panchami day of 2020. On this occasion of the closing function of the centenary celebration, in the beginning of the program, Professor Pramod Kumar Jain, Director and Alumni of Golden Jubilee batch of 1970 batch reached Malviya Bhavan and laid wreath at the statue of Mahamana Madan Mohan Malaviya ji.

The Center for Integrated Teaching and Learning and the reconstructed BENCO Chimney were inaugurated by the Director, Professor Pramod Kumar Jain. While Inaugurating this building, Director Professor Pramod Kumar Jain addressed the gathering there and said that with these facilities, the teachers of the institute will get new technology training in the changing education system, so that they will be able to give better education to the students.

The BENCO Chimney was built in 1930 and about 1000 kilowatts of electricity used to be produced. This chimney was damaged over a period of time. The initiative was taken by Professor P. Ramaji Agarwal, President of the Banaras Alumni Association of IITs (BHU) and 1982 batch metallurgical engineering graduate Mr. P. Ramachandran, Director, Banco Thermal Technology Property Limited, Chennai, rebuilt the chimney for a cost of about Rs. 70 lakhs.

Academic Activities

The Institute has maintained a high academic standard since its inception. It has turned out luminary engineers and administrators who served the nation with distinction. The current student strength is 6671 with 3358 B.Techs, 1315 IDD, 15 B. Arch., 736 M.Techs, 37 M.Sc., 87 M.Pharma and 1125 Ph.D. students. The current strength of regular faculty members of the Institute is 294. In addition to this, 14 visiting professors and 45 non-regular faculty members also contribute to the academic activities of the Institute. Furthermore, the number of technical/scientific staff is 241, and the non-technical staff is 164. At present, the Institute has 15 Departments and three interdisciplinary Schools that include the newly established Department of Architecture, Planning, and Design. Central facilities in the Institute include the recently established Supercomputing Centre, Computing and Information Services (CCIS), Central Instrumentation Facility (CIF), Main Workshop, Institute Main Library, and Industrial Consultancy & Testing Services. Teaching and Learning Cell continues to cover all aspects of pedagogy, course delivery, laboratory projects, assessment, and facilitating online courses. Institute has also started a two-year M.Sc. programs in Physics and Chemistry from the academic session 2019-2020.

Induction Programme

A notable achievement of the Institute pertains to a one-week Induction Program for the new entrants. About 1200 UG and IDD students admitted in the academic session 2019-2020 took part in it. The Induction Program facilitates the acclimatization of the new entrants to their new institution and the campus life. The Induction Program intended the assimilation of the new students in the ethos and culture of the institution based on broader national and human good. It also encourages bonding within the first year batch, cutting across branches.

Two essential components were the pillars of the design of this program. The first pertains to physical education, yoga, sports, human values, creative practice, and Basic English along with project work. And the second component was about knowing the city in which the students were taken to the historical places of Banaras; they listened to inspiring lectures by eminent personalities, they were exposed to less supervised interactive learning on all aspects, and were encouraged to understand their social responsibilities while pursuing academics.

The Program witnessed interactive sessions with many eminent personalities including four Padma Shri Awardees and renowned Professor Prof. H. C. Verma, alumni from various IITs including IIT-Madras, IIT-Roorkee, IIT (BHU), famous author Mr. Shubha Vilas, social workers, environmentalists, historians, medical doctors, psychologists and also an Origami artist. The sessions sowed seeds of interest in young minds for various fields of academics, career, skill development, art, and wellness, for a holistic learning experience.

Research and Development activities

Our Institute has a mission to fulfill the needs of the nation through Research and Innovation. Faculty members and students are engaged in cutting edge research under various schemes. To inculcate research culture in the students, the institute has set up Tinkering Labs in various departments. Students are involved in research projects from almost the early stage of their education. The institute gives partial support to the research initiatives of faculty members through grants like Seed Money, Research Support Grant, and R & D Thrust Area Grants. The institute also provides Lab Grants for up-gradation of teaching labs and supports Central Instrument Facility acquisitions.

(i) Sponsored Projects, International Visits, and MOU

Institute has proven expertise in the areas of the steels, advanced materials, microwave technology, electrical and electronic devices, artificial intelligence, composite materials, novel reactor design, new drugs and sensors/biosensors apart from others. The Institute has identified thrust areas of Research in Green and Clean Energy, Environment and Water, Healthcare, Biomedical Devices and Artificial Intelligence.

Significant numbers of projects have been initiated to address the national needs and social issues like the development of functional materials for energy, applications of hydrogen energy, and biofuel cells to energy. Key issues taken up for studies include real-time simulation of smart grids with distributed energy resources and integration/control of renewable energy systems. There are faculty members extensively involved in the design and development of new drugs, biomimetic materials for organs, and biosensors. Institute is collaborating with various Institutions of high repute in India and abroad and also industries involved in high tech research like Tata Motors, Nissan Motors, Amazon AWS Educate, Power Grid Corporation of India Ltd., NCL, CISCO, UPEIDA, etc.

Highly qualified faculty and talented research scholars are active in frontier areas of research, and Govt. research sponsoring agencies like Department of Science and Technology, Board of Research in Nuclear Sciences etc., and many reputed industries such as TISCO, HINDALCO, ONGC, SAIL, BHEL, MECON, UPSEB, FCI, Coal India Ltd., etc. support their efforts. It is resulting in high-quality output in Science & Technology, as evident from filed Patents (39) and publications (approx.1000 till September 2020) in journals of high repute. The total financial support received towards the 194 ongoing projects in the Departments and Schools, Testing/Consultancy and 36 fellowships is nearly Rs. 56.0 Crore including FIST/UGC-SAP funding/ Steel Technology Centre/ Centre for Energy Resources & Development under FAST scheme of MHRD. Madan Mohan Malviya Railway Chair was established in 2015 to undertake work related to Metallurgy & Materials.

Four projects are running in IMPRINT-2 with a total sanctioned cost of Rs. 441.497 lakhs. In the last one year Institute has signed 07 International MOU, 07 National MOU related to mostly R&D activities.

Institute has received projects under the Scheme for Promotion of Academic and Research Collaboration (SPARC), which aim to improve the research ecosystem of India's Higher Educational Institutions by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world. Under this scheme total 05 Projects are running with a total sanctioned cost of Rs 2.20 Crore with duration of 02 years.

(ii) LEAP Programme

IIT (BHU) Varanasi conducted MHRD's flagship Leadership for Academicians Program (LEAP), 2019-20 under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) Scheme. The second edition of LEAP was successfully held 02 weeks training at IIT (BHU) from 8th – 21st Dec., 2019 and one week training at University of Cambridge, UK during 19th – 25th January, 2020. This flagship programme of Government of India would provide senior faculty with high academic credentials, the required leadership and managerial skills of problem solving, handling stress, team building work, conflict management, developing communication skills, understanding and coping with the complexity and challenges of governance in HEIs, financial and general administration. The total sanctioned cost of the programme is Rs 2.90 crore.

(iii) Central Instrumentation Facility (CIF)

Central Instrument Facility (CIF) is Specialized Research Facilities at IIT (BHU). Our mission is to provide futuristic research infrastructure and quality education services in support of advanced instrumentation. The CIF is offering facilities of sophisticated instruments and technical expertise to support faculty and students' research and industrial R&D. The centre has state-of-the-art facilities like CNC Mill and CNC lathe, Prototyping Machine for electronic circuits, Magnetic Property Measurement System, Tribometer, NMR (500 MHz), thin-film & powder XRD, BET, XRF, ICP-MS, high-resolution SEM and TEM. In current year XPS and Table top SEM is added to the list amongst others.

(iv) Centre for Computing and Information Services (CCIS)

Centre for Computing and Information Services (CCIS) offers high-end computational servers, web servers, network services, and provides a robust platform for various academic and research activities of the Institute. The Centre also manages licensed software, email services, and in-house software development for the institute needs. CCIS is a growing unit and projects are in early-stage for developing it into a facility poised horizontally to meet the crescent demand of scientific and research infrastructure of the Institute.

(v) Design and Innovation Centre (DIC)

IIT-BHU and DIC, BHU has been established to work on the possibilities of innovation in Technology and Humanities, Liberal Arts, Social Science, Art, Culture, Music, languages and other relevant areas. DIC, IIT (BHU) and DIC, BHU works as HUB, and the center has three spokes; (i) Indian Institute of Information Technology, Allahabad, (ii) Motilal Nehru National Institute of Technology, Allahabad, (iii) University of Allahabad. This center has received several innovative ideas for funding.

Center has also established three labs namely; Graphic and Digital Media Lab, Digital Innovation Gallery & Design Cafe (Prototype lab and Workshop Place). Graphic and Digital Media Lab provides the facility of graphic design, web design, mobile app design, imaging, animation, documentaries, design counseling, etc. The Digital Innovation Gallery works as an exhibition platform for IIT-BHU, BHU and other spokes of DIC-BHU. A modern prototype lab has also been established for students. At present, DIC is running "Understanding Design Course" with IIT Bombay under ODS Model, and the total intake of IIT (BHU) is 35.

(vi) Intellectual Property Rights, Testing, and Consultancy

Extension of our expertise and laboratory facilities to the industries of this region is a crucial service activity of the Institute. All the major departments of the Institute actively engage in providing industrial consultancy and testing services to a large number of industries and entrepreneurs of the region and also to large industrial houses. During this year, several consultancies and testing projects valued at over approximately Rs.15.17 crores were completed successfully. Also 39 patents have been filed, out of which 16 patents have been published during this year, and two technology transfers also took place.

(vii) Research Centers

■ Supercomputing Centre

A Supercomputing Center has been set up in the Institute under the National Supercomputing Mission. The supercomputer **PARAM Shivay** has a peak processing speed of **833** Tera FLOPS. Sixty percent of the processing power is for local use by the IIT(BHU) and BHU research community, and the rest for other CFTIs and research labs across the nation. The system has been commissioned under the **Make in India** program, and the hardware has been manufactured at a plant in Chennai by the French company Atos. The system is a sophisticated mix of CPUs and GPUs with relevant systems and application software based on open source. IIT (BHU) Supercomputing Centre was inaugurated by honorable prime minister Shri Narendra Modi on 19-February 2019.

■ Centre for excellence for Defence Corridor

The Government of Uttar Pradesh has also made IIT (BHU) Varanasi a primary partner in its prestigious defence corridor project, and Institute has thus inked an MOU with Uttar Pradesh Expressway Industrial Development Authority (UPEIDA). Uttar Pradesh Government has allocated Rs. 69 crore for the creation of R&D facilities in niche areas as centre for Defence Materials and Precision Engineering. The proposal also envisages IIT (BHU) Varanasi as a hub for skill development doe defence industrial needs.

■ Sustainable Coal Mining in Northern Coalfields Limited

IIT(BHU) and NCL joined hands to ensure a robust Industry-Institute partnership given mutual benefit and in the interest of mineral conservation, mine productivity and advancement in clean technologies in the energy sector. Through this collaboration NCL also ensures social upliftment of the region surrounding Varanasi, Singraulli, and Sonbhadra by planning and execution of dedicated CSR / welfare projects strictly in terms of the company's CSR policy by involving Incubation Cell of IIT (BHU).

■ Collaborative research centre of the Indian Pharmacopoeia Commission

IIT (BHU) is now recognized as a collaborative research center of the Indian Pharmacopoeia Commission (IPC) of the Union Ministry of Health and Family Welfare, which will help to promote quality research in the area of pharmaceutical and medical devices. This will aim to develop new methods and procedures for the analysis of pharmaceutical substances, excipients and dosage forms. IIT(BHU) also has focus to reduce the health care cost by developing the low cost methods of Active Pharmaceutical Ingredients(APIs) to make India self reliant (Atmnirbhar Bharat) in the sector of bulk drugs and also to ensure that the Indian population has access quality health care services without having much financial hardship. As the regulatory landscape in health sector has dynamically been changing at present in the country with respect to protect safety, rights and well beings of the patients, the current scientific innovations in drug development and medical devices would play an important role in health care profession, therefore, IIT(BHU) striving hard to strengthen the standard setting processes in the sector of pharmacovigilance and medical devices. To enhance the outreach of theses programme at the grass root levels in the country, it is also essential and important for IIT(BHU) to become partner to Indian Pharmacopeial Commission(IPC) to enrich the patient safety compliance of medicinal product network across the country.

■ RKVY-RAFTAAR Agribusiness Incubator (R-ABI) under the RKVY-RAFTAAR Scheme

Institute has started recently Agribusiness Incubator (R-ABI) under the support of Ministry of Agriculture and Farmer Welfare (Dept. of Agriculture Cooperation & Farmer Welfare, Rashtriya Krishi Vikas Yojna Division) with a total sanctioned cost of Rs 2.33 crore for an initial duration of 02 years to develop facilitation centre for citizens living in the rural area for skill development and training of Agro and Food preservation using Solar Technology. The National Specialized Programs will play a vital role in the development & growth of MSMEs through a range of services offered.

■ Centre of Excellence in Refractories

The primary aims and objectives of the center is to build-up a self-sustaining center for hands-on ceramic research & training at IIT(BHU) for contributing our country's knowledge-economy. The centre also aims at

extending the testing facilities of refractories/high-temperature ceramics and composites for industries/small-scale industries as well as national labs/institutes and government organizations nationwide. The centre is also involved in industrial-training programs in key emerging areas that lead to technology-driven innovations for future generation technologies. This center and its facilities are dedicated for implementing various national missions, including, "Make in India", "Innovate India-Creative India", Start-up India, Kaushal Bharat Kushal Bharat" and "Atmanirbhar Bharat (self-reliant India)".

Main Library and E-resource

The IIT(BHU), Varanasi library system consists of the Main Library and five departmental libraries, which collectively support teaching, research, and extension programs of the institute. The library system, besides having an excellent print collection of over 1,40,000 volumes of books, journals, theses, reports, pamphlets, it also provides access to over 8,000 electronic journals and more than 20,000 electronic books, e-standards, and databases in science, engineering, and technology. Library provides reading room facilities, access to Digital Library, web OPAC, remote access of e-resources, discussion room facility, and reference services related to research and teaching. The library has also created the Indian research Information Network System (IRINS) database of Institute researcher's profile, Institutional Repository. Library also supports research activities by providing the Research Support Tools (Anti-Plagiarism software, Grammarly, InSite, JCR, reference management tools, etc.). Recently the library organized author workshop by Wiley, Taylor & Francis, and Workshop cum User Awareness Program on InSite and Turnitin.

Unnat Bharat Abhiyan

Unnat Bharat Abhiyan (UBA) is an MHRD initiative with a total sanctioned cost of Rs 3.50 crore and aimed at solving technological problems of the common man. This project is a joint venture of all IIT and many other Institutes of National Importance. UBA is conceptualized as a movement to connect institutes of higher education with local communities to address the development challenges of rural India through appropriate technological inventions. IIT (BHU) is also identified as a Regional Coordinating Institutions (RCIs) on the basis of their earlier experience and infrastructural competence etc. It acts as nodal centers for promoting & facilitating UBA networks in their region.

IIT(BHU) has been working on a number of aspects and their related technology since inception of this programme. The problem of solid waste management, technical support for rural problems, portable water quality, hygiene and sanitation, energy, education, housing and health care, making the villagers aware of government schemes are the main objectives of this programme. With these objectives several villages in and around Varanasi and Mirzapur were adopted and IIT(BHU) students are actively involved in counseling and providing the necessary technical inputs (such as, preservation and promotion of rural crafts, advice for sanitation and hygiene, rainwater harvesting, solar lights for community, forestation, drinking water quality, etc.) to the villagers.

Malaviya Centre for Innovation, Incubation & Entrepreneurship (MCIIE)

The Malaviya Centre for Innovation and Incubation (MCIIE) at IIT (BHU) Varanasi is functional since 2011. The MCIIE (along with partners: NSTEDB, Department of Science & Technology, Govt. of India, New Delhi, DSIR, Govt. of India, New Delhi, TIFAC, New Delhi, Ministry of MSME, Govt. of India, EDII, Ahmadabad) aims to promote Techno-Entrepreneurship and enterprise creation. One of its critical interventions is to provide Business Incubation to technology start-ups. Recently MCIIE and CISCO, in collaboration with NASSCOM Foundation signed an MoU to set up a Cisco thingQbator makerspace at MCIIE to drive innovation in the areas of Internet of Things (IoT) and other emerging digital technologies.

Institute Lecture Series

The prime objective of the Institute Lecture Series (ILS) is to motivate students through interactions with personalities who have done exceptionally well in their respective fields. Following are the details of the distinguished guests who delivered Institute Lectures:

1. Smt. Sashikala Ananth, renowned Architect and expert in Indian traditional architecture; Topic: "Introduction of VastuShastra"

2. Prof. Srinivasa N. Raja; Professor of Anesthesiology and Neurology Director of Pain Research, Johns Hopkins University School of Medicine, Maryland, USA; Topic: "The Treatment of Neuropathic Pain: Unmet Needs and Potential Therapeutic Targets"
3. Dr. C. S. R. Prabhu; Retired Director General, National Information Commission of India; Topic: "Medha 2022: How to Position India on Global Leadership Role in IT."
4. Ajai Chowdhry, co-founder of HCL and a Padma Bhushan Awardee; Topic "The Indian IT Industry with some on 'Back To The Future'. (Part of the Technex 2020)

Owing to the COVID-19 pandemic and the country wide lockdown that we had from the third week of March 2020, several lectures that were scheduled had to be suspended.

Alumni connect, Endowment, and Scholarship

The Students' Alumni Interaction Cell had organized the reunion of the 1981 batch and Golden Jubilee Celebration of 1970 in the foregoing week of the closing ceremony. These reunions brought together around 100+ Alumni families and had early morning city and campus tours scheduled for the batch. In the beginning of the program, Professor Pramod Kumar Jain, Director and Alumni of Golden Jubilee batch of 1970 batch garlanded the statue of Pt. M.M. Malviya ji in Malaviya Bhawan. Several other Unions which were organized during the closing ceremony week:

- 1970 Batch on 29th January 2020 in Centenary Concluding Function
- 1981 Batch during 24-27th Jan,2020
- 1973 Batch during 24th Feb. to 27 Feb.2020
- 1994 Batch, Silver Jubilee Batch 22-24 December 2019: SILVER JUBILEE reunion of the 1994 batch was an extravagant affair that connected the 140+ Alumni who attended this celebration along with their families. The batch has pledged monetary fund's worth 1.1 crore INR and aims to collect 3 crore INR soon. Our Alumnus Mallikarjun Sundaram promised to contribute equity of $100,000 through shares.

Endowment Funds received during Session (2019-20)

S. No.	Name of Person/Trust	Amount of Donation	Purpose
1	Sukumar Bandopadhyay	Rs 10,00,000/-	Sundora Banerjee Centennial Mining Honors Scholarship
2	Shri Chandra Kant Trivedi	Rs 6,90,691/-	for the up-gradation of existing HPTLC with HRMS (LC-MS) and establishment of Prof. G. P. Srivastava Lab in the Department of Pharmaceutical Engineering & Technology.
3	KAF-1981 Scholarship	Rs. 2,81,000/-	KAF-1981 Scholarship
4	KAF-1981 Scholarship	Rs. 5,35,000/-	KAF-1981 Scholarship
5	Shatabdi Kosh	Rs. 10,000/-	Shatabdi Kosh
6	Shri Sunil Khanna	Rs. 24,999/-	Shatabdi Kosh
7	Shri T. N. Gunasheelan	Rs. 25,000/-	Shatabdi Kosh
8	1994 Batch	Rs. 75,21,181/-	1994 Batch Donation
9	IBGAA	Rs. 7,06,160/-	Jagmohan and Manju Bansal Scholarship
10	Vinod Kumar Ghai	Rs 10,44,921/-	Vinod Ghai Endowment Fund for Metallurgical Engineering
11	Group of 1976 Batch Alumni	Rs. 7,04,000/-	Top Fund for 1976 Scholarship
12	IBGAA	Rs. 70,276/-	KAF-1981 Scholarship
13	Sri Akilandeswari	Rs. 36,653/-	KAF-1981 Scholarship
14	Sri Bal Krishna Bhatt	Rs. 1,00,000/-	1970 Batch Project

S. No.	Name of Person/Trust	Amount of Donation	Purpose
15	Shri S.M.Agrawal	Rs. 2,00,000/-	1970 Batch Project
16	Shri Satya Prakash Barnawal	Rs. 1,11,000/-	1970 Batch Project
17	Shri Sudarshan Singh Chaudhary	Rs. 1,00,000/-	1970 Batch Project
18	Sri Yogendra Kumar Gupta	Rs. 1,00,000/-	1970 Batch Project
19	Shri Naresh Chandra Srivastva	Rs. 1,66,800/-	1970 Batch Project
Total:		**1,04,98,871/- (One Crore, Four Lakhs, Ninety Eight Thousand, Eight Hundred Seventy One Only)**	

Institute Works Department (IWD) & Infrastructure Development

Infrastructure development is the need of the hour for us. Apart from the several renovation and upgradation works (Ground floor of existing library building, renovation of kitchen block of S.C De Hostel, Vishwakarma Hostel, Boundary wall of S.C. De Hostel, etc.) carried out by IWD, major works completed through CPWD (civil) in the last one year are: (i) Construction of Girls Hostel (G+6), (ii) Extension of School of Materials Science and Technology building, (iii) Construction of Teaching & Learning Centre (G+1) building.

Training and Placement

The Training and Placement Cell of IIT (BHU) facilitates the process of placement of students passing out of the Institute. The office liaises with various industrial establishments, corporate houses, etc. to help them to select our graduate and post-graduate students from all disciplines and programmes. During 2019-20, 198 companies visited the campus for holding campus interviews and made a total of 1051 offers. There is an increase of 7 % in total number of offers received in the current year compared to the previous year. The average pay package has also increased by 5%. The maximum pay package offer this year was Rs. 162.36 lakhs and average pay package was around Rs. 16.69 Lakhs. The average pay package for this year was also around 5% higher compared to the previous year. The industries visiting us were of varied nature: Core Engineering industries, IT & IT-enabled services, Manufacturing Industries, Consultancy Firms, Finance Companies, Management Organizations, R & D laboratories. Some of the best companies have hired our students. IIT (BHU) boasts of some of the best placement packages among the IIT's.

The Cell also collaborates with leading organizations and institutes in setting up of internship and training program for our students. The Cell has managed to arrange 421 paid internship through campus selection during 2019-20. The Cell also arranges internships for outside students.

Students' Activities and achievements

The Institute nurtures technical, social, cultural, and sporting activities pursued by the Students' Gymkhana through different councils, Students' Parliament, and other student groups. Besides games and sports, the artistic and creative talents of students are encouraged through various activities like dramatics, debates, music, visual arts, etc. and clubs like Radio, Audio, Photography, Automobile, Aero-Modeling, Cine and Computer Club. Students Gymkhana successfully organized its annual techno-management festival Technex, cultural festival Kashiyatra & games event Spardha. Apart from these, students of IIT (BHU) participated in various IIT meet and brought laurels to the Institute.

(i) Cultural Activities

IIT Bombay hosted the 4th Cultural Meet during December 2019 where the IIT (BHU) Contingent bagged the fourth position in the Overall General Championship among the 18 participating IITs, and stood first in multiple events including Stage Play, Eastern Solo Singing and Re-Branding competition along with being the overall dramatics winner among all IIT teams. Our students also brought laurels to the institute by winning positions in various inter-college fests including Oasis'19 (BITS Pilani), Rendezvous'19 (IIT Delhi), Agahi'19 (RGNUL Patiala), Antaragini'19 (IIT Kanpur), Effervescence'19 (IIIT Allahabad), Riwayat'20 (RMNLU Lucknow) and Anwesha'20 (IIT Patna). The disciplines of music, literature, and arts came together in the three-day-long socio-cultural festival of IIT (BHU), Kashiyatra 2020. The festival witnessed tremendous participation from colleges all over the country. The Cultural Council also successfully organized the two chapters of Spic Macay under the prominent Virasat series in January, 2020.

(ii) Games and Sports Activities

Games and Sports council, IIT (BHU), had taken part in a plethora of tournaments and also organised a handful. The council finished 5th in the Inter IIT Sports Meet 2019 with 4 Gold, 1 bronze and numerous teams coming fourth. The council had three podium finishes in the Inter Faculty Meet that included gold, silver and bronze each. The contingent were winners in Triquetra held at IIIT Delhi and participated in the State Level Hockey Tournament. The council organised inter department, inter hostel tournaments in multiple disciplines. The shuttler's cup that was held drew a large crowd. In order to retain the spirit of the council, a yearlong chess tournament: IIT BHU Grand Prix is also being held. The council also organized the Mahaveer Tournament after 10 years where IIT BHU grabbed the second position.

(iii) Activities by Science and Technology Council

The establishment of a Technical Activity Centre (TAC - 24*7 technical workspace), resulted in the growth of several problem-solving projects. Bionic Arm, Spider Robot, Self-Balancing Bot, Smart Dustbin, Black Hawk are some of the successful projects initiated and undertook by the council. Summer and Winter Camps were conducted with the vision of maintaining a continuous learning process for the students. The Tech Meet 8.0 was conducted by IIT Roorkee where IIT (BHU) bagged the overall 7th position by winning 2 gold, 2 silver and 1 bronze. Top projects of the council were displayed in the Engineer's Conclave and the research work was presented in the Student Academic Conference. The 81st edition of Technex, the annual techno-management extravaganza of IIT (BHU) was organized by the council. The fest saw a participation of 1000+ participants from over 150 institutions across the country. The biggest attraction of the event was Sophia the first ever humanoid robot, who chit chatted with the students of IIT BHU and also celebrated her birthday in the institute. The event range varied from Startup battle, Robonex, Supernova Riqueza, Pahal, Extreme Engineering, Byte the Bits, Ascension relating to various club activities of the council. Eminent personalities like Katherine Gun(former executive-GCHQ), Alan Emtage (Inventor of the world's first search engine, Archie), Ajai Chowdhry (Co- founder, HCL) Arijit Pasayat (Former judge of the Supreme court) and Didier Patrick Queloz (Noble Laureate in Physics) were invited for the Think Talk series.

(iv) Activities by the Film & Media Council

IIT Bombay organized the Cultural Meet in December 2019 where the contingent won several prizes, including the 1st Prize in Rebranding Event, 2nd prize in News App Design Event, 2nd position in Street Photography. Overall, the contingent secured 1st position in Design and Digital Art Category. The Film and Media Council (FMC) has taken upon several initiatives and has come up with new ideas to help promote and support the growth of digital art among the students in the ongoing online semester. These include having live online sessions from prominent personalities in their fields, a series featuring inspiring stories of successful people, and regular posts displaying & appreciating the student's works in photography, animation, visual effects, etc.

(v) Social Service

The institute believes that the inherent humane qualities and the spirit of volunteerism already existent in every individual needs to be nurtured and further developed, thereby blooming out with the full potential to benefit the society as a whole. Nourishing these values and skills will foster an all-pervasive sense of social service amongst the student fraternity, catering to our society's needs and challenges. The Social Service Council, IIT (BHU), manifests this through four student clubs. Students visited the children in bastis once a week to carry out various activities, including assisting in academic and training for the Navodaya entrance examination. Last academic session, Kashi Utkarsh conducted Sangyaan, a science exhibition, to develop scientific temper and a sense of curiosity in children of the bastis. During this crisis, volunteers are staying connected with the children, providing worksheets. Many activities like Sports Day and Daan Utsav wherein a craft activities and skill-sharing session named Arpan, an orphanage visit event called Milan, and a Book collection drive - for the library was held. After this, Gram Mela was held in Tikri, for sub-events like family planning, science exhibition, parent-teacher-meeting, and scholarship awareness. Aarohan - The Social Conclave, NGOs were contacted for learning about their work process, was a big success even in this lockdown situation, and held online. Social Projects' Club represented IIT (BHU) in the Smart India Hackathon'20 semifinals and Hult Campus'19 finals by presenting an idea of centralizing household waste and then selling it to organic farms. It is working on projects like developing an app to translate sign language

to speech and a platform to connect people to solve a particular social problem. The Council also conducted its annual plantation drive, blood donation camp, and medicine collection drive. The volunteers visited Nasirpur, Patia, and Kakkarmatta on weekends and educated the residents about health, hygiene, sanitation, disease-prevention, government schemes, and cleanliness.

(vi) E-cell

E-Cell is a platform for the promotion of entrepreneurship among the students of IIT (BHU) with a vision of "Help will be given to those who seek it." It will help in creating a Startup Ecosystem, building relations for promotion of Startups and Entrepreneurship at IIT (BHU). E-Cell organized several business plan Competitions, workshops, hackathons and Interactive sessions from high-end speakers and entrepreneurs. It also ran a startup 101 course where curated online lectures on design thinking, compliance, etc needed for setting up a company were provided. This year Cell hosted the E-Summit'20 the annual Entrepreneurial festival to celebrate entrepreneurship along with the aid of our Alumni fraternity.

(vii) Student Alumni Interaction Cell (SAIC)

SAIC has grown multi-fold and remains dedicated to the goal of bringing together the IIT (BHU) fraternity. The cell has strengthened its online presence tremendously and now coordinates with 50+ city-wise alumni groups. With the launch of the alumni cell website, the institute has successfully delivered more than 175 documents including transcript, copy of migration certificates, etc, to alumni across the world. The Alumni bookshelf initiative launched this year has received 30+ signed copies of books written by our alumni while Alumni Visiting Faculty Program has brought the Alumni Community closer to the Institute and currently has a total of 6 courses being taught to students by industry stalwarts. With its motto to connect, engage and celebrate, SAIC had organized the reunion of the young batch of 2011 and had assisted in the organization of silver jubilee celebration of 1994. The batch of 1994 amassed an amount of Rs. 1.1 crore and had decided to collect an amount of Rs. 3 crore in the coming years. Three consecutive reunions, namely, reunion of 1981 batch, golden jubilee celebration of 1970 batch and closing ceremony of centenary celebrations were organised in Jan 2020. In the years to come, SAIC shall continue to grow at the same rate and endeavor towards the realization of its goal to bring together, the student and alumni fraternity of IIT BHU.

In conclusion, IIT (BHU) is continuously striving for a better future. The new IIT (BHU) emerges from the old, building on its earlier strengths, and transforming itself to meet the challenges of the future. The major highlights of this year's (2019-20) achievements of IIT (BHU) are:

- Total publications were 1186 in 2019-20 in journals of high repute compared to 1036 in the year 2018-19.
- The total extramural grants sanctioned under sponsored research projects and schemes, etc. has significantly increased to 142.41 crores, which is almost over ~58 % more than that obtained in the previous financial year (90.11 crores).
- This year has witnessed improved placement in many parameters like the number of visiting companies has increased by 12%, number of job offers has increased by 7% and average CTC has increased by 5%.
- The institute retained 11th position in NIRF Ranking 2020 for engineering category and ranked 26th in the overall category of NIRF Ranking 2020, scaling two positions up compared to the previous year 2019 (28th).

JAI HIND

2. Apex Committees
(2019-20)

2.1 Members of Board of Governors (2019-20)

1. **Chairman**

   Prof. Pramod Kumar Jain,
   Director (*ex-officio*)
   IIT (BHU), Varanasi – 221 005

2. **Vice-Chairman (nominated by Executive Council, BHU)**

   Prof. Anand Mohan
   Member, Executive Council, BHU
   22.10.2019 onward

3. **Director (*ex-officio*) Member**

   Prof. Pramod Kumar Jain,
   IIT Director (ex-officio)
   IIT (BHU), Varanasi – 221 005

4. **Council Nominees (Members)**

   (a) Prof. Praveen Kumar
   Director, National Institute of Technology Delhi
   Sector A-7, Institutional Area
   Narela, Delhi-110040

   (b) Additional Secretary/Joint Secretary (TE), MHRD, ex-officio, Shastri Bhawan, New Delhi – 110 001.

5. **Executive Council, BHU Nominees from amongst its members**

   (a) Prof. Adya Prasad Pandey
   Member, Executive Council, BHU
   Prof Ashim Kumar Mukherjee

   (b) Member, Executive Council, BHU
   [Director, Moti Lal Nehru Institute of Research and Business Administration, University of Allahabad, Chatham Lines Campus, Allahabad University Allahabad – 211 002, Uttar Pradesh]

6. ***State Government Nominee (Member) (Uttar Pradesh Government Nominee)***

   (a) Shri Nitin Malhotra
   Shree Ganga Keramos P. Ltd.
   Next to Hyundai Showroom, Shivdaspur, Manduadih
   Varanasi – 221 103

7. **Senate Nominees (Member)**

   (a) Prof. Nilay Krishna Mukhopadhyay,
   Dept. of Metallurgical Engg., IIT (BHU)

   (b) Prof. Prabhakar Singh
   Dept. of Physics, IIT (BHU)

   (c) Prof. Rajnesh Tyagi
   Dept. of Mechanical Engg., IIT(BHU)
   01.01.2020 onward

(d) Prof. Shyam Bihari Dwivedi
Dept. of Civil Engg., IIT(BHU)
01.01.2020 onward

8. Registrar (*ex-officio*) Secretary

Dr. S.P. Mathur
Registrar, Indian Institute of Technology (BHU)
Varanasi – 221 005

2.2 Members of Senate (2019-20)

A. In terms of provision contained in Section 14(d) of the Institutes of Technology Act, 1961 (as amended from time to time), the Chairman, Board of Governors, IIT(BHU), vide his order dated 26.03.2019, has nominated the following members to the Senate of the Institute for a period of Two years w.e.f. 01.04.2019:

1. Mr. T.S. Murali, General Manager, Bharat Heavy Electrical Ltd., Heavy Equipment Repair Plant, Tarna, Shivpur, Varanasi-221003 (included vide IIT(BHU)/Senate/3/2018-19/2707 dated 19.05.2018
2. Dr. N. Eswara Prasad, Director, Defence Materials and Stores Research and Development Establishment (DMSRDE), Kanpur
3. Prof. Sunil Khijwania, Dept. of Physics, IIT Guwahati, Guwahati-781039 (skhijwania@iitg.ernet.in)
4. Prof. Manoj Kumar Tiwari, Industrial & Systems Engineering, IIT Khargapur, West-721302 (deanpc@adm.iitkgp.ernet.in)
5. Prof. Nagendra Kumar, Dept. of Humanities & Social Sciences, IIT Roorkee, Roorkee-Haridwar-247667 (nagenfhs@iitr.ac.in)

B. In terms of provision contained in Section 5(1)(c) the Director and the Chairman, Senate has nominated the following faculty members to the Senate for a period of one year w.e.f. 01.04.2019:

Dept. of Metallurgical Engineering

6. Dr. Vikas Jindal,

Dept. of Mining Engineering

7. Dr. Rajesh Rai,

Dept. of Electronics Engineering

8. Dr. Manoj Kumar Meshram,

Dept. of Electrical Engineering

9. Dr. N. Krishna Swami Naidu,

Dept. of Civil Engineering

10. Dr. Nikhil Saboo,

Dept. of Mechanical Engineering

11. Dr. Ajinkya Nandkumar Tanksale,

Dept. of Computer Science & Engineering

12. Dr. Ruchir Gupta,

Dept. of Ceramic Engineering

13. Dr. Ashutosh Kumar Dubey,

Dept. of Pharmaceutical Engineering & Tech.

14. Dr. Sunil Kumar Mishra,

Dept. of Chemical Engineering & Tech.

15. Dr. Sweta,

School of Biochemical Engineering

16. Dr. Ashish Kumar Singh,

School of Biomedical Engineering

17. Dr. Sanjiv Kumar Mahto,

School of Materials Science & Technology

18. Dr. Shrawan Kumar Mishra,

Dept. of Mathematical Sciences

19. Dr. Lavanya Selvaganesh,

Dept. of Physics

20. Dr. Abhishek Kumar Srivastava,

Dept. of Chemistry

21. Dr. V. Ramanathan,

Dept. of Humanistic Studies

22. Dr. Satish Kanaujia,

C. Professor Members

23. Prof. Devendra Kumar
24. Prof. Ram Pyare
25. Prof. Vinay Kumar Singh
26. Prof. A.K. Verma
27. Prof. A.S.K. Sinha **(On Deputation w.e.f. 09.07.2019)**
28. Prof. B.N. Rai
29. Prof. Pradeep Kumar Mishra
30. Prof. Pradeep Ahuja
31. Prof. Manoj Kumar Mondal
32. Prof. Ram Saran Singh
33. Prof. (Mrs.) Vijaya L. Yadava
34. Prof. Satya Vir Singh
35. Prof. Veerendra Kumar
36. Prof. Goutam Banerjee
37. Prof. Devendra Mohan
38. Prof. Prabhat Kumar Singh
39. Prof. Prabhat Kumar Singh Dixit
40. Prof. Sasankasekhar Mandal

41. Prof. Rajesh Kumar
42. Prof. Shyam Bihari Dwivedi
43. Prof. K.K. Pathak
44. Prof. Arun Prasad
45. Prof. A.K. Tripathi
46. Prof. K.K. Shukla
47. Prof. Rajeev Srivastava
48. Prof. S.K. Singh
49. Prof. Shiva Pujan Singh
50. Prof. S.K. Nagar
51. Prof. R.K. Pandey ***(On Deputation w.e.f. 11.07.2016)***
52. Prof. Rakesh Kumar Srivastava
53. Prof. Rakesh Kumar Mishra
54. Prof. Ranjeet Mahanty
55. Prof. Devender Singh
56. Prof. Mitresh Kumar Verma
57. Prof. Ram Khelawan Saket
58. Prof. P. Chakrabarti ***(On Deputation w.e.f. 10.05.2018)***
59. Prof. P.K. Jain ***(On Deputation w.e.f. 21.11.2017)***
60. Prof. V.N. Mishra
61. Prof. Satyabrat Jit
62. Prof. Virendra Pratap Singh
63. Prof. A.K. Agrawal
64. Prof. V.K. Srivastava
65. Prof. Santosh Kumar
66. Prof. S.P. Tewari
67. Prof. K.S. Tripathi
68. Prof. A.P. Harsha
69. Prof. Sanjay Kumar Sinha
70. Prof. Sandeep Kumar
71. Prof. Rajesh Kumar
72. Prof. Prashant Shukla
73. Prof. Pradumna Ghosh
74. Prof. Shailendra K. Shukla
75. Prof. Rajnesh Tyagi
76. Prof. Saroja Kanta Panda
77. Prof. Prabhash Bhardwaj
78. Prof. R.K. Mandal
79. Prof. N.K. Mukhopadhyay

80. Prof. Sunil Mohan
81. Prof. (Mrs.) N.C. Shanti Srinivas
82. Prof. B. Nageshwar Sarma
83. Prof. Kamlesh Kumar Singh
84. Prof. Om Prakash Sinha
85. Prof. Indrajit Chakraborty
86. Prof. B. K. Shrivastava
87. Prof. Netai Chandra Karmakar
88. Prof. Aarif Jamal
89. Prof. Piyush Rai
90. Prof. Sanjay Kumar Sharma
91. Prof. Suprakash Gupta
92. Prof. B. Mishra
93. Prof. S.K.Singh
94. Prof. Sanjay Singh ***(On Deputation w.e.f. 23.02.2019)***
95. Prof. S.K. Shrivastava
96. Prof. (Mrs.) S. Hemalatha
97. Prof. Sairam Krishnamurthy
98. Prof. (Mrs.) R. B. Rastogi
99. Prof. Prem Chandra Pandey
100. Prof. Syed Hadi Hasan
101. Prof. (Mrs.) Vandana Srivastava
102. Prof. Yogesh Chandra Sharma
103. Prof. D. Tiwary
104. Prof. K.D. Mandal
105. Prof. Tanmoy Som
106. Prof. (Mrs.) Rekha Srivastava
107. Prof. Lal Pratap Singh
108. Prof. Sanjay Kr. Pandey
109. Prof. (Mrs.) S. Mukhopadhyay
110. Prof. S.K. Upadhyay
111. Prof. Subir Das
112. Prof. Murali Krishna Vemuri
113. Prof. Prasant Kumar Panda
114. Prof. D. Giri
115. Prof. Prabhakar Singh
116. Prof. Sandeep Chatterjee
117. Prof. Rajendra Prasad
118. Prof. R.M. Banik

119. Dr. Mira Debnath Das
120. Prof. Pradeep Srivastava ***(On Deputation w.e.f. 18.02.2020)***
121. Prof. Vikash Kumar Dubey
122. Dr. Ranjana Patnaik
123. Prof. P.K. Roy
124. Prof. Neeraj Sharma
125. Prof. Rajiv Prakash
126. Prof. Pralay Maiti
127. Dr. Akhilesh Kumar Singh

2.3 Members of Finance Committee (2019-20)

Chairman

(a) Prof. Pramod Kumar Jain,
Director *(ex-officio)*
IIT (BHU), Varanasi – 221 005

Director (*ex-officio*) Member

Members nominated by the Central Government

(a) Additional Secretary (TE) *(ex-officio)* Member , MHRD
(b) Joint Secretary & Financial Advisor *(ex-officio)* to the Government of India, Integrated Finance Division, MHRD,
Department of Higher Education, New Delhi

Board Nominees (members)

(a) Prof. Rajiv Prakash
School of Materials Science & Tech., IIT (BHU)
(b) Prof. Prabhakar Singh
Dept. of Physics, IIT (BHU)

Registrar (*ex-officio)* Secretary

Dr. S.P. Mathur
Registrar, IIT (BHU)

2.4 Members of Building & Works Committee (2019-20)

Prof. Pramod Kumar Jain — Chairman
Director (*ex-officio),* IIT (BHU), Varanasi

Prof. A.K. Jain — Member
Head, Dept. of Civil Engg., IIT Delhi, New Delhi- 110 016.

Prof. Pradeep Bhargawa — Member
Department of Civil Engg., IIT Roorkee, Roorkee-247667
Till 25.7.2019

Prof. Manoj Mathur — Member

Head Industrial Design SPA and Architect

(Nominee of Director, School of Planning & Architecture), 4 – Block – B, Indraprastha Estate, New Delhi – 110002

Till 25.7.2019

Sri N. Nanjappa — Member

(Ex-Senior Superintending Engineer, CCMB, Hyderabad) Flat No. 202, "Grand Residency", No. 4-7-102/18, Lane No. 2, Sai Enclave, Habsiguda, Hyderabad – 500007

Till 25.7.2019

Prof. R Mahanty — Member

Dept. of Electrical Engg., IIT (BHU), Varanasi

Till 25.7.2019

Prof. Rajesh Kumar — Member

Chairman, IWC, IIT (BHU) *(ex-officio)*

Till 25.7.2019

Prof. S.Y. Kulkarni — Member

Ex-Professor & Head, Dept. of Architecture & Planning, IIT-Roorkee [currently Visiting Professor, Dept. of Architecture, Planning and Design, IIT (BHU)]

26.07.2019 onward

Shri Shyam Mohan Garg, General Manager (Mech.) — Member

UP State Bridge Corporation Ltd., Setu Bhawan

16 MM Malaviya Marg, Lucknow – 226 001.

26.07.2019 onward

Shri Vijay Pal — Member

Superintending Engineer, Urban Electric Distribution Circle I, Purvanchal Vidyut Vitaran Nigam Limited, near Sigra Crossing, Varanasi

26.07.2019 onward

Prof. S.B. Dwivedi, Dept. of Civil Engg., IIT (BHU) — Member

26.07.2019 onward

Dr. S.P. Mathur — Secretary

Registrar, IIT (BHU)

List of Conveners of Under Graduate Committees (DUGC) and Post Graduate Committees (DPGC) of the Departments/Schools for the Session 2019-20 (w.e.f. 01.09.2019)

Department/School	DUGC Conveners	DPGC Conveners
Bio-Chemical Engineering	Dr. Sanjay Kumar	Dr. Abha Mishra
Bio-Medical Engg.	Dr. Pradeep Paik	Prof. Prasun Kumar Roy
Ceramic Engineering	Dr. Santanu Das	Dr. Pradip Kumar Roy
Chemical Engineering & Technology	Dr. H. Pramanik	Dr. Ankur Verma
Chemistry	Dr. Arindam Indra	Prof. Y.C. Sharma
Civil Engineering	Dr. Anurag Ohri	Dr. Brind Kumar
Computer Science and Engineering	Dr. A.K. Singh	Dr. Pratik Chattopadhyay
Electrical Engineering	Dr. V.N. Lal	Dr. R.K. Singh
Electronics Engineering	Dr. K.P. Sarawadekar	Dr. Amit Kumar Singh
Humanistic Studies	Dr. Shail Shankar	Dr. Vinita Chandra
Materials Science & Technology	Dr. Shrawan Kumar Mishra	Dr. Sanjay Singh
Mathematical Sciences	Dr. Sunil Kumar	Dr. Rajesh Kumar Pandey
Mechanical Engineering	Prof. S.K. Sinha	Prof. R.K. Gautam
Metallurgical Engineering	Dr. Vikas Jindal	Dr. R. Manna
Mining Engineering	Dr. Suresh Kumar Sharma	Dr. S.K. Palei
Pharmaceutical Engineering and Technology	Dr. M.S. Muthu	Dr.(Mrs.) Ruchi Chawla
Physics	Dr. S.K. Singh	Dr. A.K. Srivastava
Architecture, Planning and Design	Dr. Chandan Upadhyay	No PG Course

3. Faculty Administration

3.1 Faculty Position as on 31.03.2020*

Faculty Members	294
Visiting Faculty/Institute Professor/Emeritus Professor	09 + 05 + 00 = 14

* Excluding contractual faculty members

3.2 List of Faculty Members appointed during 1st April 2019-31stMarch 2020

Sl.No.	ID No.	Name of Faculty/Staff	Designation	Department/Section	Date of Joining
1	50235	Dr. Rajesh Kumar Upadhyay	Associate Professor	Chemical Engg. & Technology	20.11.2019
2	50229	Dr. Debdip Bhandary	Assistant Professor	Chemical Engg. & Technology	28.06.2019
3	50231	Dr. Shivam Verma	Assistant Professor	Electronics Engg.	27.08.2019 (AN)
4	50236	Dr. Sanjeev Sharma	Assistant Professor	Electronics Engg.	02.12.2019
5	50239	Dr. Anubhav Sinha	Assistant Professor	Mechanical Engg.	24.12.2019
6	50238	Dr. Binita Pathak	Assistant Professor	Mechanical Engg.	23.12.2019
7	50241	Dr. Amit Subhash Sedbale	Assistant Professor	Mechanical Engg.	02.03.2020
8	50230	Dr. Surya DeoYadav	Assistant Professor	Metallurgical Engg.	06.08.2019
9	50232	Dr. Subhasis Sinha	Assistant Professor	Metallurgical Engg.	16.09.2019
10	50233	Dr. Rajnish	Assistant Professor	Pharmaceutical Engg. & Tech.	28.10.2019
11	50234	Dr. Deepak Kumar	Assistant Professor	Pharmaceutical Engg. & Tech.	04.11.2019
12	50237	Dr. Pranjal Chandra	Assistant Professor	Bio-Chemical Engg.	04.12.2019
13	50240	Dr. Aditya Pratap Sanyal	Assistant Professor	Architecture, Design & Planning	17.02.2020

3.3 Faculty/Staff members who retired between April 2019-March 2020

S.No.	ID No.	Name of Faculty member	Designation	Department	Date of Birth	Date of Retirement (with FN/AN)
1	13885	Dr. (Mrs.) Ranjana Patnaik	Professor	Bio-Medial Engineering	12.05.1954	31.05.2019
2	13744	Dr. A.K. Verma	Professor	Chemical Engineering	12.07.1954	31.07.2019
3	13817	Dr. S.P. Tiwari	Professor	Mechanical Engineering	02.08.1954	31.08.2019
4	13690	Dr. Devendra Kumar	Professor	Ceramic Engineering	01.10.1954	30.09.2019
5	13889	Dr. (Mrs.) Mira Debnath Das	Professor	Bio-Chemical Engineering	01.12.1954	31.11.2019
6	13822	Shri S.K. Shah	Associate Professor	Mechanical Engineering	03.02.1955	29.02.2020

3.4 Faculty members/officers/staff members on long leave (On Deputation)

S. No.	Name	Designation	Department	From	To	Details	Remarks
1	Dr. R. K. Pandey	Professor	Electrical Engineering	10.07.2016 (AN)	10.07.2021	On Deputation for 5 years	

S. No.	Name	Designation	Department	From	To	Details	Remarks
2	Dr. P K Jain	Professor	Electronics Engineering	21.11.2017 (AN)	20.11.2022	On Deputation for 5 years	
3	Dr. P. Chakrabarti	Professor	Electronics Engineering	09.05.2018 (AN)	09.05.2023	On Deputation of 5 years	
4	Dr. Sanjay Singh	Professor	Pharmaceutical Engg. & Tech.	23.02.2019 (AN)	23.02.2024	On Deputation for 5 years	
5	Dr. A.S.K. Sinha	Professor	Chemical Engineering	09.07.2019 (AN)	30.06.2021	On Deputation	Date of Retirement 30.06.2021
6	Dr. Pradeep Srivastava	Professor	Bio-Chemical Engineering	18.02.2020 (AN)	18.02.2025	On Deputation for 5 years	

Faculty/Staff members on extraordinary leave

S. No.	Name	Designation	Department	From	To
1	Dr. Arnab Sarkar	Associate Professor	Mechanical Engineering	30.12.2019	31.12.2019
2	Dr. Rosalin Sahoo	Assistant Professor	Civil Engineering	13.04.2019	30.04.2019

4. Non-Faculty Administration

4. Staff Position (as on 31st March 2020) : Non-faculty members

4.1. Staff members in Position

Group A Staff	26
Scientific Officers	07
Technical Staff	234
Administrative Staff	138

4.2 Staff members who resigned/were relieved during 1st April 2019-31st March 2020

S. No.	ID No.	Name of Staff	Designation	Department/Section	Date of Relief (with FN/AN)
1.	50164	Sri Pramod Singh	Junior Superintendent	Institute Purchase Cell	30.06.2019 (AN)
2.	50102	Sri Siddhartha Kumar Gupta	Junior Assistant	Scholarship Section	30.12.2019 (AN)
3.	50089	Sri Ramesh Giri	Junior Assistant	Institute Purchase Cell	20.01.2020 (AN)

4.3 Staff members who retired during 1st April 2019-31st March 2020

S. No.	ID No.	Name of Staff/ Officer	Designation	Department/ Section	Date of Birth	Date of Retirement
1.	13979	Sri K.C. Mishra	Senior Technical Superintendent	Mechanical Engg.	13.06.1959	30.06.2019
2.	13615	Sri K.N.A. Chaudhary	Senior Technical Superintendent	Main Workshop	15.06.1959	30.06.2019
3.	13992	Sri Dinesh Singh	Technical Superintendent	Civil Engg.	25.06.1959	30.06.2019
4.	14013	Sri Barhu Ram	Technical Superintendent	Electronics Engg.	01.07.1959	30.06.2019
5.	13999	Sri Yamuna Ram	Technical Superintendent	Main Workshop	10.07.1959	31.07.2019
6.	13916	Sri L.S. Yadav	Senior Technical Superintendent	Civil Engg.	05.08.1959	31.08.2019
7.	13629	Sri Bechai Prasad	Technical Superintendent	Main Workshop	12.08.1959	31.08.2019
8.	14015	Sri Purnwasi	Junior Technical Superintendent	Electronics Engg.	08.09.1959	30.09.2019
9.	18634	Sri Rakesh Chandra Singh	Technical Superintendent	Chemical Engg.	20.10.1959	31.10.2019
10.	13904	Sri Rajendra Prasad	Senior Technical Superintendent	Mechanical Engg.	14.11.1959	30.11.2019
11.	14142	Sri Birendra Yadav	Technical Superintendent	Chemical Engg.	08.11.1959	30.11.2019
12.	16665	Sri I.A. Khan	Senior Technical Superintendent	Ceramic Engg.	01.01.1960	31.12.2019
13.	13715	Sri Ram Pyare	Technical Superintendent	Ceramic Engg.	20.12.1959	31.12.2019
14.	13998	Sri Raman Ji Jha	Technical Superintendent	Civil Engg.	03.12.1959	31.12.2019
15.	15913	Sri Ashok Kumar Pandey	Senior Technician	Administrative Sector	31.12.1959	31.12.2019
16.	13545	Sri Raj Kumar Singh	Senior Technician	Ceramic Engg.	30.12.1959	31.12.2019

S. No.	ID No.	Name of Staff/ Officer	Designation	Department/ Section	Date of Birth	Date of Retirement
17.	13619	Sri Munna Lal	Senior Technical Superintendent	Main Workshop	03.01.1960	31.01.2020
18.	11551	Sri Munna Lal	Senior Technical Superintendent	Ceramic Engg.	16.01.1960	31.01.2020

4.4. Staff Welfare

4.4.1 Human resource development

a. External trainings

S. No.	No. of Persons who attended	Course Title	Duration	Organization where attended
1.	01	Workshop on Sexual Harassment of Women at Workplace	29.05.2019 to 31.05.2019	ISTM (New Delhi)
2.	01	Workshop/Training Programme for user institutions of UGC-Canara Bank Scholarship payment portal	21.06.2019	Mata Sunderi College for Women, New Delhi
3.	01	Orientation for submission of proposals under Top Class Scholarship Scheme for SC Students for the year 2019-20	18.07.2019	Ministry of Social Justice and Empowerment, New Delhi
4.	02	पूर्वदशम एवं दशमोत्तर छात्रवृत्ति योजनान्तर्गत मास्टर डाटा का विश्वविद्यालय व एफिलियेटिंग एजेंसी स्तर पर समयवद्ध व त्रुटिरहित सत्यापन हेतु कार्यशाला	08.08.2019	निदेशालय,समाज कल्याण विभाग, लखनऊ, उ०प्र०

भारतीय प्रौद्योगिकी संस्थान (का.हि.वि.), वाराणसी।

हिन्दी पखवाड़ा (सितंबर 04-19, 2019)

संस्थान में हिन्दी पखवाड़ा का आयोजन दिनांक 04.09.2019 से दिनांक 19.09.2019 तक किया गया। हिन्दी पखवाड़ा के दौरान निम्नलिखित कार्यक्रम आयोजित हुए-

1. हिन्दी पखवाड़ा का उद्घाटन :

संस्थान में हिन्दी पखवाड़ा (सितंबर 04-19, 2019) के अंतर्गत दिनांक 04.09.2019 को एनी बेसेंट व्याख्यान कक्ष संकुल में उद्घाटन समारोह का आयोजन किया गया। समारोह का उद्घाटन संस्थान के निदेशक महोदय आचार्य प्रमोद कुमार जैन द्वारा किया गया। इस कार्यक्रम में संस्थान के संयुक्त कुलसचिव ने वर्ष 2018-19 के दौरान हिन्दी में किये गये कार्यों की आख्या प्रस्तुत की। इस अवसर पर निदेशक महोदय ने संस्थान के कर्मचारियों को कार्यालय के अधिकाधिक कार्य हिन्दी में करने का आह्वान किया। साथ ही श्री जगदीश नारायण राय, संयोजक, केंद्रीय सचिवालय हिन्दी परिषद्, वाराणसी द्वारा प्रतिभागियों को संघ की राजभाषा नीति एवं उसके कार्यान्वयन के बारे में बताया गया।

2. "राजभाषा हिन्दी का उन्नयन एवं चुनौतियाँ" विषय पर निबंध प्रतियोगिता:

दिनांक 04.09.2019 से 08.09.2019 के मध्य "राजभाषा हिन्दी का उन्नयन एवं चुनौतियाँ" विषय पर निबंध प्रतियोगिता का आयोजन निम्नलिखित चार वर्गों में किया गया :

1) शैक्षणिक,
2) गैर-शैक्षणिक एवं
3) विद्यार्थी।

उक्त निबंध ई-मेल के माध्यम से संस्थान के राजभाषा प्रकोष्ठ को प्रेषित करने हेतु शैक्षणिक, गैर-शैक्षणिक कर्मचारियों एवं विद्यार्थियों से अनुरोध किया गया, जिसमें गैर-शैक्षणिक से 14 एवं विद्यार्थियों से 09 निबंध प्राप्त हुए।

3. हिन्दी पुस्तकों की प्रदर्शनी:

दिनांक 04.09.2019 को संस्थान के मुख्य ग्रंथालय में हिन्दी पुस्तकों की प्रदर्शनी का आयोजन किया गया। उक्त प्रदर्शनी संस्थान के छात्र-छात्राओं और कर्मचारियों के लिए बहुत उपयोगी साबित हुई।

4. हिन्दी टिप्पण लेखन, पत्राचार एवं शब्द-ज्ञान प्रतियोगिता:

दिनांक 06.09.2019 को हिन्दी टिप्पण लेखन, पत्राचार एवं शब्द-ज्ञान प्रतियोगिता का आयोजन एनी बेसेंट व्याख्यान कक्ष संकुल में किया गया, जिसमें कुल 18 गैर-शैक्षणिक कर्मचारियों ने भाग लिया।

5. यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता:

दिनांक 09.09.2019 को संस्थान के प्रथम वर्ष संगणक प्रयोगशाला, यांत्रिक अभियांत्रिकी विभाग में यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता का आयोजन किया गया। इसमें कुल 14 गैर-शैक्षणिक कर्मचारियों ने भाग लिया।

6. हिन्दी दिवस समारोह:

दिनांक 19.09.2019 को संस्थान में हिन्दी दिवस समारोह का आयोजन एनी बेसेंट व्याख्यान-कक्ष संकुल में किया गया। कार्यक्रम का आयोजन पं0 मदन मोहन मालवीय जी की प्रतिमा पर माल्यार्पण एवं दीप-प्रज्ज्वलन के साथ हुआ। आचार्य सुशांत कुमार श्रीवास्तव, भैषजकीय अभियांत्रिकी एवं प्रौद्योगिकी विभाग एवं अध्यक्ष, हिन्दी पखवाड़ा आयोजन समिति ने कार्यक्रम में आये सभी अतिथियों एवं सहभागियों का स्वागत किया।

कुलसचिव महोदय ने हिन्दी पखवाड़ा की अवधि में संस्थान में दिनांक 04.09.2019 से 19.09.2019 के मध्य आयोजित कार्यक्रम एवं प्रतियोगिताओं की आख्या प्रस्तुत की।

तत्पश्चात् आचार्य सुशांत कुमार श्रीवास्तव ने माननीय गृह मंत्री जी का हिन्दी दिवस के अवसर पर जारी संदेश का पाठन किया।

इसके बाद आचार्य अनिल कुमार त्रिपाठी, उपाध्यक्ष, राजभाषा कार्यान्वयन समिति ने विश्व स्तर पर हिन्दी के बढ़ते प्रयोग एवं प्रत्येक क्षेत्र में इसकी महत्ता पर प्रकाश डाला।

पुरस्कार वितरण

कार्यवाहक निदेशक महोदय ने दिनांक 04.09.2019 से दिनांक 19.09.2019 के मध्य आयोजित सभी प्रतियोगिताओं के प्रथम, द्वितीय एवं तृतीय निम्नलिखित विजेता कर्मचारियों को पुरस्कृत किया।

- दिनांक 06.09.2019 को आयोजित हिन्दी टिप्पण लेखन, पत्राचार एवं शब्द-ज्ञान प्रतियोगिता में प्रथम स्थान प्राप्त सुश्री आरती गुप्ता, कनिष्ठ अधीक्षक, स्थापना अनुभाग, द्वितीय स्थान प्राप्त श्री रवि गर्ग, कनिष्ठ सहायक, गोपनीय इकाई एवं तृतीय स्थान प्राप्त श्री विकास प्रजापति, कनिष्ठ सहायक, वेतन अनुभाग को पुरस्कृत किया गया।
- दिनांक 09.09.2019 को आयोजित यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता में प्रथम स्थान प्राप्त श्री अंकित जैन, कनिष्ठ सहायक, संस्थान निर्माण विभाग, द्वितीय स्थान प्राप्त सुश्री आरती गुप्ता, कनिष्ठ अधीक्षक, स्थापना अनुभाग एवं तृतीय स्थान प्राप्त श्री संदीप प्रजापति, कनिष्ठ सहायक, निदेशक का निजी सचिव अनुभाग को पुरस्कृत किया गया।
- दिनांक 04.09.2019 से दिनांक 08.09.2019 के मध्य आयोजित "राजभाषा हिन्दी का उन्नयन एवं चुनौतियाँ" विषय पर निबंध प्रतियोगिता के गैर-शैक्षणिक कर्मचारी वर्ग में प्रथम स्थान प्राप्त श्री महेन्द्र कुमार पटेल, वरिष्ठ तकनीशियन, पदार्थ विज्ञान एवं प्रौद्योगिकी स्कूल, द्वितीय स्थान प्राप्त श्री आशीष कुमार श्रीवास्तव, कनिष्ठ सहायक, संस्थान निर्माण विभाग एवं तृतीय स्थान प्राप्त सुश्री प्रगति गुप्ता, कनिष्ठ सहायक, स्थापना अनुभाग एवं श्री नफीस अख्तर, कनिष्ठ सहायक, कटौती अनुभाग तथा विद्यार्थी वर्ग में प्रथम स्थान प्राप्त श्री साकेत बिहारी, बी.टेक. (चतुर्थ वर्ष), रासायनिक अभियांत्रिकी एवं प्रौद्योगिकी विभाग, द्वितीय स्थान प्राप्त श्री रोहित त्रिपाठी, बी.टेक (द्वितीय वर्ष), यांत्रिक अभियांत्रिकी विभाग व तृतीय स्थान प्राप्त श्री अमन श्रेष्ठ, बी.टेक (चतुर्थ वर्ष), इलेक्ट्रॉनिक्स अभियांत्रिकी विभाग को पुरस्कृत किया गया।

इस अवसर पर संस्थान के कार्यवाहक निदेशक महोदय ने अपना संबोधन प्रस्तुत किया, जिसमें उन्होंने कर्मचारियों को अधिकाधिक हिन्दी में कार्य करने का आह्वान किया।

हिन्दी दिवस समारोह के अवसर पर मुख्य अतिथि प्रो0 अनिल कुमार त्रिपाठी, निदेशक, विज्ञान संस्थान, काशी हिन्दू विश्वविद्यालय ने व्याख्यान प्रस्तुत किया। उन्होंने बताया कि हिन्दी भाषा हमारी सभ्यता की पहचान है। ये सभी को जोड़ती है। हिन्दी भाषा गंगा नदी के समान है और अन्य भारतीय बोलियाँ इसकी सहायक नदियां हैं। कई संस्थानों में आयोजित होने वाले सम्मेलनों एवं संगोष्ठियों में विज्ञान विषय पर व्याख्यान हिन्दी में ही होते हैं। हमें हिन्दी में और अधिक कार्य करने की आवश्यकता है।

कार्यक्रम का समापन संस्थान के संयुक्त कुलसचिव (प्रशासन) श्री राजन श्रीवास्तव के धन्यवाद ज्ञापन से हुआ।

5. Academic Programmes, Students And Awards

The Institute offers Ph.D. programmes in 15 departments, M.Tech. programme in 13 streams/specializations, M.Pharm. programme in one stream/specialization, B.Tech. programmes in 10 engineering departments, Dual Degree (B.Tech. and M.Tech.) programmes in 14 engineering departments/schools/science departments, B.Arch. programme in 1 department (Department of Architecture, Planning and Design, established in 2019-20), besides a preparatory course for SC/ST students during the year under report. The Institute has recently developed online registration portal, fee deposition portal as well as declaration of results etc. through the online mode. The registration portal was started from the session 2014-15 and onwards in the Institute to facilitate the students. Fee deposition portal has been designed and institute fee submitted by the students successfully during even semester 2019-20.

An academic section, examination unit and scholarship section are under the Dean (Academic Affairs) of the Institute. Three smart lecture theatre complexes has been established and equipped with LCD projector in each classrooms along with the backup of the electricity. The classes for the Institute core courses, HULM and Institute Open elective are being held centrally in the lecture theaters of the Institute. The Examination unit publishes the online application forms for the admission of PG annually and for Ph.D. Programmes biannually each year. Online profile registration, add/drop courses, department-wise/subject-wise students list, grade submission, declaration of results, transcripts has keen automated and is taken care by the examination unit. The Scholarship section looks after the fellowships (Institute or other) of the students. Academic Section looks after the works related to Ordinances, admissions process for B.Tech./B. Pharm./IDD through JEE(Advanced) and M.Sc. through JAM jointly conducted by the IITs, students leave, conducting of semester examinations, preparation of academic calendar, class time-tables under supervision of Dean (Academic Affairs)/Associate Dean (Academic Affairs), UG/PG/Core Courses. The office of the Dean (Academic Affairs) is totally automated for the Ph.D. submission as well as for submission of grades on portal, overload, physical registration and change of branch etc.

Admissions 2019–2020

Candidates for admission to the 4-Year B.Tech., 5-Year B.Arch. and 5-Year Dual Degree programmes are selected through JEE(Advanced) and on the basis of the All India Rank. 2-Year M.Sc. programmes started from the session 2019-20 in the Department of Physics and Chemistry, the candidates were selected through JAM, jointly conducted by the IITs. 2-Year M.Tech./M.Pharm. programmes, candidates got admitted on the basis of GATE/GPAT score. Quite a few candidates were also selected for the M.Tech. programme under the Sponsored and Q.I.P. programmes through interviews and/or written tests. Selection for the Ph.D. programmes was done through tests/interviews, the candidates must have qualified the GATE or GPAT or UGC/CSIR-NET. To attract the foreign national students for studies in India, the Institute has also taken admission in PG and Ph.D. Programmes through the Study in India Portal as well as ASEAN Fellowship programmes conducted by the Govt. of India.

The number of students and scholars admitted to the various programmes in July 2019 and in January 2020 are listed in Table as shown below.

Details of no. of students admitted during academic session 2019-20

Sl. No.	Department/School/ Specialization	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	.Sc.	M.Tech.	M. Pharm.	Ph. D.	Total
1.	**Architecture Planning and Design**	---	---	**15**	---	---	---	---	**15**
2.	**Biochemical Engineering**	---	**13**	---	---	**10**	---	**13**	**36**
3.	**Biomedical Engineering**	---	**13**	---	---	**8**	---	**12**	**33**
4.	**Ceramic Engineering**	**42**	**10**	---	---	**12**	---	**4**	**68**
5.	**Chemical Engineering**	**146**	---	---	---	**50**	---	**23**	**219**
6.	**Chemistry**	---	**13**	---	**18**	---	---	**22**	**53**
7.	**Civil Engineering**	**112**	**28**	---	---	**67**	---	**20**	**227**

Sl. No.	Department/School/ Specialization	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	.Sc.	M.Tech.	M. Pharm.	Ph. D.	Total
8.	**Computer Science and Engineering**	**92**	**32**	---	---	---	---	**10**	**134**
9.	**Electrical Engineering**	**108**	**25**	---	---	**52**	---	**19**	**204**
10.	**Electronics Engineering**	**124**	---	---	---	**42**	---	**9**	**175**
11.	**Humanistic Studies**	---	---	---	---	---	---	**14**	**14**
12.	**Industrial Management**	---	---	---	---	**10**	---	**3**	**13**
13.	**Materials Science and Technology**	---	**23**	---	---	**20**	---	**12**	**55**
14.	**Mathematical Sciences**	---	**48**	---	---	---	---	**29**	**77**
15.	**Mechanical Engineering**	**139**	**30**	---	---	**58**	---	**11**	**238**
16.	**Metallurgical Engineering**	**75**	**21**	---	---	**43**	---	**9**	**148**
17.	**Mining Engineering**	**99**	**21**	---	---	**31**	---	**13**	**164**
18.	**Pharmaceutical Engineering and Technology**	**38**	**12**	---	---	---	**48**	**19**	**117**
19.	**Physics**	---	**22**	---	**19**	---	---	**32**	**73**
20.	**Systems Engineering**	---	---	---	---	**8**	---	**2**	**10**
Total		**975**	**311**	**15**	**37**	**411**	**48**	**276**	**2073**

In addition, 24 students (SC – 5; ST – 15; OBCPD – 1; GEPD – 3) joined the preparatory course.

Category/Gender-wise no. of students admitted during academic session 2019-20

Sl. No.	Programme	General		OBC		EWS		SC		ST		PD		Total		
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
1.	B.Tech.	315	75	220	36	80	18	120	27	72	6	5	1	812	163	975
2.	Dual Degree (B.Tech. & M.Tech.)	100	27	71	10	27	5	36	5	29	1	---	---	263	48	311
3.	B.Arch.	4	4	3	---	1	---	3	---	---	---	---	---	11	4	15
4.	M.Sc.	12	4	9	2	---	---	4	2	3	1	---	---	28	9	37
5.	M.Tech.	149	21	101	15	37	4	50	10	12	7	5	---	354	57	411
6.	M.Pharm.	9	6	9	6	4	1	6	2	1	3	1	---	30	18	48
7.	Ph.D.	66	53	72	24	9	5	24	13	6	2	1	1	178	98	276
Total		655	190	485	93	158	33	243	59	123	20	12	2	1676	397	2073

No. of students admitted during the academic session 2019-20 under following categories:

Foreign national	3
OBC	578
Scheduled Castes	302
Scheduled Tribes	146
Physically handicapped	14
Women Students	397

EWS		191
Sponsored	M.Tech. Ph.D.	11 07
Q.I.P.		Nil.
External registration in Ph.D.		05

Enrolment of Students/Scholars

The total numbers of students on roll in various programmes of the Institute in the academic year 2019–2020 are given below:

Sl. No.	Department/School	B.Tech.	Dual Degree (B.Tech. & M.Tech.)	B.Arch.	M.Sc.	M.Tech.	M.Pharm.	Ph.D.	Total
1.	Architecture Planning and Design	0	0	15	0	0	0	0	**15**
2.	Biochemical Engineering	0	79	0	0	19	0	41	**139**
3.	Biomedical Engineering	0	82	0	0	16	0	38	**136**
4.	Ceramic Engineering	222	80	0	0	25	0	52	**379**
5.	Chemical Engineering	483	0	0	0	95	0	69	**647**
6.	Chemistry	0	82	0	18	0	0	83	**183**
7.	Civil Engineering	348	100	0	0	126	0	89	**663**
8.	Computer Science and Engineering	269	92	0	0	0	0	80	**441**
9.	Electrical Engineering	340	102	0	0	89	0	63	**594**
10.	Electronics Engineering	359	0	0	0	74	0	55	**488**
11.	Humanistic Studies	0	0	0	0	0	0	24	**24**
12.	Industrial Management	0	0	0	0	17	0	16	**33**
13.	Materials Science and Technology	0	96	0	0	37	0	65	**198**
14.	Mathematical Sciences	0	122	0	0	0	0	116	**238**
15.	Mechanical Engineering	426	107	0	0	89	0	65	**687**
16.	Metallurgical Engineering	292	100	0	0	78	0	48	**518**
17.	Mining Engineering	394	103	0	0	59	0	51	**607**
18.	Pharmaceutical Engineering and Technology	223	71	0	0	0	87	63	**444**
19.	Physics	0	99	0	19	0	0	99	**217**
20.	Systems Engineering	0	0	0	0	12	0	8	**20**
Total		**3356**	**1315**	**15**	**37**	**736**	**87**	**1125**	**6671**

Category/Gender-wise students on roll

Sl. No.	Programme	General		OBC		EWS		SC		ST		PD		Total		
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Total
1.	B.Tech.	1370	185	839	85	80	18	446	54	219	24	34	2	**2988**	**368**	**3356**
2.	Dual Degree (B.Tech. & M.Tech.)	532	90	299	32	27	5	184	14	103	13	14	2	**1159**	**156**	**1315**
3.	B.Arch.	4	4	3	0	1	0	3	0	0	0	0	0	**11**	4	15
4.	M.Sc.	12	4	9	2	0	0	4	2	3	1	0	0	**28**	**9**	**37**
5.	M.Tech.	280	48	194	25	37	4	87	18	28	8	6	1	**632**	**104**	**736**
6.	M.Pharm.	16	13	22	9	4	1	10	4	4	3	1	0	**57**	**30**	**87**
7.	Ph.D.	340	164	286	84	9	5	116	38	25	8	8	2	**824**	**301**	**1125**
Total		**2554**	**508**	**1652**	**237**	**158**	**33**	**850**	**130**	**382**	**57**	**63**	**7**	**5699**	**972**	**6671**

The students on roll including the following:

Foreign national	3
OBC	1889
Scheduled Castes	987
Scheduled Tribes	439
Physically handicapped	70
Women Students	972

EWS		191
Sponsored	M.Tech.	6
	Ph.D.	12
Q.I.P.		16
Project		10
External registration	Ph.D.	8

The branch-/discipline-wise and year-wise details of students enrolled in the 4-Year B.Tech., 5-Year Dual Degree B.Tech.-M.Tech. programmes are given below:

4-Year B.Tech. students on roll

Sl. No.	Branch	2019	2018	2017	2016 and earlier batches	Total
1.	Ceramic Engineering	62	52	54	54	**222**
2.	Chemical Engineering	132	116	118	117	483
3.	Civil Engineering	99	88	80	81	**348**
4.	Computer Science and Engineering	84	67	59	59	**269**
5.	Electrical Engineering	97	84	79	80	**340**
6.	Electronics Engineering	113	86	80	80	**359**
7.	Mechanical Engineering	121	109	98	98	**426**
8.	Metallurgical Engineering	90	68	67	67	**292**
9.	Mining Engineering	114	88	95	97	**394**
10.	Pharmaceutical Engineering and Technology	62	54	58	49	**223**
Total		**974**	**812**	**788**	**782**	**3356**

5-Year B.Arch. students on roll

Sl. No.	Branch	2019	2018	2017	2016 and earlier batches	Total
	Architecture Planning and Design	15	--	--	--	**15**

5-Year Dual Degree (B.Tech. and M.Tech.) students on roll

Sl. No.	Branch	2019	2018	2017	2016	2015 and earlier batches	Total
1.	Biochemical Engineering	18	15	16	16	14	**79**
2.	Biomedical Engineering	15	15	17	19	16	82
3.	Ceramic Engineering	15	14	17	17	17	**80**
4.	Chemistry	15	14	21	19	13	**82**
5.	Civil Engineering	20	21	20	20	19	**100**
6.	Computer Science and Engineering	28	18	16	15	15	**92**
7.	Electrical Engineering	22	20	20	20	20	102
8.	Materials Science and Technology	22	18	21	18	17	**96**
9.	Mathematical Sciences	43	20	19	20	20	**122**
10.	Mechanical Engineering	27	21	19	20	20	**107**
11.	Metallurgical Engineering	25	18	21	18	18	**100**

Sl. No.	Branch	2019	2018	2017	2016	2015 and earlier batches	Total
12.	Mining Engineering	26	17	21	20	19	103
13.	Pharmaceutical Engineering and Technology	13	13	20	15	10	**71**
14.	Physics	22	20	18	18	21	**99**
Total		**311**	**244**	**266**	**255**	**239**	**1315**

2-Years M.Tech. students on roll

Sl. No.	Branch	2019	2018	Total
1.	Biochemical Engineering	10	9	**19**
2.	Biomedical Engineering	8	8	**16**
3.	Ceramic Engineering	12	13	**25**
4.	Chemical Engineering	50	45	**95**
5.	Civil Engineering	67	59	**126**
6.	Electrical Engineering	52	37	**89**
7.	Electronics Engineering	42	32	**74**
8.	Industrial Management	10	7	**17**
9.	Materials Science and Technology	20	17	**37**
10.	Mechanical Engineering	58	31	**89**
11.	Metallurgical Engineering	43	35	**78**
12.	Mining Engineering	31	28	**59**
13.	Systems Engineering	8	4	**12**
Total		**411**	**325**	**736**

2-Years M.Pharm. students on roll

Sl. No.	Branch	2019	2018	Total
1.	Pharmaceutical Engineering and Technology	48	39	**87**

2-Years M.Sc. students on roll

Sl. No.	Branch	2019	2018	Total
1.	Chemistry	18	--	**18**
2.	Physics	19	--	**19**
Total		**37**	--	**37**

Ph.D. scholars on roll

Sl. No.	**Branch**	**2019a**	**2018a**	**2017a**	**2016a**	**2015 and previous years**	**Total**
1.	Biochemical Engineering	13	12	8	4	4	41
2.	Biomedical Engineering	12	3	8	8	7	38
3.	Ceramic Engineering	4	10	17	13	8	52
4.	Chemical Engineering	23	14	12	11	9	69
5.	Chemistry	22	21	18	12	10	83
6.	Civil Engineering	20	26	15	19	9	89
7.	Computer Science and Engineering	10	15	36	13	6	80

Sl. No.	Branch	2019a	2018a	2017a	2016a	2015 and previous years	Total
8.	Electrical Engineering	19	8	10	12	14	63
9.	Electronics Engineering	9	9	26	6	5	55
10.	Humanistic Studies	14	6	1	0	3	24
11.	Industrial Management	3	2	3	4	4	16
12.	Materials Science and Technology	12	19	17	12	5	65
13.	Mathematical Sciences	29	44	25	17	1	116
14.	Mechanical Engineering	11	12	18	15	9	65
15.	Metallurgical Engineering	9	13	15	6	5	48
16.	Mining Engineering	13	11	13	8	6	51
17.	Pharmaceutical Engineering and Technology	19	22	8	11	3	63
18.	Physics	32	23	31	9	4	99
19.	Systems Engineering	2	2	2	1	1	8
Total		**276**	**272**	**283**	**181**	**113**	**1125**

Students Intake in different programmes

The Institute offered the following programmes in various departments/school. The Department/School-wise Intake is given below:

Department-wise & Programme-wise Intake capacity of Session 2019-20

COURSES	Students Intake										
	GE	OBC	EWS	SC	ST	PwD					Total
						GE	OBC	EWS	SC	ST	
Four-Years B.Tech. Programmes											
1. Ceramic Engineering	25	16	6	10	5	1	0	1	0	0	**64**
2. Chemical Engineering	52	35	13	19	10	2	1	0	1	0	**133**
3. Civil Engineering	40	27	10	15	7	1	1	0	0	1	**102**
4. Computer Science & Engg.	33	22	8	12	6	1	1	0	0	1	**84**
5. Electrical Engineering	39	26	10	14	7	1	1	0	0	0	**98**
6. Electronics Engineering	44	29	11	17	8	1	1	1	1	0	**113**
7. Mechanical Engineering	49	33	12	18	9	2	1	1	1	0	**126**
8. Metallurgical Engineering	36	24	9	13	6	1	1	0	0	0	**90**
9. Mining Engineering	45	30	11	17	9	0	0	0	0	0	**112**
10. Pharmaceutical Engineering and Technology	27	18	6	10	5	1	0	0	1	0	**68**
Total	**390**	**260**	**96**	**145**	**72**	**11**	**7**	**3**	**4**	**2**	**990**
Five-Years Integrated M.Tech. Dual Degree Programmes											
11. Biochemical Engineering with M.Tech. in Biochemical Engineering and Biotechnology	8	5	2	3	1	1	0	0	0	1	**21**
12. Bioengineering with M.Tech. in Biomedical Technology	7	5	2	3	1	0	0	0	0	0	**18**

COURSES	Students Intake										
	GE	OBC	EWS	SC	ST	PwD					Total
						GE	OBC	EWS	SC	ST	
13. Ceramic Engineering	7	5	2	2	1	0	0	0	0	0	**17**
14. Civil Engineering	10	6	2	4	2	0	1	0	0	0	**25**
15. Computer Science & Engineering	11	7	3	4	2	0	1	0	1	0	**29**
16. Electrical Engineering with M.Tech. in Power Electronics	9	6	2	3	1	1	0	1	0	0	**23**
17. Engineering Physics	10	6	2	3	2	0	1	0	0	0	**24**
18. Industrial Chemistry	7	5	1	3	1	0	0	0	0	0	**17**
19. Materials Science & Technology	9	6	2	3	2	0	1	0	0	0	**23**
20. Mathematics & Computing	17	12	5	6	4	0	0	0	0	0	**44**
21. Mechanical Engineering	10	7	3	4	2	1	0	0	0	0	**27**
22. Metallurgical Engineering	9	6	3	3	2	1	0	0	0	0	**24**
23. Mining Engineering	10	7	2	4	2	0	0	0	0	0	**25**
24. Pharmaceutical Engineering and Technology	7	5	1	3	1	0	0	0	0	0	**17**
Total	**131**	**88**	**32**	**48**	**24**	**4**	**4**	**1**	**1**	**1**	**334**
Five-Years B.Arch. Degree Programme											
25. Architecture	9	6	2	3	2	---	---	---	---	---	**22**

COURSES	Students Intake						
	GE	OBC	EWS	SC	ST	PC#	Total
Two-Years M.Sc. Programmes							
Chemistry	9	5	--	3	2	1	**20**
Physics	9	5	--	3	2	1	**20**
Total	18	10	--	6	4	2	40

Student intake numbers for PC (5%) category.

COURSES	Students Intake						
	GE	OBC	EWS	SC	ST	PC#	Total
Two-Years M.Tech. Programmes							
Biochemical Engineering	05	3	1	2	1	(1)	**12**
Biomedical Engineering	05	3	1	2	1	(1)	**12**
Ceramic Engineering	10	5	2	3	2	(1)	**22**
Chemical Engineering	25	14	5	8	4	(3)	**56**
Civil Engineering	33	19	7	11	5	(4)	**75**
Electrical Engineering	25	14	5	8	4	(3)	**56**
Electronics Engineering	25	14	5	8	4	(3)	**56**
Industrial Management	05	3	1	2	1	(1)	**12**
Materials Science & Technology	10	5	2	3	2	(1)	**22**
Mechanical Engineering	25	14	5	8	4	(3)	**56**

COURSES	Students Intake						
	GE	OBC	EWS	SC	ST	PC#	Total
Metallurgical Engineering	25	14	5	8	4	(3)	**56**
Mining Engineering	15	8	3	5	2	(2)	**33**
Systems Engineering	05	3	1	2	1	(1)	**12**
Two-Years M.Pharm. Programme							
Pharmaceutical Engineering and Technology	20	12	4	7	4	(2)	**47**
Grand Total of 2-Years M.Tech. Courses	233	131	47	77	39	(29)	527

Student intake numbers for PC (5%) category has not been added in calculating total number of seats, as provision for the physically challenged candidate will be made from within the respective category.

Convocation

The 8th Convocation was held on November 08, 2019. Shri Ramesh Pokhriyal 'Nishank', Minister of Human Resource Development, Government of India delivered the convocation address. A total of 1486 various degrees were awarded in 8th Convocation of the Institute. During Convocation, a total 953 candidates received degrees in person. The department-wise details of the degrees awarded are given below.

Degrees awarded

Branch	Ph.D.	M. Tech.	M. Pharm.	I.M.D.	Dual Degree				B. Tech.	B. Pharm.	Total
					B. Tech.	M. Tech.	B. Pharm.	M. Pharm.			
Biochemical Engineering	5	9	---	---	12	12	---	---	---	---	**38**
Biomedical Engineering	2	6	---	---	10	10	---	---	---	---	**28**
Ceramic Engineering	5	11	---	---	9	9	---	---	41	---	**75**
Chemical Engineering	3	41	---	---	---	---	---	---	111	---	**155**
Chemistry	5	---	---	---	11	11	---	---	---	---	**27**
Civil Engineering	5	33	---	---	20	20	---	---	76	---	**154**
Computer Science & Engineering	1	---	---	---	15	15	---	---	66	---	**97**
Electrical Engineering	6	15	---	---	24	24	---	---	89	---	**158**
Electronics Engineering	7	26	---	---	---	---	---	---	94	---	**127**
Industrial Management	---	5	---	---	---	---	---	---	---	---	**5**
Materials Science & Tech.	7	9	---	---	12	12	---	---	---	---	**40**
Mathematical Sciences	9	---	---	1	19	19	---	---	---	---	**46**
Mechanical Engineering	15	30	---	---	23	23	---	---	106	---	**197**
Metallurgical Engineering	4	15	---	---	16	16	---	---	57	---	**108**
Mining Engineering	---	18	---	---	7	7	---	---	84	---	**116**
Pharmaceutics	7	---	31	---	8	8	---	---	31	---	**85**
Physics	2	---	---	---	12	12	---	---	---	---	**26**
Systems Engineering	1	3	---	---	---	---	---	---	---	---	**4**
TOTAL	**84**	**221**	**31**	**1**	**197**	**197**	**---**	**---**	**755**	**---**	**1486**

With this convocation, the cumulative number of degrees awarded so far by the Institute is **40,833**. Total 12,170 degrees awarded by IIT(BHU) and before conversion of IT-BHU into IIT(BHU), the IT-BHU has awarded total 28,663 number of degrees:

Sl. No.	Programme	No. of degrees awarded		
		After conversion	Before conversion	Total
1.	Ph.D.	627	854	**1481**
2.	M.Tech.	2197	3,119	**5,316**
3.	M.Pharm.	375	653	**1028**
4.	I.M.D.	265		**265**
5.	Dual Degree B.Tech.	1214		**1214**
	M.Tech.	1214		**1214**
6.	Dual Degree B.Pharm.	76		**76**
	M.Pharm.	76		**76**
7.	B.Tech.	6002	22,947	**28,949**
8.	B.Pharm.	124	1,090	**1,214**
Total		**12,170**	**28,663**	**40,833**

Award of Medals and Prizes to Graduands

Convocation prizes

Medals and Prizes awarded to graduands at the 8th Convocation:

1. **Shri Virendra Singh** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Biochemical Engineering Examination, 2019.
2. **Shri Neeraj Sharma** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Biomedical Engineering Examination, 2019.
3. **Shri Ranjeeth R.** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Ceramic Engineering Examination, 2019.
4. **Ms. Binita Joshi** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Chemical Engineering Examination, 2019.
5. **Shri Saksham Jain** was awarded:

   I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Civil Engineering Examination, 2019.

   R.P. Singh, IRSE (Retired) Gold Medal for securing highest marks at the M.Tech. in Civil Engineering Examination, 2019.
6. **Shri Aditya Kumar** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Electrical Engineering Examination, 2019.
7. **Shri Chandan Kumar Behera** was awarded T.N. Srivastava Memorial Centenary Award for the best thesis on Power Systems Applications at the M.Tech. in Electrical Engineering Examination, 2019.
8. **Ms. Ayesha Singh** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Electronics Engineering Examination, 2019.
9. **Shri Prerit Dewan** was awarded Sanjeev Memorial Gold Medal for securing First position at the M.Tech. in Electronics Engineering (Digital Technology and Instrumentation) Examination, 2019.
10. **Shri Gaurav Sharma** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Industrial Management Examination, 2019.
11. **Shri Shantanu Singh** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Materials Science and Technology Examination, 2019.

12. **Shri Sagar Srivastava** was awarded:

    I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Mechanical Engineering Examination, 2019.

    Prof. (Dr.) Mahendra Kumar Jain Nyayacharya Gold Medal for securing highest CPI at the M.Tech. in Mechanical Engineering Examination, 2019.

13. **Shri Ankit Malik** was awarded S.K. Memorial Gold Medal for standing First position at the M.Tech. in Mechanical Engineering (Machine Design) Examination, 2019.

14. **Shri Gulshan Verma** was awarded:

    BENCO-64 Gold Medal for best thesis at the M.Tech. in Mechanical Engineering Examination, 2019.

    BENCO-64 Cash Prize Rs. 25000/- for best thesis at the M.Tech. in Mechanical Engineering Examination, 2019.

15. **Shri Subhakar M.** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Metallurgical Engineering Examination, 2019.

16. **Shri Arra Kumar** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Mining Engineering Examination, 2019.

17. **Shri Husen Ilyasbhai Devani** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Tech. in Systems Engineering Examination, 2019.

18. **Ms. Ankita Sanjay Burande** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the M.Pharm. Examination, 2019.

19. **Ms. Shreya Mathur** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Industrial Chemistry Examination, 2019.

20. **Shri Vikhyat Chadha** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Mathematics and Computing Examination, 2019.

21. **Shri Abhinav Kumar Singh** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Engineering Physics Examination, 2019.

22. **Shri Kinshuk Sahu** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Biochemical Engineering (Biochemical Engineering and Biotechnology) Examination, 2019.

23. **Ms. Srishti** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Bioengineering (Biomedical Technology) Examination, 2019.

24. **Shri Akash Agrawal** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Ceramic Engineering Examination, 2019.

25. **Shri Arpit Bhardwaj** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Civil Engineering (Structural Engineering) Examination, 2019.

26. **Shri Shivam Garg** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Computer Science & Engineering Examination, 2019.

27. **Shri Spandan Roy** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Electrical Engineering (Power Electronics) Examination, 2019.

28. **Shri Shashwat Sinha** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Materials Science & Technology Examination, 2019.

29. **Shri Peela Kartheek** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Mechanical Engineering Examination, 2019.

30. **Shri Ganne Ketan Balaji** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M.Tech.) in Metallurgical Engineering Examination, 2019.

31. **Shri Himanshu Kumar** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the 5-Year I.D.D. (B.Tech.-M. Tech.) in Mining Engineering Examination, 2019.

32. **Ms. Sharmistha Singh** was awarded I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Ceramic Engineering Examination, 2019.

33. **Shri Shaikh Mohammed Zaeem** was awarded Harbans Gokul Memorial Gold Medal for standing first at the B.Tech. among the Electrical, Electronics and Ceramics Engg. Exam. 2019 and Best Project work in the area of Electrical, Electronics and Ceramics.

34. **Ms. Eleswarapu Shravani** was awarded:

35. **Shri Jitendra Kumar Chaudhary** was awarded:

I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Civil Engineering Examination, 2019.

CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Civil Engineering Examination, 2019.

Rai Bahadur Taracharan Gue Memorial Award Rs. 500/= cash for standing First at the B.Tech. in Civil Engineering Examination, 2019.

Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Civil Engineering Examination, 2019.

36. **Shri Komal Pratap Singh** was awarded Meenakshamma Shankaranaramappa Prize Rs. 500/= cash for securing highest marks in Environmental Engineering (Theory) at the B.Tech. Civil Engineering Examination, 2019.

37. **Ms. Anveshika Pandey** was awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Civil Engineering Examination, 2019.

38. **Ms. Ayushi Jain** was awarded:

a) I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Computer Science & Engineering Examination, 2019.

b) Late Dr. R.N. Singh and Mrs. Uma Singh Medal for securing highest CPI among the girl students at the B.Tech. Examination, 2019.

c) C. Raja Gopal Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Computer Science & Engineering Examination, 2019.

d) Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Computer Science & Engineering Examination, 2019.

e) Prof. V.V. Chalam Prize (The Prize shall be in the form of books by Mr. J. Krishnamurti) for standing Second position among all the branches of B.Tech. Examination, 2019.

39. **Shri Akshansh Chandravanshi** was awarded:

I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Electrical Engineering Examination, 2019.

The R.B.G. Modi Medal for standing First at the B.Tech. in Electrical Engineering Examination, 2019.

Himmat Narayan Singh Memorial Gold Medal for securing the First position and First Division in B.Tech. Electrical Engineering Examination, 2019.

CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Electrical Engineering Examination, 2019.

N.V.R. Nageshwar Iyer (Prize Rs. 100/= in the form of books) for standing First in B.Tech. in Electrical Engineering Examination, 2019.

Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in the B.Tech. in Electrical Engineering Examination, 2019.

40. **Ms. Aanchal Varma** was awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Electrical Engineering Examination, 2019.

41. **Shri Vibhour Bansal** was awarded:

    I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Electronics Engineering Examination, 2019.

    Late Shri Shyam Sunder Lal Razdan Memorial Gold Medal for securing highest percentage of marks in B.Tech. Examination, 2019.

    Prof. Gopal Tripathi Memorial Gold Medal for securing highest marks at the B.Tech. Examination, 2019.

    Smt. Arati Paul and Prof. Binod Bihari Paul Gold Medal for securing highest marks in IV Year Examination among all the students of B.Tech. Examination, 2019.

    Umesh Pratap Singh Gold Medal for First Rank at the B.Tech. Examination, 2019 among all the branches.

    Lala Balak Ramji Kohinoor Memorial Gold Medal for securing highest marks at the B.Tech. Examination, 2019 among the branches of Civil, Mechanical, Electrical and Electronics Engineering.

    Late Prof. Nagesh Chandra Vaidya Gold Medal for standing First at the B.Tech. in Electronics Engineering Examination, 2019.

    Dr. (Late) Nandita Saha Roy Memorial Gold Medal for securing First position in B.Tech. Electronics Engineering Examination, 2019.

    C. Raja Gopal Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Electronics Engineering Examination, 2019.

    Shri Raj Kishore Kapoor Silver Medal for securing highest marks at the B.Tech. Examination, 2019.

    Dr. Annie Besant Prize (in the forms of books by Dr. Annie Besant including copy of the 'Bhagavadgita') for standing First position among all the branches of B.Tech. Examination, 2019.

    Dr. Ayyagari Sambasiva Rao Prize Rs. 1000/= cash for standing First at the B.Tech. in Electronics Engineering Examination, 2019.

    Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Electronics Engineering Examination, 2019.

42. **Shri Samarth Koul** was awarded Prof. A.K. Ghosh Silver Medal for standing Second Position in B.Tech. in Electronics Engineering Examination, 2019.

43. **Shri Malay Sagar** was awarded:

    I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Mechanical Engineering Examination, 2019.

    The Prince of Wales Medal for standing First at the B.Tech. in Mechanical Engineering Examination, 2019.

    Sudhir Kumar Sharma Memorial Gold Medal for securing highest marks in B.Tech. Mechanical Engineering Examination, 2019.

    CRS Iyengar Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Mechanical Engineering Examination, 2019.

    Late Prof. Manoranjan Sengupta Platinum Jubilee Merit Award Rs. 1000/= cash for securing highest marks in B.Tech. in Mechanical Engineering Examination, 2019.

44. **Shri Aditya Patodia** was awarded Prof. B.B. Bansal Memorial Gold Medal for being involved in Social Services/ Co-curricular activities and having highest CPI at the undergraduate engineering Examination, 2019 among such students.

45. **Ms. Rimjhim Spandan** was awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Mechanical Engineering Examination, 2019.

46. **Shri Kratin Anish Sanghvi** was awarded:

    I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Metallurgical Engineering Examination, 2019.

    Swarnamma Memorial Gold Medal for securing highest marks in B.Tech. 4-Year Metallurgical Engineering Examination, 2019.

47. **Ms. Kriti Jain** was awarded Smt. Indira Tripathi Gold Medal for securing highest CPI among the girl students at the B.Tech. in Metallurgical Engineering Examination, 2019.

48. **Shri Rajesh Kumar Jha** was awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2019.

49. **Shri Kapil Arjariya** was awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2019.

50. **Shri Prashant Kumar Gupta** was awarded Ms. Indira Ananthachari Endowment Fund Prize Rs. 10,000/= cash for securing highest CPI more than 7.50 and family income is less than Rs. 5 lacs per annum at the B.Tech. Metallurgical Engineering Examination, 2019.

51. **Shri Yenugu Dhanushmanth** was awarded:

    I.I.T.(B.H.U.) Varanasi Medal for standing First at the B.Tech. in Mining Engineering Examination, 2019.

    The Bishan Das Basil Medal for securing Fist position among B.Tech. in Mining and Metallurgical Engineering Examination 2019.

    Dr. B.S. Verma Memorial Gold Medal for securing highest marks in B.Tech. Mining Engineering Examination, 2019.

52. **Shri Devraj Gurjar** was awarded:

    I.I.T (B.H.U.) Varanasi Medal for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2019.

    Aruna and Malviya Medal for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2019.

    Late Prof. G.P. Srivastava (Prize Rs. 200/= in the form of books) for standing First at the B.Tech. in Pharmaceutical Engineering & Technology Examination, 2019.

53. **Shri Sai Pavan S N** was awarded Director's Gold Medal for outstanding all-round performance and excellent organizational abilities and leadership qualities among all B.Tech. graduates of 2019.

54. **Ms. Shruti Rajlakshmi** was awarded President's Gold Medal for outstanding performance in academics among all disciplines of B.Tech. Examination 2019.

6. Architecture, Planning & Design

Year of Establishment: 2019

Head/Coordinator of the Department:Prof K.K. Pathak

1. Introduction of the Department/School:

The program aims to produce qualified architects as per the requirement of registration with the Council of Architecture (CoA), for license to practice the profession in India. Students gradually learn through practical work how to evolve an architectural design as a response to at least four, occasionally conflicting, forces that define the context, namely, historical and cultural antecedents, contemporary social aspirations, climate/geography and evolving technologies. The aim of the program will be to attain a vanguard position in nurturing thought leaders for the way we need to build in the future, in India definitely and perhaps all over the world. The pedagogic model shall strive to consciously move away from the personality driven design practice of the past, towards more inclusive and collaborative paradigms which are process-oriented rather than result-oriented, targeting truly disruptive, path-breaking explorations with less weightage given to short-term success or failure.

Although our B.Arch degree is designed in such a way so that it fulfils the educational component of professional certifying bodies, the upcoming architects should be prepared to realise their social responsibility. Hence, the program provides an insight into the practical realm through its field-based studio works as well as through study tours, regular field visits and periodic industry interaction.

This degree covers different areas with primary focus on spatial design, aesthetics and building engineering. Additional focus areas also cover fields such asarchitectural history, building sustainability, construction management, material management, advanced technology and evolving technology. Being a part of the prestigious IIT system, the department will work collectively with other engineering departments to reinforce the techno-architectural culture among the students.

On the regional level, the Department intends to specifically deal with endemic problems and introduce efficient solutions for the physical condition of the city of Varanasi and the Purvanchal region, which may be scalable and adaptable to other geographies, in India and abroad.

Department is spread in an area of 155.69 square meter. Currently, the department has 1 classroom.

Major areas of Research: Architecture, Panning & Design

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch.	14	00	00	00	00

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization
PROFESSORS			
1	Prof K.K. Pathak PhD, 50056	Feb 2000	Solid & structural mechanics
ASSISTANT PROFESSORS			
1	Dr. Aditya PratapSanyal PhD, 50240	28/06/2019	Construction management, Green Building climatology
Guest Faculty			
1	Renuka Singh, M. Arch		Urban Designing, Architecture
Visiting Faculty			
1 Prof S.Y. Kulkarni, M. Arch			Architectural Design

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Ravi Kumar Sonkar, B.Tech	Junior Assistant 50090	25/12/2020
2	Abhishek Tiwari, MBA	Data Entry Operator (Outsourcing)	05/08/2019

5. Research and Consultancy

Sponsored research projects: NIL

Industrial consultancy projects: NIL

6. New facilities added: NIL

7. Patents filed: NIL

8. Books, monographs authored/co-authored: NIL

9. Research Publication

1. A field Study of Urban Microclimate in Bhopal, International Journals of Architecture Engineering & construction, Vol-8, No-3, Sep 2019

Refereed National Journal: NIL

10. Number of Conference Papers: NIL

11. Honours and awards to faculty members: NIL

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: NIL

13. Names of students/scholars who got prizes and awards outsidethe Institute: NIL

14. Number of Students/Scholars who went for foreign Internship: NIL

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members: NIL

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: NIL

17. Number of Special lectures delivered by faculty members in other institutions: 2

18. Number of Visits abroad by faculty members for conference/symposia: NIL

19. Fellowships of academic and professional societies: NIL

20. Editorial boards of journals: NIL

21. Faculty members' participation with other universities under MoUs: NIL

22. 5 Articles from the Department with maximum no. of Citations in last 5 years: NIL

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof Tarun Kant, Ex Professor, IIT Bombay	17/02/2020	Special Lecture
2	Dr. Shiv Kumar Sinha Ex. GM NABARD	02/03/2020 & 03/03/2020	Special Lecture

24. Other activities

25. Any other Information:

Since the inception of the department in July 2019, the department has admitted 14 students in the B. Arch program. The department is headed by Prof. K K Pathak (Professor, Department of Civil Engineering) and supported by Dr.Aaditya Pratap Sanyal (Assistant Professor).With the support of other faculty members namely, Prof. S Y Kulkarni (Visiting Faculty), Ar. Renuka Singh (Guest Faculty); the department is imparting a solid foundation to the students of 1st Year with an initial focus on developing their artistic and aesthetic acumen.

7. Department of Ceramic Engineering

Year of Establishment: 1924

Head/Coordinator of the Department: Prof. V. K. Singh

1. Brief Introduction of the Department:

The founder of Banaras Hindu University, Pandit Mandan Mohan Malviyaji instituted courses in Glass and Ceramic Technology as early as 1924 with the noble objective of advancing glass and ceramic technology in India. The Department offers B. Tech, B. Tech - M. Tech. (Dual Degree), M. Tech. and Ph. D. degrees in Ceramic Engineering. M. Tech. and Ph. D. programs are interdisciplinary and are also open to those students of allied branches of Engineering and Sciences. The Department is pursuing active research in the emerging areas of glass, glass ceramics, bio-glass and bio-glass ceramics, refractories, ceramic white-wares, pottery & porcelain, cement, electrical and electronic ceramics.

The Department regularly works in collaboration with Academic and Research institutions, National Laboratories and various Ceramic industries through regular contacts, visits, seminars, symposia, workshops and conferences. The Department has also been rendering technical advice and consultancy to the industries under Industrial Consultancy and Testing Services of the Institute from time to time. The contribution of this very Department of Ceramic Engineering during past is unparallel to the entire industrial, research and development and educational areas in the country. For enhancing collaboration with Academic and Research Institutions globally, the Department has **MOU with University of Connecticut and Oklahoma USA,** to create research and testing facilities for industrial development established **IIT (BHU) – IRMA Centre of Excellence for Refractory** with participation of Industrial Organizations and to work for technology up-gradation and support for Small and Medium sized ceramic and glass industries created **Mahamana Glass and Ceramic Technology Skill Development Centre.**

The floor area of the department is ~ 5000 sq. meter. The department has 8 laboratories, 2 lecture theatres, and 2 class rooms.

Major areas of Research:

Glass and Glass Ceramics, Refractories, Electrical and Electronic Ceramics, Cement and Advanced Building Materials, Bio Ceramics, Ceramic Micronutrients, Energy Materials; Fuel cell, Solar cell, and Batteries, Ceramic Waste Management, Ultra High Temperature & Light Weight Ceramics

2. Academic Programmes offered and Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech	62	35	48	49	-
2.	Dual Degree	15	10	14	15	17
3.	M. Tech	12	12	-	-	-
4.	Ph. D (Under Institute Fellowship)	4	10	15	10	8
5.	Ph. D (Under Project Fellowship)	-	3	-	-	-
6.	Ph. D (Under Sponsored Category)	-	-	1	-	-

3. Faculty and their areas of specialisation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Vinay Kumar Singh, 17365	1994	Bio-Ceramics, Cements, Dental Materials, Glass, Refractories
2	Prof. Ram Pyare, 13694	1981	Glass Science & Technology, Ceramic Technical Analysis,Bio-ceramic

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
ASSOCIATE PROFESSORS			
1	Dr. Anil Kumar, 16730	1991	Glass Technology & Furnaces
2	Dr. Kalyani Mohanta, 18361	2003	Powder Processing, Fabrication of Advanced Ceramics, Composite Materials and Cermet
3	Dr. M. R. Majhi, 18295	2012	Refractory Technology, Bio Ceramics, Composite Material
ASSISTANT PROFESSORS			
1	Dr. P. K. Roy, 19780	2009	Magnetic & Ferroelectric Ceramics, Varistors, Size dependent properties of Nano Materials
2	Dr. Ashutosh Kumar Dubey, 50037	2012	Piezoelectric Biomaterials, Functionally graded materials, Nanoporous bioceramics
3	Dr. Akansha Dwivedi, 50039	2010	Electronic Ceramics & composites for energy storage, multifunctional oxide electronics, multilayer Capacitors and Actuators
4	Dr. Mohammad Imteyaz Ahmad, 50043	2009	Inorganic photovoltaic materials, Composites, Materials Processing
5	Dr. Preetam Singh, 50042	2010	Energy Materials, Rechargeable Battery, Fuel Cells
6	Dr. Santanu Das, 50055	2012	Synthesis and characterizations of various functional nanostructures, including, 2D graphene and transition metal di-chalcogenides (TMDC), CNT, ferrite-nanoparticles, quantum dots etc for applications in the field of transistors, hydrogen energy, light sensor diode, energy storage, sensors, energy generations, and other optoelectronic device applications.
Senior Scientific Officer			
1.	Dr. Sudama Singh, 18991	1992	Pollution Control and Refractory
2.	Dr. R. K. Chaturvedi, 18989	1991	Corrosion and Glass Nutrients
Institute Professors			
1.	Dr. Om Parkash	1977	Electroceramics

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Shri R. K. Sharma Intermediate	Senior Technical Superintendent Gr II, 16662	22.12.1989
2	Shri Bhagmal Singh Intermediate	Senior Technical Superintendent Gr II, 16655	12.01.1990
3	Shri Mansha Ram Intermediate	Senior Technical Superintendent 13712	28.05.1987
4	Shri Madan Kumar Intermediate	Senior Technical Superintendent 13710	22.02.1985
5	Shri Pankaj Kumar Singh Intermediate	Senior Technical Superintendent 18750	15.12.2008

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
6	Shri Subash Singh Intermediate	Technical Superintendent 13723	15.10.1998
7	Shri Barun Kumar Singh Intermediate	Junior Technical Superintendent 13722	15.10.1998
8	Shri Shiv Jatan Intermediate	Junior Technical Superintendent 14203	12.08.1991
9	Shri P. K. Bhaduri Intermediate	Senior Technician 16739	21.08.1982
10	Shri Gopal Yadav Intermediate	Junior Technical Superintendent 16213	20.04.1995
11	Shri Raj Kumar Mishra Intermediate	Senior Technician 18656	05.08.2008
12	Shri Ashish Tripathi Intermediate	Senior Technician 19607	21.07.2012
13	Shri Vinod Kumar High School	Junior Technical Superintendent 13707	16.05.1997
14	Shri Pawan Kumar, Post Graduation	Junior Superintendent 50165	08.08.2017
15	Shri Shailendra Kumar, Post Graduation	Junior Assistant 50093	08.05.2017

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
1	Metal nanostructure assisted plasmonic hot electron induced phase transformation in 2D-transition metal di-chalcogenides for hydrogen evolution reaction	2020-2023	Ministry of Human Resources and Development "STARS Project", Indian Institute of Science -Bangalore	~98.7 Lakhs.	Dr. Santanu Das
2	Combined effect of dynamic electrical stimulation and surface charge on cellular functionality of electrovector and piezoelectrically toughened bioceramics	2017-20	SERB, DST	~43.23 Lakh	Dr. Ashutosh Kumar Dubey
3	Novel Electrode Materials for Reversible Alkali-ion (Li+/Na+) capacitors and Pseudocapacitors	2018-2021	SERB	~46 lakh	Dr. Preetam Singh and Prof. Rajiv Prakash
4	Development of low cost sodium-ion battery: Fabrication and application of NASICON based electrodes	2018-2021	DST	~96 lakh	Prof. Rajiv Prakash and Dr.Preetam Singh
5	Development of Nanostructured Bi-functional oxide low cost electro-catalysts for Sustainable High Energy Density Metal-Air Battery for Electric vehicles	2019-20	SPARC	~40 lakh	Dr.Preetam Singh Dr. T. maiyalagan, ,Prof Jinwoo Lee

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
6	Seamless Synthesis of large-area 2D transition metal di-chalcogenide semiconductors and their applications in next-generation high-performance optoelectronic devices	December 2016-December 2019	SERB	49.8	Dr. Santanu Das
7	Development of a high throughput processing for CIGS PV absorber films by spray pyrolysis of pre-synthesised nanoparticle ink	September 2016-September 2019	DST-SERB	47 Lakh	Dr. Md. Imteyaz Ahmad
8	Development of rare earth free ceramic magnet with high energy and curie temperature for motor applications	July 2017 - July 2020	DST- Early Career Research Award Scheme	45.221	Dr. P. K. Roy
9	Development of Plant glasses as plant nutrients	October 2018-2021	DST-SERB	42.05 Lakh	Prof. Ram Pyare Dr. Preetam Singh Dr. R. K. Chaturvedi
10	Development of high dielectric constant and low loss tangent thin film CCTO capacitor by spin coating	2019-2020	AICTE (TEQIP)	10.30 LAKH	Dr. M. R. Majhi, Dr. Prakash Singh, Mr. Rajesh Suther
11.	Fabrication of an all-transparent flexible 2D-graphene based phototransistor device	August 2017-August 2019	DIC, Banaras Hindu University	4.2 Lakhs	Dr. Santanu Das
12.	Development of High Alumina (Al_2O_3) and doped High Alumina materials for Ceramic Cartridge Applications	April 2019 - January 2020	YANTRANSH AUTO PVT. LTD., Rajkot, Gujarat, India,	0.7 Lakhs	Dr. Santanu Das

6. New facilities added

Name	Value (INR)
Density Determination Kit	40,000
Digital Ball Mill	94,500
HYDRAULIC PRESS	99900
Hall Effect Appartus	163000
TEST SIEVES SHAKER With TEST SHIVES	99750
Refractory Brick Cutting Machine	60000
Vickers Hardness Tester	345000
Metallurgical Microscope	298725
Universal Testing Machine	614250
PERMEABILITY APPARATUS	250500
Horizontal Filter Press	125250
Four Point Probe Setup	149900
Balance	39500

Name	Value (INR)
Fume Hood	99999
pH Meter	19996
Magnetic Stirrer	99990
Oven	67600
Table Top Balance	17397

7. Patents filed

S. No.	Name of Faculty Member	Title of Patent
1	Dr. Santanu Das	Aluminum Based Metallic Glass Powder For Efficient Degradation Of Azo Dye And Other Toxic Organic Chemicals, (2020) (Us Patent # Us10363548b2) Patent Awarded On 20th February 2020.
2		A Two Dimensional Photosensitive Metal Oxide Semiconductor (Mos) Capacitor, Govt. Of India, Patent Application # 202011017140 (2020).
3		Synthesis Of Cuprous Oxide Nanoparticles From Waste Printed Circuit Boards (2019)
4		(Iii) Low-Cost Adhesive For The Metal-Ceramic Joints, (2019) (Patent Application No: 201911002765).
5		Magnesium Zinc Ferrite-Polyurethane Nanocomposite Based Sprayable Paint And Making A Coating Thereof As Broadband Microwave Absorber In Gigahertz Frequency Range(2019) (Patent Application No: 201911000437)
6		Preparation Of Graphene-Oxide Nanocomposites Based Sprayable Paint And Making Of A Large-Scale Coating With Superior Broadband Absorptivity In The Range Of Ghz Frequency, (2019) (Patent Application No: 201911008550).
7	Dr. Kalyani Mohanta	Dvelopment Of Porous Scaffold Using Waste Bone For Orthopedic Application, K. Mohanta, V. Pandey, A. Kumar, M K Yadav, Jyoti(Application No. 202011001700 ; Dated January 14, 2020)
8		"Construction Bricks Using Industrial Waste And A Method There Of " K. Mohanta, V. Pandey, A. Kumar (Application No. 201911036988; Dated September 13, 2019)
9		"Fabrication Of Highly Porous Light Weight Red Mud Ceramic Foam" K. Mohanta, A. Kumar, V. Pandey, (Application No. 201911038240; Dated September 23, 2019)
10		"High Porosity Light Weight Macro Porous Ceramic Foam And A Process There Of " K. Mohanta, V. Pandey, M.K. Yadav, A. Gupta, A. Kumar (Application No. 201911030657; Dated July 30, 2019)
11		"A Foaming Agent For Porous Ceramics And A Method Of Preparation There Of" K. Mohanta, V. Pandey, A. Kumar (Ref. No. 201911025592 Dated June 27,2019).
12	Dr. Pradip Kumar Roy	A waste derived nano- sol binder for castable refractory and a method of preparation thereof" (Indian Patent Application: TEMP/E-1/17141/2019-DEL [201911016335], Date: 24-04-2019)
13		A method of preparing benzaldehyde through catalytic oxidation" (Indian Patent Application: TEMP/E-1/5893/2020-DEL [202011005531], Date: 07-02-2020),

8. Books, monographs authored/co-authored

1. Ravikumar K, Ashutosh Kumar Dubey and B. Basu, New Generation Materials for Applications in Bone Tissue Engineering and Regenerative Medicine; in Tissue Engineering Strategies for Organ Regeneration; CRC Press/ Taylor & Francis, 2019 (In press).
2. Brij Bansh Nath Anchal, Preetam Singh, Ram Pyare, Fabrication of Nano-petals $Zn_{0.97}Cu_{0.03}O$ Thin Film and Application in Methane Sensing, Advances in VLSI, Communication, and Signal Processing (Springer, Singapore),427-33 (2020).

9. Research Publication

Manuscript Details

1. P. Kameswara Rao, b, Premanshu Jana, Md. Imteyaz Ahmad , P. K. Roy, Synthesis and Characterization of Zirconia Toughened Alumina Ceramics Prepared by Co-precipitation Method, Ceram. Int. 45 (2019) 16054-16061. (https://doi.org/10.1016/j.ceramint.2019.05.121, Published in September 2019)
2. "Room temperature electrical properties and excitation performance of Al2O3 doped fused silica ceramics", *Materials Research Express,* Hajra, Sugato, Sahu, Manisha, Purohit, Varsa; Mohanta, K.,Panigrahi, Basanta K, Deepti, P (Accepted for publication December 2019)
3. "Studies of structural, dielectric and impedance spectroscopy of fused silica ceramics fabricated through colloidal processing" *Applied Physics **A*** 125 :369 (2019) 368-375 S. Hazra, K. Mohanta, M.Sahu, V. Purohit, R.N.P. Choudhury.
4. "Synthesis of graphene oxide and green properties of dry pressed alumina compacts with small addition of graphene oxide/graphite" *Australian Ceramics Society,* Vaibhav Pandey, Jyoti, Mayank Kumar Yadav, Ajay Kumar (Accepted May 2020).
5. 45, [14], 16893-16903 (2019).
6. A. Singh, K. Reshma and Ashutosh Kumar Dubey, Combined effect of surface polarization and ZnO addition on antibacterial and cellular response of Hydroxyapatite-ZnO composites, Materials Science and Engineering: C, 107, 110363,2020.
7. Abhinav Saxena, Maneesha Pandey and Ashutosh Kumar Dubey, Induced Electroactive Response of Hydroxyapatite: A Review, J. Ind. Inst. Sci., *2019* 99, 339-359(2019) (Invited).
8. Akanksha Yadav, Ram Pyare, John B. Goodenough, Preetam Singh, KTa1–x–yTixGeyO3–δ: A High κ Relaxor Dielectric and Superior Oxide-Ion Electrolyte for IT-SOFC, ACS Applied Energy Materials 3, 3205-3211 (2020).
9. Akher Ali, Bhisham Narayan Singh, Sumit Kumar Hira, S.P.Singh, Ram Pyare, ZnO modified 1393 bioactive scaffolds with enhanced cytocompatibility and mechanical performance, Ceramics Internationals, 46(5) , 6703-6713(2020).
10. Amrendra Rai, Pooja Rai, Vijay Kumar, Naresh Kumar Singh,Vinay Kumar Singh, Effect of Sintering Temperature on the Physico-Mechanical Behavior of SiC Reinforced Zinc-Magnesium Based Composite, Metals and MaterialsInternational Accepted in 2020
11. Amrendra Rai,Pooja Rai,Vijay Kumar,Naresh Kumar Singh,Vinay Kumar Singh, Study of mechanical, electrochemical, cellular and antibacterial response of Zn2Mg6SiC biodegradable implant, Ceramics International, 46, [11], 18063-18070 (2020).
12. Arepalli, Sampath Kumar, Himanshu Tripathi, Partha Pratim Manna, Paliwal Pankaj, Sairam Krishnamurthy, Shashikant CU Patne, Ram Pyare, and S. P. Singh. "Enhanced in vivo biocompatibility of magnesia-contained bioactive glasses." Journal of the Australian Ceramic Society 55(2); 337-342 (2019).
13. Arepalli, Sampath Kumar, Himanshu Tripathi, Partha Pratim Manna, Paliwal Pankaj, Sairam Krishnamurthy, Shashikant CU Patne, Ram Pyare, and S. P. Singh. "Preparation and in vitro investigation on bioactivity of magnesia-contained bioactive glasses." Journal of the Australian Ceramic Society 55(1), 145-155 (2019).
14. Arun Kumar, Preetam Singh, Ram Janay Choudhary, Dhananjai Pandey, Effect of Mn-doping on the low temperature magnetic phase transitions of BiFeO3, Journal of Alloys and Compounds, 825, 154148 (2020).
15. Ashutosh Kumar Dubey, R. Kumar and B. Basu, Piezobiomaterials as New Generation Materials for Orthopaedic Applications, Trans Indian Inst Met, 72(8), 1999-2010, 2019 (Invited).
16. Banerjee, A,; Chattyopadhyay, S.; Kundu, A.; Sharma, R. K.; Maiti, P.; Das, S.; Vertically aligned zinc oxide nanosheet for high-performance photocatalysis of water pollutants Ceramic International (2019) 45 (14) 16821-16828.
17. Bhattacharyya, R.; Prakash, O.; Roy, S.; Singh, A. P.; Bhattacharyya, T. K.; Maiti, P.; Bhattacharyya, S.; and Das, S.; Graphene oxide-ferrite hybrid framework as enhanced broadband absorption in gigahertz frequencies, (2019) Nature Scientific Reports, (2019) 9, 12111.

18 Bose, A.; Ray, S.; Singh, V.K.; Banerjee, A.; Nayak, C.; Singha, A.; Bhattacharyya, A.; Chattopadhyay, D.; Das, S.; and Dasgupta; A. K.; Differential Graphene functions on two Photosynthetic Microbes; Advances in Natural Sciences: Nanoscience and Nanotechnology (2020) 11(1) 015004 (10pp).

19 D Shukla, M Das, D Kasade, M Pandey, Ashutosh Kumar Dubey, SK Yadav and AS Parmar, Sandalwood-derived carbon quantum dots as bioimaging tools to investigate the toxicological effects of malachite green in model organisms, *Chemosphere* 248, 125998, 2020.

20 Daripa, S.; Khawas, K.; Das, S.; Kuila, B. K.; Aligned proton conducting graphene sheets via block copolymer supramolecular assembly and their application for highly transparent moisture sensitive conductive coating, ChemistrySelect (2019) 4 (25) 7523-7531.

21 Daripa, S.; Khawas, K.; Sharma, A.; Kumar, A.; Pal, B. N.; Das, S.; Jit, S.; Kuila, B. K.; Simple and direct synthetic route to a rod-coil conjugated block copolymer either from rod or coil block using a single bi-functional initiator, solvent dependent self-assembly and field effect mobility study, ACS Applied Polymer Materials (2020) 2, 1283-1293.

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25 Deepshikha Shekhawat, P. K. Roy, "Impact of yttrium on the physical, electro-magnetic and dielectric properties of auto-combustion synthesized nanocrystalline strontium hexaferrite" Journal of Materials Science: Materials in Electronics, 30(2) (2019) 1187-1198.

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39 Neeraj Pandey, I Chakrabarty, Preetam Singh, MR Majhi, Effect of sintering temperature on microstructure and flexural strength of alumina borate whiskers, *Materials Research Express*, 6(10), 105210 (2019).

40 Neeraj Singh and Preetam Singh, Cu(I) substituted wurtzite ZnO: a novel room temperature lead free ferroelectric and high-κ giant dielectric, RSC Advances 10, 11382-11392(2020).

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44 Pooja Rai, R. K. Chaturvedi, Vijay Kumar,Vinay Kumar Singh, To develop biodegradable Mg based metal ceramic composites as bone implant material, Bulletin of Materials Science Accepted in Feb. 2020.

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52 SK S Hossain, P. K. Roy, " Waste rice husk ash derived sol: A potential binder in high alumina refractory castables as a replacement of hydraulic binder", Journal of Alloys and Compounds 817 (2020) 152806.

53 SK S Hossain, P. K. Roy, "Fabrication of sustainable ceramic board using solid-wastes for construction purpose" Construction & Building Materials 222 (2019) 26–40.

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57 SK S. Hossain , Vikash Ranjan, Ram Pyare, P.K. Roy, Study the effect of physico-mechanical characteristics of ceramic tiles after addition of river silts and wollastonite derived from wastes, Construction and Building Materials 209; 315–325 (2019).

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60 Sushma Yadav, Preetam Singh, Ram Pyare, Synthesis, characterization, mechanical and biological properties of biocomposite based on zirconia containing 1393 bioactive glass with hydroxyapatite, Ceramics International, 46(8), 10442-10451 (2020).,

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62 Vipul Saxena, Vijay Kumar, Amrendra Rai, Rishikesh Yadav, Uttam Gupta, Vinay Kumar, Singh and Partha, Pratim Manna, Optimization of Bio-mechanical properties by reinforcing 1393 B3 bioactive glass into the matrix of Ti-8Si-2Mn alloy, Materials Research Express6, [07], 75401-75413 (2019).

63 Vipul Saxena, Vijay Kumar, Angaraj Singh, Vinay Kumar Singh, Effect of reinforcing S53P4 bioactive glass on physio-mechanical and biological properties of Ti –8Nb–2Fe alloy, Ceramics International, 45, [17], 21810-21818 (2019).

10. Number of Conference Papers: 4

11. Honours and awards to faculty members: Nil

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 9

13. Names of students/scholars who got prizes and awards outsidethe Institute: Nil

14. Number of Students/Scholars who went for foreign Internship: 1

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

S. No.	Cordinator	Title	Period
1	Dr. Pradip Kumar Roy	**Recent Advances in Materials Processing and Materials Tribology**	06th to 10th January 2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 8

17. Number of Special lectures delivered by faculty members in other institutions: 16

18. Number of Visits abroad by faculty members for conference/symposia: 3

19. Fellowships of academic and professional societies: Nil

20. Editorial boards of journals: Nil

21. Faculty members' participation with other universities under MoUs: Nil

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

S.N.	Authors	Year	Title	Journal	Impact Factor	Citation
1.	Konda Shiva, Preetam Singh, Weidong Zhou and John B. Goodenough	2016	$NaFe_2PO_4(SO_4)_2$: a potential cathode for a Na-ion battery	*Energy Environ. Sci.*, 2016, **9**, 3103-3106	33.24	37
2.	Sampath Kumar Arepalli,Himanshu Tripathi,Sumit Kumar Hira,Partha Pratim Manna, **Ram**	2016	Enhanced bioactivity, biocompatibility and mechanical behavior of strontium substituted bioactive glasses	Materials Science and Engineering C, http://dx.doi.org/10.1016/j.msec.2016.06.070	4.959	25
3.	V. S. Yadav, S. K. Ghosh, S. Bhattacharyya, and S. Das,	2018	Graphene-based metasurface for a tunable broadband terahertz cross-polarization converter over a wide angle of incidence	Applied Optics 57 (29), 8720-8726.	1.791	19
4	Pulkit Garg, Anbesh Jamwal, Devendra Kumar, Kishor Kumar Sadasivuni, Chaudhery Mustansar Hussain, Pallav Gupta	2019	Advance Research Progresses in Aluminium Matrix Composites: Manufacturing & Applications	J. Mater Res and Tech. 8 (5) 4924-4939 ; doi.org/10.1016/j.jmrt.2019.06.028	3.327	28
5	S.K.S. Hossain, Lakshya Mathur, Preetam Singh & Manas Ranjan Majhi	2017	Preparation of forsterite refractory using highly abundant amorphous rice husk silica for thermal insulation	Journal of Asian Ceramic Societies, 5:2, 82-87, DOI: 10.1016/j.jascer.2017.01.001	2.6	14

23. Distinguished Visitors

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof. Raj Narayan Singh	Jan – April 2019	Visiting Faculty

24. Other activities

Foreign Faculty visiting Department

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Raj Narayan Singh	Visiting Faculty	Jan – April 2019

8. Department of Chemical Engineering & Technology

Year of Establishment: 1921

Head/Coordinator of the Department: Prof. Vijay Laxmi Yadav w.e.f. 01.01.2020

1. Introduction of the Department/School:

Department of Industrial Chemistry was established in 1921 at Banaras Hindu University. Subsequently, it was renamed as the Department of Chemical Engineering and Technology in 1956. The Department has established several benchmarks of achievements in teaching and research. It modernizes its programmes to impart education in upcoming areas of chemical engineering.

The Department presently offers courses leading to B.Tech., M.Tech. and Ph. D. degrees in Chemical Engineering. The Department also offers courses to IIT(BHU) and Banaras Hindu University. In the new undergraduate curriculum, the department has been entrusted to offer a number of institute level courses either independently or jointly with outer departments. The research facilities of the department are utilized not only by other departments of the institute and BHU but also by other teaching institutions and research laboratories.

The floor area of the department is 4,002 sq. meter. The department has 27 laboratories, one workshop, 7 lecture theatres, one 250 seat auditorium, one library having over 11,000 volumes of text and reference books and a text book bank and high speed internet facility. The Department also has a seminar room and a few instruction rooms and some rooms for faculty members.

The University Grants Commission, New Delhi has granted the Department the Status of Centre of Advanced Study in Chemical Engineering.

Major areas of Research:

Currently major areas of research in the department are waste water treatment, separation processes, catalysis, biotechnology, fuel cell, multiphase flow, flow measurement technique, membrane reactor and modelling and simulation. The department has identified three major thrust areas for future research as energy, environment and nanotechnology with emphasis on developing affordable solutions for the problems in the country such as drinking water, energy (harvesting, production and storage) and healthcare.

2. Academic Programmes offered and Students on Roll

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	156	129	117	105	Nil
3.	M. Tech	50	45	Nil	Nil	Nil
4.	Ph.D (Under Institute Fellowship)	15	11	13	10	28
5.	Ph.D (Under Project Fellowship)	01	01	Nil	Nil	Nil

3. Faculty and their areas of specialisation

Sl.No.	Name, Qualifications, Employee No.	Date of award of Ph.D. Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1.	Dr. Ashok Kumar Verma Ph.D. 13744	1985	Chemical Engineering, Mass Transfer, Modelling And Simulation
2.	Dr. A.S.K. Sinha Ph.D. 13741	1990	Reaction Engineering, Photocatalysis., Electrocatalysts, Process Development, Hydrogen Energy, Nanotechnology

Sl.No.	Name, Qualifications, Employee No.	Date of award of Ph.D. Degree	Major Areas of Specialization (Max. 3 Areas)
3.	Dr. Birendra Nath Rai Ph.D. 13746	1991	Bio-Remediation, Water Pollution Control, Air Pollution Control And Environmental Biotechnology
4.	Dr. Pradeep Kumar Mishra Ph.D. 13747	1995	Bioenergy, Wastewater Treatment and Biocompatible Materials
5.	Dr. Pradeep Ahuja Ph.D. 13748	1996	Modeling and Simulation, Thermodynamics and Kinetics
6.	Dr. Manoj Kumar Mondal Ph.D. 13749	2004	Environmental Chemical Engineering and Industrial Pollution Control, Separation Processes, Biomass Waste to Energy and Chemicals
7.	Dr. Ram Sharan Singh Ph.D. 16729	2007	Environmental Biotechnology, Energy, Process Control
8.	Dr. Vijay Laxmi Yadav Ph.D. 13745	2002	Polymer Composites, Wastewater Treatment, Separation Processes, Reaction Engineering
9.	Dr. Satya Vir Singh Ph.D. 18210	2006	Fruit and vegetable storage and processing, Adsorption
ASSOCIATE PROFESSORS			
10.	Dr. Hiralal Pramanik Ph.D. 17500	2008	Fuel Cell Technology, Energy Engineering, Pyrolysis of Plastics
11.	Dr. Bhawna Verma Ph.D. 18152	2013	Heat Transfer in narrow channels, Biodiesel; Carbon Materials/ Nanocomposites Materials for Enhanced Capacitance
12.	Dr. Pradeep Kumar Ph.D. 18479	2007	Catalytic Thermal Treatment (Thermolysis), Coagulation- Flocculation, Adsorption, Fenton Oxidation
13.	Dr. Rajesh Kumar Upadhyay Ph.D. 50235	2010	Multiphase Flow, Measurement Technique, CFD, Membrane Reactor, Catalysis
ASSISTANT PROFESSORS			
14.	Mr. Aanad Chandra Mohan 13742		Process Control, Polymer Technology
15.	Mr. Durga Prasad A. 18151		Process modeling and simulation, Optimization techniques, Process dynamics and control, Process Equipment design.
16	Dr. Jyoti Prasad Chakraborty Ph.D. 19844	2011	Torrefaction; pyrolysis; kinetic modelling and optimization
17.	Dr. Sweta Ph.D. 19770	2012	Environmental Catalysis, Reaction Kinetics, Polymer Blends, Diesel Exhaust Treatment
18.	Dr. Ravi Prakash Jaiswal Ph.D. 50025	2008	Interfacial Adhesion, Solar Energy, Wastewater Treatment

Sl.No.	Name, Qualifications, Employee No.	Date of award of Ph.D. Degree	Major Areas of Specialization (Max. 3 Areas)
19.	Dr. Ankur Verma Ph.D. 50026	2011	Soft matter, interfacial science, Nanotechnology
20.	Dr. Manoj Kumar Ph.D. 50027	2009	Optical material design, Bio/chemi-sensing and interfacial science
21.	Dr. Vijay Shinde Ph.D. 50171	2013	Solid state and material chemistry, Heterogeneous catalysis for energy application, sustainability and green chemistry
22.	Debdip Bhandary Ph.D. 50229	2016	Chemical Engineering, Interfacial Sciences, Molecular Simulations
DST INSPIRE Faculty			
23.	Dr. Shikha Singh	2018	Nanomaterials, Sensor, Catalysis, Energy
SERB Research Scientist			
24.	Dr. Manish Srivastava	2011	Nanomaterials synthesis and their applications for energy harvesting, biosensors

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1.	Sri Arvind Kumar M.Sc. (Information Technology)	Sr. Technical Superintendent 14069	22.03.1997
2.	Sri Umesh Pratap Singh Intermediate	Technical Superintendent 17688	23.01.2006
3.	Sri Ram Chandra Sachiv Intermediate, I.T.I.	Technical Superintendent 14123	28.10.1985
4.	Sri Meharman Thapa Intermediate	Technical Superintendent 14126	01.06.1982
5.	Sri Birendra Yadav Intermediate	Technical Superintendent 14142	16.06.1988
6.	Sri Rakesh Chandra Singh B.Sc., Diploma	Technical Superintendent 18634	06.08.2008
7.	Sri Arjun Prasad Gond M.A.	Technical Superintendent 14144	05.04.1990
8.	Sri Sudhir Kumar Intermediate	Technical Superintendent 14145	21.12.1990
9.	Sri Chand Lal Intermediate, I.T.I	Jr. Technical Superintendent 14140	25.06.1987
10.	Sri Om Prakash Patel Intermediate	Jr. Technical Superintendent 14148	28.09.1993
11.	Sri Surendra Kumar Verma Intermediate	Jr. Technical Superintendent 14147	02.06.1994
12.	Shri. Murli Dhar Mishra B.Sc., Diploma in Electrical Engineering	Technical Superintendent 18024	15.01.2007

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
13.	Sri Sudhir Kumar B.Sc	Jr. Technical Superintendent 18094	20.02.2007
14.	Sri Arun Kumar Singh MCA	Jr. Superintendent 50155	26.07.2017
15.	Sri Rajesh Kumar I.T.I., Diploma	Senior Technician 18622	07.08.2008
16.	Sri Vinay Kumar I.Sc., Diploma in Medical Laboratory Technology	Senior Technician 18625	05.08.2008
17.	Sri Ajay Kumar Pandey B.A., Desktop Publishing	Senior Technician 18623	05.08.2008
18.	Sri Shailendra Kumar Upadhyay Intermediate	Senior Technician 18629	05.08.2008
19.	Sri Raj Kumar B.Sc., Post Graduate Diploma in Computer Applications	Senior Technician 18626	05.08.2008
20.	Sri Ankit Kumar M.Sc. (Information Technology), Advanced Certified Hardware and Network Professional	Senior Technician 18627	05.08.2008
21.	Sri Dhirendra Kumar Pandey B.A., I.T.I., Diploma	Senior Technician 19272	10.02.2011
22.	Sri Anand Prakash Upadhyay L.L.B	Jr. Technician 11579	25.01.1997
23.	Sri Lal Bahadur Ram B.Sc.	Jr. Technician 19602	11.07.2012
24.	Shir Zishan Ahmed B.Sc.	Jr. Assistant 50104	09.05.2017

5. Research and Consultancy

Sponsored research projects

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Coordinator
1.	RKVY-RAFTAAR scheme under "Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation" (RKVY-RAFTAAR)	2018-19 to 2020-21	Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Ministry of Agriculture & Farmers Welfare	233.00	Prof. P.K. Mishra
2.	Design and Development of a Membrane Reformer Prototype for Production of Ultra-Pure Hydrogen from Methanol for Fuel Cell Based Vehicle and Power Generators	2017-2020	Department of Science & Technology	114.00	Dr. R.K. Upadhyay
3.	SPARC Project	2019-2021	MHRD	72.00	Prof. R.S. Singh

Sl. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Coordinator
4.	Detailed Study on the Effect of Mining as well as Thermal Power Stations on Natural Water Bodies in Singrauli Region and Recommendation Thereof, 03 Years [2020-2023], Sponsor agency-NCL, Singrauli	01.02.2020 to continue	Northern Coalfields Limited	59.00	Prof. P.K. Mishra
5.	Fabrication of Low-cost High throughput Flow Cytometer	2016-2020	SERB, Govt. of India	52.00	Dr. Ankur Verma
6.	Direct Cooling of the Silicon Photovoltaic Module Enabled by Modification of the Backside EVA-Layer	2019-2022	SERB, Govt. of India	41.50	Dr. R.P. Jaiswal
7.	A Stack Development of Unitized Regenerative Proton Exchange Membrane Fuel Cell for Large Scale Production of Ultra-Pure Hydrogen Fuel, Oxygen Using Solar Energy and Uninterrupted Power	2019-2022	SERB, Govt. of India	37.615	Dr. Hiralal Pramanik
8.	Development of Materials Applicable for Artificial photosynthesis or Sustainable Production of Energy	2018-2023	Department of Science & Technology	35.00	Dr. Shikha Singh
9.	Investigation of Flow Behaviour of Pulsed Sieve Plate Column through Radiotracer Based Techniques	2018-2021	BRNS	33.755	Dr. R.K. Upadhyay
10.	Controlled Synthesis of MoO3 Nanoparticles inside Mesoporous Material for Oxidative Dehydrogenation of Organic Molecules with CO_2	2019-2021	SERB, Govt. of India	31.25	Dr. Vijay Shinde
11.	'A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship' (ASPIRE)	Financial Year 2019-20 to 2020-21	Ministry of Micro Small & Medium Enterprises (MoMSME) Government of India	30.00	Prof. P.K. Mishra
12.	Regional characterization of atmospheric aerosols at Varanasi region	2020-2023	VSSC, ISRO	30.00	Prof. R.S. Singh
13.	Development of graphene supported heteroatom doped metal sulfide hybrids nanostructures for hydrogen evolution reaction: Application in fuel cell	2 years	Science and Engineering Research Board	16.00	Dr. Manish Srivastava
14.	Multicomponent acidic gas absorption from coal fired thermal power plant stack gases	2019-Continue	AICTE, Government of India, New Delhi	15.45	Prof. M.K. Mondal (Co-PI)
15.	Modelling and simulation of ultra-high temperature coating of pyrolysied on substrate using CVD/CVI process.	2019-2021	DMSRDE, Kanpur	09.81	Dr. Vijay Shinde

Industrial consultancy projects

Sl. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1.	Monthly monitoring of recipient drains of Grossly Polluting Industries/industrial clusters	01.12.2019-28.09.2020	CPCB	135.64

Sl. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
2.	CPCB Textile industries	01.04.2019 onoing	CPCB	100.10

6. New facilities added

Sl. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1.	Created a space for laboratory and workshop for RKVY RAFTAR Scheme of Ministry of Agriculture and Farmers Welfare having relevant infrastructure & Equipments	100.00
2.	Developed Microbial Characterization Facilities in the Department	100.00
3.	PAAR High pressure rector	25.00
4.	Infrastructure created for research on Unitized regenerative fuel cell for the production of ultrapure hydrogen, oxygen and electricity funded by SERB. Equipment procured: Autoclave reactor, digital mass flow controller, Fuel cell stack hardwares with temperature controller and humidifier, DC electronic load.	20.00
5.	Membrane Reformer test rig	20.00
6.	Procured New Equipments for Process Dynamics and Control Lab	7.00
7.	GPU facility for molecular simulations	6.92
8.	Keithley I-V Characterization Unit for Solar Device	6.00
9.	Bacterial Growth and Isolation Facility	4.00
10.	Linux Lab for Molecular Simulations	2.50
11.	Trinocular stereozoom microscope	1.95
12.	Vacuum Rotatory Evaporator	1.75
13.	Physical Vapor Deposition unit	15
14.	Radoactive particle tracking technique	20

7. Patents filed

Sl. No.	Name of Faculty Member	Title of Patent
1.	Dr. J.P. Chakraborty	Reorganization of molecules in disposed absorbent materials into energy products using nanocatalyst

8. Books, monographs authored/co-authored

Sl. No.	Name of Author/Co- Author	Title	Publisher
1.	Manish Srivastava, Neha Srivastava, P.K. Mishra and V.K. Gupta	Nanomaterials in Biofuels Research	Springer Nature
2.	Vivek Kumar Pandey and P.K. Mishra	Nanoconjugates for detection of waterborne bacterial pathogens (Book: Waterborne Pathogens Detection and Treatment)	Elsevier
3.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Substrate analysis for effective biofuels production	Springer Nature

Sl. No.	Name of Author/Co- Author	Title	Publisher
4.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Biofuels Production Technologies: Critical Analysis for Sustainability	Springer Nature
5.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Substrate analysis for effective biofuels production,	Springer Nature
6.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Nanomaterials in Biofuels Research,	Springer Nature
7.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Biofuels Production Technologies	Springer Nature
8.	Neha Srivastava, Manish Srivastava, P.K. Mishra and V.K. Gupta	Green synthesis of nanomaterial for bioenergy application	Wiley
9.	Neha Srivastava, Manish Srivastava and P.K. Mishra	From Cellulose to Cellulase: Strategies to Improve Industrial Production	Elsevier
10.	Pradeep Ahuja	Introduction to Numerical Methods in Chemical Engineering, Second Edition	PHI Learning
11.	G.K. Gupta, M.K. Mondal	Bio-energy generation from agricultural waste and enrichment of end products (Book: Refining Biomass Residues for Sustainable Energy and Bioproducts)	Elsevier
12.	M.C. Kannaujiya, Tamal Mandal, D.D. Mandal and M.K. Mondal	Treatment of leather industry wastewater and recovery of valuable substances to solve waste management problem in Environment (Book: Environmental Contaminants: Ecological Implications and Management)	Springer Nature
13.	Shobhit Dixit and V.L. Yadav	Handbook of Nanomaterials and Nanocomposites for Energy and Environmental Applications	Springer
14.	Pradeep Kumar and Deepak Yadav	Phytoremediation of Hazardous Radioactive Waste (Book: Assessment and Management of Radioactive and electronic wastes)	IntechOpen
15.	Pradeep Kumar and Deepak Yadav	Bio-Catalyst Synthesis by Green Route: Mechanism and Application (Book: Innovative Bio-Based Technologies for Environmental Remediation)	
16.	Richa Sharma, Amit Kumar and R.K. Upadhyay	Book Chapter on "Design of a Membrane Reactor for On-Site High Purity Hydrogen Production" in Dynamics and Control of Energy Systems, Authors: Editors: Achintya Mukhopadhyay, Dipankar Narayan Basu, Sirshendu Mondal, Swarnendu Sen,	Springer
17.	Debabrata Mishra, Manish Srivastava	Role of low dimensional nanomaterials for the electro/ photocatalytic degradation of organic pollutants (chapter), in book Nano-Materials as Photocatalysts for Degradation of Environmental Pollutants: Challenges And Possibilities	Elsevier

9. Research Publication

Manuscript Details

1. Agarwal N. and Verma A.K. (2019) Measurement of Bubble Size, Gas holdup and Interfacial Area in Bubble Columns using Image Processing Techniques. International Journal of Innovative Technology and Exploring Engineering. 9(1): 2278-3075.
2. Agarwal N. and Verma A.K. (2019) Measurement of Thickness of Foam layer and Entrance Region in a Bubble Column using Image Processing Technique. International Journal of Innovative Technology and Exploring Engineering. 8(10): 3776-3781.
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2. Gaurh P. and Pramanik H. (2020) In-situ production of valuable aromatics via pyrolysis of hazardous waste polypropylene using commercial catalyst ZSM-5. Indian J Chemical Technology.
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10. Number of Conference Papers: 20

11. Honours and awards to faculty members

Sl. No.	Name of Faculty Member	Details of Award
1.	Prof. P.K. Mishra	Member, International Advisory Committee, CHEM-CONFLUX, organized by MNNIT, Allahabad, February, 2020
2.	Prof. P.K. Mishra	Member, National Organizing Committee, IANN-2019, organized by MNNIT Allahabad, November, 2019
3.	Prof. P.K. Mishra	Appreciation Certificate by Cisco & Nasscom Foundation for contribution to Cisco ThingQbator Program, October, 2019
4.	Prof. P.K. Mishra	Member, Board of Studies, Chemical Engineering, MMTU, Gorakhpur, 19-20 onwards
5.	Prof. M.K. Mondal	Member, Joint Committee in Honorable NGT matter for environmental compensation, CPCB
6.	Prof. M.K. Mondal	Member, Advisory Committee of UP state Disaster Management, 2019
7.	Prof. M.K. Mondal	Member, Board of Governors. Rajkiya Engineering College, Azamgarh 2019
8.	Prof. M.K. Mondal	Member, Board of Studies. Department of Applied Sciences, Faculty of Engineering & Technology, Rama University, Kanpur 2019
9.	Prof. M.K. Mondal	Review-team member, SPARC, Ministry of Human Resource Development, Government of India 2019
10.	Prof. M.K. Mondal	Member Scientific Advisory Board, 14th Conference on Sustainable Development of Energy, Water and Environment Systems (SDEWES), October 1-6, 2019, Dubrovnik, Croatia
11.	Prof. R.S. Singh	Top cited paper award in Bioresource Technology by Elsevier, 2019
12.	Dr. Hiralal Pramanik	"Best Poster Presentation Young Scientist Award" in the International conference ICOMS-2019 Jointly Organized IIT-BHU and NCL at Singrauli, MP on dated 13-14th December 2019
13.	Dr. Hiralal Pramanik	Invited me as an External Examiner at Indian Institute of Technology(ISM) for M.Tech. evaluation and Viva voce examination on 13.07.2019.
14.	Dr. Hiralal Pramanik	Member of Scientific Advisory Board (SAB) of SDEWES 2019 Dubrovnik, Croatia, October 1-6, 2019
15.	Dr. Hiralal Pramanik	Member of Scientific Advisory Board (SAB) of SDEWES 2020, Buneos Aires, Argentina, February 9-12, 2020
16.	Dr. Hiralal Pramanik	Mentor of Battery operated Sportscar racing team IIT-BHU "Averera".
17.	Dr. R.K. Upadhyay	Mokshagundam Vishweshwarayya Engineers Award, 2019
18.	Dr. Manish Srivastava	SERB-Research Scientist (Science and Engineering Research Board)

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 18

13. Names of students/scholars who got prizes and awards outside the Institute

Sl. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1.	Pratiksha Pandey	18045067	Best Oral Presentation	17.10.2019 to 18.10.2019 Ankleshwar, Gujarat	SChemcon 2019
2.	Ravi Kumar Sonwani	16041006	Best oral presentation award in an international conference (CHEM-CONFLUX 2020)	14.02.2020 to 16.02.2020 MNNIT, Allahabad, UP	CHEM-CONFLUX 2020

14. Number of Students/Scholars who went for foreign Internship: 5

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

Sl. No.	Coordinator	Title	Period
1.	Porf. P.K. Mishra	Three weeks LEAP of IIT (BHU) Varanasi in association with Cambridge University, UK	December 2019
2.	Porf. P.K. Mishra	Workshop for selected startups under RKVY RAFTAR Scheme By: Dr. Vijay Chauthaiwalae, Member, ATAL Innovation Mission (Niti Ayog), Govt. of India	04.09.2019
3.	Porf. P.K. Mishra	Startup 101 series - Workshop for IIT Students on Go to Market Strategy by Mr. Avelo Roy, a Serial Tech Entrepreneur, Investor & TV Host	07.09.2019
4.	Porf. P.K. Mishra	Trash Cash- An IOT based Waste Management Workshop for Startups	10.02.2019
5.	Porf. P.K. Mishra	Workshop on Entrepreneurial Eco-System in Education System, by Pdmabhushan Sri Ajay Chowdhary, Co-Founder, HCL	14.02.2020
6.	Porf. P.K. Mishra	E-Summit, IIT BHU Varanasi	31.01.2020 to 02.02.2020
7.	Porf. P.K. Mishra	IOT Workshop of Cisco & NASSCOM at IIT BHU, Speakers: Dominic Scott, VP, Govt Affairs & Harish Krishnan, MD, Cisco India	07.02.2020
8.	Porf. P.K. Mishra	Ideation workshop hosted by Prashant and Lyle Rodericks	30.09.2019 to 01.10.2019
9.	Porf. P.K. Mishra	1st Agri-preneurship Training Workshop	25.08.2019 to 04.10.2019
10.	Porf. P.K. Mishra	Workshop on R&D Opportunities In Biotechnology by Ms Andrilina Dasgupta, Business Development Head, Novaenzyme	23.08.2019
11.	Porf. P.K. Mishra	Human Library	17.08.2019
12.	Porf. P.K. Mishra	Workshop on "The Balance of possibilities and probabilities"	09.11.2019
13.	Porf. P.K. Mishra	II Agripreneurship Training Program (Part I) II Agripreneurship Training Program (Part II)	16.12.2019 to 21.12.2019 20.01.2020 to 25.01.2020
14.	Porf. P.K. Mishra	ICOMS-19, Jointly organized by NCL, Singrauli & IIT BHU, Varanasi	13.12.2019 to 14.12.2019
15.	Porf. P.K. Mishra	24 Hours Hackathon "Because, Entrepreneurs are never at rest", at Cisco thingQbator, MCIIE, IIT BHU.	31.12.2019
16.	Dr. Hiralal Pramanik	Scientific Social Responsibility Program (SSR) -2020	29.02.2020 to 29.02.2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 11

17. Number of Special lectures delivered by faculty members in other institutions: 18

18. Number of Visits abroad by faculty members for conference/symposia: 1

19. Fellowships of academic and professional societies

Sl. No.	Name of Faculty Member	Details of Fellowship
1.	Dr. Shikha Singh (DST Inspire Faculty)	DST Inspire Faculty Fellowship [DST/INSPIRE/04/2018/002018]

20. Editorial boards of journals

Sl. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1.	Prof. P.K. Mishra	Edited Special Issue as "Guest Editor" on "Biology, Biotechnology and Bioprospecting of Microbial Biomolecules"	Journal Biomolecules MDPI
2.	Prof. P.K. Mishra	Clean Energy Production Technologies, Series editors: Neha Srivastava & P.K. Mishra [October 2019-running].	Springer Nature
3.	Dr. J.P. Chakraborty	Associate editor	Petroleum and Petrochemical Engineering Journal

21. Faculty members' participation with other universities under MoUs

1. The MoU between Indian Institute of Technology (BHU) Varanasi, India and Bioenegy Development Board, Lucknow, UP, India
2. The MoU between Indian Institute of Technology (BHU) Varanasi, India and NCL, Singrauli, India
3. The MoU between Indian Institute of Technology (BHU) Varanasi, India and Blue Ocean Renewable Energy Foundation, India
4. MoU between Institute of Agricultural Sciences (IAS), BHU and Malaviya Centre for Innovation, Incubation & Entrepreneurship
5. MoU between Rajasthan Technical University and Malaviya Centre for Innovation, Incubation & Entrepreneurship
6. MoU between GLA University, Mathura and Malaviya Centre for Innovation, Incubation & Entrepreneurship

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

1. S.K. Srikar, D.D. Giri, D.B. Pal, P.K. Mishra, S.N. Upadhyay, "Green synthesis of silver nanoparticles: a review", Green and Sustainable Chemistry 6 (01), 34, 2016 [citation 86]
2. S.K. Srikar, D.D. Giri1, D.B. Pal, P.K. Mishra, S.N. Upadhyay, "Green Synthesis of Silver Nanoparticles: A Review", Green and Sustainable Chemistry, 6, 34-56, 2016 [citation 62]
3. S. Srivastava, S.B. Agrawal, M.K. Mondal, "A review on progress of heavy metal removal using adsorbents of microbial and plant origin", Environmental Science and Pollution Research 22 (20), 15386-15415, 2015 [citations 58]
4. Y.C. Sharma, A. Kumar, R. Prasad, S.N. Upadhyay, "Ethanol steam reforming for hydrogen production: latest and effective catalyst modification strategies to minimize carbonaceous deactivation", Renewable and Sustainable Energy Reviews 74, 89-103, 2017 [citation 52]
5. M. Yadav, N. Srivastva, R.S. Singh, S.N. Upadhyay, S.K. Dubey, "Biodegradation of chlorpyrifos by Pseudomonas sp. in a continuous packed bed bioreactor", Bioresource technology 165, 265-269, 2014, [citation 46]

23. Distinguished Visitors

Sl. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1.	Shri Anil Kumar Jha Former Chairman & MD Coal India Limited	27.02.2020	Entrepreneurial activity
2.	Shri P.K. Sinha CMD, Northern Coalfields Limited	27.02.2020	Entrepreneurial activity
3.	Shri Ajay Chowdhary Co-Founder, HCL	15.02.2020	To see the ecosystem of Entrepreneurial activity

Sl. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
4.	Mr. Vish Narayanan Former Global Architect & Technology Leader, General Motors	01.02.2020	Keynote Speaker in E-Summit 2020
5.	Mr. Jai Shankar Manager, IT Advisory, KPMG	09.02.2020	Startup 101 Series
6.	Mr. Digantaa Sircar CEO, Data Secure LLP	09.02.2020	Startup 101 Series
7.	Mr. Dominic Scott VP, Govt. Affairs, Cisco	07.02.2020	Influx Program of Cisco thingQbator
8.	Mr. Harish Krishnan MD, Cisco India	07.02.2020	Influx Program of Cisco thingQbator
9.	Mr. Gunjan Shukla CFO, PayPal-India	01.02.2020	As a Speaker in E-Summit 2020
10.	Mr. B.V. Jagdeesh Managing Partner, Kaaj Ventures	01.02.2020	As a Speaker in E-Summit 2020
11.	Mr. Sanjeev Mehta MD, Standard Charted Bank	01.02.2020	As a Speaker in E-Summit 2020
12.	Mr. Praharsh Sharma MD, Goldman Sachs	01.02.2020	As a Speaker in E-Summit 2020
13.	Mr. Kaustav Mukherjee Senior Partner & MD, BCG	01.02.2020	As a Speaker in E-Summit 2020
14.	Mr. Shalap Singhal, Co-Founder, Ziploan	01.02.2020	As a Speaker in E-Summit 2020
15.	Shri P. Raghavendra Rao Secretary, Department of Chemicals and Petrochemicals, Ministry of Chemicals & Fertilizers, GoI	28.12.2019	To see the infrastructure and Facilities for the Startups
16.	Dr. Usha Dixit Scientist, DST, GoI	05.06.2019	Entrepreneurs activity
17.	Ms. Chhavi Jha Joint Secretary, RKVY-RAFTAAR, Ministry of Agriculture Cooperation & Farmers Welfare, GoI	18.04.2019	To see the Entrepreneurial activity in RKVY-RAFTAAR
18.	Mr. Satish Jha GM, R&D, NCL	16.04.2019	NCL Meeting
19.	Mr. Gaurav Kedia Chairman, Indian Biogas Association	21.04.2020	Agripreneurship Orientation Program
20.	Mr. Pulkit Srivastava Co-Founder, Geeky Works IT Solutions Pvt. Ltd.	21.04.2020	Agripreneurship Orientation Program
21.	Mr. Subhash Maurya District Agriculture Officer, Varanasi	16.12.2019	Agripreneurship Orientation Program
22.	Mr. Siddhartha Jalan Entrepreneur	16.12.2019	Agripreneurship Orientation Program
23.	Shri P.S. Ojha State Coordinator of Bio Energy Development Board, UP	24.08.2019	Agripreneurship Orientation Program
24.	Mr. Sanjay Kiran Enishetty Investor, 50K Ventures	14.09.2019	Agripreneurship Orientation Program
25.	Dr. Virendra Tripathi CEO, Phyto-Consultant Fitochem Laboratories	17.12.2019	Agripreneurship Orientation Program

Sl. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
26.	Mr. Sumit Srivastava Business Consultant, UK	19.12.2019	Agripreneurship Orientation Program
27.	Mr. Kaustubh Dhargalkar Founder- Potential & Possibilities	23.01.2020	Agripreneurship Orientation Program
28.	Mr. Sumit Singh Founder, Blueneck	24.01.2020	Agripreneurship Orientation Program
29.	Mr. Anil Kumar Patent Attorney Scientist CSIR-New Delhi	22.01.2020	Agripreneurship Orientation Program
30.	Mr. Mayur Gujrati Company Secretary, Varanasi	20.01.2020	Agripreneurship Orientation Program

24. Other activities

International collaboration/achievements by the Department/School

Mr. Peter Van Dijk, Senior Expert, PUM Netherlands, has visited RKVY-RAFTAAR Agri Business Incubator for two week workshop from 1-July-2019 to 12-July-2019 in setting up a sustainable and professional incubator.

1. Mr. Robert T. Smits, Senior Expert, PUM Netherlands, has visited Malaviya Centre for Innovation Incubation & Entrepreneurship for two week workshop from 16-Sept-2019 to 30-Sept-2019 in setting up a sustainable and professional incubator.

9. Department of Civil Engineering

Year of Establishment: 1949

Head/Coordinator of the Department: Prof. Prabhat Kumar Singh Dikshit w.e.f.__01.01.2019_

1. Introduction of the Department/School:

The Civil Engineering Department was established in 1949 (then known as Civil and Municipal Engineering) in BENCO (Banaras Engineering College) which was a part of BHU. The formal sanction of the Visitor of the University to create this Dept. was received in 1956 and the B.Sc Engineering (Civil & Municipal) Degree was recognized by the Govt. of India in 1958. The department was rechristened to the present name in the year 1975. Presently, it caters its student with seven specialized Post Graduate courses like Environmental Engineering, Geotechnical Engineering, Hydraulic Engineering, Structural Engineering, and Transportation Engineering. The department has taken up various research programmes apart from regular teachings and the research activities, namely CSIR, UGC, SAP, HUDCO, DST and AICTE. It has a created cooperation with industries to work for the various tasks given by Govt., Semi-Govt. and other Private organisations. It is particularly dedicating in providing solutions to the people of the country with technical solutions and guidelines. It conducts short-term courses, training courses, seminars, workshops and conferences for enrichment in quality of students and entrepreneurs. The department has its own Civil Engineering Society which is dedicated in organising lectures by various experts in their respective field, group discussions, competitions, sports and various other extra-curricular and cultural activities so that there would be an holistic all round development of students. Also this society conducts a separate fest for the Civil Engineering Students, known as, Shilp. The department has 10 laboratories, 4 lecture halls, and 5 class rooms.

Major areas of Research:

Group A: Structural Engg., Geotechnical Engg., Transportation Engg. andEngg. Geoscience

Thrust Areas: Development and characterization of Smart materials and Construction Technologies for sustainable infrastructure.

Group B: Hydraulics & Water Resource Engg.,Env. Engg.,GeoinformaticsEngg.

Thrust Areas: Water Resources Management, River Modelling, Water quality monitoring and treatment, River Health Restoration, Waste Management and Pollution Control.

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1	B. Tech./B. Pharm.	111	81	74	86	-
2	Dual Degree	28	24	22	21	25
3	M. Tech./ M. Pharm.	65	34	-	-	-
4	Ph. D. (Under Institute Fellowship)	16	12	13	4	6
5	Ph. D. (Under Project Fellowship)	2	2	-	-	3 (JRF)
6	Ph. D. (Under Sponsored Category)	-	-	-	-	-

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India

Name of Student	Roll No.	Conference/Seminar/Symposia/Workshop	Date & Venue	Financial Assistance From
India				
Ashish Singh	18061004	2nd ASCE India Conference on challenges of resilient and sustainable infrastructure development in emerging economics	02-04 March 2020, Hotel Novotel, New TownKolkata	IIT (BHU)
Ashish Singh	18061004	Advanced course on wind loads and effect on structures	18-20 Dec. 2019, CSIR-SERC Chennai	IIT (BHU)

Names of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India				
Name of Student	**Roll No.**	**Conference/Seminar/Symposia/Workshop**	**Date & Venue**	**Financial Assistance From**
SatyajitMondal	15061501	15th World Conference on Transport Research (WCTR-2019)	26-31 May, 2019, IIT Bombay	Institute
ABROAD				
SatyajitMondal	15061501	13th International Conference on Eastern Asian Society for Transportation Studies (EASTS-2019)	09-12 Sep. 2019, Sri Lanka	Institute

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Veerendra Kumar	1986	Structural Engineering; Plastic design and analysis
2	Prof. Gautam Banerjee		Environmental Engineering
3	Prof. Devendra Mohan	2004	Environmental Engineering
4	Prabhat Kumar Singh PhD. (17063)	2000	Environmental Engineering (Water Quality Monitoring and Control, Solid Waste Engineering and Management, River Health Studies)
5	Prof. Prabhat Kumar Singh Dikshit	2010	Hydraulics and Water Resources Engineering, R S and GIS
6	Prof. Sasankasekhar Mandal	2002	Wind effect on structures, Advanced Concrete Technology, FEM analysis of structures
7	Rajesh Kumar, PhD, 17051	2004	Structural Engineering, Earthquake Engineering, Concrete Technology
8	Prof. Shyam Bihari Dwivedi	Dec, 1992	Engineering Geosciences
9	Prof. Arun Prasad	2000	Geotechnical Engineering (Soil stabilization, Unsaturated soil mechanics, Slope stability)
10	Prof. Krishna Kant Pathak	2001	Structural Engineering
ASSOCIATE PROFESSORS			
1	Dr. Kamlesh Kumar Pandey		Hydraulics & Water Resources Engineering
2	Dr. Brind Kumar, PhD, 16816	19.10.2001	Transportation Engineering
3	Dr. PabitraRanjanMaiti		Structural Engineering
4	Dr. Sanjay K. Gupta	7-Sep-08	Hydraulics and Water Resources, Modelling and Computation, Hydraulic Systems Design
5	Dr. P. BalaRamudu	12.10.2007	Geotechnical Engineering- Environmental Geotechnics; Geopolymers; Remediation of Contaminated Sites; Electreo Osmotic consolidation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
6	Dr. MedhaJha	December, 2003	Engineering Geosciences
7	Anurag Ohri, PhD, 17065	2012	Geoinformatics Engineering, Municipal Solid Waste Management, Surveying
ASSISTANT PROFESSORS			
1	Dr. Ankit Gupta, Ph.D., 19851	04th Aug. 2012	Transportation Engineering, Sustainable Pavement Materials, Traffic Engineering
2	Dr. Kesheo Prasad		Hydraulics & Water Resources Engineering
3	Dr. Suresh Kumar		Geotechnical Engineering
4	Dr. Shishir Gaur	July, 2010	Numerical Modelling, Optimization, GIS & Remote Sensing
5	Dr. Nikhil Saboo	May, 2016	Transportation Engineering: Pavement Materials, Design and Analysis
6	Dr. RosalinSahoo	26/03/2020	Composite Plates/Shells, CNT/Smart/FGM, Uncertainty Analysis
7	Dr. SupriyaMohanty	18-Jun-14	Geotechnical Earthquake Engineering, Liquefaction Potential Evaluation, Nonlinear Dynamic Response Analysis.
8	Manash Chakraborty, Ph.D., Emp. No. 50144	31st July, 2015	Geotechnical Engineering, Numerical Analysis, Limit Analysis
9	Dr. AbhisekMudgal	Dec. 2011	Transportation Engineering

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation	Date of Appointment in the Department
1	Shri Kamlesh Kumar	Junior Superintendent	31/07/2017
2	Shri Kamelsh Kumar	Junior Assistant	16/02/2016
3	Shri Ajit Kumar	Skilled Clerical Staff (Ex-Cadre)	16/04/2015
4	Shri L. S. Yadav	Technical Superintendent	19/08/1992 (Ret. On 31 Aug, 2019)
5	Shri Lalji	Technical Superintendent	30/05/1987
6	Shri Sharada Prasad	Technical Superintendent	12/1/1989
7	Shri Dinesh Singh	Jr. Technical Superintendent	21/12/1990 (Ret. On 30 June, 2019)
8	Shri Basanta Prasad	Jr. Technical Superintendent	28/12/1990
9	Shri Vinod Kumar Singh	Senior Technician	14/10/1993
10	Shri Raman JeeJha	Senior Technician	7/1/1997 (Ret. On 31 Dec, 2019)
11	Shri A. K. Jaiswar	Senior Technician	22/02/2007
12	Shri R. B. Bhandari	Senior Technician	16/05/2007
13	Shri Yashwant Singh	Senior Technician	6/6/2007
14	Shri Amit Kumar Singh	Senior Technician	11/11/2011
15	Shri Shankar Ram	Junior Technician	13/06/2012
16	Shri Netrapal	Junior Technician	13/06/2012
17	Shri Rama Shankar Singh	Skilled Worker	1/1/2010
18	Shri Jai Singh Yadav	MTS-Skilled Worker	1/1/2015
19	Shri Deepak Kharwar	Unskilled Worker	22/01/2015
20	Shri Mintoo Lal Srivastava	MTS-Skilled Worker	13/12/2016

Sl. No.	Name, Qualifications	Designation	Date of Appointment in the Department
21	Shri Nitin Srivastava	MTS-Skilled Worker	13/12/2016
22	Shri Amar Srivastava	MTS-Skilled Worker	19/01/2017

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
1	Smart and Integrated Pedestrian Network Design	Jan 2017 – July 2020	MHRD	220 Lakhs (IIT BHU part Rs 15 Lakhs)	Dr. Ankit Gupta
2	River-Aquifer Exchanges & Hydrogeological Study for Watershed Management of Betwa River Basin. Duration	2018-2020	NRDMS, DST	2 years. Amount sanctioned 24,80,000 INR	Prof S B Dwivedi
3	Development and assessment of asphalt mastic from typical Indian and Austrian filler materials with a new test method	2018-2020	Department of Science and Technology (DST), Government of India	Rs 11.4 Lakhs	Dr. Nikhil Saboo
4	Rheophysics of semi-rigid road-building materials and optimization of their compositions for the perception of heavy transport load	2019-2021	Department of Science and Technology (DST), Government of India	Rs 11 Lakhs	Dr. Nikhil Saboo
5	Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics	2019-2022	Science and Engineering Research Board (SERB), India	Rs 36 Lakhs	Dr. Nikhil Saboo
6	Life Cycle and Performance Assessment of Roads Constructed Using Cold Mix Technology	2019-2021	National Rural Infrastructural Development Agency, (Ministry of Rural Development, Government of India)	Rs 20.5 Lakhs	Dr. Nikhil Saboo
7	Performance Assessment of Roads Constructed Using Waste Plastics	2019-2021	National Rural Infrastructural Development Agency, (Ministry of Rural Development, Government of India)	Rs 20.5 Lakhs	Dr. Nikhil Saboo
8	Safer Roads: Development of Mix Design Methodology for OGFC Mixes	2019-2022	Council of Science and Technology: UP	Rs 12 Lakhs	Dr. Nikhil Saboo
9	Development of Guidelines for Use of Waste Reclaimed Water in Pavement Construction	2020-2023	Ministry of Roads Transport and Highways (MoRTH)	Rs 27.56 Lakhs	Dr. Nikhil Saboo
10	Active vibration control of smart composite and sandwich structures in hygrothermal environment	2017-2020 (Ongoing)	SERB, DST, New Delhi	Rs. 19 Lakhs	Dr. RosalinSahoo
11	An Experimental Approach to Dynamic Response of Woven Fibre composite Plates in hygrothermal environment	2018-2020 (Ongoing)	IIT, BHU	Rs. 10 Lakhs	Dr. RosalinSahoo

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
12	Investigation on Dynamic Response Analysis of Shallow Foundation Resting on Pond Ash Deposits	2016-2019	SERB Division, Department of Science & Technology, New Delhi, India	Rs 36.14 Lakhs	Dr. Supriya Mohanty
13	Measurement of Shear Wave Velocity Using Bender Element Tests for Earthquake Response Analysis	2018-2019	IIT(BHU), Varanasi	Rs 14.65 Lakhs	Dr. Supriya Mohanty
14	Studying fewaspects of soilbehaviourandincorporatingthem in LimitAnalysis	2018-2022	DST INSPIRE	Rs. 35 Lakhs	Dr. Manash Chakraborty
15	Under standing the engineering behaviour of unsaturated geomaterialsandimplementing it in limit analysis for solving geotechnical problems	2020-2022	SERB, DST	Rs. 27.3 Lakhs	Dr. Manash Chakraborty
16	Propagation and Mitigation Model of Mixed Road Traffic Noise for Planning of Mid-Sized Indian Cities	2017-2020	MHRD &MoUD	373.53 Lakhs	Dr.Brind Kumar
17	Crop-signature Studies by Microwave Remote Sensing with Soft Computing Techniques"	2 Years	Spouting Grant, MHRD	25 Lakhs	Prof. P.K.S. Dikshit
18	Research Project (Co-PI)	One Year	NPIU	5.52 Lakh	Prof. P.K.S. Dikshit
19	Research Project (Co-PI)	One Year	NPIU	12.34 Lakhs	Prof. P.K.S. Dikshit
20	Research Project (Co-PI)	One Year	NPIU	15.92 Lakhs	Prof. P.K.S. Dikshit
			Total		

Industrial consultancy projects

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. Goutam Banerjee	Vetting of design & drawings of sewerage network of 127 km. Vetting of design & drawings of Pipe(Sewer) Bedding for the above sewerage network and design & drawing of Manholes as per IS-4111(Part1)-1986	Project Manager Temporary Gomti Pollution Control Unit, UP Jal Nigam, Lucknow, River Bank Colony, Surajkund Park, Lucknow-226018	7.37 Lakh
2	Prof. Goutam Banerjee	Vetting of Environmental Process design and hydraulic losses calculation for 10-MLD STP at Sultanganj, Bhagalpur, Bihar	M/s Avian Infrastructure and Energy Pvt. Ltd. A-107, VeenaVihar Apt., AdarshVihar Colony, Patna-800014 C/o VC Project (JV), 2A, New York Corner, S.G. Highway, Ahmedabad)	4.24 Lakh
3	Prof. Goutam Banerjee	Vetting of Design/Drawings for the work of Sewerage works in Vindhyachal Zone of Mirzapur(NPP), with UP Jal Nigam	AYYAPPA INFRA PROJECTS PVT. LTD. Near Manglam arts, Dwarkapur Colony, LohiyaTalab, Mirzapur cum Vindhyachal, UP-231001	3.77 Lakh

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
4	Prof. Veerendra Kumar	Vetting of structural design and drawing of Hospital, College and Hostel Buildings of Heritage Institute of Medical Sciences	Vice Chairman Heritage Institute of Medical Sciences, Bhadwar, Varanasi	17 Lakh
5	Prof. Veerendra Kumar	Vetting of structural design and drawings of ROB of Western Railway	M/s Patel Infrastructure Ltd. Patel House, Beside Prakruti Resort, Chhani Road, Chhani, Vadodara-390024, Gujarat	13 Lakh
6	Prof. Veerendra Kumar	Vetting of structural design and drawing of construction of 10 MLD STP and 13 MLD MPS along with Nala tapping at Ramnagar, Varanasi	Project Manager U.P. JalNigar, Ganga Pollution Prevention Division, Bhagwanpur, Varanasi (M/s SNET-N & S-RISPL JV, New Delhi)	7 Lakh
7	Prof. Veerendra Kumar	Vetting of structural design and drawing of Minor Bridges	M/s SABZ INFRA SOLUTION PVT. LTD 216A, Ground Floor, Budha Marg, Mandawli, East Delhi, Delhi-110092	6.19 Lakh
8	Prof. Prabhat Kumar Singh Dikshit	अनपरातापीय परियोजनापरउत्प्रवाहसंषोधनसंयंत्र के निर्माणहेतुइसकीतकनीकीविषिश्टीकरण, कार्यवृत्त एवंलागतकाआकलनप्रस्ताव के संबंध में।	श्रीअजय कुमारराय अधिषासीअभियंता, राख उपयोगिताप्रकोश्ठ, अनपरातापीय परियोजना, उ0प0स0 विद्युतउत्पादननिगमलि., अनपरा सोनभद्र–231225	7 Lakh
9	Prof. Prabhat Kumar Singh Dikshit	Vetting of drawing and design of construction on Road Tunnel, viaduct and Churhat By-pass of RewaSidhi section of NH 75 E from km 33/200 to 55/400 in the state of Madhya Pradesh.	कार्यालय अधीक्षणअभियंता बाणसागरनहरनिर्माण मण्डल–2, मीरजापुर	3.5 Lakh
10	Prof. Prabhat Kumar Singh Dikshit	Discharge Measurement of ETP at AnpraTharmal Project Sonbhadra	अधिषासीअभियंता राख उपयोगिताप्रकोश्ठ, अपनरातापीय परियोजना, उ0प्र0रा0 विद्युतउत्पादननिगमलि., अनपरा सोनभद्र–231225	1.53 Lakh
11	Prof. Sasankasekhar Mandal	Vetting of (i) design of pot cum PTFE bridge bearing (ii) 1500 kL RCC Overhead Tank (iii) Pipe culvert	PWD, Sahiya OPGCPL, Indore PWD Rajashan	1.75 Lakh
12	Prof. Rajesh Kumar	Proof checking of structural design of Bridges along four laning of Mangalwedha-Solapur section of NH-166 in the state of Maharastra (Package IV of SangliSolapur Section) and others Project of DilipBuildcon Limited	DilipBuildcon Limited, Bhopal (MP), India	11 Lakhs
13	Prof. Rajesh Kumar	Proof checking of structural design of Subway at Transport Nagar-Lucknow	Gravitas Infrastructures Pvt. Ltd.	1 Lakh
14	Prof. Rajesh Kumar, Prof. S. Mandal, Prof. K.K. Pathak and Dr. RosalinSahoo	Proof checking of structural design of various residential quarters at Chandauli, U.P.	CPWD, Chandauli Unit, U.P.	4 Lakh

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
15	Prof. Arun Prasad	Stability analysis of three RMDs using FEM GEO5 or Plaxis 2D	Sri Shabdendu Mohan, Head (Alumina Refinery), Hindalco Industries Ltd., Renukoot-231217 Sonebhadra	4.72 Lakh
16	Prof. Arun Prasad	Stability analysis and remedial measures for mud stock piling.	The Head- Alumina Refinery Hindalco Industries Ltd., Renukoot-231217 (Sonebhadra), UP	2.95 Lakh
17	Prof. Arun Prasad	Plate load test and bearing capacity	M/s HES Infra Pvt. Ltd. #39, B N Reddy Colony Road No. 14, Banjara Hills, Hyderabad-500034	2.36 Lakh
18	Prof. Krishna Kant Pathak	Proof checking for condition assessment and preparation of DPR for repair and retrofitting work of : (1) Ultadanga Flyover Kolkata (2) BankimSetu, Howrah	ITL-Cortex(JV) Indian Technocrat Ltd., Plot No 8, Local Shopping Complex, VasantKunj, New Delhi-110070	7 Lakh
19	Prof. Krishna Kant Pathak	Vetting of Structural Drawing Government Medical College Pratapgarh	Unit Incharge Raibarelly Unit, UPRNN, District Jail Campus, Raibarelly	6 Lakh
20	Prof. Krishna Kant Pathak	Vetting of structural design and drawing of following (1) 110m span suspension bridge on Ramganga River at Basedi, DistAlmora (2) 70m span suspension bridge on Mashangarhi River under SyaldeVikaskhand, DistAlmora (3) 70m span BintaBichilam bridge on Ramganga River at distAlmora	BRIDCUL AvsthapnaBhawan, 583-D, Rajkiya ITI, Front of Niranjan House, Majra, Saharanpur Road, Dehradoon	5.31 Lakh
21	Dr. Kamlesh Kumar Pandey	Vetting of hydraulic design of following (1) Pressurized Piped Irrigation Network for Pungaheri of Phase II (2) HCS Loft of Phase II Irrigation Network	Vice President M/s JWIL Infra Ltd., 102, Geetanjali Tower Opp., ESI Dispensary, Ajmer Road, Jaipur, Rajasthan-3202006	3.54 Lakh
22	Dr. Suresh Kumar	Site visit, Initial Pile test and Report preparations for the Rajkiya Medical College, Siddharthnagar, Vetting of Initial Pile test reports for the Rajkiya Medical College, Siddharthnagar	Unit In-charge Siddhartha Nagar Unit, UPRNN Ltd., JilaChikitsalyaParisar, Siddhartha Nagar	5.60 Lakh
23	Dr. Suresh Kumar	Vetting of initial Pile test reports for the Rajkiya Medical College, Deoria	Unit In-charge UPRNN Ltd., Residential Area, Ravindra Nagar, Dhoos, Kushinagar-274304	1.18 Lakh
24	Dr. Ankit Gupta	Proof checking for Rehabilitation and Upgradation of LasalSalasarRatangarh road section of SH-7 & SH-92 excluding overlapping of SH-20 from Nechhwa to Salasar in Rajasthan	Mr. ShrawanBhakhar for M/s Durga Construction Company, VPO- Khoor, Distt-Sikar (Raj.)	2.36 Lakh

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
25	Dr. Ankit Gupta	Proof checking for Rehabilitation and Upgradation of LasalSalasarRatangarh road section of SH-7 & SH-92 excluding overlapping of SH-20 from Nechhwa to Salasar.	Mr. ShrawanBhakhar for M/s Durga Construction Company, VPO- Khoor, Distt-Sikar.	2.36 Lakh
26	Dr. Ankit Gupta	Job Mix for BC	Executive Engineer, Path Pramandal, NirmanVibhaag, Babhua Bihar	1.88 Lakh
27	Dr. Brind Kumar	3rd Party test of laid PQC of Varanasi-Gorakhpur section of NH-29 (km 148 to km 215.160) in different stretches of 16 km	GM(Tech)/Project Director, NHAI, PIU, Gorakhpur	5.30 Lakh
28	Dr. Brind Kumar	3rd Party test of laid PQC of Varanasi-Gorakhpur section of NH-29 (km 88 to km 148) in different stretches of 15 km	GM(Tech)/Project Director, NHAI, PIU, Gorakhpur	5.30 Lakh
29	Dr. Brind Kumar	Structural design of cement concrete pavement of Umanath Singh Rajkiya Medical College, Jaunpur	The Project Manager, Azamgarh Unit, UPRNN	3.20 Lakh
30	Dr. Brind Kumar	Design of flexible pavement for widening and strengthening of Gorakhpur Jila Jail ByPass road from 2 lane to 4 lane.	The Executive Engineer, CD (Building), PWD, Gorakhpur	3.30 Lakh
31	Dr. Brind Kumar	Design of flexible pavement for widening and strengthening of Nausarh to Paidleganj road at Gorakhpur from 4 lane to 6 lane	The Executive Engineer, CD (Building), PWD, Gorakhpur	3.30 Lakh
32	Dr. Brind Kumar	Design of flexible pavement for widening and strengthening of DeoriaByPass road at Gorakhpur from 2 lane to 4 lane	The Executive Engineer, CD-3, PWD, Gorakhpur	3.30 Lakh
33	Dr. Brind Kumar	Assessment of distressed PQC locations and making suggestions for remedial measures	M/s Gayatri Projects Ltd.,Varanasi	23.50 Lakh
34	Dr. Brind Kumar	Structural design of flexible pavement for of 6m carriageway for GC, CRPF campus at Chakia, Chandauli.	The Executive Engineer, Chandauli Project, CPWD, Chandauli	2.95 Lakh

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Diamond Coring Tool	Rs. 2.90 Lakh
2	Pore Pressure Sensors : EPB-PW-3.5B-S-/L5M	Rs. 1.12 Lakh
3	Flow Tracker II Lab ADV 5%	Rs. 7.93 Lakh
4	Spectrophotometer W/O RFID	Rs. 4.38 Lakh
5	AIM-951-1 Concrete Pan Mixer	Rs. 3.90 Lakh
6	An Unmanned Aerial Vehicle with Thermal and Visual Sensor	Rs. 3.46 Lakh
7	Panasonic Toughpad FZ-M1, SUBS, Service Plan Magnet Field 12 MO	Rs. 3 Lakh
8	Thin Section Grinder Polisher Machine & Accessories	Rs. 3 Lakh

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
9	Deep Freezer(-40C), Water Bath Refrigerated, Hot Air Oven Inner SS Outer MS Temp-200C	Rs. 2.6 Lakh
10	COD Digester Cum Analyzer COD	Rs. 2.38 Lakh
11	(1) AIM-114-1 Universal Automatic Compactor (2) AIM-054-1 Sieve Shaker	Rs. 2 Lakh
12	Peristaltic Pump	Rs. 1.75 Lakh
13	(1) AIM-583-1 Automatic Marshall Frame 50kN Capacity (2) AIM-55001 Breaking Head for Marshall Apparatus	Rs. 1.49 Lakh
14	AIM-9891 Concrete Mixer, Pan Type, Capacity 40 Ltr.	Rs. 1.49 Lakh
15	(1) Soil Grinding Machine Capacity : 50-100 kg/hr. Power - 2 HP (2) Soil Mixer Machine Capacity : 25-50 kg/hr. Power - 2 HP	Rs. 1.29 Lakh
16	Deep Freezer (-40 C) (Size - 505x830x415mm)	Rs. 0.99 Lakh
17	(1) Pore Pressure Transducer-BPR-A-50KPs (2) Metal Filters-FB-10SUS	Rs. 0.92 Lakh
18	Sieve Brass Frame, Pan and Cover for sieve, Sieve G.I. Frame and Mould Cast Iron	Rs. 0.89 Lakh
19	Water Bath Refrigerated (Inner Size - 375x375x300mm) (Make : Precious Techno)	Rs. 0.89 Lakh
20	(1) Intelligent Lipo Batteries Having Capacity of 4000m (2) Propeller2.5km (3) Remote Control Having Battery 5000mah, Range (4) Charger 100w Can Have Points to Charge 3 Batteries	Rs. 0.89 Lakh
21	Semi Circular Beam Bending Testing Apparatus	Rs. 8 Lakhs
22	Rotational Viscometer	Rs. 6 Lakhs
23	UAV with thermal Camera	Rs. 3.62 Lakhs
24	High end Workstations (Dell Precision T7820)	Rs. 3.99 Lakhs
25	Designed a three-dimensional seepage apparatus	Rs. 0.5 Lakhs
26	Sound Level Meter	Rs. 40 Lakhs
27	Computational & reproduction devices	Rs. 10 Lakhs
Total		

7. Patents filed: Nil

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	Asthana, G., Choudhary, J., **Kumar, B**., & Gupta, A. (2020).	Experimental Investigation of Waste Glass Powder as Filler in Asphalt..	*Lecture Notes in Civil Engineering*. Springer
2	Singh, S., Choudhary, J., **Kumar, B.**, & Gupta, A. (2020).	Effects of using Kota Stone as Filler on Mechanical Properties of Asphalt Concrete Mixes.	*Lecture Notes in Civil Engineering*. Springer
3	V., Singh V., Raj V. &**Dikshit,P.K.S.** (2020)	Development of Water Resources in India. Water Science and Technology Library	Springer, Cham

9. Research Publication:

1 A.K.Shukla and P.R. Maiti(2019)Retrofitting and Rehabilitation of damage foot bridge over Yamuna River, International Journal of Recent Technology and Engineering, Vol-8, Issue 2, PP-4239-4246

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6 Chanda, A., and Sahoo, R. (2020), "Accurate Stress Analysis of Laminated Composite and Sandwich Plates, The Journal of Strain Analysis for Engineering Design, SAGE (accepted).

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10 Choudhary, J., Kumar, B. and Gupta, A. "Performance Evaluation of Bauxite Residue Modified Asphalt Concrete Mixes", European Journal of Environmental and Civil Engineering, Taylor and Francis. [IF: 1.873] (Online Published) (DOI: 10.1080/19648189.2019.1691662)

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12 Choudhary, J., Kumar, B., & Gupta, A. (2019). Use of Dimension Limestone Sludge as Filler in Asphalt Mix. Proceedings of the Institution of Civil Engineers-Construction Materials. DOI: 10.1680/jcoma.18.00022.

13 Choudhary, J., Kumar, B., & Gupta, A. (2020) (In Press). Bauxite Residue: A Viable Filler for Asphalt Mixes. Gradevinar: Journal of the Croatian Association of Civil Engineers.

14 Choudhary, J., Kumar, B., & Gupta, A. (2020), Performance evaluation of asphalt concrete mixes having copper industry waste as filler. Transportation Research Procedia.(Accepted).

15 Choudhary, J., Kumar, B., & Gupta, A. (2020). Performance evaluation of industrial waste modified asphalt mixes using ranking methodology. Journal of Materials in Civil Engineering, ASCE 32(5), 04020064. DOI: 10.1061/(ASCE)MT.1943-5533.0003137 234.

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29 Mauya, S.P., Singh, P.K., Ohri, A. and Singh, R. (2020) Identification of Indicators For Sustainable Urban Water Development Planning, Ecological Indicators, 108, 10951.

30 Mishra, S., Kushwaha, A., Aggrawal, D. and Gupta, A. (2019) "Comparative Emission Study by Real-Time Congestion Monitoring for Stable Pollution Policy on Temporal and Meso-Spatial Regions in Delhi", Journal of Cleaner Production, Elsevier, Vol. 224, pp. 465-478. [IF: 6.395] (https://doi.org/10.1016/j.jclepro.2019.03.122)

31 Mishra, S., Tiwary, D., Ohri, A., Agnihotri, A.K, (2019), Impact of Municipal Solid Waste Landfill leachate on groundwater quality in Varanasi, India, Groundwater for Sustainable Development, 9

32 Mondal, S. and Gupta, A. (2019) "Assessment of Vehicles Headway during Queue Dissipation at Signal Controlled Intersection under Mixed Traffic", Current Science, Indian Academy of Sciences, Vol. 116, No. 3, pp. 437-444. [IF: 0.756] (doi: 10.18520/cs/v116/i3/437-444)

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Refereed National Journal

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10. Number of Conference Papers: 42

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Prof. S. Mandal	Session chairman in 2nd ASCE India Conference on challenges of resilient and sustainable infrastructure development in emerging economics
2	Dr. Ankit Gupta	VREF Fellowship of 2000 USD to attend a conference at Long Beach LA USA
3	Dr. Ankit Gupta	Session Chair (Moderator) at 13thInternational Conference on Eastern Asian Society for Transportation Studies (EASTS-2019), 09-12 Sep. 2019
4	Dr. Ankit Gupta	International Scientific Committee (ISC) Member, EASTS
5	Dr. Nikhil Saboo	Session Chair: A Special Tribute to Lt Prof. B. B. Pandey: Conference of Transportation Research Group of India- December 18-21, 2019
6	Dr. Nikhil Saboo	Work Shop Co-Chair: Highway Materials & Pavement: Conference of Transportation Research Group of India- December 18-21, 2019
7	Dr. Nikhil Saboo	International Scientific Committee, AM3P
8	Dr. RosalinSahoo	-Received '**YoungWoman in Engineering' (Structural Engineering)** by Venus International Foundation Award 2020
9	Dr. RosalinSahoo	Selected for **Yuva Rattan Award-2020** by NRI Welfare Society of India, New Delhi.
10	Dr. RosalinSahoo	Technical Programme committee, Convergence 2020
11	Dr. Supriya Mohanty	"Young Scientist in Civil Engineering", under the Engineering Discipline, 5th Venus International Research Awards - VIRA 2019, Venus International Foundation, August 2019.
12	Dr. Manash Chakraborty	Young Scientist in Geotechnical Engineering, Venus International Research Awards-2019

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: Nil

13. Names of students/scholars who got prizes and awards outsidethe Institute: 4

14. Number of Students/Scholars who went for foreign Internship: Nil

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator	Title	Period
1	Dr. Nikhil Saboo and Dr. Ankit Gupta	Design and Construction of Long Lasting Flexible Pavements (DCLLFP-2019)	15-19 July, 2019
2	Dr. Ankit Gupta and Dr. AbhisekMudgal	Road Safety Travelling Workshop	19-25 July, 2019
3	Dr. Ankit Gupta	Road Safety	30 Sep – 04 Oct. 2019 (Hotel Fairfield by Marriott Lucknow)
4	Dr. Nikhil Saboo and Dr. Ankit Gupta	Design and Construction of Long Lasting Flexible Pavements (DCLLFP-2019)	15-19 July, 2019
5	Prof. K. K. Pathak and Dr. RosalinSahoo	Expert Lectures on Finite Element Method	17-18 Feb, 2020
6	Prof.Arun Prasad, Dr.BalaRamuduParamkusam, Dr. Suresh Kumar, Dr.Manash Chakraborty & Dr.SupriyaMohanty	Emerging Geoenvironmental Engineering Technologies & Sustainability.	16th August 2019
10	Manash Chakraborty	Numerical and Analytical Methods in Geomechanics	9th Dec. – 13th Dec., 2019

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 10

17. Number of Special lectures delivered by faculty members in other institutions: 11

18. Number of Visits abroad by faculty members for conference/symposia: 7

19. Fellowships of academic and professional societies: Nil

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. S. Mandal	Member	International Journal of Structural Engineering (IJSE)
2	Prof. S. Mandal	Member	Journal of Energy and Environmental Sustainability (JEES)
3	Dr. Ankit Gupta	Editorial Panel Member	International Journal ICE-Transport (SCI Indexed)

21. Faculty members' participation with other universities under MoUs: Nil

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof.Tarun Kant Professor Emeritus & INSA Senior Scientist; Department of Civil Engineering, IIT Bombay	17/02/2020- 18/02/2020	To deliver expert lectures

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
2	Prof. Krishna R. Reddy, Professor, Department of Civil and Materials Engineering, University of Illinois at Chicago (UIC), USA.	16th Aug, 2019	Invited speaker for Workshop on "Emerging Geoenvironmental Engineering Technologies & Sustainability"
3	Prof.Sarat Kumar Das, Professor, Department of Civil Engineering,IIT (ISM) Dhanbad.	16th Aug, 2019	Invited speaker for Workshop on "Emerging Geoenvironmental Engineering Technologies & Sustainability"
4	Dr. Amit Prashant, Professor	9th Dec, 2019	Delivering Lecture in STC
5	Dr.Jyant Kumar, Professor	11th Dec, 2019	Delivering Lecture in STC
6	Dr. Priyanka Ghosh, Professor	12th Dec, 2019	Delivering Lecture in STC
7	Dr.Arghya Das, Assistant Professor	9th Dec, 2019	Delivering Lecture in STC
8	Dr. Kumar Anupam, TU Delft	Invited Lecture	27th Jan. 2020

24. Other activities

Foreign Students Visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Mr. Michael Steinder	DST Bilateral Project with TU Vienna, Austria	23 Nov 2019 – 06 Dec. 2019
2	Mr. Michael Steinder	DST Bilateral Project with TU Vienna, Austria	23 Nov 2019 – 06 Dec. 2019

10. Computer Science and Engineering

Year of Establishment: 1983

Head/Coordinator of the Department: Prof. Rajeev Srivastava w.e.f. 01.08.2017-till date

2. Introduction of the Department/School:

The Department of Computer Science and Engineering was established in July 1983. The department offers a 4 year course, B.Tech. in Computer Sc. & Engineering, 5 year Integrated Dual Degree (B.Tech. and M.Tech.) in Computer Sc. & Engineering from 2005-2006, and Ph.D. degree in various specializations of Computer Sc. and Engineering. Computer Sc. & Engineering is the most sought- after branch for the JEE (Advanced) selected students that come to the Institute. Our graduates have distinguished themselves in higher studies at the top Universities. They also occupy positions of eminence in the computer industry. Our Alumni remain in constant touch with us and are contributing in the development of the department. Placements for our graduates are the best in the Institute. The faculty members of the department have international experience and training. The departmental research is focused in the areas of Artificial Intelligence, Parallel and Distributed Computing, Software Engineering, Image Processing and Computer Vision, Machine Learning\ Deep Learning, Medical Image Processing, Pattern Recognition, Datamining and Web mining, semantic web, Natural Language Processing (NLP) and Information Extraction. The department has all the facilities to carry out the related teaching and research work. The floor area of the department is 1455 sq. meter. The department has 15 laboratories, 3 lecture halls, and 5 classrooms.

Major areas of Research:

Image Processing, Computer Vision and Pattern Recognition, Artificial Intelligence, Natural Language Processing, and Information Retrieval, Software Engineering, Computer Networks, Machine Learning,

Cyber Security, High Performance Computing

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Pharm	91	75	66	65	-
2.	Dual Degree	32	21	17	17	17
3.	M. Tech/ M. Pharm	-	-	-	-	-
4.	Ph.D (Under Institute Fellowship)	3	15	28	11	-
5.	Ph.D (Under Project Fellowship)	1	01 (External)	01 (External)	01 (Internal)	-
6.	Ph.D (Under Sponsored Category)	3	06 (QIP)	03 (QIP) 03 (Sponsored)	01 (Sponsored)	-

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Dr. Anil Kumar Tripathi (13770)	1992	Parallel/Distributed Computing and Software Engineering
2	Dr. Kaushal Kumar Shukla (13772)	1993	Artificial Intelligence, Neural Networks, Data Mining
3	Dr. Rajeev Srivastava (18363)	April 2011	Image Processing, Computer Vision, Pattern Recognition, Machine Learning, Video Surveillance, and Medical Image Analysis.
4	Dr. Sanjay Kumar Singh (18362)	August 2004	Artificial Intelligence, Data Science, Machine Learning

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
ASSOCIATE PROFESSORS			
1	Dr. Bhaskar Biswas (16832)	2010	Data Mining, Web Mining and Social Networks
2	Dr. Ravi Shankar Singh (17184)	2010	Data Structures, Algorithms and High Performance Computing
3	Dr. Anil Kumar Singh (50014)	July 2010	Natural Language Processing, Computational Linguistics, Information Retrieval
ASSISTANT PROFESSORS			
1	Dr. Vinayak Shrivastava (13773)	07.03.2009	Software Engineering, Software Re-engineering
2	Dr. Ravindranath Chowdary C (19845)	31.07.2009	Information Extraction, Text Summarization, Web Mining
3	Dr. Sukomal Pal (50052)	10.09.2012	Information Retrieval, Recommender Systems, Text Mining, Data Science
4	Dr. Ruchir Gupta (50126)	18.06.2014	Peer-to-peer network, Social Networks, Game Theory, NLP and Machine Learning
5	Dr. Lakshmanan Kailasam (50127)	28.06.2013	Reinforcement Learning, Network Science
6	Dr. Hari Prabhat Gupta (50031)	31.10.2014	Computer Networks, WSN, Ubiquitous Computing, and IoT
7	Dr. Tanima Dutta (50075)	08.06.2015	Multimedia Forensics, Vision and Graphics, Machine / Deep Learning, Human Computer Interaction, Multimedia Sensor Networks
8	Dr. Amrita Chaturvedi (50125)	27.06.2016	Software Architecture and Design Patterns, Ontologies, Artificial Intelligence, Semantic Web, Big Data Analytics and Machine Learning
9	Dr. Pratik Chattopadhyay (50151)	06.11.2015	Image and Video Processing, Pattern Recognition, Machine Learning, Cyber-security, Generative Neural Networks

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1.	Shri Roshan Singh (M.Tech)	System Analyst (50008)	27.06.2015 (F/N)
2.	Shri Mahesh Pandey (MCA)	System Analyst (50013)	27.08.2015 (F/N)
3.	Shri Ravi Kumar Bharti (Bachelor of Arts)	Junior Assistant (50004)	27.04.2015 (F/N)
4.	Shri Prakhar Kumar (MA - Economics Honours)	Junior Assistant (50132)	10.07.2017 (A/N)
5.	Shri Ritesh Singh (BA – Archaeology)	Junior Assistant (50136)	10.07.2017 (A/N)
6.	Shri Shubham Pandey (M.Sc.- Physics)	Junior Assistant (50189)	13.06.2018 (F/N)
7.	Dr. Ram Prasad Meena (Ph.D. (Botany)	Technical Superintendent (18756)	06.01.2009 (A/N)
8.	Shri Raghuvir Sharan Tripathi M.Sc.(Tech.)-(Geophysics)	Technical Superintendent (18753)	03.01.2009 (F/N)
9.	Shri Dinesh Kumar Tiwari (M.A.-Economics)	Senior Technician (18600)	18.08.2008 (A/N)
10.	Shri Shashi Kant Singh (B.Sc.)	Senior Technician (18640)	18.08.2008 (F/N)
11.	Shri Manoj Kumar Singh (B.Sc.)	Senior Technician (18601)	18.08.2008 (A/N)
12.	Shri Pramod Kumar (B.Sc.)	Senior Technician (18661)	27.04.2011 (A/N)

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- Ordinator
1	Research and Experiment in the area of advanced data structures and methodologies to represent and process large terrain datasets for efficient rendering	Dec'2019-June'2020	ANURAG, DRDO Hyderabad	9.95	Prof. Rajeev Srivastava
2	Building of a Sanskrit text collection for Information Retrieval	2018-2019	Project Varanasi	4.50	Dr. Sukomal Pal
3	Water-to-Cloud: Ganga River	2019-2020	Tata Centre for Development at Uchicago	10.00	Dr. Tanima Dutta, Dr. Hari Prabhat Gupta
4	A Robust Medical Image Forensics System for Smart Healthcare	2018-2020	SERB	14.08	Dr. Tanima Dutta
5	Development of an Energy-efficient Wireless Sensor Network for Precision Agriculture	2017-2020	Science and Engineering Research Board, Govt. of India	34.47	Dr. Hari Prabhat Gupta

Industrial consultancy projects: Nil

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	GPU Server (Tyrone Camarero)	4.68
2.	PCs	10.25
3.	Network Equipment for Network Lab (Layer 3 Switch, Layer 2 Switch, Router and Wireless Access point)	17.61
4.	Exide Battery, 12V42Ah	2.67
5.	UPS Offline – 1 KVA	1.067
6.	FPGA Xilinx Experiment Kit	4.77
7.	IoT sensor kits and experimental kits for hardware lab	1.67

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1	Prof Sanjay Kumar Singh	A Biometric Based System and Method for Management of Pet Animal
2	Prof Sanjay Kumar Singh	A Biometric Based Method and System for Identifying an Infant

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	Shashank Shekhar Singh, Ajay Kumar, Shivansh Mishra, Kuldeep Singh, and Bhaskar Biswas	Influence Maximization in Social Networks (Chapter of Optimization in Large Scale Problems,)	Springer Switzerland
2	Debi Prosad Dogra, Pratik Chattopadhyay, Shamik Sural	Video Analytics: A Machine Intelligence Approach (Under Revision)	Springer, Singapore

9. Research Publication

Manuscript

1 Agarwal, Shivang, and C. Ravindranath Chowdary (2020). A-Stacking and A-Bagging: Adaptive versions of ensemble learning algorithms for spoof fingerprint detection, Expert Systems with Applications 146: 113160.

2 Ambedkar Kanapala, Sukomal Pal, Rajendra Pamula (2019). Summarization and Information Access in Legal Domain: A Survey, Artificial Intelligence Review, 51(3): 371-402.

3 Anita Saroj, Sukomal Pal (2020). Use of social media in Crisis Management: A Survey in International Journal of Disaster Risk Reduction (Accepted).

4 Ankit Kumar Jaiswal, Rajeev Srivastava (2020). A Technique for Image Splicing Detection Using Hybrid Feature Set, Multimedia Tools and Applications, (Published Online).

5 Ashish Gupta, Hari Prabhat Gupta, Bhaskar Biswas, and Tanima Dutta (2019). A Divide-and-Conquer Based Early Classification Approach for Multivariate, ACM Transactions on Internet of Things (Accepted and in press).

6 Ashish Gupta, Hari Prabhat Gupta, Bhaskar Biswas, and Tanima Dutta (2019). An Early Classification Approach for Multivariate Time Series of On-vehicle Sensors in Transportation, IEEE Transactions on Intelligent Transportation Systems, 2019 (Accepted and in press).

7 Ashish Gupta, Hari Prabhat Gupta, Bhaskar Biswas, and Tanima Dutta (2020). A Fault-Tolerant Early Classification Approach for Human Activities using Multivariate Time Series, IEEE Transactions on Mobile Computing, 2020 (Accepted and in press).

8 Ashish Kumar Maurya, and Anil Kumar Tripathi (2019), An Edge Priority-based Clustering Algorithm for Multiprocessor Environments, Concurrency and Computation: Practice and Experience, Wiley, 31(11), e5060.

9 Ashish Kumar Maurya, and Anil Kumar Tripathi (2019). ECP: a novel clustering-based technique to schedule precedence constrained tasks on multiprocessor computing systems, Computing (Vienna/ New York), Springer, 101(8) 1015-1039.

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11 Dara, Sriharsha, and C. Ravindranath Chowdary (2019). A study on the role of flexible preferences in group recommendations. Applied Intelligence 49.9: 3293-3307.

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13 Das, D., Agarwal, A., Chattopadhyay, P., & Wang, L. (2019). RGait-NET: An Effective Network for Recovering Missing Information from Occluded Gait Cycles. arXiv preprint arXiv:1912.06765. (Communicated to IEEE Transactions on Biometrics, Behavior, and Identity Science).

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17 Gupta, D., Jain, S., Tripathi, U., Chattopadhyay, P., & Wang, L. (2019). Fully Automated Image De-fencing using Conditional Generative Adversarial Networks. arXiv preprint arXiv:1908.06837. (communicated to Signal, Image and Video Processing).

18 Jethwani, D., Gall, F. L., & Singh, S. K. (2019). Quantum-inspired classical algorithms for singular value transformation. arXiv preprint arXiv:1910.05699.

19 Kumar, A., Singh, S. S., Singh, K., & Biswas, B. (2019). Level-2 node clustering coefficient-based link prediction. Applied Intelligence, 49(7), 2762-2779.

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26 Lal, Anurag and C. Ravindranath Chowdary (2019). SANE 2.0: System for fine grained named entity typing on textual data. Engineering Applications of Artificial Intelligence 84: 11-17.

27 Nirbhay Kumar Tagore, Ayushman Singh, Sumanth Manche, Pratik Chattopadhyay, Person Re-identification from Appearance Cues and Deep Siamese Features, Journal of Visual Communication and Image Representation (Communicated after first revision).

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35 Singh, K., Kumar, A., Singh, S. S., Shakya, H. K., & Biswas, B. (2019). EHNL: An efficient algorithm for mining high utility itemsets with negative utility value and length constraints. Information Sciences, 484, 44-70.

36 Singh, N. P. and Srivastava, R. (2019). Extraction of retinal blood vessels by using an extended matched filter based on second derivative of Gaussian, Proceedings of the National Academy of Sciences, India Section A: Physical Sciences, Volume 89, Issue 2, pp 269–277.

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58 Srivastava, Gargi, and Srivastava, Rajeev (2020). Design, Analysis and Implementation of Efficient Framework for Image Annotation, ACM Transactions on Multimedia (ToMM) (Accepted).

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60 Srivastava, V., & Biswas, B. (2019). CNN-based salient features in HSI image semantic target prediction. Connection Science, 1-19.

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62 Srivastava, V., & Biswas, B. (2020). Deep CNN feature fusion with manifold learning and regression for pixel classification in HSI images. Journal of Experimental & Theoretical Artificial Intelligence, 32(2), 339-358.

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77 Verma, M., & Shukla, K. K. (2020). Convergence analysis of accelerated proximal extra-gradient method with applications. Neurocomputing, 388, 288-300.

Refereed National Journal: None

10. Number of Conference Papers: 36

11. Honours and awards to faculty members: None

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 24

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Rakshit Kumar	17074013	World Finalist at Hack Asia Hackathon conducted by Jardine Matheson, Dairy Farm and Agorize.	October 18-19, 2019	Sponsored by Jardine Matheson, Daimler, Dairy Farm and Agorize
2	Himanshu Singh Deepak Kumar Gour Bhavy Jain	16075031 16075023 16075020	ICPC Asia West Continent Championship, Rank 3rd	14th January, 2020 Kolkata & Tehran	ICPC Foundation and Jetbrains

14. Number of Students/Scholars who went for foreign Internship: 4

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator	Title	Period
1	Dr Sukomal Pal	A Foundation Program on Data Science	5th April, 2019
2	Dr. Ravi Shankar Singh	QIP-STC on High Performance Computing and Data Engineering	June 24-29, 2019
3	Dr. Ravi Shankar Singh	One Week Workshop on Supercomputing	September 23-27, 2019
4	Dr. Ravi Shankar Singh	One Week Workshop on High Performance Computing	January 20-25, 2020
5	Dr. Pratik Chattopadhyay (co-coordinator)	Numerical and Analytical Methods in Geo-mechanics	9th-13th December, 2019
6	Dr. Bhaskar Biswas (co-ordinator)	Smart Electronics for Connected Communities	4th-7th November, 2019

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 13

17. Number of Special lectures delivered by faculty members in other institutions: 19

18. Number of Visits abroad by faculty members for conference/symposia: 5

19. Fellowships of academic and professional societies:

S. No.	Name of Faculty Member	Details of Fellowship
1	Prof. Rajeev Srivastava	Senior Member, IEEE, USA
2	Dr. Ravi Shankar Singh	Fellow member, IE(India)
3	Dr. Ravi Shankar Singh	Fellow member, IETE
4	Dr. Hari Prabhat Gupta	IEEE Member
5	Dr. Tanima Dutta	IEEE SPS Member

S. No.	Name of Faculty Member	Details of Fellowship
6	Prof. Sanjay Kumar Singh	Senior Member IEEE
7	Prof. Sanjay Kumar Singh	ACM Professional Member
8	Prof. Sanjay Kumar Singh	Life Member, Computer Society of India (CSI)

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. Rajeev Srivastava	Reviewer	IEEE Transactions on Industrial Electronics ACM Transactions on Multimedia Computing Communications and Applications (TOMM) Computer Methods and Programs in Biomedicine, Springer Journal of Electronic Imaging, SPIE
2	Dr. Hari Prabhat Gupta	Main Guest Editor	IEEE Sensors Journal
3	Dr. Tanima Dutta	Guest Editor	IEEE Sensors Journal

21. Faculty members' participation with other universities under MoUs:

1. Dr. Pratik Chattopadhyay (Assistant Professor) has taken the initiative to form an MoU between IIT(BHU), Varanasi and Universidad Politecnica de Madrid, Spain to facilitate collaborative research and exchange of academic resources, faculties and students. The MoU has been signed by both the parties.
2. Dr. Tanima Dutta: MoU with Prof. S. Guha at University of Chicago, USA, Feb 2019- March 2020.

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

1. Kumar, R., Srivastava, R., Srivastava, S. (2015). Detection and classification of cancer from microscopic biopsy images using clinically significant and biologically interpretable features. Journal of medical engineering, 2015. (**85 Citations**)
2. Gupta HP, Chudgar HS, Mukherjee S, Dutta T, Sharma K. (2016) A continuous hand gestures recognition technique for human-machine interaction using accelerometer and gyroscope sensors. IEEE Sensors Journal. 16(16):6425-32. (**73 Citations**)
3. Singh, A. K., Kumar, B., Singh, S. K., Ghrera, S. P., & Mohan, A. (2018). Multiple watermarking technique for securing online social network contents using back propagation neural network. Future Generation Computer Systems, 86, 926-939. (**67 Citations**)
4. Singh, N. P., & Srivastava, R. (2016). Retinal blood vessels segmentation by using Gumbel probability distribution function based matched filter. Computer methods and programs in biomedicine, 129, 40-50. **(57 Citations)**
5. Chakraborty, M., Pal, S., Pramanik, R., & Chowdary, C. R. (2016). Recent developments in social spam detection and combating techniques: A survey. Information Processing & Management, 52(6), 1053-1073. (**49 Citations**)

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Mr. Balaji Krishnan (Software Developer)	02.01.2020	Talk on Challenges and Opportunities with Edge Computing Vs Cloud Computing
2	Prof. Sandeep Gupta (Director, School of Computing Arizona State University)	24.12.2019	Discuss about potential collaboration with CSE Department, IIT(BHU) and School of Computing Arizona State University
3	Padam Shri and Padam Bhushan Sh. Vijay Pandurang Bhatkar	21.09.2019	Interact with faculty members, technical officers, and research scholars of the Department.

24. Other activities:

International collaboration/achievements by the Department/School (From 1st April 2019 to 31st March 2020):

Dr. Pratik Chattopdhyay has strong collaboration with Dr. Lipo Wang of Nanyang Technological University (NTU), Singapore, and in the recent past they have communicated several research papers together. In future, he is looking to form an MoU between NTU and IIT(BHU) to facilitate exchange of ideas, and carry out collaborative research and academic activities.

Foreign Faculty Visits in the Department/School/School (From 1st April 2019 to 31st March 2020):

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Sandeep Gupta (Director, School of Computing Arizona State University)	Discussion about potential collaboration with CSE Department, IIT(BHU) and School of Computing Arizona State University	24.12.2019 (Committee Room, Department of CSE, IIT(BHU))

25. Any other Information:

The department is in the process of starting a new MTech Programme in Artificial Intelligence soon.

11. Department of Electrical Engineering

Year of Establishment: 1919

Head/Coordinator of the Department: Professor D. Singh

1. Introduction of the Department/School:

Since the inception of Benaras Engineering College (BENCO) in 1919, combined Bachelor's degree in Mechanical and Electrical Engineering was awarded till 1952. Department of Mechanical Engineering and Department of Electrical Engineering were separated in 1953 and conferred separate degrees in respective disciplines. Presently, Department of Electrical Engineering runs five post graduate (M. Tech.) programs in Electrical Machines and Drives (started in 1956), Power Systems (started in 1964), Control Systems (started in 1964), Power Electronics (started in 1982) and Interdisciplinary Systems Engineering (started in, 1982) and Ph. D. program in all disciplines of Electrical Engineering. The department has also a five year Integrated Dual Degree Program (started in 2006) leading to Master's degree with specialization in Power Electronics. The department has been sanctioned Special Assistance Programme (SAP) of UGC since 1988 and COSIST program of UGC from 1995 to 2000. Apart from these, the department has been conducting research projects funded by DST, AICTE, CPRI and other R&D organizations of Govt. of India. Department has very good placement records over the years. Some of the department's famous alumni includes, Mr.Nikesh Arora: Senior Vice President and Chief Business Officer at Google, Mr. Rajiv Dogra: Indian diplomat, Ex- Consul General to Karachi, Pakistan, Mr. Gyanesh Pandey: Co-founder, CEO and CTO of Husk Power Systems and Mr. Narla Tata Rao: Winner of Padma Shree, a doyen of power sector in India.

Department has 7 lecture halls and 5 laboratory.

Major areas of Research: Power System, Power Electronics, Machines and Drives, Control System

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Pharm	96	89	87	89	
2.	Dual Degree	22	22	23	22	22
3.	M. Tech/ M. Pharm	45	35	--	--	--
4.	Ph. D (Under Institute Fellowship)	10	11	8	9	11+5(Rs.10,000)
5.	Ph. D (Under Project Fellowship)	-	-	-	1	-
6.	Ph. D (Under Sponsored Category)	1(QIP)	-	-	1	-

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1.	Dr. S P Singh, PhD, Emp. No.13783	1991	Power System Operation and Control, Smart Grid, Distribution Automation.
2.	Prof. S. K. Nagar Ph.D. Emp. No.13780	1991	Control Systems, AI Applications
3.	Prof. R. K. Pandey Ph.D. Emp. No.16623	22/05/1992	EHV AC & DC Transmission, FACTS Controllers Design & Analysis, Integrated Large Power System Operation & Control
4.	Rakesh Kumar Srivastava Ph.D. EE; Dip in German. Emp No. 13788	06 March 2000	Electrical Machines & Drives, Linear Induction Motor, Permanent Magnet Machines

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
5.	Prof. R. K. Misra Ph.D. Emp. No.13791	23/03/ 2005	Power Distribution Systems , AI and its application in Power Systems, Control and Applications of Computational Intelligence in Power Systems
6.	Prof. R. Mahanty Ph.D. Emp. No. 13792	10/10/2005	Power Electronics
7.	Prof. Devender Singh Ph.D. Emp. No.17094	05/04/ 2002	Short term Load Forecasting, State Estimation, Distributed Generation,
8.	M. K. Verma Ph.D. Emp. No. 17590	31/5/2005	Voltage stability studies, Application of FACTS controllers, Smart grid
9.	R.K.Saket Ph.D. (Reliability Engineering) Emp. No. 17548	16/06/2006	Reliability Engineering, Electrical Machines & Drives, Renewable Energy Systems
ASSOCIATE PROFESSORS			
1.	Kalpana Chaudhary, Ph. D, Emp no. 16629	19th July 2009	Power Electronics, Electrical Machines and drives, Renewable energy generation, Satellite solar power station
2.	Santosh Kumar Singh PhD Emp. No.17446	24th March 2012	Power Electronics, Electric Drives, Renewable energy integration
3.	Dr. R. K. Singh Ph.D. Emp. No. 17464	12/02/2013	Power Electronics, Energy Storage System and Optimal Bidirectional Battery Chargers, Modelling , simulation, and control of Power Electronics System, Power Electronics for the Hybrid Renewable AC/DC micro-grid, Modeling and control for Point-of-load's, EV/PHEV interface with renewable energy and grid.
4.	Dr S.R. Mohanty, PhD (IIT Kharagpur), (Employee No.-50224)	23/02/2002	Protection issues in Power System and Micro grid, Disturbance detection and classification in hybrid distributed generation Multi-objective Robust Control Based Load-Frequency control, Fault Analysis in Offshore Wind Farm, Wide area Monitoring and control in Smart Grid Environment, Harmonic and Inter harmonic estimation in Power System
5.	Dr. V. N. Lal Ph.D., Emp. No. 175549	09/09/2015	Power Electronics. Design and Control of Solar PV system, Renewable Energy, ANN application in Power Electronics.
6.	Sandip Ghosh Ph.D. Emp. No 50063	11/11/2010	Control System Engineering
ASSISTANT PROFESSORS			
1.	Dr. Jeewan Chandra Pandey PhD, Emp. No. 17538	28-06-2018	(i)High Voltage electrical insulation (ii) Nanodielectrics
2.	Dr. Manish Kumar Ph.D. Emp. No. 17101		Renewable Energy Technologies Plasma Physics Coherent Radiation Generation, Terahertz Radiation Generation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
3.	Dr. Shyam Kamal Ph.D. Emp No 50062	14-08-2014	Nonlinear control, Adaptive control, Fault Tolerant Control
4.	NK Swami Naidu Ph.D. Emp. No 50209	19/05/2015	Power Electronics and Drives, Renewable Energy integration to grid, Microgrid.
5.	Ms. Sobhita Meher M. Tech. 17589	---	Computer Science

4. Technical and Non-Teaching Staff

Sl. No.	Name	Qualification	Designation, Employee Number	Date of appointment	
				In IT(BHU)/(BHU)	In the Department
1.	Mr. Sanjeev Kumar Maurya	B.Sc.	Junior Superintendent, 50149	21.07.2017	25.07.2017
2.	Mr. Sunil Kumar Sonkar	MBA	Junior Assistant, 19876	19.02.2015	27.04.2015
3.	Mr. A.N.Singh	M.A., B.Sc., CIC	Technical Superintendent, 14007	16.06.1988	16.06.1988
4.	Mr. R. C. Sharma	B.A.	Technical Superintendent, 14008	26.04.1991	26.04.1991
5.	Mr. Radhe Shyam Patel	Intermediate, Polytechnic in EE	Technical Superintendent, 18648	05.08.2008	05.08.2008
6	Mr. B. L. Singh	B.A., Diploma in E.E., DBM	Technical Superintendent, 18657	06.08.2008	06.08.2008
7	Mr. Umesh Mishra	B.Sc.	Senior Technician, 18658	05.08.2008	05.08.2008
8	Mr. Satish Kumar Singh	B.A.	Senior Technician, 18652	06.08.2008	06.08.2008
9	Mr. Dharmendra Kumar Singh	High School+ITI	Senior Technician, 18647	07.08.2008	07.08.2008
10	Mr. Sanjay Kumar Bharti	B.Sc., B.Ed.	Senior Technician, 18659	11.08.2008	11.08.2008
11	Mrs. Ranjana Singh	Postgraduate	Senior Technician, 14740	16.05.1996	13.04.2012
12	Mr. Anjneya Kumar	M.Sc., B.Ed.	Senior Technician 19649	03.08.2012	21.09.2012

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Construction of Non-monotonic Lyapunov Function for the Dynamical Systems governed by Differential Inclusions: Project's reference no. MTR/2018/000799	2019-2021 (3 years)	Mathematical Research Impact Centric Support (MATRICS) to the Science and Engineering Research Board (SERB), india	6 Lakh	Shyam Kamal
2	Output Feedback Controller Design for Linear Parameter Varying Systems: Project's reference no. CRG/2018/004481	2019-2021 (3 years)	Science and Engineering Research Board (SERB), India	60 Lakh	Shyam Kamal
3	Output Feedback Controller Design for Linear Parameter Varying Systems	17/Jul/19-16/ Jul/22	SERB (Core Research Grant)	57.32 Lakh	Dr. Sandip Ghosh
4	Prospects of power converters for Integration of Electric vehicle charging stations with the existing Electric distribution system in India	2019 to 2021	MHRD-SPARC	49.78	Dr. S K Singh (PI)
5	Virtual Synchronous Generator for Microgrid Applications	19th March 2019 to 19th March 2022	SERB	45.54	N Krishna Swami Naidu
6	Mix-Energy-Source Electric Vehicle Charging System Design and its Impact on Indian Smart-distribution-grid	July 2018- July 2021	DST India	90	R. K. Singh

Industrial consultancy projects

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	R K Srivastava	Design, modeling and simulation of Linear induction drive for propulsion applications	RCI, Hyderabad	10.00 (2018-20)
2	R K Srivastava; O.P. Singh (ME); S. Bhattacharyya (ECE)	Design and Analysis of Linear Induction Motor Drive for EMLS	DRDO, Pune (Awaiting fund transfer)	30.00 (2020-22)

6. New facilities added

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	dSPACE Controller	15

7. Patents filed: Nil

8. Books, monographs authored/co-authored: Nil

9. Research Publication:

Manuscript

1 Piyush Choudhary, Rakesh Kumar Srivastava (2019), "Sustainability perspectives-a review for solar photovoltaic trends and growth opportunities", Journal of Cleaner Production, 2019/4/12

2 K.S. Anand Kumar, Singh Aanchal S Vardhan, Singh Akanksha S Vardhan, Sachin Kumar, R.K. Saket, R. Rajendran, S. Eslamian (2020), Microbial Fuel Cells for Soil Based Green Energy Conversion System, International Journal of Hydrology Science and Technology, Inderscience Publishers (UK), In Press.

3 Abhinandan Routray, Rajeev Kumar Singh, and R. Mahanty "Selective Harmonic Elimination in Hybrid Cascaded Multilevel Inverter Using Modified Whale Optimization", International Transactions on Electrical Energy Systems, accepted for publication, November 2019.

4 Abhinandan Routray, Rajeev Kumar Singh, and R. Mahanty (2020), "Harmonic Reduction in Hybrid Cascaded Multilevel Inverter Using Modified Grey Wolf Optimization", IEEE Transactions on Industry Application, accepted for publication, November 2019

5 Alok Jain and M. K. Verma, "A communication-assisted scheme in radial disdtibution systems using Phasor Measurement Units", IETE Technical Review (SCI-E indexed), Early view available since 04 September 2019 https://doi.org/10.1080/02564602.2019.1660237

6 Alok Jain and M. K. Verma, "A state-of-the-art on power quality enhancement techniques: present scenario and future challenges", International Journal of Recent Technology and Engineering (IJRTE) (Scopus-indexed), Vol. 8, issue 3, pp. 5757-5762, September 2019.

7 Alok Jain and M. K. Verma, "Monitoring, control, and protection of radial distribution networks using a two-level control architecture", International Transactions on Electrical Energy Systems (SCI-E indexed), Vol. 30, Issue 3, March 2020 (Early view available since 25 November 2019 https://doi.org/10.1002/2050-7038.12213)

8 Anish Ahamad and Rajeev Kumar Singh (2019), "Embedded Dual Switched-Capacitor Based Continuous Input Current Switched-Inverter for Renewable Energy Application", IET Power Electron, Vol 12, page 1263–1273, May 2019

9 Anish Ahmad, Rajeev Kumar Singh, A. R. Beig (2019), "Switched-Capacitor Based Modified Extended High Gain Switched Boost-Z-Source Inverters", IEEE Access, accepted for publication, December 2019

10 Avneet Kumar, M. Raghuram, Santosh Kumar Singh, Xiaogang Xiong, Motiur Reza, "Analysis and Control of Enhanced Switched Boost Inverters for Wide Duty Cycle Operation", IEEE Access, vol. 7, Issue: 1, pp. 45427-45439, Dec 2019

11 Avneet Kumar, Sajid Kamal, M. Raghuram, Deepankar, Santosh Kumar Singh, Xiaogang Xiong, "High Gain Quasi-Mutually Coupled Active Impedance Source Converter Utilizing Reduced Components Count", IEEE Transactions on Industry Applications, vol. 55, issue:6, pp. 6376-6388, Nov-Dec 2019

12 Avneet Kumar, Yi Wang, M. Raghuram, Naresh K. Pilli, Santosh Kumar Singh, Xuewei Pan, Xiaogang Xiong, "A Generalized Switched Inductor Cell Modular Multilevel Inverter", IEEE Transactions on Industry Applications, vol. 56, issue:1, pp. 507-518, Jan-Feb 2020

13 B. Vinod Kumar, Rajeev Kumar Singh and R. Mahanty, "Enhanced high gain switched LC Z-source inverter at low duty region", IET Power Electron, Vol 12, page 1532-1544, June 2019

14 B.Sethi, D. Singh, R.K.Mishra and S. R. Mohanty, "Smart Home Energy Management System under False Data Injection Attack," International Transactions on Electrical Energy Systems, Early Access ,Willey Inter Science,March2020 (Impact Factor: 1.53)

15 B.Vinod Kumar, Rajeev Kumar Singh, V.N.Lal, and R. Mahanty, "Design and Analysis of Step-Up Interleaved DC-DC Converter for Different Duty Regions", IEEE Transactions on Industry Applications, accepted for publication, December 2019

16 Devesh Shukla, S.P.Singh, Soumya . Mohanty, "ATC Assessment and Enhancement of Integrated Transmission and Distribution System considering the impact of Active Distribution Network," IET Renewable Power Generation, March 2020(Impact Factor: 3.760)

17 E. Purwar, D. N. Vishwakarma and S. P. Singh, "A Robust Protection Scheme Based on Hybrid Pick-Up and Optimal Hierarchy Selection of Relays in the Variable DGs-Distribution System", IEEE Transactions on Power Delivery, vol. 35, no. 1, pp. 150-159, Feb 2020.

18 Goyal J. K., Ghosh S. and Kamal S. (2019) New LMI Conditions for H∞/H2 Output Feedback Control of Linear Discrete-Time Systems. International Journal of Control, DOI.org/10.1080/00207179.2019.1665712.

19 Goyal J. K., Kamal S., Patel R. B., Yu X., Mishra J. and Ghosh S. (2019) Higher Order Sliding Mode Control Based Finite-time Constrained Stabilization. IEEE Transactions on Circuits and Systems II: Express Briefs, (Early Access), DOI: 10.1109/ACCESS .2019. 2901806.

20 J. K. Jain, S. Ghosh and S. Maity, (2019) "A Dynamic Controller Design for Indirect Vector Controlled Induction Motor", IET Electric Power Applications, Vol. 13, Issue 8, pp. 1167-1176

21 J. K. Jain, S. Ghosh and S. Maity, (2020) "Concurrent PI Controller Design for Indirect Vector Controlled Induction Motor", Asian Journal of Control, Vol. 22, Issue 1, pp. 130-142.

22 Jha B. K., Kumar A., Dheer D. K., Singh D. and Misra R. K.(2019) A modified current injection load flow method under different load model of EV for distribution system. International Transactions on Electrical Energy Systems 30(4)

23 Jha B. K., Singh A., Kumar A., Dheer D. K., Singh D. and Misra R. K. (2019) Day ahead scheduling of PHEVs and D-BESSs in the presence of DGs in the distribution system. IET Electrical Systems in Transportation.

24 K.S. Anand Kumar, R.K. Saket, R. Rajendran, S. Eslamian (2020), "Design and Development of Green Energy Conversion System Using Waste Water and Organic Kitchen Wastes", International Journal of Hydrology Science & Technology, Inderscience Publishers (UK), Impact Factor: 0.246, Volume: 00; No: 00; pp: 000-000, In Press. Web Site: http://www.indercsience.com/ijpec.

25 K.S. Anand Kumar, Sachin Kumar, R. K. Saket, R. Rajendran (2019), "Technological Aspects of Microbial Fuel Cells and Soil Based Green Energy Conversion System", GMSARN International Journal; Volume: 13, Issue: 04, pp: 159-170. Web-site: http://www.gmsarn.com.

26 Kamal S., Kumar R., Chalanga A., Goyal J. K., Bandyopadhyay B. and Fridman L. (2020) A New Class of Uniform Continuous Higher Order Sliding Mode Controllers. Journal of Dynamic Systems Measurement and Control, 142(1) DOI.org/10.1115/1.4044952.

27 Kamal S., Sharma R. K., Thach D., Harikrisnan M. S. and Bandyopadhyay B. (2019) Sliding Mode Control of Uncertain Fractional Order Systems: A Reaching Phase Free Approach. Asian Journal of Control, DOI. org/10.1002/asjc.2223.

28 Kamal S., Yu X., Sharma R. K., Mishra J. and Ghosh S. (2019) Non-Differentiable Function Tracking. IEEE Transactions on Circuits and Systems II: Express Briefs, vol. 66, no. 11, pp. 1835-1839, DOI:10.1109/ TCSII.2018.2890403.

29 Kamal, S., Sachan, A., Kumar, D. K., & Singh, D. (2019). Robust finite time cooperative control of second order agents: A multi-input multi-output higher order super-twisting based approach. ISA transactions, 86, 1-8.

30 Karabacak M., Ramírez L. F., Kamal T. and Kamal S. (2019) A new Hill Climbing Maximum Power Tracking Control for Wind Turbines with Inertial Effect Compensation. IEEE Transactions on Industrial Electronics, 66(11), pp. 8545-8556, DOI:10.1109/ TIE.2019. 2907510.

31 Kharan Shiluveru, Akash Singh, Anish Ahmad, and Rajeev Kumar Singh (2019), "Hybrid Buck-Boost Multi Output Quasi Z-Source Converter with Dual DC and Single AC Outputs", IEEE Transactions on Power Electronics, accepted for publication, December 2019

32 Kumar A, Jha B. K., Dheer D. K. and Misra R. K. amd Singh D (2020) A Nested-Iterative Newton-Raphson based Power Flow Formulation for Droop-based Islanded Microgrids. Electric Power Systems Research 180():

33 Kumar A, Misra R. K., Singh D., Mishra S. and Das S. (2019) The spherical search algorithm for bound-constrained global optimization problems. Applied Soft Computing 85():

34 Kumar A., Jha B. K., Singh D. and Misra R. K. (2019) Current injection-based Newton–Raphson power-flow algorithm for droop-based islanded microgrids. IET Generation, Transmission & Distribution 13(23): 5271-5283.

35 Kumar A., Jha B. K., Singh D. and Misra R. K. (2020) A New Current Injection Based Power flow Formulation. Electric Power Components and Systems

36 Kumar A., Jha B. K., Singh D. and Misra R. K. (2020) A novel Power Flow Formulation for a Droop Controlled Islanded Microgrid. International Transaction on Electrical Energy Systems

37 M Raghuram, AK Chauhan, SK Singh, "High Gain Integrated Switched Capacitor Indirect Matrix Converter", IEEE Journal of Emerging and Selected Topics in Power Electronics, vol. 7, issue:3, pp. 1846-1853, Sep 2019

38 M Raghuram, Avneet K. Chauhan, Santosh Kumar Singh, "Extended Range of Ultra Sparse Matrix Converter Using Integrated Switched Capacitor Network", IEEE Transactions on Industry Applications, vol. 55, issue: 5, pp. 5406-5415, Sep-Oct 2019

39 M. Juneja, S. Nagar, and S. R. Mohanty, "PSO based reduced order modelling of Autonomous AC Microgrid considering state perturbation," Taylor and Francis journal, Journal for Control, Measurement, Electronics, Computing and Communications vol. 7, pp. 66–78, July2019. (Impact Factor:.403)

40 M. Juneja, S. Nagar, and S. R. Mohanty, "Robust optimization- based order reduction and stability analysis of autonomous DC Microgrid with consideration of non- linearity," International Transactions on Electrical Energy Systems Willey Inter Science vol. 7, pp. 66–78, October 2019. (Impact Factor:.1.53)

41 Manash Kumar Mishra and V. N. Lal (2020), "An improved methodology for reactive power management in grid integrated solar PV system with maximum power point condition", Solar Energy, Elsevier, Vol 199, Page 230-245.

42 Naresh K. Pilli, M. Raghuram, Avneet Kumar, Santosh K. Singh, "Single dc-source-based seven-level boost inverter for electric vehicle application", IET Power Electronics, vol.12, issue: 3, pp. 3331-3339, Nov 2019

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44 Naresh K. Pilli, Santosh K. Singh, "Logic pattern-based low-frequency pulse generation technique for modified multilevel DC-link inverters", Journal of Power Electronics, vol. 20, no. 1, pp. 121-132, Jan 2020

45 Om Prakash Bharti, R. K. Saket and S. K. Nagar (2019), "MPPT based On-off control for DFIG Driven by Variable Speed Wind turbine", GMSARN International Journal; Volume: 13, Issue: 03, pp: 125-137, Web-site: http://www.gmsarn.com.

46 Om Prakash Bharti, R. K. Saket; S. K. Nagar (2019), "Reliability assessment and Performance analysis of DFIG based WT for wind energy conversion system", International Journal of Reliability and Safety, Inderscience Publishers (UK), Impact Factor: 0.246, Volume: 13; No: 04; pp: 235-266. Web Site: http://www.indercsience.com/ijrs.

47 P. R. Sahoo, J. K. Goyal, S. Ghosh and A. K. Naskar, (2019) "New results on restricted static output feedback H∞ controller design with regional pole placement", IET Control Theory & Applications, Vol. 13, Issue 8, pp. 1095-1104

48 Pal A.K., Kamal S., Nagar S.K., Bandyopadhyay B. and Fridman L. (2020) Design of controllers with arbitrary convergence time. Automatica, 112, p.108710.

49 Pandey J.C. and Gupta N. (2019), Study of Treeing in Epoxy-Alumina Nanocomposites using Electroluminescence, IEEE Transactions on Dielectrics and Electrical Insulation,26(2): 648–653

50 Pankaj Sahu and M. K. Verma, "Online monitoring of voltage stability margin and its control through STATCOM", Compusoft, An International Journal of Advanced Computer Technology (SCOPUS-indexed), Vol. 8, Issue 8, pp. 3324-3335, August 2019.

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52 Pawan Kumar, Rajeev Kumar Singh, and R.Mahanty (2019), "Minimum Phase Bipolar Converter for DC Microgrid Applications", IET Power Electronics, accepted for publication, October 2019

53 Raja Ram Kumar, S.K. Singh, R.K. Srivastava and R.K. Saket (2020), "Dynamic Reluctance Air gap Modeling and Experimental Evaluation of Electromagnetic Characteristics of Five-Phase Permanent Magnet Synchronous Generator for wind power application", Ain Shams Engineering Journal, Elsevier (WoS, Scopus & SCIE), Impact Factor: 3.091, Available online (In Press); volume: 0, issue: 0, pp: 00-00. Web-site: http://www.sciencedirect.com/asej.

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71 Singh B., Kamal S., Yu X., Ghosh D. and Ghosh S. (2020) Controller and Observer design for Chaotic Systems: A Vector based Contraction Approach. IEEE Transactions on Circuits and Systems II: Express Briefs, (Accepted).

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84 Vijay Babu Pamishetti, Shailendra Singh and S. P. Singh, "Combined Impact of Network Reconfiguration and Volt-VAR Control Devices on Energy Savings in the Presence of Distributed Generation", IEEE Systems Journal, vol. 14, no. 1, pp. 995-1006, March 2020.

85 Vijay Babu Pamishetti, Shailendra Singh and S.P. Singh, "Reduction of energy demand via conservation voltage reduction considering network reconfiguration and soft open point", International Transactions on Electrical Energy Systems, vol. 30, Issue 1, January 2020.

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88 Xiong X., Kikuuwe R., Kamal S. and Ji+A1:B89+A79:B89n S. (2019) Implicit-Euler Implementation of Super-Twisting Observer and Twisting Controller for Second-Order Systems', IEEE Transactions on Circuits and Systems II: Express Briefs, (EarlyAccess), DOI:10.1109/ TCSII. 2019. 2957 271.

Refereed National Journal:

Kumar, P., Srivastava, R.K. (20), "Effect of Relative Slot-Opening Shift on Cogging Torque and Performance of an Axial Flux Permanent Magnet Machine", Journal of The Institution of Engineers (India): Series B, 100(2), pp. 117-122

10. Number of Conference Papers: 27

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1.	**Shyam Kamal**	INAE Young Engineers Award-2019 for research contribution in control system
		Recipient of SERB-International Travel Grant for the 21st IEEE ICIT-2020 held in Buenos Aires, Argentina.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India:

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Jitendra Kumar Goyal	16181001	IES Student & Young Professional Paper Assistance Award	Feb 26th , 2020, Buenos Aires, Argentina	IEEE IES Society at 21st *International Conference on Industrial Technology* (ICIT 2020)
2	Shailendra Singh	14081011	POSOCO Power System Award (PPAS -2020) Under Doctoral Category	13 March 2020, IIT Delhi	POWER SYSTEM OPERATION CORPORATION LIMITED (POSOCO), in association with FITT IIT Delhi .
3	Chandan Kumar Behera	17082110	Best paper Award	14-15 Feb 2020,MMMUT, Gorakhpur India	ICE3,2020 jointly Organized by MMMUT Gorakhpur and North Dakota state University ,USA

14. Number of Students/Scholars who went for foreign Internship: Nil

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members: Nil

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 8

17. Number of Special lectures delivered by faculty members in other institutions: 19

18. Number of Visits abroad by faculty members for conference/symposia: 3

19. Fellowships of academic and professional societies: Nil

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	R.K.Saket	**Editorial Board Member**	(1) IET Renewable Power Generation (UK) (2) Journal of Electrical Systems (France) (3) Engineering, Technology and Applied Science Research (Greece)

21. Faculty members' participation with other universities under MoUs: Nil

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

23. Distinguished Visitors:

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Shankar P. Bhattacharyya Electrical and Computer Engineering Texas A&M University	Delivering lecture on "A Model Free Measurement Based Approach to Design"	09 Dec 2019 Department of Electrical Engineering
2	Prof. Johann Reger Institute for Automation and Systems Engineering, Computer Science and Automation Department, Technische Universität Ilmenau, Germany	Delivering lecture on "Dynamic Extensions for Exact Backstepping Control of Systems in Pure Feedback Form" and collaborating interactions in the department	28/11/2019-01/12/2019
3	Prof. Bhim Singh, IIT Delhi	PhD oral exam	31-10-2019, Electrical Engg. Deptt.
4	Prof. G. K. Singh, IIT Roorkee	PhD oral exam	22-05-2019, Electrical Engg. Deptt.

12. Electronics Engineering

Year of Establishment: 1971

Head/Coordinator of the Department: Prof. V. N. Mishra

1. Introduction of the Department/School:

The Department of Electronics Engineering came into existence as an offshoot of Electrical Engineering Department in the year 1971 with a great effort from Prof. S.S. Banerjee. In the same year the erstwhile Banaras Engineering College (BENCO), College of Mining and Metallurgy and College of Technology were amalgamated to form the Institute of Technology-Banaras Hindu University (IT-BHU). The Department offers Bachelor, Master and Doctoral programs in Electronics Engineering with the major thrust areas of Microelectronics, Microwave Engineering, Digital Techniques & Instrumentations and Communication Systems. The Department has been actively engaged in research since its inception as evidenced by the research publications. The first major financial support from the Department of Electronics (DoE), Govt. of India in the tune of Rs.1.0 Crore was received by the Department in 1980 to carry out research for development of High Power Microwave Tubes. Subsequently, in recognition of excellent research contribution, the University Grants Commission (UGC) identified the Department to provide financial support under Special Assistance Program (SAP) in 1983 for five years. During this period, the department established three independent research centers e.g., Centre of Research in Microwave Tubes (CRMT), Centre for Research in Microelectronics (CRME) and Centre for Research in Microprocessor Applications (CRMA) supported by UGC/MHRD. The Department was further recognized as a Centre of Advanced Studies (CAS) by the UGC in 1989. The Department successfully completed three phases of CAS in the year 2009. The Department is also one of the DRDO centers for M.Tech. in Electronics Engineering. In addition to this, the Department has been actively pursuing manpower training and collaborative research programs in specialized areas to meet the national manpower requirement in R&D laboratories, academic institutions and industries. The Department has a close interaction with many reputed national R&D laboratories such as DRDO, CSIR, Bharat Electronics Ltd. and leading software companies as well as foreign Universities.

The floor area of the department is 3561.22 sq. meter. The department has 16 laboratories, 1 lecture hall, and 8 classrooms.

Major areas of Research: Communication System Engineering, Digital Techniques & Instrumentation, Microwave Engineering, Microelectronics Engineering

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech	124	100	88	88	-
2.	M. Tech	41	28	-	-	-
3.	Ph. D (Under Institute Fellowship)	3	7	18	3	8
4.	Ph. D (Under Project Fellowship)	-	1	-	-	-
5.	Ph. D (Under Sponsored Category)	-	-	3	-	-
6.	Ph. D (Under QIP Category)	4	2	2	-	-
7.	Ph. D (Others)	1	-	-	-	5

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. P. Chakrabarti (On Deputation) Ph.D Employee ID: 13803	1988	High Speed Semiconductor Devices, Optoelectronic Devices, Optical Communication

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
2	Prof. P. K. Jain (On Deputation) Ph.D Employee ID: 13802	1988	Microwave Engineering
3	Prof. V. N. Mishra Ph.D Employee ID: 10389	1996	Microelectronics
4	Prof. Satyabrata Jit Ph.D Employee ID: 13804	2002	Advanced CMOS Devices, Thin Film Based Nanoelectronic Devices for Electronic, Gas Sensing and Optoelectronic Applications
ASSOCIATE PROFESSORS			
1	Dr. Manoj Kumar Meshram Ph.D Employee ID: 16628	2001	Microwave antennas, Artificial materials, Microwave passive devices
2	Dr. N. S. Rajput Ph.D Employee ID: 16800	July 2011	Digital Techniques & Instrumentation
3	Dr. Amit Kumar Singh Ph.D Employee ID: 18299	June 2010	Microwave Engineering
4	Dr. Amritanshu Pandey Ph.D Employee ID: 18360	2016	Communication System Engineering, Microelectronics
5	Dr. M. Thottappan Ph.D Employee ID: 18358	15 May, 2014	Microwave Engineering
ASSISTANT PROFESSORS			
1	Mr. M. K. Singh M.Tech. Employee No. 13806	N. A.	Communication System Engineering
2	Kishor P Sarawadekar Ph.D. Employee No. 19847	5 July, 2012	VLSI Architectures, VLSI based Signal and Image Processing, Image Coding and Image Compression
3	Dr. Somak Bhattacharyya Ph.D. Employee No. 50074	30 April, 2015	RF & Microwave Engineering, Metasurfaces, Terahertz Modelling
4	Dr. Smrity Dwivedi Ph.D. Employee No. 50101	29 December, 2012	RF & Microwave Engineering
5	Dr. Shivam Verma Ph.D. Employee No. 50231	4 January, 2017	Spintronics, Devices and Circuits for VLSI, Non-volatile memory and logic circuits
6	Dr. Sanjeev Sharma Ph.D. Employee No. 50236	17 November, 2018	Wireless Communication, Signal Processing, Machine Learning-based Wireless Communication Systems Design
INSTITUTE PROFESSORS			
1	Prof. S.P. Singh Ph.D., FAC-IP09	1989	Bioelectromagnetics, Antennas, Microwave Circuits and Measurements

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
2	Dr. Anand Mohan Ph.D., FAC-IP03	1994	Digital Techniques & Instrumentation
INSTITUTE ASSOCIATE PROFESSORS			
1	Dr. R. Dwivedi Ph.D Employee ID: 13796	1978	Microelectronics
2	Dr. R. U. Khan Ph.D Employee ID: 13799	1987	Microelectronics
SENIOR SCIENTIFIC OFFICER			
1	Dr. Ashok Kumar Sharma M.Sc, Ph.D Employee ID: 17019	4 October, 1989	Microelectronics, Photovoltaics

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Dr. Vinod Kumar Singh, Ph.D	Senior Technical Superintendent (Gr.-II), 14165	16.01.1990
2	Sri. Tarun Kumar Singh, M.Sc. (Electronics)	Sr. Technical Superintendent (Gr.-I), 16564	15.02.1995
3	Sri. Lal Bhadur Vishwakarma, B.A.	Sr. Technical Superintendent, 14166	11.03.1988
4	Sri. Krishna Kumar Srivastava, Intermediate	Sr. Technical Superintendent, 14167	16.01.1990
5	Sri. Lalji Prasad, Intermediate, Diploma	Sr. Technical Superintendent, 18022	18.01.2007
6	Sri. Mohan, High School	Technical Superintendent, 14170	11.03.1988
7	Sri. Binod Kumar Singh, Intermediate	Technical Superintendent, 16567	11.03.1988
8	Sri. Rajesh Kumar Rai, Intermediate, ITI	Technical Superintendentt, 16566	11.03.1988
9	Sri. Bahru Ram, High School, ITI	Technical Superintendent, 14013	07.02.1995
10	Sri. Jay Ram, High School	Technical Superintendent, 14014	07.02.1995
11	Sri. Sanjiv Kumar Srivastava, B.A., ITI	Jr. Technical Superintendent, 18056	20.02.2007
12	Sri. Shyam Narayan, Intermediate, ITI	Jr. Technical Superintendent, 18087	26.02.2007
13	Sri. Bahadur Lal, B.A.	Senior Technician, 18660	05.08.2008
14	Sri. Vinod KumarVerma, Intermediate, ITI Diploma	Senior Technician, 18653	05.08.2008
17	Sri. Dinesh Kumar, Intermediate, ITI DIploma	Senior Technician, 18673	06.08.2008
18	Sri. Vinay Kumar Srivastava, B.Sc.	Senior Technician, 18907	18.01.2010
19	Sri. Gyan Chand Vishwakarma, High School	Senior Technician, 18904	18.01.2010
20	Sri. Amit Kumar Srivastava, B.A.	Senior Technician, 18609	05.08.2008
21	Sri. Ravindra Nath Ram, Intermediate	Senior Technician, 14016	01.04.1990
22	Sri. Ajit Kumar Singh, Intermediate, ITI	Senior Technician, 19270	09.02.2011

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
23	Sri. Sanjay Kumar Vishwakarma, M.Sc.	Senior Technician, 19594	11.07.2012
24	Smt.Sudha Misha, M .Sc, Ph.D	Junior Superintendent, 17436	01.10.2015
25	Sri. Ashish Kumar Vishwakarma, B.Tech. (E&C)	Jr. Assistant, 50081	20.05.2017
26	Sri. Rajeev Ratan Sahaya, B.Tech, MBA	Junior Assistant, 50186	06.03.2018
27	Sri. Ved Prakash Yadav, M.A.	MTS	16.12.2016
28	Sri. Pavan Singh, B.A., ITI	MTS	16.12.2016
29	Sri. Ankit Kumar Rai, M.A., B.Ed	MTS	01.11.2019

5. Research and Consultancy:

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Development of Polymer and Doped Quantum Dots Blended Tandem Solar Cells Using Low-Cost Solution Processed Method	2017-2020	SERB	44.86	Prof. S. Jit
2	Design and Development of Miniaturized Pattern/ Frequency Reconfigurable MIMO Antennas and its Performance Improvement using Artificial Electromagnetic Material	2017-2020	SERB	42.52	Dr. Manoj Kumar Meshram
3	Electromagnetic Analysis, Design and Simulation of Dual frequency (S- and C-band) Relativistic Backward Wave Oscillator – A HPM Source	Sep. 2019-Sep-2022	DRDO	46.85	Dr. M. Thottappan
4	Study, Design and Implementation of Frequency Selective Metasurfaces for Microwave Applications	2018-2021	SERB	46.70	Dr. Somak Bhattacharyya
5	Design, Development and Characterization of Low-Loss, Frequency-Selective Metamaterial Waveguide, Coupler and Antenna for 5G Applications	2020-2023	SERB	6.60	Dr. Smrity Dwivedi
6	Development of Simulation Software for Spintronics Device and Circuit Simulation	Dec 2019-Dec 2021	SERB	16.13	Dr. Shivam Verma

Industrial consultancy projects: Nil

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	IOT Lab Boards and Sensors	6.00
2	NI Labview Platform	7.50
3	Embedded System Kits	1.00
4	GPU accelerated Workstation with 2 GPUs (16GB+11GB GPU)	5.50
5	COMSOL Multiphysics	5.00

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1	Vikram Kumar, **Smrity Dwivedi, P. K. Jain**	Sectoral waveguide mode convertor used with high power microwave devices

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	NS Rajput, Dhananjay Singh	Blockchain Technology for Smart Cities	Springer Nature Singapore Pvt. Ltd.
2	Amit Kumar Singh, Anand **Mohan**	Handbook of Multimedia Information Security: Techniques and Applications	Springer International Publishing (ISBN: 978-3-030-15886-6)
3	Trailokya Nath Sasamal, Ashutosh Kumar Singh, and Anand Mohan	Quantum-Dot Cellular Automata Based Digital Logic Circuits: A Design Perspective	Springer ISBN 978-981-15-1823-2
4	Ashutosh Kumar Singh, Masahiro Fujita, Anand Mohan	Design and Testing of Reversible Logic	Springer htttps://www.springer.com/gp/book/9789811388200

9. Research Publication:

Manuscript

1 A. K. Mishra, D. K. Jarwa1, B. N. Mukharjee, A. Kumar, S. Ratan and S. Jit, "CuO nanowire based extended-gate field-effect-transistor (FET) for pH sensing and enzyme-free/receptor-free glucose sensing applications," accepted for publication in *IEEE Sensor Journal.*

2 A. K. Singh, M. R. Tripathy, K. Baral, P. K. Singh, *S. Jit,* "Simulation Study and Comparative Analysis of Some TFET Structures with a Novel Partial-Ground-Plane (PGP) Based TFET on SELBOX Structure," accepted for publication in *Silicon.*

3 A. P. Singh, S. Dwivedi, and P. K. Jain, "A novel application of artificial neural network for recognition of target behind the wall," *Microwave and Optical Technology Letters,* vol. 62, pp. 152-167, 2020.

4 A. P. Singh, S. Dwivedi, and P. K. Jain, "Analysis of imaging algorithm for shape detection and shape identification of a target using though-the-wall imaging system," *Progress In Electromagnetic Research B,* vol. 85, pp. 181-199, 2019.

5 Abhishek Kumar Singh, Nitesh Chourasia, Bhola Pal, Amritanshu Pandey, and P Chakrabarti, "Low Operating Voltage Solution Processed Dielectric (Li2ZnO2) and (SnO2) channel based Medium Wave UV-B Phototransistor for Application in Phototherapy", accepted for publication in *IEEE Transactions on Electron Device.*

6 Abhishek Kumar Singh; A Pandey, and P Chakrabarti, "Fabrication, modelling and characterization of green light photosensitive p-channel -Poly[2,5-bis(3-tetradecylthiophen-2-yl)thieno[3,2-b]thiophene] organic semiconductor based phototransistors", *Organic Electronics,* vol. 75, pp. 105424, 2019.

7 Abhishek Kumar Singh; A Pandey, and P Chakrabarti, " Poly[2,5-bis(3-tetradecylthio Organic Polymer Based -Interdigitated Channel Enabled Thin Film Transistor for Detection of Selective Low ppm Ammonia Sensing at 25°C", accepted for publication in *IEEE Sensors Journal.*

8 Agarwal, Mayank; Meshram, Manoj Kumar, "'An Active Polarization-Insensitive Ultrathin Metamaterial Absorber with Frequency Controllability," *Advances in Signal Processing and Communication,* 157-163, 2019.

9 Akash and M. Thottappan, "Stability and Multimode Simulation Studies of W-band Uniformly Dielectric Loaded Gyrotron Travelling Wave Tube Amplifier," *IEEE Transactions on Electron Devices,* vol. 66, no. 12, pp. 5305-5312, Dec. 2019.

10 Akhlesh Lakhtakia, Somak Bhattacharyya, and Sambit Kumar Ghosh, "Comment on: Wide incidence angle and polarization insensitive dual broad-band metamaterial absorber based on concentric split and continuous rings resonator structure," *IOP: Materials Research Express,* Vol. 6, no. 8, pp. 088002, 2019.

11 Aman, Vineet Singh, and Somak Bhattacharyya, "Retrieval of Electrical and Physical Properties of Dielectric Samples Using Time Domain Multiple Reflection Method," accepted for publication in *IET Microwaves, Antennas and Propagation.*

12 Arjun Kumar, Smrity Dwivedi, and P. K. Jain. "MILO Performance Improvement Study--An Equivalent Circuit Approach," IEEE trans. Plasma Sci., vol. 47, no. 10, pp. 4642-4649, Oct. 2019.

13 Arun Kumar Saurabh and Manoj Kumar Meshram, "Compact Sub-6 GHz 5G-MIMO Antenna System with Enhanced Isolation," accepted for publication in International Journal of RF and Microwave Computer-Aided Engineering.

14 Ashwini Kumar Mishra, Bratindranath Mukherjee, Amit Kumar, Deepak Kumar Jarwal, Smrity Ratan, Chandan Kumar, and Satyabrata Jit, "Superficial fabrication of gold nanoparticles modified CuO nanowires electrode for non-enzymatic glucose detection," RSC Advances, Vol. 9, pp.1772 – 1781, 2019.

15 C. Kumar, B. K. Kushwaha, A. Kumar, D. K. Jarwal, R. K. Upadhyay, A. P. Singh and S. Jit, "Fibrous Al-Doped ZnO Thin Film Ultraviolet Photodetectors with Improved Responsivity and Speed," IEEE Photonics Technology Letters, Vol. 32, pp. 337-340, March 2020.

16 D. Gola, B. Singh, J. Singh, S. Jit and P K Tiwari, "Static and Quasi-Static Drain Current Modeling of Tri-Gate Junctionless Transistor with Substrate Bias Induced Effects," IEEE Trans. Electron Devices, Vol. 66 (7), pp. 2876-2883, 2019.

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Refereed National Journal

1. A. P. Singh, **S. Dwivedi**, and **P. K. Jain**," Development of optimal thresholding technique for shape and size detection for through-the-wall radar imaging system," *Defence Science Journal*, vol. 69, no. 6, pp. 531-626, 2019.

10. Number of Conference Papers: 88

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Prof. Satyabrata Jit	Recognized as Fellow, The Institution of Engineering and Technology (IET), UK
2	Dr. Manoj Kumar Meshram	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
3	Dr. M. Thottappan	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
4	Dr. Somak Bhattacharyya	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition

S. No.	Name of Faculty Member	Details of Award
5	Dr. Smrity Dwivedi	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
6	Dr. Shivam Verma	IEEE and IEEE Electron Device Society annual membership

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 71

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Arjun Kumar	15091006	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
2	Akanksha Singh	18091004	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
3	Ajitesh	18091505	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
4	Rajkumar Jatav	18091504	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
5	Manas Ranjan Tripathy	17091026	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
6	Rahul Dubey	17091020	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
7	Akash	15091007	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
8	Sambit Kumar Ghosh	17091021	Student Travel Grant (STG) award	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
9	Rahul Dubey	17091020	Third Position Prize amount of INR 1,500 only in Student Activity Program	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
10	Sambit Kumar Ghosh	17091021	First Position Prize amount of INR 5,000 only in Student Activity Program	13-15 December 2019, IIT Mumbai, India	IEEE MTT-S Society
11	Saurabh Kumar Srivastava	17091008	Local Accommodation Support	10-13 Dec, 2019, Singapore	IEEE MTT Society
12	V. V. Reddy	17091028	Local Accommodation Support	10-13 Dec, 2019, Singapore	IEEE MTT Society
13	S. G. Yadav	16091005	Local Accommodation Support	10-13 Dec, 2019, Singapore	IEEE MTT Society
14	Amit Kumar	17091002	Local Accommodation Support	10-13 Dec, 2019, Singapore	IEEE MTT Society
15	Dipti Ranjan Samantaray	17091013	Certificate for Third Prize in Best Poster Award in URSI-RCRS 2020	12-14 Feb, 2020, IIT(BHU), Varanasi	URSI-RCRS 2020 Conference

14. Number of Students/Scholars who went for foreign Internship: 2

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Cordinator	Title	Period
1	Dr. Manoj Kumar Meshram	Workshop on Electromagnetics and Antenna Design (WEAD-2019)	10-15 June, 2019
2	Dr. Manoj Kumar Meshram	Microwave/Millimeter wave devices & their application	23-28 September, 2019
3	Dr. M. Thottappan	Recent Trends in Microwave/Millimeter Wave Technology and their Applications in Wireless Communication and Defense Perspective	14-19 October, 2019
4	Dr. N. S. Rajput	Smart Electronics for Connected Communities (SECC-2019)	6-18 January, 2020
5	Dr. Somak Bhattacharyya	2020 URSI Regional Conference on Radio Science (URSI-RCRS 2020; Website: https://conferences.iitbhu.ac.in/URSI-RCRS2020/)	12-14 February, 220

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 29

17. Number of Special lectures delivered by faculty members in other institutions: 20

18. Number of Visits abroad by faculty members for conference/symposia: 5

19. Fellowships of academic and professional societies:

S. No.	Name of Faculty Member	Details of Fellowship
1	Prof. Satyabrata Jit	Fellow, The Institution of Engineering and Technology (IET), UK
2	Dr. Manoj Kumar Meshram	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
3	Dr. Kishor P Sarawadekar	Member, IEEE
4	Dr. Kishor P Sarawadekar	Life Member, ISTE
5	Dr. M. Thottappan	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
6	Dr. Somak Bhattacharyya	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition
7	Dr. Smrity Dwivedi	IEEE Senior Member, the highest professional grade of IEEE, recognized as a professional accomplishment as less than 10% of IEEE Members have achieved this recognition

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. Satyabrata Jit	Editor-In-Chief	Material Science Research India
2	Prof. Satyabrata Jit	Editor-In-Chief	Trends in Opto-Electro & Optical Communications
3	Prof. Satyabrata Jit	Associate Editor	IET Micro & Nano Letters
4	Prof. Satyabrata Jit	Member	NIEEE (The Nigerian Institution of Electrical and Electronics Engineers) Technical Transactions
5	Prof. Satyabrata Jit	Member	Journal of Advance Research in Microelectronics and VLSI

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
6	Prof. Satyabrata Jit	Member	Journal of Advance Research in Electrical Engineering and Technology
7	Prof. Satyabrata Jit	Member	Journal of VLSI Design Tools & Technology
8	Prof. Satyabrata Jit	Member	Journal of Electronic and Electrical Engineering
9	Prof. Satyabrata Jit	Member	Journal of Nano Science and Quantum Physics (JNSQP)
10	Prof. S. P. Singh	Member	International Journal of RF and Microwave Computer-aided Engineering (Wiley Publication)
11	Dr. Smrity Dwivedi	Member	IEEE Plasma Science, IEEE ED, IEEE MTT
12	Dr. Smrity Dwivedi	Member	International Journal of RF and Microwave Computer-aided Engineering (Wiley Publication)

21. Faculty members' participation with other universities under MoUs:

- **Dr. N. S. Rajput** actively participated for signing MoU with **Yonsei University, South Korea**, for National Mission on Interdisciplinary Cyber Physical Systems for joint research and product development.
- **Dr. N. S. Rajput** actively participated for signing MoU with **Woosong University, South Korea,** India for National Mission on Interdisciplinary Cyber Physical Systems for joint research and product development.
- **Dr. N. S. Rajput** actively participated for signing MoU with **CISCO, India** for National Mission on Interdisciplinary Cyber Physical Systems for joint research and product development.
- **Dr. N. S. Rajput** actively participated for signing MoU with **ASRDEEP Group of Companies, India** for National Mission on Interdisciplinary Cyber Physical Systems for joint research and product development.

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

- S. Kumar, E. Goel, K. Singh, B. Singh, P. K. Singh, K. Baral, and S. Jit, "2-D Analytical Modeling of the Electrical Characteristics of Dual-Material Double-Gate TFETs With a SiO2/HfO2 Stacked Gate-Oxide Structure," in IEEE Transactions on Electron Devices, vol. 64, no. 3, pp. 960-968, March 2017. (Citation: 61)
- S. Kumar, E. Goel, K. Singh, B. Singh, M. Kumar and S. Jit, "A Compact 2-D Analytical Model for Electrical Characteristics of Double-Gate Tunnel Field-Effect Transistors With a SiO2/High- k Stacked Gate-Oxide Structure," in IEEE Transactions on Electron Devices, vol. 63, no. 8, pp. 3291-3299, Aug. 2016. (Citation: 56)
- M. Agarwal, A. K. Behera and M. K. Meshram, "Wide-angle quad-band polarisation-insensitive metamaterial absorber," in Electronics Letters, vol. 52, no. 5, pp. 340-342, 3 3 2016. (Citation: 54)
- G. K. Pandey, H. Verma and M. K. Meshram, "Compact antipodal Vivaldi antenna for UWB applications," in Electronics Letters, vol. 51, no. 4, pp. 308-310, 19 2 2015. (Citation: 48)
- B. Singh, D. Gola, K. Singh, E. Goel, S. Kumar and S. Jit, "Analytical Modeling of Channel Potential and Threshold Voltage of Double-Gate Junctionless FETs With a Vertical Gaussian-Like Doping Profile," in IEEE Transactions on Electron Devices, vol. 63, no. 6, pp. 2299-2305, June 2016. (Citation: 36)

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	**Dr. Amitava Sen Gupta (Formerly) Outstanding scientist/ Acting Director, CSIR NPL, New Delhi**	30 September, 2019	Delivering talk on " Atomic Clocks and the Amazing History of Timekeeping" organized by IEEE Microwave Theory & Techniques Society Student Branch Chapter and IEEE Photonics Society Student Branch Chapter, IIT BHU
2	**Dr. Surendra Pal Singh** **Ex-VC DIAT Pune. Distinguished Scientist ISRO, Bangalore**	1 October, 2019	Delivering Talk on IEEE Day entitled, " Chandrayan – II Mission"

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
3	**Dr. D. C. Pande** **Outstanding Scientist (Retd.), LRDE, DRDO, Bangalore**	1 October, 2019	Delivering Talk on IEEE Day entitled, " A Glimpse of Past, Present and Future Military Radars by DRDO"
4	**Prof. Yashwant Gupta** **Director, National Centre for Radio Astrophysics, Tata Institute of Fundamental Research, Pune**	12 February, 2020	Keynote Speech entitled, "Signal processing challenges en route to understanding the Universe" during 2020 URSI Regional Conference on Radio Science (URSI-RCRS 2020)
5	**Prof. Debatosh Guha** **Institute of Radio Physics & Electronics, University of Calcutta, Kolkata**	13 February, 2020	Keynote Speech entitled, "Impact of Radio Science in the Eye of an Antenna Engineer (A Tribute to Hans Ørsted in the Bicentenary Year of His Discovery)" during 2020 URSI Regional Conference on Radio Science (URSI-RCRS 2020)
6	**Dr. Radhika Ramachandran** **Director, Vikram Sarabhai Space Centre, ISRO, Trivandrum**	14 February, 2020	Keynote Speech entitled, "Estimation of the atmospheric carbon dioxide emission over the Indian region for Scientists and Policy makers" during 2020 URSI Regional Conference on Radio Science (URSI-RCRS 2020)

24. Other activities:

Number of Indian Faculties Visited the Department: 54

Foreign Faculty Visits in the Department/School/School:

S. No.	Name of Faculty Member	Purpose of Visit	Date
1	**Dr. Nagendra Yadav** **Professor, Hubei University of Science and Technology, China**	Delivering Talk on THz Super-Resolution Imaging for Biomedical Application organized by IEEE MTT Society Student Branch Chapter IIT BHU	5 August, 2019
2	**Dr. Ranga Rao Venkatesha Prasad** **Faculty of Engineering, Mathematics and Computer Science (EWI) Delft University of Technology, Netherlands**	Delivering Talk on Internet of Things, Approximate Services and Virtual Sensing organized by IEEE MTT Society Student Branch Chapter IIT BHU	23 August, 2019
3	**Dr. Rashaunda M Henderson** University of Texas at Dallas, Richardson, TX USA	Delivering Talk on Integration and Packaging Strategies for Millimeter-Wave CMOS organized by IEEE MTT Society Student Branch Chapter IIT BHU	11 December, 2019

25. Any other Information:

The Department has organized the conference **URSI-RCRS 2020** during 12-14 February, 2020 (Web: https://conferences.iitbhu.ac.in/URSI-RCRS2020/) where nearly 300 delegates were present all over India.

13. Mechanical Engineering

Year of Establishment: 1919

Head/Coordinator of the Department: Prof. A. P.Harsha

1. Introduction of the Department/School:

The Department of Mechanical Engineering came into existence in 1919 under the leadership of Professor Charles A. King, the first Head of the Department and Principal of the erstwhile Banaras Engineering College. Over the last ninety nine years, the department has grown four folds to become the largest department in IIT (BHU), Varanasi. The post-graduate and doctoral program in the department is well-established and infrastructural facilities exist for studies and research for a range of specialisations such as Machine Design, Thermal and Fluid Engineering, Production Engineering and Industrial Management. The department has 20 laboratories, 4 lecture theatres, and 4 classrooms.

Major areas of Research: Fracture mechanics, Vibrations and dynamic analysis, Smart materials, Tribology, Heat Transfer, Fluid dynamics, Metal forming/joining, Machining, Micro-Machining, Welding engineering, Supply Chain Management.

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	121	122	111	111	
2.	Dual Degree	27	25	21	23	23
3.	M. Tech/ M. Pharm	59	34	30	-	
4.	Ph. D (Under Institute Fellowship)	09	11	18	13	Nil
5.	Ph. D (Under Project Fellowship)	02	-	-	02	Nil
6.	Ph. D (Under Sponsored Category)	01	02	01	-	01

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof.V.P.Singh Ph.D 13818	27.8.1987	Vibrations, Solid Mechanics
2	Prof.A.K.Agrawal Ph.D 13819	1990	Quality Control, Six Sigma, Optimization, Industrial Engineering, Operation Management, Supply Chain Management
3	Prof.V.K.Srivastava Ph.D 13811	1987	NDT of Composites, Delaminating of Fibre Composites, Fracture, Toughness and interface of Fibre Composites, Metal-Matrix Composites, Ceramic Fibre Composites, Biocomposites, Glass Composites, NanoComposites.
4	Prof.Santosh Kumar Ph.D 13831	Feb 12, 2000	Metal forming & Unconventional manufacturing, Additive manufacturing, Product Design & Development
5	Prof.S. P. Tewari, Ph.D., 13817	1998	Production Engineering, Welding
6	Prof. A.P.Harsha Ph.D 16722	April 2004	Tribology, Material Tribology and Design

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
7	Prof.Sandeep Kumar Ph.D 17343	1999	Computational Mechanics (Wavelets, FEM, Meshless)
8	Prof.K.S.Tripathi Ph.D 13821	1992	Mechanisms, Vibrations
9	Prof.S.K.Sinha Ph.D. 17364	1993	CNC
10	Prof.Rajesh Kumar Ph.D. 17318	2002	Tribology, MEMS Reliability, Optimization
11	Prof.Prasant Shukla Ph.D. 16723	3rd May 2001	Fluid mechanics and heat transfer
12	Pradyumna Ghosh, Ph.D, 16801	Oct 2007	Nanofluids, Porous media flow, Microgravity fluid physics
13	Prof.S.K.Shukla Ph.D.18130	2005	Thermal Engineering, Renewable Energy, Alternate Fuels
14	Prof. Rajnesh Tyagi Ph.D. 17341	Nov 2001	Solid Lubricating Composites and Tribology, Surface Modification for Wear reduction, High Temperature Wear of Composites and Coatings
15	Prof.S.K.Panda Ph.D.17390	29th June, 2005	Failure Analysis and Reliability Design, Finite Element Analysis, Impact Dynamics and Ballistics, Advanced Composite Structures, Rolling Element Bearings
16	Prof.P.Bhardwaj Ph.D. 16720	24th May, 2006	Cellular Manufacturing System, Supply Chain Management, Production Systems
ASSOCIATE PROFESSORS			
1	Mr.S.K.Shah 13822		Production Engg.
2	Dr. Mohd Zaheer Khan Yusufzai,Ph.D. 16657	September 2012	Welding, Friction stir welding, Material Characterization
3	Dr. Meghanshu Vashista,Ph.D. 16721	22nd Feb., 2010	Grinding, Welding, Material characterization
4	Dr.S.S.Mondal Ph.D. 17339	13 august, 2005	Fluid, Thermal and Energy
5	Dr. Jahar Sarkar, Ph.D., 17388	2006	Heat transfer, Thermodynamics, Airconditioning
6	Dr. Arnab Sarkar, Ph.D., 17252	11.5.2012	Wind Climatology, Renewable Energy, Microfluidics
7	Dr. Debashis Khan Ph.D.18139	December, 2007	Solid Mechanics, Fracture Mechanics, Finite Element Method
8	Dr. R.K.Gautam, Ph.D, 18239	May 22, 2009	Composite Materials, Hybrid Cu-base in-situ composite, nano-composite, Microwave sintered composite, Tribological properties of composite materials, Bio-Tribology
9	Om Prakash Singh Ph.D.50061	16 December 2006	Solar energy, Renewable energy, Computational Fluid Dynamics

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
10	Dr.J.V.Tirkey Ph.D. 16724	2008	SI and CI Engine Design simulation, Alternate fuel
11	Cherian Samuel, PhD, 16798	May 2005	Industrial Management, Operations and Supply Chain Management,
12	Dr.N.Mallik Ph.D. 17253	13.08.2005	Smart materials and structures, composites, finite element method
13	Dr.Amit Tyagi Ph.D. 17268	November 2011	Machine Design
14	Dr. U. Srinivas Rao, PhD 17269	23.12.2013	Modeling and Simulation, Micro-machining, Machining,
15	Dr R. R. Sahoo. PhD 17335	3/10/2017	I.C. Engine, Combustion Technology, Nanofluid
16	Dr.Laltu Chandra Ph.D.50223	7th July 2005	Fluid Flow and Heat Transfer; Solar Energy; Nuclear Reactor Thermal-hydraulics
ASSISTANT PROFESSORS			
1	Shri P.C.Mani 18214		Tribology and Maintenance Engineering
2	Dr. Amitesh Kumar Ph.D. 50073	Oct, 2010	Turbulent flow, High Mach Number Flow, Cryotherapy
3	Dr. Ajinkya Nandkumar Tanksale, Ph.D.,50225	20 July 2018	Operations Research, Facility Location, Supply Chain Management
4	Dr. Binita Pathak, PhD, 50238	02 Jan 2018	droplet atomization, multiphase flow and microfluidics
5	Dr. Anubhav Sinha, PhD, 50239	12-Mar-2016	Atomization and Spray Gas Turbine Combustion Hydrogen Explosions
6	Dr. Amit Subhash Shedbale, PhD.,50241	24 September 2017	Solid Mechanics Damage Mechanics Finite Element Analysis
Institute Professors			
1	Prof.S.K.Sharma Ph.D.FAC-IP21	9th March, 1987	Industrial Management
2	Prof.A.K.Jha Ph.D.FAC-IP23	1st March, 1988	Manufacturing process and Manufacturing System
Emeritus Professors			
1	Prof.P.C.Upadhyay		Machine Design
Guest Faculty			
1	Dr.A.Bhattacharya	1985	Engineering Drawing, Engineering Mechanics, Strength of Materials
Visiting Faculty			
1	Dr.Kripa Shanker		Ph.D. FAC-VF18

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Sri P K Pandey, B.Com. (Hons.)	Junior Superintendant,50162	01/08/2017
2	Sri J.K. Sinha, Diploma in Computer Sci. & Engg., BCA, B.Tech., MPA	Junior Assistant, 50016	04/09/2015
3	Sri Akash Mishra, M.Com. & B.Com.	Junior Assistant,50079	08/05/2017
4	Sri Rajendra Prasad, Intermediate, ITI	Sr. Tech. Superintendent, 13904	29/09/1986
5	Sri P.N. Singh, Graduation (B.A.)	Sr. Tech. Superintendent, 13963	01/06/1987
6	Sri K.C. Mishra, 12th, Diploma in Mech. Engg.	Sr. Tech. Superintendent, 13979	30/05/1987
7	Sri Kali Prasad, High School, ITI	Sr. Tech. Superintendent, 13977	10/03/1989
8	Sri Ram Adhar Yadav, Intermediate, Diploma in Mechanical Engg.	Technical Superintendent, 13981	05/05/1988
9	Sri Barmeshwar Rai, Graduation	Technical Superintendent, 13975	12/10/1988
10	Sri Dhaniram Shankar Singh, Intermediate (Sci.)	Technical Superintendent, 13967	04/06/1991
11	Sri Hari Shankar, 12th, Diploma in Computer in Off. Management	Technical Superintendent, 13982	08/01/1997
12	Sri D.P. Sharma, Intermediate (Sci.)	Technical Superintendent, 13984	15/10/1998
13	Sri V.P. Srivastava, Graduation (B.Sc.)	Technical Superintendent, 13983	15/10/1998
14	Sri S.P. Singh, High School, ITC	Jr. Tech. Superintendent, 13985	12/10/1998
15	Sri Ranjeet Sharma, High School	Jr. Tech. Superintendent, 13986	12/10/1998
16	Sri Rajendra Kumar, Intermediate (Sci.)	Jr. Tech. Superintendent, 18062	22/02/2007
17	Sri Nand Lal, Intermediate, ITI	Jr. Tech. Superintendent, 18055	21/02/2007
18	Sri Anil Kr. Singh, Graduaion (B.A.), ITI	Jr. Tech. Superintendent, 18060	20/02/2007
19	Sri Surendra P. Yadav, Intermediate (Sci.)	Sr. Technician 18610	05/08/2008
20	Sri Dinesh Kumar, Graduation (B.Sc.)	Sr. Technician, 18614	11/08/2008
21	Sri Sunil Kr. Bardhan, 12th, ITI, Diploma in Mechanical Engg.	Sr. Technician, 18613	05/08/2008
22	Sri Shambhu Prasad, Post Graduation (M.P.Ed.)	Sr. Technician, 18611	05/08/2008
23	Sri Shivendra Tewari , Diploma in Mech. Engg.	Sr. Technician, 18615	06/08/2008
24	Sri Ravi Prakash Singh, Intermediate, ITI (Draftsman)	Sr. Technician, 18612	06/08/2008
25	Ms. Saroj K. Patel, M.A. (Sociology), ITI	Sr. Technician, 19271	09/02/2011
26	Sri Mool Chand, Intermediate (Sci.)	Sr. Technician, 13974	16/09/1987
27	Sri Barmeshwar Prasad, Intermediate	Sr. Technician, 19597	11/07/2012
28	Sri Anupam Mishra, Graduation (B.Sc.), ADCA	Sr. Technician, 19600	11/07/2012

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Design Small Scale Portable Biogas Digester For Electric Generation For Rural Area In Developing Country	2019-2020	Research Grant of International Collaboration, Udayana University, Indonesia	Rp150,000,000	Prof. S.K.Shukla,
2	Valorisation of agri-waste for sustainable recovery of energy and nutrient for climate change impact reduction by biorenewables leading to sustainable farming	2019-2020	GCRF, Govt. of UK	€ 34444.00	Prof. S.K.Shukla,
3	Pathology on a Spinning Disc	1.4.2020-31.3.2023	MHRD (Under STARS scheme)	94.10	Dr. Arnab Sarkar
4	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site	1.1.2020-31.12.2022	BRNS	32.37	Dr. Arnab Sarkar
5	Assessment of Vulnerability of Structures in Regard to Cyclonic Wind Loads	1.4.2020-31.3.2022	BIS	16.76 (Approved)	Dr. Arnab Sarkar
6	Development of an intelligent evaporative cooler for composite climate	2018-2020	DST, New Delhi	9	Dr. Jahar Sarkar
7	Photonic radiative cooler for passive sub-ambient cooling	2018-2021	IMPRINT-2, SERB, New Delhi	45	Dr. Jahar Sarkar
8	Development of ORC technology for waste heat utilization for the generation of electricity	2020-2023	BRNS, Mumbai	29	Dr. Jahar Sarkar
9	Behaviour of partially miscible fluid in microgravity	June, 2019 onwards	United Nation Office for Outer Space Affairs	USD 619,000	Prof. Pradyumna Ghosh
10	CARS project on design and analysis of linear induction motor drive for EMLS	2020-2022 (2.5 years)	DRDO	30	Dr. Om Prakash Singh R. K Srivastava, Somak Bhattacharyya
11	Technology Development and fabrication of Tabletop CNC Machine for Micro-tube hydro forming with process optimization	2015-19	BRNS, Mumbai	49.0	Prof. Santosh Kumar
12	Setting of 'Teaching Learning Centre (Technical) building under PMMMNMTT Scheme	2016-20	MHRD	760	Prof. Santosh Kumar
13	Development Of Complex Aluminum Shell Part Using High Pressure Die Casting	2019-20	DRDL-Hyderabad (INDIA)	24.86	Prof. Santosh Kumar
14	"Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications"	2018-2021	DST, SERB	50.21	Dr. R. K. Gautam
15	Characterisation and validation of Schilieren technique for capturing shock wave	March, 2017-December, 2019	DRDO	17.84	Dr. Amitesh Kumar

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
16	Experimental study of turbulent jet	April, 2018 onwards	IIT(BHU), Seed Grant	10.00	Dr. Amitesh Kumar
17	Effective necrosis of skin tumour using cryospray	June, 2018 onwards	IIT(BHU), DIC	5.00	Dr. Amitesh Kumar
18.	Establishing the preliminary systems/facilities that are required for initiating research activities	Feb 2019	IIT(BHU), Seed Grant	10.00	Dr. Laltu Chandra

Industrial consultancy projects:

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. S.K.Shukla,	Value Addition in Innovators Work	CST UP	2.0 Lakhs
2	Prof. Pradyumna Ghosh, Dr. M.Z.Khan Yusufzai	Vetting of pumping systems mechanical components	UP Jal Nigam	4.5 Lakhs
3	Prof. AP Harsha, Prof. Pradyumna Ghosh	Vetting of pumping systems mechanical components	UP Jal Nigam	

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Workstation (24 Cores)	5.4 (approx.)
2	An experiment set-up on Solar Thermal System (in progress)	3.5
3	Design of TEG and PCM based WHR systems	3.9
4	Resistance spot welding	3
5	Tool maker's microscope	3
6	Solar Distillation Systems	2.5
7	Wind Tunnel for Visualisation of Streamlines	12
8	Pressure/Temperature/Flow Controller Trainer	2.6
9	HP Work station with monitor-1 no	1.76
10	Voltas AC (1.5ton) – 2 no (replacing old)	0.896
11	HP X36014CD0050TX – 1 no	0.79

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1.	Prof. S.K.Shukla & Dr.J.V.Tirkey	A thermally efficient over-expansion Stroke based engine
2.	Dr. Arnab Sarkar	A Point of Care System Comprising Blood/Body Fluid Counting Kit
3.	Om Prakash Singh	Integrated solar air heater and trombe wall
4.	Dr. Amitesh Kumar	Single Board 3 Phase BLDC Motor Controller for Hyper Energy Efficient Electric Vehicle
5.	Dr. Amitesh Kumar	Development of highly efficient multi-hole nozzle for the cryospray process
6.	Prof. Prashant shukla	Carbon nanotube filter for toxin removal from cigarette smoke

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	Dipankar Deb, Ambesh Dixit, Laltu Chandra	Renewable Energy and Climate Change (Proceedings of REC 2019)	Springer-Nature
2	S.K.Shukla and P.S.Rathor	Book Chapter, Production of Biodiesel And Its Application In Engines, S.K.Shukla et al.,@ Waste Refinery- Vol.II @2019 by Elsevier Inc.	Elsevier Inc.
3	Rawat, Sooraj Singh, and A. P. Harsha	Chapter entitled "Current and Future Trends in Grease Lubrication." Automotive Tribology. 2019. 147-182. (https://link.springer.com/chapter/10.1007/978-981-15-0434-1_9)	Springer, Singapore,
4	Anand Jaiswal & Cherian Samuel	MCDM Approaches for Green Supply Chain Management Strategies	Apple academic press publication
5	Prof. Santosh Kumar	Technical Report on 'Development of Rubber based Sheet hydro forming Setup' for DRDL, Hyderabad	
6	Prof. Santosh Kumar	Technical Report on 'Design Development of an Incremental Sheet Hydro forming Machine Setup' for DST(SERB)	
7	Manvandra Kumar Singh, Mulkraj Anand, Pushkar Jha and Rakesh Kumar Gautam.	Hysteresis of Composites Edited by Li Longbiao Topic/Page No. "Effect of Ceramic/Graphite Reinforcement on Dry Sliding Wear Behaviour of Copper Metal Matrix Hybrid Composites"	Intech Open, DOI: 10.5772/intechopen.85189

9. Research Publication:

Manuscript

1 Agarwal, R., Sarkar, A., & Chakraborty, S. (2019) Interplay of Coriolis effect with rheology results in unique blood dynamics on a compact disc. Analyst 144(12): 3782-3789]

2 Agarwal, R., Sarkar, A., Bhowmik, A., Mukherjee, D., & Chakraborty, S. (2020) A portable spinning disc for complete blood count (CBC). Biosensors and Bioelectronics 150: 111935]

3 Agarwal, R., Sarkar, A., Paul, S., & Chakraborty, S. (2019) A portable rotating disc as blood rheometer. Biomicrofluidics, 13(6): 064120]

4 Bhattad, A., Sarkar, J., & Ghosh, P. (2019) Energetic and exergetic performances of plate heat exchanger using brine-based hybrid nanofluid for milk chilling application. Heat Transfer Engineering: 1-14]

5 Bhattad, A., Sarkar, J., & Ghosh, P. (2019) Experimentation on effect of particle ratio on hydrothermal performance of plate heat exchanger using hybrid nanofluid. Applied Thermal Engineering 162: 114309]

6 Bhattad, A., Sarkar, J., & Ghosh, P. (2019) Hydrothermal performance of different alumina hybrid nanofluid types in plate heat exchanger. Journal of Thermal Analysis and Calorimetry: 1-11]

7 Dawara, V., Vashista, M., & KhanYusufzai, M. Z. (2019) Barkhausen noise signal of different steels upon face-turning process. Journal of the Brazilian Society of Mechanical Sciences and Engineering 41(8): 329]

8 Gautam, A., Gautam, C., Mishra, M., Mishra, V. K., Hussain, A., Sahu, S., & Gautam, R. K. (2019) Enhanced mechanical properties of hBN–ZrO 2 composites and their biological activities on Drosophila melanogaster: synthesis and characterization. RSC Advances 9(70): 40977-40996]

9 Gautam, R. K. S., Rao, U. S., & Tyagi, R. (2019) High temperature tribological properties of Ni-based self-lubricating coatings deposited by atmospheric plasma spray. Surface and Coatings Technology 372: 390-398]

10 Gautam, R. K. S., Rao, U. S., & Tyagi, R. (2019) Influence of Load on Friction and Wear Behavior of Ni-Based Self-Lubricating Coatings Deposited by Atmospheric Plasma Spray. Journal of Materials Engineering and Performance 28(12): 7398-7406]

11 Gautam, R. K. S., Rao, U. S., Mishra, S., & Tyagi, R. (2020) Tribological Behavior of Atmospheric Plasma-Spray-Deposited Ni-Based Composite Coatings at Different Speeds and Temperatures. Journal of Thermal Spray Technology: 1-17]

12 Gupta, S. K., Kumar, A., Raja, A. R., Vashista, M., & Yusufzai, M. Z. K. (2020) Magnetic hysteresis loop behaviour of welded ferritic stainless steel 409L with the variation of magnetic field intensity. Materials Today: Proceedings]

13 Gupta, S. K., Raja, A. R., Vashista, M., & Yusufzai, M. Z. K. (2019) Hysteresis loop analysis of gas metal arc welded ferritic stainless steel plate. Materials Research Express 6(9): 096110]

14 Gupta, S. K., Raja, A. R., Vashista, M., & Yusufzai, M. Z. K. (2020) Effect of Gas Metal Arc Welding on Magnetic Response of Ferritic Stainless Steel. Arabian Journal for Science and Engineering: 1-11]

15 Gupta, V., & Ghosh, P. (2020) Visualization of quenching front propagation on heated rod through single jet impingment. ASME Journal Of Heat Transfer]

16 Harsha, A.P., Wäsche, R. and Joyce, T.J., 2019 Wear of biopolymers under reciprocating sliding conditions against different counterfaces. Polymer Engineering & Science 59(11): 2356-2366]

17 Jaiswal A., Samuel C. and Mishra CC. (2019) Minimum Carbon dioxide emission based selection of traffic route with unsignalised junctions in tandem network. Management of Environmental Quality: An International Journal]

18 Jaiswal, A., Samuel, C., & Ganesh, G. A. (2019) Pollution optimisation study of logistics in SMEs. Management of Environmental Quality: An International Journal]

19 Karana D.R. and Sahoo R.R. (2019) Influence of geometric parameter on the performance of a new asymmetrical and segmented thermoelectric generator. Energy 179: 90-99]

20 Karana D.R. and Sahoo R.R. (2019) Performance effect on the TEG system for waste heat recovery in automobiles using ZnO and SiO2 nanofluid coolants. Heat transfer Asian Research 48(1): 216-232]

21 Karana D.R. and Sahoo R.R. (2020) An experimental study on the thermal behavior of aluminum thermoelectric system integrated with engine exhaust. Experimental Heat Transfer, 1-16]

22 Karana D.R. and Sahoo R.R. (2020) Effect of design parameters on the performance of a new modified annular teg system. International Journal of Energy for a Clean Environment: 351-371]

23 Kashyap, S., Sarkar, J., & Kumar, A. (2019) Proposal and month-wise performance evaluation of a novel dual-mode evaporative cooler. Heat and Mass Transfer 55(12): 3523-3536]

24 kumar Singh, R., Chakraborty, J. P., & Sarkar, A. (2020) Optimizing the torrefaction of pigeon pea stalk (cajanus cajan) using response surface methodology (RSM) and characterization of solid, liquid and gaseous products. Renewable Energy]

25 Kumar Singh, R., Sarkar, A., & Chakraborty, J. P. (2019) Effect of torrefaction on the physicochemical properties of pigeon pea stalk (Cajanus cajan) and estimation of kinetic parameters. Renewable energy 138: 805-819]

26 Kumar V, Sarkar J. Numerical and experimental investigations on heat transfer and pressure drop characteristics of Al2O3-TiO2 hybrid nanofluid in minichannel heat sink with different mixture ratio, Powder Technology, 2019; 345: 717–727.

27 Kumar V. and Sahoo R. R. (2019) Exergy and energy analysis of a wavy fin radiator with variously shaped nanofluids as coolants. Heat transfer Asian research 48(6): 2174-2192]

28 Kumar V. and Sahoo R. R. (2019) Viscosity and thermal conductivity comparative study for hybrid nanofluid in binary base fluids, Heat transfer Asian research 48(7): 3144-3161]

29 Kumar V. and Sahoo R. R. (2020) Exergy and energy performance for wavy fin radiator with a new coolant of various shape nanoparticle-based hybrid nanofluids. Journal of Thermal Analysis and Calorimetry: 1-12]

30 Kumar, A., & Shukla, S. K. (2019) Experimental and numerical analysis of a helical coil solar cavity receiver: Thermal oil as the heat transfer fluid. International Journal of Green Energy 16(9): 716-732]

31 Kumar, M., Behera, S. K., Kumar, A., & Sahoo, R. K. (2019) Numerical and experimental investigation to visualize the fluid flow and thermal characteristics of a cryogenic turboexpander. Energy 189: 116267]

32 Kumar, M., Panda, D., Kumar, A., Sahoo, R. K., & Behera, S. K. (2019) A methodology for the performance prediction: flow field and thermal analysis of a helium turboexpander. Journal of the Brazilian Society of Mechanical Sciences and Engineering 41(11): 484]

33 Kumar, V., & Sarkar, J. (2019) Experimental hydrothermal characteristics of minichannel heat sink using various types of hybrid nanofluids. Advanced Powder Technology]

34 Kumar, V., & Sarkar, J. (2020) Experimental hydrothermal behavior of hybrid nanofluid for various particle ratios and comparison with other fluids in minichannel heat sink. International Communications in Heat and Mass Transfer 110: 104397]

35 Kumar, V., & Sarkar, J. (2020) Particle ratio optimization of Al2O3-MWCNT hybrid nanofluid in minichannel heat sink for best hydrothermal performance. Applied Thermal Engineering 165: 114546]

36 Kumar, Y., & Kumar, S. (2019) Experimental and analytical evaluation of Incremental Sheet Hydro-Forming strategies to produce high forming angle sheets. Heliyon 5(6): e01801]

37 Kumari, C., Kumar, A., Sarangi, S. K., & Thirugnanam, A. (2019) Effect of adjuvant on cutaneous cryotherapy. Heat and Mass Transfer 55(2); 247-260]

38 Kumari, C., Kumar, A., Sarangi, S. K., & Thirugnanam, A. (2019) Effects of spray parameters on skin tumour ablation volume during cryotherapy. Australasian physical & engineering sciences in medicine 42(2): 453-464]

39 Manish Kr, Samuel C. (2019) Stochastic demand side management in smart grid system. International Journal of Networking and Virtual Organizations 20(4): 319-339]

40 Mishra, V., Samuel, C., & Sharma, S. K. (2019) Decision of decentralization in a healthcare service-a case of diabetes management. International Journal of Healthcare Management 12(4): 308-313]

41 Mishra, V., Samuel, C., & Sharma, S. K. (2019) Lean, agile and leagile healthcare management-A case of chronic care. International Journal of Healthcare Management 12 (4): 314-321]

42 Mishra, V., Samuel, C., & Sharma, S. K. (2019) Patient's utility for various attributes of Diabetes care services. IIM Kozhikode society & Management Review 8(1)]

43 Moharana, R., Sengar, S. S., Badhan, B., Rao, U. S., Gautam, R. K., & Tyagi, R. (2019) Tribological Behaviour of Graphene Coated Bearing Steel (EN31). In Journal of Physics: Conference Series 1240: 012040]

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45 Nautiyal H., Kumari S., Khatri O. P., Rao U.S. and Tyagi R. (2019) Copper matrix composites reinforced by rGO-MoS2 hybrid: Strengthening effect to enhancement of tribological properties. Composites Part B 173: 1-12]

46 Nautiyal H., Srivastava P., Khatri O.P., Mohan S. and Tyagi R. (2019) Wear and friction behavior of copper based nano hybrid composites fabricated by spark plasma sintering. Materials Research Express 6 (8): 1-16]

47 Nautiyal, H., Kumari, S., Rao, U. S., Tyagi, R., & Khatri, O. P. (2020) Tribological Performance of Cu–rGO–MoS 2 Nanocomposites Under Dry Sliding. Tribology Letters 68(1): 29]

48 Pandey, S. K., Vishwakarma, P. K., Yadav, S. K., Shukla, P., & Srivastava, A. (2019) Multiwalled Carbon Nanotube Filters for Toxin Removal from Cigarette Smoke. ACS Applied Nano Materials]

49 Patel BS, Tiwari AK, Kumar M, Samuel C, Sutar G. (2020) Analysis of agile supply chain enablers for an Indian manufacturing organization. International Journal of Agile Systems and Management 13 (1): 1-27]

50 Pathak, S., & Shukla, S. K. (2019) Design Investigation of 5 kW Organic Rankine Cycle (ORC) System Using Diffusion Absorption Refrigeration (DAR) for Cooling and Power Generation for India. Asian Journal of Water, Environment and Pollution 16(2): 35-42]

51 Patra, N., Ghosh, P., Singh, R. S., & Nayak, A. (2019) Flow visualization in dilute oxide based nanofluid boiling. International Journal of Heat and Mass Transfer 135: 331-344]

52 Patra, N., Gupta, V., Ghosh, P., & Singh, R. S. (2019) Bubble departure characteristics in nanofluid flow boiling. Multiphase Science and Technology 31(4)]

53 Paul, S., Roy, S., Ghosh, P., Zarandi, M. A. F., Cender, T., & Pillai, K. M. (2019) A Novel Method for Permeability Estimation from Micro-tomographic Images. Transport in Porous Media 127(1): 171-190]

54 Poddar, S., Parasa, M. K., Vajanthri, K. Y., Chaudhary, A., Pancholi, U. V., Sarkar, A., & Mahto, S. K. (2019) Low density culture of mammalian primary neurons in compartmentalized microfluidic devices. Biomedical microdevices 21(3): 67]

55 Prakash, M., Sarkar, A., Sarkar, J., Chakraborty, J. P., Mondal, S. S., & Sahoo, R. R. (2019) Performance assessment of novel biomass gasification based CCHP systems integrated with syngas production. Energy 167: 379-390]

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Refereed National Journal

1. Jeewan V Tirkey, Ashish Patel , Shailendra K Shukla*and , Radhey Lal (2019), Energy and Cost Estimation of Biodiesel Production from Neem feedstock-a parametric study, Indian Journal of Environmental Protection, (IJEP), 39(8), 683-697

10. Number of Conference Papers: 46

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Dr.Laltu Chandra	Member (Program Committee), IHMTC 2019, IIT Roorkee
2	Dr.Laltu Chandra	Chair (One Technical Session), IHMTC 2019, IIT Roorkee
3	Prof. S.K.Shukla,	Visiting Professor at Nagoya Institute of Technology, Japan
4	Prof. Rajesh Kumar	Guest of Honour at National Youth Conclave 2020, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttarakhand, Feb 20-21 2020.
5	Dr. Arnab Sarkar	Certificate of Outstanding Contribution in Reviewing has been awarded to Dr. Arnab Sarkar on April, 2020 in recognition of the contributions made to the quality of the journal Energy (Elsevier)
6	Dr. Arnab Sarkar	Certificate of Appreciation awarded to Dr. Arnab Sarkar for speaking on 'Wind Resources Assessment through Wind Data Modeling' at F&R Energy, 2020 during February 17-19, 2020 at Houston, TX, USA
7	Dr. Mohd Zaheer Khan Yusufzai	"TIG Welding of commercially pure Titanium gr -2" has been adjudged as the winner of Weldman Award-2019 for the best paper on Automation or Process Development.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 30

13. Names of students/scholars who got prizes and awards outside the Institute: Nil

14. Number of Students/Scholars who went for foreign Internship: 2

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Cordinator	Title	Period
1	Dr. Ajinkya Nandkumar Tanksale	AICTE sponsored QIP short term on "Operations Research: Principles and Applications"	30 December 2019 to 3 January 2020
2	Prof. S.K..Shukla	DAE Workshop on Role of Nuclear Technologies in Human Development	May 25, 2019
3	Prof. S.K..Shukla, and Dr. D.S. Pandey, Ruskin Fellow and Senior Lecturer, ARU	Indo –UK Workshop On Valorisation of agri-waste for energy and nutrient recovery	January 15 – 17, 2020
4	Prof. S.K.Shukla	CST UP Sponsored IPR Awareness Workshop for Grass root Innovators	March 06, 2020
5	Prof. Rajesh Kumar (Convener)	A Dialogue between Vedic and Modern Sciences,	21-22 Sept 2019
6	P. Bhardwaj, A.K. Agrawal, Cherian Samuel & A.N.Tanksale	Green Belt: A Six Sigma Training Program	September 29-October 03, 2019
7	Nilanjan Mallik	Engineering Standards	25.05.2019 to 26.05.2019
8	Prof. Santosh Kumar	Topology optimization & Additive manufacturing: FEM Practices	June 3-9, 2019 (CEP)
9	Prof. Santosh Kumar	Inside a Publishers Mind - Editorial workshop (one day workshop by IITBHU library)	Sep 27, 2019

S. No.	Cordinator	Title	Period
10	Prof. Santosh Kumar	3D Printing & Design (AICTE-ATAL program)	Oct. 5-9, 2019
11	Prof. Santosh Kumar	Engineering Innovation & Product Development through Green Manufacturing (QIP Course)	Feb 22-28, 2020
12	Prof. Santosh Kumar	Robotics (AICTE-ATAL program)	March 11-15, 2020
13	Dr. R. K. Gautam	AICTE sponsored QIP short term course "Recent Advances in Materials Processing and Materials Tribology"	January 06- 10, 2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 13

17. Number of Special lectures delivered by faculty members in other institutions: 20

18. Number of Visits abroad by faculty members for conference/symposia: 10

19. Fellowships of academic and professional societies: Nil

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1.	Dr. Ajinkya Nandkumar Tanksale	Member	International Journal of Industrial Engineering: Theory, Applications and Practice
2.	Prof.Rajnesh Tyagi	Editorial Board Member	FRICTION, Springer
3.	Prof. S.K.Shukla,	Editor-in-chief	Journal of Thermal Engineering and Applications
4.	Prof. Pradyumna Ghosh	Associate Editorial Board Member	Aerospace Engineering, Benthem Opens

21. Faculty members' participation with other universities under MoUs:

I. MOU with Udayana University , Indonesia(Coordinator: Prof.S.K.Shukla)

II. NDA with NiTech , Japan (Coordinator: Prof.S.K.Shukla)

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

- Sarkar J, Ghosh P, Adil A. A Review on hybrid nanofluids: Recent research, development and applications, Renewable & Sustainable Energy Reviews, 2015; 43: 164-177. [Citations in last 5 years = 341] [Total citations = 341]
- Sarkar J, A critical review on convective heat transfer correlations of nanofluids, Renewable & Sustainable Energy Reviews, 2011; 15(6): 3271-3277. [Citations in last 5 years = 180] [Total citations = 246]
- Sarkar J, Bhattacharyya S, Ramgopal M. Optimization of a transcritical CO2 heat pump cycle for simultaneous cooling and heating applications. International Journal Refrigeration 2004; 27(8): 830-838.[Citations in last 5 years = 151] [Total citations = 307]
- Sarkar J. Ejector Enhanced Vapor Compression Refrigeration and Heat Pump Systems - A Review, Renewable & Sustainable Energy Reviews, 2012; 16(9): 6647-6659. Citations in last 5 years = 142] [Total citations = 167]
- Sarkar J. Second law analysis of supercritical CO2 recompression Brayton cycle, Energy, 2009; 34(9): 1172-1178. [Citations in last 5 years = 120] [Total citations = 146]

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof. Mukesh Khare, Professor, IIT Delhi	23-01-2020	Ph.D Oral Examination
2	Prof. G. Srinivasan, Professor, IIT Madras	2-02-2020,3-01-2020	Resource person, Short term course

24. Other activities:

International collaboration/achievements by the Department/School

Dr. Arnab Sarkar - An international collaboration has been established with Prof. Christophe Ley, Ghent University, Belgium. One joint article with Dr. Arnab Sarkar has been published in Renewable Energy and another article is Under Review.

Indian Faculty visits in the Department/School/School:

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Mukesh Khare, Professor, IIT Delhi	Ph.D Oral Examination	23-01-2020, New Seminar hall, Mechanical Engg. Department
2	Prof. G. Srinivasan, Professor, IIT Madras	Resource person, Short term course	2-02-2020,3-01-2020, ABLT-1, IIT (BHU)

Foreign Faculty Visits in the Department/School/School:

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Luo Jianbin, Dept. of Mechanical Engineering, Tsinghu University, Beijing China	Research Collaboration	Nov 29 to Dec 1, 2019, Dept. of Mechanical Engineering, IIT BHU Varanasi
2	Prof. Chenhui Zhang, Dept. of Mechanical Engineering, Tsinghu University, Beijing China	Research Collaboration	Nov 29 to Dec 1, 2019, Dept. of Mechanical Engineering, IIT BHU Varanasi
3	Dr. Guoxin Xie, Dept. of Mechanical Engineering, Tsinghu University, Beijing China	Research Collaboration	Nov 29 to Dec 1, 2019, Dept. of Mechanical Engineering, IIT BHU Varanasi

25. Any other Information:

- Complete blood count (CBC) on a portable spinning disc, developed by Dr. Arnab Sarkar and others, has been covered by most of the leading newspapers and media channels such as Financial Express, Times Now, Economic Times, The Hitavada, The Week, Amar Ujala, Sakshi, Business Standard, Millennium Post, Express Healthcare, Anandabazar Patrika, Zee News

14. Metallurgical Engineering

Year of Establishment: 1923

Head/Coordinator of the Department: Prof. N. K. Mukhopadhyay

1. Introduction of the Department/School:

The Department of Metallurgical Engineering, established in the year 1923 has pioneered metallurgical education and research in the country. The far-sighted vision of Mahamana Pandit Madan Mohan Malaviyaji has helped this Department to attain such a distinction. This is now a part of IIT (BHU). The UG programme began in the year 1923 itself and the first ever undergraduate and doctoral degrees in metallurgy in the country were awarded by this Department in the years 1927 and 1955 respectively. This is also one of the first two Departments in the country to confer a postgraduate degree in metallurgy in the year 1959. The undergraduate programme was set on a firm foundation by the first Head of the Department, Professor Nagardas Purushottam Gandhi. The postgraduate programme was nurtured by the second Head of the Department, Professor Daya Swarup. Professor Tanjore Ramachandra Anantharaman, the third Head of the Department, established a fine research school of metallurgy, firmly rooted in exemplary traditions and ensured all-round growth and high profile image of the Department. Subsequently, illustrious successive Heads of the Department have continued to do their utmost to enhance the levels of excellence that the Department is known for. The Department celebrated its Golden Jubilee in the year 1973, Diamond Jubilee in 1983 and Platinum Jubilee in the year 1998 in a befitting manner. The department has 19 laboratories, one workshop, one centre, 3 lecture halls, and 4 classrooms.

Major areas of Research: Microstructural, Structural and Chemical Characterization, Mechanical Behavior, Deformation Processing and Failure Analysis, Phase Equilibria and Phase Transformation, Non-Equilibrium Processing of Advanced Materials, Ultra-Fine Grained and Nano-Structured Material, Recycling of Metallurgical and E-Waste, Design and Development of Advanced Steels, Tribology and Surface Engineering, Thermodynamics and Kinetics of Metallurgical Processes, Advanced Structural and Functional Materials

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	75	55	60	58	--
2.	Dual Degree	21	15	21	18	17
3.	M. Tech/ M. Pharm	39	33	--	--	--
4.	Ph. D (Under Institute Fellowship)	07	13	15	07	09

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
Professors			
1	Prof. R.K. Mandal (Ph.D.) (13849)	1990	Quasicrystals, Nanostructured Materials, Phase Transformations, Microstructural Evolution
2	Prof. N.K. Mukhopadhyay (Ph.D.) (13853)	1990	Physical Metallurgy of Complex Metallic Alloys, Nanomaterials, Mechanical Alloying, Electron Microscopy, Nanoindentation.
3	Prof. Sunil Mohan (Ph.D.) (13857)	1990	Metal-Matrix Composites, Tribology of composites, Erosion in steels, Transport processes
4	Prof. (Smt.) N.C. Santhi Srinivas (Ph.D.) (13851)	1999	Physical/Mechanical Metallurgy-Phase Transformations, Deformation and Fracture, Failure Analysis and Low Cycle Fatigue
5	Prof. B.N. Sarma (Ph.D.) (13852)	2001	Computational Thermodynamics, Integrated Computational Materials Engineering

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
6	Prof. K.K. Singh (Ph.D.) (18188)	2010	Extractive Metallurgy, Recycling of electronic waste, aluminium dross
7	Prof. O.P. Sinha (Ph.D.) (18218)	1992	Ferrous Process Metallurgy, N_2 bearing Special Steels, Industrial wastes utilization, Plasma Technology
8	Prof. I. Chakrabarty (Ph.D.) (18242)	1990	Foundry Metallurgy, Phase Transformations, Wear of metals, Metal Matrix composite
Associate Professors			
1	Dr. C.K. Behera (Ph.D.) (16732)	2007	Extractive Metallurgy, Experimental Thermo-lead free solder, nitrogen steel
2	Dr. R. Manna (Ph.D.) (16805)	2008	Heat Treatments of Metals, Ultra Fine Grained Metals, Severe Plastic Deformation, Phase Transformation, Design and Development of Advanced Steels, and Crystallographic Texture
3	Dr. Kausik Chattopadhyay (Ph.D.) (18242)	2008	Mechanical Metallurgy, Structure-Property Relationship of Materials, Oxidation of Metals and Alloys, Powder Metallurgy, Fatigue & Fracture
4	Dr. G.S. Mahobia (Ph.D.) (18287)	2013	Welding Engineering, Heat-Treatment, Ferrous Metallurgy, Corrosion Fatigue & Fracture, Hot Corrosion
5	Dr. Joysurya Basu (Ph.D.) (50054)	2005	Electron Microscopy, Energy and Electronic Materials, Complex Structures and Phase Transformation in Metals and Ceramics
6	Dr. Vikas Jindal (Ph.D.) (18229)	2014	Computational Thermodynamics, Advanced Materials
7	Dr. J.K. Singh (Ph.D.) (18194)	2015	Foundry Metallurgy, Transport Phenomena
8	Dr. N.K. Prasad (Ph.D.) (18221)	2007	Physical Metallurgy, Magnetic Materials, Nanomaterials and Biomaterials
Assistant Professors			
1.	Dr. Bratindranath Mukherjee (Ph.D.) (50180)	2010	Nanomaterials for Energy Applications
2.	Dr. Randhir Singh (Ph.D.) (50214)	2009	Extractive/Electro-Metallurgy, Fuel Cells and Batteries, Hydrogen Production
3.	Dr. Ashok Kumar Mondal (Ph.D.) (50218)	2009	Mechanical behaviour of materials, Light metals, alloys (mostly magnesium alloys) andcomposites - Processing, microstructural characterization and evaluation of mechanical behavior, High temperature deformation behavior (Creep)
4.	Dr. Surya Deo Yadav (Ph.D.) (50230)	2016	Development of new steels. Modelling the microstructural evolution during creep and hot deformation, Flow stress and Creep strain modelling
5.	Dr. Subhasis Sinha (Ph.D.) (50232)	2017	Microstructure, crystallographic texture, mechanical behaviour and thermo-mechanical processing of metals and alloys
Institute Professor			
1.	Prof. S.N. Ojha (Ph.D.)	1979	Rapid Solidification Processing, Undercooling of Metallic Melts, Atomisation and Spray Deposition Processing, Directional Solidification of Binary Alloys, Physical Metallurgy of Alloy Steels

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
Visiting Faculty & Distinguished Professor			
1	Prof. S. Lele (Ph.D.)	1967	Physical Metallurgy and Materials Engineering
Emeritus Professor			
1	Prof. Vakil Singh (Ph.D.)	1974	Mechanical Behaviour of Metals and Alloys Fatigue, Fracture, and Environmental Effects Bio-implant Materials

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Shri Lalit Kr. Singh (B.E.)	Sr. Technical Superintendent (19262)	14/02/2011
2	Shri Arun Prakash (M.A.)	Sr. Technical Superintendent (14047)	18/02/1995
3	Shri A.K. Vishwakarma (B.A.)	Sr. Technical Superintendent (14099)	27/05/1987
4	Dr. Ashutosh Dubey (M.sc. , Ph.D.)	Technical Superintendent (18754)	22/12/2008
5	Shri Mohd. Sharaj (B.A.)	Technical Superintendent (18621)	06/08/2008
6	Shri J.P. Minz (Intermediate)	Technical Superintendent (14109)	26/05/1990
7	Shri Kamala Prasad (Intermediate)	Technical Superintendent (14116)	15/10/1998
8	Shri Rana Pratap Yadav (Intermediate)	Technical Superintendent (14117)	16/10/1998
9	Shri Chhote Lal (ITI)	Jr. Technical Superintendent (18053)	21/02/2007
10	Shri Setu Prasad (High School)	Jr. Technical Superintendent (14222)	16/05/2007
11	Shri Ashok Kr. Mishra (B.A.)	Jr. Technical Superintendent (10227)	16/05/2007
12	Shri Binod Kr. Pathak (ITI)	Jr. Technical Superintendent (12492)	18/05/2015
13	Shri Bal Govind Singh (ITI)	Sr. Technician (16253)	13/04/2012
14	Shri Rajendra Prasad Yadav (B.A.)	Sr. Technician (18618)	05/08/2008
15	Shri Shashi Kant Pandey (M.Sc.)	Sr. Technician (18619)	05/08/2008
16	Shri Samish Kr. Singh (M.A.)	Sr. Technician (18620)	05/08/2008
17	Shri Sunil Kumar (Intermediate)	Sr. Technician (18616)	06/08/2008
18	Shri Anjani Kr. Singh (B.A.)	Sr. Technician (18638)	06/08/2008

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
19	Shri Mahendra Narain Mishra (ITI)	Sr. Technician (18639)	05/08/2008
20	Shri Kamlesh Mishra (Intermediate)	Sr. Technician (18617)	12/08/2008
21	Shri Balwant Singh (ITI)	Sr. Technician (19273)	10/02/2011
22	Shri Ram Ashre (Intermediate)	Sr. Technician (14109)	10/09/1996
23	Shri Sushil Kumar (B.Sc.)	Sr. Technician (19604)	13/07/2012
24	Shri Rishabh Tiwari (B.Tech, MBA)	Junior Assistant (50092)	08/05/2017

5. Research and Consultancy:

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Setting up of Advanced Research Center for Iron and Steel at IIT(BHU), Steel Development Fund	2016-2021	Ministry of Steel, Govt. of India	3098.00	Dr. R. Manna (Coordinator) & all teachers of the Dept.
2	Malaviya Chair For Railways Technology	2015-2020	Ministry of Railways, Govt. of India	500.00 (Corpus Fund)	Prof. R.K. Mandal (Coordinator)
3	Structural optimization and band gap engineering of lead-free perovskite based photovoltaics	2017-2019	Center for Energy Research & Development, IIT (BHU)	22.00	Prof. R.K. Mandal (PI),
4	Mechanical behaviour of advanced high strength steel processed by additive manufacturing	2019-2022	SERB, DST, Govt. of India	39.84	Prof. N.C. Santhi Srinivas (PI
5	Studies on Improvement in Stiffness of Aluminum Alloy Fibers	2016-2019	DRDO, Govt. of India	40.11	Dr. R. Manna (PI),
6	Development of Ni-Free Austenitic Stainless Steel for Biomedical Application	2016-2019	Ministry of Steel, Govt. of India	284	Dr. G.S. Mahobia (PI),
7	In-situ electron microscopy at atomic scale for understanding nucleation growth and interfaces of omega phase.	2017-2020	SERB, DST, Govt. of India	81.50	Dr. Joysurya Basu (PI)
8	Development and structural characterization of Bi2-xMxO3+x(y-3)/2 (M=Fe, Cr, Mn) coating for protection against liquid coolant and sensors	2017-2020	UGC-DAE-CSIR, Govt. of India	18.00	Dr. Joysurya Basu (PI)

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
9	Role of short-range ordering in designing High Entropy Alloys	2019-2022	SERB, DST, DST, Govt. of India	34.00	Dr. Vikas Jindal (PI),
10	Development of Functionally Graded Armour Composites (FGACs) Materials	2020-2023	ARMREB, DRDO	91.66	Dr. Vikas Jindal (PI),
11	Cyclic Thermochemical fuel generation	2019-2022	SERB, DST, DST, Govt. of India	51.00	Dr. Randhir Singh (PI)
12	Optimization of recovery of valuable metal from waste printed circuit boards by modified hydrometallurgical route	2018-2020	UGC-UKIERI	GBP 29000.00	Dr. K.K. Singh (PI)
13	Processing, microstructural characterization and evaluation of mechanical properties of creep resistant magnesium alloy-based nanocomposites	2019-2021	Seed grant for new faculty, IIT (BHU) Varanasi	10.0	Dr. Ashok Kumar Mondal (PI)
14	High Performance Rare Earth Free Nanocomposite Permanent Magnets for Advanced Motors and Alternative Energy Applications	2020-2023	SERB, DST, DST, Govt. of India	56.90	Dr. N.K. Prasad (PI)
15	In-situ microscopy study of age hardening in dispersion strengthened cast magnesium alloys and its ex-situ correlation with mechanical properties.	2020-2023	SERB, DST, DST, Govt. of India	37. 36	Dr. A.K. Mondal (PI),
16	Creep and corrosion behaviour of novel MRI230D magnesium alloy with nanoparticles additions	2020-2023	CSIR, New Delhi, India	18.08	Dr. Ashok Kumar Mondal (PI),
17	Atomic Scale Electron Microscopy, FIST Engineering Sciences (Level III)	2020-2025	SERB, DST, DST, Govt. of India	990	Dr. J. Basu (PI),
18	Development of low-modulus β-Ti alloys for biomedical applications	2019-2022	SERB, DST, DST, Govt. of India	41.08	Dr. Kausik Chattopadhyay (PI)
19	Durability aspects of air electrode in high-temperature solid oxide electrolysis cell (SOEC) for hydrogen production from water	2019-2021	Institute Seed Grant, IIT(BHU), India	10.00	Dr. Randhir Singh (PI)
20	Development of a unified physical model for hot deformation and creep to support the development of high temperature materials	2019-2024	DST (Inspire)	35.00	Dr. Surya Deo Yadav (PI)
21	Zone wise investigation of creep behaviour of tempered martensitic steel weld joints employing impression creep testing technique	2019-2021	Seed Grant IIT(BHU)	10.00	Dr. Surya Deo Yadav (PI)
22	Tunable Surface Plasmon Optical Sensing Behaviour of M-MoS2 (M= Cu,Ag,Au) Alloy Nanostructures	2020-2022	SERB, DST	44.65	Dr. B Mukherjee (PI)

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
23	Quantification of the texture dependence of cyclic deformation mechanisms in single-phase and dual-phase alloys with FCC and HCP crystal structures	2019-2021	IIT (BHU) Seed Grant	10.00	Dr. S. Sinha (PI)

Industrial consultancy projects:

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. O.P. Sinha & Dr. J.K. Singh	Assisting NCL in short listing of vendors under – Make in India, for import substitution and establishing an indigenous supply chain for replacement of HEMM spares and reduce the reliance on overseas sources for supply of high value HEMM spares	NCL, Singrauli	20.40
2	Dr. Kausik Chattopadhyay (PI), Prof. Vakil Singh, Prof. N. C. Shanti Srinivas, Prof. S. K. Panda (Mec.), Dr. G S Mahobia	Failure Analysis of Gudgeon Pin	M/s Maruti Suzuki India Limited	4.92

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Instrumented Microindentation Tester	69.90
2	Bottom pouring magnesium melting furnace with squeeze-casting set-up; Make: SwamEquip	10.00

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1	Dr. G.S. Mahobia	A Composition of Austenitic Stainless Steel for Medical Implants

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co-Author	Title	Publisher
1	I. Chakrabarty	Online Reference Module on "Characteristics Properties and Developments of Microstructures by Heat Treatment of unalloyed and low-alloyed Cast Irons" in Materials Engineering Series	Elsevier.
2	Nancy Raj, R Bansal, Rahul Agrawal, K Chattopadhyay, V Singh	Effect of Surface Nanostructuring on Gene Expression for Protein Synthesis, Osteoblast Cells Recruitment and Size of Focal Adhesion: Review'	Apple Academic Press, 2019

9. Research Publication:

Manuscript

1 Singh M.K., Chettri Prajwal, Basu Joysurya, Tripathi Ajay, Mukherjee Bratindranath, Tiwari Archana, Mandal R.K. (2019) Synthesis of rod-shaped Au-Cu intermetallic nanoparticles and SERS detection. Materials Letters, 249, 33-36

2 Agrawal Rahul Kumar, Pandey Vaibhav, Naik Amruta Barhanpurkar, Wani Mohan R., Chattopadhyay Kausik and Singh Vakil (2020), 'Effect of ultrasonic shot peening duration on microstructure, corrosion behavior and cell response of cp-Ti', Ultrasonics, 104, , 106110.

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13 Ganguly S., Sarkar S., Mondal A.K., (2020) Enhancement of tensile properties of AZ91-Ca-Sb magnesium alloy with SiC nanoparticles additions. Metals and Materials International, In press.

14 Gangwar A., Singh G., Shaw S. K., Mandal R. K., Sharma A., Meena SS, Prajapat C. L. and Prasad N. K. (2019) Synthesis and structural characterization of Co x Fe 3−x C ($0 \leq x \leq 0.3$) magnetic nanoparticles for biomedical applications. New J. Chem. 43, 3536-3544.

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10. Number of Conference Papers: 2

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Prof. N.K. Mukhopadhyay	IIM-Distinguished Educator Award-2019
2	Prof. I. Chakrabarty	Distinguished Researcher Award 2020 in Metallurgical Engineering (Metal Casting), affiliated by World Research Council.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 48

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1.	Biswajit Mishra	19141002	Behind The Teachers Desk (BTTD-2019), First Rank with Cash Prize	September 2019	NML-Jamshedpur
2.	Shri Ganne Ketan Balaji	14144003	AICTE-INAE Travel Grant	16-20 June, 2019; Nano Today 2019	INAE
3.	Shri Yagnesh Shadangi	14141002	CSIR Foreign Travel Grant	For attending MS&T 2019 at Oregon, USA	CSIR
4.	Ankitendran Mishra	15141501	ITS-DST	For attending ITC, 2019 at Sendai, Japan	SERB, DST
5.	Shri Ashnit Gangawar	15141502	ITS-DST	For attending MMM 2019, USA	SERB, DST
6.	Ankitendran Mishra	15141501	INF Scholarship	For attending INF meeting 2020	INF, Malaysia
7.	Shri Vikas Shivam	13141007	IFSM-YRC Award 2020	3-7 Feb. 2020, Hyderabad	IFSM
8.	Shri Rajat Gupta	18142023	CSIR Foreign Travel Grant	For attending TMS 2020 at San Diego, USA	CSIR
9.	Shri Yagnesh Shadangi	14141002	Best poster presentation (Third)	7-8 March, 2020; IIT Kanpur	IWHEM-3, IIT Kanpur, India

14. Number of Students/Scholars who went for foreign Internship: 4

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator	Title	Period
1	Prof. K.K. Singh	International Conference on Management and Recycling of Metallurgical Wastes (MetWaste 2020)	February 22-23, 2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 26

17. Number of Special lectures delivered by faculty members in other institutions: 2

18. Number of Visits abroad by faculty members for conference/symposia: 8

19. Fellowships of academic and professional societies:

S. No.	Name of Faculty Member	Details of Fellowship
1	Prof. K.K. Singh	Institution of Engineers (India)

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. R.K. Mandal	Member	CMC-Transtech.
2	Prof. N.K. Mukhopadhyay	Key-Reader	Metallurgical and Materials Transactions A (USA)
3	Prof. N.K. Mukhopadhyay	Editor	Journal of Institution of Engineers, Metallurgical and Materials: Series D: (Springer)
4	Prof. N.K. Mukhopadhyay	Guest Editor	Special Issue of Journal of Alloys and Compounds (Elsevier).
5	Prof. K.K. Singh	Guest Editor	Materials Today: Proceedings (MRMW-2020)

21. Faculty members' participation with other universities under MoUs:

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1.	Prof. Ranjit Kumar Ray MN Dastur School of Materials Science and Engineering IIEST Shibpur	April 04, 2019	To deliver Lecture
2.	Dr. Anindya Basu Associate Professor, Department of Metallurgical Engineering, NIT Rourkela	April 04, 2019	To deliver Lecture
3.	Professor Raj N. Singh School of Materials Science and Engineering, Oklahoma State University, OK, USA	April 15, 2019	To deliver Lecture
4.	Dr. V. Ramaswamy Department of Metallurgical Engg., PSG College of Technology, Coimbatore	April 20,2019	To deliver Prof. T.R. Anantharaman Memorial Lecture-2019
5.	Dr. Arun Kumar Rai Scientist, Raja Ramanna Centre for Advanced Technology, Indore	May 30, 2019	To deliver Lecture
6.	Dr. Prakash Srirangam Associate Professor, WMG, University of Warwick, Coventry	June 17, 2019	To deliver Lecture
7.	Dr. R. Vaideeswaran Met. Consultant & Rtd. Sr. Manager, BHEL, Tiruchirappalli, Tamilnadu Visiting faculty NITT, NABL Assessor Chairman, Society for Failure Analysis, Tiruchi	October 02,2019	To deliver Lecture

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
8.	Dr.-Ing. K.G. PRASHANTH Head, Additive Manufacturing Laboratory Professor in Additive Manufacturing Department of Mechanical and Industrial Engineering School of Engineering, Tallinn University of Technology Estonia	Jan 27, 2020	To deliver Lecture
9.	Prof. Jason B Love The University of Edinburgh	February 20-26, 2020	To conduct research activities and to organise international conference under UGC UKIERI sponsored project

24. Other activities:

Indian Faculty visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Ranjit Kumar Ray MN Dastur School of Materials Science and Engineering IIEST Shibpur	To deliver Lecture	April 04, 2019 IIT (BHU)
2	Dr. Anindya Basu Associate Professor, Department of Metallurgical Engineering, NIT Rourkela	To deliver Lecture	April 04, 2019 IIT (BHU)
3	Dr. V. Ramaswamy Department of Metallurgical Engg., PSG College of Technology, Coimbatore	To deliver Prof. T.R. Anantharaman Memorial Lecture-2019	April 20,2019 IIT (BHU)
4	Dr. Arun Kumar Rai Scientist, Raja Ramanna Centre for Advanced Technology, Indore	To deliver Lecture	May 30, 2019 IIT (BHU)
5	Dr. R. Vaideeswaran Met. Consultant & Rtd. Sr. Manager, BHEL, Tiruchirappalli, Tamilnadu Visiting faculty NITT, NABL Assessor Chairman, Society for Failure Analysis, Tiruchi	To deliver Lecture	October 02,2019 IIT (BHU)

Foreign Faculty Visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Professor Raj N. Singh School of Materials Science and Engineering, Oklahoma State University, OK, USA	To deliver Lecture	April 15, 2019 IIT (BHU)
2	Dr. Prakash Srirangam Associate Professor, WMG, University of Warwick, Coventry	To deliver Lecture	June 17, 2019 IIT (BHU)
3	Dr.-Ing. K.G. PRASHANTH Head, Additive Manufacturing Laboratory Professor in Additive Manufacturing Department of Mechanical and Industrial Engineering School of Engineering, Tallinn University of Technology, Estonia	To deliver Lecture	January 27, 2020 IIT (BHU)
4	Prof. Jason B Love The University of Edinburgh	To conduct research activities and to organise international conference under UGC UKIERI sponsored project	February 20-26, 2020 IIT(BHU)

15. Mining Engineering

Year of Establishment: 1923

Head/Coordinator of the Department:

1. Introduction of the Department/School:

The oldest Mining Engineering Department in the country, came into existence as early as 1923, as a section of the Department of Geology, Mining and Metallurgy. Later, in the year 1944, separate departments of Mining and Metallurgy were constituted under the College of Mining and Metallurgy. The first Ph.D. degree in Mining Engineering in the country was awarded from this department in the year 1964. This lead was further strengthened by introducing the First Post- Graduate course in 1966 leading to M.Sc. degree in Mining Engineering, Metal Mining and Coal Mining, respectively and later the M.Sc. degree in Mine Planning was introduced in 1972. Since, 1995-96 the department offers M.Tech. degree in Mine Environment, Mine Planning and Rock Mechanics. The Department of Mining Engineering, BHU was one of the first in the country to receive UGC Assistance under COSIST and SAP Programme in 1984. Subsequently, the Department was upgraded as a Centre of Advanced Study in the area of Rock Mechanics and Ground Control in 1984. The Department of Mining Engineering, IIT (BHU) occupies a pioneering position in the field of mining education and research. It has many firsts to its credit. The first Bachelor, Postgraduate and Doctoral degrees in mining engineering in India have been awarded by this department. Today's Mineral Industry is being run by many of its illustrious alumni who are holding key positions within the country and abroad. Senior faculty members have been recognized by the mining and allied industries as experts in the respective fields and are members of the important decision making bodies associated with CIMFR, NIRM, UGC, ISMU, NCL, CCL, SCCL, CIL, HZL, UCIL etc. The Department received generous grants to accelerate its research and developmental activities. The Department is divided into six divisions with laboratories that are well equipped with the conventional and modern facilities. Facilities have also been developed for research in collaboration with mining industry to deal with their practical problems, these laboratories are also equipped to undertake fundamental research in the field of mining. The Department is also provided with an Underground Experimental Model Mine well equipped for demonstration, experimental and research purposes particularly in the field of underground mechanised transport systems, mine ventilation and mine surveying experiments.

The department is spread in an area of 5815.08 m^2. The department has 7 laboratories, 1 lecture hall, and 3 classrooms.

Major areas of Research: Rock Mechanics & Ground Control and numerical modelling, Mine Environment, Mine Ventilation, Mine Safety, Water Soluble Polymer, Mining Geology, Mine Water Management & Environmental Pollution, Mining Methods, Production and Productivity analysis of Mining Machines, Design of Structure in Rock, Mine Planning, Reliability Analysis and Slope stability, Environmental Economic, GIS and Remote Sensing, Operations Research, Mine Surveying, Mine economics, Mine legislation and Computer Applications in Mining, Mine Safety, Risk Analysis, Reliability and Rock Cutting Technology, Rock Fragmentation Engineering, Drilling and Blasting of rocks, Coal Analysis, Mineral Beneficiation

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	99	78	84	87	
2.	Dual Degree	21	13	19	18	18
3.	M. Tech/ M. Pharm	24	31			
4.	Ph. D (Under Institute Fellowship)	12	17	9	9	
5.	Ph. D (Under Project Fellowship)	01	--	--	-	-
6.	Ph. D (Under Sponsored Category)	01	-	-	-	-

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	B K Shrivastva, PhD 13862	1986	3D simulation of Mine Subsidence Slope stability Social cost benefit analysis of mining projects
2	N C Karmakar, PhD 17282	1999	Mine Environment - Underground and Surface, Mine Safety Engg.,Water Soluble Polymer in Mining Engg
3	A Jamal, PhD 13869	1990	coal quality and utilization environmental pollution in mines characterization and management
4	Piyush Rai, PhD, 13868	2002	Rock Fragmentation by Drilling and Blasting, Mining Methods, Production and Productivity Investigation and Enhancement of Equipment for Mining Applications
5	S K Sharma, PhD 13871	2009	Mine Legislation's and safety Rock Reinforcement and instrumentation ML and AI in slope stability
6	S Gupta, PhD 13872	2004	Safety & Risk management Data Analytics Availability & Maintainability Analysis
ASSOCIATE PROFESSORS			
1	R P Singh, M.Tech	-	Mine mechanization & Planning, Mine Environmental Management and Planning
2	Ashok Jasiwal, PhD 18149	2007	Design of Roof and 3D numerical simulation Stability analysis and design of panel of underground mines Monitoring and analysis of rock instrumentation
3	Rajesh Rai, PhD	2009	Rock Slope and Dump stability Monitoring and analysis of slope Blast vibration
4	A Kumar, PhD	2014	Environmental Economic, GIS and Remote Sensing, Operations Research
5	S K Palei, PhD	2008	Mine Safety Engineering, Risk Management, Reliability Analysis and maintenance Planning
6	G S P Singh, PhD	2008	Underground Coal Mining, Numerical Simulation of Mining Structures Rock Instrumentation
ASSISTANT PROFESSORS			
1	Tarun Verma, PhD 18147	2016	Air pollution modeling, Remote sensing and GIS and Radar, LIDAR in slope monitoring and analysis

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
2	Suresh Ku Sharma, PhD	2016	Rock Blasting and Fragmentation, Rock Mechanics Mine Surveying
3	Nawal Kishore, PhD	2004	Mine Planning Surface Mining Operation
4	Amit kumar Verma, PhD	2013	Slope stability and Landslide, Tunneling and Numerical Modelling Underground Space Technology

Research Staff:

S. No.	Name, Qualification and Employee No.	Year of PhD	Major Areas of Specialization (Max. 3 Areas)
1	Dr. A.K. Singh, PhD 18987	1991	Mine Environment, Mineral Processing, Coal sampling, preparation and analysis
2.	Dr. C.S. Singh, PhD 17034	1996	Mining Geology, Rock Mechanics, Rock and Coal Testing, Numerical Modeling

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications,	Designation	Date of Appointment in the department
Technical Staff			
	Shri Mithilesh Kumar Gupta, B.A. & Diploma in Mechanical Automobile Engineering	Senior Technical Superintendent	29.01.2007
2.	Shri Lalmani, Intermediate and Diploma in Mechanical Engineering	Technical Superintendent	12.08.2008
3.	Shri Kanhaiya Lal, Intermediate (Science)	Senior Technical Superintendent	27.05.1987
4.	Shri Anupam Kumar Debey, M.Sc. (Biochemistry), PG (Envi. Science.) & M.A. (Social Science)	Technical Superintendent	16.12.2008
5.	Shri A.K.Pandey, M.A. (Hindi)	Technical Superintendent	13.04.1989
6.	Shri Rajendra Prasad, B.A.	Technical Superintendent	20.04.1989
7.	Shri C.B.Singh, M.Sc. Ag (Entomology and Agricultural Zoology)	Technical Superintendent	21.12.1990
8.	Shri Bindresh Yadav, High School Science	Technical Superintendent	22.12.1990
9.	Shri Indu Bhusan Pal, Intermediate (Science)	Technical Superintendent	01.02.1991
10.	Shri Ramdhani Prasad, Intermediate (Science)	Technical Superintendent	01.06.1994

Sl. No.	Name, Qualifications,	Designation	Date of Appointment in the department
11.	Shri Ram Sewak Singh, Intermediate (Science)	Technical Superintendent	07.01.1997
12.	Shri Mahendra Yadav, Intermediate (Science)	Senior Technician	05.08.2008
13.	Shri Vijay Prakash Shrivastava, Intermediate (Science)	Senior Technician	05.08.2008
14.	Shri Ajay Kumar Patel, M.Sc. (Geology)	Senior Technician	06.08.2008
15.	Shri Sunil Kumar Mishra, B.A. & ITI Degree	Senior Technician	05.08.2008
16.	Shri Bansh Narayan Pal, Intermediate (Science)	Junior Technician	02.06.1980
17.	Shri Rajkumar Singh, Intermediate (Science)	Junior Technician	23.04.2004
18.	Shri Pyarelal, Intermediate & ITI Degree	Junior Technician	11.07.2012
Non-Teaching Staff			
19.	Shri Ashish Shankar Gupta, B.A. & Pursuing M.A. in Sociology from IGNOU	Junior Assistant	08.05.2017
20.	Ms. Neha Gautam, Master in Mass Communication & Journalism	Junior Assistant	27.07.2017

5. Research and Consultancy:

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co- ordinator
1	Whole Body Vibration Exposure on HEMM Operators in Surface Coal Mines – An Assessment of Various Contributing Factors	3 years	SERB-DST	40	Dr. S. K. Palei
2	Design and Development of Micro Seismic based technique for monitoring and prediction of slope failure in Pandoh, Himachal Pradesh, India	3 years	SERB	50	Dr.A.K. Verma
3	Optimization of capacity Utilization of Draglines deployed in NCL through Big data Analytics	3 years	NCL, Coal India	84	Prof S Gupta
4	Developing Slope Stability Models for Design of Long Term Stable Dump Slopes through proper benching and vegetation- Part A	3 years	NCL, Coal India	68	Dr Rajesh Rai
5	Developing Slope Stability Models for Design of Long Term Stable Dump Slopes through proper benching and vegetation- Part B	3 years	NCL, Coal India	141	Dr G S P Singh
6	Slope Stability monitoring and analysis using Hyperspectral imaging	3 years	SERB, DST, New Delhi	47	Dr Tarun Verma

S. No.	Title	Period	Funding Agency	Amount (in lakhs)	Co- ordinator
7	Contribution of Neighboring Industries over the Air Quality of the Mining Area	3 years	NCL, Coal India	134	Prof A Jamal
8	Study of Impact Assessment of Back filling of Fly Ash in Abandoned Gorbi Mine and Treatment to Avoid Contamination of Ground water and soil	3 years	NCL, Coal India	124	Prof A Jamal
9	Evaluation of Ground behavior in Open Cast and underground excavation using TDR and Machine learning	3 years	NCL, Coal India	34	Prof S K Sharma

Industrial consultancy projects

S. No.	Name of Faculty Members	Title	Industry	Amount (in lakhs of Rs.)
1	Dr. A.K.Verma (P.I) Prof. Sanjay Kr. Sharma	Proof checking of detail design report of slope stability of various locations in connection with Lumding-Silcher GC project	Beaver Infra Consultant Pvt. Ltd.	3.5
2	Dr. A.K.Verma (P.I) Prof. Sanjay Kr. Sharma Dr. C.S.Singh	Testing of rocks of pakage 15 & 16 under construction highway	Navayuga Engineering Company Ltd.	8.4
3	Prof. S.K.Sharma, Dr.G.S.P.Singh, Dr. Tarun Verma & Dr. Nawal Kishore	Scientific study to plan and design ultimate pit slope of one number of pit of mechanised opencast working involving extraction of multiple developed coal seams (previously worked by underground Bord and Pillar method) with removal of overburden at Pindra Colliery, Kuju Area, CCL	CCL, Kuju Area, Jharkhand	14.2
4	Prof. B.K.Shrivastva	Numerical modelling in 3-D for subsidence prection of Tilaboni UGP	ECL, Sitarampur, W.B.	7.0
5	Prof. A.Jamal & Prof. S.K.Sharma	Proximate and GCV analysis cost of coal sample	Aravali Power Company Pvt. Ltd., Haryana	1.7
6	Prof. A.Jamal	Comprehensive study for Dipka and Gevra OCPs regarding carrying capacity of the Eco-System to assess optimal mining operations with minimal impact on eco system services	SECL, Bilaspur	35.4
7	Prof. B.K.Shrivastva Dr. Rajesh Rai	Scientific study in Dahernanagi Patch, Rajmahal OCP for part working to deal with fire in coal seam for the stability of OB dump and solid OB bench	ECL, Godda, Jharkhand	5.9
8	Dr.G.S.P.Singh (P.I.), Prof. S.K.Sharma, & Dr. Nawal Kishore	Scientific study and preparation of scientific study report of Amadand OCP of Jamuna Kotma in compliance of Reg. 106 ((2) of CMR 2017	SECL, Amadand OCP, Jamuna Kotma Area	14.4
9	Prof. S.K.Sharma Dr. A.K.Verma Dr. C.S.Singh	Testing of rock samples of Vindhya mine, SECL	JMS Mining Pvt. Ltd., Kolkata	1.4
10	Prof. A.Jamal (P.I.) Prof. S.K.Sharma Prof. S.Ratan Dr. Ramesh Kumar	Production and trading of coal validation of minw water utilization data SECL (Coal Jal)	SECL, Bilaspur	58.3

S. No.	Name of Faculty Members	Title	Industry	Amount (in lakhs of Rs.)
11	Prof. S.K.Sharma Dr. G.S.P.Singh Dr. Tarun Verma Dr. Nawal Kishore	Scientfic study for suitable method of working, ultimate pit slope and dump slope and monitoring of slope stability of Madhaipur OC patch	ECL, Madhaipur Colliery, Burdwan, W.B.	15
12	Dr. A.K.Verma (P.I)	Proof checking of two tunnel, two tubes of four lane for missing link under capacity augmentation of Mumbai Pune Expressway in the State of Maharashtra under EPC Mode	Navayuga Engineering Company Ltd.	5.9
13	Dr.G.S.P.Singh (P.I.), Prof. S.K.Sharma, & Dr. Nawal Kishore	Scientific study for stability of parting between contiguous coal seams G-III top and bottom of Bagdewa U/G mine, SECL	SECL, Bagdewa UG Mine	9.60
14	Dr. A.K.Verma (P.I)	Sample for concrete creep analysis as per ASTM C512	Dipak S. Pimple Engineers & Contractors, Palghar-401404	1.4
15	Prof. B.K.Shrivastva Dr. Rajesh Rai	Scientific study in Lalgutwa Dumping Area of Rajmahal OCP, ECL	ECL, Rajmahal Area, Bara Simra	7.0

6. New facilities added: NIL

7. Patents filed: NIL

8. Books, monographs authored/co-authored: NIL

9. Research Publication:

Manuscript

1 Behera, B., Yadav, A., Singh, G. S. P., Sharma, Sanjay Kumar (2019). Numerical Modeling Study of the Geo-mechanical Response of Strata in Longwall Operations with Particular Reference to Indian Geo-mining Conditions. Rock Mech Rock Eng (2019) doi:10.1007/s00603-019-02018-w

2 Gautam, PK, MK Jha, AK Verma, TN Singh (2019) Evolution of absorption energy per unit thickness of damaged sandstone, Journal of Thermal Analysis and Calorimetry,vol. 136, pp. 2305-2318.

3 Kumar Pramod, Gupta Suprakash, Yuga Raju Gunda (2020) Estimation of human error rate in underground coal mines through retrospective analysis of mining accident reports and some error reduction strategies, Safety Science 123,104555 https://doi.org/10.1016/j.ssci.2019.104555.

4 Sardana, Sahil, A.K. Verma, Laldinpuia, T.N. Singh (2019) Investigation of Rockfall Prone Road Cut Slope near Lengpui Airport, Mizoram, India, Journal of Rock Mechanics and Geotechnical Engineering, vol.11, pp. 146-158

5 Sardana, Sahil, AK Verma, Anand Singh (2019) Comparative analysis of rockmass characterization techniques for the stability prediction of road cut slopes along NH-44A, Mizoram, India, Bulletin of Engineering Geology and the Environment, Pages 1-13 https://doi.org/10.1007/s10064-019-01493-3.

6 Singh, Jayraj Haider Banka, AK Verma (2019) Locating critical failure surface using meta-heuristic approaches: a comparative assessment, Arabian Journal of Geosciences, vol. 12(9), Pages 307

7 Supta Suprakash, Kumar Pramod and Raju Gunda Yuga, (2019) A fuzzy causal relational mapping and rough set based model for context-specific human error rate estimation International Journal of Occupational Safety and Ergonomics (JOSE), DOI: 10.1080/10803548.2019.1578114

8 Vishwakarma, A.K, Behera, T., Rai, R., Sonkar, A. K., Singh A. P., and Shrivastva B.K., (2020) Impact assessment of coal mining induced subsidence on native soil of South Eastern Coal Fields: India. Geomechanics and Geophysics for Geo-Energy and Geo-Resources volume 6, Article number: 31

Refereed National Journal

1. Kushwaha P. K., S. P. Maurya, N. P. Singh and Piyush Rai, 2019 Estimating subsurface petro-physical property from raw and conditioned seismic reflection data: A Comparative Study, Journal of Indian Geophysical Union, v.23, no. 4, pp: 285-306.
2. Shukla, Asit and Rai, Piyush, 2019."Modelling of Dragline Boom Structure", Journal of Mines Metals and Fuels, Vol. 67, No. 9, Sep. 2019, pp: 431-435.
3. Azam, Shah Fateh and Rai, Piyush, 2019 Finite Element Based Simulation and Analysis of Dragline Bucket in Static and Dynamic Loading Condition, Current Science, V.116, No.4, Feb., 2019, pp: 612-619.
4. Yadav, P.K., Suprakash Gupta and Deepak Kumar (2019), Machine performance index (MPI): a method to evaluate the performance of mining dumper, Journal of Mines, Metals & Fuels, Vol. 67, No. 6, June, pp 320-325.
5. Kumar B, Sharma, Sanjay Kumar, and Singh G S P (2019). Enhanced prediction of hard rock pillars stability using fuzzy rough feature selection followed by Random forest. Journal of Mines Metals & Fuels. Nov (Vol.67): 509-514.
6. Yadav A.K. and A. Jamal (2019) Impact of Mining on Human Health in and around Mines. Environmental Quality Management 28(1), 83–87. ISSN: 1520-6483
7. Shirin, S., and A. Jamal (2019 Study on assessment of slope stability and mixed disposal of overburden in voids of Singrauli coalfield. Environmental Quality Management 28(3), 131-139. doi:10.1002/tqem.21616
8. Varshney Ramita and Aarif Jamal (2019) A Multivariate Statistical Analysis Approach for the Assessment of Water Quality in Govind Ballabh Pant Sagar Reservoir. Rasayan Journal of Chemistry, 12 (1), 251-256 (2019). ISSN: 0976-0083.
9. Azam, Shah Fateh and Rai, Piyush, 2019 Finite Element Based Simulation and Analysis of Dragline Bucket in Static and Dynamic Loading Condition, Current Science, V.116, No.4, Feb., 2019, pp: 612-619.
10. Rai, Piyush, 2020, "A comparative Investigation of Inter-row Delay Timing Vis-à-vis Some Rock Properties on High sandstone Benches", Indian Journal of Engg. and Material Sciences, NISCAIR, CSIR Publication New Delhi (In-press).
11. Kashi, V.K., N. C. Karmakar & S. Krishnamoorthi. (2020) A Critical Review of Haul Road Opencast Mines Fugitive Dust. Part–I: Genesis, Characteristic and Impact. Indian Journal of Environmental Protection 116: 57-63.
12. Kashi, V.K., N. C. Karmakar, S. Krishnamoorthi, Ekta Sonker, Pubali Adhikary & Rudramani Tiwari. (2020) Reducing the Dust Generation of Haul Road by Improving Water Holding Capacity with the Application of Synthesised Polyacrylamide at Laboratory Condition. Nature Environment and Pollution Technology 19 (1): 413-19.
13. Ray, A., R. E. S. Chaitanya Kumar, Ashutosh Kumar Bharati, Rajesh Rai & T. N. Singh (2019) "Hazard Chart for Identification of Potential Landslide Due To the Presence of Residual Soil in the Himalayas" https://doi.org/10.1007/s40098-019-00401-6

10. Number of Conference Papers: 18

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Prof. Piyush Rai	Received **Dr. D Lal Best paper award 2019 from Indian Journal of Geophysical Union** for the research paper "Estimating sub surface petro-physical properties from raw and conditioned seismic reflection data -A comparative study" V. 23(4), pp.285-306.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 2

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Gagan Gupta	18151005	Young Scientist Award for best paper presentation titled "An Improved Approach for Assessment of Instability Potential in Large Overburden Dump Structures" in 2nd International Conference On Opencast Mining & Sustainability (ICOMS2019).	December 13-14 2019, NCL Singrauli, India.	ICOMS2019, NCL Singrauli, India.
2	Gagan Gupta	18151005	Class "A" Scholarship in ISRM 2019 Specialized Conference: The 5th ISRM Young Scholars' Symposium on Rock Mechanics and International Symposium on Rock Engineering for Innovative Future (YSRM 2019 & REIF 2019).	December 1-4 2019, Okinawa, Japan.	International Society of Rock Mechanics and Japanese Society of Rock Mechanics, YSRM 2019 & REIF 2019

14. Number of Students/Scholars who went for foreign Internship: NIL

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members: NIL

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 6

17. Number of Special lectures delivered by faculty members in other institutions: 3

18. Number of Visits abroad by faculty members for conference/symposia: 2

19. Fellowships of academic and professional societies: NIL

20. Editorial boards of journals: NIL

21. Faculty members' participation with other universities under MoUs: NIL

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

23. Distinguished Visitors: NIL

24. Other activities: NIL

25. Any other Information: NIL

16. Department of Pharmaceutical Engineering & Technology

Year of Establishment: 1932

Head/Coordinator of the Department: Professor Sushant Kumar Shrivastava

1. Introduction of the Department/School:

Department of Pharmaceutical Engineering & Technology is a pioneer in Pharmaceutical education in India at University level. It was started in July 1932 by Prof.Mahadev Lal Schroff under the auspicious guidance of Mahamana Madan Mohan Malaviya Ji. Initially, a two-year programme was introduced in 1934 for the degree of B.Sc. (Pharmaceutical Chemistry). Later, the department has expanded academically by the inception of B.Pharm. (1937), M.Pharm. (1941), Ph.D. (1945) and integrated dual degree (2006) as its regular programmes. In the year 2014, the UG and IDD programmes were restructured and renamed as 4-year B Tech Programme in Pharmaceutical Engineering and Technology and 5-year IDD (B Tech & M Tech) programme in Pharmaceutical Engineering and Technology, respectively.

The Department has produced over 2100 B.Pharm., 1200M.Pharm., 50M.Pharm.(Integrated Dual Degree) and 130 Ph.D. students who enjoy leading positions in industry, academia, drug administration, research institutes and contemporary pharmacy practice worldwide. The Department has hosted many national and international events and to name a few are the 17th, 34th & 59th editions of Indian Pharmaceutical Congress in the year 1965, 1982 & 2007 in conjunction with Silver Jubilee, Golden Jubilee and Platinum Jubilee of the Department, respectively.

The department is spread over an area of 5823 m^2. The department has 26 laboratories, 2 lecture halls and 6 classrooms.

Major areas of Research: Drug discovery – Identification and optimization of new chemical agents from natural and synthetic origin for the treatment of diabetes, epilepsy, depression, pain, Alzheimer's disease, cancer, tuberculosis and other infectious and neurological diseases, Drug formulation design and development – Design and development of new drug delivery systems with improved pharmacokinetic and pharmacodynamic profiles.

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B. Pharm	62	53	51	44	---
2.	Dual Degree	13	13	18	14	18
3.	M. Tech/ M. Pharm	45	38	---	---	---
4.	Ph. D (Under Institute Fellowship)	15	19	05	12	04
5.	Ph. D (Under Project Fellowship)	2	02	03	---	---
6.	Ph. D (Under Sponsored Category)	1	---	---	---	---

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1.	Brahmeshwar Mishra (M.Pharm., PhD.)	10.08.1988	Pharmaceutics –Rate Controlled Novel Drug Delivery Systems, Nanotechnology based drug formulations Pharmacokinetics and Pharmacodynamics
2.	Sushil Kumar Singh (M.Pharm., PhD.)	21.02.1989	Pharmaceutical Chemistry –Chemistry of Natural Drug Products, Synthetic Analogues and Evaluation of their Biological Activity
3.	Sanjay Singh (M.Pharm., PhD.)	03.04.1993	Pharmacology – Nanomedicine, PK/PD Modeling, Stress and Diabetic Pharmacology
4.	Sushant Kumar Shrivastava (M.Pharm., PhD.)	19.06.2000	Pharmaceutical Chemistry – Rational Drug Design and Molecular Modeling

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
5.	S. Hemalatha (M.Pharm., PhD.)	29.07.2005	Pharmacognosy – Pharmacognostical and Pharmacological Evaluation of Indian Medicinal Plants
6.	Sairam K (M.Pharm., PhD.)	05.04.2003	Pharmacology – Neuropharmacology, Mitochondrial Medicine, New Drug Discovery, Organelle Targeted Drug Development
ASSOCIATE PROFESSORS			
1.	A.K.Srivastava (M.Pharm., Ph.D)	2019	Pharmaceutics – Newer Drug Delivery System especially Oral Controlled Release Solid Dosage Form
2.	Senthil Raja A (M.Pharm., PhD.)	18.07.2009	Pharmaceutical Chemistry – Synthetic Medicinal Chemistry, Computational Chemistry, Lead identification and Optimization
3.	AlakhNiranjanSahu (M.Pharm., PhD.)	08.12.2014	Pharmacognosy –Quality control studies and standardization of medicinal plants and herbal formulations
4.	Ruchi Chawla (M.Pharm., PhD)	17.10.2016	Pharmaceutics – Nano-drug Delivery System and Pharmacokinetics
5.	M.S. Muthu (MS., Ph.D.)	02.01.2010	Pharmaceutics –Cancer Nanotechnology, Theranostics, Anti-psychotic nanomedicine
ASSISTANT PROFESSORS			
1.	Sunil Kumar Mishra (M.Pharm., Ph.D.)	02.11.2013	Pharmacognosy – Medicinal & Aromatic Plants (MAP) Research, MAP Tissue Culture, Natural Drugs
2.	Prasanta Kumar Nayak (M.Pharm., Ph.D.)	25.05.2013	Pharmacology –Brain injury; Memory impairment; Breast cancer; Gallbladder cancer
3.	Gyan Prakash Modi (M.Pharm., Ph.D.)	14.12.2013	Pharmaceutical Chemistry – Design, Development of Novel Drugs to Treat Infections and CNS Disorders
4.	Shreyans Kumar Jain (MS, PhD)	15.09.2015	Medicinal Chemistry of Natural Products
5.	Vinod Tiwari (MS, PhD)	19.06.2012	Pharmacology: Cellular molecular mechanisms driving Neuropathic Pain, Role of reward circuitry in Chronic Pain, Targeting Kinesins for the treatment of neuropathic pain
6.	Ashish Kumar Agrawal (M Pharm, PhD)	15.06.2015	Pharmaceutical Nanotechnology and drug delivery
7.	Rajnish (MPharm, Ph.D)	07.03.2014	Pharmaceutical and Medicinal Chemistry
8.	Deepak Kumar (MPharm, Ph.D) Ramalinga Swami Fellow	09.11.2016	Medicinal Chemistry, natural product chemistry, bioluminescent chemistry
SENIOR RESEARCH OFFICER			
1.	Ashok Kumar (M.Sc., Ph.D.)	1993	Pharmaceutical Chemistry – Synthesis and Characterization of Novel Compounds
DST INSPIRE/Ramalingam Swami Faculty			
1.	ArunKhattri, PhD	2010	Cancer Biology, bioinformatics and human genetics

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation & Employee No.	Date of Appointment in the department
Office Staff			
1.	**Sh. Atul Kumar Gupta**, B.Tech. (Electrical)	Junior Assistant, 50109	21.05.2017
2.	**Sh. Yashwant Singh**, M.A.	Skilled Clerical Staff	27.04.2015
3.	**Sh. Ram Jiyawan,**B.A.	Ex. Senior Assistant, 12126	05.06.2007
4.	**Sh. Anand Kumar**, B.A.	Caretaker cum Clerk	06.12.2016
5.	**Sh. Surya Pratap Singh,** Intermediate	Multitasking Staff	01.05.2019
Library Staff			
	Km. ShyamaliGhosal, B. Lib.	Ex-Semi Professional Assistant, 14073	01.08.1987
Laboratory Staff			
1.	**Sh. Kapil Dev Rai**, M.A.	Technical Superintendent, 14179	02.02.1987
2.	**Smt. Archana Singh**, M.Sc	Technical Superintendent,18747	15.12.2008
3.	**Sh. Madan Lal**, M.A.	Technical Superintendent, 14185	12.08.1995
4.	**Sh. Virendra Kumar**, I Sc.	Technical Superintendent, 14187	15.10.1998
5.	**Sh. Ram Hriday Pathak**, H.Sc.	Technical Superintendent, 14186	15.10.1998
6.	**Sh. Sunil Kumar Singh**, Dip. In Electrical Engg	Senior Technician, 19269	20.12.2013
7.	**Sh. AkhilaNandUpadhyay** B. Sc., D. Pharm.	Senior Technician, 18628	07.08.2008
8.	**Sh. Arun Kumar**, Intermediate	Senior Technician, 18624	02.07.1996
9.	**Sh. Mohd. Jameel**, Intermediate	Senior Technician, 18633	02.07.1996
10.	**Sh. Amit Kumar**, Intermediate	Senior Technician, 17371	03.12.2015
11.	**Sh. Nand Lal**, B. Sc.	Ex. Technical Superintendent, 14183	11.01.1979
12.	**Sh. Chhote Lal**, B.A.	Ex. Technical Superintendent, 6497	02.02.1987
13.	**Sh. RafiqueAhmad,**High School	Ex Sr Laboratory Attendant, 14184	26.05.1992

5. Research and Consultancy:

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1.	Synthesis and evaluation of diverse N-functionalized heterocyclic hybrids as multi-target directed ligands for neuroprotective and neurorestorative therapies	2019-2022	MHRD, Government of India under STARS	75.30 Lakhs	Dr. Senthil Raja A, Principal Investigator
2.	Phytochemical and pharmacological evaluations of bioactivity guided fractions of medicinal plants of Tripura	2018-2021	DBT	26.5 Lakhs	Dr. A.N. Sahu, Principal Investigator
3.	Evaluation of reversal potential of *Bryonialaciniosa* seeds (Shivlingi) extract against Bisphenol-A induced epigenetic changes during pre and post-natal development in rat model: A focus on female reproductive health	2018-2020	UGC	10.0 Lakhs	Co-PI

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
4.	Pilot study on the Safety, Efficacy and Quality of Medical Devices used in Health centres (Wellness centres) in Varanasi district	2020-2021	Patient Safety and Access Initiative of India Foundation	12 Lakhs	Dr.Ruchi Chawla
5.	Development of novel near infrared fluorescence imaging probes for detecting amyloid beta species in eyes of Alzheimer's disease animal model	2019-2022	ICMR	37.00 Lakhs	Dr.Gyan Prakash Modi
6.	Development of Green & Sustainable C-H Functionalization Approaches: Total Synthesis of Medicinally Active Molecules and Their Biological Evaluation.	2019-2022	ICMR	RA Position approved under supervision of Dr.Gyan Modi approved and transferred to ICT, Mumbai	Dr.Gyan Prakash Modi
7.	Targeting Kinesins Mediated Regulation of Nociceptors for the Treatment of Neuropathic Pain	2 years	Ministry of Human Resource & Development (MHRD): SPARC	INR 47.53 Lakhs	Dr. Vinod Tiwari
8.	Dissecting Brain Reward Circuitry and CNS Comorbidities in Chronic Neuropathic Pain	3 years	SERB Early Career Research Award	INR 49.90 Lakhs	Dr. Vinod Tiwari
9.	Machine learning based design, synthesis and evaluation of novel tau-aggregation inhibitors for the treatment of tauopathy in neurodegenerative diseases	Jan-2020-Dec-2020	Seed grant to New Faculty, IITBHU	10 Lakhs	Dr.Rajnish
10.	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	Nov. 2019-Nov. 2024	DBT	42.50 Lakhs	Dr. Deepak Kumar
11.	Genomic characterization of early-localized vs advanced-metastatic head and neck cancers in India	2018-2023	Department of Biotechnology	32.5 Lakhs	Dr.Arun Khattri

Industrial consultancy projects

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Dr. S.K. Jain – PI Prof. S.K. Shrivastava- co PI	Consultancy Research and Development Project: Consultancy: Quantitative Estimation of Nicotine and Magnesium Carbonate in Chewable Herbs, Pan Masala and Other Products Asper FSSAI guideline	DS Group, Noida	18.65
2	Prof.Sairam K	Retainer Consultancy	NatreonInc, Kolkata	60K per month
3	Dr. Vinod Tiwari	Acute toxicity studies for bioslim, erotican and anti-stress capsules provided	Sanat Products Ltd	INR 1.41 Lacs
4	Dr. Vinod Tiwari	Study of Anti diabetic activity of the samples provided by SANAT Products Ltd.	Sanat Products Ltd	INR 2.22 Lacs

6. New facilities added:

S. No.	Details (Infrastructure, Equipment, etc.)	Value (in Lakhs of Rupees)
Equipment		
1.	In Vivo Optical Imaging System	147
2.	Electrospinning Instrument	2.00
3.	Rotary Evaporator with vacuum pump and Water Regulation Chiller	4.90
4.	Vacuum pump and Water Regulation Chiller for RotaVapor	4.10
5.	Electrophysiology Unit	10.48
6.	-20 Deep Freezer	1.50
7.	Steel Racks for animal Cages	1.00
8.	Rotary Evaporator including Chiller and Vacuum pump IKA	5.00
9.	Equipped (Biosafety cabinet, Co2 incubator, inverted microscope and centrifuge) cell culture facility	12.99
10.	Bio-molecular Simulation Facility (Dell Precision 3630 Tower Workstation)	1.50
11.	Synthetic medicinal chemistry facility (rotary evaporator, vacuum pump, chiller, magnetic stirrer, magnetic stirrer with hot plate, weighing balance, rotamantle, laboratory stands and clamps, UV TLC chamber, hot air oven, micropipettes etc.)	8.00
12.	Rotary Evaporator, Recirculating chiller, Vacuum pump	~6.50
13.	Weighing balances, Magnetic Stirrer, pH meter, UV chamber	~2.50
14.	Workstation (Server for Bioinformatics)	3.00
15.	PCR Machine	2.50

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1	Sharma, P., Tripathi, A., Tripathi P.N., Avhad, A., Shrivastava, S.K.	Synthesis of *N*-benzylpiperidine and 5-(2,4-dichlorophenyl)-1,3,4-oxadiazole hybrid with multifunctional activities against Alzheimer's Disease. Indian Patent (201911034164) 24.08.2019
2	Tripathi, A., Sharma, P., Choubey, P.K., Shrivastava, S.K.	A novel compound for treating Alzheimer's disease and a method of preparation thereof. Indian Patent (201911034300) 26.08.2019
3	Sharma, P., Tripathi, A., Tripathi P.N., Salunke, P., Shrivastava, S.K.	*N*-(1-benzylpiperidin-4-yl)-5-(4-(trifluoromethyl)phenyl) 1,3,4-oxadiazol-2-amine as multitargeted ligand to treat Alzheimer's disease. Indian Patent (201911034930) 29.08.2019
4	Tripathi, A., Sharma, P., Choubey, P.K., Shrivastava, S.K.	Synthesis of 2-(4-bromophenyl)-5-(4-(pyridin-2-yl)Piperazin-1-yl)-1,3,4-oxadiazole for treating Alzheimer's disease and method of preparation thereof. Indian Patent (201911034931) 29.08.2019
5	Sairam Krishnamurthy, Pankaj Palliwal, Gopi Chand, SK Singh, Gyan Modi (201911012094)	A novel anti-coagulant formulation and a method of preparation thereof
6	Michael J. Pepi, Lizbeth K. Hedstrom, Deviprasad R. Gollapalli, Shibin Chacko, Gyan Modi, Suresh Kumar and Greg Cuny, PCT/US19/29338 (Filed on April 26, 2019)	Antibacterial compounds, compositions and uses thereof

S. No.	Name of Faculty Member	Title of Patent
7	Lizbeth K. Hedstrom, Deviprasad R. Gollapalli, Gregory D. Cuny, Suresh K. Gorla, Gyan Modi, and Mohana R Vippila, Filing Date: November 25, 2019, FH Reference No.: PCT/ US19/62946	Compounds and methods for treating chronic microbial infections
8	Dr. Deepak Kumar	Indolylkojylmethane analogues, process of preparation thereof, and use as inhibitor of cancer cell invasion and metastasis.

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	Prof. B. Mishra	Transdermal Drug Delivery. In "Controlled Drug Delivery Systems" (Book Chapter)	CRC Press, Taylor and Francis Group, Florida USA
2		pH Sensed Interpenetrating Polymeric Network: Application in Drug Delivery. In "Interpenetrating Polymer Network: Biomedical Applications" (Book Chapter)	Springer, Singapore
3		MCQs on Physical Pharmaceutics (Book)	Pharma Career Publication, Nashik, India.
4		Nanomedicines for the Treatment of Respiratory Diseases. In "Nanomedicine for the Treatment of Disease from concept to application" (Book Chapter)	Apple Academic Press, USA
5	Sharma P, Tripathi MK, Shrivastava SK	Cholinesterase as a Target for Drug Development in Alzheimer's Disease	Springer Nature- Humana Press, New York
6	Tripathi MK, Sinha J, Srivastava SK, Kumar D	Bioinformatics in Skin Cancer: A System Biology Approach to Understanding the Molecular Mechanisms and It's Regulations	Springer, Singapore
7	Ruchi Chawla, Varsha Rani, Mohini Mishra	Nanopharmaceutical Advanced Delivery Systems, Chapter: Nanoparticulate Carriers-Versatile Delivery systems	Scrivener Publishing Wiley, USA
8	**Book Chapter**: Cheema, A. K.; Grindrod, S.; Zhong, X.; Jain, S.; Menon, S. S.; Mehta, K. Y.; Suy, S.; Collins, S.; Wang, Y.; Timofeeva, O.; Bandi, G.; Pahira, J.; Kowalczyk, K.; Lynch, J.; Dritschilo, A.	Discovery of Metabolic Biomarkers Predicting Radiation Therapy Late Effects in Prostate Cancer Patients.	In: Rhim J., Dritschilo A., Kremer R. (eds) Human Cell Transformation. Advances in Experimental Medicine and Biology, vol 1164. **Springer**, 2019
9	**Book Chapter**: Jain, S.K. Dysoxylum Binectariferum Hook.f., An Indian Medicinal Plant as a Source for Anti-Cancer Agents, In Plants for Human Survival and Medicine, pp 115-149 © 2019,	Dysoxylum*Binectariferum*Hook.f., An Indian Medicinal Plant as a Source for Anti-Cancer Agents, In Plants for Human Survival and Medicine	In Plants for Human Survival and Medicine, pp 115-149 © 2019, Editor, Bikarma Singh, New India Publishing Agency, New Delhi, India

9. Research Publication:

Manuscript

1 A. K. Mishra, K. N. Tiwari, P. Mishra, S. K. Tiwari, S. K. Mishra, J. Singh, Optimization of concentrations of different cytokinins and other factors for establishment of high frequency regeneration from seedling derived node explants of Nyctanthesarbor-tristis (L.) and evaluation its genetic fidelity through ISSR marker, Plant Biosystems, 2019.

2 A. Magotra, A. Gour, D. K Sharma, A. K Dash, G. Singh, D. Mukherjee, U. Nandi (2019) Pharmacokinetic evaluation of medicinally important synthetic N, N′ diindolylmethane glucoside: Improved synthesis and metabolic stability Bioorganic & medicinal chemistry letters 29(8): 1007-1011

3 Adena S.K.R., Upadhyay M., Vardhan H., Mishra B. (2019) Gold nanoparticles for sustained antileukemia drug release: development, optimization and evaluation by quality-by-design approach. Nanomedicine. 14(7):851-870.

4 Ajmal G., Bonde G.V., Mittal P., Khan G., Pandey V., Bakade B.V., Mishra B. (2019) Biomimetic PCL-gelatin based nanofibers loaded with ciprofloxacin hydrochloride and quercetin: A potential antibacterial and anti-oxidant dressing material for accelerated healing of a full thickness wound. International Journal of Pharmaceutics. 567:118480. (Available online 28 June 2019)

5 Anima Tripathi, Vivek Pandey, A.N. Sahu, Alok Singh, Pawan K. Dubey (2019) Di (2-ethylhexyl) phthalate (DEHP) inhibits steroidogenesis and induces mitochondria-ROS mediated apoptosis in rat ovarian granulosa cells Toxicology Research 8, 381–394.

6 Arepalli, S.K., Tripathi, H., Manna, P.P., Pankaj, P., Krishnamurthy, S., Patne, S.C.U., Pyare, R., Singh, S.P., Enhanced in vivo biocompatibility of magnesia-contained bioactive glasses, 2019, Journal of the Australian Ceramic Society, 55-2-1

7 Arun Kumar Mahanta, SudiptaSenapati, Pankaj Paliwal, Sairam Krishnamurthy, Siva Hemalatha&PralayMaiti (2019) Nanoparticle- induced controlled drug delivery using chitosan based hydrogel and scaffold: Application to Bone Regeneration. Molecular Pharmaceutics 16(1):327-338

8 Awadhesh Kumar Mishra, Rajesh Saini, Pradeep Kumar, Sunil Kumar Mishra, Virendra Bahadur Yadav & Gopal Nath, Green synthesis of silver nanoparticles from leaf extract of Nyctanthesarbor-tristis L. and assessment of its antioxidant, antimicrobial response, Journal of Inorganic and Organometallic Polymers and Materials, 2019 (Accepted)

9 Balavigneswaran, C.K., Venkatesan, R., Karuppiah, P.S., Kumar, G., Paliwal, P., Krishnamurthy, S., Kadalmani, B., Mahto, S.K., Misra, N., Silica Release from Silane Cross-Linked Gelatin Based Hybrid Scaffold Affects Cell Proliferation, 2020, ACS Applied Bio Materials, 3(1)

10 Bharti K., Mittal P., Mishra B. (2019) Formulation and characterization of fast dissolving oral films containing buspirone hydrochloride nanoparticles using design of experiment. Journal of Drug Delivery Science and Technology. 49:420-432.

11 Bonde G.V., Ajmal G., Mittal P., Yadav S.K., Singh J., Mishra B. (2019) Lapatinib-loaded self- assembled Soluplus® polymeric micelles for breast cancer treatment by intravenous route. Journal of Cancer Science & Therapy. 11:100.

12 Bonde G.V., Ajmal G., Yadav S.K., Mittal P., Singh J., Bakade B.V., Mishra B. (2019) Assessing the viability of soluplus® self-assembled nanocolloids for sustained delivery of highly hydrophobic lapatinib (anticancer agent): optimization and in-vitro characterization. Colloids and Surfaces B: Biointerfaces. 185:110611. (Available online 29 October 2019)

13 Burande AS, Viswanadh MK, Jha A, Mehata AK, Poddar S, Mahto SK, Azad S, Agrwal N, Muthu MS. (2020) EGFR targeted paclitaxel and piperine co-loaded liposomes for treatment of triple-negative breast cancer. AAPS PharmSciTech. In press.

14 Chandrashekhar Singh, KavindraNath Tiwari, Chandra Prakash, Sunil Kumar Mishra, Hepatoprotective efficacy of Premnaintegrifolia leaves against aflatoxin B1-induced toxicity in mice, Toxicon, 2019, 10.1016/j. toxicon.2019.05.014.

15 Dar, M. I.; Mahajan, P.; Jan, S.; Jain, S. K.; Tiwari, H.; Sandey, J.; Bharate, S.; Nargotra, A.; Syed, S. H. (2020) Rottlerin is a pan phosphodiesterase inhibitor and can induce neurodifferentiation in IMR-32 human neuroblastoma cells. European Journal of Pharmacology 857: 172448.

16 DileepUrimi, Ashish Kumar Agrawal, Varun Kushwah, Sanyog Jain (2019) Polyglutamic acid functionalization of chitosan nanoparticles enhances the therapeutic efficacy of insulin following oral administration. AAPS PharmSciTech, 20: 131.

17 Farrukh Aqil, RadhaMunagala, JeyaprakashJeyabalan, Ashish Kumar Agrawal, Al-Hassan Kyakulaga, Sarah A. Wilcher Ramesh C. Gupta (2019) Milk exosomes - Natural nanoparticles for siRNA delivery. Cancer Letters 449:186-195.

18 Fu J., Shrivastava A., Shrivastava S.K., Srivastava R.K. and Shankar S. (2019) Triacetyl resveratrol upregulates miRNA200 and suppresses the Shh pathway in pancreatic cancer: A potential therapeutic agent. International Journal of Oncology 54(4): 1306-1316.

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20 Gangwar A, Kumar S, Meena SS, Sharma A, Viswanadh MK, Neogi K, Muthu MS, Prasad NK. (2020) Structural and in-vitro assessment of ZnxFe3− xC (0≤ x≤ 1) nanoparticles as magnetic biomaterials. Applied Surface Science. 15(509):144891.

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22 Gaurav Gopal Naik& Md. BayazeedAlam&Vivek Pandey &DebadattaMohapatra&Pawan K. Dubey &Avanish S. Parmar&Alakh N. Sahu (22 February 2020) Multi-Functional Carbon Dots from an Ayurvedic Medicinal Plant for Cancer Cell Bioimaging Applications Journal of Fluorescence 417-418. doi.org/10.1007/s10895-020-02515-0

23 Gupta, S.K., Patel, S.K., Tomar, M.S., Singh, S.K., Mesharam, M.K., Krishnamurthy, S.Long-term exposure of 2450â€¯MHz electromagnetic radiation induces stress and anxiety like behavior in rats, 2019, Neurochemistry International, 128-2

24 Gutti, G., Kakarla, R., Kumar, D., Beohar, M., Ganeshpurkar, A., Kumar, A., Krishnamurthy, S., Singh, S.K.Discovery of novel series of 2-substituted benzo[d]oxazol-5-amine derivatives as multi-target directed ligands for the treatment of Alzheimer's disease, 2019, European Journal of Medicinal Chemistry, 182.

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26 Hossain, S.S., Yadav, S., Majumdar, S., Krishnamurthy, S., Pyare, R., Roy, P.K., A comparative study of physico-mechanical, bioactivity and hemolysis properties of pseudo-wollastonite and wollastonite glass-ceramic synthesized from solid wastes, 2020, Ceramics International, 46(1)3.

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32 Krishna Kumar Patel, ShilpkalaGade, Md. MerajAnjum, Sanjay Kumar Singh, PralayMaiti, Ashish Kumar Agrawal, Sanjay Singh (2019) Effect of penetration enhancers and amorphization on transdermal permeation flux of Raloxifene encapsulated solid lipid nanoparticles: an ex vivo study on human skin. Applied Nanoscience 9(6):1383-1394.

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37 MdMerajAnjum, Krishna Kumar Patel, Nidhi Pandey, RaginiTilak, Ashish Kumar Agrawal, Sanjay Singh (2019) Development of Anacardic Acid/hydroxypropyl-β-cyclodextrin inclusion complex with enhanced solubility and antimicrobial activity. Journal of Molecular Liquids 296: 112085.

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40 Mishra, A., Krishnamurthy, S., Neurorestorative effects of sub-chronic administration of ambroxol in rodent model of Parkinsonâ€™s disease, 2020, Naunyn-Schmiedeberg's Archives of Pharmacology, 393(3)

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42 Mishra, P., Sharma, P., Tripathi, P.N., Gupta, S.K., Srivastava, P., Seth, A., Tripathi, A., Krishnamurthy, S., Shrivastava, S.K., Design and development of 1,3,4-oxadiazole derivatives as potential inhibitors of acetylcholinesterase to ameliorate scopolamine-induced cognitive dysfunctions, 2019, Bioorganic Chemistry, 89(2)

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2. Besan M., Gautam M.K. and Shrivastava S.K. (2019) Development of 1, 4-Naphthoquinones as Potential Epidermal Growth Factor Receptor Inhibitors For The Treatment of Cancer. Current Trends in Biotechnology and Pharmacy 13(3): 283-308.
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10. Number of Conference Papers: 7

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Prof. B. Mishra	"Mrs. SudhaNagaich Memorial Award", 2020, by Society of Pharmaceutical Education and Research (SPER) during SPER 9th Annual Conference and Exhibition at AKS University, Satna, India.
2	Prof. Sushant Kumar Shrivastava	Coordinator- ARPIT Programme in Pharmacy 2019
3	Dr. Senthil Raja A	Outstanding Scientist in Pharmaceutical Chemistry 2019, by Venus International Foundation, Chennai.
4	Dr. Vinod Tiwari	Travel Award by International Association for the Study of Pain (IASP) to attend "2020 IASP World Congress on Pain" to be held in Amsterdam, the Netherlands from August 4-8, 2020.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 14

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Gyanendra Singh		Innovative Researcher of the Year	15 Aug 2019, Trichy, Tamilnadu	World Research Council & United Medical Council
2	Gaurav Gopal Naik	18161517	Certificate of Merit for nomination in the best poster award at 7th International Congress of Society for Ethnopharmacology	Convention Center, Jamia Hamdard, New Delhi [February 15-17, 2020]	Jamia Hamdard, New Delhi
3	AsadAftab	17165028	Bronze Medal in 56kg category in Weightlifting in 54th Inter IIT	16 December 2019, IIT Kharagpur(West Bengal)	IIT Kharagpur (West Bengal)

14. Number of Students/Scholars who went for foreign Internship: 6

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator	Title	Period
1	Prof. Sushant Kumar Shrivastava - Programme Coordinator Dr. MS Muthu - Course Coordinator	Online Annual Refresher Programme in Teaching-Pharmacy (ARPIT-2019)	October 2019 to April 2020
2	Dr. Senthil Raja A.- Coordinator Dr. G.P Modi & Dr Shreyans Kumar Jain (as Co- Coordinators)	Emerging Computational Tools in Drug Discovery and Development	3 Oct to 9 Oct, 2019
3	Dr. Ruchi Chawla, Dr. Abha Mishra and Dr. Shiru Sharma	STC: Technological Advancements in Pharmaceuticals, Biochemical and Biomedical Research	August 4-10, 2019 (Multi-Disciplinary)
6	Dr. Vinod Tiwari	Neuropathic Pain and its Management: Unmet Needs and Potential Therapeutic Targets by **Prof.Srinivasa N. Raja**, *Johns Hopkins University School of Medicine, Baltimore, MD, U.S.A*	1 day (Institute Lecture Series) on January 28, 2020
7	Dr. Rajnish	Guest lecture by Prof.Alok Srivastava, Department of Chemistry, Panjab University, Chandigarh on "Biomedical and Pharmaceutical Applications of Nuclear Science"	02.03.2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 24

17. Number of Special lectures delivered by faculty members in other institutions: 23

18. Number of Visits abroad by faculty members for conference/symposia: 3

19. Fellowships of academic and professional societies:

S. No.	Name of Faculty Member	Details of Fellowship
1	Dr. Vinod Tiwari	International Association for the Study of Pain (IASP)
2	Dr. Deepak Kumar	DBT sponsored-Ramalingaswami Fellowship

16. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. B. Mishra	Member	Recent Patents On Drug Delivery & Formulation
2		Associate Editor	Journal of Pharmaceutical Research
3		Editor-In-Chief	SPER Journal of Pharmaceutical Sciences [SJPS]
4		Member	Austin Therapeutics
5		Advisory Board Member	SPER Times
6		Member	Journal of Advanced Pharmaceutical Technology and Research
7.		Member	Inventi Impact: Pharmaceuticals
8.		Editorial Advisors	The Pharmstudent
9.	Dr. Prasanta Kumar Nayak	Editorial Board Member	Journal Of Research Innovation And Management Science (http://www.jrim.net/editorial-board)
10.	Dr. Prasanta Kumar Nayak	Managing Editor	The Pharmstudent (https://www.thepharmstudent.com/editorial_board.html)
11.	Dr. Vinod Tiwari	Member	Journal of Pain and Relief
12.	Dr. Vinod Tiwari	Member	Frontiers in Behavioral Neuroscience
13.	Dr. Vinod Tiwari	Member	Frontiers in Cellular Neuroscience
14.	Dr. Vinod Tiwari	Member	Frontiers in Neuropharmacology

17. Faculty members' participation with other universities under MoUs:

- Prof. Sushant Kumar Shrivastava, Purdue University, West Lafayette, USA

18. 5 Articles from the Department with maximum no. of Citations in last 5 years:

1. G Khan, SK Yadav, RR Patel, G Nath, M Bansal, B Mishra 2016, Development and evaluation of biodegradable chitosan films of metronidazole and levofloxacin for the management of periodontitis, AapsPharmscitech 17 (6), 1312-1325.
2. D Garabadu, A Ahmad, S Krishnamurthy, 2015,Risperidone attenuates modified stress–re-stress paradigm-induced mitochondrial dysfunction and apoptosis in rats exhibiting post-traumatic stress disorder-like symptoms, Journal of Molecular Neuroscience 56 (2), 299-312.
3. D Kumar, A Ganeshpurkar, D Kumar, G Modi, SK Gupta, SK Singh 2018, Secretase inhibitors for the treatment of Alzheimer's disease: Long road ahead, European Journal of Medicinal Chemistry 148, 436-452.
4. RKP Tripathi, S Krishnamurthy, SR Ayyannan, 2016, Discovery of 3-hydroxy-3-phenacyloxindole analogues of isatin as potential monoamine oxidase inhibitors, ChemMedChem 11 (1), 119-132.
5. AG Banerjee, N Das, SA Shengule, RS Srivastava, SK Shrivastava, 2015, Synthesis, characterization, evaluation

and molecular dynamics studies of 5, 6–diphenyl–1,2,4–triazin–3(2H)–one derivatives bearing 5–substituted 1,3,4–oxadiazole as potential anti–inflammatory and analgesic agents, European Journal of Medicinal Chemistry 101, 81-95.

19. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	YugalSikri	21.08.2019	Alma Visit
2	TilakMarwaha, OAK Brrok IL 60523	24.09.2019	Alma Visit- 1970-1976 student`
3	Dr.Sumendra Rana, Assistant Professor, IIT Bhubaneshwar	05.10.2019	STC lecture
4	Dr. Sanjeev Marwah, Alumni	27.11.2019	Batch 1977
5	Dr. S.K. Dwivedi, Director DRL-DRDO Tezpur	11.12.2019	Possible collaboration reg
6	A. Manikandan, ADM Pindra Region Varanasi	12.12.2019	Invited Guest
7	Rajiv Malhotra, Associate Director Standards & Governance Biogen, Switzerland	23.12.2019	Alma Visit
8	Chanakya Misra, Novartis, BKC	23.12.2019	Alma Visit
9	Anirudh Gautam, Sr. Director, DRL Labs	23.12.2019	Alma Visit
10	Aman Gupta, Co founder SPAG	23.12.2019	Alma Visit
11	Mallikarjun Sundaram, CEO, Accurius Therapeutics, Boston	23.12.2019	Alma Visit
12	Neeraj Jaiswal, GM, Mylan Lab	23.12.2019	Alma Visit
13	Vaibhav Srivastava, MD, Insignia Learning	23.12.2019	Alma Visit
14	Dr. Rashmi Srivastava	23.12.2019	Visit
15	Neetu Pant	23.12.2019	Alma Visit
16	Keta Agarwal	23.12.2019	Alma Visit
17	Prashant Surama	23.12.2019	Visit
18	Jagdish P Desai	03.02.2020	ALma Visit
19	Dinesh Jaiswal, Consultant	07.02.2020	Alma Visit
20	DeodattWadke	13.02.2020	Alma Visit
21	Brij Mohan Chopra, Glint Cosmetics Pvt Ltd	27.02.2020	Alma Visit
22	Vidyadhan G Gore	27.12.2020	Visit

24. Other activities:

International collaboration/achievements by the Department/School:

- Prof. Sushant Kumar Shrivastava-The letter of Intent has been signed between IIT (BHU) and Purdue University, West Lafayette, USA to scale up the research work in the field of New Drug Discovery & Formulation development

Indian Faculty visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Alok Srivastava, Department of Chemistry, Panjab University, Chandigarh	Guest lecture on "Biomedical and Pharmaceutical Applications of Nuclear Science"	02.03.2020 Seminar Hall, Pharmaceutical Engg. & Tech., IIT(BHU)

Foreign Faculty Visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof.Srinivasa N. Raja, Johns Hopkins University School of Medicine, Baltimore, MD, U.S.A	Institute Lecture Series	28.01.2020 Gopal Tripathi Auditorium, IIT(BHU)

17. Department of Humanistic Studies

Year of Establishment: 2015

Head/Coordinator of the Department: Prof. Rakesh K. Misra

1. Introduction of the Department/School:

The Department of Humanistic Studies was initiated in the year 2015. Prior to its inception, Technical Writing Section was looking after the language and communication needs of the students of the institute for a little more than two decades.This department as an academic entity envisages to enhance the power of science and technology with an inspiring touch of human sensibility that our world urgently needs in the present civilizational crisis pertaining to the mindless development in the form of three dimensional projections as the hallmarks of growth. It will be an interdisciplinary platform to develop finer sensibilities in the students of engineering and technology to creatively engage themselves in the development of a society which upholds values our heritage has provided us with its multifarious sources.This department comprises faculty in many disciplines such as History, Philosophy, Sociology, Psychology, Language, Linguistics, Literature and culture, but not limited to these only. As and when a worthwhile academic proposition that evidently indicates a civilizational change will be considered worthy to be included in its curriculum for teaching and research in this department. The department has 1 lecture hall.

Major Areas of Research:

English (Literature, Cultural Studies, Gender Studies, Film Studies and Visual Culture, Narrative Studies, Professional Communication, Creative writing, Literary Theory)

Philosophy (Indian and Western Logic, Gandhian Philosophy, Peace and Ahimsa Studies, Indian Philosophy-Sanskrit- Navya Nyaya and Bharatiya Tarka)

Linguistics (Computational Linguistics, MT, CALL, Computational Semantics, Grammar Formalism, Cognitive Linguistics, Sanskrit Computational Linguistics, Sociolinguistics)

Psychology (Intelligence, Macro Organizational Behaviour, Social Psychology)

Sociology (Environmental Sociology, Sustainable Urbanization, Smart Cities, Gender Studies, Science, Technology and Society, Social Anthropology in India, Ethnography of Performance, Post-colonialism and the Inter-disciplinary Dialogues on Caste and Literature in India)

History

Political Science

2. Academic Programmes offered and Students on Roll:

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	Nil	Nil	Nil	Nil	Nil
2.	Dual Degree	Nil	Nil	Nil	Nil	Nil
3.	M. Tech/ M. Pharm	Nil	Nil	Nil	Nil	Nil
4.	Ph. D (Under Institute Fellowship)	1	6	1	Nil	2
5.	Ph. D (Under Project Fellowship)	12	2	Nil	2	Nil
6.	Ph. D (Under Sponsored Category)	Nil	Nil	1	Nil	Nil

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Year of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prasanta Kumar Panda		Literary Theory, Technical Communication, Creative Writing,

S. No.	Name, Qualifications, Employee No.	Year of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
ASSOCIATE PROFESSORS			
1	Dr. Sanjukta Ghosh	December 29, 2004	Cognitive semantics, syntax-pragmatics interface, Computational lexical semantics, Cognitive Linguistics, Historical Linguistics, Grammar Formalism
2	Dr. Anil Kumar Thakur	February 25, 2006	Language teaching and language technology, syntax, descriptive grammar, Linguistics, Education
3	Dr. Ajit Kumar Mishra	2003	Critical Narrative Studies, Visual Culture, Precarity Studies (Gerontology, Ecosophy, Grievable Life), Humanistic Communication
4	Dr. Nirmalya Guha	December, 2009	Logic, Semantics, Epistemology
5	Dr. Vinita Chandra	March 4, 2009	History, Gender Studies; Disability Studies
6	Dr. K V Cybil	January 31, 2005	Sociology and Social Anthropology in India, Ethnography of Performance, Post-colonialism and the Inter-disciplinary Dialogues on Caste and Literature in India
ASSISTANT PROFESSORS			
1	Dr. Puneet Kumar Bindlish		Integrative Intelligence, VUCA, Research Worldviews, Macro Organizational Behaviour, Leadership, Entrepreneurship
2	Dr. Swasti Mishra	December 31, 2006	Sociolinguistics, Language Culture & Society, Lexicography, lexical semantics, Computational Lexicography, Applied Linguistics, Computational Linguistics
3	Dr. Amrita Dwivedi	2009	Environmental Studies including Sanitation & Human Health, Solid Waste Management, Drainage & Sewerage System, Slums
4	Dr. Sukhada	August 12, 2017	Computational Linguistics, Machine Translation, Natural Language Processing, Sanskrit Grammar
5	Dr. Manhar Charan	March 15, 2012	Humanistic Philosophy & Research, Gandhian Philosophy, Peace & Non-violence
6	Dr. Kavya Krishna K. R.	April 24, 2015	Gender Studies, Cultural Studies, Postcolonial Literature, Regional Indian Literatures, Film and Media Studies.
7	Dr. Vishwanath Dhital	December 8, 2011	Bhāratīya tarkaśāstra , Indian Philosophy , Navya Nyaya & pāramparika śāstra adhyayana
8	Dr. Shail Shankar		Group dynamic, Identity, Health and Well being
9	Dr. Satish Kanaujia		Physical-Education
Visiting Faculty			
1	Dr. Sanjaya Kumar Lenka	Morphosyntax, Language & Communication, Academic Writing & Speaking	
2	Dr. Arvind Gupta	Data and Digital Economy	
3	Deepak Gandotra	Data and Digital Economy	
4	Arun Anant	Media Environment	

S. No.	Name, Qualifications, Employee No.	Year of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
5	Bharath Ganapati	Media Environment	
6	S Krishna Kumar	Quality Management and Business Strategy	
7	Vineet Suri	Quality Management and Business Strategy	
8	Anurag Singh	Finance	
9	Vipul Prasad	Finance	
10	Ashish Khattri	Economics	

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Vinay Prakash Singh, BA (Sociology), MA (Sociology), B.Lib.	Junior Assistant	22.05.2017
2	Ajay Kumar Pandey, Graduation	Skilled Clerical Staff	11.06.2016
3	Amit Kumar Prajapati	Multi Tasking Staff	13.12.2016

5. Research and Consultancy:

Sponsored research projects: NIL

Industrial consultancy projects

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Swasti Mishra Consultancy (freelancer)	Nature of Work :- Lexicography, Translation, Review, Evaluation, Content modification etc.	Harper Collins Publishers, Glasgow, UK.	Per task based

6. New facilities added: NIL

7. Patents filed: NIL

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	K V Cybil (ed)	Social Justice ; Interdisciplinary Inquiries from India	Routledge, London
2	Amrita Dwivedi, A.K.Singh & K.V. Yadav	Healthcare Facilities in Developing Countries: A Case Study of Mau, India	Cambridge Scholars Publishing. Healthcare Facilities in Developing Countries
3	Nandram S., Bindlish K.,	Integral Yoga as Foundation for Social Entrepreneurship Leading Towards Sustainable Welfare (Shubh Laabh) in *The Routledge Companion to Management and Workplace Spirituality,. Eds. Joan Marques*	*Routledge*
4.	Nirmalya Guha, Stephen Phillips, Mathew Dasti	God the World's Arrangement	Hackett, USA (In press)
5.	Nirmalya Guha	Indian Deductive System: The Logical Basis of Indian Sciences (Book chapter), in "New Perspectives in Indian Science and Civilization"	Routledge, London

S. No.	Name of Author/Co- Author	Title	Publisher
6	Vinita Chandra	Book Chapter on "Decolonizing the Mind: Insights from Dharampal's 'The Beautiful Tree'", in the book entitled *Retrieving the Voices from the Margins: Thinkers of Modern India*	IIAS, Shimla

9. Research Publication:

Manuscript

1 Amrita Dwivedi, Ravikant Dubey, P.K. Singh & Anurag Ohri (2019). Scientific Management of Municipal Solid Waste in an Academic Campus – A Case Study of IIT(BHU), J. Mater. Environ. Sci., 2019, ISSN: 2028-2508, Volume 10, Issue 10, Page 909-917.

2 Bindlish P., Nandram S. (2019). Manifestation of Worldview in a Metaphor. International Journal of Business and Globalisation, Vol. 23, No. 3, pp.464–474.

3 Bindlish P., Nandram S., (2019). Regulatory focus and growth intentions: the mediating role of an opportunity register. International Journal of Technology Transfer and Commercialisation, 16(2), DOI:10.1504/IJTTC.2018.097409, pp.118 - 133.

4 Bindlish P., Nandram S., Gupta R. (2019). Definition schema for redefining leadership: an integrative approach. International Journal of Indian Culture and Business Management, 18(1), DOI: 10.1504/IJICBM.2019.096921, pp 34-58.

5 Cybil K V (2019) History, Hierarchy and Ritual : Critical Comments on a Goddess Cult in Susan Visvanathan (ed) Art, Politics, Symbols and Religion, Om Publications, New Delhi.

6 Cybil K V (2019) Introduction (editorial), Social Justice: Interdisciplinary Inquiries from India (editor Cybil K .V), London, Routledge.

7 Cybil K V (2019) Social Justice: Interdisciplinary Inquiries from India (editor), London, Routledge

8 Cybil K V (2019) Victim(s), Parasites and Creative Evolution : Narayana Guru and Anthropology of Vision, Social Justice: Interdisciplinary Inquiries from India (editor Cybil.K.V), London, Routledge.

9 Guha N., (2020). Through the Logician's Strainer. Journal of Indian Philosophy, Online First (March 03, 2020).

10 Kavya Krishna K.R. "*Feminism in the Time of Neo-liberal Women Empowerment: A Study of Select Indian Television/ Online Advertisements*". Chapter in the book Gendered Ways of Trans-national Unbelonging from a Comparative Literature Perspective(2019)(Ed. Indrani Mukherjee and Java Singh).New Castle, UK: Cambridge Scholars.

11 Nandram S., Bindlish P., Integral Yoga as foundation for Social Entrepreneurship leading towards sustainable welfare (Shubh Laabh) in Routledge Companion to Management and Workplace Spirituality, Eds. Joan Marques, Routledge, (2019), ISBN-978-1-138-49918-8 , Ch-27

12 Nandram S., Keizer S,Bindlish P. (2019). Addressing Gender Inequality through Intelligence. The European Financial Review, May 2019, pp 51-55.

13 Sundar,Shyam., charan, Manhar., (2019). Value Education: Universal need, Issues of Elementary Education, DIET- Daryaganj, New Delhi 2019, pp 9-18.

Refereed National Journal

1. Kavya Krishna K.R.*Politics of Gender, Body and Caste: Understanding the Ban on Cinematic Dance in Schools of Kerala*.Diotima's : A Journal of New Readings.Peer Reviewed /National Journal- published by Dept of English Providence Women's College University of Calicut, Kerala. Volume -9 Issue -1,December 2019.ISSN 2319-4189.
2. *Mishra Ajit K.* (2019) *Navigating Precarity: (Re)mediation, Agency, and Human Security in Airlift*. *Literary Endeavour* 10.2 : 337-342
3. Charan, Manhar., गांधी दर्शन पर चलने वाली कद्दावर संस्थानों का संचालन, प्रज्ञा, BHU, अंक- 65, भाग -2 में प्रकाशन हेतु स्वीकृत, 2019.ISSN 0554-9884.

10. Number of Conference Papers: 7

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Dr. Vishwanath Dhital	"Presidential Award Maharṣi Bādarāyaṇa Vyāsa Sammāna" on 04-04-19 in New Delhi conferred by the Vice President of India.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 20

13. Names of students/scholars who got prizes and awards outside the Institute:

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Shivam Dwivedi	18191003	TCS RSP scholarship	Aug 9, 2019	Tata consultancy services

14. Number of Students/Scholars who went for foreign Internship: NIL

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator/s	Title	Period
1	Prasanta K. Panda and Ajit K. Mishra	One Week Faculty Development Programme on Communication for Educators	July 15-19, 2019
2	Prasanta K. Panda and Ajit K. Mishra	Workshop on Research Writing and Publishing for Research Scholars in Science and Engineering	September 26-28, 2019
3	Prasanta K. Panda and Ajit K. Mishra	AICTE QIP-STC on Research Communication	December 2-6, 2019
4	Ajit K. Mishra	One Week Faculty Development Programme on Research Writing, Publishing, and Presentation	February 3-7, 2020
5	Puneet K. Bindlish	Two Week Faculty Development Program on Entrepreneurship	February 24-March 6, 2020
6	K V Cybil	Workshop on Biopolitics (with Prof Lawrence Cohen, UC Berkeley)	18th December, 2019
7	K V Cybil	Workshop on Independent Cinema (with Salman Farshi, Bangladesh Independent Film Movement)	19th August, 2019
8	K V Cybil	Seminar on Gender and embodiment of Aadhar (with Prof Lawrence Cohen, UC Berkeley)	27th August, 2019
9	K V Cybil	Seminar on The Question of Water and State Boundaries (with Prof Susan Visvanathan, JNU)	3rd January, 2020
10	K V Cybil	Seminar on Climate Change: Perspectives from the European Union	6th March, 2020
11	K V Cybil	Seminar on Climate Change : Perspectives from the EU (with Hans Joachim Kiederlen, former Dep. Ambassador from Germany to India)	
12	Dr Sukhada (coordinated the Bhasha Stream)	A Dialogue between Vedic and Modern Sciences (VVS 2019)	September 21-22 2019
13	Dr. Sukhada	IT Shivir at Vaanaprasth Sadhak Ashram, Rojad Gujarat, India	June 16-22 2019
14	Dr. Sukhada	Aatma-manthan Adhyatma Shivir at Vaanaprasth Sadhak, Ashram, Rojad Gujarat, India	June 23-30 2019

S. No.	Coordinator/s	Title	Period
15	Vinita Chandra	Three weeks international course on 'Lived Sanskrit Cultures in Varanasi', with Heidelberg and Wuerzburg Universities, Germany, sponsored by DAAD	17th February, 2020 to 6th March, 2020
16	Vinita Chandra	Roundtable Dialogue on "Partnership 2020: Leveraging US-India Cooperation in Higher Education to Harness Economic Opportunities and Innovation"	23rd July, 2019

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 19

17. Number of Special lectures delivered by faculty members in other institutions: 32

18. Number of Visits abroad by faculty members for conference/symposia: 9

19. Fellowships of academic and professional societies:

S. No.	Name of Faculty Member	Details of Fellowship
1	K V Cybil	INTACH, Thrissur (Allied Life Member)

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	K V Cybil	Member	Jesus and Mary College Review, New Delhi
2	Prasanta Kumar Panda	Editor in Chief	Nuances
3	Prasanta Kumar Panda	Editorial Board member	Platform
4	Puneet K. Bindlish, Dr. Sukhada, Vishwanath Dhital	Editorial Team member	OM RISE (An online magazine from the Chair of Hindu Spirituality and Society Vrije Universiteit Amsterdam, The Netherlands)
5	Nirmalya Guha	International Editorial Board	Revista Innovacion Educativa, Mexico

21. Faculty members' participation with other universities under MoUs:

- Puneet K. Bindlish. Research Collaboration with Faculty of Religion and Theology, Beliefs and Practices under an MoU with Vrije University, Amsterdam, Netherlands
- Vinita Chandra. Member, Core Project Coordination Committee, DAAD sponsored project- Exploring Cultures of Learning in India and Germany, South Asia Institute, Heidelberg University, Germany
- Vinita Chandra. Member, Core Project Coordination Committee, DAAD sponsored project- Cultures of Learning in Academic and Non-academic Institutions in India and Germany, Chair of Indology, Würzburg University, Germany
- Nirmalya Guha. Research Collaboration with School of Philosophy, Fudan University, China

22. 5 Articles from the Department with maximum no. of Citations in last 5 years:

23. Distinguished Visitors:

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof Lawence Cohen, Anthropology, UC Berkeley	18th December, 2019	Workshop
2	Prof Susan Visvanathan, Sociology, JNU	3rd January, 2020	Seminar
3	Hans Joachim Kiederlen, former Deputy Ambassador from Germany to India	6th March	Seminar

24. Other activities:

International collaboration/achievements by the Department/School

- MoU with School of Philosophy, Fudan University, facilitated by Dr. Nirmalya Guha, signed in December 2019.

Indian Faculty visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Dr. Susan Visvanathan, Jawaharlal Nehru University, New Delhi	Talk and Interaction Session	3 Jan 2020, Department Committee Room

Foreign Faculty Visits in the Department/School/School

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof Lawrence Cohen, University of California Berkeley	Talk and Interaction Session	27th August, 2019, Department Committee Room
2	Prof Bipin Indurkhya, Jagiellonian University, and AGH University of Science and Technology, Cracow, Poland	Special Talk	18 Oct. 2019, ABLT-4
3	Prof. Sharda S. Nandram, Vrije University, Amsterdam, Netherlands	Talk and Interaction Session	16 Jan 2020, Department Committee Room

Foreign Students Visits in the Department/School/School

S. No.	Name of Faculty	Purpose of Visit	Date and Venue
1	Vinita Chandra	Karin Druxes, MA student from Würzburg University visited the Department for a Semester (5 months) to work on her Ma thesis	1st September 2019 to 31st January 2020, Department of Humanistic Studies, IIT (BHU)
2	Amrita Dwivedi	Mr. Victor Secco, Research scholar, University of Manchester, U.K. Affiliated in the department of HSS, IIT(BHU) as visiting research student for 1 year to pursue his research project on " Microbiology in the waters of Ganges : A matter of life and death".	5August 2019 to 4 August 2020, Department of Humanistic Studies, IIT (BHU).

18. School of Biochemical Engineering

Year of Establishment: 1986

Head/Coordinator of the Department: Dr. Pradeep Srivastava (till 17/02/2020)

Prof. Vikash Kumar Dubey (18/02/2020 onwards)

1. Introduction of the Department/School:

The School was established for achieving several benchmarks in teaching and research in the modern field of Bioengineering. It has kept on modernizing its programmes to impart education in upcoming areas of Biochemical engineering.The School presently offers courses leading to IDD, M.Tech., and Ph.D. degrees in Biochemical Engineering. The School also offers courses to undergraduate students of Department of Chemical Engineering., Department of Pharmaceutics, and postgraduate students of School of Materials Science & Technology, School of Biomedical Engg, Department of Civil Engg, Department of Food Sc& Tech, IAgSc, and School of Biotechnology, Faculty of Science. In the new undergraduate curriculum, the School has been entrusted to offer a number of institute level courses either independently or jointly with other departments. The research facilities of the School are utilized not only by other departments of the institute and BHU but also by other teaching institutions and research laboratories. The faculty also guides.

The floor area of the new school building of School is 10,000 sq. feet.The School has 12 laboratories, 06 lecture theatres, 1 lecture hall, a 100-seat conference room and a library with textbook bank.

Major areas of Research: Bioprocess and Bioreactor Engineering, Enzyme Engineering & Tissue Engineering, Molecular Biology and Genetic Engineering, Cell Death Pathways and Diseases; Protein Biochemistry; Protein Engineering, Biochemical Parasitology

2. Academic Programmes offered and Students on Roll:

Sl. No.	Programme	I Year	II Year	III Year	IV Year	V Year & Above
1.	Dual Degree	18	13	13	14	13
2.	M. Tech/ M. Pharm	10	07	-	-	-
3.	Ph. D (Under Institute Fellowship)	04	10	7	2	2
4.	Ph. D (Under Project Fellowship) CSIR, UGC & DBT Fellowship	7	-	-	1	-

3. Faculty and their areas of specialisation:

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof.Vikash Kumar Dubey, PhD, 50211	2003	Cell Death Pathways and Diseases; Protein Biochemistry; Protein Engineering, Biochemical Parasitology
2	Prof.Rathindra Mohan Banik, Ph.D, 13887	1992	Microbial Biotechnology, Environmental Biotechnology, Biopolymer
3	Prof. Pradeep Srivastava, PhD,16831	1998	Microbial Engg., Bioreactor Kinetics, Modelling &Scaleup
ASSOCIATE PROFESSORS			
1	Dr.Abha Mishra, PhD, 16830	2001	Protein Chemistry, fermentation technology and Intellectual property rights (IPR).
ASSISTANT PROFESSORS			
1	Dr.Vishal Mishra, PhD, 50064	2012	Separation Process and Bioreactor Design

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
2	Dr. Sanjay Kumar, PhD, 50067	2011	Algal Biofuel Research, Therapeutic Enzyme Bioprocess Developmen
3	Dr. Ashish Kumar Singh, PhD, 50066	2009	Molecular Microbiology, Genetic Engineering and Biochemistry
4	Dr.Pranjal Chandra, PhD, 50237		Bio-Physio Sensors, Nano bioengineering, Device Designs
Institute Professors			
1	Prof. SK Srivastava		Microbial Engg., Enzyme Engineering, Bioreactor-kinetics, Modelling and Scale-up, Downstream Processing, Bioconversion, Bioinformatics, Food Engineering, Nanobiotechnology, Biomass Energy.
2	Prof.SubirKundu	1983	Enzyme Engg., Bio-conversion, Waste water Engg., Downstream Processing, Instrumentation and Process Contro

4. Technical and Non-Teaching Staff:

Sl. No.	Name, Qualifications	Designation	Appointment in the department
1.	**Shri Rama Shankar Singh**	Senior Technician	1991
2	**Mrs. Usha Yadav**	Laboratory Attendant	2011
3	**Shri Dinesh Kumar**	Laboratory Attendant	2012
4	**Mr. Amit Kumar srivastava**	Junior Assistant	2020

5. Research and Consultancy:

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Coordinator
1	How Beclin 1 mediates cross-talk between apoptosis and autophagy via its C- terminal fragment?	2019-2022	CSIR	32.61	Prof.Vikash Kumar Dubey
2	Targeted drug delivery of methotrexate/gallic acid-folate conjugated Poly L-Lysine nanoparticles”	2018-2021	DBT	34.61	Dr.Abha Mishra
3	Flow and segregation of granular materials from hoppers and segregators	2018-2021	CST UP	10.44	Dr. Vishal Mishra
4	Application of genetic engineering to enhance the lipid content in microalga Scenedesmus obliquus: a step towards biodiesel	2017-2020	CST, UP	4.5	Dr. Ashish Kumar Singh (PI)
5	Screening of Novel Antibiotics from the Metagenome of Himalayan Glacial Soil	2017-2020	LSRB/DRDO, New Delhi	39.87	Dr. Ashish Kumar Singh (PI)

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Coordinator
6	Construction of cold inducible expression system	2017-2020	DBT, New Delhi	36.10	Dr. Ashish Kumar Singh (PI)
7	Identification of Gene Responsible for Degradation of Poly (ethylene terephthalate) in *Ideonellasakaiensis*	2017-2020	DBT, New Delhi	40.43	Dr. Ashish Kumar Singh (PI)

Industrial consultancy projects: NIL

6. New facilities added:

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	RT-PCR*	12
2	Microtiter Plate Reader*	12
3	Refrigerated Centrifuge*	8
4	Fluorometer*	18
5	UV- Vis Spectrophotometer*	8
6	Electroporator*	8
7	CO2 incubator	6
8	PCR*	2.5
9	Shaking incubator	3.0
10	PCR	2.5

7. Patents filed:

S. No.	Name of Faculty Member	Title of Patent
1	Dr. Vishal Mishra	A novel material for treating wastewater and a method of preparation thereof. (Application No. 201911020250)
2	Dr. Vishal Mishra	A method of preparing synthetic beads to remove heavy metals from waste water (Application no. 201911022735)
3	Dr. Vishal Mishra	An Integrated Continuously Operated Wastewater Treatment System with Microalgal Biomass Production (Application No. 201911031783)
4	Dr. Vishal Mishra	An arsenic resistant bacterium strain (Date of filing: 27/01/2020)
5	Dr. Vishal Mishra	An arsenic resistant bacterium strain (Date of filing: 06/02/2020)
6	Dr. Sanjay Kumar	A novel composition for surface modification of anode for electrochemical application
7	Dr. Sanjay Kumar	A process for efficient bioremediation of cheese wastewater

8. Books, monographs authored/co-authored:

S. No.	Name of Author/Co- Author	Title	Publisher
1	GundappaSaha, Prakash Saudagar and **Vikash Kumar Dubey**	Virus like particles: nano-carriers in targeted therapeutics In: Encapsulation of Active Molecule and their Delivery systems	Elsevier ISBN 978-0-12-819363-1
2	Veer Singh, Vipul K. Yadav, **Vishal Mishra**	Nanotechnology: An application in the biofuel production and wastewater treatment	Springer Nature

S. No.	Name of Author/Co- Author	Title	Publisher
3	Veer Singh, Priyanka Yadav, **Vishal Mishra**	Recent advances on classification, properties, synthesis and characterization of nanomaterials	Wiley
4	Vipul K. Yadav, Veer Singh, **Vishal Mishra**	Alkaline protease a tool to manage solid waste and its utility in detergent industry	Springer
5	Jyoti Singh and **Vishal Mishra**	Mathematical Models for Analyzing the Microbial Growth in Food	Taylor and Francis
6	Jyoti Singh, Priyanka Yadav, **Vishal Mishra**	Low-cost bio-adsorbent for emerging inorganic pollutants	Elsevier, USA
7	Jyoti Singh, Priyanka Yadav, Ashok Kumar Pal, **Vishal Mishra**	Water Pollutants: Origin and status	Springer, USA
8	Priyanka Yadav, Jyoti Singh, **Vishal Mishra**	Biosorption-cum-bioaccumulation of heavy metals from industrial effluent by brown algae-Deep insight	Springer Nature Singapore Pvt. Ltd., Singapore.
9	GyanendraTripathi, Jyoti Singh, Dhirendra Kumar Srivastava and **Vishal Mishra**	Advancement and modification in photoreactor used for degradation processes	Elsevier, The Netherland
10	GyanendraTripathi, Vipul Kumar Yadav, Jyoti Singh and **Vishal Mishra**	Analytical methods of water pollutants detection	Springer, USA
11	Vishal Singh and **Vishal Mishra**	Bioremediation of nutrients and heavy metals from wastewater by microalgae: Mechanism and Kinetics	Springer,Nature
12	Jyoti Rani, Indrajeet, AkhilRautela, **Sanjay Kumar**	Chapter: Biovolarization of winery industry waste to produce value added products Book: Biovalorisation of Wastes to Renewable Chemicals and Biofuels	Elsevier
13	Ashutosh Pandey, Sameer Srivastava, **Sanjay Kumar**	Chapter: Phycoremediation of dairy industry effluents and biomass valorisation: a sustainable approach. Book: Application of Microalgae in Wastewater Treatment Volume 2: Biorefinery Approaches of Wastewater Treatment	Springer Nature
14	Ashutosh Pandey, Manish P. Singh, **Sanjay Kumar**, Sameer Srivastava	Chapter :*Phycoremediation of persistent organic pollutants from wastewater.* Book: Application of Microalgae in Wastewater Treatment Volume 1: Domestic and Industrial Wastewater Treatment	Springer Nature
15	Geetanjali, Roma Agrahari, **Sanjay Kumar**, Radha Rani	Chapter: Microbial fuel cell based process for wastewater treatment and power generation. Book: Environmental Chemistry for a Sustainable World Volume: Environmental Biotechnology	Springer Nature
16	Dr.Pranjal Chandra	Paper-based biosensors for clinical and biomedical applications: Emerging engineering concepts and challenges in Comprehensive Analytical Chemistry	Academic Press, Elsevier, USA
17	Dr.Pranjal Chandra	Nanobiomaterial Engineering Concepts and Their Applications in Biomedicine and Diagnostics. By Pranjal Chandra and Rajiv Prakash (Eds.), 2020. ISBN: 978-981-329-839-2, DOI 10.1007/978-981-32-9840-8	Springer Nature

9. Research Publication

S. No. Manuscript

1 Chaturvedi N, A Mishra and V Rawat. Synthesis and Characterization of Oxygen Depleted tert-Amine Calix[4]arene Ligands and Study the Effect on Sigma Non-Opioid Intracellular Protein Receptor. Structural Chemistry https://doi.org/10.1007/s11224-019-01324-x IF 1.6, 2019.

2 Choudhary, D.K. &Mishra, A.* (2019). In vitro and in silico interaction of faba bean (Viciafaba L.) seed extract with xanthine oxidase and evaluation of antioxidant activity as a therapeutic potential, Natural Product research,33,18,2689-2693.

3 Choudhary, D.K., Chaturvedi, N., Singh, A., &Mishra, A. (2020). Characterization, inhibitory activity and mechanism of polyphenols from faba bean (gallic-acid and catechin) on α-glucosidase: insights from molecular docking and simulation study, Preparative Biochemistry & Biotechnology, 50:2, 123-132, DOI: 10.1080/10826068.2019.1679171.

4 Colotti G, Santo R, Gramiccia M, Muccio T.D., Prakash J, Yadav S, Dubey V.K., Battista T, Bibi A, and Ilari A. (2020). Structure-guided approach to identify a novel class of anti-leishmaniasisdiarylsulfide compounds targeting the trypanothione metabolism. Amino acid, 52, 247-259

5 Dhiraj Kumar Choudhary&Abha Mishra*,In vitro and in silico interaction of faba bean (Viciafaba L.) seed extract with xanthine oxidase and evaluation of antioxidant activity as a therapeutic potential, Natural Product research, 33,18,2689-2693, 2019.

6 Geetanjali, Rani R. and Kumar Sv.(2019) Enhanced performance of a single chamber microbial fuel cell using $NiWO_4$ / reduced graphene oxide coated carbon cloth anode. Fuel Cells, 19, 299-308. https://doi.org/10.1002/fuce.201800120 IF 2.149

7 Geetanjali, Rani R. and KumarS. (2019) High-capacity polyaniline-coated molybdenum oxide composite as an effective catalyst for enhancing the electrochemical performance of the microbial fuel cell. International Journal of Hydrogen Energy 44(31),16933-16943. IF 4.229

8 Geetanjali, Rani R., Sharma D. and Kumar S. (2019) Optimization of operating conditions of miniaturize single-chambered microbial fuel cell using $NiWO_4$/graphene oxide modified anode for performance improvement and microbial communities dynamics. Bioresource Technology 285:121337. IF 6.669

9 KamaleshVerma ,DebanjanKundu , Lal Mohan Kundu , Ashish Kumar Singh , Vikash Kumar Dubey*. Folding and stability of recombinant azoreductase enzyme from Chromobacteriumviolaceum. Enzyme and Microbial Technology. 2019, 131,109433.

10 Kashyap, S., Singh, A., Mishra, A., & Singh, V. (2019) Enhanced sustained release of furosemide in long circulating chitosan-conjugated PLGA nanoparticles. Res Pharma Sci. 14:93-106.

11 Mishra, O. P., Chhabra, P., Narayan, G., Srivastava, P., Prasad, R., Singh, A., Abhinay, A., &Batra, V. V. (2019). Cytotoxic T- Lymphocyte Antigen-4 (CTLA4) Gene Expression and Urinary CTLA4 Levels in Idiopathic Nephrotic Syndrome. Indian Journal of Paediatrics. https://doi.org/10.1007/s12098-018-2734-9

12 Pandey A., Gupta A., Sunny A., Kumar S. andSrivastava S. (2020) Multi-objective optimization of media components for improved algae biomass, fatty acid and starch biosynthesis from Scenedesmus sp. ASK22 using desirability function approach. Renewable Energy 150: 476-486 IF 5.439

13 Pandey A., Srivastava S. and Kumar S. (2019) Sequential optimization of essential nutrients addition in simulated dairy effluent for improved Scenedesmussp ASK22 growth, lipid production and nutrients removal. Biomass and Bioenergy, 128, 105319. IF 3.537

14 Pandey A., Srivastava S. and Kumar S. (2019) Isolation, screening and comprehensive characterization of candidate microalgae for biofuel feedstock production and dairy effluent treatment: a sustainable approach Bioresource Technology 293, 121998. https://doi.org/10.1016/j.biortech.2019.121998 IF 6.669

15 Pandey A., Srivastava S. and Kumar S. (2020) Development and cost-benefit analysis of a novel process for biofuel production from microalgae using pre-treated high strength fresh cheese whey wastewater. Environmental Science and Pollution Research (Accepted: March 19, 2020), doi: 10.1007/s11356-020-08535-4 ***IF 2.9***

16 Poddar S., Parasa M.K., Vajanthri K.Y., Chaudhary A., Pancholi U.V., Sarkar A., Singh A.K. and Mahto S.K. (2019) Low Density Culture of Mammalian Primary Neurons in Compartmentalized Microfluidic Devices. Biomedical Microdevices 21 (67):1-9.

17 Prakash J, Yadav S, Saha G, Chiranjivi AK, Kumar S, Sasidharan S, Saudagar P, Dubey VK*. Episomal expression of human glutathione reductase (HuGR) in Leishmania sheds light on evolutionary pressure for unique redox metabolism pathway: Impaired stress tolerance ability of Leishmaniavdonovani. Int J BiolMacromol. 2019 Jan;121:498-507.

18 Priyanka Singh, Rathindra Mohan Banik (2019) Effect of Purified Alkaline Phosphatase from Bacillus licheniformis on Growth of ZeaMaya L. B. Plant Science Today. 6 Spl.1, 676-172.

19 Raj S ,Sasidharan S , Dubey V.K.,Saudagar P (2019) Identification of lead molecules against potential drug target protein MAPK4 from L. donovani: An in-silico approach using docking, molecular dynamics and binding free energy calculation. PLoS One. 14(8):e0221331. doi: 10.1371/journal.pone.0221331. eCollection.

20 Raj S, Saha G, Sasidharan S, Dubey V.K., Prakash Saudagar (2019) Biochemical characterization and chemical validation of Leishmania MAP Kinase-3 as a potential drug target. Scientific Reports,9(1):16209 [Publisher: Nature Publishing Group].

21 Reena Vishvakarma and Abha Mishra* .Protective effect of a protease inhibitor from Agaricusbisporus on Saccharomyces cerevisiae cells against oxidative stress. Preparative Biochem and Biotechnology, (10.1080/10826068.2018.1536992, iF 1.117, 2019.

22 Reena Vishvakarma, Abha Mishra, Effect of protease inhibitor from Agaricusbisporus on glucose uptake and oxidative stress in 3T3-L1 adipocytes, Asian Pacific Journal of Tropical Biomedicine2020; 10(3): 136-146

23 Saha G, Khamar B, Prerna K, Kumar M and Dubey V.K.*, (2019) BLIMP-1 plays important role in the regulation of macrophage pyroptosis for the growth and multiplication of Leishmaniadonovani. ACS Infectious Diseases, 9(1):16209 doi: 10.1021/acsinfecdis.9b00186.

24 Sahu, S., Shera, S.S. Banik, R.M. (2019) Enhanced reusability of horseradish peroxidase immobilized onto graphene oxide/magnetic chitosan beads for cost effective cholesterol oxidase assay. Open Biotechnology Journal 13 (1), 93-104.

25 Sahu, S., Shera, S.S. Banik, R.M. (2019) Optimization of process parameters for Cholesterol oxidase production by Streptomyces olivaceus MTCC 6820. Open Biotechnology Journal 13 (1), 47-58.

26 Sarma S, Ortega D, Minton P.M., Dubey V.K., Moholkar V.S., (2019). Homologous overexpression of hydrogenase and glycerol dehydrogenase in Clostridium pasteurianum to enhance hydrogen production from crude glycerol, Bioresource Technology, 284, 168-177.

27 Shera, S.S., Sahu,S., Banik, R.M. (2019) Invitro Biodegradability of Silk Fibroin / Xanthan Biopolymeric Composite Scaffolds. Journal of Bionic Engineering16 (2): 299-310.

28 Vajanthri K.Y., Sidu R.K., Poddar S., Singh A.K., and Mahto S.K. (2019) Combined substrate micropatterning and FFT analysis reveals myotube size control and alignment by contact guidance. Cytoskeleton (Hoboken) 76(3): 269-285.

29 Verma K, Saha G, Kundu LM, Dubey VK*. Biochemical characterization of a stable azoreductase enzyme from Chromo bacteriumviolaceum: Application in industrial effluent dye degradation. Int J BiolMacromol. 2019, 121:1011-1018.

30 Verma K., Kundu D., Kundu L.M., Singh A.K. and Dubey V.K. (2019) Folding and stability of recombinant azoreductase enzyme from Chromobacteriumviolaceum. Enzyme and Microbial Technology 131: 1-9.

31 Vishvakarma, R. and Mishra, A.* (2019) Protective effect of a protease inhibitor from Agaricusbisporus on Saccharomyces cerevisiae cells against oxidative stress; Preparative Biochem and Biotechnology, (1 0.1080/10826068.2018.1536992.

10. Number of Conference Papers: 3

11. Honours and awards to faculty members:

S. No.	Name of Faculty Member	Details of Award
1	Dr. Vishal Mishra	Awarded with "Outstanding Faculty in Engineering" for the major area: Biochemical Engineering. Year of Award 2019. Awarding Agency; Venus International Foundation.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 9

13. Names of students/scholars who got prizes and awards outsidethe Institute: NIL

14. Number of Students/Scholars who went for foreign Internship: 3

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members:

S. No.	Coordinator	Title	Period
1	Prof. Pradeep Srivastava	National Convention on Quality Control (NCQC-19) in Collaboration with QCFI.	26-30 December 2019
2	Prof. Pradeep Srivastava	Bioengineering and regenerative medicine (ICBR-20) Indo-US Conference)	27-29 February 2020

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 1

17. Number of Special lectures delivered by faculty members in other institutions: 4

18. Number of Visits abroad by faculty members for conference/symposia: 1

19. Fellowships of academic and professional societies: NIL

20. Editorial boards of journals:

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof.Vikash Kumar Dubey	Associate Editor	Scientific Report (Publisher: Nature Publishing Group)
2	Prof.Vikash Kumar Dubey	Associate Editor	Journal of Proteins and Proteomics [Publisher: Springer]
3	Prof.Vikash Kumar Dubey	Editorial Board Member	Protein and Peptide Letters [Publisher: Bentham]
4	Prof. R. M. Banik	Editor	Vivechan International Journal of Research
5	Prof. R. M. Banik	Editor	The Open Biotechnology, Bentham Science
6	Dr.Pranjal Chandra	Associate Editor	Sensors International

21. Other activities:

International collaboration/achievements by the Department/School

- Dr. Andrea Ilari, Dept. of Biochemical Sciences, Sapienza - University of Rome: Collaborative work with **Prof. Vikash Kumar Dubey** resulted in joint publication (Amino acid, 2020,52, 247-259). Based on these results, joint project submission for external funding is planned.
- Florida International University through SPARC project to Prof. Pradeep Srivastava

19. Biomedical Engineering

Year of Establishment: 1985

Head/Coordinator of the Department: Professor Prasun Kumar Roy, w.e.f. 01-01-2020

1. Introduction of the Department/School:

Biomedical Engineering (BME) is a most interdisciplinary and frontier field of technology, endeavouring to converge the three uniquely diverge scientific fields: Biology, Engineering and Medicine. The School of Biomedical Engineering is involved in Teaching, Outreach, Research, Translation and Entrepreneurship, in collaboration with Institute of Medical Sciences (BHU), Tata Cancer Centre (BHU campus), in-campus Innovation centre, and other Departments of IIT(BHU). The School has been a pioneer of nation building in the BME sector for about 40 years, being set up by UGC during the 5th Five Year Plan in 1978, with the appointment of regular faculty in 1985.

The School runs the following programs: (1) a five-year Integrated Dual Degree (IDD) program that conjointly offers B.Tech in Bioengineering and M.Tech in Biomedical Technology, (2) a two-year M.Tech program in Biomedical Engineering, (3) a rigorous PhD program, both for young scholars as well as QIP-based engineering college teachers (4) an intensive research setting for Post-doctoral Fellows and Faculty Fellows (as 'Inspire' candidates). The Banaras Hindu University ecosystem is a seminal paradigm of an Institute of Technology and an Institute of Medical Sciences thriving in the same campus. This results in excellent collaborative work in Healthcare Technologies and Medically-oriented product or process development, Incubation of start-ups, and innovative entrepreneurships.

Major areas of Research

- Biomedical signal and image processing
- Brain-Computer Interfacing based on Motor Imagery and Visual Evoked Potential.
- Stem cell therapy, Tissue engineering and Regenerative medicine
- Nanocomposites and Bio-devices
- Stem cell technology, Tissue engineering and Regenerative medicine,
- Biomicrofluidics, Neuroengineering and Nanotoxicology
- BioMEMS and Biosensors.
- Brain Circulation, Autoregulation, Its Disturbance and Neuroprotection
- Bio-effects of electromagnetic radiation, specially the biohazards of Microwave radiation
- Design and fabrication of low cost diagnostic and therapeutic instruments
- Functionally graded materials & conducting IPN composites and their medical application
- Control system modelling, analysis and simulation in health and diseases.
- Molecular pathogenesis and nanomedicine based therapeutics for infectious diseases
- Computational Biomechanics (Design and modelling of Orthopaedics implants: Hip Joint, Knee Joint, Spine spacers, Bone Plates and Screws, Dental implants).
- Cardiovascular Blood flow dynamics study, Stent and Heart valve design and development; FEA/CFD Simulation). Energy harvesting for biomedical applications.
- Improved Cancer Diagnostics, Radiation Oncology, Chemotherapy enhancement.
- Neurotechnology, Brain Research, Cognitive Science, and Affordable Mental Health Care.

2. Academic Programmes offered and Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch					
2.	Dual Degree	14	13	15	19	13

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
3.	M. Tech/ M. Pharm	08	08			
4.	Ph. D (Under Institute Fellowship)	34 {28 +3 (on professional leave) +03 (thesis Submitted)}				
5.	Ph. D (Under Project Fellowship)	02 {01 + 01 (thesis submitted)}				
6.	Ph. D (Under Sponsored Category)	13 {05 (QIP) + 07 (CSIR/UGC JRF) +1 (Part Time, Institute Staff)}				

3. Faculty and their areas of specialisation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Dr. Neeraj Sharma	2008	Bioinstrumentation, Biomedical Signal and image Processing.
2	Dr. Prasun Kumar Roy, MBBS, FRSM, PhD.	2003	Neurotechnology, Medical Devices, Affordable Health Care
ASSOCIATE PROFESSORS			
1	Dr. Shiru Sharma	2009	Biological control system, Mathematical modeling of biological system, Bio-instrumentation
2	Dr. Sanjay Kumar Rai	1998	Computational Biomechanics (Design and modelling, FEA/CFD Simulation). Energy Harvesting for biomedical applications.
3	Dr. Marshal	2004	Biophyiscs, Biomaterials and Tissue Engineering, Stem Cell Reprogramming, Biosensors, Bio-MEMS, Nano-medicine, Plasma Physics
4	Dr. Pradip Paik	2008	Materials for Health Care and Therapeutic Applications: New designing and synthesis of Polymers, Ceramic, Composites, other Nanoscale Materials of Health care and Nanomedicine, in-plantable materials, Drug Delivery, Cancer Therapy, Nano vaccination, in-vitro and in-vivo studies
ASSISTANT PROFESSORS			
1	Dr. Sanjeev Kumar Mahto	2011	Tissue Engineering, Microfluidics Devices, Scaffold Designing

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation	Date of Appointment in the department
1.	Mr. Ajay Kumar, Diploma in Mechanical Engineering	Senior Technical Superintendent	17.02.1992
2	Mr. Bhuwaneshwari Sharan, Intermediate (Science)	Technical Superintendent	06.06.1988
3	Dr. Anuj Srivastava, D.M.L.T., B.Sc. MLT, M.Sc. (Microbiology), Ph.D	Senior Technician	06.08.2008
4	Mr. Bharat Kumar Vishwakarma, B.Sc., B.Ed., P.G.D.C.A.	Senior Technician	12.07.2012
5	Mr. Divyanshu Singh, M.A. (Journalism & Mass Communication), D.C.A. (Diploma in Computer Application)	Junior Assistant	20.05.2017
6	Mr. Vipin Kumar Verma, B.Tech (Electronics & Communication Engg.)	Junior Assistant	01.08.2017

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Development of Microfluidic Tools for Neuromuscular Synaptogenesis and Nanotoxicological Studies	Jul. 2014 –Jun. 2020	INSPIRE Project, Department of Science and Technology, New Delhi, India.	*35 Lakhs*	Dr. S. K Mahto
2	Functional-Hollow-porous-biopolymer based Nanoformulations and Interventions for treatment of Cancer and prevention of Tuberculosis: concept of nanomedicine with multiple drugs for multiple diseases	2017-2020	DST Nano mission	~57.00 Lakhs	Dr. Pradip Paik (PI)
3	Neem-seed based Nanocapules and nanomedicine for targeted drug delivery and cancer therapy	2017-2020	DST-SERB	40.33 Lakhs	Dr. Pradip Paik (PI)
4	Device fabrication of nanostructured carbon decorated with metal nanoparticle loaded metal doped monochalocogenides: Performance evaluation with commercially available thermoelectric devices	2017-2020)	DST-INPRINT (with IIT Kanpur)	Total value 200 Lakhs	Dr. Pradip Paik (Co-PI)
5	National Mission on Data Analytics & Predictive Technology: Healthcare	2020-25	DST	Rs 150 lakhs	Prasun K. Roy
6	Spatiotemporal Dynamics of the Neural System: Information Flux Imaging with clinical applicability	2015-20	Ministry of Electronics & Information Technology, New Delhi.	Rs. 68 lakhs	Prasun K. Roy
7	Design and development of affordable myoelectric prosthetic hand', amount of funding	2019-??	SERB DST	Rs. 13.00 lakhs	Dr. Shiru Sharma (PI), Prof. Neeraj Sharma (Co-PI)
8	Nanoparticles supported self-assembled conducting polymer monolayer based platform for rapid detection of monosodium glutamate in food products in collaboration with Dr Raju Khan, NEIST, Jorhat	3 Years 2017-2020	Department of Biotechnology, Govt of India	89.32	Dr. Marshal

6. New facilities added

7. Patents filed

S. No.	Name of Faculty Member	Title of Patent
1	Sharma, S. & N. Sharma	FMG sensor for hand prosthesis application, Indian Patent: 201911043042, October 23, 2019
2	Dr. S. K. Mahto	Psyllium Husk Based Bioink and the Method of Making Thereof
3	Dr. S. K. Mahto	A Method for Preparing Three-Dimensional Nanofibrous Composite Scaffold and a Product Thereof".

S. No.	Name of Faculty Member	Title of Patent
4	Dr. Pradip Paik (* is this patent filled from 01-04-2019 to 31-03-2020)	A process for the preparation of nanoparticles of high molecular weight of polystyrene (with Prof. Kamal K Kar, IIT Kanpur), dated awarded, 9th September, 2019, (Patent No. 320069)., Awarded
5	Prasun K. Roy	An Apparatus for Non-invasively determining the Stress Tensor, Pressure and Density of Flowing Fluids (re-filing amendment)
6	Dr. S. K. Mahto and Prof. Neeraj Sharma	Extended Larger Area Heterojunction Based Bio-Sensing Device Application No.: 202011014307, March 31, 2020

8. Books, monographs authored/co-authored

S. No.	Name of Author/Co- Author	Title	Publisher
1	Malan, N. S., & Sharma, S.	Introduction to motor imagery-based brain-computer interface: time, frequency, and phase analysis-based feature extraction for two-class MI classification	
2	Sahi, A. K., Verma, P., Pallawi., Singh, K.N., Mahto, S. K.	Advancements and New Technologies in Drug Delivery System	Biomedical Engineering and its Applications in Healthcare, Springer Nature (2019)
3	Sahi, A. K., Varshney, N., Sidu, R.K., Poddar, S., Pallawi., Singh, K.N., Mahto, S. K.	Clinical implications of cortisol and bioanalytical methods for their determination in various biological matrices	Immunodiagnostic technologies from laboratory to point-of-care testing, Springer Nature (2020)
4	Rati, Nishant Kumar Singh, Sanjay Kumar Rai, Shekhar Kumta	Triply Periodic Minimal Surface Porous Implants to reconstruct Bone Defects	Smart Healthcare for Disease Diagnostic and Prevention (Published 17th January 2020) Elsevier Publication (Academic Press), Paperback ISBN: 9780128179130, eBook ISBN: 9780128179147
5.	Uvanesh Kasiviswanathan, and Neeraj Sharma	Importance of Bio-signal for Rehabilitative Engineering	Biomedical Engineering and its Applications in Healthcare, pp. 453-469. Springer, Singapore, 2019.

9. Research Publication

Refereed International Journal

1. Prakash, A., Kumari, B., & Sharma, S. (2019). A low-cost, wearable sEMG sensor for upper limb prosthetic application. Journal of Medical Engineering & Technology, 43(4), 235–247.

2. Prakash, A., Sharma, S., & Sharma, N. (2019). A compact-sized surface EMG sensor for myoelectric hand prosthesis. Biomedical Engineering Letters, 9(4), 467–79.

3. Prakash, A., Sharma, N., & Sharma, S. (2019). Novel force myography sensor to measure muscle contractions for controlling hand prostheses. Instrumentation Science & Technology, 48(1), 43–62.

4. Prakash, A., & Sharma, S. (2020). Development of an Affordable Myoelectric Hand for Transradial Amputees: International Journal of Biomedical and Clinical Engineering, 9(1), 1–15.

5. Malan, N. S., & Sharma, S. (2019). Feature selection using regularized neighbourhood component analysis to enhance the classification performance of motor imagery signals. Computers in biology and medicine, 107, 118-126.

6. Romel Bhattacharjee, Ashish Verma, Neeraj Sharma, Shiru Sharma (2019). "Non-rigid registration (computed tomography – ultrasound) of liver using B-splines and free form deformation", IJBET (Accepted, in press for publication).

7. P. Shakti Prakash, Taresh Sarvesh Sharan, Suryappa Jayappa Pawar, Ravi Prakash Tewari, Shiru Sharma, (2019). Wavelet based noise removal from Raman signal to study PLD coated Forsterite-Hydroxyapatite thin film on Stainless Steel 316L substrate. Journal of Applied Spectroscopy (Accepted, in press for publication).

8. Taresh Sarvesh Sharan, Neeraj Sharma, Shiru Sharma, (2020). Denoising and spike removal from Raman spectra using Double density Dual tree complex wavelet transform. Journal of Applied Spectroscopy (Accepted, in press for publication).

9. A Jha, MK Viswanadh, AS Burande, AK Mehata, S Poddar, K Yadav, SK Mahto, AS Parmar, M.S. Muthu. D N A biodots based targeted theranostic nanomedicine for the imaging and treatment of non-small cell lung cancer. International Journal of Biological Macromolecules, 150, 413-425, 2020.

10. K.Y. Vajanthri, R.K.Sidu, S.K. Mahto, Micropatterning and Alignment of Skeletal Muscle

Myoblasts Using Microflowed Plasma Process, IRBM 41, 48-57, 2020.

11. CK Balavigneswaran, R Venkatesan, PS Karuppiah, G Kumar, P Paliwal, S Krishnamurthy, B Kadalmani, SK Mahto & Nira Misra Silica Release from Silane Cross-Linked Gelatin Based Hybrid Scaffold Affects Cell Proliferation, ACS Applied Bio Materials, 3, 197-207, 2020.

12. Sahi, A.K., Varshney, N., Poddar, S., Vajanthri, K.Y., and Mahto S. K. Optimizing a detection method for estimating polyunsaturated fatty acid in human milk based on colorimetric sensors, Materials Science for Energy Technologies, 2, 624-628, 2019.

13. Kumar, G., Kasiviswanathan, U., Mukherjee, S., Mahto, S.K., Sharma, N., &Patnaik, R, Changes in electrolyte concentrations alter the impedance during ischemia-reperfusion injury in rat brain Physiological Measurement, 40, 105004, 2019.

14. Vajanthri, K. Y., Sidu RK., Poddar, S., &Mahto, S. K Combined Substrate Micropatterning and FFT Analysis Reveals Myotube Size Control and Alignment by Contact Guidance. Cytoskeleton, 76, 269-285, 2019.

15. Poddar S, Parasa MK, Vajanthri KY, Chaudhary A, Pancholi UV, Sarkar A, Singh AK and Mahto S.K. Low Density Culture of Mammalian Primary Neurons in Compartmentalized Microfluidic Devices. Biomedical Microdevices, 21, 67, 2019.

16. Poddar, S., Agarwal, P. S., Sahi, A. K., Vajanthri, K. Y., Singh, K. N., &Mahto, S. K. Fabrication and Cytocompatibility Evaluation of Psyllium Husk (Isabgol)/Gelatin Composite Scaffolds. Applied biochemistry and biotechnology, 1-19, 2019

17. Varshney, N., Sahi, A.K., Vajanthri, K.Y., Poddar, S., Balavigneswar an, C.K., Prabhakar, A., Rao, V and Mahto S. K. Culturing Melanocytes and Fibroblasts within Three -dimensional Macroporous PDMS Scaffolds: Towards Skin Dressing Material Cytotechnology, 71, 287-303, 2019.

18. Monika Singh, Divya Somvanshi, Rajesh Kumar Singh, Govinda Kapusetti, Arun Kumar Mahanta, Pralay Maiti, Pradip Paik and Nira Misra,(2020) "Functionalized Poly vinyl chloride/Layered Double Hydroxide Nanocomposite and its thermal and mechanical properties" Journal of Applied Polymer Science, 84494(1-12).

19 . Monami Das Modak, Ganesh Damarla, Somedutta Maity, Anil K. Chaudhary and Pradip Paik,(2019) "Self-assembled Pearl-necklace patterned upconverting nanocrystals with highly efficient blue and ultraviolet emission: femtosecond laser based upconversion properties", **RSC Adv.**, (**9**, 38246-38256)

20. Alekha Tyagi; Amit Yadav; Prerna Sinha; Shashank Singh; Pradip Paik; Kamal K. Kar, (2019) Chicken feather rachis: An improvement over feather fiber derived electrocatalyst for oxygen electroreduction, Applied Surface Science, Applied Surface Science, 495 (30) 2019, 143603

21. Varma, Gajapati; Kummari, Githavani; Paik, Pradip; Kalle, Arunasree,(2019)Celecoxib potentiates antibiotic

uptake by altering membrane potential and permeability in Staphylococcus aureus, Journal of Antimicrobial Chemotherapy, 1;74(12):3462-3472

22..Anil Kumar Yamal, Vinod Nadella, Yitzhak Mastai, Hridayesh Prakash Pradip Paik*,(2019) p-LME Polymer Nanocapsules stimulatenaïve macrophages and protect them from oxidative damage during controlled release of drug", Journal of Applied Polymer Science, DOI: 10.1002/APP.48363, 48363 (1 of 12)

23. Debasrita Bharatiy, K. Santhosh Kumar, Raghunandan Seelaboyina, Pradip Paik(2019)*, A detailed study on the dielectric properties of CCTO@SiO_2 core-shell nanoparticles: Role of SiO_2-NH_2 shell over CCTO core surface, Journal of Solid State Chemistry, (277), 346-355

24. Debasrita Bharatia, Santhosh Kumar, S Raghunandan and Pradip Paik*(2019) Dielectrics of the noble synthesized nanocomposite silica coated CCTO over Graphene oxide with the efficacy of CCTO@SiO_2 NPs decoration", Journal of Materials Science, 54(8), 6272–6285

25. Bio- waste polymer hybrid as induced piezoelectric material with high energy harvesting efficiency" ,Chandan Kumar, Anupama Gaur, Shivam Tiwari, Arpan Biswas, Sanjay Kumar Rai, Pralay Maiti: Composites Communications, Vol.11,PP

56-61, Elsevier Publication, 2019.

26. Pareek V, Paul S, Rallabandi V, Roy PK (2019). Patterning of Corpus Callosum integrity in Glioma Brain Tumour observed by MRI: Effect of 2D bi-axial lamellar brain architecture. Journal of Neuro-Oncology 144(1):165-177.

27. Pareek V, Nath B, Roy PK (2019), Role of Neuroimaging Modalities in the Assessment of Oxidative Stress in Brain. CNS and Neurological Disorders: Drug Targets, 18(5), 372-381.

28. Ashish Kumar Singh, Juhi Jaiswal and Marshal Dhayal. Platinum disc electrode for in-situ electrochemical inactivation of bacterial growth in culture media. Journal of Electroanalytical Chemistry 868 (2020) 114119.

29. Juhi Jaiswal and Marshal Dhayal. Electroanalytical Method for Quantification of Hepatocellular Carcinoma Cells as Charge Transport Barriers in Culture Media. Electroanalysis 32 (2020) 1-9.

30. Juhi Jaiswal and Marshal Dhayal. Preparation of 2D coatings of functionally graded chitosan-gold nanocomposite through in-situ reduction in cationic and anionic environments: Application for inhibiting hepatocellular carcinoma cells response. Materials Chemistry and Physics 243 (2020) 122663.

31. Deepti Sharma, N. Naga Malleswara Rao, S. Arasaretnam, Annadanam V. Sesha Sainath and Marshal Dhayal. Functionalization of structurally diverse glycopolymers on graphene oxide surfaces and their quantification through fluorescence resonance energy transfer with fluorescein isothiocyanate. Colloid and Polymer Science. 298 (2020) 365–375.

32. Jain, Pankaj K., Saurabh Gupta, Arnav Bhavsar, Aditya Nigam, and Neeraj Sharma. "Localization of common carotid artery transverse section in B-mode ultrasound images using faster RCNN: a deep learning approach." Medical & Biological Engineering & Computing (2020): 1-12.

33. Kajaria, A., N. Sharma, Sh Sharma, S. Pradhan, A. Mandal, and L. M. Aggarwal. "Monte Carlo Study of Unflattened Photon Beams Shaped by Multileaf Collimator." Journal of Biomedical Physics & Engineering 9, no. 2 (2019): 137.

34. Anuranjeeta, Shiru Sharma, Neeraj Sharma, Munendra Singh, and K. K. Shukla. "Enhancement and segmentation of histopathological images of cancer using dynamic stochastic resonance." International Journal of Medical Engineering and Informatics 12, no. 2 (2020): 180-193.

Refereed International Journal

1. Dhiman Banik, S Chennakesavulu, Monika Singh, Nidhi Pandey, Ragini Tilak, Aramati Bindu Madhava Reddy, Pradip Paik*(2020), mesoporous x[cu(ii)o] nanoclusters dispersed and immobilized on y[sio_2] matrix: structure and effective controlled biocidal activity against pseudomonas, aeruginosa and bacillus subtilis, , Bulletin of Materials Science,43(39), 1-8

10. Number of Conference Papers: 20

11. Honours and awards to faculty members

S. No.	Name of Faculty Member	Details of Award
1	Prof. Neeraj Sharma and Dr. S. K. Mahto	Selected for Gandhian Young Technological Innovation (GYTI) Awards 2019 to be conferred by Honourable Vice President of India for the research work "Low-cost, easy-to use, in-house developed electric cell impedance sensing (ECIS) system for studying the dynamic behaviour of the biological cell"
2	Dr. Pradip Paik	Materials Research Society (MRS), Trilateral (Singapore-China-India) Invited Lecture at Singapore
3	Dr. Pradip Paik	(Patent Awarded): Title: A process for the preparation of nanoparticles of high molecular weight of polystyrene
4	Dr. Pradip Paik	Best Paper Presentation Award Oral (1st Prize): for the paper "Optical Properties in Upconverting Nanoparticles (UCNPs
5	Dr. Pradip Paik	BEST POSTER PRESENTATION Award in the conference in Fourth International Conference on Nonmaterial (ICN)
6	Dr. Pradip Paik	BEST ORAL PRESENTATION AWARD, (Fourth International Conference on Nanomaterials (ICN) 2019
7	Dr. Pradip Paik	Best Poster Presentation Award, in 4th International Conference on Nanotechnology for Better Living to address polymers and their composites at IIT Kanpur, 6th and 7th April, 2019.
8	Prasun K. Roy	Invited Speaker, Conference on Quantum Physics & Brain Function, IIWC, Bangalore.
9	Prasun K. Roy	For presentation of joint research (V Pareek, PK Roy. Integ-rative Approach to Assess Microstructural White Matter Properties), the Cajal Fellowship was awarded for team member's visit to Bordeaux Neuroscience School, France.
10	Prasun K Roy	Keynote Speaker, NeuroSchield Inauguration Meeting, InMed Prognostics, Pune, Maharashtra

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 39

13. Names of students/scholars who got prizes and awards outside the Institute

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Neelima Varshney	16021002	1st prize for best poster	29th February 2020, IIT(BHU)	By Indo-US Conference on Bioengineering and Regenerative Medicine (ICBR-2020)
2	Neelima Varshney	16021002	Certificate of appreciation for finishing in the top 3 innovations	12th October 2019, School of Biochemical Engineering	By Biotechnology Industry Research Assistance Council (BIRAC) and IKP Knowledge Park (IKP)
3	Omkar Rajesh Shinde	15024010	Khorana Fellowship Award	11.7.19, Johns Hopkins University, USA	Indo-U.S. Science & Technology, Forum
4.	Vidush Agrawal	15024015	NTU-India Connect Program Award	12.07.2019	Nanyang Technological University, Singapore
5.	Uvanesh K.	15021002	Appreciation Award for Excellence in Research work [Top 10 research work presented under Innovative Ideas and Patents Category (Poster presentation)	17/11/2019; 2nd National Biomedical Research Competition (NBRC), PGIMER, Chandigarh	Society of Young Biomedical Scientists (SYBS), India

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
6.	Uvanesh K.	15021002	SITARE-BIRAC- Gandhian Young Technological Innovation (GYTI) Award 2019, [Awarded under #MLM (More from Less for Many), Frugal Innovation Award]. Award with a grant of 15 Lakhs INR	05 to 06/07/19, Vigyan Bhawan, New Delhi	Presented by Honourable Vice President of India. Given by BIRAC, Gov. of India under the Students Innovations for Translation & Advancement of Research Explorations (SITARE) Scheme in partner/coordinated with SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions).
7.	Rohan Kandhari	16024014	Summer Intern at University Paris Descartes Paris, France	May 2019 – July 2020	Embassy of France in India
8.	Kazi Arshad Aslam	16024008	Summer Intern at Center for product design and manufac. IISc Bangalore;	11th May 2019- 5th August 2019	IISc Professor Funding
9	Kazi Arshad Aslam	16024008	Winter intern at RnD and Clinical dept, Forus Health Inc., Bangalore	10th Dec 2019 - 13th Jan 2020	Company stipend

14. Number of Students/Scholars who went for foreign Internship: 2

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

S. No.	Coordinator	Title	Period
1	Dr. S. K. Mahto	Developing Functional Three-dimensional Microscale Structures for Tissue Engineering	Sep 12 - 13, 2019 at Novotel Mumbai Juhu Beach, Mumbai, Maharashtra, India.

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 14

17. Number of Special lectures delivered by faculty members in other institutions: 09

18. Number of Visits abroad by faculty members for conference/symposia: 03

19. Fellowships of academic and professional societies: NA

20. Editorial boards of journals

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prasun K. Roy	Member	INAE Letters of Indian National Academy of Engg.
2	Prasun K. Roy	Member	Int. J. Artificial Intelligence and Soft Computing

21. Faculty members' participation with other universities under MoUs

- There has been participation of faculty in joint initiatives under four MoUs of IIT-BHU with the following organizations:
  (i) Tata Cancer Institute, GOI (constituent of Homi Bhabha National Institute: Deemed University).
  (ii) Defence Research & Development Organization (DRDO).
  (iii) National Disaster Rescue Force, GOI.
  (iv) Integrated Cyber-Physical Systems, DST, GOI.

- MoU has been done with Evolution Company, Hyderabad for design and development of prosthetic limbs.

22. Five Articles from the Department with maximum no. of Citations in last 5 years: NA

23. Distinguished Visitors

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof. Pankaj Chaturvedi, Dy. Director, Tata Cancer Centre, Mumbai; Secretary-General, International Federation of Head and Neck Oncologic Societies.	13.11.19	Research & Academic Collaboration
2	Prof. Satyajit Pradhan, Director, Tata Cancer Centre, Varanasi	13.11.19	Research & Academic Collaboration
3	Prof. S. Sarbadhikary, Dean, Indian Institute of Health Management Research, New Delhi	23.5.19	Academic interaction

24. Other activities

International collaboration / achievements by the Department/School

- Dr. Marshal is collaborating with School of Dentistry and Tissue Engineering Group, The University of Leeds, U. K.
- Cooperation of Dr. Marshal has also been initiated with Department of Dental Materials and Hard-tissue Biointerface Research Center, School of Dentistry, Chonnam National University, South Korea.
- Collaboration of Prof Neeraj Sharma is with Department of Electrical Engineering, University of Idaho, Pocatello, USA, on Medical Imaging and Diagnostic Processing.
- There is collaboration of Dr. Sanjeev Kumar Mahto with Vienna University of Technology, Austria for developing a research proposal jointly against a call for Indo-Austrian Proposal sponsored by DST, Government of India and BMBWF, Austria.
- Dr Pradeep Paik has cooperation with Bar-Ilan University, Tel-Aviv, Israel, regarding methodology of Amino-acid based polymeric nanomedicine for Tuberculosis and Malaria.
- Prof. Prasun K Roy has collaboration with Clinical Neuroscience Division, University of Cambridge, U.K. on Microglia Dynamics and its Modulation in Traumatic Brain Injury (sponsorship by Royal Society - London).
- There is cooperation between Prof. Prasun K. Roy and Council of Science, Technology & Infrastructure (CSTI), International Neuroinformatics Coordination Facility, Karolinska Institute, Stockholm, Sweden, in the area of clinical informatics applied to neuroscience (as Council member of CSTI).

25. Any other Information

- Prof. Neeraj Sharma has been selected as Expert Adviser to UPSC and AICTE in the area of Biomedical Engineering.
- Dr Shiru Sharma has been designated as Expert Committee Member of the Healthcare Section of SERB, DST, and as Expert Adviser to UPSC in the area of Biomedical Engineering.
- Dr Pradeep Paik elected as Member, Board of Studies in Chemistry at SRM University, Chennai, and also to the similar position in Materials Science at Kanpur University.
- Dr. Sanjeev Kumar Mahto (as Co-PI), in collaboration with Dr. Senthil Raja (as PI, Pharm.), has been granted a research project on "Synthesis and evaluation of diverse N-functionalized heterocyclic hybrids as multi-target directed ligands for neuroprotective-neurorestorative therapies" (Rs. 75 Lakhs) by MHRD-STARS, GOI. [As per the mandate of MHRD-STARS, this is a Multiple PIs project i.e., upto Rs. 50 Lakhs for single PI project and upto Rs. 100 Lakhs for projects with Multiple PIs].
- Prof. Prasun K. Roy has been selected as Member for Young Engineer Award Committee, Indian National Academy of Engineering (INAE), New Delhi, and as Advisory Panel Member for speciality panel of the Fellowship of National Academy of Medical Sciences, India (NAMS), New Delhi.

20. School of Materials Science and Technology

Year of Establishment: 1978

Head/Coordinator of the Department: Dr. Akhilesh Kumar Singh, w.e.f. 10 November 2017.

1. Introduction of the Department/School:

The School of Materials Science and Technology is an internationally renowned Centre of Materials Research and Education. It was established in 1978 following the recommendations of the V Plan Visiting Committee of the UGC. It serves as Institute's nodal center for fostering interdisciplinary teaching and research in the field of materials science and technology. School runs successful Ph.D., M.Tech. and Integrated Dual Degree (IDD) programmes since 1982, 1984 and 2005, respectively. All these students are gainfully employed, several of them in premier Research and Development organizations, industry and teaching institutions. The syllabi of different programsare revised periodically to include topics of current significance in the field. Integrated 5-year dual degree programme is leading to combined B.Tech. & M.Tech. degrees. This program has been initiated from the session 2005-06 through JEE.

The School has a modest four floor building. The laboratories are equipped with modern and sophisticated equipment for materials preparation, characterization, processing and phase transformation studies. Working in these frontiers areas the faculty members of the School have generated more than Rs. 15 crores during the last five years through various projects/schemes funded by agencies like DST, SERB, DBT, IMPRINT, DST-Nanomission, BRNS, SPARC, DRDO, UGC-DAE-CSR, etc. and have published more than 250 research papers in reputed journals such as Nature Comm., Phys. Rev. Lett., Appl. Phys. Lett., Phys. Rev. B, J. Phys. Cond. Matter, J. Appl. Phys., Acta Materialia, Macromolecules, Dalton Trans., J. Controlled Release, J. Mater. Chem, J. Phys Chem., Nanoscale, RSC Advances, Polymer, Electroanalysis, Langmuir, Sensors and Actuators B., Scientific Report etc.

Major areas of Research:

- Nanomaterials for Energy, Health and Electronics
- Magnetic materials and Nanomagnetism
- X-ray and Neutron Crystallography
- Ferroics and Multiferroics
- Metals, alloys and multifunctional materials
- Functional Materials and Devices
- Biopolymers for drug delivery
- Polymersand polymer nanocomposites
- Sensors and Biosensors
- Thin film devices and organic electronics
- Advanced Ceramics

2. Academic Programmes offered and Students on Roll

S. No.	Programme	Programme	I Year	II Year	III Year	IV Year	V Year& above
1	Dual Degree	Dual Degree	23	16	19	16	14
2	M. Tech/ M. Pharm	M. Tech/ M. Pharm	20	17			
3	Ph. D (Under Institute Fellowship)	Ph. D (Under Institute Fellowship)=24	5	5	3	4	7
4	Ph. D (Under Project Fellowship)	Ph. D (Under Project Fellowship)=14	1	5	5	3	
5	Ph. D (Under Sponsored Category)	Ph. D (Under Sponsored/ external fellowship)=18	4	7	3	2	2

3. Faculty and their areas of specialisation

Faculty and their areas of specialisation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Rajiv Prakash(Ph.D.) 17100	2000	Materials Chemistry and Nanotechnology Conducting Polymer and Composites Sensors & Biosensors and Organic Devices
2	Pralay Maiti(Ph.D.) 17337	1996	Biomaterials; Energy materials; Drug delivery
ASSOCIATE PROFESSORS			
1	Dr. (Mrs.) Chandana Rath (Ph.D.) 17280	2000	Nanomagnetics, Ion Irradiation, Multiferroics/ Semiconducting Nanostructured Materials
2	Akhilesh Kumar Singh(Ph.D.) 17387	2006	Smart Materials, Structural Phase Transitions in Electroceramics, Synthesis and Characterization of Novel Electroceramics, CMR Manganites, Nanomaterials
3.	Chandan Upadhyay(Ph.D.) 18433	2004	Quantum Materials, Multifunctional Materials, Nano-Bio Technology
4.	Bhola Nath Pal (Ph.D.) 19817	November, 2005	Solution processed thin film devices, Optoelectronics devices, Nanoelectronics
ASSISTANT PROFESSORS			
1	Dr. Ashish Kumar Mishra, (Ph.D.) 50065	July, 2011	Synthesis and properties of Carbon and 2D nanomaterials, Optoelectronics applications, Energy and Environmental applications
2	Dr. Shrawan Kumar Mishra, (Ph.D.) 50071	March 2010	Magnetism, Memory devices, Energy efficent materials
3	Sanjay Singh (Ph.D.) 50072	13 May 2013	Phase Transition, Shape memory alloys, Magnetism
Institute Professors			
1	Prof.Dhananjai Pandey (Ph.D.) FAC-IP11		Ferroics and Multiferroics, Functional Materials, X-ray and Neutron Crystallography
Visiting Faculty			
1	Dr. Shri Ram Singh FAC-VF06	1980	Phase transformation and Deformation behavior of Materials, High resolution electron microscopy and image simulation, Development of erosion resistance steel, ultra high strength steel, Shape memory alloys, Damping alloy, Amorphous alloys, Life assessment and life extension of engineering components

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
DST INSPIRE Faculty			
1	Dr. Ashish Kumar Singh FAC-DIF02	**2011**	Nanomaterials for Chemical Hydrogen Storage, Metal chalcogenides/ dichalcogenide for electrocatalysts, Metal and metal oxide nanocatalysts for organic transformation

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1.	**Ankit Jain** MCA	Junior Assistant (50140)	10/01/2020
2.	**Samir Kumar Dubey B.A., M.A.** (Sociology), Diploma in Electrical Engg.	Senior Technician (18632)	06/08/2008
3.	**Sitaram Tiwari** Diploma in Mechanical Engg. (Pursuing)	Senior Technician(19592)	04/09/2012
4.	**Mahendra Kumar Patel B.A., COPA** and B.Sc. (Pursuing)	Senior Technician (19599)	04/09/2012

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
1	Low cost ammonia gas sensor based onpolymer/polymer nanocomposite device formed by novel floating film transfer (FTM) technique	02 years and 0 Month, started in 2018	IMPRINT-SERB	51.0	Prof. Rajiv Prakash
2	Development of low cost sodium-ion battery:Fabrication and application of NASICON based Electrodes	03 years and 0 Month, started in 2018	DST	84.0	Prof. Rajiv Prakash
3	Harnessing the synergy of low band gap organicsemiconductors and highly facile floating film transfer method for low cost efficient organicelectronic devices	02 years and 0 Month, started in 2018	SPARC-SERB	45.0	Prof. Rajiv Prakash
4	Novel Electrode Materials for Reversible Alkaliion(Li+/Na+) capacitors and Pseudocapacitors	03 years and 0 Month, started in 2018	SERB	45.0	Prof. Rajiv Prakash
5	Understanding the mechanism of action throughcell biology and upgradation of herbal drug in solution and biodegradable patch for the treatmentof diabetic foot ulcer	01 years and 0 Month, started in 2018	BIRAC, DBT	28.6	Prof. Pralay Maiti

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
6	Radionuclide sensing platform based onfunctionalized polymer having nanochannels using Accelerator	03 years and 0 Month, started in 2018	BRNS	35.0	Prof. Pralay Maiti
7	Development of Anticorrosive Paints	01 years and 0 Month, started in 2018	Harind Chemical and Pharmaceuticals Pvt. Ltd.	1.2	Prof. Pralay Maiti
8	Chemical modification of Guar Gum to improveits properties	01 years and 0 Month, started in 2018	Hindustan Gum & Chemicals Ltd.	7.7	Prof. Pralay Maiti
9	Aging studies and estimation of thermal propertiesof liner materials	02 years and 0 Month, started in 2019	DRDO	156.85	Prof. Pralay Maiti
12	Polarised Neutron Reflectometry of HfO_2thin films deposited through MBE and Ebeam evaporation techniques	02 years and 0 Month, started in 2018	NFFA, Europe	~4000 Euro	Dr. Chandana Rath
13	Development of low voltage, low power,colloidal quantum dot light emitting transistorsfor next generation display technology	03 years and 0 Month, started in 2016	SERB	55.5	Dr. Bhola Nath Pal
14	FIST Level IIProject	Started in 2018	DST	395.0	**PI: Dr.** Akhilesh Kumar Singh **Co-PI:** All Faculty Members Of SMST
15	Design and investigation of thermalconducting two dimensionalheterostructures	03 years and 0 Month, started in 2017	SERB	54.8	Dr. Ashish Kumar Mishra
16	Carbon based nanocomposites for CO_2 capture	05 years and 0 Month, started in 2015	DST	35.0	Dr. Ashish Kumar Mishra
17	Mott transistors basedNeuromorphic memory devices	03 years and 0 Month, started in 2018	DST	101.0	Dr. Shrawan Kumar Mishra
18	Nanoscale interfacial magnetic skyrmions and its applications in memory devices	03 years and 0 Month, started in 2019	Nanomission DST	103.0	Dr. Shrawan Kumar Mishra
19	Minimizing hysteresis in magnetic shapememory Heusler alloys for reversiblemagnetocaloric effect	03 years and 0 Month, started in 2018	SERB	48.5	Dr. Sanjay Singh

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co-ordinator
20	Mutifunctional Properties of Heusler alloys	05 years and 0 Month, started in 2017	SERB	35.0	Dr. Sanjay Singh
21	Elastocaloric effect measurement setup to study caloric effect in shape memory alloys	03 years and 0 Month, started in 2018	UGC-DAE CSR	11.0	Dr. Sanjay Singh
22	Development of high performance, CMOS compatible and colour selective narrow-band photodetector for high-resolution imaging application	03 years and 0 Month, started in February, 2020	SERB	67.1	Dr. Bhola Nath Pal
23	Development of High Tc Lead Free Piezoelectric Materials for Energy Harvesting	03 years and 0 Month, started in March, 2020	SERB	49.4 lakhs	Dr. Akhilesh Kumar Singh
24	Photonic radiative cooler for passive sub-ambient cooling	2019-	IMPRINT (SERB)	41.88	Prof. Pralay Maiti
25	Impact of Carbon Nanomaterial based Photocatalyst on Microalgae Growth and Lipid for improved Biodiesel	02 years and 0 Month, started in 2019	DBT (IC#4 proposal)	51.0	Prof. Rajiv Prakash

Industrial consultancy projects

S. No.	Name of Faculty Member	Title	Industry	Amount (in lakhs of Rs.)
1	Prof. Pralay Maiti	Chemical modification of Guar Gum to improve its properties	Hindustan Gum & Chemicals Ltd.	7.7
2	Prof. Pralay Maiti	Development of Anticorrosive Paints	Harind Chemical and Pharmaceuticals Pvt. Ltd.	1.2

6. New facilities added

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Extension of New Building (two new floors added)	500
2	Corrtest Electrochemical Workstation	~ 5 Lakhs
3	Linkam thermal stage and polarizer set up for Raman spectrometer	~ 15.9 Lakhs
4	Radiant Ferroelectric Precision Premier -II	~40 lakhs
5	Rheometer cum Dynamic mechanical analyser	62 lakhs
6	Universal testing machine	40 lakhs
7	UV Chembar	4 lakhs
8	Electrochemical work station	25 lakhs

7. Patents filed

S. No.	Name of Faculty Member	Title of Patent
1	Dr. Chandana Rath	Latent Fingerprint Imaging Using rare earth doped HfO_2 Nanophosphors synthesized through Sol-gel technique"

S. No.	Name of Faculty Member	Title of Patent
2	Dr. Chandan Upadhyay	Janus shaped silver-magnetite nanoparticles and a method of preparation thereof
3	Dr. Chandan Upadhyay	Friction reducing coating on orthodontic wires
4	Prof. Pralay Maiti	**A Novel Polymer Blend Utilizing Waste Plastics and Process of Preparation Thereof Indian Patent Application No. 201911031635 filed on August 05, 2019**
5	Prof. Pralay Maiti	**A Novel Polymeric Hydrogel for Treating Melanoma Cancer and A Method Thereof Indian Patent Application No. 201911015958 filed on April 22, 2019**
6	Prof. Pralay Maiti	**A Bio-piezoelectric Device and a Method of Preparation Thereof Indian Patent Application No. 201911013972 filed on April 7, 2019**
7	Prof. Pralay Maiti	**Material for Faster Bone Healing Indian Patent Application No. 201911013103 filed on April 2, 2019**

8. Books, monographs authored/co-authored

S. No.	Name of Author/Co- Author	Title	Publisher
1	Dipti Saxena, Pralay Maiti	Progress and prospects in Naoscience Today	Nova Science publisher
2	Anupama Gaur, Aparna Shukla, Dipti Saxena and Pralay Maiti	Polymer Composites for Structural, Device and Biomedical Applications" in Materials Science and Technology Publisher	Wiley-VCH
3	Aparna Shukla and Pralay Maiti	Biodegradable Polymer-based Nanohybrids for Controlled Drug Delivery and Implant Applications" in 'Advances in Sustainable Polymers' Part of the Materials Horizons: From Nature to Nanomaterials book series (MHFNN)	Springer, Singapore

9. Research Publication

1. Chandra Jeet Verma, Ashish Kumar, Ravi Prakash Ojha, Rajiv Prakash (2020), Au-V2O5/Polyindole Composite: An Approach for ORR in Different Electrolytes, J. Electroanal. Chem, 861, 113959
2. PK Sahu, R Pandey, R Dwivedi, VN Mishra, R Prakash (2020), Polymer/Graphene oxide nanocomposite thin film for NO2 sensor: An in situ investigation of electronic, morphological, structural, and spectroscopic properties, Scientific Reports 10, 2981
3. RP Ojha, R Mishra, P Singh, NR Nirala, R Prakash (2020), A composite prepared from MoS2 quantum dots and silver nanoparticles and stimulated by mercury(II) is a robust oxidase mimetic for use in visual determination of cysteine, Microchimica Acta, 187, 74
4. Rajiv K. Pandey, Richa Mishra, Gopal Ji, Rajiv Prakash (2019) Corrosion prevention of commercial alloys by air-water interface grown, edge on oriented, ultra thin squarine film, Scientific Reports, 9, 13488
5. Rajiv K. Pandey, Atul S. M. Tripathi, Shyam S. Pandey and Rajiv Prakash (2019) Optoelectrical anisotropy in graphene oxide supported polythiophene thin films fabricated by floating film transfer, Carbon, 147, 252-261.
6. Praveen Kumar Sahu, Lalit Chandra, Rajiv K Pandey, V. N. Mishra and Rajiv Prakash (2019) Fast development of self-assembled, highly oriented polymer thin film and observation of dual sensing behavior of thin film transistor for ammonia vapour.
7. Macromolecular Chemistry and Physics, 220, 1
8. Monika Srivastava, Preeti Tiwari, Vineet Kumar Mall, S. K. Srivastava and Rajiv Prakash (2019) Voltammetric determination of the antimalarial drug chloroquine using a glassy carbon electrode modified with reduced graphene oxide on WS2 quantum dots, Microchimica Acta, 186, 415

9. Vinita, Madhu Tiwari, Neha Agnihotri, Monika Singh, Akhilesh Kumar Singh, Rajiv Prakash (2019), Nano network of coordination polymer AHMT-Ag for the effective and broad spectrum detection of 6-Mercaptopurine in urine and blood serum, ACS Omega, 16, 16733-16742
10. Shweta Pal, Uday Pratap Azad, Ashish Kumar Singh, Dinesh Kumar and Rajiv Prakash (2019) Studies on some spinel oxides based electrocatalysts for oxygen evolution and capacitive applications, Electrochimica Acta, 320, 134584.
11. Nikhil, Gopal Ji, Rajiv Prakash (2019) Composites of Donor-π-Acceptor type configured organic compound and porous ZnO nano sheets as corrosion inhibitors of copper in chloride environment, Journal of Molecular liquids, 280, 160-172
12. Shweta Pal , Hassane Lgaz , Preeti Tiwari , Ill-Min Chung , Gopal Ji, Rajiv Prakash (2019) Experimental and theoretical investigation of aqueous and methanolic extracts of Prunus dulcis peels as green corrosion inhibitors of mild steel in aggressive chloride media, Journal of Molecular Liquids, 276, 347-361
13. Monika Srivastava, S.K. Srivastava, Nikhil, G.JI, Rajiv Prakash (2019) Chitosan based new nano composites for corrosion protection of mild steel in aggressive chloride media, International Journal of Biological Macromolecules,140, 177-187
14. V. Chaudhary, R.K. Pandey, Rajiv Prakash, N. Kumar, A.K. Singh (2019) Highly aligned and crystalline poly(3-hexylthiophene) thin films by off-center spin coating for high performance organic field-effect transistors, Synthetic Metals, 258, 1. DOI: 10.1016/j.synthmet.2019.11622.
15. P. Singh, P. Singh, Rajiv Prakash, S.B. Rai (2019) Photo-physical studies of ultrasmall upconversion nanoparticles embedded organometallic complexes: Probing a dual mode optical sensor for hydrogen peroxide, Optical Materials, 98. DOI: 10.1016/j.optmat.2019.109459
16. A Gaur, S Tiwari, C Kumar, P Maiti (2000),Bio-waste orange peel and polymer hybrid for efficient energy harvesting, Energy Reports 6, 490-496
17. Prakash, AM Mhatre, R Tripathi, AK Pandey, PK Yadav, SA Khan (2000), Fabrication of Conducting Nanochannels Using Accelerator for Fuel Cell Membrane and Removal of Radionuclides: Role of Nanoparticles, ACS Applied Materials & Interfaces 12 (15), 17628-17640
18. D Saxena, KK Jana, N Soundararajan, V Katiyar, D Rana, P Maiti, Potency of nanolay on structural, mechanical and gas barrier properties of poly (ethylene terephthalate) Nanohybrid, Journal of Polymer Research 27 (2), 1-9
19. S Tiwari, A Gaur, C Kumar, P Maiti (2000), Electrospun hybrid nanofibers of poly (vinylidene fluoride) and functionalized graphene oxide as a piezoelectric energy harvester, Sustainable Energy & Fuels 4 (5), 2469-2479
20. SH Wankhade, S Tiwari, A Gaur, P Maiti (2000), PVDF–PZT nanohybrid based nanogenerator for energy harvesting applications, Energy Reports 6, 358-364
21. M Singh, D Somvanshi, RK Singh, AK Mahanta, P Maiti, N Misra, P Paik (2000), Functionalized polyvinyl chloride/layered double hydroxide nanocomposites and its thermal and mechanical properties, Journal of Applied Polymer Science 137, 48894
22. VD Singh, RS Singh, BK Dwivedi, S Mukhopadhyay, A Shukla, P Maiti, (2019), Photosensitization Ability of 1, 7-Phenanthroline Based Bis– BODIPYs: Perplexing Role of Intramolecular Rotation on Photophysical Properties, The Journal of Physical Chemistry C 123 (50), 30623-30632
23. A Biswas, VK Aswal, P Maiti (2019), Tunable shape memory behavior of polymer with surface modification of nanoparticles, Journal of colloid and interface science 556, 147-158
24. AK Mahanta, P Maiti (2019), Injectable Hydrogel through Hydrophobic Grafting on Chitosan for Controlled Drug Delivery, ACS Applied Bio Materials 2 (12), 5415-5426
25. A Gaur, D Rana, P Maiti (2019), Mechanical and wear behaviour of poly (vinylidene fluoride)/clay nanocomposite, Journal of Materials Research and Technology 8 (6), 5874-5881
26. D Saxena, D Rana, EB Gowd, P Maiti (2019), Improvement in mechanical and structural properties of poly (ethylene terephthalate) nanohybrid, SN Applied Sciences 1 (11), 1363

27. A Banerjee, S Chattopadhyay, A Kundu, RK Sharma, P Maiti, S Das (2019), Vertically aligned zinc oxide nanosheet for high-performance photocatalysis of water pollutants, Ceramics International 45 (14), 16821-16828
28. AK Mahanta, DK Patel, P Maiti (2019), Nanohybrid Scaffold of Chitosan and Functionalized Graphene Oxide for Controlled Drug Delivery and Bone Regeneration, ACS Biomaterials Science & Engineering 5 (10), 5139-5149
29. S Senapati, T Sarkar, P Das, P Maiti (2019), Layered Double Hydroxide Nanoparticles for Efficient Gene Delivery for Cancer Treatment, Bioconjugate chemistry 30 (10), 2544-255
30. S Senapati, DK Patel, B Ray, P Maiti (2019), Fluorescent-functionalized graphene oxide for selective labeling of tumor cells, Journal of Biomedical Materials Research Part A 107 (9), 1917-1924
31. KK Patel, S Gade, MM Anjum, SK Singh, P Maiti, AK Agrawal, S Singh (2019), Effect of penetration enhancers and amorphization on transdermal permeation flux of raloxifene-encapsulated solid lipid nanoparticles: an ex vivo study on human skin, Applied Nanoscience 9 (6), 1383-1394
32. AP Singh, A Biswas, A Shukla, P Maiti (2019), Targeted therapy in chronic diseases using nanomaterial-based drug delivery vehicles, Signal transduction and targeted therapy 4 (1), 1-21
33. Rajarshi Bhattacharyya, Om Prakash, Somnath Roy, Akhilendra Pratap Singh, Tapas Kumar Bhattacharya, Pralay Maiti, Somak Bhattacharyya, Santanu Das(2019), Graphene oxide-ferrite hybrid framework as enhanced broadband absorption in gigahertz frequencies, Scientific reports 9 (1), 1-12,
34. SK Shaw, A Biswas, A Gangwar, P Maiti, CL Prajapat, Sher Singh Meena, NK Prasad(2019), Synthesis of exchange coupled nanoflowers for efficient magnetic hyperthermia, Journal of Magnetism and Magnetic Materials 484, 437-444
35. A Biswas, A Shukla, P Maiti (2019), Biomaterials for Interfacing Cell Imaging and Drug Delivery: An Overview, Langmuir 35 (38), 12285-12305
36. A Shukla, AP Singh, T Dubey, S Hemalatha, P Maiti (2019), Third Generation Cyclodextrin Graft with Polyurethane Embedded in Hydrogel for a Sustained Drug Release: Complete Shrinkage of Melanoma, ACS Applied Bio Materials 2 (4), 1762-1771
37. S Kumar, AP Singh, S Senapati, P Maiti (2019), Controlling drug delivery using nanosheet-embedded electrospun fibers for efficient tumor treatment, ACS Applied Bio Materials 2 (2), 884-894
38. A Shukla, P Maiti 92019), Biodegradable Polymer-Based Nanohybrids for Controlled Drug Delivery and Implant Applications, Advances in Sustainable Polymers, 3-19
39. A Gaur, S Tiwari, C Kumar, P Maiti (2019), A bio-based piezoelectric nanogenerator for mechanical energy harvesting using nanohybrid of poly (vinylidene fluoride), Nanoscale Advances 1 (8), 3200-3211
40. Rajshree Singh, Kheyanath Mitra, Shikha Singh, Sudipta Senapati, Vijay Kumar Patel, Sambhav Vishwakarma, Archana Kumari, Jaydeep Singh, Susanta K Sen Gupta, Nira Misra, Pralay Maiti, Biswajit Ray(2019), Highly selective fluorescence 'turn off'sensing of picric acid and efficient cell labelling by water-soluble luminescent anthracene-bridged poly (N-vinyl pyrrolidone), Analyst 144 (11), 3620-3634
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42. H Tripathi, C Rath, AS Kumar, PP Manna, S.P. Singh (2019), Structural, physico-mechanical and in-vitro bioactivity studies on SiO2–CaO–P2O5–SrO–Al2O3 bioactive glassesMaterials Science and Engineering: C 94, 279-290.
43. Sandeep Kumar, Chandana Rath (2019), Latent Fingerprint Imaging using Dy and Sm Codoped HfO2 Nanophosphors: Structure and Luminescence Properties, Particle & Particle systems Characterization 36, 1900048

44. G. C. Pandey, G. Aquilanti, P.U. Sastry and C. Rath (2019), Structural Phase Transition and Spontaneous Exchange Bias in NiCr1.9Fe0.1O4 nanoparticles: XRD, EXAFS and Magnetic Measurements, Ceramics International 45, 13874-13882.
45. Durgesh Kumar, K. Nemkovski, Y. Su, Chandana Rath (2019), Enhancement of Curie- and spin-spiral temperatures with doping Fe in multiferroic CoCr2O4 nanoparticles, Journal of Magnetism and Magnetic Materials 488, 165378.
46. Priyanka Tiwari, Sandeep Kumar and Chandana Rath (2019),Structural and magnetic phase transitions along with optical properties in GdMn1-xFexO3 Perovskite; Journal of Applied Physics 126, 045102.
47. Priyanka Tiwari and Chandana Rath (2019), Effect of Fe on Jahn-Teller distortion and magnetic transitions in GdMn1-xFexO3 (x= 0.3 and 0.5); Physica B: Condensed matter; 570, 172-175.
48. Deepti Gangwar, Priyanka Tiwari, Ajay Kumar,Rajiv Prakash and Chandana Rath (2019), Effect of Dy on electrochemical supercapacitive behaviour of a-MnO2 nanorods; Electrochimica Acta; 328, 135027.
49. Sandeep Kumar and Chandana Rath (2019), Oxygen Vacancy Mediated Stabilization of Cubic Phase at Room Temperature and Resistive Switching Effect in Sm- and Dy-Doped HfO2 Thin Film; Physica Status Solidi A; 217, 1900756.
50. Priyanka Tiwari, Sandeep Kumar and Chandana Rath (2019), Probing structural transformation and optical and magnetic properties in Cr doped GdMnO3: Jahn–Teller distortion, photoluminescence and magnetic switching effect; RSC Advances; 9, 39871-39882.
51. Deepti Gangwar and Chandana Rath (2020),Electrochemical and magnetic properties of a-MnO2 nanorods; Journal of Magnetism and Magnetic Materials; 497, 166074.
52. B. Bharati, N.C. Mishra, A.S.K. Sinha and Chandana Rath (2020),Unusual structural transformation and photocatalytic activity of Mn doped TiO2 nanoparticles under sunlight, Materials Research Bulletin; 123, 110710.
53. G C Pandey, K Nemkovski, Y Su, C Rath (2020), Evidence of anomalous conventional and spontaneous exchange bias, high coercivity in Fe doped NiCr2 O 4 spinel; Dalton Transactions. 49, 4502-4517.
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58. Sushil Kumar, Akhilesh Kumar Singh (2019), Room temperature crystal structure and high temperature structural and magnetic phase transitions in Sr(Fe0.5Nb0.5)O3 ceramic, J. Appl. Phys. 125, 174102.
59. Dinesh Kumar, Akhilesh Kumar Singh (2019) Investigation of structural and magnetic properties of Nd0. 7Ba0. 3Mn1-xTixO3 (x= 0.05, 0.15 and 0.25) manganites synthesized through a single-step process, J. Magn. Magnt. Mater. 469, 264-273
60. Role of Chemical Pressure on Optical and Electronic Structure of Ho2GexTi2-xO7 M. Shukla, S. Banik, R. Pandey, Chandan Upadhyay, Journal of Physics: Condensed Matter 32 (11), 115501 (2020)
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64. Janus shaped plasmonic-magnetic silver-magnetite nanostructures for multimodal applications, P Singh, P Bharti, A Gangwar, NK Prasad, Chandan Upadhyay, Japanese Journal of Applied Physics 58, 105001 (2019)

65. Dielectric relaxations in Ho2Ti2O7 and Dy2Ti2O7 pyrochlores, PK Yadav, M Tolkiehn, Chandan Upadhyay, Journal of Physics and Chemistry of Solids 134, 201-208 (2019)

66. Quantum Criticality in geometrically frustrated Ho2Ti2O7 and Dy2Ti2O7 spin ices, PK Yadav, Chandan Upadhyay Journal of Magnetism and Magnetic Materials 482, 44-49 (2019)

67. Effect of A-site Fe substitution on the magnetic behavior of Dy2Ti2O7 Spin Ice, PK Yadav, PK Harijan, A Tripathi, Chandan Upadhyay, Journal of Magnetism and Magnetic Materials 481, 221-226 (2019)

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75. A Sharma, NK Chourasia, N Pal, S Biring, BN Pal (2019), Role of Electron Donation of TiO2 Gate Interface for Developing Solution-Processed High-Performance One-Volt Metal-Oxide Thin-Film Transistor Using Ion-Conducting Gate Dielectric, The Journal of Physical Chemistry C 123 (33), 20278-20286

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77. NK Chourasia, A Sharma, V Acharya, N Pal, S Biring, BN Pal (2019), Solution processed low band gap ion-conducting gate dielectric for low voltage metal oxide transistor, Journal of Alloys and Compounds 777, 1124-1132

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87. Georgios Araizi-Kanoutas, Jaap Geessinck, Nicolas Gauquelin, Steef Smit, Xanthe H. Verbeek, Shrawan K. Mishra, Peter Bencok, Christoph Schlueter,Tien-Lin Lee, Dileep Krishnan, Jarmo Fatermans, Jo Verbeeck, Guus Rijnders, Gertjan Koster, and Mark S. Golden (2020), "Co valence transformation in isopolar LaCoO3/LaTiO3 perovskite heterostructures via interfacial engineering", Phys. Rev. Mater. 4, 026001

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89. Kavita Yadav, Mohit K. Sharma, Sanjay Singh & K. Mukherjee (2019). 'Exotic magnetic behaviour and evidence of cluster glass and Griffiths like phase in Heusler alloys Fe2-xMnxCrAl ($0 \leq x \leq 1$)'. Scientific Report 15888.

90. K.K.Dubey, P.Devi, Anupam K.Singh, Sanjay Singh (2020). 'Improved crystallographic compatibility and magnetocaloric reversibility in Pt substituted Ni2Mn1.4In0.6 magnetic shape memoryHeusler alloy'. Journal of Magnetism and Magnetic Materials 507, 166818.

10. Number of Conference Papers: 19

11. Honours and awards to faculty members

S. No.	Name of Faculty Member	Details of Award
1	Prof. Pralay Maiti	Tata Innovation Fellowship by DBT

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 29

13. Names of students/scholars who got prizes and awards outside the Institute

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1.	Shweta Kumari (M.Tech.)	18112015	Best poster presentation Award	February 27-29, 2020, Central University of South Bihar, Gaya, Bihar, India	Organizers-National conference on Advance Materials and Nuclear Sciences (AMNS-2020)
2.	Somesh Sunil Jaiswal (IDD)	15114006	Impact Challenge of Energy and Environmental Sustainability (Winner Oral Presentation)	February 15-18, 2019, Harvard University, USA	Organizers- HPAIR Harvard Conference
3.	Somesh Sunil Jaiswal (IDD)	15114006	Best Business Idea for Sustainable Energy Systems	August 30- September 03, 2019, Shanghai, China	Organizers - Global Entrepreneurship Summer Summit 2019
4.	Shweta Kumari (M.Tech.)	18112015	Prime Minister Research Fellowship for PhD	December 2019	Government of India

14. Number of Students/Scholars who went for foreign Internship: 13

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members: 04

S. No.	Coordinator	Title	Period
1	Ashish Kumar Mishra (Convener)	QIP-short term course on Nanomaterials: Synthesis, Characterization and Applications	July 01-06, 2019
2	Akhilesh Kumar Singh	AICTE QIP-STC on Materials Characterization for Engineers	17-Jun-2019 - 22-Jun-2019
3	Dr.(Mrs.) Chandana Rath	QIP-STC Radiation effect in Materials and their Characterization through Advanced Techniques	07-12 October, 2019
4	Dr. Chandan Upadhyay	QIP-STC on "Materials Characterization for Engineers"	17-Jun-2019 - 21-Jun-2019

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 15

17. Number of Special lectures delivered by faculty members in other institutions: 18

18. Number of Visits abroad by faculty members for conference/symposia: 06

19. Fellowships of academic and professional societies

S. No.	Name of Faculty Member	Details of Fellowship
1	Dr. A. K. Singh	Joint Secretary of the Indian Crystallographic Association (ICA) for the period 2019-2022.
2	Prof. Pralay Maiti	Fellow of West Bengal Academy of Science and Technology
3	Dr. Chandana Rath	Council Member of MRSI, India 2019-2022

20. Editorial boards of journals

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. Rajiv Prakash	**Editor-in-Chief** of **Frontiers in Sensors** (FS), Science and Engineering Publ. Company, USA. **ISSN Print: 2327-7297** In Editorial Board German Journal of Materials Engineering (GJME) **Editorial Board,Biosensors Journal,** OMICS International Journals.	Frontiers in Sensors (FS) German Journal of Materials Engineering Biosensors Journal
2	Prof. Pralay Maiti	Associate Editor Editorial Board member	Signal Transduction and Targeted Therapy; Springet Nature MedComm; Wiley

21. Faculty members' participation with other universities under MoUs

Dr. Bhola Nath Pal, Ming Chi University of Technology, Taiwan

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

1. Gopal Ji, Shadma Anjum, Shanthi Sundaram, Rajiv Prakash (2015), Musa paradisica peel extract as green corrosion inhibitor for mild steel in HCl solution, *Corrosion Science,* 90, 2015, p 107-117
2. Sudipta Senapati, Mahanta Arun Kumar, Kumar Sunil, Maiti Pralay (2018), Controlled drug delivery vehicles for cancer treatment and their performance, *Signal Transduction and Targeted Therapy* (2018) 3:7
3. Sudipta Senapati, Ravi Thakur, Shiv Prakash Verma, Shivali Duggal, Durga Prasad Mishra, Parimal Das, T Shripathi, Mohan Kumar, Dipak Rana, Pralay Maiti (2016), Layered double hydroxides as effective carrier for anticancer drugs and tailoring of release rate through interlayer anions, *Journal of Controlled Release* 224 (2016) 186–198
4. Low cost aqueous extract of Pisum sativum peels for inhibition of mild steel corrosion M Srivastava, P Tiwari, SK Srivastava, A Kumar, G Ji, R Prakash Journal of Molecular Liquids 254, 357-368
5. AK Mahanta, V Mittal, N Singh, D Dash, S Malik, M Kumar, P Maiti, Polyurethane-grafted chitosan as new biomaterials for controlled drug delivery Macromolecules 48 (8), 2015, 2654-2666

23. Distinguished Visitors

24. Other activities

International collaboration/achievements by the Department/School:

- Kyushu Inst. of Tech, (Japan)
- Univ. of Girona (Spain)
- KAIST (S. Korea)
- Univ. Appl. Sci. (Russelsheim, Germany)
- Universität Mainz (Germany)
- Max Planck Institute for Chemical Physics of Solids, Dresden (Germany)
- Institute of Laue Langevin , Grenoble (France)
- Technical University of Munich (Germany)
- Max Planck Institute for Iron Research, Düsseldorf (Germany)
- Technical University Dresden (Germany)
- IMEM-CNR, Parma (Italy)
- Institute of Physics, Praha (Czech Republic)
- European Synchrotron Radiation Facility, Grenoble (France)
- Ming Chi University of Technology (Taiwan)

21. Department of Chemistry

Year of Establishment: 1985

Head of the Department: Prof. Dhanesh Tiwary (w.e.f. 10th May, 2018)

1. Introduction of the Department/School:

The Department of Chemistry, IIT-BHU, previously known as Department of Applied Chemistry (Institute of Technology), was established in the year of 1985. Earlier this Department was functioning as a Section in the School of Basic Sciences in Banaras Hindu University-Varanasi. This Department currently constitutes 15 faculty members including 07 Professors, 1 Institute professor, 3 Associate Professors and 4 Assistant Professors. The prime responsibility of the department is to organize the teaching of chemistry courses in various B. Tech and integrated M. Tech programs. In addition, this department is also providing an excellent research platform to the students in various thrust areas of chemistry.

The Department of Chemistry offers a five-year Dual Degree M. Tech program in Industrial Chemistry and Ph. D programs in Organic, Inorganic, Physical and Analytical chemistry. More than 100 PhD's have been awarded from this department and about 50 students are currently pursuing their research. Research programs in the department have been supported by DST, CSIR, BRNS, UGC and AICTE. The department has received 85 lakhs from DST-FIST for the establishment of research and teaching facilities. The department is presently equipped with primary instruments including AAS, AFM, LC MS & GC MS, UV-Vis spectrophotometers, FTIR, and powder-XRD, Particle size analyser, NMR, etc.

Major areas of Research:

Computational Chemistry, Nanoparticles for adsorption and catalytic applications; Composite materials Organic synthesis, Carbohydrate chemistry; Photocatalytic digradatation Corrosion Inhibitors, Ant wear/Extreme Pressure Lubricant Additives, Sensors, Energy materials.

2. Academic Programmes offered and Students on Roll

M Sc Degree ?

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	Dual Degree	14	10	18	16	14
2.	Ph. D (Under Institute Fellowship)	48 Fellowships				
3.	Ph. D (Under Project Fellowship)	17 (Project: 01 + UGC: 07 + CSIR: 09 Fellowships)				

3. Faculty and their areas of specialisation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Rashmi Bala Rastogi	1979	Coordination Chemistry, Corrosion Inhibitors, Antiwear /Extreme Pressure Lubricant Additives
2	Prof. P. C. Pandey	1986	Sensors Technology, bioelectrochemistry, Organically modified silicate based Nanomaterial and optoelectrochemistry
3	Prof. S. H. Hasan	1989	Nanomaterials, Nuclear Materials, Water Remediation
4	Prof. V. Srivastava	1985	Synthetic Organic and Green Chemistry
5	Prof. Y. C. Sharma	1984-1991	Renewable Energy and Bio-fuels, Development and characterization of heterogenous catalysts, Synthesis and application of nanoadsorbents, Macrophytes for Uptake of Metallic Species from industrial effluents.

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
6	Prof. Dhanesh Tiwary	1992	Bioremediation, composites for photoderadation, Development of surface functionalized iron oxide and mesoporous silica
7	Prof. K. D. Mandal	1989	Electro -Ceramics, Nano-materials, Materials Chemistry, Solid State Chemistry
ASSOCIATE PROFESSORS			
1	Dr. Sundaram Singh	1994-1999	Synthetic Organic Chemistry, Microwave Assisted Organic Synthesis
2	Dr. Indrajit Sinha	2000	Chemistry of nanomaterials and Computational Chemistry
3	Dr. Jeyakumar Kandasamy	31 July 2008	Organic Synthesis, Carbohydrate Chemistry
ASSISTANT PROFESSORS			
1	Dr. Manisha Malviya	2008	Synthesis of Metal oxide nanoparticles, renewable energy, photo electrochemistry, bio electrochemistry, alkaline fuel cell
2	Dr. Asha Gupta	2010	Energy Storage devices (Lithium-ion, Sodium Ion battery, Supercapacitors), Heterogeneous Catalysis, Electrochemistry, Photocatalysis, Catalyst for green and renewable energy, First-Principles Density Functional Calculations
3	Dr. Arindam Indra	18th August 2012	Artificial photosynthesis, Bioinspired energy conversion, Metal Organic Framework (MOF) derived catalysts for the water splitting, Photocatalytic organic reaction, Catalysis, Energy Conversion
4	Dr. V. Ramanathan	July 2003 - Aug 2008	Laser Spectroscopy, Raman Spectroscopy and Imaging, Computational chemistry
Institute Professors			
1	Prof. Rashmi Bala Rastogi	1979	Coordination Chemistry, Corrosion Inhibitors, Antiwear /Extreme Pressure Lubricant Additives

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Mr. Param Hans Ram, B.Sc.(Hons) & LLB	Technical Superintendent	15.12.2008
2	Mr. Prakash Narayan Pandey, Post Graduate	Technical Superintendent	22.12.1990
3	Mr. Sundip Kumar, Intermediate (Science)	Jr. Tech. Superintendent	26.02.2007
4	Mr. Rajesh Kumar, Intermediate (Science)	Senior Technician	06.08.2008
5	Mr. Jagdish Kumar, B.Sc.(Hons)	Senior Technician	06.08.2008
6	Mr. Pooran Singh Rana, Intermediate (Science)	Senior Technician	25.07.2014
7	Mr. Chhote Lal, High School	Senior Technician	25.07.2014
8	Ms. Anshu Kaushal, M.Sc. (Computer Science)	Junior Assistant	20.05.2017
9	Mr. Rambish Gond, M.A (Sociology)	Junior Assistant	07.06.2017
10	Mr. Lakhan Chand Jana, (9th Pass)	Ex. Peon	24.06.2000
11	Mr. Amit Anand Singh, M. Lib. I. Sc.	Care Taker Cum-Clerk	02.08.2017
12	Mr. Niraj Kumar, Intermediate	MTS	19.01.2017

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Development of portable electrochemical sensors for hydrogen peroxide (H_2O_2)	2017-2020	BRNS	Rs. 35.00 Lakh	Prof. P. C. Pandey
2	Metal Hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides	2019	DRDO	Rs. 44.00 Lakh	Prof. P. C. Pandey Prof. Y. C. Sharma
3	Development of screen printed electrodes for caesium (Cs) ion removal	2018-2021	DRDO	Rs. 50.00 Lakh	Prof. P. C. Pandey
4	"Photolabile Protected Monosaccharides: Synthesis and Application to Oligosaccharides Synthesis Using a Continuous Flow Photo reactor	2016-2019	Indo-German DST-MPI	Rs. 95.00 Lakh	Dr. Jeyakumar Kandasamy
5	Evaluation and optimization of biodiesel production from microalgae(PI)	2019	DST	Rs 61 lakh	Prof. Y.C. Sharma
6	Metal hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides (Co-PI)	2018-2021	DRDO	Rs 43 Lakh	Prof. Y.C. Sharma
7	Quick revision of the Model Curriculum in Undergraduate Engineering courses-Detailed lecture based Curriculum development for Science subjects as part of Induction Programme in AICTE colleges	June 2017 continuing	AICTE	Rs. 11.52 Lakh	Principal Investigator
8	Noble multimetallics/ZnO photocatalysts for hydrogen production from green sources	June 2019 continuing	AICTE TEQIP-CRS scheme	Rs. 13.00 Lakh	Mentor and Co-investigator
9	Development of magnetically recyclable visible light photocatalysts for H_2O_2 production.	23rd Aug. 2019 onwards	Sanction Letter No. 58/14/18/2019-BRNS	Rs. 34.05 Lakh	Principal Investigator
10	Development of Transition Metal Based Nanocatalysts for Bio-inspired Water Oxidation	2019-2022	CSIR	Rs. 16,00,000	Dr. Arindam Indra
11	Promoting Water Oxidation Reaction with Electrochemically Synthesized Ultrathin Layered Double Hydroxide Nanosheets	2019-2021	DST-SERB	Rs. 26,51,000	Dr. Arindam Indra

Industrial consultancy projects: Nil

6. New facilities added

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Prof. P. C. Pandey, (Fluid Dispensing Technology)	Rs. 25 lakhs
2	Dr. Jeyakumar Kandasamy ,Gas Chromatography (GC) and Liquid Chromatography (LC)-Mass Spectrometry	Rs. 01 Lakhs 20 Thousand
3	785 nm Raman spectrometer (bech-top)	Rs. 12 Lakhs

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
4	Autolab PGSTAT 204:potentiostat/galvanostat with a compliance voltage of 20 V and a maximum current of 400 mA with electrochemical glass cell for measuring and characterizing electrochemical activities such as Cyclic voltametery, Chronoamperometry, Chrornopotentiometry	Rs. 5 lakhs (using Seed Grants)

7. Patents filed

S. No.	Name of Faculty Member	Title of Patent
1.	Prof. Yogesh Chandra Sharma	A solar energy operated vertical photobioreacto for culture of autotrophic microorganisms
2.	Prof. P. C. Pandey	Indian Patent 201911004218
		Indian Patent 201911004219
		Indian Patent 201911016184
		Indian Patent 201911021365
		Indian Patent 201931021659.
		Indian Patent **201911029351**
		Indian Patent 201911042984
		Indian Patent 201911048932
		Indian Patent 201911053517
		Indian Patent 202011000038
		Indian Patent 202011000218
		Indian Patent 202011014527

8. Books, monographs authored/co-authored

S. No.	Name of Author/Co- Author	Title	Publisher
1	Akhilendra Pratap Singh, Yogesh Chandra Sharma, Nirendra N. Mustafi, Avinash Kumar, Agarwal	Alternative Fuels and their Utilization Strategies in Internal Combustion Engines	Singapore Nature, Singapore Pte Ltd., 2020.
2	Dhanesh Tiwari, P. Singh, A. Borthakur PRMDT	Nona Material as Photo catalysts for degradation of Environmental Pollutants.	ISBN: 9780128185 985, Elsevier.
3	Dr. Sundaram Singh	One-Pot-Condensation Reaction of Heterocyclic Amine, 1,3-Diketone and Aldehydes Using In Situ Generated Superoxide Ion: A Rapid Synthesis of Structurally Diverse Drug-Like Complex Heterocycles	
4	Dr. Indrajit Sinha	Nano catalysts	Published: July 31st 2019 ISBN: 978-1-78984-160-2 Print ISBN: 978-1-78984-159-6 eBook (PDF) ISBN: 978-1-78985-046-8, Copyright year: 2019
5	Dr. Indrajit Sinha and Arup Kumar De	"An overview of synthesis techniques for preparing doped Photo catalysts", Chapter 1 in book entitled "Nano-Materials as Photo catalysts for Degradation of Environmental Pollutants Challenges and Possibilities"	**Imprint:** Elsevier, **Published Date:** 2nd December 2019. **Paperback ISBN:** 9780128185988 DOI: 10.1016/B978-0-12-818598-8.00001-8

S. No.	Name of Author/Co- Author	Title	Publisher
6	Alkadevi Verma, Madhulata Shukla and Dr.Indrajit Sinha*	In book entitled: Nano catalysts Chapter 1. Salient Features of Nano catalysis	Publisher: Intech Open https://www.intechopen.com/books/nanocatalysts/introductory-chapter-salient-features-of-nanocatalysis July 31st 2019 DOI:10.5772/intechopen.86209
7.	Arindam Indra	Bifunctional Nano catalysts for water splitting and its challenges	Elsevier

9. Research Publication

1. Kumar, Bharat; Verma, Dinesh K.; Singh, Alok K.; Kavita, Shukla, Nivedita and Rastogi, Rashmi B. "Nanohybrid Cu@C: synthesis, characterization and application in enhancement of lubricity" Composite Interfaces, 2019, https://doi.org/10.1080/09276440.2019.1697134.
2. Kumar, Bharat; Kuntail, Jyoti; Verma, Dinesh K.; Sinha, Indrajit and Rastogi, Rashmi B. *; "Mechanism of triboactivity of Schiff bases: Experimental and molecular dynamics simulations studies", Journal of Molecular Liquids 2019, 289, DOI: 10.1016/j.molliq.2019.111171.
3. Kumar, Bharat; Verma, Dinesh K.; Shukla Nivedita, Singh Alok K. and Rastogi, Rashmi B.; "Ionic liquid stabilized Ag@C composite for improvement of triboactivity" Journal of Molecular Liquids 2020, 113012.
4. Kavita, Verma, Pratibha; Verma, Dinesh K.;Kumar, Bharat; Shukla ,Nivedita; Srivastava, Vandana and Rastogi Rashmi B.; "Tetrahydropyrazolopyridines as antifriction and antiwear agents: experimental and DFTcalculations" RSC Advances 2020,10(17), 10188-10196.
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72. A Facile Synthesis of Green-Blue Carbon Dots from Artocarpuslakoocha Seeds and Their Application for the Detection of Iron (III) in Biological Fluids and Cellular Imaging. Yadav, P. K., Singh, V. K., Kumar, C., Chandra, S., Jit, S., Singh, S. K., & Syed Hadi Hasan., Volume 42, Chemistry select, 1.7, SCIE.

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2. Tiwari, V.; Badavath, V. N.; Singh, A. K.; Kandasamy, J* (2020) Synthesis of photolabile group protected anomeric acetals and its application in carbohydrate synthesis with the assistance of continuous flow photo-reactor. J. Indian Chem. Soc., 97, 227-236.
3. V. Ramanathan and L. Keseven (2019) Raman Spectroscopy in Forensic Analysis of Blue Gel Inks on Paper PINSA 85(3) 613.

10. Number of Conference Papers: 21

11. Honours and awards to faculty members

S. No.	Name of Faculty Member	Details of Award
1	Prof. Yogesh Chandra Sharma	Chief Guest and Keynote Speaker in One Day Programme on "Project Proposal: Process and Preparation" on 25 September 2019
		Top 1% highest cited author of American Chemical Society (ACS) 2015-2019
		Top downloaded paper 2018-2019 in Biofuels, Bioproducts and Biorefining, Wiley
2	Prof. K. D. Mandal	Fellow of Royal society of Chemistry (FRSC)

S. No.	Name of Faculty Member	Details of Award
3	Prof. P C Pandey	CALCIUM ION-SENSOR COMPRISING IONOPHORE/CARRIER ION -FREE POLYINDOLE-CAMPHOR SULPHONIC ACID COMPOSITE, Indian Patent, 317867
		A process for the generation of noble metal nanoparticles and thereafter core shell of the same, Indian Patent 331496
4	Dr. Indrajit Sinha	**Invited talk** entitled **"Computational Studies on Adsorption and Catalysis"** in Department of Chemistry, University of Porto, Porto, Portugal on 12th June 2019.
		Resource person/expert talk entitled **"Writing a Research Paper – the Journey",** for Faculty development programme on "Communication for Educators" held at TLC, IIT (BHU) from July 15-19, 2019.
		Resource person/expert talk entitled **"Citing Sources and Finding Proper Journal for Getting Your Research Published",** for Workshop on Research Writing and Publishing organized by TLC, IIT (BHU) from 26-28 September 2019.
		Resource person/expert talk entitled **"Publishing Strategies",** for AICTE QIP-STC organized by IIT (BHU) on 3rd December 2019.
		Resource person/expert talk entitled **"Publishing Strategies", in** FDP on "Research Writing, Publishing, and Presentation" at IIT (BHU) Varanasi on 6th February 2020.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 10

13. Names of students/scholars who got prizes and awards outside the Institute*: Nil*

14. Number of Students/Scholars who went for foreign Internship: 5

S. No.	Name of Student	Roll No.	Name of the Organization	Place of Internship	Country	Duration
1	Atri Kumar Patel	17053005	National Pingtung University of Science and Technology, Taiwan.	, Taiwan.	Taiwan	15 May to 02 Aug. 2019
2	Patil Mohit Pravinchandra	16053012	Institute of Nanosciences of Paris, France	Paris, France	France	12 May to 25 July 2019
3	Wrig Prajapati	16053018	Chemnitz University of Technology, Germany	Germany.	Germany	14 May to 18 July 2019
4	Sourav Majumadar	15053011	University of Lorraine, France, LPCT Lab.	France, LPCT Lab.	France	09 May to 25 July 2019
5	Vaidyula Rinish Reddy	15053013	University of Claud Bernard Lyon-1, France	Bernard Lyon-1, France	France	09 May to 23 July 2019

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

S. No.	Cordinator	Title	Period
1	Dr. V. Ramanathan (one of the members in the organizing team)	NatFoS19 (National Symposium on Frontier of Science 2019)	Nov 6-8, 2019 at Samodh Bagh, near Jaipur Rajasthan funded by the Principal Scientific Advisor, GoI

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 04

17. Number of Special lectures delivered by faculty members in other institutions: 09

18. Number of Visits abroad by faculty members for conference/symposia: 05

19. Fellowships of academic and professional societies

S. No.	Name of Faculty Member	Details of Fellowship
1	Prof. Yogesh Chandra Sharma	Elected Fellow, International Association of Physical Sciences, 2019.
2	Dr. V. Ramanathan	Indian National Young Academy of Science (part of INSA) fellow

20. Editorial boards of journals

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. Yogesh Chandra Sharma	Associate Editor, SADHNA, Indian Academy of Sciences	International Journal, Springer
		Energy Conversion and Management, Editorial Board Member,	International Journal, Elsevier
		Indian Journal of Chemical Technology, NISCAIR	National/International NISCAIR
2	Dr. V. Ramanathan	Guest Editor	Proceedings of Indian National Science Academy

21. Faculty members' participation with other universities under MoUs

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

23. Distinguished Visitors

24. Other activities

1. International Collaboration between IIT (BHU) and University of North Carolina, USA. Professor Roger Narayan of UNC has been appointed as Vajara faculty.
2. Was invited as the "Guest of Honour" to share dais with Sri Yogi Adityanath on the occasion of the Golden Jubilee celebration in Aug 2019.
3. Prepared online lectures in the topic History of Chemistry in India for the UGC MOOC course coordinated by JNU (Coordinator Dr. Madhav Gobind of JNU).

22. Department of Mathematical Sciences

Year of Establishment: 1985

Head/Coordinator of the Department: Prof. Tanmoy Som (w.e.f. 04 November 2018)

1. Introduction of the Department/School:

Department of Mathematical Sciences began its journey in the year 1968 as a section to assist engineering departments of the institute which, in the true sense, pioneered engineering education in the nation. It soon acquired the status of a full-fledged department in 1985. The department caters to the needs of the undergraduate as well as post-graduate students of the Institute. It runs a five years' Integrated Dual Degree program in Mathematics & Computing since 2005. This is one of the most sought courses offered by the institute. The top jobs in terms of the annual package by reputed MNCs are offered to the students for this course which indicates the popularity and usefulness of the course for the industrial growth in general and software industry, in particular, under present circumstances.

The department aims to emphasize research in analysis, algebra, topology, mathematical modelling, and other applied areas of mathematics. Be it functional analysis, algebra, numerical optimization**,** harmonic analysis, fracture mechanics, solid mechanics, fluid dynamics, heat and mass transfer, biomathematics, digital image processing, graph theory, parallel computing, queuing theory and many more fields of applied nature, the department's contribution is enormous in terms of numerous research papers published in reputed international journals over the past few decades. Computing is the glamour of the department. It annexes several dimensions in terms of new and growing areas of research and further facilitates the simulation of mathematical models constructed for interdisciplinary areas.

Major areas of Research

Functional Analysis, Fuzzy & Rough Set Theory, Soft Computing, Fuzzy Topology, Heat and Mass Transfer, Mathematical Modelling, Nonlinear Waves, Nonlinear Dynamics, Pseudo-Differential Operators, Wavelet Analysis and Distribution Theory, Fractional Calculus, Numerical analysis, Parallel Computing, Theoretical & Numerical Optimization, Harmonic analysis, Differential geometry, Mathematical modeling on Solid Mechanics, Fracture Mechanics, Coupled Thermomechanics, Bio-Transport Processes, Biomechanics, Free Boundary Problems, Fluid dynamics, Image Processing, Graph Theory and Network Sciences, Queuing theory.

2. Academic Programmes offered and Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	Dual Degree	48	23	22	22	22
2.	Ph. D (Under Institute Fellowship)	14	19	3	5	0
3.	Ph. D (Under Project Fellowship)	3	1	0	1	0
4.	Ph. D (Under External Fellowship)	9	24	20	12	0
5.	Ph. D (Part time)	3	1	1	0	0

3. Faculty and their areas of specialisation

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Tanmoy Som, Ph. D. Emp. No. 18386	1986	Functional Analysis, Mathematical Modelling, Soft Computing using Fuzzy-Rough Set Theory
2	R Srivastava, Ph.D. Emp. No.13662	1984	Fuzzy Topology

S. No.	Name, Qualifications, Employee No.	Date of award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
3	L P Singh, Ph.D. Emp. No.17162	1987	Nonlinear Waves in Gasdynamics, Hyperbolic PDEs, Computational Fluid Dynamics
4	S K Pandey, Ph.D., Emp. No. 17315	1998	Bio-Mechanics, Fluid Mechanics (Atmospheric vortex dynamics), Digital image processing
5	S Mukhopadhyay, Ph.D., Emp. No. 17180	1998	Mathematical Modelling on Coupled Thermomechanical problems, Non-Fourier Heat Conduction, Fractional order Thermoelasticity.
6	Subir Das, Ph.D. Emp. No.18373	1999	Fracture Mechanics, Mathematical Modelling, Nonlinear Dynamics
7	S K Upadhyay, Ph.D. Emp. No 18409	1993	Wavelet Analysis, Distribution Theory, Pseudo-Differential Operator
8	Murali Krishna Vemuri, Ph.D. Emp. No.50167	1997	Harmonic Analysis, Differential Geometry.
ASSOCIATE PROFESSORS			
1	Ashok Ji Gupta, Ph.D. Emp. No17179	2003	Theory of Rings and Modules
2	Rajeev, Ph.D. Emp. No. 17745	2009	Moving Boundary Problems
3	Vineet Kumar Singh, Ph.D. Emp. No.19772	2009	Numerical Methods for integral and Differential Equations, Wavelets, Operational Matrix Schemes
4	Rajesh Kumar Pandey, Ph.D Emp. No.19846	2009	Numerical Methods for Integro-differential equations; Image Processing
ASSISTANT PROFESSORS			
1	Anuradha Banerjee, Ph.D. Emp. No. 19773	2012	Stochastic Modelling in Queuing Theory
2	Sunil Kumar, Ph.D. Emp. No. 50069	2012	Numerical analysis, Image Processing, Parallel computing
3	Debdas Ghosh, Ph.D Emp. No.50068	2014	Convex Optimization, Numerical Optimization, Optimization under Uncertainty
4	Lavanya Selvaganesh, PhD, Emp. No. 50070	2008	Graph Theory, Network Sciences, Analysis of Complex Networks
Institute Professors			
1	K. N. Rai, Ph.D. (Jan - June 2019)	1974	Mathematical Modelling, Bio-heat Transfer
Emeritus Professors			
1	K. N. Rai, Ph.D. (July - Dec 2019)	1974	Mathematical Modelling, Bio-heat Transfer
2	Shri Ram, Ph.D. (July - Dec 2019)	1974	Cosmology, General Relativity

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Shri. Som Deo Keshari B.Com (Hons), M.Lib.I.Sc.	Junior Assistant	24.05.2017
2	Shri. Anil Kumar Mishra B.A.	Junior Technical Superintendent	19.02.2007
3	Dr. Piush Kumar Singh Ph.D.(Mathematics)	Senior Tech.	06.08.2008
4	Shri. Amod Kumar Patel B.Tech (Mechanical)	Office Assistant	30.05.2014
5	Pintu Kumar Mahto	MTS	13.04.2018

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	**Co- ordinator**
1	Study and Analysis of Mathematical Models of Moving Boundary Problems	Feb 2019 to Feb 2022	SERB, India	22.44	Rajeev
2	Approximation Methods For Problems In Fractional Calculus Of Variations	2019-2022	SERB, India	21.56	Rajesh Kumar Pandey
3	Robust Adaptive Mesh Methods for Singularly Perturbed Problems in Ordinary and Partial Differential Equations	2018-2021	SERB, India	20.95	Sunil Kumar
4.	Schwarz Waveform Relaxation Methods for Singularly Perturbed Parabolic Problems	2018-2021	SERB, India	6.60	Sunil Kumar
5	Applications of Spectral Graph Theory in Analyzing the Structural Properties of Large Scale Networks	March 2019 - March 2022	SERB, India	6.60	Lavanya Selvaganesh
6	On Characterizing and Obtaining the Complete Efficient Solution Set of an Interval Optimization Problem under a D-Dominance and a Variable Dominance Structure	Dec 2016 - Nov 2019	SERB, India	15.02	Debdas Ghosh

6. New facilities added

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Podium in Seminar Hall	1.98
2	LED presentation facility in Class room	0.55 (approx)

7. Patents filed: Nil

8. Books, monographs authored/co-authored

S. No.	**Name of Author/Co- Author**	**Title**	**Publisher**
1	S. Das and Anuwedita Singh	Interfacial crack in composite media	Springer Publication (Editor Holm Altenbach and Andreas Öchsner)
2	Debdas Ghosh, Debjani Chakraborty	An Introduction to Analytical Fuzzy Plane Geometry	Springer

9. Research Publication

1. Avinash Dixit, DR Sahu, Amit Kumar Singh and T Som (2019), Application of a new accelerated algorithm to regression problems, Soft Computing, 24(2):1539-1552.
2. Anoop Kumar Tiwari, Shivam Shreevastava, K Subbiah, Tanmoy Som (2019), An intuitionistic fuzzy-rough set model and its application to feature selection, Journal of Intelligent and Fuzzy Systems, 36(5): 4969-4979.
3. Shivani Singh, Shivam Shreevastava, Tanmoy Som and Gaurav Somani, (2019), A fuzzy similarity-based rough set approach for attribute selection in set-valued information systems, Soft Computing, 24(6): 4675-4691
4. Pankhuri Jain, Anoop Kumar Tiwari and Tanmoy Som (2020), A fitting model based intuitionistic fuzzy rough feature selection, Engineering Applications of Artificial Intelligence, 89.
2. Rahul Kumar Chaturvedi, Pooja Gupta, L.P. Singh (2019), Solution of generalized Riemann problem for hyperbolic p−system with damping, International Journal of Non-Linear Mechanics, 117(10): 1-4.
3. Rahul Kumar Chaturvedi, Shobhit Kumar Srivastava, L.P. Singh (2019), Evolution of acceleration waves in non-ideal radiative magnetogasdynamics, The European Physical Journal Plus, 134(11): 564-574.
4. Pooja Gupta, Rahul Kumar Chaturvedi, L.P. Singh (2020), The propagation of weak shock waves in non-ideal gas flow with radiation, The European Physical Journal Plus, 135(1): 17-31.
5. Rahul Kumar Chaturvedi, Shobhit Kumar Srivastava, L.P. Singh (2020), Effect of solid dust particles on the propagation of shock wave in planar and non-planar gasdynamics, Chinese Journal of Physics, 65(3): 114-122.
6. Pooja Gupta, Rahul Kumar Chaturvedi, L.P. Singh (2020), The generalized Riemann problem for the Chaplygin gas equation, European Journal of Mechanics - B/Fluids, 82(4):61-65.
7. Shobhit Kumar Srivastava, Rahul Kumar Chaturvedi and L. P. Singh (2020), On the evolution of finite and small amplitude waves in non-ideal gas with dust particles, Physica Scripta, Article in Press.
8. Tiwari Harshita and Srivastava Rekha (2019) A characterization of the category FCS. Soft Computing 23: 13001-13005
9. Tiwari Harshita and Srivastava Rekha (2019) Exponential Q- topological spaces, Fuzzy Sets and Systems. https://doi.org /10.1016 / j.fss.2019.11.012
10. S.K. Pandey, M.K. Chaube , Dharmendra Tripathi (2019), Corrigendum to "Peristaltic transport of multilayered power-law fluids with distinct viscosities: A mathematical model for intestinal flows", Journal of Theoretical Biology, 470: 11-19.
11. Sanjay Kumar Pandey and Amirlal Singh (2019) , Peristaltic transport of Herschel–Bulkley fluids in tubes of variable cross section induced by dilating peristaltic waves: application to sliding hiatus hernia, International Journal of Dynamics and Control, 7: 407-418.
12. Sanjay Kumar Pandey and Jagdish Prasad Maurya (2020), "A general viscous model for some aspects of tropical cyclonic winds", Zeitschrift für Naturforschung A, 75(4):301-315.
13. Sanjay Kumar Pandey and Amirlal Singh (2020), "Peristaltic transport in an elastic tube under the influence of dilating forcing amplitudes", International Journal of Biomathematics, Accepted. doi/10.1142/S1793524520500278.
14. Manushi Gupta, Santwana Mukhopadhyay (2019), Stochastic thermoelastic interaction under a dual phase-lag model due to random temperature distribution at the boundary of a half-space, Mathematics and Mechanics of Solids, 24(6): 1873-1892.
15. Shashi Kant, Santwana Mukhopadhyay (2019), An investigation on responses of thermoelastic interactions in a generalized thermoelasticity with memory-dependent derivatives inside a thick plate, Mathematics and Mechanics of Solids, 24(8): 2392-2409.
16. Om Namha Shivay, Santwana Mukhopadhyay (2019), Some basic theorems on a recent model of linear thermoelasticity for a homogeneous and isotropic medium, Mathematics and Mechanics of Solids, 24(8): 2444-2457.
17. Harendra Kumar, Santwana Mukhopadhyay (2019), Analysis of the quality factor of micro-beam resonators based on heat conduction model with a single delay term, Journal of Thermal Stresses, 42(8): 929-942.

18. Manushi Gupta, Santwana Mukhopadhyay (2019), A study on generalized thermoelasticity theory based on non-local heat conduction model with dual-phase-lag, Journal of Thermal Stresses, 49(2):1123-1135.
19. Manushi Gupta, Santwana Mukhopadhyay (2019), Galerkin-type solution for the theory of strain and temperature rate-dependent thermoelasticity, Acta Mechanica, 230(10): 3633-3643.
20. Om Namha Shivay, Santwana Mukhopadhyay (2019), On the Temperature-Rate Dependent Two-Temperature Thermoelasticity Theory, ASME Journal of Heat Transfer, 142(2).
21. Harendra Kumar, Santwana Mukhopadhyay (2019), Thermoelastic damping analysis for size-dependent microplate resonators utilizing the modified couple stress theory and the three-phase-lag heat conduction model, I*nternational Journal of Heat and Mass Transfer, 148.*
22. Harendra Kumar, Santwana Mukhopadhyay (2019), Thermoelastic damping in micro and nano-mechanical resonators utilizing entropy generation approach and heat conduction model with a single delay term, *International Journal of Mechanical Sciences*(Available online 21 November 2019), 165.
23. Bhagwan Singh, Manushi Gupta and Santwana Mukhopadhyay (2020), On the fundamental solutions for the strain and temperature rate-dependent generalized thermoelasticity theory, The Journal of Thermal Stresses, Accepted in February,2020.
24. Harendra Kumar, Santwana Mukhopadhyay(2020), Thermoelastic damping analysis in micro-beam resonators based on Moore-Gibson-Thompson generalized thermoelasticity theory, Acta Mechanica, Accepted in March, 2020
25. Manushi Gupta, Santwana Mukhopadhyay(2020), Analysis of harmonic plane wave propagation by strain and temperature rate-dependent thermoelastic model, Waves in Random and Complex Media, Accepted in March,2020.
26. Vijay K. Yadav, R. Kumar, A. Y. T. Leung and S. Das (2019), Dual phase and dual anti-phase synchronization of fractional order chaotic systems in real and complex variables with uncertainties, Chinese J. of Physics, 57: 282-308.
27. A. Singh, S. Das, H. Altenbach and E.–M. Craciun (2019), Semi-infinite moving crack in an orthotropic strip sandwiched between two identical half planes, Jour. Appl. Math. Mech. 100(2).
28. S Jaiswal, M Chopra, S Das (2019), Numerical Solution of Non-linear Partial Differential Equation for Porous Media using Operational Matrices, Numerical Solution of Non-linear Partial Differential Equation for Porous Media using Operational Matrices, 160:138-154.
29. Anup Singh, Subir Das, Siew Hui Ong, Hossein Jafari (2019), Numerical solution of nonlinear reaction-advection-diffusion equation, Journal of Computational and Nonlinear Dynamics, 14(4).
30. Anup Singh, M. Chopra and S. Das (2019), Study and analysis of a two-dimensional non-conservative fractional order aerosol transport equation, Mathematical Methods in the Applied Sciences, 42(9): 2939-2948.
31. Kushal Dhar Dwivedi, Subir Das (2019), Fibonacci Collocation Method to Solve Two-dimensional Nonlinear Fractional Order Advection-Reaction Diffusion Equation, Special Topics & Reviews in Porous Media, 10(6):569-584.
32. Prashant Pandey, Sachin Kumar & Subir Das (2019), Approximate analytical solution for coupled fractional order reaction-advection-diffusion equation, The European Physical Journal Plus, 134(7) articlno. 364.
33. Kushal Dhar Dwivedi, S Das(2019) , Numerical solution of the nonlinear diffusion equation by using non-standard/ standard finite difference and Fibonacci collocation methods, The European Physical Journal Plus, 134(12).
34. Sachin Kumar, Prashant Pandey, Subir Das (2019), Gegenbauer wavelet operational matrix method for solving variable-order non-linear reaction–diffusion and Galilei invariant advection–diffusion equations, Computational and Applied Mathematics, 38(4).
35. Prashant Pandey, Sachin Kumar, Hossein Jafari, Subir Das(2019), An Operational Matrix for solving time-fractional order Cahn-Hilliard equation, Thermal Science, 23(6):2045-2052.
36. Anup Singh, Manish Chopra, Subir Das (2019), Study of one-dimensional space-time fractional order Burgers-Fisher and Burgers-Huxley fluid models, Mathematical Methods in the Applied Sciences, 1-14. https://doi.org/10.1002/mma.5955
37. Vijay K. Yadav, Vijay K. Shukla, Mayank Srivastava and Subir Das (2019), Dual Phase Synchronization of Chaotic Systems Using Nonlinear Observer Based Technique, Nonlinear Dynamics and Systems Theory, 19:209-216.

38. Rakesh Kumar, Shreemoyee Sarkar, Subir Das and Jinde Cao (2019), Projective Synchronization of Delayed Neural Networks With Mismatched Parameters and Impulsive Effects, IEEE transactions on neural networks and learning systems, 1-11.
39. Rakesh Kumar, Subir Das (2019) , Weak, modified and function projective synchronization of Cohen–Grossberg neural networks with mixed time-varying delays and parameter mismatch via matrix measure approach, Neural Computing and Applications, 1-12.
40. Rakesh Kumar, Subir Das, Yang Cao (2020), Effects of infinite occurrence of hybrid impulses with quasi-synchronization of parameter mismatched neural networks, Neural Networks, 122: 106-116.
41. Sanjeev Kumar Maurya and A J Gupta (2019), Characterization of rings using finite direct-injective modules, Asian European Journal of Mathematics, available online. doi.org/10.1142/S1793557120501338
42. A.Kumar, A.K.Singh, Rajeev (2020), A Stefan problem with temperature and time dependent thermal conductivity, Journal of King Saud University-Science, 32(1), 97-101.
43. A.Kumar, A.K.Singh, Rajeev (2020), A moving boundary problem with variable specific heat and thermal conductivity, Journal of King Saud University-Science, 32(1), 384-389.
44. Vinita Devi, Rahul Kumar Maurya, Vijay Kumar Patel, Vineet Kumar Singh (2019), Lagrange Operational Matrix Methods to Lane-Emden, Riccati's and Bessel's Equations, International Journal of Applied and Computational Mathematics (Special Issue), 11(1), 1717-1722.
45. Vinita Devi, Rahul Kumar Maurya, Somveer Singh, Vineet Kumar Singh (2020), Lagrange's operational approach for the approximate solution of two-dimensional hyperbolic telegraph equation subject to Dirichlet boundary conditions, Applied Mathematics and Computation, 367, article124717.
46. S. Yadav, R. K. Pandey, A. K. Shukla (2019), Numerical approximations of Atangana–Baleanu Caputo derivative and its application, Chaos Solitons & Fractals,118: 58-64.
47. S. Sharma, R. K. Pandey, K. Kumar (2019), Galerkin and Collocation Methods for Weakly Singular Fractional Integro-differential Equations, Iranian Journal of Science and Technology, Transactions A: Science, 43(4) (2019) 1649-1656.
48. H Singh, R. K. Pandey, H M Srivastava (2019), Solving Non-Linear Fractional Variational Problems Using Jacobi Polynomials, Mathematics, 7(3):224.
49. K. Kumar, R. K. Pandey, S. Sharma, Y. Xu (2019), Numerical scheme with convergence for a generalized time-fractional Telegraph-type equation, Numerical Methods for Partial Differential Equations, 35(3):1164-1183.
50. S. Yadav, R. K. Pandey, A. K. Shukla, and K. Kumar (2019), High-Order Approximation for Generalized Fractional Derivative and Its Application, International Journal of Numerical Methods for Heat and Fluid Flow 29(9), 3515-3534. doi.org/10.1108/HFF-11-2018-0700.
51. A. K. Shukla, R. K. Pandey, S. Yadav and R. B. Pachori, (2019), Generalized fractional filter based algorithm for image denoising, Circuits, Systems, and Signal Processing, 39(1): 363-390.
52. K. Kumar, R. K. Pandey and S. Yadav (2019), Finite Difference Scheme for a Fractional Telegraph Equation with Generalized Fractional Derivative Terms, Physica A: Statistical Mechanics and its Applications, 535 : 122271.
53. K Kumar, RK Pandey, S Sharma (2019), Approximations of fractional integrals and Caputo derivatives with application in solving Abel's integral equations, Journal of King Saud University-Science, 31(4): 692-700.
54. A. K. Shukla, R. K. Pandey, PK Reddy, (2020), Generalized fractional derivative based adaptive algorithm for image denoising, Multimedia Tools and Applications (published online: 13 Feb 2020)
55. A. Gupta, R. K. Pandey, (2020), Adaptive Huber scheme for weakly singular fractional integro-differential equations, Differential Equations and Dynamical Systems, (published online: 18 Jan 2020)
56. Gupta G. K. and Banerjee A. **(2019) On Finite Buffer Bulk Arrival Bulk Service Queue with Queue Length and Batch Size Dependent Service.** *International Journal of Applied and Computational Mathematics. (2), article no. 32.* https://doi.org/10.1007/s40819-019-0617-z
57. Gupta G. K. and Banerjee A. **(2019)** Steady state analysis of system size-based balking in $M/M^b/1$ queue. *International Journal of Mathematics in Operational Research* 14(3) 319-336.

58. Gupta G. K., Banerjee A. and Gupta U. C. (2019) On finite buffer batch size dependent bulk service queue with queue length dependent vacation. *Quality Technology & Quantitative Technology*, 1-27. (doi.org/10.1080/16843703 .2019.1675568).

59. S. Kumar, J. Singh, M. Kumar (2019), A robust domain decomposition method for singularly perturbed parabolic reaction-diffusion systems, Journal of Mathematical Chemistry, 57, 1557-1578.

60. Debdas Ghosh, Ram Surat Chauhan, Radko Mesiar, Amit Kumar Debnath (2020), Generalized Hukuhara Gateaux and Frechet Derivatives of Interval-valued Functions and their Application in Optimization with Interval-valued Functions, Information Sciences, 52: 31-34.

61. B. Singh, S. Kamal, X. Yu, D. Ghosh, S. Ghosh (2020), Controller and Observer design for Chaotic Systems: A Vector Based Contraction Approach, IEEE Transactions on Circuits and Systems II: Express Briefs (20 March 2020) **DOI:** 10.1109/TCSII.2020.2982327.

62. Debdas Ghosh, W. Pedrycz (2020), A Variable and a Fixed Ordering of Intervals and their Application in Optimization with Interval-valued Functions, International Journal of Approximate Reasoning (published online: 18 March 2020) doi.org/10.1016/j.ijar.2020.03.004.

63. Debdas Ghosh, Akshay Sharma, K. K. Shukla, A. Kumar, K. Manchanda (2020), Globalized Robust Markov Perfect Equilibrium for Discounted Stochastic Games and its Application on Intrusion Detection in Wireless Sensor Networks: Part I - Theory, Japan Journal of Industrial and Applied Mathematics, 37: 283-308.

64. M. Singla, Debdas Ghosh, K. K. Shukla (2020), A survey of robust optimization based machine learning with special reference to support vector machines, International Journal of Machine Learning and Cybernetics doi.org/10.1007/ s13042-019-01044-y

65. Debdas Ghosh, Abhishek Singh, K. K. Shukla, Kartik Manchanda, (2019), Extended Karush-Kuhn-Tucker Condition for Constrained Interval Optimization Problems and its Application in Support Vector Machines , Information Sciences, 504:276-292.

66. Debdas Ghosh (2019), On identifying fuzzy knees in fuzzy multi-criteria optimization problems, SeMA - Boletin de la Sociedad Española de Matemática Aplicada, 76(2):343-364.

67. S.K Bhuiya, D Ghosh, D Chakraborty (2019), On the distribution-free continuous review (Q, r, L) inventory model with lead-time dependent partial backlogging, International Journal of Management Science and Engineering Management, 14(4): 273-283.

68. Subramanyam Upadhyay and K N Rai (2019), A new iterative least square Chebyshev wavelet Galerkin FEM applied to dual phase lag model on microwave drying of foods, International Journal of Thermal Sciences, 139, 217-231.

69. Mukesh Kumar, Subramanyam Upadhyay and K N Rai (2019), A study of heat transfer during cryosurgery of lung cancer, Journal of Thermal Biology, 84, 53-73.

70. P. Kumar and K N Rai (2019), Numerical solution of generalized DPL model using wavelet method during thermal therapy applications. International Journal of Biomathematics, 12 (03), 1950032.

71. Subramanyam Upadhyay, V.K Singh and K N Rai (2019), Finite difference Legendre wavelet collocation method applied to the study of heat mass transfer during food drying, Heat Transfer – Asian Research, 48(7), 3079-3100; 1-22, DOI: 10.1002/htj.21531.

72. Vineet Kumar Singh, Piyush Kumar Singh and K N Rai (2020), A Parallel processing Technique based on GMO and BCS for medical image encryption, International Journal of Innovative Technology and Exploring Engineering, 9(3), 3418-3427.

73. Shri Ram, Surendra K Singh and M K Verma (2019), Spatially homogeneous Bianchi type I Mesonic models in two-fluid cosmology, Prespacetime Journal 10(3), 293-300.

74. Shri Ram and M K Verma (2019), Spatially homogeneous Bianchi type I bulk viscous fluid models in f(R,T) gravity theory, Prespacetime Journal 10 (6).

75. Shri Ram and M K Verma (2019), Anisotropic Bianchi V bulk fluid cosmological model in in f(R,T) gravity theory, Prespace time Journal 10, 800-806.

Refereed National Journal

1. Subramanyam Upadhyay, Sarita Yadav and K N Rai (2019), Modeling and simulation of moving boundary problem arising during immersion frying of foods, National Academy Science Letters, 42(1), 59-69.

10. Number of Conference Papers: 05

11. Honours and awards to faculty members

S. No.	Name of Faculty Member	Details of Award
1	Prof. Shri Ram	Lifetime Achievement Award by VDGOOD- International Scientists Awards on Engineering, Science and Medicine, Chennai, Sept 14-15, 2019.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 62

13. Names of students/scholars who got prizes and awards outside the Institute

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Pankaj Gautam	16121011	AMU prize(for presenting best research paper)	25th nov 2019, IIT Kharagpur	Indian Mathematics Society (85th Annual Conference)
2	Anupam Kr. Pandey	18121520	Gold Medal (Para-Power lifting)	19th Dec 2019, IIT Kharagpur	Inter-IIT Sports Meet December 2019 (IIT Kharagpur)

14. Number of Students/Scholars who went for foreign Internship: 08

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

S. No.	Cordinator	Title	Period
1.	Dr. Rajeev	AICTE sponsored QIP-Short Term Course on Advanced Numerical Schemes for Scientists & Engineers (ANSSE-19)	August 12-16, 2019
2.	Dr. Rajeev	One day workshop on "Study and Analysis of Mathematical Models of Moving Boundary Problems" sponsored by SERB	August 17, 2019
3.	Prof. Santwana Mukhopadhyay Co-Co-ordinator: Prof. S. Das and Dr. P. R. Maiti	QIP-Short Term Course program on "Mathematical Modeling and Analysis on Continuum Mechanics (MMACM – 2019)"	September 09-15, 2019
4.	Dr. Lavanya Selvaganesh	Sixth India-Taiwan Conference on Discrete Mathematics (ITCDM 2019)	November 15-18, 2019.

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 07

17. Number of Special lectures delivered by faculty members in other institutions: 11

18. Number of Visits abroad by faculty members for conference/symposia: 05

19. Fellowships of academic and professional societies

20. Editorial boards of journals

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Prof. T. Som	Guest Editor	i) International J. of Fuzzy Computation and Modelling
		Member, Editorial Board	ii) Indian Academy of Mathematics
		Reviewer	i) Neural Computing and Applications ii) Expert System & Applications and few other reputed journals
3	Prof. L. P. Singh	Reviewer	Many Internationally reputed Journals
4	Prof. Sanjay Kumar Pandey	Associate Editor	International Journal of Energy and Thermal Fluids
		Member, Editorial Board	ISST Journal of Mathematics and Computer Systems, Ghaziabad, INDIA
5	Prof S. Mukhopadhyay	Member, Editorial Board	Journal of Thermal Stresses Computational Methods in Science & Technology Mathematics and Mechanics of Solids
		Reviewer	AMS Math Reviews, USA
		Reviewer	Several Internationally reputed Journals
6	Prof. S. Das	Reviewer	Many Internationally reputed Journals
7	Prof. S. K Upadhyay	Assistant Editor	Journal of Progress of Mathematics.
8.	Dr. Lavanya Selvaganesh	Reviewer	National Academy Science Letters (Physica A) Discrete Applied Mathematics (Elsevier) Transactions on Combinatorics Proceedings of the National Academy of Sciences, India Section A: Physical Sciences AMS Math Reviews, USA

21. Faculty members' participation with other universities under MoUs

22. 5 Articles from the Department with maximum no. of Citations in last 5 years

1. M. Srivastava, S. P. Ansari, S.K. Agrawal, S. Das & A. Y. T. Leung (2014). Anti-synchronization between identical and non-identical fractional-order chaotic systems using active control method. Nonlinear dynamics, 76(2), 905-914.
2. S.K. Agrawal, S. Das (2014). Function projective synchronization between four dimensional chaotic systems with uncertain parameters using modified adaptive control method. Journal of process control, 24(5), 517-530.
3. H Rajput, T Som, S Kar (2015), An Automated Vehicle License Plate Recognition System, IEEE Computers 48 (8), 56-61.
4. VK Yadav, S Das, BS Bhadauria, AK Singh, M Srivastava (2017). Stability analysis, chaos control of a fractional order chaotic chemical reactor system and its function projective synchronization with parametric uncertainties, Chinese Journal of Physics 55 (3), 594-605.
5. A K Tiwari, S Shreevastava, T Som, K K Shukla (2018) Tolerance-based intuitionistic fuzzy-rough set approach for attribute reduction, Expert Systems with Applications 101, 205-212.

23. Distinguished Visitors

S. No.	Name of the visitor & Designation	Date of Visit	Purpose of Visit
1	Prof. Satya Deo Tripathi, F.N.A.Sc. HRI, Allahabad	21.5.2019	Delivered Centenary talk on "Co-Hopfian properties of Manifold groups"
2	Prof. K T Joseph, Raja Ramanna Fellow, TIFR CAM, Bangalore	25.5.2019	Delivered Centenary talk on "Mathematical Theory of Hyperbolic Systems of Conservation Laws since Hopf's 1950 paper on Burgers equation
3	Prof. T Gnana Bhaskar, Florida Institute of Technology, Florida, USA	22.6.2019	Delivered Centenary talk on "Set Differential Equations: An overview and recent developments"
4	Prof. S. Lakshmivarahan, University of Oklahoma, USA	10.9.2019	Delivered Centenary talk on "Dynamics opinion in Complex Social Networks: Consensus and Cleavage"
		09.09.2019-12.09.2019	Delivered Series of lectures on Algebraic Graph theory and Dynamics of Networks
5	Prof. Subir Ghosh, RK Mission Vivekananda Educational and Research Institute, Belur (Ex Professor TIFR)	13.11.2019	Delivered Centenary talk on "Google Map and Robot Path Planning"
6	Prof. Satyajit Roy (IIT Madras)	10.09.2019-12.09.2019	Delivered lectures in MMACM-2019
7	Prof. S. Chakraverty (NIT-Rourkela)	12.09.2019-13.09.2019	Delivered lecture in MMACM-2019
8	Prof. S. Ghorai (IIT-Kanpur)	14.09.2019-15.09.2019	Delivered lecture in MMACM-2019
9	Prof. Pierre Maréchal (Institut de Mathématiques de Toulouse, Université Paul Sabatier, France)	05.02.2020	Academic Discussion with faculty

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. S P Yadav, IIT, Roorkee	Delivered Centenary Lecture on "Data Envelopment Analysis and Its Applications"	08.04.2019
2	Prof. Karmeshu, Shiv Nadar University (Ex Professor JNU)	Delivered Centenary talk on "Uncertainty Quantification"	20.10.2019

24. Other activities

Foreign Faculty Visits in the Department

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. T Gnana Bhaskar, Florida Institute of Technology, Florida, USA	Deliver Centenary Lecture	22 June 2019; Dept of Mathematical Sciences, IIT (BHU)
2	Prof. S. Lakshmivarahan, University of Oklahoma, USA	Deliver Centenary Lecture Series	09-12 September 2019; Dept of Mathematical Sciences, IIT (BHU)
3	Prof. Tao Ming Wang, Tunghai University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
4.	Prof. Fei-Huang Chang, National Taiwan Normal University	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
5	Prof. Michael Fuchs, National Chiao Tung University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
6	Prof. Chiu-yuan Chen, National Chiao Tung University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
7	Prof. Chih-wen Weng, National Chiao Tung University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
8	Prof. Hung-Lin Fu, National Chiao Tung University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
9	Prof. Wei-Tian Li, National Chung Hsing University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
10	Prof. Chin-Mei Fu, Tamkang University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
11	Hui-Lin Chang, National University of Kaohsiung, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
12	Hsin-Hao Lai, National Kaohsiung Normal University, Taiwan	Deliver Lecture at 6th ITCDM 2019	15-18 November 2019; Department of Mathematical Sciences, IIT(BHU)
13	Prof. Pierre Maréchal, Institut de Mathématiques de Toulouse, Université Paul Sabatier, France	Academic Interaction	04 February, 2020

23. Department of Physics

Year of Establishment: 1985

Head/Coordinator of the Department: Dr. Prabhakar Singh w.e.f. 24.08.2017

1. Introduction of the Department:

Department of Physics (formerly Department of Applied Physics, IT, BHU / Applied Physics Section, 1968) established in 1985, is a center of excellence for quality research and teaching in Physics & Applied Physics. The evolution of Department of Physics in its present form took over nine decades. Since its inception, physics teaching was both integral and essential part of the technical education to enable young minds having good grinding in physical sciences. Therefore, initially all the three colleges (BENCO, TECHNO & MINMET) had their own faculty members in Physics to do the job. A turning point came in 1968 when BENCO, TECHNO & MINMET were merged under one umbrella of Institute of Technology, Banaras Hindu University (IT-BHU). This then made it meaningful to have all the physics teachers from these three colleges to join hands together to form an Applied Physics Section as a part of newly formed School of Applied Sciences. Finally, we became a Department of Applied Physics of IT-BHU in 1985. At long last, we became a Department of Physics in 2012 soon after the conversion of IT-BHU into IIT (BHU) on 29 June 2012. Faculties of the department have been pursuing cutting edge front line research in various areas and in collaboration with prestigious national and international institutes. The Department currently offers research programmes in the field of Solar Physics & Space Physics, Astrophysics, Cosmology, High Energy Physics, Nuclear & Particle Physics Fibre Optics, Photonics & Optoelectronics, Condensed Matter Physics & Materials physics, Microwave Remote Sensing, Bio-physics and Composite Materials, Energy Studies & Solid State Ionics, Quantum statistical mechanics and dynamics, Quantum entanglement and quantum information theory etc.

Major areas of Research:

The department has a rich heritage and history of scientific research in space physics including theoretical study of the planetary atmosphere and solar magnetic field. In the mid 1970s, the whistler wave at low latitude were recorded for the first time and published in the prestigious "Nature" by the group of our department. $(SP)^2RG$ has been making significant contributions to the theory and modeling of solar plasma in optical, ultraviolet, X-ray, gamma-ray, and in the atomic spectroscopy – especially in the field of diagnostics of electron and proton beams and of the plasmas they heat. This group has been making seminal contributions in the areas of 'MHD waves and transients in the solar atmosphere' and also in 'science communication'. Theoretical calculations related to pitch-angle, cross-sections, scattering are also being carried out. Another group is actively working on the origin of the solar magnetic field, its dynamics using magnetohydrodynamics and the mysterious solar cycle using a novel theoretical (dynamo) model. The SP^2RG has equipped with VLF-Antenna for upper Earth atmospheric measurements; Advanced Solar Computation and Analyses Laboratory (ASCAL) to analyse the large-scale solar observational data and model its magnetic atmosphere. SP2RG has global collaborations (e.g., UK, Poland, Russia, China, Austria, Spain, USA, Belgium, etc.) as well as participation in international (e.g., Royal Society; Polish National Science Foundation etc.), and national (e.g., 2m- National Large Solar Telescope; Aditya-I) projects.

The department has now several strong theoretical physics groups (Astrophysics & Astronomy, High Energy Physics, Nuclear & Particle Physics etc.) who are actively working on Structures and Dynamics of the Interstellar Medium, Large-scale gas fragmentation and star formation in galaxies, and Gravitational Lensing as an Astrophysical Probe, Cosmology / Cosmic Microwave background - Statistical Isotropy, Component separation, Low energy QCD at high precision, flavour physics, phenomenology of top, Higgs, vector-like fermions and singlet scalar fields, and model building, Nuclear Physics (Gamma Ray Spectroscopy, Nuclear structure model calculations - cranked Nilsson Strutinsky Model, Shell Model calculations).

The Department carries out a wide range of frontier research activities related to magnetism and superconductivity and semiconductors, nanostructures, thin films and nano-materials and is backed by many sophisticated equipment and measurement techniques. Though the main emphasis of these works is on fundamental aspects, many of the results have a potential for application in industries. In the materials science, we study the electronic, physical, mechanical, optical, and chemical properties of materials, most often in relation to their structure, and use this knowledge to understand and optimize their properties and create new, improved materials and devices. Work in

Soft Condensed Matter and Bio-physics is also a front-line research area of the department. "Soft" condensed matter research explores areas like adhesion, friction, wetting, the movement of fluids in porous media, Modelling self-assembly and phase separation kinetics in the complex soft materials, understanding recent single molecule force spectroscopy experiments on biopolymers, Polymers under shear flow, etc. Biophysics and nanotechnology group aim is to investigate the interaction between 2D, 1D, and 0D materials with proteins and DNA. The main focus of this group is to develop sustainable technologies using green synthesis method utilizing medicinal plants and biopolymers for biomedical, energy and environmental applications like biosensors, drug delivery, OLED, bioelectronics and other nanotechnology applications using various experimental techniques and computational methods. Another theoretical physics group is also involved in understanding non-equilibrium dynamics of quantum many body systems with long range interaction.

Optics, Photonics and Fiber optics is emerging new field of research in our country. We establish a research lab with essential facilities to pursue the theoretical, experimental and computations researches in the field of Photonics. We are engaged in the theoretical analysis of photonic crystals and quasi photonic crystals composed of graded, dispersive and negative index materials. These works would be useful in study of the photonic crystals having such type of materials for various applications. It will open new window to design several photonic crystal devices like sensors, reflectors, switches etc. Research works on the Optical Instrumentation, Non-Destructive Imaging and testing, Computational Optics and Imaging through random complex media have also been initiated in our department. Such works has variety of practical applications in underwater imaging, bio-medical optics, space applications etc.

Research on remote sensing is also one of the frontline research areas in the Department. In this field, the growth of agricultural crops are monitored, classification of crops and the recognition of shape/size of buried objects are done by scatterometer measurements and satellite image analysis. Such studies are useful in designing of sensors, urban planning, crop classification, crop-yield and soil moisture estimation for agricultural planning.

Moreover, one of the groups is actively engaged in different types of luminescent materials, particularly inorganic nanostructures/phosphors having potential applications in the area of energy harvesting, bio-imaging and for advance lighting applications, etc. Composite material studies are also pursued at the Department and the lab for such studies is in development.

Research in the field of Green Energy and Solid State Ionics is also carried out in this Department. The energy studies explore the various fuel cells, materials, etc. to optimize the renewable energy sources. In the Green Energy area, the work on anode, cathode and electrolyte materials of Solid Oxide Fuel Cells (SOFC) is in focus. Also, preliminary establishment of lab towards the fabrication and characterization for Solar cells has been done. In addition to it, some work on hydrogen energy has also been started. Towards Solid State Ionics, the ion dynamics of the structurally disordered and crystalline materials is being studied. This study is not only restricted to the amorphous materials but also has been extended to the various materials of SOFC. Also, the work has also been started in the field of materials for nano piezo- pyro energy harvesters.

2. Academic Programmes offered and Students on Roll

S. No.	Programme	I Year	II Year	III Year	IV Year	V Year & above
1.	B. Tech/B.Arch	--	--	--	--	--
2.	Dual Degree	22	22	19	18	21
3.	M. Tech/ M. Pharm/M.Sc.	19	-	-	-	-
4.	Ph. D (Under Institute Fellowship)	3	13	17	4	8
5.	A. Ph. D (Under Project Fellowship) B. Other Funding Agency	-- 23	-- 6	-- 10	3 4	-- 3
6.	Ph. D (Under Sponsored Category)	1	--	--	--	--

3. Faculty and their areas of specialisation

S. No.	Name, Qualification, Employee No.	Date of Award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
PROFESSORS			
1	Prof. Debaprasad Giri, Ph.D., 17048	January 1997	Statistical Physics; Soft Condensed Matter Physics; Computational Bio-Physics
2	Prof. Prabhakar Singh, M.Tech., Ph.D., 18366	16th June 2005	Condensed matter physics Materials Science and Technology
3	Prof. Sandip Chatterjee, Ph.D., 18478	May 1997	Topological Insulators, Multiferroic Materials, Magnetism.
4	Prof. Rajendra Prasad, Ph.D., 17276	1998	Remote Sensing, Satellite image analysis, crop growth variables and soil moisture retrieval algorithms development for their monitoring
ASSOCIATE PROFESSORS			
1	Dr Anita Mohan PhD, 17041	1996	Physics and Diagnostics of Solar, EUV and X-Ray Emission Processes; Synthesis of composites; Tribology
2	Dr. Praveen Chandra Pandey, Ph.D., 18359	2001	Fiber Optics & Photonic Crystal Fibers, PBG and Metamaterials, Photonic materials.
3	Dr. (Mrs.) Shail Upadhyay, Ph.D., 18536	March 2000	Experimental Condensed Matter; Electro ceramic
4	Dr. Abhishek Kr. Srivastava, Ph.D., 19771	2006	Solar Physics
5	Dr. Rakesh Kumar Singh, Ph.D., 50222	8th August 2009	Optics: Experiment, Theory & Computation
ASSISTANT PROFESSORS			
1	Dr. Sunil Kumar Mishra, Ph.D., 50020	2nd June 2012	Quantum Infomation, Quantum Spins systems, Frustrated Magnets
2	Dr. Avanish Singh Parmar, Ph.D., 50021	7th August 2009	Biophysics, Nanotechnology, Hybrid Materials
3	Dr. Saurabh Tripathi, Ph.D., 50028	2012	Structural Phase Transitions in ferroics, Short and long range ordering in functional materials, Experimental Condensed Matter & Materials Science
4	Dr. Swapnil Patil, Ph.D., 50029	30th July 2010	Experimental Condensed Matter Physics; ARPES investigations of the electronic structure of materials
5	Dr. Shradha Mishra, Ph.D, 50033	February 2009	Condensed matter theory, soft matter and statistical physics
6	Dr. Prasun Dutta, Ph.D., 50036	2011	Physics of Interstellar Medium Radio Astronomy Observations and Interpretations, Statistical astrophysics and cosmology
7	Dr. Rajeev Singh, Ph.D., 50170	21st December 2013	Quantum Computing, Quantum Optics, Machine Learning
8	Dr. Somnath Nag, Ph.D., 50173	20th July 2014	Nuclear Physics (Gamma Ray Spectroscopy, Nuclear structure model calculations - cranked Nilsson Strutinsky Model, Shell Model calculations)
9	Dr. Sunil Kumar Singh, Ph.D, 50182	28th September 2011	Spectroscopy Lasers Nanophotonics
10	Dr. Gauhar Abbas, Ph.D., 50199	14th December 2012	Theoretical High Energy Physics

S. No.	Name, Qualification, Employee No.	Date of Award of PhD Degree	Major Areas of Specialization (Max. 3 Areas)
11	Dr. Awaneesh Kumar Singh, Ph.D.; 50213	11th October 2011	Soft Matter Physics, Statistical Physics, Physical Chemistry
12	Dr. Bidya Binay Karak, 50217	August 2013	Solar Physics; Magnetohydrodynamics (MHD) and its application in Sun and other stars; Astrophysical Fluids, Turbulence, and Convection; Dynamo Theory, Sunspot and Solar Cycle, Chaotic behaviours of Astrophysical Objects
13	Dr. Pavan Kumar Aluri, Ph.D., 50219	5th June 2013	Cosmology - Cosmic Microwave Background - Statistical isotropy
Institute Professors			
1	Prof. Bhola Nath Dwivedi, Ph.D., FAC-IP04	1978	Physics and Diagnostics of Solar EUV and X-ray Emission Processes; MHD Waves and Oscillations in the Solar Atmosphere; Science Communication
2	Prof. Onkar Nath Singh, Ph.D., 13665	1974	Spectroscopy, Fiber optics, Planetary and Space Science.
Emeritus Professors			
1	Prof. R. P. Singhal, Ph.D., 13664	1971	Nuclear & Atomic Physics, Planetary and Space Sciences, Space Weather.
Visiting Faculty			
1	Dr. Arvind Kumar Tripathi, FAC-VF-17	2000	Planetary & Space Sciences, Planetary Space Weather

4. Technical and Non-Teaching Staff

Sl. No.	Name, Qualifications	Designation, Employee No.	Date of Appointment in the department
1	Rahul Kant Chaudhary, M. Tech.	Jr. Assistant	13.05.2017
2	Awadhesh Kumar Srivastava, B.Com & B. Lib	Skilled Clerical Staff	10.06.2016
3	Vikash Singh, B.Sc.	Skilled Staff	21.12.2010
4	Ramji Ram, High School & Agricultural Diploma	Technical Superintendent	30.05.1987
5	Mahavir, High School Science	Technical Superintendent (Retired)	29.09.1988
6	Manjul Tiwari, B.Sc. & Diploma in Applied Videography	Technical Superintendent	15.12.2008
7	Bhanu Pratap Prasad, Intermediate Science	Technical Superintendent	19.11.1990
8	Sujeet Kumar Bose, BA & Diploma in Electrical Engineering	Jr. Technical Superintendent	22.02.2007
9	Pankaj Kumar Asthana, B.Sc.	Senior Technician	06.08.2008
10	Upendra Prasad, M.Sc.& M.Ed.	Senior Technician	16.08.2008
11	Kumar Vikram, Intermediate Commerce & DCA+Tally	Senior Technician	27.08.2004
12	Uma Shankar Pandey, Intermediate	Multi Tasking Staff	16.12.2016
13	Anil Pal, BA & ITI Diploma	Multi Tasking Staff	05.05.2017

5. Research and Consultancy

Sponsored research projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Co- ordinator
1	Investigations of Glass-ceramics for capacitive energy storage applications	2018-2021	CSIR	26.47 Lakh	Prof. Prabhakar Singh
2	Investigations of new lead free perovskite materials for solar cells	2019-2022	DST SERB	38.09 Lakh	Prof. Prabhakar Singh
3	The Sun under the Microscope - An Integrated Research Activity to Maximise the Science Return from a New Generation of Missions to Study the Sun	May 2018-May 2020	UKIERI (Indo-UK)	19.28 Lakh	Dr. A.K. Srivastava (India); Prof. M. Mathioudakis (UK)
4	Tuning Self-assembly of Fluorescent Protein Nanodots for Melanoma Skin Cancer	31st December 2019 – 30th December 2022	DST-SERB	36.68 Lakh	Dr. Avanish Singh Parmar
5	Protein folding, unfolding and aggregation	2016-2021	DST-SERB via Ramanujan Fellowship	38 Lakh	Dr. Avanish Singh Parmar
6	Electronic structure evolution across quantum critical points in $Li(Ti_{1-x}V_x)_2O_4$ and $(Li_{1-x}Zn_x)V_2O_4$	15th March 2018-14th March 2021	DST-SERB	55 Lakh	Dr. Swapnil Patil
7	Thermalization and Non-Equilibrium Dynamics in Quantum Systems	2016-2021	DST-SERB via Ramanujan Fellowship	38 Lakhs	Dr. Rajeev Singh
8	Modeling self-assembly and phase separation kinetics in the complex soft materials	Project starts from 5th Nov 2018 for the next 3 Years	Science and Engineering Research Board (SERB) through Early Career Research Award (ECRA)	46.54 Lakh	Dr. Awaneesh Kumar Singh
9	Exploring the origin and dynamics of magnetic cycles of low main sequence stars	2018-2023	DST/SERB	38 Lakhs	Dr. Bidya Binay Karak
10	On understanding the solar activity and preparing for space weather prediction using a state-of-art dynamo model	2020-2022	ISRO	30.99 Lakhs	Dr. Bidya Binay Karak
11	Multiple reversals of the Sun's polar-fields and their physical causes	2020-2022	Indo-Russian DST	10.45 Lakhs	Dr. Bidya Binay Karak
12	Study of magnetospheric Wave-particle interaction, Aurora, Airglow and Conductivities on Planets and their satellites"	2016-2019 (Completed)	ISRO-PLANEX Project	38.03 Lakhs	Prof. R.P. Singhal (CoPI), Prof. O.N. Singh (CoPI), Prof. D. Giri (PI)
13	Study of Aurora on Jupiter and Airglow, Plasma densities and conductivities on Europa	2020-2023	ISRO Project	Project Granted	Dr. A.K. Tripathi

6. New facilities added

S. No.	Details (Infrastructure, Equipments, etc.)	Value (in Lakhs of Rupees)
1	Vertical Bridgman Single Crystal Growth furnace (Carbolite Gero GmBH, Germany)	~43.44
2	High performance computing cluster (6 Node), Rack & two computers with Linux O	~22.36
3	Hydrothermal High Pressure reactor	~ 10.21
4	Cyclic Voltammetry Set up	~2.3
5	Setting up of MSc – I General Lab.	12
6	Rutherford Scattering Experiment Set Up for Nuclear Lab	6
7	Tower Workstation with 16 threads, 64 GB RAM	~ 2.0
8	Online UPS	~ 1.0
9	NAS Storage system	~ 1.0

7. Patents filed: Nil

8. Books, monographs authored/co-authored

S. No.	Name of Author/Co- Author	Title	Publisher
1	Anita Mohan	Book Chapter entitled "Energy Efficient Composite Materials" in book Encyclopedia of Renewable and Sustainable Materials, vol. 1, pp. 262–272, 2020	Oxford: Elsevier
2	Anita Mohan, Gaurav Gautam, Narendra Kumar and Sunil Mohan	Book Chapter entitled "Sustainable Materials for Tribological Applications" in book Encyclopedia of Renewable and Sustainable Materials, vol. 1, pp. 880-897, 2020	Oxford: Elsevier
3	Bhargab Das, Vinu R V, Rakesh Kumar Singh	Book Chapter entitled "Speckle correlation based single-shot wide field imaging" in the book Springer Series in Light Scattering, Vol. 4, 2020, Ed. Alexander Kokhanovsky	*Springer*
4	K. Wilhelm & B.N. Dwivedi	*Book Chapter entitled* "Impact Models of Gravitational and Electrostatic Forces" in the book "Planetology - Future Explorations".	Intech Open

9. Research Publication

1. D. Mohanta, D. Giri, and S. Kumar (2019), Statistical mechanics of DNA melting in confined geometry, J. Stat. Mech.: Theory & Experiment, (4):043501.
2. Saurabh Singh, Raghvendra Pandey, Sabrina Presto, Maria Paola Carpanese, Antonio Barbucci, Massimo Viviani and Prabhakar Singh (2019), Suitability of Sm^{3+}-Substituted $SrTiO_3$ as Anode Materials for Solid Oxide Fuel Cells: A Correlation between Structural and Electrical Properties, Energies, 12, 4042, doi:10.3390/en12214042
3. Priyam Singh, Prabhakar Singh, R. Prakash and S.B. Rai (2019), Photo-physical studies of ultrasmallupconversion nanoparticles embedded organo-metallic complexes: Probing a dual mode optical sensor for hydrogen peroxide, Optical Materials 98, 109459.
4. Priyam Singh, S. K. Singh, Prabhakar Singh, R. Prakash and S.B. Rai (2019), Generation of red-NIR bi-modal fluorescence in hybrid nanostructure, Mater. Res. Bull. https://doi.org/10.1016/j.materresbull. 110663
5. Vani Pawar, Manish Kumar, P. K. Dubey, Manish K. Singh, A. S. K. Sinha and Prabhakar Singh (2019), Influence of synthesis route on structural, optical, and electrical properties of TiO_2 Appl. Phys. A 125: 657
6. Vani Pawar, Manish Kumar, Priyanka A. Jha, S. K. Gupta, A. S. K. Sinha, Pardeep K. Jha and Prabhakar Singh (2019), Ambient atmospheric temperature processed lead halide perovskites, Journal of Thermal Analysis and Calorimetry 10.1007/s10973-019-08676-w.

7. Pravin Kumar, Paramananda Jena, P. K. Patro, R. K. Lenka, A. S. K. Sinha, Prabhakar Singh and Rajendra Kumar Singh (2019), Influence of Lanthanum Doping on Structural and Electrical/Electrochemical Properties of Double Perovskite Sr2CoMoO6 as Anode Materials for Intermediate-Temperature Solid Oxide Fuel Cells, ACS Appl. Mater. Interfaces, 11, 27, 24659-24667
8. Ajay S. Bangwal, Pardeep K. Jha, Pawan K. Dubey, Manish K. Singh, A. S. K. Sinha, Vasant Sathe, Priyanka A. Jha and Prabhakar Singh (2019), Porous and high conducting cathode material $PrBaCo_2O_{6-\delta}$: The bulk and surface studies for synthesis anomaly, Phys. Chem. Chem. Phys. 21, 14701-14712.
9. Rishikesh Yadav, Vijay Kumar, Vipul Saxena, Prabhakar Singh, Vinay Kumar Singh (2019), Preparation of controlled lotus like structured ZnO decorated reduced graphene oxide nano composites to obtain enhanced photocatalytic properties, Ceram. Int. 10.1016/j.ceramint.2019.04.142.
10. Vandna Tomar, Pardeep K. Jha, A.S.K. Sinha, Priyanka A. Jha and Prabhakar Singh, Field-induced ferroelectricity in paraelectric phase of Barium strontium titanate, J. Mater. Sci.: Mater. Electron. DOI: 10.1007/s10854-020-03127-x
11. Pragati Singh, Pardeep K. Jha, Priyanka A. Jha and Prabhakar Singh (2019), Influence of Sintering Temperature on Ion Dynamics of $Na_{0.5}Bi_{0.5}TiO_{3-\delta}$: Suitability as an Electrolyte Material for SOFC, Int. J. Hydrogen Energy DOI: 10.1016/j.ijhydene. 2019.06.096.
12. Vandna Tomar, Pardeep K. Jha, A.S.K. Sinha, Priyanka A. Jha and Prabhakar Singh (2020), Enhancement in pyroelectricity of polar $Ba_{0.9}Sr_{0.1}TiO_3$ -TeO_2 glass-ceramics, J. Non-crystalline solids, 535, 119964.
13. Dinesh Kumar, Ajay S. Bangwal, Saurabh Singh, Priyanka A. Jha and Prabhakar Singh (2020), High –temperature conduction mechanism of samarium ferrite substituted sodium niobate ceramics, Physica B, https://doi.org/10.1016/j.physb.2020.412028.
14. P. Singh, P.K. Jha, A. S. K. Sinha, P.A. Jha, Prabhakar Singh (2020), Ion dynamics of non-stoichiometric $Na_{0.5+x}Bi_{0.5-x}TiO_{3-\delta}$: A degradation study, Solid State Ionics, 345, 115158.
15. O.N. Verma, P.A. Jha, P. Singh, P.K. Jha, Prabhakar Singh (2020), Influence of iso-valent 'Sm' double substitution on the ionic conductivity of$La_{0.9}Sr_{0.1}Al_{0.9}Mg_{0.1}O_{3-\delta}$ ceramic system, Materials Chemistry and Physics 241, 122345.
16. Somnath Roy, Brijmohan Prajapati, Abhishek Singh, Amish G Joshi, Sandip Chatterjee, Anup K Ghosh (2019), Identification of point defects on CoNi codoping in SnO2 nanocrystals and their effect on the structural and optical properties, Journal of Applied Physics 126, 154303.
17. Arkadeb Pal, Prajyoti Singh, V. K. Gangwar, Surajit Ghosh, P. Prakash, S. K. Saha, Amitabh Das, Manoranjan Kumar, A. K. Ghosh and Sandip Chatterjee (2019), B-site disorder driven multiple-magnetic phases: Griffiths phase, re-entrant cluster glass, and exchange bias in Pr_2CoFeO_6,, Appl. Phys. Lett. 114, 252403.
18. Soumendra Ghorai, Nirmalendu Patra, Arkadeb Pal, Dibyendu Bhattacharyya, Shambhu Nath Jha, Biswajit Ray, Sandip Chatterjee, Anup K. Ghosh (2019), Insights into local atomic structure of Fe alloyed ZnS nano crystals: Correlation with structural, optical, magnetic and photocatalyst properties, Journal of Alloys and Compounds 805, 363-378.
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20. Prince K Gupta, Surajit Ghosh, Shiv Kumar, Arkadeb Pal, Prajyoti Singh, Mohd Alam, Abhishek Singh, Somnath Roy, Rahul Singh, Bheeshma Pratap Singh, N Naveen Kumar, Eike F Schwier, Masahiro Sawada, Takeshi Matsumura, Kenya Shimada, Hong-Ji Lin, Yi-Ying Chin, AK Ghosh, Sandip Chatterjee (2019), Room temperature exchange bias in antiferromagnetic composite $BiFeO_3$-$TbMnO_3$, Journal of Applied Physics 126, 243903.
21. Prince K Gupta, Surajit Ghosh, Arkadeb Pal, Somnath Roy, Amish G Joshi, AK Ghosh, Sandip Chatterjee (2019), Study of band structure, transport and magnetic properties of BiFeO3–TbMnO3 composite, SN Applied Sciences 1, 12.
22. Prince K Gupta, Surajit Ghosh, Seema Kumari, Arkadeb Pal, Somnath Roy, Rahul Singh, Prajyoti Singh, Ranjan K Singh, A K Ghosh and Sandip Chatterjee (2019), Spin phonon coupling and magneto-dielectric coupling in $BiFeO_3$-$TbMnO_3$ composite, Mater. Res. Express 6, 086114.

23. Soumendra Ghorai, Nirmalendu Patra, Dibyendu Bhattacharyya, Shambhu Nath Jha, Bishwajit Ray, Sandip Chatterjee, Anup K. Ghosh (2019), Infuence of chromium concentration on the structural, electronic structure, optical and temperature dependent magnetic properties of ZnS nanocrystals, Journal of Materials Science: Materials in Electronics 30, 11652–11664,
24. Prajyoti Singh, Arkadeb Pal, Vinod K. Gangwar, Surajit Ghosh, Ranjan K. Singh, A.K. Ghosh, Sandip Chatterjee (2019), Spin freezing and field induced transition in $(Tb_{1-x}Eux)_2Ti_2O_7$: A magnetic property study, Journal of Magnetism and Magnetic Materials 490, 165512.
25. Arkadeb Pal, Surajit Ghosh, Amish G Joshi, Shiv Kumar, Swapnil Patil, Prince K Gupta, Prajyoti Singh, V K Gangwar, P Prakash, Ranjan K Singh, Eike F Schwier, M Sawada, K Shimada, A K Ghosh, Amitabh Das and Sandip Chatterjee (2019), Investigation of multi-mode spin–phonon coupling and local B-site disorder in Pr_2CoFeO_6 by Raman spectroscopy and correlation with its electronic structure by XPS and XAS studies, J. Phys.: Condens. Matter 31 275802.
26. S Roy, S Chatterjee, AK Ghosh (2020), A versatile low-cost experimental set-up and measurement protocol for temperature dependent electrical measurements in the temperature range 100 K–500 K, Vacuum (DOI: https:// doi. org/ 10.1016/ j.vacuum. 2020. 109308).
27. Arkadeb Pal, Prajyoti Singh, V. K. Gangwar, Amish G Joshi, Panchanan Khuntia, Gopeshwar Dhar Dwivedi, P. K. Gupta, Md. Alam, K. Anand, K Sethupathi, Anup K Ghosh, Sandip Chatterjee (2020), Probing the Griffiths like phase, unconventional dual glassy states, giant exchange bias effects and its correlation with its electronic structure in $Pr_{2-x}Sr_xCoMnO_6$, Journal of Physics: Condensed Matter 32, 215801.
28. V.P. Yadav, R. Prasad, R. Bala (2019), Leaf area index estimation of wheat crop using modified water cloud model from the time-series SAR and optical satellite data. Geocarto International. DOI: 10.1080/10106049.2019.1624984.
29. R. Bala, R. Prasad, V.P. Yadav (2019), Disaggregation of MODIS land surface temperature in urban areas using improved thermal sharpening techniques. Advances in Space Research. Vol. 64, pp. 591-602
30. M. Gautam, G. Gautam, A. Mohan and S. Mohan (2019) Enhancing the performance of Aluminium by Chromium Oxide. Materials Research Express 6(12)
31. V. Kumar, A. Mishra, S. Mohan and A. Mohan (2019) Fabrication of stircast ZA/ZrB_2 reinforced in-situ composites. Materials Research Express 6(12)
32. G. Gautam, N. Kumar, A. Mohan, S. Mohan and D. Singh (2019) ZrB2 nanoparticles transmuting tribological properties of Al3Zr/AA5052 composite. Journal of the Brazilian Society of Mechanical Sciences and Engineering 41: 1-14
33. A. Mishra, D. Pradhan, C.K. Behera, S. Mohan and A. Mohan (2019) Effect of pre-hot corrosion on erosion behavior of high chromium ferritic steel for heat exchangers. ASME Journal of Tribology 141(4): 041607-15
34. BK Singh, A Bijalwan, PC Pandey, V Rastogi (2019), Photonic bandgaps engineering in double graded hyperbolic, exponential and linear index materials embedded one-dimensional photonic crystals, Engineering Research Express 1 (2), 025004
35. BK Singh, A Bijalwan, PC Pandey, V Rastogi (2020), Multi-channel photonic bandgap consequences in one-dimensional linear, exponential, and hyperbolic graded-index photonic crystals, JOSA B 37 (2), 523-532
36. A Dixit, S Tiwari, U Ramani, PC Pandey (2020), Refractive index sensor based on evanescent field effects in hollow core PCF for detection of analytes over extended E+ S+ C+ L+ U communication bands, Optics & Laser Technology 121, 105779
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1. S.K. Singh, N. Kumar, G. Gautam, A.K. Padap, A. Mohan, R.K. Gautam and S. Mohan (2019) Dry Sliding Wear Characteristics of Aluminium Alloy 8011/AlB2 Insitu Composite. Indian Journal of Tribology, 7(3): 1-3.

10. Number of Conference Papers: 07

11. Honours and awards to faculty members

S. No.	Name of Faculty Member	Details of Award
1	Dr. Abhishek Kumar Srivastava	2019 Laxminarayana & Nagalaxmi Modali Award from the Astronomical Society of India
2	Dr. Bidya Binay Karak	2019 INSA Medal for Young Scientists from Indian National Science Academy, Gov. of India.

12. Number of students/scholars who attended conferences/workshops/seminars and symposia abroad or in India: 92

13. Names of students/scholars who got prizes and awards outside the Institute

S. No.	Name of Student	Roll No.	Name of Prize	Date & Venue	Prize awarded by
1	Dr. Priyanka A. Jha	001	CSIR-SRA (Scientists' Pool Scheme)	08 Jan, 2020	CSIR
2	Devyani Shukla	15171013	Best Presentation Award	9-12 Oct. 2019, Hotel Vrisa, Jaipur	Soft Materials Research Society (SMRS) Jaipur India
3	Ajay Shankar Bangwal	16171004	Newton Bhabha PhD Placement Fellowship	13 Jan 2020	British Council and DST(INDIA)
4	Vandna Tomar	16171006	Best Oral Presentation Award	28 Jan - 1 Feb, 2020	Thermans- 2020
5	Yadav Suraj Amarbahadur	17171010	First best oral presentation in student category	22 Nov 2019, Shillong, Meghalaya	ISG-ISRS National Symposium

14. Number of Students/Scholars who went for foreign Internship: 5

S. No.	Name of Student	Roll No.	Name of the Organization	Place of Internship	Country	Duration
1	Manish	16171005	University of Surrey	Guildford	United Kingdom	6 January to 1 May, 2020
2	Gautam Kamlakar Naik	15173007	College of Staten Island, The City University of New York	New York	USA	28 May to 1 August, 2019

S. No.	Name of Student	Roll No.	Name of the Organization	Place of Internship	Country	Duration
3	Satyam Shekhar Jha	15173018	College of Staten Island, The City University of New York	New York	USA	28 May to 31 July, 2019
4	Suman Aich	15173020	Institut Neel (CNRS),	Grenoble	France	20 May to 19 July, 2019
5	Abhijit Pravin Chaudhari	16173001	Harvard University	Boston	USA	1 June to 13 August, 2019

15. Short-term courses/workshops/seminars/symposia/conferences organised by faculty members

S. No.	Cordinator	Title	Period
1	Prof. Debaprasad Giri (Co-convener)	Workshop on "DNA bubble formation: from physics to biological function" under the SPARC program of MHRD, New Delhi,	14-20 February, 2020, Department of Physics, BHU, Varanasi
2	Prof. Rajendra Prasad (Co-convener)	Microwave/ Millimeter-Wave Devices and their Applications	23-28 September, 2019, Department of Electronics Engg., IIT(BHU)
3	Prof, Rajendra Prasad (Co-convener)	2nd National Workshop on "Techniques in Hyperspectral Data Analysis and Processing"	27-31 January, 2020 at Institute of Environment and Sustainable Developed, BHU, Varanasi
4	Dr. Praveen Chandra Pandey (Co-convener)	AICTE Sponsored Short Term Course on "Materials Characterization for Engineers"	17-21 June, 2019, School of Materials Science & Technology, IIT(BHU),Varanasi,
5	Dr. Avanish Singh Parmar (Convener)	International Conference on "Smart Materials for Sustainable Technology (SMST-2020)	22–25 February, 2020 at Bogmallo Beach Resort, Goa

16. Number of short-term courses/workshops/seminars/symposia/conferences/ training programmes attended by faculty members: 25

17. Number of Special lectures delivered by faculty members in other institutions: 24

18. Number of Visits abroad by faculty members for conference/symposia: 11

19. Fellowships of academic and professional societies

S. No.	Name of Faculty Member	Details of Fellowship
1	Dr. Abhishek Kumar Srivastava	**Life-time member**, Plasma Science Society of India (PSSI), 2019
2	Dr. Bidya Binay Karak	Ramanujan Fellowship
3	Dr. Bidya Binay Karak	Active Member (Junior Member) of International Astronomical Union (IAU)
4	Dr. Bidya Binay Karak	Life Member of Astronomical Society of India (ASI)

20. Editorial boards of journals

S. No.	Name of Faculty Member	Position (Editor/ member)	Name of Journal
1	Dr. Abhishek Kumar Srivastava	Editorial Board Member	Journal of Astrophysics & Astronomy (JoAA), Springer

21. Faculty members' participation with other universities under MoUs

22. Five Articles from the Department with maximum no. of Citations in last 5 years

1. A. K. Yadav, Prabhakar Singh, A Review on Structure of Glasses by Raman Spectroscopy, RSC Adv. 5, 67583 (2 015).
2. **A.K. Srivastava et al. (2017), High Frequency torsional** Alfvén waves as an energy source for coronal heating, Nat. Sci. Rep., 7, 43147.
3. **A.S. Parmar,** J.K. James, D.R. Grisham, D.H. Pike, V. Nanda, *Dissecting Electrostatic Contributions to Folding and Self-Assembly Using Designed Multicomponent Peptide Systems,* **Journal of American Chemical Society,** *138*, 4362–4367 (2016)
4. S. Patil, A. Generalov, M. Güttler, P. Kushwaha, A. Chikina, K. Kummer, T. C. Rödel, A. F. Santander-Syro, N. Caroca-Canales, C. Geibel, S. Danzenbächer, Y. Kucherenko, C. Laubschat, J. W. Allen and D. V. Vyalikh, ARPES view on surface and bulk hybridization phenome000na in the antiferromagnetic Kondo lattice CeRh2Si2, Nature Communications 7, 11029 (2016)
5. M Rai, SK Singh, AK Singh, R Prasad, B Koch, K Mishra, SB Rai, Enhanced Red Upconversion Emission, Magnetoluminescent Behavior, and Bioimaging Application of $NaSc_{0.75}Er_{0.02}Yb_{0.18}Gd_{0.05}F_4$@AuNPs Nanoparticles, ACS applied materials & interfaces 7 (28), 15339-15350 (2015)

23. Distinguished Visitors

S. No.	Name of Faculty Member	Purpose of Visit	Date and Venue
1	Prof. Yoko Miyamto, Professor, The University of Electro-Communications, Tokyo, Japan	Academic & Research Collaboration	16-18th October 2019, Dept of Physics, IIT (BHU)

24. Other activities

1. Collaboration established with Prof. Tomasz Paterek, NTU Singapore, Prof. Igor Tralle University of Rzeszow, Poland, Dr. Zaza Toklikishvili Tbilisi State University, Chavchavadze Avenue 3, 0128 Tbilisi, Georgia.
2. Collaboration with Prof. K. Shimada, Hiroshima Synchrotron Radiation Center, Japan
3. Collaboration with Prof. Jinguang Cheng, Institute of Physics, Beijing, China
4. Collaboration with Prof. H.D. Yang, Department of Physics, National Sun Yat Sen University, Taiwan
5. **SULIS: Solar cUbesats for Linked Imaging Spectropolarimetry (Dr Eamon Scullion (PI), Northumbria University UK);** A proposed upcoming UK Space Mission to Observe the Sun and Heliosphere. Dr. A.K. Srivastava **participates as one of the Academic Partners in SULIS** to work with its scientific rationale and related developments.

24. Centre for Computing and Information Services

1. Background:

Centre for Computing and Information Services inaugurated on 6th April 2017 has been established as a central facility to provide 24x7 digital backbone to the Computing, Web, Email and Network services of the institute. Centre for Computing and Information Services offers high-end computational servers, high availability web servers, network services and provides a robust platform for various academic and research importunities of the institute. Licensed software, email services and in-house software development for the institute needs are also managed by the Centre. CCIS is one of the growing unit and projects are in early stage for developing it into a facility centre poised horizontally to meet the crescent demand of computerization and software solution required for scientific and research infrastructure of the institute. Head/Coordinator of the centre is Prof. Rajeev Srivastava **w.e.f.** 01 August 2017.

2. Services Offered

2.1 Computing

Services: Management of the user login and authentication to all the compute nodes. Running multiple software and their license servers.

We have licenses of following software running on our servers:

- MATLAB Suite of solutions – 50 User licenses with appropriate number numbers of toolboxes.
- Mathematica Software (Perpetual software, network version): 30 User licenses
- CST Studio Software (Perpetual) with basic components: 01 No each.
- Origin Lab Software (100, Network version, Perpetual license)
- MedeA VASP – 01 User (MedeA core GUI, Job/Task Server, VASP, VASP GUI, LAMMPS GUI, Infomatica, COD & COD GUI)
- ANSYS- Existing academic multiphysics solution (10/100) has been upgraded with following licenses and TECS upto- 02/03/2022:
    - ANSYS Academic Multiphysics Campus 50/500
    - ANSYS Academic Research Chemical Kinetics (5 Tasks)
    - ANSYS Academic Research Scade Suite (1 Tasks)
    - ANSYS Academic Teaching Scade Suite (25 Tasks)
    - ANSYS Academic Ensight Post Processing tool (5 Tasks)
    - ANSYS Additive Suite (5 tasks)
    - ANSYS Discovery Ultimate Enterprise (5 Tasks)
    - ANSYS Academic Spaceclaim tool (25 Tasks)
    - ANSYS Academic Research Ls-Dyna (25 Tasks)
    - CasaXPS – Unlimited Pack (Windows desktop)
- Statistica Ultimate Academic Pack software: 50 users network for 5 years licenses.
- Simulia ABAQUS- 2 Users license (Research Edition)
- Gaussian, GaussView and TCP Linda Software: Site License for Linux Platform.

User can login to the compute nodes and run their application using available purchased licensed software or open source software.

Hardware:

Three Compute Servers are available for providing the computing facility to all the students and faculty members of the Institute. Server are having following configuration:

- 1x Dell R-930 Server: Populated with 4x18 core of Intel Xeon E7-8870 v3 @ 2.10 GHz processor with 45MB L3 Cache, 256GB DDR4 RAM, 8 x 1.2TB 15K hot plug SAS, 01 NVIDIA Tesla P4 GPU
- 3xDell R-730 Server: Populated with 2x10 core of Intel® Xeon® processor E5- 2660v3 @ 2.60 GHz with 25MB L3 Cache, 2U Form factor, 128 GB DDR4 RAM, 3 X 600GB 15K hot plug SAS, 01 NVIDIA Tesla K 40C
- 1xDell R-540 Server: 2 X Intel® Xeon® Silver 4114 2.2G, 10C/20T, 9.6GT/s, 96GB RAM, 3 X 600GB 10K RPM SAS 12Gbps HDD
- 1xDell R-440 Server: 2 X Intel® Xeon® Gold 6132 2.6G,14C/28T,10.4GT/s, 12 X 16GB RAM, 3 X 600GB 10K RPM SAS 12Gbps HDD
- GPU Computer Server: Populated with 2 x Intel Xeon E5-2609 v4 (8 Cores,20M Cache, 1.70 GHz), 128GB DDR4 RAM, 8 Nos. NVIDIA GeForce GTX-1080Ti 11GB GDDR5x, 3584 CUDA cores.

2.2 Storage:

Service : Providing space for the storage requirement for running scientific and research applications of the faculty and students. It is integrated with webservers to provide space for Institute website and other portals, network Servers/ Switches over NAS, being managed by CCIS.

Hardware: Dell SC4020 Storage with FS8600 NAS. Two controllers running in an active-active mode with automatic failover to each other in case of one controller failure with 20 TB on SAS 10K RPM drives and 100 TB on NL-SAS drives with 105 TB raw capacity (Approx. 70TB usable considering the RAID overhead).

2.3 Web Services

Services: Two primary web servers are running in High Availability for hosting our Institute website. These servers are configured with RHEL Operating System. Institute's website is built in-house and it has replaced several small websites running earlier on different domain and servers making it a truly one website of IIT(BHU). It incorporates all the departments, school, units, offices and covers all the activities governed by the institute placing a uniform structure throughout. In addition, it has decentralized access for website content modification and individual login for all the faculties to maintain their profile.

In the session 2018-19, two more web servers has been installed and configured with Centos and Windows Server Operating Systems.

Hardware: The following hardwares are available

- 2xDell R-730 Server: Populated with 2x10 core of Intel® Xeon® processor E5- 2660v3 @ 2.60 GHz with 25MB L3 Cache, 2U Form factor, 128 GB DDR4 RAM, 3 X 600GB 15K hot plug SAS
- 2xDell R-440 Server: 2 X Intel® Xeon® Silver 4114 2.2G, 10C/20T, 9.6GT/s, 96GB RAM, 3 X 600GB 10K hot plug SAS

2.4. Email Services

Facilitating with email services to the all faculty members, students and staff of the institute using G Suite for Higher Academic Institution. Services includes email services, classroom, unlimited google drive space etc. The entire users are allocated in various groups as per their department, section, offices, and designation, restricting them access over individual groups for sending emails.

3. People at CCIS

S. No.	Name	Designation
1	Prof. Rajeev Srivastava	Professor & Head of the Department

S. No.	Name	Designation
2	Mr. Roshan Singh	System Analyst
3	Mr. Mahesh Pandey	System Analyst
4	Mr. Ritesh Singh	Junior Assistant

4. Conclusion

As per the available statistics, the students, faculty members and other research staff of the Institute are heavily using the software facilities hosted on the servers. After establishment of the unit, further, an extended server area has been created for hosting more servers. More compute nodes and webservers has been added this year to enhance the compute and hosting facilities at CCIS. We are continuously in process of enhancing the services available at CCIS to meet the compute and web hosting facilities available at CCIS.

25. Main Library, IIT(BHU)

1. Introduction

The Indian Institute of Technology (Banaras Hindu University), Varanasi library system consists of the Main Library and five departmental libraries, which collectively support teaching, research, and extension programs of the institute. All students, faculty members, and employees of the institute are entitled to make use of the library facilities on taking library membership. The library, besides having an excellent print collection of over 14,00,000 volumes of books, journals, theses, reports, standards, pamphlets, it also provides access to over 8,000 electronic journals and more than 2,500 to electronic books and databases in science, engineering, and technology. The library offers various facilities to the users like collaboration learning space, Document delivery service, Remote Access facility, e-library, Modern reading room, etc. The library opens on weekdays 08:00 am to 11.00 pm, including Saturday and Sunday. It opens 9. 30 am to 6 pm on government holidays.

2. Manpower

Sl. No	Name	Designation
01	Dr. Navin Upadhyay	Deputy Librarian
02	Shri. Kanu Chakraborty	Assistant Librarian
03.	Shri Maneesh Kumar Singh	Semi-Professional Assistant
04.	Smt. Bhargavi Tiwari	Semi-Professional Assistant
05	Smt. Archana Rani	Semi-Professional Assistant
06	Shri Abhishek Shukla	Junior Assistant (Office)
07	Shri Mahendra Yadava	Semi-Professional Assistant
08	Shri Dharmraj	Semi-Professional Assistant
09	Shri Kumar Karn	Senior Technician (Deputed from workshop)

3. Library collection

Collection building is one of the vital work of the library that supports the academic and research work of the students, faculty, staff, and other users. Library collection comprising of books, journals, theses, reports, standards, pamphlets and other reading material in science, engineering, technology, humanities, social sciences, and management is considered one of the best in the country and is its greatest asset. The total collection of the library as in 31st March 2020 stands as follows:

Sl No	Category	Number
1	Books (Reference and General)	92,257
2	Text Book Bank	23,274
3	ST/SC Book Bank	8,740
4	Bound Volume of periodicals	17,738
5	Theses	553
6	Dissertation	742
7	Compact Disc	1200

The library added 1720 books under general collection and 828 books under Text Book Bank collection during the financial year 2019-2020.

4. Journals/Databases/Standards/E-books

Periodical section procures and maintains print and online journals for the academic need of the Institute. In this financial year, the library added more than 400 selective titles of e-books (Textbooks and Reference Books) of publishers

Elsevier, Taylor & Francis, McGraw Hill and Wiley. The library renewed the ASM Handbooks (complete set) for three years. Some e-journals titles of Wiley, Taylor & Francis, Elsevier (Energy), and Cambridge University Press (Journal of Fluid Mechanics) also added. The complete collection of INFORMS (PubsOnLine Suite collection of 16 journals) subscribed this year the first time. The following databases, Standards, e-books and e-journals are accessible.

Database

- **Journal Citation Reports (JCR)**
- InCites
- MathSciNet
- SciFinder Scholar
- Scopus
- Springer Materials
- Web of Science

Standards

- ACI MCP
- Indian Standards(BIS)
- ASTM Standard

E-Books

- ASM Handbook Online
- Elsevier (38 titles)
- Taylor & Francis (113 titles)
- McGraw Hill (22 Text and Reference books)
- Wiley Online (172 titles)
- Royal Society of Chemistry (All e-books published upto 2016

The Main Library provides web-based access to more than 15,000 full- text journals 24x7 on the institute-wide network and remotely as follows:

Online e-Journal

Publisher	Description
ACM Digital Library	ACM journals (42+), conference proceedings, magazines, newsletters, and multimedia titles.
Actapress	International Journal of Power and Energy Systems
American Concrete Institute	Materials, Structural, Concrete International & Symposium Volume ACI MCP, Materials Journals, ACI Structural Journal, ACI Concrete International, ACI Symposium Volumes
American Chemical Society	49 journals with Legacy Archive for Universities.
American Institute of Physics	It provides access to 19 full-text journals in the area of physics. Backfiles Access: 1997 onward
American Mathematical Society	The AMS journals package includes 15 online journals published by AMS, including 6 open access journals. Backfiles Access: 1999 onwards
American Physical Society	The current collection includes access to 13 leading peer-reviewed research journals. Backfiles Access: All
American Society of Civil Engineers (ASCE)	It publishes 33 journals, contains over 1, 70,000 bibliographic records of everything ASCE has published since 1970.

Publisher	Description
American Society of Mechanical Engineers (ASME)	ASME collection provides access to 29 journals, including a complete package for ASME journals + AMR.
Bentham Science	Bentham Life science collection 59 titles.
Cambridge University Press	Journal of Fluid Mechanics, Backfiles Access: 2000 Onwards (Newly Added)
De Gruyter	1.International Journal of Nonlinear Sciences and Numerical Simulation 2. Functional calculus and Applied Analysis
Emerald Engineering Collection	59 Journals of Engineering collection. Backfiles Access: 1994 Onwards
Foundry Trade Journal	Foundry Trade Journal
IEEE - IEEE/IET Electronic Library (IEL)	The IEEE Xplore digital library provides access if more than 467 journals, 72 magazines, more than 8000 conference proceedings and standards.
IET	IET Journals offers a range of over 30 research titles, 3 letters journals and a gold open access mega journal (Including Conferences) Backfiles Access: 10 years back files
Inderscience	1. International Journal of Exergy 2. International Journal of Nanomanufacturing
Indian Geotechnical Society	Indian Geotechnical Journal
Informa Healthcare	1. Drug Development and Industrial Pharmacy 2. Pharmaceutical Biology 3. Expert Opinion on Drug Delivery
Institute of Materials, Minerals and Mining	Advances in Applied Ceramics: Structural, Functional and Bioceramics
Informs	The entire 16-journal INFORMS PubsOnLine Suite package (newly added)
IOP	It provides access to 76 full-text journals in the area of physics. Backfiles Access: 10 years rolling back
Jove	1. Jove Bio-Engineering 2. Jove Engineering
JSTOR	JSTOR Archive provides access to more than 2500 journals and primary content on an access fee basis.
Microwave Journals	Microwave Journals
NACE International	Corrosion
NRC Research Press	Canadian Journal of Civil Engineering BackFiles: 1996 onward
PNAS	Proceedings the National Academy of Sciences of the United States of America publishes more than 3200 paper annually.
Nature	Nature
Royal Society of Chemistry	It provides access to RSC Gold 2018 Excluding Archives with 51 full-text journals/ magazines/alerting services. Backfiles Access: 2008
SAGE	Imech collection 17 titles.
ScienceDirect	Nine Subject collections (Access to 1233 titles) Chemical Engineering Chemistry Computer Science Engineering Environmental Science Material Science Mathematics Pharmacology, Toxicology and Pharmaceutics Physics and Astronomy Energy (Newly added)

Publisher	Description
Science Online	Only Science Magazine
SIAM	SIAM publishes 17 peer-reviewed journals. Backfile Access: 1997 onwards
SPIE Digital Library	Journal of Applied Remote Sensing
Springer	Springer: 1700 titles
Springer Nature	Access of 17 selected titles.
Taylor & Francis	Access of 57 selected titles (4 new titles added)
The Optical Society of America	17 flagship, partnered, and co-published journals; OSA's magazine, Optics & Photonics News; and the conference proceedings from all of OSA's Topical Meetings Backfiles Access: Vol 1. Issue 1
Wiley Online Library	Access of 144 selected titles.

Print Journal

Title	Subjects	Publisher
Aluminium International Today	Raw materials, Energy suppliers, Extrusion	Quartz Business Media Ltd
Architectural Digest	Interior, style, design, art & architecture	Conde Nast
Coal International	Mining, Coal, Power Installation	Tradelink publication Ltd
Foundry Trade Jl. (Formally British Foundry)	Cast metals industry	Foundry Trade Journal
Mineral And Metal Review	Steel, Mineral & Metal	Binani Metals Pvt. Ltd.
Modern Costing	Waste Stream	American Foundry Society
Nano Trends: A Journal Of Nano Technology & Its Application	Nanoscience and technology	STM Journal
Welding Journals	Metal fabrication and construction.	American Welding Society

5. Details of software available (Research Support Tools)

The library provides several Research Support Tools and software to support the research activities. This year we have also implemented a remote access facility to all the e-resources from outside the campus network. Grammarly, Turnitin, URKUND, Remotex, and InCites are the most popular research tools among the faculty and research scholars. There are more than 3700 regular users of Grammarly, more than 400 accounts of Instructors and students in Turnitin, and 240 users are currently using another Plagiarism detection software URKUND. At present more than 700 users are availing remote access facilities to access e-resources outside the campus. The research support tools and software available are as follows :

- Grammarly (Writing Enhancement Tools)
- Turnitin (Anti-Plagiarism Software)
- **Urkund (Anti-Plagiarism Software) -newly added**
- Endnote (Reference Tool)
- InCites (Database to analyze institutional productivity and benchmark your output against peers worldwide)
- JCR (Journal Citation Ranking)
- **RemotXs (Remote Access platform) -newly added**

6. Infrastructure/Services/Facilities added

The ground floor of library has recently renovated, and now the complete library is fully Air-conditioned, Wi-Fi

enabled, under CCTV surveillance and equipped with an alarming fire system. After the renovation, some new sections have been created.

Collaboration learning space: The Library has created Collaborative Learning Space on the ground floor. The collaborative learning space has been created to facilitate space to the user,s who wants to learn/discuss together/in a group to solve problems, work on a project, or have a meaningful discussion. In this space, we provided comfortable furniture and other facilities for the users.

Meeting/presentation space: The library has created a meeting/presentation space on the first floor. This space can be used by the faculty/Research Scholar/Students for presentation or academics meetings among groups of students. Space has more than 25 sitting capacity with comfortable furniture and other facilities like a White board, projector, sound systems, computer, etc for the users.

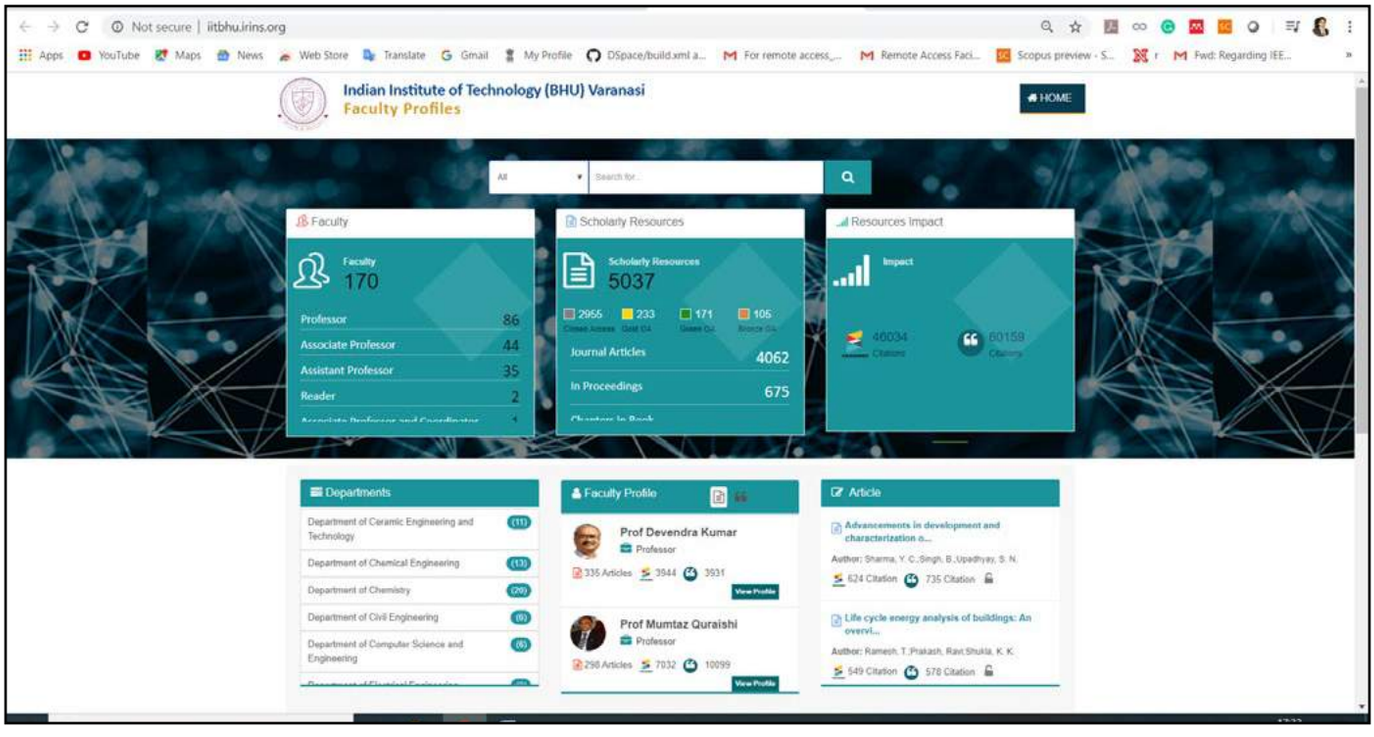
Apart from this, the library has created a separate property counter for depositing student's belongings a capacity of 500 bags at a time.

e-Library: In this space, 50 PC is meant for users to access, e-books, e-databases, e-journals, and other e-resources installed in the e-Library section. All systems are highly configured modern systems with high -speed LAN connection. Some of the systems are dedicated for software testing and project implementation. In this space, the library provided comfortable furniture and other facilities to the users.

Computer-Aided Reference Service: Until date, we are not able to develop a computer-aided reference service unit. However, an email **"libraryservies@iitbhu.ac.in"** and "**Ask the Librarian**" link on the library website is dedicated to all types of ready reference services. The library an average responds more than 25 queries daily to users related to plagiarism check, article request and other library and research -related issues.

7. Creation of Scholarly Profile of faculty and maintenance of Institutional Digital Repository

The library recently created Scholars Profile IRINS (Indian Research Information Network System) and added more than 170 faculty publications on this platform, which is being regularly added and updated. The library is also enriching the IDR (Institutional Digital repository), which have currently 196 PhD thesis, 446 articles,10 videoes, which is linked to the National Digital Library and accessible from anywhere.



8. Any Other Information/Activities/participation in conferences/lecture delivered

Seminar /Conference/Workshop Organized

Editorial Workshop on "Inside a Publishers Mind" : The Main Library, in association with Taylor & Francis group, organized the "Inside a Publishers Mind" Editorial Workshop on September 27, 2019, at ABLT Hall IIT (BHU), Varanasi. More than 150 faculty and students attended the Author workshop. A technical resource person from Taylor & Francis conducted the session on how to publish and issues related to open access publishing. The Deputy Librarian conducted the session, responded to the queries of students, and the vote of thanks done by the Assistant Librarian.



Workshop: How to use InCites, Web of Science and EndNote for research?: The Main Library IIT(BHU), Varanasi in association with Clarivate Analytics, organized the "Workshop on InCites, Web of Science and EndNote" on Tuesday, 14th May 2019, at ABLT Hall, IIT (BHU). A technical resource person from the Clarivate Analytics conducted the session. The workshop was very fruitful for research scholars and they interacted and raise their issues with the resource person. More than 100 participants (Research Scholar and Faculty) attended the Workshop.



Exhibition of Hindi Books During Hindi Pakhwara: The Main Library exhibited Hindi book from 4th to 15th September 2018 to celebrate the Hindi Pakhwara. During the exhibition period, students and faculty visited the exhibition area and appreciated the initiative of the library.


Lecture Delivered by Deputy Librarian

- "Plagiarism : How can you avoid it?' as a resource person for the 84/85th orientation course organized by the UGC-Human Resources Development Center BHU for college and University faculty from January 25 to February 14, 2020.
- "Writing Research Articles- Citation Management" for One Week Faculty Development Program on "Research writing, publishing, and presentation 3-7 February 2020 organized by Teaching Learning Center IIT (BHU), Varanasi.
- "Open access e-resources and Plagiarism issues" as a resource person for the 82nd/83rd Orientation course organized by the UGC-Human Resources Development Center BHU for college and University faculty from 05 to 24 -08-2019 on 07-08-2019.

Lecture Delivered/conference attended by Assistant Librarian

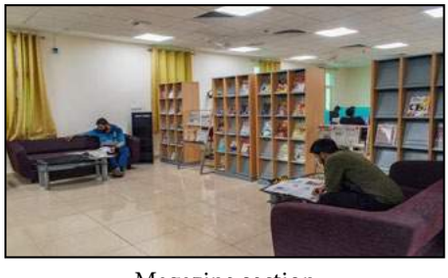
- "Writing Research Articles- Citation Management" for One Week Faculty Development Program on "Research writing, publishing, and presentation 3-7 February 2020 organized by Teaching Learning Center IIT (BHU), Varanasi.
- Delivered lecture and presentation through online platform (skype) on "Open access e-resources in prospective to academic" on National Librarian's Day (12th Aug 2019) at ICFAI University, Nagaland -797112.

Renovated Library Pictures (Reading Hall, e-Library and Periodical Section)

Library Building

Reading hall

e-Library



Magazine section

Renovated Book Stacks

Collaborative Learning Space

Revenue generated under Overdue/lost books/photocopy/consultancy: In the FY 2019-20 the library collected Rs. 37,768 under overdue charges, Rs. 8,561 against lost books, Rs. 19,793 under photocopying and Rs. 60 under consultancy charges.

26. Students Life

Students' Activities and Achievements

The Institute nurtures technical, social, cultural, and sporting activities pursued by the Students' Gymkhana through different councils, Students' Parliament and other student groups. Besides games and sports, the artistic and creative talents of students are encouraged through various activities like dramatics, debates, music, visual arts, etc. and clubs like Radio, Audio, Photography, Automobile, Aero-Modeling, Cine and Computer Club. Students Gymkhana successfully organized its annual techno-management festival Technex, cultural festival Kashi Yatra & games event Spardha. Apart from these, students of IIT (BHU) participated in various IIT meet and brought laurels to the Institute.

Cultural Activities: IIT Roorkee hosted the third 'Inter IIT Cultural Meet' in December 2018, with many IITs participating in this cultural extravaganza. The IIT BHU Contingent bagged the fifth position in the Overall Championship and stood first in Stage Play and English poetry competition along with being the Overall Dramatics Winner among all IIT teams. The 7th edition of the IIT(BHU) Model United Nations (MUN) conference was organized in September 2019. The United Nations Information Centre officially recognizes this conference for India and Bhutan. Delegates from across the nation deliberated to solve real-world diplomatic relations and the foreign policy issues of the different countries.

The disciplines of music, literature, and arts came together in the three-day-long cultural festivals of IIT(BHU), Kashiyatra 2019. There was a multi-fold increase in participation this year. All seven clubs of the Council organized and participated in a wide variety of events.

Games and Sports Activities: Games and Sports council, IIT (BHU), had taken part in a plethora of tournaments and also organised a handful. The council finished 5th in the Inter IIT Sports Meet 2019 with 4 Gold, 1 bronze and numerous teams coming fourth. The council had three podium finishes in the Inter Faculty Meet that included gold, silver and bronze each. The contingent were winners in Triquetra held at IIIT Delhi and participated in the State Level Hockey Tournament. The council organised inter department, inter hostel tournaments in multiple disciplines. The shuttler's cup that was held drew a large crowd. In order to retain the spirit of the council, a year long chess tournament: IIT BHU Grand Prix is also being held. The council also organized the Mahaveer Tournament after 10 years where IIT BHU grabbed the second position.

Activities by Science and Technology Council: The establishment of a Technical Activity Centre (TAC - 24*7 technical workspace), resulted in the growth of several problem-solving projects. Bionic Arm, Spider Robot, Self Balancing Bot, Smart Dustbin, Black Hawk are some of the successful projects initiated and undertook by the council. Summer and Winter Camps were conducted with the vision of maintaining a continuous learning process for the students. The Tech Meet 8.0 was conducted by IIT Roorkee where IIT (BHU) bagged the overall 7th position by winning 2 gold, 2 silver and 1 bronze. Top projects of the council were displayed in the Engineer's Conclave and the research work was presented in the Student Academic Conference. The 81st edition of Technex, the annual techno-management extravaganza of IIT (BHU) was organized by the council. The fest saw a participation of 1000+ participants from over 150 institutions across the country. The biggest attraction of the event was Sophia the first ever humanoid robot, who chit chatted with the students of IIT BHU and also celebrated her birthday in the institute. The event range varied from Startup battle, Robonex, Supernova Riqueza, Pahal, Extreme Engineering, Byte the Bits, Ascension relating to various club activities of the council. Eminent personalities like Katherine Gun(former executive-GCHQ), Alan Emtage (Inventor of the world's first search engine, Archie), Ajai Chowdhry (Co- founder, HCL) Arijit Pasayat (Former judge of the Supreme court) and Didier Patrick Queloz (Noble Laureate in Physics) were invited for the Think Talk series.

***Activities by The Film & Media Council*:** IIT Bombay organized the Cultural Meet in December 2019 where the contingent won several prizes, including the 1st Prize in Rebranding Event, 2nd prize in News App Design Event, 2nd position in Street Photography. Overall, the contingent secured 1st position in Design and Digital Art Category. The Film and Media Council (FMC) has taken upon several initiatives and has come up with new ideas to help promote and support the growth of digital art among the students in the ongoing online semester. These include having live online sessions from prominent personalities in their fields, a series featuring inspiring stories of successful people, and regular posts displaying & appreciating the student's works in photography, animation, visual effects, etc.

Social Service: The institute believes that the inherent humane qualities and the spirit of volunteerism already existent in every individual needs to be nurtured and further developed, thereby blooming out with the full potential to benefit the society as a whole. Nourishing these values and skills will foster an all-pervasive sense of social service amongst the student fraternity, catering to our society's needs and challenges. The Social Service Council, IIT(BHU), manifests this through four student clubs. Students visited the children in bastis once a week to carry out various activities, including assisting in academic and training for the Navodaya entrance examination. Last academic session, Kashi Utkarsh conducted Sangyaan, a science exhibition, to develop scientific temper and a sense of curiosity in children of the bastis. During this crisis, volunteers are staying connected with the children, providing worksheets. Many activities like Sports Day and Daan Utsav wherein a craft activities and skill-sharing session named Arpan, an orphanage visit event called Milan, and a Book collection drive - for the library was held. After this, Gram Mela was held in Tikri, for sub-events like family planning, science exhibition, parent-teacher-meeting, and scholarship awareness. Aarohan - The Social Conclave, NGOs were contacted for learning about their work process, was a big success even in this lockdown situation, and held online. Social Projects' Club represented IIT (BHU) in the Smart India Hackathon'20 semifinals and Hult Campus'19 finals by presenting an idea of centralizing household waste and then selling it to organic farms. It is working on projects like developing an app to translate sign language to speech and a platform to connect people to solve a particular social problem. The Council also conducted its annual plantation drive, blood donation camp, and medicine collection drive. The volunteers visited Nasirpur, Patia, and Kakkarmatta on weekends and educated the residents about health, hygiene, sanitation, disease-prevention, government schemes, and cleanliness.

E-cell*:* E-Cell is a platform for the promotion of entrepreneurship among the students of IIT (BHU) with a vision of "Help will be given to those who seek it." It will help in creating a Startup Ecosystem, building relations for promotion of Startups and Entrepreneurship at IIT (BHU). E-Cell organized several business plan Competitions, workshops, hackathons and Interactive sessions from high-end speakers and entrepreneurs. It also ran a startup 101 course where curated online lectures on design thinking, compliance, etc needed for setting up a company were provided. This year Cell hosted the E-Summit'20 the annual Entrepreneurial festival to celebrate entrepreneurship along with the aid of our Alumni fraternity.

SAIC: SAIC has grown multi-fold and remains dedicated to the goal of bringing together the IIT (BHU) fraternity. The cell has strengthened its online presence tremendously and now coordinates with 50+ city-wise alumni groups. With the launch of the alumni cell website, the institute has successfully delivered more than 175 documents including transcript, copy of migration certificates, etc, to alumni across the world. The Alumni bookshelf initiative launched this year has received 30+ signed copies of books written by our alumni while Alumni Visiting Faculty Program has brought the Alumni Community closer to the Institute and currently has a total of 6 courses being taught to students by industry stalwarts. With its motto to connect, engage and celebrate, SAIC had organized the reunion of the young batch of 2011 and had assisted in the organization of silver jubilee celebration of 1994. The batch of 1994 amassed an amount of Rs. 1.1 crore and had decided to collect an amount of Rs. 3 crore in the coming years. Three consecutive reunions, namely, reunion of 1981 batch, golden jubilee celebration of 1970 batch and closing ceremony of centenary celebrations were organised in Jan 2020. In the years to come, SAIC shall continue to grow at the same rate and endeavor towards the realization of its goal to bring together, the student and alumni fraternity of IIT BHU.

27. Training and Placement

Overview

The Training and Placement Cell of the Indian Institute of Technology (BHU) was developed as a separate unit in the Institute as early as 1977-78. Since its inception, the Cell is coordinating placement of final year students in various industries and research organizations and making arrangements of summer internship for B.Tech./IDD/M.Tech. students every year as part of their academic curriculum. More than 18,000 students of B.Tech./ IDD and M.Tech./M.Pharm./ Ph.D. have been placed through this Cell with lucrative compensation package in leading industries in the country and abroad.

Large numbers of prestigious companies, both from public and private sector, have visited our institute and their number has greatly increased from mere 16 in 1977 to 198 in 2019-20. During the academic session, the recruitment process started on 1st December, 2019, large number of prestigious companies such as Google, Microsoft, Goldman Sachs, Oracle, Intel, Amazon, Apple, Uber, KLa Tencor, Master Card, JPMC, Citibank, American Express, Samsung, Adobe, Bosch, Texas Instrumentation, CISCO, Tata Steel, Qualcomm, Walmart, Citrix, Indian Oil, Mercedes Benz, Larson & Toubro etc. who had been our regular visitors to the Institute, continued to show their faith in our students' performance and made large number of recruitments. There had been the first time visitors to our institute which include companies like Jaguar Landrover, ab-inBev, Mckinsey, BNY Melon (International), ITC, GSTN, UADAI, SAIL, Dalmia OCL, Adani Group, Ambuja Cement NVT Power etc. Apart from this, around 350 students from other institutes were given interhship through the cell.

1. List of the staff members associated with the Training and Placement Cell

Sl. No.	Name	Designation
1	Dr. Anil Kumar Agrawal	Professor Incharge
2	Sri. S. N. Sadhya	Ex-P.S.
3	Sri. Amitabh Kumar Verma	Senior Assistant
4	Sri. Ghanshyam Gupta	Junior Assistant
5	Sri. Raj Bahadur	Attendent
6	Sri. Jitendra Kumar	Attendent
7	Sri. Jaswant Lal Roshan	Attendent

2. Number of students who enrolled for the campus placement during 2019-20 : 1429

3. Number of companies that visited for campus recruitment:

2018-19	2019-20
177	198

4. Number of offers made :

Domestic Offers : 1040
International Offers : 11

5. Average CTC Package (in LPA) :

2018-19	2019-20	Increment over the previous Year
15.9	16.69	4.97

6. Highest (or top few) CTC package offered (Rs.)

1. 1,62,36,636
2. 1,08,38,295
3. 83,22,600
4. 45,60,048
5. 43,31,133

7. Number of paid internships earned by the students : 421

8. Any other achievements or highlights (in a paragraph).

In comparison to the last year, this year has witnessed improvement in many parameters as shown in percentage increase as follow

i) Number of visiting companies by 11.86%

ii) Number of job earned by 7.22 %, and

iii) Average CTC by 4.97%

28. Resource & Alumni

Introduction: The Resource & Alumni office of the Institute works for the functions as delineated by the Director of the Institute (Vide letter No. IIT (BHU)/2014-15/504/L Dated 9th September 2014 and Subsequent modification. The following works/functions are carried out as

- Planning, Allocation and Monitoring of existing infrastructure and reorganization.
- Alumni Processes and Functions [through Student Alumni Interaction Cell (SAIC)]
- Gandhi Technology Alumni Centre-Guest Houses Including GRTA. (Through Coordinator, GTAC).
- Local and Regional (Varanasi) Alumni Interaction.
- Seeking and Raising Endowments.
- Newer Dimensions.
- Green Cell (through Chair Green Committee).
- An IRO (International Relation Office) : The Committee will work towards establishing congenial and intimate relation of the Institute with National, International Universities and other Research and Academic Organizations, aiding the contraction of Memorandums of Understanding with them

1. Vision:

The institute aspires to be a harbinger of modern interdisciplinary technological advancement in the country and at a forefront of imparting quality education by use of innovative pedagogy culminating traditional with contemporary methods. The institute also envisions building best in class infrastructure that not just attracts outstanding faculty, staff and students but also help institute to create an atmosphere for developing technologically astute professionals with a strong entrepreneurial spirit.

- Pursuance of Value Based Excellence in Science & Technology Education and Research.
- To serve Humanity through enlightened and morally sound human capital.
- To contribute to the development of the nation by solving the problems of the nation and society at large.

2. Mission:

IIT(BHU) is committed to imparting quality education using modern teaching methods and by designing curriculum that is abreast with latest technological advancements in the industry. The institute continually pursues to solve complex societal problems and to support the nation in its march towards technological advancement. The institute is steadfast and resolute in creating an environment aimed at learning and development of students, faculty and staff alike. The institute continues to produce innovative research papers regularly published in leading world-renowned journals and magazines. IIT (BHU) is also forging new alliances with other institutions and is engaged in inter disciplinary technology advancement to solve key society and national problems. Broadly, IIT (BHU)'s mission is :-

- To groom the next generation of thought leaders.
- To impart high quality of research & innovation oriented education to enable students to solve challenging grand problems of the future.
- To conduct innovative, fundamental and interdisciplinary research geared towards solving societal problems while aligning with regional, national and international priorities.
- To regularly interact and engage with Industry, Professionals, R&D establishments, Alumni and the Society to meet National and Regional needs as may be identified by Government of India, and concerned State Governments.
- To collaborate and interact with Institutions of higher learning at Global and National Levels for enriching the Academic and R&D processes, activities and functionalities.

3. Objectives:

1. To produce highly motivated and confident graduates for serving the nation and humanity.
2. Continuous engagement of Industry, Professionals, R&D establishments, Alumni and the Society.
3. Collaboration and interaction with Institutions of higher learning at Global and National Levels for enriching the academic and R&D processes, activities and functionalities.
4. Working for National and Regional needs as may be identified by Government of India, and concerned State Governments.

4. Events

Centenary Celebration Closing Function: On 29.01.2020, on the occasion of the centenary year celebrations at the Indian Institute of Technology (Banaras Hindu University), Director, Professor Pramod Kumar Jain inaugurated the Center for Integrated Learning and the reconstructed, BENCO Chimney. Earlier in Malviya Bhawan, BHU, Director Professor Pramod Kumar Jain, BHU Vice Chancellor Professor Rakesh Bhatnagar, along with all the Alumni of Golden Jubilee batch of 1970 batch, laid wreath at the statue of Mahamana Madan Mohan Malaviya ji.

On 29.01.2020,, the Integrated-Teaching Learning Center building was inaugurated in the institute. Inaugurating this building, Director Professor Pramod Kumar Jain said that on the ground floor of this building, the teachers of the institute will have three labs, four discussion rooms and on the first floor, video recording, video editing, smart class room, library and reading rooms. He said that with these facilities, the teachers of the institute will get new technology training in the changing education system, so that they will be able to give better education to the students.

Earlier the BENCO Chimney, rebuilt, was inaugurated by the Hon. Director, IIT (BHU). Let us tell you that in the year 1930, this chimney was built and about 1000 kilowatts of electricity used to be produced. This chimney was damaged over a period of time. The initiative was taken by Professor P. Ramaji Agarwal, President of the Banaras Alumni Association of IITs (BHU), a 1982 batch metallurgical engineering graduate Mr. P. Ramachandran, Director, Banco Thermal Technology Property Limited, Chennai, got construction rebuilt for a cost of about Rs. 70 lakhs.

In the beginning of the program, Professor Pramod Kumar Jain, Director and Alumni of Golden Jubilee batch of 1970 batch and BHU Vice Chancellor Professor Rakesh Bhatnagar reached Malviya Bhavan and placed the garland on the statue of Malviya.

Other Reunions:

- 1970 Batch on 29th January 2020 in Centenary Concluding Function
- IIT (BHU) 1981 Batch during 24-27th Jan,2020
- IIT (BHU) 1973 Batch during 24th Feb. to 27 Feb.2020
- IIT (BHU) 1994, Silver Jubilee Batch 22-24 December 2019: DéjàBHU, SILVER JUBILEE reunion of the 1994 batch was an extravagant affair that connected the 140+ Alumni who attended this celebration along with their families. The batch has pledged monetary funds worth 1.1 crore INR and aims to collect 3 crore INR soon. Our Alumnus Mallikarjun Sundaram promised to contribute equity of $100,000 through shares.

5. Distinguished Alumnus Awards: Not Awarded this Year

Other Activities: E-Cell is a platform for the promotion of entrepreneurship among the students of IIT BHU. With a Vision of "Help will be given to those who see it" we are helping and creating a Startup Ecosystem, building relations for promotion of Startups and Entrepreneurship at IIT BHU. E-Cell organized several B Plan Competitions, Workshops, hackathons and Interactive sessions from High-end speakers and entrepreneurs. This year Cell is hosting the E-Summit'20 the annual Entrepreneurial festival to celebrate entrepreneurship along with the aid of our Alumni Fraternity.

Endowment Funds received during Session (2019-20):

S. No.	Name of Person/Trust	Amount of Donation	In favour of	Type	Purpose
1.	Sukumar Bandopadhyay	10,00,000/-	Registrar BHU	Endowment	Sundora Banerjee Centennial Mining Honors Scholarship
2.	Shri Chandra Kant Trivedi	Rs 6, 90,691/-	Registrar BHU	Endowment	for the up-gradation of existing HPTLC with HRMS (LC-MS) and establishment of Prof. G. P. Srivastava Lab in the Department of Pharmaceutical Engineering & Technology.
3.	KAF-1981 Scholarship	Rs. 2,81,000/-	Registrar BHU	Endowment	KAF-1981 Scholarship
4.	KAF-1981 Scholarship	Rs. 5,35,000/-	Registrar BHU	Endowment	KAF-1981 Scholarship
5.	Shatabdi Kosh	Rs. 10,000/-	Registrar BHU	Endowment	Shatabdi Kosh
6.	Shri Sunil Khanna	Rs. 24,999/-	Registrar BHU	Endowment	Shatabdi Kosh
7.	Shri T. N. Gunasheelan	Rs. 25,000/-	Registrar BHU	Endowment	Shatabdi Kosh
8.	1994 Batch	Rs. 75,21,181/-	Registrar BHU	Endowment	1994 Batch Donation
9.	Shri S. M.Agrwal	Rs. 2,00,000/-	Registrar BHU	Endowment	1970 Batch Project
10.	Shri Satya Prakash Barnawal	Rs. 1,11,000/-	Registrar BHU	Endowment	1970 Batch Project
11.	Shri Sudarshan Singh Chaudhary	Rs. 1,00,000/-	Registrar BHU	Endowment	1970 Batch Project
12.	Total:	1,04,98,871/- (One Crore, Four Lakhs, Ninety Eight Thousand, Eight Hundred Seventy One Only)			

Year- wise funds & Donors

	Total Funds from Alumnus (in lakhs of Rupees)	Total No. Of Donors
2014-15	Approximately Rs. 60 Lakhs	1 (IBGAA)
2015-16	Rs. 524.55 Lakhs	10
2016-17	Rs. 122.14826 Lakhs	9
2017-18	Rs. 60,53,644/-	6
2018-19	Rs. 89,41,317/-	16
2019-20	Rs. 1,04.98,871 Lakh	11

6. Report of Gandhi Technology Alumni Centre (GTAC), IIT (BHU) for the session:

Gandhi Technology Alumni Centre (GTAC) has been established in 2007 with the help of alumni of IIT(BHU) for the purpose of providing stay to guests which includes alumni's, employees, students etc. Since then it has been a long journey till now. It has developed a lot since then.

Present Admin:Dr. Rajeev Kumar Singh *(*Coordinator)

Total No. of Rooms: There are a total of 72 rooms in GTAC, which includes 4 suites and 68 rooms. All rooms are air conditioned and have basic facilities like TV, telephone, two beds, table and chairs etc.

Canteen: A canteen is also there to provide breakfast, lunch, dinner, tea, snacks etc. to the staying guest.

Waiting Room: A waiting room is also there so that guest can meet someone or wait for the time being. Also it serves purpose of meeting room in required condition.

Hall or Conference room: A large hall is also there for conferences, meeting, seminars etc. for the student or faculty.

Programmes & Activities in GTAC:

- Provided stay to the guest during convocation of the Institute.
- Provides stay to the Alumni's and guest during alumni meet of IIT (BHU) alumni's.
- Provides stay to the participants Of QIP programmes of different departments of IIT (BHU).
- Provides stay to the participants of IIT cultural programmes like Spardha and KashiYatra.
- Provides stay to the participants of programmes like Technex.
- Provides stay to the parents of the students taking admission in IIT(BHU) or parents coming to meet their children.
- Provides stay to the friends and relatives of the IIT's faculty member and non-faculty members.
- Provides stay for the departmental programmes of IIT (BHU).

Development works at GTAC during session 2019-20:

- Ground floor rooms were renovated and maintained. Like painting of walls, tiling of floor, maintenance of wardrobes, windows, doors etc. has been done. Bathrooms were renovated too.
- All rooms are now connected to institute local intercom system.
- All the room attendants and canteen were given proper dress to wear during working hour.
- Full renovation work of Suite F20 has been done which includes painting, polishing of furniture's, electrical maintenance etc.
- The canteen has been renovated that includes tiling, painting, chimneys installation, air ducting etc. to make canteen more clean and hygienic.
- Automatic sensor door has been installed.
- Card payment method adopted in guesthouse.

29. Research and Development Activities

Our Institute has a mission to fulfill the needs of the nation through Research and Innovation. Faculty members and students are engaged in cutting edge research under various schemes. To inculcate research culture in the students, the institute has set up Tinkering Labs in various departments. Students are involved in research projects from almost the early stage of their education. The institute gives partial support to the research initiatives of faculty members through grants like Seed Money, Research Support Grant, and R & D Thrust Area Grants. The institute also provides Lab Grants for up-gradation of teaching labs and supports Central Instrument Facility acquisitions. Faculty members of the institute are active in frontier areas of research, and Govt. research sponsoring agencies and many reputed industries have supported their efforts. The list of new and ongoing projects as well as consultancy/testing projects are shown below.

1. New Sponsored Project Sanctioned in FY 2019-20

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
School of Biochemical Engg.					
1	How Beclin 1 mediates cross-talk between apoptosis and autophagy via ITS C-Terminal Fragment?	3 years	CSIR	3261600	Prof. Vikash Kumar Dubey
2	Strategies towards generation of functional tissue engineered construct for orthopedic application	02 Yrs	SPARC-MHRD	2325950	Prof. Pradeep Srivastav
3	Re-purposing of approved drugs from Drug Bank database for possible treatment for COVID-19 by targeting SARS-CoV-2 main purpose	1 year	SERB	15,44,664/-	Prof. Vikash Kumar Dubey
School of Biomedical Engg.					
1	Design and Development of Affordable Myoelectric Prosthetic Hand	3 years	SERB-CRG	1001000	Dr. Shiru Sharma
Department of Ceramic Engg.					
1	Development of high strength ceramic magnet for rotating machine applications	3 years	SERB (IMPRINT)	2591600	Dr. Pradip Roy
2	Metal Nanostructure assited plasmonic hot electron induced phase transformation in 2D- Transition metal di- chacogenides for hydrogen evolution reaction	03 Yrs	STARS -MHRD	9790000	Dr. Santanu Das (PI), Dr. Bratindranath Mukherjee (CoPI)
Department of Chemical Engineering & Technology					
1	Direct cooling of the Silicon Photovoltaic Module Enabled by an Array of Micro channel built in the backside EVA –Layer	03Yrs	SERB	4152280	Dr. Ravi Prakash Jaiswal
2	Removal of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) using Adsorption and Bioremediation	02 Yrs	SPARC-MH RD	5402420	Dr. RS Singh (Chemical) (PI) Prof. BN Rai (Chemical) (CoPI)
3	Modelling & Simulation of ultra-high temp coating on substrate using CVD/ CVI process	02 Yrs	DRDO	981000	Dr. Vijay Maruti Shinde

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
4	Detailed studies on the effects of mining as well as thermal power station on natural water bodies in singrauli region and recommendation thereof investigation of flow behaviour pulsed sieve plate column through radiotracer based techniques	1.5 Yrs	BRNS-DAE	3375500	Dr. RK Upadhyay
5	RKVY-RAFTAAR, Agribusiness Incubators under RKVY-RAFTAAR Scheme	02 Yrs	DACFW	23300000	Prof. PK Mishra
6	Regional cheracterization of atmospheric aerosols at Varanasi Region	Initially for 03 Yrs	ISRO	NA	Dr. RS Singh (PI)v Dr. Therthankar Benerjee (CoPI)
Department of Chemistry					
1	Development of magnetically recyclable visible light photocatalysts for H2O2 Production	03Yrs	BRNS	3405850	Dr. Indrajit Sinha (PI), Prof Rajiv Prakash (CoPI)
2	Development of transition metal based nanocatalysts for bioinspired water oxidation	03 Yrs	CSIR	1600000	Dr. Arindam Indra
3	Developing Superior Nobel Metal free Oxygen Evolution Catalyst for Electrochemical Water oxidation and Metal -Air Battery	02 Yrs	SERB	2464000	Dr. Asha Gupta
4	Promoting water Oxidation Reaction with Electrochemically Synthesized ultrathin Layered double Hydroxide Nanosheets	02 Yrs	SERB	2651000	Dr. Arindam Indra
Department of Civil Engg.					
1	Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics	3 years	SERB, ECRA	3670680	Dr. Nikhil Saboo
2	Rheophysics of semi-rigid road building materials and optimization of their composites for the perception of heavy transport load	2 years	DST	1040000	Dr. Nikhil Saboo
3	Safer Roads: Development of Mix Design Methodology for OGFC Mixes	3 years	CST-UP	1192000	Dr. Nikhil Saboo
4	Life cycle and performance of Waste Plastic roads	1.5 Years	NRIDA	2050000	Dr. Nikhil Saboo
5	Life Cycle and performance assessment of cold mix roads	1.5 Years	NRIDA	2050000	Dr. Nikhil Saboo

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
6	Understanding the engineering behavior of unsaturated geomaterials and implementing it in limit analysis for solving geotechnical problems	2 years	SERB	27,28,000/-	Dr. Manash Chakraborty
Department of Computer Science & Engineering					
1	Research & Experiment in the area of advanced data structures and methodologies to represent and process large terrain datasets for efficient rendering	07 MONTHS	DRDO	995000	Prof Rajiv Srivastav (PI), Dr. NS Rajput (CoPI)
2	MoA Between IIT(BHU) & nokia UNDER NOKIA Global university Donation Agreement	02 Yrs	NOKIA	1151466	Earlier Dr. KV Srinivas (ELECTRONI CS), Currently runnnig under Dr. Ruchir Gupta
Department of Electrical Engineering					
1	Virtual synchronous generator for microgrid applications	03 Years	SERB	4554930	Dr. N.Krishna Swami Naidu
2	Output feed back controller design for linear parameter varying systems	03Yrs	SERB	5732760	Dr. Sandip Ghosh (PI), Dr. Shyam Kamal (CoPI), Dr. NKS Naidu (CoPI), Dr. SK Singh (CoPI)
3	Prospects of power converters for integration of electric vehicle charging stations witj the existing distribution system in India	02 YRS	SPARC - MHRD	4978635	Dr. Santosh kumar singh (PI),
Department of Electronics Engg.					
1	Electromagnetic Analysis, Design and Simulation of Dual Frequency (S- and C-band) Relativistic Backward wave Oscillator – A HPM Source	3 years	DRDO	4685000	Dr. M. Thottappan & Dr. Somak Bhattarcharya
2	Development of Simulation Software for Spintronic Device & Circuit Simulation	2 years	SERB	1613600	Dr. Shivam Verma
3	Design development and characterization of Low loss frequency selective metamaterial waveguide coupler and antenna for 5 G Applications	3 years	SERB - MATRICS	660000	Dr. Smrity Dwivedi
Department of Mathematical Sciences					
1	Approximation methods for problems in fractional calculus of variations	03Yrs	SERB	2156264	Dr. Rajesh Kr. Pandey
Department of Mechanical Engg.					
1	Development of complex Aluminium Shell Part High pressure die-casting	1 year	DRDL Hyderabad	2485000	Prof. Santosh Kumar

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
2	Development of ORC technology for waste heat utilization for the generation of electricity	3 years	BRNS	26,97,175/-	Dr. Jahar Sarkar
3	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site	3 years	BRNS	30,32,275/-	Dr. Arnab Sarkar
Department of Metallurgical Engineering					
1	Role of short range ordering in desigining high entropy alloys	03 YRS	SERB	4136000	Dr. Vikash Jindal (PI) Dr. NK. Mukhopadhya y (CoPI)
2	Cyclic thermochemical fuel generation	03Yrs	SERB	5263920	Dr. Randhir Singh (PI), Dr. Bratindranath Mukherjee (CoPI)
3	INSPIRE Faculty Award	05 Yrs	DST	3500000	Dr. Suryadeo Yadav
4	Weaer corrosion and biocompatibility of Tantalum (Ta) coated 316 L, Stainless steel fotr Ortopedic Applications	03 Yrs	SERB	4493240	Dr. CK Behera
5	Development of Functionally Graded Armour Composites (FGACs) Materials	03Yrs	DRDO	9166240	Dr. Vikas Jindal (PI), Dr. Kaushik Chattopadhya y (CoPI)
6	Mechanical behaviour of advanced high strength steel procesed by additive manufacturing	03 Yrs	SERB	3983896	Dr. NC Santhi Srinivas(PI), Dr. Kaushik Chattopadhya y (CoPI)
7	Tunable surface plasmon optical sensing behaviour of M-MoS2 (M=Cu, Ag, Au) Alloy Nanostructures	03 Yrs	SERB	4465000	Dr. Bratindranath Mukherjee (PI), Dr. RK Mondal (CoPI)
8	Creep and corrosion behaviour of Novel MRI2300 Magnesium Alloy with Nanoparticles Addition	03 Yrs	CSIR	1722000	Dr. AK Mondal
9	Development of low cost ß-Ti alloy for biomedical applications	03 YRS	SERB	4050400	Dr. Kaushik Chattopadhya y
10	In -situ microscopy study of age hardeining in dispersion strengthend cast magnesium alloys and its ex-situ correlation with mechanical propoerties	03Yrs	SERB	3736064	Dr. Ashok Kumar Mondal(PI), Dr. Joysurya Basu (CoPI), Prof NK Mukhopadhya y (CoPI)

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
11	High performance rare earth free nanocomposites permanent magnet for advanced motor and alternative energy applications	04 Yrs	SERB	5690264	Dr. N.K. Prasad (PI), Dr. Chandan Upadhyay (CoPI)
Department of Mining Engineering					
1	Optimization Of capacity utilization of draglines deployed in NCL through Big data Analytics	3 years	NCL	8397000	Prof. Suprakash Gupta
2	Study for impact assessment of back filling of fly ash in abandoned gorbi mine and treatment/manageme nt of acidic water to avoid contamination of ground water and soil	2.5 years	NCL	12480000	Prof. Aarif Jamal
3	Contribution of Neighboring Industries over the air quality of mining area	3 years	NCL	13400000	Prof. Aarif Jamal
4	Evaluation of ground behaviour in open cart and underground excavations using TDR	2 years	NCL	3444000	Prof. Sanjay Kuamr Sharma
5	Stability Evaluation of dump slopes & developing slope stability model for design of Long Term Stable Dump Slopes through proper benching & vegetation : Part A	3 years	NCL	6680000	Dr. Rajesh Rai
6	Stability Evaluation of Dump Slopes and Developing Slope Stability Models for Design of Long Term Stable Sump Slopes through Proper Benching and Vegetation – Part B	3 years	NCL	14113000	Prof. G.S.P. Singh
7	Slope stability monitoring and analysis using hyperspectral imaging	3 years	SERB	47,10,500/-	Dr. Tarun Verma
8	Equipment for Coal Laboratory at IIT(BHU)	1 years	NCL	1,95,00,000/-	Dr. Aarif Jamal
Department of Pharmaceutical Engg. & Technology					
1	Natural Template Based Novel Neuroprotective Molecules for the management of Alzheimer's Disease	3 years	SERB- CRG	3720240	Dr. G.P. Modi
2	Pharmacological evaluation of anti-diabetic effects of some natural drugs	2 years	Natreon Inc.	2887500	Dr. Sairam Krishnamurthy
3	Development of novel near infrared fluroscence imaging probes for detecting amyloid beta species in eyes of Alzheimer's disease animal model	3 years	ICMR	3700000	Dr. Gyan Prakash Modi
4	Novel Milk Exosomes for the combination therapy by using selected natural medicine (Paclitaxel & Colchicine) for the efficient management of breast cancer	2 years	SERB	3138344	Dr. Ashish kumar Agrawal

S. No.	Title of the Project	Duration	Name of the Funding agency	Total Project Cost	Name of Principal Investigator
5	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	5 Years	DBT	42,50,000/-	Dr. Deepak Kumar
6	Synthesis and evaluation of diverse N- functionalized heterocyclic hybrids as multi target directed ligands for neuroprotective	3 years	MHRD STARS	7539000	Dr. Senthil Raja A (PI) & Dr. S.K.Mahto (Co-PI)
	neurorestorative therapies				
7	Targeting kinesins Mediated regulation of nociceptors for the Treatment of Neuropathic Pain	02 yrs	SPARC – MHRD	4753775	Dr. Vinod Tiwari (PI), Dr. Sanjay Singh (CoPI)
Department of Physics					
1	Tuning self assembly of fluorescent Protein Nanodots for Melanoma Skin Cancer	03 Yrs	SERB	3668522	Dr. Avanish Singh Parmar (PI) Dr. SK Yadav (CoPI)
2	On understanding the solar activity and preparing for space weather prediction using a state of the art dynamo model	03 YRS	ISRO	3099000	Dr. Bidya Binay Karak(PI), Dr. Dipankar Banerjee(CoP I)
School of Materials Science & Technology					
1	NRDC Innovation Facilitation Centre	3 years	National Research Development Centre	8,00,000 per year	Prof. Rajiv Prakash
2	Chemical modification of Gaur Gum to improve its properties	1 year	Hindustan Gum Pvt. Ltd	770000	Prof. Pralay Maiti
3	Impact of Carbon Nanomaterial based Photocatalyst on Microalgae Growth and Lipid for improved Biodiesel	3 years	DBT	730000	Prof. Rajiv Prakash
4	Development of high performance, CMOS compatible and color selective narrow-bandphotodet ector for high resolution imaging application	3 years	SERB	6714400	Dr. Bholanath Pal
5	Development of High Tc Lead Free Piezoelectric Materials for Energy Harvesting	3 years	SERB	52,71,200/-	Dr. Akhilesh Kumar Singh
6	Harnessing the synergy of low band gap organic semiconductor and highly facile floating film transfer method for low cost efficient organic electronic devices	02 Yrs	SPARC-MH RD	4285375	Prof. Rajiv Prakash (PI) Prof. Praddep Kumar Jain (CoPI -electronics Engg.)

2. Other Ongoing Sponsored Projects

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
Department of Ceramic Engineering					
1	Design Development & characterization of porous Ti/SiO2 composite with tailored microstructure fabricated by powder metallurgy using rice hu sucrose as space holder for orthopaedic Applications	1.5 Yrs	DBT	1560000	Dr. KalyaniMohanta
2	Novel Electrode Materials for Reversible alkali –ion (Li+/Na+) capacitors and Pseudocapacitors	3 Yrs	SERB	3665245	Dr. Preetam Singh
3	Development of glasses as plant nutrients	03 Yrs	SERB	4205520	Prof. Ram Pyare (PI) (Retired on 31/05/20) Dr. RK Chaturvedi (CoPI), Dr. Preetam Singh(CoPI)
4	Development of Hgh Alumina(Al2O3) & DOPED High Alumina materials for Ceramic Catridge Applications	06months	Yantransh Auto Pvt. Ltd	60500	Dr. Santanu Das
5	Development of high Thorough put Processing route for CIGS PV absorber films by spray pyrolysis of Pre-synthesised Nanoparticle Ink	3 Years	SERB	4603010	Dr. M.I. Ahmad/ Dr. S. Das
6	MoU between IIT(BHU) & IRMA(Indian Refractory Makers Association), Kolkata	15 yrs	IRMA, Kolkata	5,000,000	c/o Head Ceramic Engineering
7	Cold sintered ferroelectric polymer Ceramic Nano composites for Energy Storage	3 Years	SERB	5491695	Dr. Akanksha Dwivedi
8	Development of rare earth free ceramic magnet with high energy and curie temperature for motor applications	3Yrs	SERB	4522100	Dr. Pradip Kr. Roy
9	Combined effect of dynamic electrical stimulation and surface charge on cellular functionality of electrovector and piezoelectrically toughened bioceramics	3 YEARS	SERB	4322680	Dr. Ashutosh Kr. Dubey
Department of Chemical Engineering & Technology					
1	A Stack development of untilized regenerative Proton Exchange Memberance Fuel Cell for Large Scale Production of Ultra Pure Hydrogen Fuel, Oxygen using Solar Energy & uninterrupted Power	03 Yrs	SERB	3761500	Dr. Hiralal Pramanik
2	Controlled synthesis of MoO3 nanoparticles inside mesoporous materials for oxidative dehydrogenation of organic moleciles with CO2	03 Yrs	SERB	3229430	Dr. Vijay Maruti Shinde

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
3	FIST Programme under the Head, Department of Chemical Engineering, IIT(BHU)	5 Years	DST (INSPIRE & First Division)	24000000	The Head
4	NOx Removal from Diesel Exhaust by combined NOx storage Reduction and NH3 SCR System	3 Years	SERB	2735000	Dr. Sweta
5	Development & Evaluation of Infrared Nanoparticles for Cellular-wide sensitive E-field Mapping	3 Years	DST Nano Mission	5152965	Dr. Manoj Kumar
6	Pyrolysis of Biomass for the Producation of Bio-oil: Experimental and Computational Study	3 Years	DST	23,50,000 (T/F Case)	Dr. J.P. Chakraborty
7	Fabrication of low-cost High-through out Flow Cytometer using tunable nanolenses.	3 Years	DST, New Delhi	5209600	DrAnkurVerma
Department of Chemistry					
1	Evaluation and Optimisation of Biodiesel Production from Microalgae	3 Years	DST	5192400	Prof. Yogesh Chandra Sharma
2	Photolabile Protected Monosaccharides: Syntehsis and Application to Oligosaccharides Synthesis Using a Continuous flow Photoreactor	3 year	Germany	4462460	Dr. Jeyakumar Kandasamy
3	Development of portable electrochemical sensor hydrogen peroxide	3Yrs	BRNS - Mumbai	3492750	Dr. P.C. Pandey
4	Detailed lacture based curriculum development for science subjects as part of Induction Programme in AICTE COLLEGES	02 Yrs	AICTE	1152000	Dr. Indrajit Sinha
5	Metal hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides	03Yrs	DRDO	4171680	Prof. PC Pandey (PI) / Prof. YC Sharma (CoPI)
Department of Civil Engg.					
01	Propagation & Mitigation model of mixed road traffic noise for planning od mid-sized Indian Cities	3 years	MHRD IMPRINT	37,300,000	Dr. Brind Kumar
02	INSPIRE Faculty Award	5 years	DST	3,500,000	Dr. Manash Chakraboratory
03	Smart & Integrated Pedestrian System Design	3 years	MHRD, MoUD, GMR Airport Developers (Ltd), Vikram Solar Pvt. LTd	9,33,206	Dr.Ankit Gupta
04	Active Vibration Control of Smart Composite and Sandwich Structures in hydro-thermal Environment	3 years	SERB	1,908,940	Dr. Rosalin Sahoo

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
05	Investigation on dynamic response analysis of shallow foundation resting on pond ash deposits	3 years	SERB- ECRA	36,14,600	Dr. Supriya Mohanty
06	Development and assessment of asphalt mastic from typical Indian and Austrian filler materials with a new test method	2 years	DST	9,50,000	Dr. Nikhil Saboo
07	River Aquifer exchanges & hydrogeological study for watershed management of betwa river basin	2 years	NRDMS	24,51,000	Dr. Shishir Gaur
08	Strategic Planning for Water Resources and Implementation of Novel Biotechnical Treatment Solutions and Good Practices (SPRING)	3 years	DBT	71,27,840/-	Prof. Prabhat Kumar Singh
09	Smart & Integrated Pedestrian System Design	3 Years	MHRD, MoUD, GMR Airport Developers (Ltd), Vikram Solar Pvt. LTd	21277100	Dr. Ankit Gupta (Co- P.I.)
Department of Computer Science & Engineering					
1	A Robust medical image forensics system for smart healthcare	02 Yrs	SERB	140770	Dr. Tanima Dutta
2	UNNAT BHARAT ABHIYAN, MoU B/W IIT(BHU) & IIT(DELHI) –MHRD	NA	MHRD	850000	Earlier with Prof. BN Rai/ Dr. Ruchir Gupta (currently)
3	Incorporating Intelligence in Email System	2 Years	BRNS	1368000	Dr. Ruchir Gupta
4	WATER to Cloud : Ganga River Project, MoU b/w IIT(BHU) & University of Chicago TRUST Banguluru	11 months	University of Chicago Trust, Benguluru	1000000	Dr. Tanima Dutta
5	Development of an energy –efficient wireless sensor networks for precision agriculture	3 Years	DST	3417130	Dr. H.P. Gupta
Department of Electrical Engineering					
1	Mix energy Source Electric Vehicle Charging System Design and its Impact on Indian Smart –distribution – grid	3 Yrs	DST	9449500	Dr. R.K.Singh
2	Design Modelling and simulation of linear Induction Drive for Propulsion Applications	02 Yrs	CARS, DRDO	1000000	Prof. R.K.Srivastava
3	Construction of Non-monotonic Lyapunov Function for the Dynamical Systems governed by differential inclusions	03Yrs	SERB	660,000	Dr. Shyam Kamal

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
Department of Electronics Engg.					
1	Electromagnetic Analysis, Design and simulation of an X-band Gyro-Twystron Amplifier	3 years	SERB	29,10,448	Dr. M. Thottapan
2	Design Investigations of High Power MM Wave W Band Gyratron	2 years	CARS	990,000	Prof. P.K. Jain
3	Design and development of miniaturized pattern/frequency reconfigurable MIMO antennas and its performance improvement using artificial electromagnetic material	3 years	SERB	4,252,000	Dr. Manoj Kumar Meshram
4	Development of Polymer and Quantum Dots Blended Tandem Solar Cells Using Low Cost Solution Processed Method	3 years	SERB	4,486,000	Prof. Satyabrata Jit
5	Study, Design and Implementation of Frequency Selective Metasurfaces for Microwave Applications	3 years	SERB-ECRA	4,670,620	Dr. Somak Bhattacharyya
6	Physical Layer Security for LTE based Wireless Networks to increase Jamming Margins	1 year	CRL- BEL	3360000	Dr. K.V. Srinivas
Department of Humanistic Studies					
1	Cognitive Linguistic study of perception verbs in Hindi and English: In the context of machine translation	2 years	DST(CSRI)	1,364,000	Dr. Swasti Mishra
Department of Mathematical Sciences					
1	Schwarz waveform relaxation methods for singularly Perturbed Parabolic Problems	03 Years	SERB	660000	Dr. Sunil Kumar
2	Study and analysis of Mathematical Models of Moving Boundtry Problems	03 Years	SERB	2244000	Dr. Rajeev
3	RobustAdaptive Mesh Methods for Singularly Perturbed Problems in Ordinary and Partial Differential Equations	03 Yrs	SERB	2095279	Dr. Sunil Kumar
4	Numerical methods for integral equations and differential equations by using Wavelets and operational matrix	3 Years	SERB, New Delhi	693000	Dr. Vineet Kumar Singh
5	Development of solution methods for Abel's integral equations and generalized Abel's integral equation	3 Years	DAE, Mumbai	332500	Dr.Rajesh Kr. Pandey
6	On characterizing and Obtaining the Complete Efficient Solution Set of an Interval Optimization Problem under a D-Dominance and a variable Dominance Structure	3 Years	SERB, New Delhi	1502500	Dr. DebdasGhosh
7	Applications of Spectral graph theory in analyzing the structural properties of large scale networks	03 Yrs	SERB	660000	Dr. Lavanya Silveganeshan

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
Department of Mechanical Engg.					
1	Study of tool wear in diamond turn mechining & micro machining process	2 years	BARC, Mumbai	2,405,800	Prof. Sandeep Kumar, P.I. Dr. U.S. Rao
2	Development of Sheet Hydro-forming Process for missile Components	2 years	DRDO	980,000	Prof. Santosh Kumar
3	Technology and Fabrication of Tabletop CNC Machine for Micro-Tubular Hydro forming Setup	2 years	BARC	4,932,000	Prof. Santosh Kumar
4	Assessment of residual stress upon friction stir welding of steel	3 years	SERB	4,500,000	Dr. Mohd. Zaheer Khan Yusufzai
5	Quenching behavior of dry heated ord with nanofluid	2 years	BRNS	3,356,800	Dr. Pradyumna Ghosh
6	Development of a Rubber based sheet Hydro forming setup	2 years	DRDL, CARS Hyderabad	984,000	Prof. Santosh Kumar
7	Characterization and validation of Schlieren Technique for Capturing Shock Wave	3 years	DRDO	1,784,800	Dr. Amitesh Kumar
8	Design & Development of Combined Cooling and Power Generation system	2 years	CST-UP	960,000	Dr. S.K. Shukla
9	Development of an intelligent evaporative cooler for composite climate	2 years	DST	892,243	Dr. Jahar Sarkar
10	Development of Ti alloy based composites by mechanical alloying and stirrer casting route for dental applications	3 years	SERB	5,021,000	Dr. Rakesh kumar Gautam
11	Pathology on a Spinning Disc	3 years	MHRD- STARS	94,10,000	Dr. Arnab Sarkar
12	Photonic radative cooler for passive sub-ambient cooling	3 years	SERB-IMPRINT	4,188,800	Dr. Jahar Sarkar
13	Design of High Temperature Facility for Graphite Dust Formation and Transport.	2 years Extended till 2018	BRNS (DAE)	5184000	Dr. Prasant Shukla
14	Centre for Energy and Resources Development	2 Years Extended till 2018	MHRD FAST Scheme	40000000	Dr. S.K. Shukla
15	Design Development and Fabrication of an Incremental Sheet Hydro forming Machine Setup	3 Years	SERB	4800000	Dr. Santosh Kumar
Department of Metallurgical Engineering					
1	DST-INSPIRE Fellow	5 Years	DST	6716084	Breatindranath Mukherji
2	Development of nickel free nitrogen austenitic stainless steel for biomedical applications	3 Years	Min. of Steel, GoI	28444800	Dr G.S. Mahobia/ Dr. Kausik Chattopadhyay/ Prof. Vakil Singh

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
3	Development and structural characterization of Bi2-xMx3+(y-3)/2 coating for protection against coolant & sensors	3 yrs	UGC DAE-CSR	NA	Dr. JoysuryaBasu
4	Development of Electropulsing Facility for Synthesis of Bulk Nanostructured Materials	2 Years	B.R.N.S.	2648400	Dr. Rampada Manna Prof. G.V.S. Sastry/ Prof. R.K. Pandey/ Prof. S.N. Ojha
5	In situ electron microscopy at atomic scale for understanding nucleation growth and interfaces of omega phase	3 Yrs	SERB	6584600	Dr. JoysuryaBasu
6	Optimization of recovery of valuable metals from waste printed circuit boards (WPCBs) through modified hydrometallurgical route	2 Yrs	UGC	1016400	K.K.Singh
Department of Mining Engg.					
1	Meter Scale Granite block Smectic clay barriers experiment and associated TMH modeling for Indian Pit mode reference geological Disposal System	3 years	BRNS	3,088,900	Dr. A.K. Verma
2	INSPIRE Faculty Award	6 years	DST-INSPIR E	3,500,000	Dr. A.K. Verma
3	Landslide stability analysis in subzero environment around Kinnaur district of Himachal Pradesh, India	3 years	DST	4,973,200	Dr. A.K. Verma
4	Design and development of Micro Seismic based technique for monitoring and prediction of slope failure in Pandoh, Himachal Pradesh, India	3 years	SERB	4,977,040	Dr. A.K. Verma
5	Whole body Vibration Exposure on HEMM Operators in Surface Coal Mines – An Assessment of Various Contributing Factors	3 years	SERB	4,003,762	Dr. S.K. Palei
6	National Geotechnical Conclave on "Development of Early warning system (EAWS) for Landslide Hazard Mitigation on 21-22 March, 2019	One time grant	DST	550,000	Dr. A.K. Verma
Department of Pharmaceutical Engg. & Technology					
1	Development & evaluation of nanocarrier for enhanced anti-microbai activity of anacrdic acid against human and plant pathogens	3 years	DST	5,866,996	Dr. Sanjay Singh
2	Evaluation of some compounds in experimental Alzherimer Disease	2 years	Natreon	2,940,000	Dr. Sairam Krishnamurthy
3	Pharmacological Effect of novel formulation in experimental allergic encephalomyelitis rodent model	1 years	DISTO	504,000	Dr. Sairam Krishnamurthy

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
4	Pharmacology of Natural drugs in obesity and eating disorders	2 years	Natreon	2,654,600	Dr. Sairam Krishnamurthy
5	Dissecting brain reward circuitry and CNS comorbidities in chronic neuropathic pain	3 years	SERB-ECRA	4,909,520	Dr. Vinod Tiwari
6	Phytochemical and pharmacological evaluations of bioactivity guided fractions of medicinal plants of Tripura	3 years	DBT	2,655,200	Dr. A.N. Sahu
7	Design and Synthesis of novel Matrix Metallo Proteinase (MMP-2 & 9) Inhibitors as therapeutic agents for Alzheimer's Disease	3 Years	Deptt. of Biotechnolo Gy	6052000	Dr. S.K. Singh
8	Experimental Evaluation of Geroprotective Activity of Some Compounds	2 years	Natreon Inc., U.S.A.	2206800	Dr. Sairam Krishnamurthy
Department of Physics					
1	DST/INSPIRE Faculty Award (IFA-12-PH-21)	5 Years	DST	9500000	Dr. S.K. Singh
2	IFA-12-Ph-22 DST/INSPIRE FACULTY Award/2012 INPIRE FACULTY AWARD	5 Years	DST	7600000	Shri Sunil Kumar Mishra
3	Study of Magnetospheric Wave-Particle interaction, Aurora, Airglow and Conductivities on Planets and their Satellites	3 Years	ISRO	38,0,3,000	Dr. D. Giri/ R.P. Singhal/ O.N. Singh
4	Observations and Modeling of solar transients & space weather candidates	3 Years	SERB	1776000	Dr. Abhishek Kr. Srivastava
5	Investigation of Glass - Ceramic for Capacitive Energy Storage Applications	3 Yrs	CSIR	NA	Prof .Prabhakar Singh
6	Electronic Structure evolution across quantum critical point in Li(Ti1-xVx)2O4 Li1-x Znx)V2O4	03 Yrs	SERB	5500000	Dr. Swapnil Patil
7	Collection of self-propelled particles in inhomogeneous environment : numerical & analytical Studies	03 Yrs	SERB	2459600	Dr. Shradha Mishra
8	The sun under the microscope – An integrated research activity to maximize the science return from a new generation of missions to study the sun	2 Yrs	UGC	1928180	Abhishek srivastav
9	Modeling self assembly and phase seperation kinetics in the complex soft materials	03 Yrs	SERB	4654375	Dr. Awaneesh Kumar Singh
10	Ramanujan Fellowship	05 Yrs	SERB	3800000	Dr. Bidya Binay Karak
11	Investigations of new lead free perovskite materials for solar cells	03 Yrs	SERB	3809391	Prof. Prabhakar Singh

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
12	DST-INSPIRE Faculty Award (IFA-13 PH 54) understanding structure and dynamics of the Interstelar medium	5 Years	DST, New Delhi	3500000	Dr. PrasunDuttta
School of Biomedical Engg.					
1	Development of Microfluidic tools for neuromuscular synatogenesis and nanotoxicological studies	5 years	DST	Rs. 3,500,000.00	Dr. Sanjeev Kumar Mahto
2	Nanoparticles supported self Assembled Conducting Polymer Monolayer Based Platform for Rapid Detection of Monosodium Glutamate in Food Products	3 years	DBT	3,492,000	Dr. Marshal
3	Neem seed based nanocapsules and nanomedicine for targeted drug delivery and cancer therapy	3 years	SERB	4,046,000	Dr. Pradip Paik
4	Funcional-hollow-porous-bipolymer based Nanoformulations and Interventions for treatment of Cancer and prevention of Tuberculosis, concept of nanomedicine with multiple drugs for multiple diseases	3 years	DST	5,218,094	Dr. Pradip Paik
5	Nanoparticles supported self Assembled Conducting Polymer Monolayer Based Platform for Rapid Detection of Monosodium Glutamate in Food Products	3 Years	DBT	8920000	Dr. Marshal
6	Delineating the molecular interactome of Calcineurin, post phagosome formation in mycobacterial pathogenesis	3 Years	SERB-DST	2130000	Dr. Somdeb Das Gupta
School of Biochemical Engg.					
1	Development and evaluation of an innovative poly herbal Bi layer wound dressing material	3 years	DRDO	3,203,200	Dr. Pradeep Srivastava
2	Construction of Cold Inducible Expression System	3 years	DBT	3,610,300	Dr. Ashish Kumar Singh
3	Enhancement of Lipid Content in Microalge Scenedesmus Obliquus Using Genetic Engineering Tool: a step towards biodiesel	3 years	CST	450,000	Dr. Ashish Kumar Singh
4	Screening of novel antibiotics from the metagenome of Himalayan glacial soil	3 years	DRDO	3,987,500	Dr. Ashish Kumar Singh
5	Identification of Gene Responsible for Degradation of Poly (Ethylene Terephthalate) in Ideonella sakaiensis	3 years	DBT	4,043,200	Dr. Ashish Kumar Singh
6	Flow and segregation of granular materials out of hoppers and two & three dimensional devices	3 years	CST-UP	1,044,000	Dr. Vishal Mishra

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
7	Screening of Novel Psychrophilic alkaline Protace from the metagenoime of Antartic soil	3 years	SERB	1,904,410	Dr. Ashish Kumar Singh
9	Targeted drug delivery of methotrexate/ gallic acid- folate conjugated Poly L-Lysine nanoparticles	3 years	DBT	3,461,200	Dr. Abha Mishra
School of Materials Science & Technology					
1	J.C. Bose Fellowship	5 years	SERB	6,800,000	Prof. Dhananjay Pandey
2	Polymeric Nanobiohybrids for Tissue Engineering and Drug Delivery	3 years	SERB	2,311,000	Prof. Pralay Maiti
3	Development of low voltage, low power, colloidal quantum dot light-emitting transistors for next generation display technology	3 years	SERB	5,552,323	Dr. Bhola Nath Pal
4	Co2 Capture in Carbon nanocomposites	5 years	DST	3,500,000	Dr. Ashish Kumar Mishra
5	Ramanujan Fellow	5 years	SERB	3,500,000	Dr. Sanjay Singh
6	Development of low cost sodium ion battery: Fabrication and application of NASICON based electrodes	3 years	DST	8,289,600	Prof. Rajiv Prakash
7	Understanding the mechanism of action through cell biology and upgradation of herbal drug in solution and biodegradable patch for the treatment of diabetic foot ulcer	1.5 years	BIRAC	2,860,000	Prof. Pralay Maiti
8	Elastocaloric effect measurement setup to study caloric effect in shape memory alloys	3 years	UGC- DAE	NA	Dr. Sanjay Singh
9	Development of anticorrosive paints	1 years	Harind chemicals & Pharmaceuticals Pvt. LTd	120,000	Prof. Pralay Maiti
10	Radionuclide sensing platform based on functionalized polymer having nanochannels using accelerator	3 years	BRNS - DAE	3,416,000	Prof. Pralay Maiti
11	Mott transistors based Neuromorphic memory device	3 years	DST	10,098,200	Dr. Shrawan Kumar Mishra
12	Minimizing hysteresis in magnetic shape memory Heusler slloys for reversible magnetocaloric effect	3 years	SERB	4,839,838	Dr. Sanjay Singh
13	Low cost ammonia gas sensor based on polymer/polymer nanocomposite device formed by novel floating film transfer (FTM) technique	2 years	IMPRINT-SERB	3,569,376	Prof. Rajiv Prakash

S. No.	Title	Period	Funding Agency	Amount (in lakhs of Rs.)	Principal Investigator/ Co-ordinator
14	Nanoscale interfacial magnetic skyrmions and its applications in memory devices	3 years	DST	10,350,520	Dr. Shrawan Kumar Mishra
15	Table Top Sem	One time grant	Advanced Materials Pvt. LTd	1,731,500	Prof. Rajiv Prakash
16	Aging studies and estimation of thermal properties of Liner Materials	2 years	DRDO	15,685,030	Prof. Pralay Maiti
17	Design & investigation of thermal conducting two dimensional heterostructures	3 years	SERB	5,480,840	Dr. Ashish Kumar Mishra

3. Consultancy/Testing projects

Sl. No.	Name of Faculty Member	Title	Industry	Amount
1	Prof. K.K. Pathatk & Dr. P.R. Maiti	Vetting of Design & Brawing of prestressed concrete flat slab at all slab level for project	Vice President M/s Nokior Engineer & Project Consultant B-104 Sitconvally shivaraganj crosing sattalli Ahmdabad, Gujrat	2,16,000.00
2	Dr. K.K. Pathak	Vetting of Structural Design & Drawing PTDD Government Colleger Palhi Patti, Varanasi	Project Manager Bhadohi Unit, UPRNN Bhadohi, House NO-2 Vivekanand Nagar Colony, Lohamandi, Maldahiya, Varanasi	59,000.00
3	Dr. Ankit Gupta	Testing work for PQC & DLC Design and Quality Inspection	T.N. Rai Adhishashi Abhiyanta Gramin abhiyantan Vibhag, Chandauli	4,24,239.00
4	Dr. Ankit Gupta	Techncal Support & quality dispection during cc poad construction	T.N. Rai Adhishashi Abhiyanta Gramin abhiyantan Vibhag, Chandauli	6,87,955.00
5	Dr. K.K. Pathak	Proof checking of Design & Drawing of Primary School Building in Himanchal Pradesh	Principal Architech Space Architects Vadodra	35,400.00
6	Prof. V. Kumar	Vetting of Design & Drawing of Laureching shceme of open wedgi	Chief G.M. CGM/DFCCIL/ ALD (East) DFCCIL Allahabad East 1st Floor Old GM Building N.C. Railway Valmiki Chouraha Allahabad	3,54,000.00
7	Dr. K.K. Pathak	Vetting of structural design & drawing of caferaria on first floor of NSS Bilding of SSU Varanasi	Project Manager, Bhadohi Unit, UPRNN Bhadohi House No. 2 Vivekanand Nagar colony, Lohamandi Maldahiya, Varanasi	35,400.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
8	Dr. P.R. Maiti	Vetting of structural design of 162.236 M High TV Install of Mau	M/S EMMTEE Constrcution F-44 Indl. Area Phase VII Mohali (PB)	88,500.00
9	Dr. Brind Kumar	Security of project proposal for the state of Le P Under PMGSY	Director (Technical) National Rusal coal Development Agency, 5th floor, 15-NBCC Tower Behind cama Place, New Delhi	3,88,563.00
10	Dr. Ankit Gupta	Testing of stone Ballast	Executive Engineer construction, ECR, Chopan M/s Sourabh & Brothers, Bokaro Jharkhand	12,980.00
11	Prof. V. Kumar	Inspection & Report preparation of Existing OH water tank	G.M. (Projects) Hindalco Industries Limited Renukoot, Sonebhadra	11,88,000.00
12	Dr. Ankit Gupta	Testing of Bituminous Mix	AGM (HRIDA-Varanasi) Plot No.-D-59/143, A-48, Sant Raghuvir Nagar, Sigra, Varanasi (M/s Sainik Construction)	23,600.00
13	Prof. Arun Prasad	Stability analysis and remedial measures for mud stock piling	The Head, Hindalco Industries Ltd., Renukoot (Sonebhadra)	2,70,000.00
14	Dr. Ankit Gupta	Testing of Track Ballast	Executive Engineer XEN/ CON/BUI, North Eastern Railway, Ballia	12,980.00
15	Dr. P.B. Ramadu	Soil Investigation	Executive Engineer, Mirzapur Nahar Parkhand, Mirzapur	1,20,360.00
16	Dr. Brind Kumar	Site inspection of Rajapur-Hatwa Marg (ODR)	EE, CE-1, PWD, Chitrakoot	88,500.00
17	Dr. Brind Kumar	Quality Verification of Urban CC Road	EE, PD, PWD, Karwi, Chitrakoot	1,30,980.00
18	Dr. Brind Kumar	Analysis of Materials properties for proposing suggestions for rehabilitation of Rajapur-Hatwa Marg (ODR)	EE, CE-1, PWD, Chitrakoot	59,063.00
19	Dr. Brind Kumar	JMD of G & B WMM, DBM, and BC fo widening & Stregthening of MMBCB road	EE, CD, PWD, Sonebhadra	2,83,200.00
20	Dr. Brind Kumar	Job mix design of G&B, WMM, DBM and BC for wideming & strengthening of MM BCB road	EE, CD, PWD, Sonebhadra	2,83,200.00
21	Dr. Brind Kumar	Evaluation of quality of CC road work at FSD, Manduadih	AGM (Civil), food corporation of India, Regional office, Lucknow	1,05,020.00
22	Dr. Brind Kumar	Evaluation of quality of CC road work at FSD, Manduadih	AGM (Civil), food corporation of India, Regional office, Lucknow	14,160.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
23	Dr. Brind Kumar	Analysis of cracking pattern and its preparation along with making rehabilitation of urban CC road in chitrakoot district	EE, PWD, PD-Karwi, Chitrakoot	1,18,000.00
24	Dr. Brind Kumar	Job mix design of BC-II for general renewal works of Bdkhari-Tiwaripur marg	EE, CD-2, PWD, Sonebhadra	94,400.00
25	Dr. Brind Kumar	JMF of BC-II for general renewal works of Mareltawa katauli-Kataudhi-dumhan Marg	EE, CD, PWD, Sonebhadra	94,400.00
26	Dr. Brind Kumar	JMF of BC-II for general renewal works of Mareltawa katauli-Kataudhi-dumhan Marg	EE, CD, PWD, Sonebhadra	94,400.00
27	Dr. Suresh Kumar	soil investigation	Anga Construction (India) Ltd.	92,880.00
28	Prof. V. Kumar	Vetting of structural design and drawing of PSC girder composite girder and solid RCC deck slab	M/s Salabuddin & JK (JV) Hathua Chawani Chatradhari Bazar, Chapra	5,90,000.00
29	Prof. V. Kumar	vetting of structural design and drawing of substructure of ROB at LC No. 20 (1x30.28m)	Director M/s Geotech Technical Associates Pvt Ltd., Varanasi	41,300.00
30	Prof. V. Kumar	vetting of structural design and drawing of substructure of major bridge no. 17 and 57	Director M/s Geotech Technical Associates Pvt Ltd., Varanasi	82,600.00
31	Prof. V. Kumar	Inspection, Verification of materials quality report workmanship etc.	M/s Gannon Dunkarley & Co. Ltd., Ghaziabad	59,000.00
32	Dr. P.R. Maiti	testing of cement, coarse aggregate, sand steel	M/s Gannon Dunkarley & Co. Ltd., Ghaziabad	2,10,040.00
33	Dr. P.R. Maiti	concrete mix design	Project Manager UP Awas evam Vikas Parishad Construction Unit, Varanasi	32,450.00
34	Dr. P.R. Maiti	coarse aggregate (20 mm, 10 mm) fine aggrigate (sand)	M/s C&G ESMJV Camp, Jhansi, Chandauli	28,320.00
35	Dr. P.R. Maiti	coarse aggregate sand	Dy. Project Manager UP State Bridge Corporation Ltd.	55,460.00
36	Dr. P.R. Maiti	cube testing	Lokendra Kumar Karva, Gopal Bag, Varanasi	1,770.00
37	Dr. P.R. Maiti	testing of cement, testing of steel, cube testing	Assistant Engineer BHU Project Subdivision CPWD Varanasi	3,456.00
38	Dr. P.R. Maiti	steel testing	Executive Engineer Electricity Civil Division (Distribution) PVVNL, Vidyut Nagar, Hydel Colony, Varanasi	50,150.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
39	Dr. P.R. Maiti	cube testing	Executive Engineer Nagar Nigam Varanasi (M/s Krishna Construction)	1,770.00
40	Dr. P.R. Maiti	cube testing	M/s Chloride Power System Solutions Ltd., Plot No. Y-21, Block EP, Sector-V Salt Lake Electronics Complex Kolkata	3,540.00
41	Dr. P.R. Maiti	Testing of cement, cube, steel	Assistant Engineer BHU Project Subdivision-1, CPWD VNS (M/s Eastern Construction Company)	56,160.00
42	Dr. P.R. Maiti	cube testing	Executive Engineer, Kanabar Construction Division-2, Pipri, Sonebhadra	5,310.00
43	Prof. V. Kumar	Vetting of desing and drawing of GI structur of Solar Pannel of Solar Power Plant 1.8 KW at 80 MLD Water Treatment Plant Kathata under Amrit Scheme, Lucknow	Project Manager Gomti Pollution Control Unit-3 (V/Y) UP Jal Nigam, 22, Japling road, Lucknow (M/s Acme Pumps & Power Projects Ltd.)	29,500.00
44	Prof. K.K. Pathak	Vetting of structural design and drawing of following Dllam span Suspension bridge of Ramganga River at Bardi, Almora	Tom Span Binta Bichilam bridge on Ramganga River at Almora	4,77,000.00
45	Prof. Prabhat Kr. Singh	Inspection and Preparation if Adeduocy report for ETPs of food Processing Units at Aligarh (UP) and Derrabasi,	Urban Plan Consulting & Engg. Pvt. Ltd., 106, 107 Nikhat Plaza Aligarh	88,500.00
46	Prof. P.K.S. Dikshit	vuijk rkih; ifj;kstuk ij mRiknu la'kks/ku laiad ds fuekZ.k gsrq bldh rduhdh fof'k"Vhdj.k	Jh vt; dqekj jk; vf/k'kklh vfHk;ark] la?k mi;ksfxrk izdks"B] vuijk rkih; ifj;kstuk] m0iz0 fo|qr mRiknu fuxe fy0 vuijk lksuHknz	6,36,000.00
47	Dr. Suresh Kumar	Vetting of soil investigation report of construction of ETP of NCL site location at krishanshila	Eesavyasa Technology Pvt. Ltd., Ballabh Complex, Auri More, Adarsh nagar, Sonebhadra	35,400.00
48	Dr. P.R. Maiti	Concrete Mix Design	M/s Shubham Construction, Village-Ganga Kheda, Daihar, Mohanlalganj, Lucknow	1,32,750.00
49	Dr. P.R. Maiti	Testing of Cement	AGM (FQA/Safety), Kanti Bijlee Utpadan Nigam Limited, MTPS, P. Kanti Thermal Mujjafarpur, Bihar (M/s Shiv Shankar Traders)	21,240.00
50	Dr. P.R. Maiti	Steel Testing	Executive Engineer, Construction Division, Jal Nigam, Balia. (M/s Sonali Enterprises)	16,520.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
51	Dr. P.R. Maiti	Cube Testing	Executive Engineer, UP Jal Nigam, Kathua Gandhighat, Mirzapur, M/s Brijbhushan Bubey, Nuwao Sndwa, Mirzapur	5,310.00
52	Dr. P.R. Maiti	Cube Testing	M/s HES Infra Pvt. Ltd., Amwar, Duddhi, Sonbhadra. C/o Executive Engineer, Kanhar, Construction Division-2, Pipri, Sonbhdra	1,770.00
53	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Kanhar, Construction Division-2, Pipri, Sonbhdra	5,310.00
54	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Kanhar, Construction Division-2, Pipri, Sonbhdra	7,080.00
55	Dr. P.R. Maiti	Cube Testing	M/s NBCC(India) Ltd., Site Office,CIHTS Sarnath Varanasi (M/s JPG Constructions Pvt Ltd)	3,540.00
56	Dr. P.R. Maiti	Steel Testing	AM/Civil Regional Project office Lucknow, NH 24, Lucknow-Sitapur Road, Lucknow (M/s Kalpataru Power Transmission Ltd.)	1,17,504.00
57	Dr. P.R. Maiti	Testing of Cement	Sr. Manager, Non Trade Sales, M/s Nivoco Vistas Corp. Ltd., C/o Business Equipments Pvt. Ltd., DLW Road, Kakarmatta, Varanasi	7,080.00
58	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Kanhar, Construction Division-1, Pipri, Sonbhdra	17,700.00
59	Dr. P.R. Maiti	Building Material Testing (Cement, Steel, Cube, Bricks)	Assistant Engineer, BHU Project Division-2, CPWD, Varanasi (M/s Varun Gupta & Co.)	89,680.00
60	Dr. P.R. Maiti	Building Material Testing (Cement, Cube,)	Assistant Engineer, BHU Project Division-2, CPWD, Varanasi (M/s Varun Gupta & Co.)	28,320.00
61	Dr. P.R. Maiti	Building Material Testing (Cement, Bricks)	Assistant Engineer, BHU Project Division-2, CPWD, Varanasi (M/s Varun Gupta & Co.)	23,010.00
62	Dr. P.R. Maiti	Building Material Testing (Steel,Cement, Cube)	Assistant Engineer, BHU Project Subdivision-5, CPWD, Varanasi (M/s Varun Gupta & Co.)	69,030.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
63	Dr. P.R. Maiti	Building Material Testing (Steel,Cement)	Assistant Engineer, BHU Project Subdivision-5, CPWD, Varanasi (M/s Varun Gupta & Co.)	38,940.00
64	Dr. P.R. Maiti	Building Material Testing (Cement, Steel, Cube, Bricks)	Assistant Engineer, Varanasi Central SD, CPWD, Varanasi (M/s Varun Gupta & Co.)	43,660.00
65	Dr. P.R. Maiti	Cube Testing	Additional General Manager, M/s Hindustan Prefab Limited, Project Unit, ESIC Hospital, Pandeypur, Varanasi (M/s Universal Contractors and Engineers Pvt. Ltd.)	17,700.00
66	Dr. P.R. Maiti	Mix Design	Assistant Engineer, Varanasi Project Division-3, CPWD, Varanasi (M/s Gupta Construction Pvt. Ltd.)	59,400.00
67	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-3, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	63,720.00
68	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-3, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	42,480.00
69	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-3, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	28,320.00
70	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-2, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	7,080.00
71	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-2, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	26,550.00
72	Dr. P.R. Maiti	Cube Testing	Sub Divisional Office, Electricity Civil Trans. SD-II, UPPICL, Mohaddipur, Gorakhpur (M/s Amit Construction)	3,540.00
73	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Electricity Civil Trans. SD-II, UPPICL, Mohaddipur, Gorakhpur (M/s Amit Construction)	3,540.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
74	Dr. P.R. Maiti	Testing of Wood	Assistant Engineer, BHU Project Subdivision-1, CPWD, Varanasi (M/s Gupta Construction Pvt. Ltd.)	8,640.00
75	Dr. P.R. Maiti	Building Material Testing (Cement, Steel, Cube, Bricks)	Upper Project Manager, UPRNN Ltd. Ram Kath park, Naya Ghat, Ayodhya.	87,910.00
76	Dr. P.R. Maiti	Concrete Mix Design	Executive Engg.-II, Office of the Supertending Engg. UWD, BHU (M/s Shiv Prakash yadav)	32,450.00
77	Dr. P.R. Maiti	Testing of Bricks	Superintending Engg., UWD, BHU. (M/s Shiv Prakash Yadav)	8,850.00
78	Dr. P.R. Maiti	Testing of Bricks	Executive Engineer, Electricity Civil Division (Distribution) Purvanchal Vidyut Vitran Nigam Ltd. Hydel Colony, varanasi	8,850.00
79	Dr. P.R. Maiti	Testing of Bricks-Cube	M/s Kishna Buildshape Pvt. Ltd., Ramnagar Industrial Area, Parag dairy, Varanasi	10,020.00
80	Dr. P.R. Maiti	Testing of Bricks	Assistant Engineer, Chakiya Central Subdivision, CPWD, Chakiya (M/s R. K. The Aluminium People)	17,700.00
81	Dr. P.R. Maiti	Testing of Concrete Mix Design Bricks	Executive Engg.-II, Office of the Supertending Engg. UWD, BHU (M/s K C Construction)	41,300.00
82	Dr. P.R. Maiti	Concrete Mix Design	Executive Engg., Office of the Supertending Engg. UWD, BHU (M/s Anil Enterprises)	29,700.00
83	Dr. P.R. Maiti	Concrete Mix Design	Assistant Engineer, Varanasi Project Division-3, CPWD, Varanasi (M/s Gupta Construction Pvt. Ltd.)	59,400.00
84	Dr. P.R. Maiti	Testing of Bricks	M/s Max-1, Infratech S.M., Plot No. 378, Gram-Hiramanpur, Ashapur, Varanasi	8,100.00
85	Dr. P.R. Maiti	Concrete Mix Design	Executive Engg.-II, Office of the Supertending Engg. UWD, BHU (M/s Jai Bajrang Enterprises)	32,450.00
86	Dr. P.R. Maiti	Testing of Building Materials (Cement, Aggrigate, Steel)	Ch. Manager/TLC, Power Grid Coorporation of India Limited, C-27/210A, Kailgarh House, Jagatganj, Hindustan Times Campus, Varanasi-UP	1,25,080.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
87	Dr. P.R. Maiti	Testing of Building Materials (Bricks, Sand,Aggrigate, Steel)	Project Manager, UPPNN Ltd, Bhadohi Unit, H.No.-02, Vivekanad Nagar Colony, Lohamandi, Maldahiya, Varanasi	54,280.00
88	Dr. P.R. Maiti	Testing of Inter locking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi (M/s sahil Enterprises)	11,800.00
89	Dr. P.R. Maiti	Testing of Cube	Executive Engineer, Kanhar Construction Division-3, Pipari Sonebhadra	21,240.00
90	Dr. P.R. Maiti	Steel Testing	Assistant Engineer, BHU Project Subdivision-2, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	1,47,500.00
91	Dr. P.R. Maiti	Steel Testing	Assistant Engineer, BHU Project Subdivision-3, CPWD, Varanasi (M/s Winner Construction Pvt. Ltd.)	25,370.00
92	Dr. P.R. Maiti	Cube Testing	M/s Gannen Dunkerley & Co. Ltd., Mirzapur	5,310.00
93	Dr. P.R. Maiti	Concrete Mix Design	Unit Incharge, UPRNN Ltd., Raibarely Unit, District Jail Campus, Raibarelly	32,450.00
94	Dr. P.R. Maiti	Concrete Mix Design	M/s Dilip Building Ltd., Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal	84,960.00
95	Dr. P.R. Maiti	Steel Testing	Assistant Engineer (Co.), Office of Deputy Chief Engineer, West of Hazipur Railway Station, East Central Railway, Hazipur. (M/s S P Malik and North Bihar (JV))	61,360.00
96	Dr. P.R. Maiti	Steel Testing	AGM, M/s NBCC(India) Ltd., Central Institute Site Office, CIHTS, Sarnath, Varanasi (M/s JPG Constructions Pvt. Ltd.)	54,280.00
97	Dr. P.R. Maiti	Testing of Cement	Assistant Engineer, BHU Project Subdivision-1, CPWD, Varanasi (M/s Eastern Construction Company)	25,920.00
98	Dr. P.R. Maiti	Cube Testing	M/s Hindustan Prefab Ltd., Project Unit-ESIC Hospital, Pandeypur Varanasi (M/s Universal Contractors and Engg. Pvt. Ltd.)	8,850.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
99	Dr. P.R. Maiti	Concrete Mix Design	Assistant Engineer (Co.), Office of Deputy Chief Engineer, West of Hazipur Railway Station, East Central Railway, Hazipur. (M/s S P Malik and North Bihar (JV))	35,400.00
100	Dr. P.R. Maiti	Testing of Gabian Box	Chief Manager (Civil), QC, Northern Coalfeilds Ltd., Singraul, MP	32,450.00
101	Dr. P.R. Maiti	Steel Testing	Assistant Engineer, BHU Project Subdivision-2, CPWD, Varanasi (M/s Eastern Construction Company)	1,14,460.00
102	Dr. P.R. Maiti	CGI Sheet Testing, Testing of Gabian Box, Profile Sheet, Panelled Shuflers & Wire Gauge, Flush Door Shiftter	Chief Manager (Civil), QC, Northern Coalfeilds Ltd., Singraul, MP	65,490.00
103	Dr. P.R. Maiti	Testing of Glazed Tiles	Chief Manager (Civil), QC, Northern Coalfeilds Ltd., Singraul, MP	21,240.00
104	Dr. P.R. Maiti	Testing of Steel, Cement	Assistant Engineer, C/o Dy. Chief Engg./Con./MGS, East Central Railway Station, Mugalsarai Distt., Chandauli	53,690.00
105	Dr. P.R. Maiti	Testing of Cement, Concrete Mix Design	Assistant Engineer, Varanasi Central SD, CPWD, Varanasi (M/s Vivek Associates)	39,530.00
106	Dr. P.R. Maiti	Concrete Mix Design	Kichul Park/QC GM M/s Doosan Power System India Pvt. Ltd DPSI Site office Obra Extension Thermal Power Station UPRVUN Obra, Sonebhadra (M/s Diva Eiva poject)	35,990.00
107	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Panchyat Gangapur, Varanasi	5,900.00
108	Dr. P.R. Maiti	Testing of Building Materials, (Cube, Sand, Stone Grid, Steel, Bricks)	Unit Incharge, Prayagraj Unit-1, Construction of 24 court room, Judiclary Campus, Prayagraj	76,700.00
109	Dr. P.R. Maiti	Glazed Tiles	Chief Manager (Civil)/Q C/ Northern Coalfeilds Limited, Singrauli, MP	21,240.00
110	Dr. P.R. Maiti	interlocking Bricks	Executive Officer, Nagar Panchyat Gangapur, Varanasi	5,900.00
111	Dr. P.R. Maiti	Glazed Tiles, Shutter	Chief Manager (Civil)/Q C/ Northern Coalfeilds Limited, Singrauli, MP	46,020.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
112	Dr. P.R. Maiti	Testing of Building Materials, (Cube, Sand, Stone Grid, Steel, Bricks)	U P State Construction and Infrastructure Development Coorporation Ltd., S 2/656-D 4-C, Commisioner Compound	46,170.00
113	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Kanabar Construction Division-5, Pipri, Sonebhadra	9,720.00
114	Dr. P.R. Maiti	Concrete Mix Design	M/s NIC, Ansal API, Sector C-2/183, Sushant Golf City, Near Saint Joseph International School, Lucknow-220030	70,800.00
115	Dr. P.R. Maiti	Concrete Mix Design	Kichul Park/QC GM M/s Doosan Power System India Pvt. Ltd DPSI Site office Obra Extension Thermal Power Station UPRVUN Obra, Sonebhadra (M/s J G Mining & Construction)	71,980.00
116	Dr. P.R. Maiti	Interlocking Bricks	Project Officer, District Urban Development Authority, Chandauli (M/s Om Engineering)	5,900.00
117	Dr. P.R. Maiti	Interlocking Bricks	Project Officer, District Urban Development Authority, Chandauli (M/s Kushal Construction)	5,900.00
118	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Panchyat Gangapur, Varanasi	5,900.00
119	Dr. P.R. Maiti	Testing of Cement	M/s Dalmia Cement Bharat Limited, Ist Floor, S-20/21 GB, Nepali Kothi, Varanasi, UP	8,260.00
120	Dr. P.R. Maiti	Interlocking Bricks	Project Officer, District Urban Development Authority, Chandauli (M/s Dhanvantari Enterprises)	5,900.00
121	Dr. P.R. Maiti	Concrete Mix Design	PPO Lucknow, M/s RITES Limited, Sitapur Road, Lucknow. (M/s Suresh Chandra Gupta, Jhansi)	1,46,910.00
122	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi. (M/s Raghuvanshi Construction Co.)	23,600.00
123	Dr. P.R. Maiti	Stone Sample	M/s Adeba Construction, Deep Nagar, Robertsganj, Sonebhadra	8,850.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
124	Dr. P.R. Maiti	Testing of Tiles	Director, M/s DO International, Mahesh Nagar, Samneghat, Nagwa, Varanasi	10,620.00
125	Dr. P.R. Maiti	Testing of Bricks, Sand	Assistant Commissioner, Regional Public Analysis Laboratory, Shivpur, Varanasi	18,290.00
126	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Panchyat Gangapur, Varanasi	5,900.00
127	Dr. P.R. Maiti	Testing of Bricks, Cement and Aggregate	AGM Engg. (Civil), Airport Authority of India, LBSI Aiport, Varanasi	30,090.00
128	Dr. P.R. Maiti	Concrete Mix Design	M/s Ayyappa Infra Project Pvt. Ltd., 70 MLD STP, Vindhyachal, Mirzapur	1,97,640.00
129	Dr. P.R. Maiti	Testing of Coarse Aggregates	M/s Dilip Buildcon Ltd., Lalganj- Hanumana Section (PKg-3)	11,800.00
130	Dr. P.R. Maiti	Cube Testing	Lokendra Kumar Karva, Gopal Bag, Varanasi	1,770.00
131	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Electricity Civil Trans. SD-II, UPPICL, Mohaddipur, Gorakhpur (M/s Technical Construction Co. HO-A, New Mandi, Muzaffarnagar (UP))	3,540.00
132	Dr. P.R. Maiti	Concrete Mix Design	Project Engineer (Civil) Khadia Project, Civil Deptt, Northern Coalfeilds Ltd. (M/s D D Singh)	35,990.00
133	Dr. P.R. Maiti	Testing of Cube Steel Aggregate, Cement, Coarse Sand, Brick	Project Manager (Civil)/ M/s hindustan Prefab limited, Project Unit, ESIC-Hospital, Pandeypur, Varanasi	40,120.00
134	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi. (Shri Anil Kumar Singh)	11,800.00
135	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi. (Shri Manish Kumar Singh)	11,800.00
136	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Electricity Civil Division (Distribution) Purvanchal Vidyut Vitran Nigam Ltd. Hydel Colony, varanasi	3,540.00

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137	Dr. P.R. Maiti	Cube Testing	Executive Engineer, Scarcity Division, U P Jal Nigam, Bathua Gandhighat, Nakahara Road, Mirzapur (M/s Brijbhushan Dubey, Nuwao, Sandwa, Mirzapur)	3,540.00
138	Dr. P.R. Maiti	Steel Testing	M/s ABL-STS JOINT VENTURE, Ashoka Buildicon Ltd., Jagnarayan/Dhanwate Niwas, Coal Dippo, Dehri on Sone, Rohtas	44,280.00
139	Dr. P.R. Maiti	Concrete Mix Design	Assistant Engineer, CPWD, Darbhanga Central Subdivision, R.L.Market, Darbhanga	32,450.00
140	Dr. P.R. Maiti	Concrete Mix Design, Steel testing	Executive Engineer, Construction division, UP Jal Nigam, Ambedkar Nigam (M/s O P Gupta Contractor Pvt. Ltd.)	73,980.00
141	Dr. P.R. Maiti	Testing of Wood	M/s Standard Coorporation, S-14/22, B-1, maldahia, Varanasi	4,130.00
142	Dr. P.R. Maiti	Testing of Building Materials (Cement, Aggregate, Concrete Mix Design)	M/s S P Singla Construction Pvt. Ltd., District-Kaushambi - 212204, UP	71,280.00
143	Dr. P.R. Maiti	Schmidt Hammer Test	Assistant Engineer, Bhadaini Industrial Development Authority, Aurai Road, Bhadohi-221401	59,000.00
144	Dr. P.R. Maiti	Concrete Mix Design	Assistant Engineer, BHU Project SD-2, CPWD, Varanasi (Kashyapi Infrastructure Private Limited)	59,400.00
145	Dr. P.R. Maiti	Cube Testing	Executive Engg., Electricity Civil Transmission Division, U P Power Coorporation Ltd., Mohaddipur, Gorakhpur (M/s Krishna Associates)	3,540.00
146	Dr. P.R. Maiti	Cube Testing	Assistant Executive Engineer, BHU, Project Division-2, CPWD, Varanasi (M/s Kashyap Infrastructure Pvt. Ltd.)	12,960.00
147	Prof. Gautam Banerjee	Calculation charge for Cu and Co of Blancketing material	Executive Engg./con. BUI, North Eastern Railway Ballia	11,880.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
148	Dr. P.R. Maiti	Cube Tesing	Assistant Executive Engineer, BHU Project Division-2, CPWD, Varanasi (M/s Kashyapi Infrastructure Pvt. Ltd.)	4,860.00
149	Dr. PR Maiti	Steel Testing	A.E., Varanasi Central SD, CPWD, Varanasi (M/s Vivek Associates)	48,380.00
150	Dr. PR Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi (M/s S.K. Construction)	5,900.00
151	Dr. PR Maiti	Interlocking Bricks	M/s SOLINCON Enterprises, Gaurav Vihar Colony, Lathiya Varanasi	5,900.00
152	Dr. PR Maiti	Testing of Cement Bricks, Steel	PM, KEC Interantional Ltd., Rama Ishwar Bhawan, HW, 58 Raod No. 5, Shri Nagar Colony, Gobarsahi, Muzaffarpur, Bihar	62,100.00
153	Dr. PR Maiti	Steel Testing	AE, Chakiya Central SD, Chakiya (M/s RK The Aluminium Peepte)	48,380.00
154	Dr. PR Maiti	Concrete Mix Design	Chief Manager (Civil) NCL, Singrauli, MP	32,450.00
155	Dr. PR Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, VNS (M/s Sanjay Kumar Sonkar)	5,900.00
156	Dr. PR Maiti	Coarse Aggregates	Dilip Buildon Ltd. Dagmapur Lalganj Sector (Pkg-3)	16,520.00
157	Dr. PR Maiti	Cube Testing	M/s Duggal Assoicate Pvt. Ltd. C/o Pt. Deendayal Upadhyay Govt. Hospital, Varanasi	1,770.00
158	Dr. PR Maiti	Cube Testing	Lokendra Kumar Kara, Gopal Bag, PO Bhullanpur (PAC) Varanasi	1,770.00
159	Dr. PR Maiti	Concrete Mix Design	M/s JPG Engineers Pvt. Ltd. 722, 7th Floor, Wawe Silver Tower, Sec.-12, Noida-201301	32,450.00
160	Dr. PR Maiti	Coarse Sand	Asstt. Mgr. Operations, HPCL, Mughalsarai, POL Dept. Alinagar, Sakaliha Road, Vill. Sarsar, Mughalsarai, Chandauli (M/s Ratan Construction Company)	7,080.00
161	Dr. PR Maiti	Testing of Cement Coarse sand, Coarse Aggregate, Bricks Steel	Project Manager, UPRNN Ltd., Azamgarh Unit, New Collectorate Campus, Civil Lines, Azamgarh	1,56,940.00

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162	Dr. PR Maiti	Testing of Wood	M/s Standard Coorporation, S-14/22, B-1, Teliyabad, Maldahia, Varanasi	5,310.00
163	Dr. PR Maiti	Interlocking Bricks	Asstt. Divisional Engineer, EC Railway, Buxar	8,850.00
164	Dr. PR Maiti	Concrete Mix Design	M/s S.P. Singh Construction Pvt. Ltd., Distt.-Kaushambi (UP)	35,400.00
165	Dr. PR Maiti	Cube Testing	Dy. Mgr. (Civil) BHEL Transmission Business (Northern Sector) 132KVGIS Sub-station, UPPTCL Rasra, Ballia (M/s JSEPL)	3,500.00
166	Dr. PR Maiti	Steel Testing	M/s Sri Balajee Enterprises (JV) M/s Ardefact Project LTd., In Association with AICONS Engineering Pvt. Ltd., Lakhimpur-Khiri (UP)	30,680.00
167	Dr. PR Maiti	Cube Testing	Lokendra Kumar Karva, Gopal Bag, PO-Bhullanpur (PAC) Varanasi	1,770.00
168	Dr. PR Maiti	Cylinder Testing	M/s PNC Infotech Ltd., Varanasi, Gorakpur Road, Vill&PO - Kaithi (Markandey Mahadev) Varanasi	11,800.00
169	Dr. PR Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi (M/s Shri Lal Chandra)	5,900.00
170	Dr. PR Maiti	Testing of Fly Ash Bricks, Cement, Bricks	Asstt. Engineer, CPWD, Darbhanga Central Sub Division Riti Market, Said Nagar, Laheriasarai, Darbhanga (M/s Vaishali Construction)	24,780.00
171	Dr. PR Maiti	Cube Testing	Executive Engg., Electricity Civil Div. (Dist. Division) PVVNL, Vidyut Nagar, Hydil Colony, Varanasi	3,540.00
172	Dr. PR Maiti	Cube Testing	Executive Engineer Electricty Civil Transmission Division UPPCL, Mohaddipur, Gorakhpur (M/s TRG Industries)	7,080.00
173	Prof. Arun Prasad	Soil Investigation	Asst. Executive Engineer/ Const. Northern Railway, Varanasi	1,18,000.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
174	Dr. P.R. Maiti	Testing of Concrete Mix Design	Staff Officer (C) Block B Project NCL, Gorbi Singrauli, MP (M/s U.C. Jaiswal)	35,990.00
175	Prof. V. Kumar	Vetting of structural design and drawing of proposed construction of 200 person Barrack PAC at Barabanki, UP	M/s Urban D/02, Vardan khand, Gomti Nagar, Ext., Lucknow	59,000.00
176	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer Nagar Punchayat Saiyadraja, Chaundai	5,900.00
177	Dr. P.R. Maiti	Steel Testing	Sr. Civil Engg., DLW, Varanasi (M/s R.N. Choudhary)	10,620.00
178	Dr. P.R. Maiti	Concrete Mix Design	Sr. Civil Engg., DLW, Varanasi (M/s R.N. Choudhary)	32,450.00
179	Dr. P.R. Maiti	Cube Testing	DGM A/c Shriram EPC Ltd., C/o3, Vinay Kunj apartment, Sigra, Varanasi C/o Project Manager, UP Jal Nigam, Ganga Pollution Prevention Division, Bhagawanpur, Varanasi	5,310.00
180	Dr. P.R. Maiti	Steel Testing	Manager/Civil M/s RITES LTD. G. No. 3AE-80, Sector-3, Obra Sonebhadra (M/s Suresh Chand Gupta, Jhansi)	42,480.00
181	Dr. P.R. Maiti	Testing of Cement	Project Manager UPRNN Ltd., Azamgarh Unit, New Collectorate Campus, Civil Lines, Azamgarh	2,46,620.00
182	Dr. P.R. Maiti	Testing of Cube, Coarse Sand, Stone, Grit, Bricks, Steel, Cement	Upper Project Manager of Rajkiya Medical College, Agriculture Field, Mirzapur	2,88,360.00
183	Dr. P.R. Maiti	Testing of Cube, Coarse Sand, Stone, Grit, Bricks, Steel, Cement	Upper Project Manager of Rajkiya Medical College, Agriculture Field, Mirzapur	2,79,720.00
184	Prof. V. Kumar	Inspection, Verification of materials reports of High Court New Building Campus, Gomtinagar, Lucknow	Upper Project Manager, UPRNN Ltd. High Court Unit-1, Honble High Court Construction Place Campus Vibhutikhand, Lucknow	1,29,600.00
185	Prof. V. Kumar	Vetting of modified structural design and drawing inspection plat form along with washing pit at ballia station	M/s H.S. Construction G 37 F, shiv Nagar Colony Behind Alluminium Factory, Basharatpur Gorakhpur	59,000.00
186	Prof. R. Kumar	Vetting of structural design and drawing of Bow string Girder Loaching Scheme of ROB in west bengal	AVP Technical M/s Dilip Buildcon Limited, Plot No. 619, No. 382 Gaiua, Madinipur	1,77,000.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
187	Prof. V. Kumar	Vetting of structural design and drawing of Phase II Irrigation project	Sr. Vice President M/s JIVIL Infra Ltd., 102, Gautanali Tower Opp., ESI dispensary Ajmer Road, Jaipur, Rajasthan	1,62,000.00
188	Dr. P.R. Maiti	Cube Testing	S.D. Officer ECTSD-III, UPPTCL, 220 KV, Sub Station, jail Road Gonda (M/s Krishna Associates)	3,540.00
189	Prof. V. Kumar	Inspection, Verification of materials quality report of Teacher Residential flats	Executive Engineer cum Sr. Mgr. (Civil)-1, BHU Project Varanasi, CPWD Behind Central Office, BHU Varanasi	58,000.00
190	Dr. P.R. Maiti	Testing of Bricks, Stone Grit, Sand	Executive Engg. UPRNSSL, Construction div- Varanasi, Ashok Vihar Colony Phas-I, Paharia, Varanasi	47,520.00
191	Dr. P.R. Maiti	Steel Testing	Asstt. Engineer BHU Project Div.-2, CPWD, Varanasi (M/s Kashyapi Infrastructure Pvt. Ltd.)	49,680.00
192	Dr. P.R. Maiti	Testing of Bricks	Executive Engg. Rural, Engineering Deptt. UP Division, Ghazipur	11,800.00
193	Dr. P.R. Maiti	Concrete Mix Design	M/s S. P. Singla Construction Pvt. Ltd., Kaushambi	22,420.00
194	Prof. V. Kumar	Vetting of structural design and drawing of sub structure and foundation and super structure of Delhi Meerut Expressway in the state of UP	M/s G.R. Infra Project Ltd., Khasra No. 1598, Bhhojpur, Jalalabad, Madinagar, Ghaziabad	2,16,000.00
195	Dr. P.R. Maiti	Testing of Gabion Box, flush door, Shutter, CGI Shuit	Chief Mgr. (Civil)/I/C Q.C., NCL, Singhrauli MP	87,320.00
196	Dr. P.R. Maiti	Testing of CGI Sheet, Gabion Box, Flush Door Shutter	Chief Mgr. (Civil)/I/C Q.C., NCL, Singhrauli MP	1,77,000.00
197	Dr. P.R. Maiti	Testing of Gabion Box	Chief Mgr. (Civil)/I/C Q.C., NCL, Singhrauli MP	1,94,700.00
198	Prof. V. Kumar	Site visit and report preparation for tower fuase Ganga river crossing of 765 KV Anpara Jhoosi Transmission of Hadiya	Executive Engineer Electricity Civil Transmission Division UPPTCL, 57 George Town, Prayagraj	58,000.00
199	Prof. V. Kumar	Vetting of structural design and drawing of Academic Block & Residential Singla Unit type-F at Mandan Bharti Agriculture College, Saharsa, Bihar	M/s Arch-En-Design, B-1/37, UGF, Hauz Khas, New Delhi	47,200.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
200	Dr. Medha Jha	Petregraphy Test and Alkali Peactivity test	M/s Comt. Constructio Pvt. Ltd., a-760, Sushant Lok Phase-1, Gurgaon	47,200.00
201	Dr. P.R. Maiti	Cube Testing	Dy. Mgr. (Civil) BHEL, Transmission Business Group (Northern Sector), 400/220/132 KV GIS Sub-Station, UPPTCL, Rasra Ballia, (M/s JSEPL)	1,770.00
202	Dr. P.R. Maiti	Concrete Mix Design	Asstt. Engineer Allahabd Central SD, CPWD, Allahabad (M/s Anil Enterprises)	59,400.00
203	Prof. V. Kumar	Vetting of structural design and drawing of following building of Kashi Vishwanath Temple Road	Chief Executive Officer Shri Kashi Vishwanath Vishist Kshetra Vikas Parishad, Varanasi	15,90,000.00
204	Prof. V. Kumar	Vetting of foundation design and drawing for B2 KV D/c Linas of UPPTCL	M/s R.S. Infra Project Pvt. Ltd., B-133, Sector-02, Noida	2,88,576.00
205	Prof. V. Kumar	Inspection, Verification of materials quality report of Agriculture Degree College (Phase-II) Kotawa, Azamgarh	Project Manager UPRNN Ltd., Azamgarh Unit, Construction of Collectorate Campus, Civil Lines, azamgarh	59,000.00
206	Dr. P.R. Maiti	Cube Testing	DGM Accounts Shriram EPC Ltd., C/003, Vinay Kunj Apartment, Sigra, Varanasi C/o Project Manager, UP Jal Nigam Ganga Pollution Prevention Division, Bhagawanpur, Varanasi	7,080.00
207	Dr. P.R. Maiti	Interlocking Bricks	Executive Engg. Varanasi Nagar Nigam, Varanasi (M/s Pratap Enterprises)	5,900.00
208	Prof. S.B. Dwivedi	Hardness Test	Chief Mgr. (Civil)/I/C Q.C., NCL, HQ, Singrauli, MP	3,540.00
209	Dr. P.R. Maiti	Testing of Glazed Tiles, Flush Door shutter	Chief Mgr (Civil)/I/C G.C., NCL, Singrauli, MP	42,480.00
210	Dr. P.R. Maiti	Testing of Coarse Sand, Stone Grit, Steel and Cement	M/s GEPDEC Infratech Ltd., LGF, Tower-B, B-9A, Green Beulevard, Sector-6, Noida	79,060.00
211	Dr. P.R. Maiti	Interlocking Bricks	Executive Engg. Varanasi Nagar Nigam, Varanasi (M/s Trishul Enterprises)	5,900.00
212	Dr. P.R. Maiti	Inspection, Verification of materials quality report of 50 bedded Ayush Hospital, Bakhariya, Basti	Executive Engineer, UPSIDCO Ltd, H. No.- 1087 Malaviya Road near Basti	79,800.00

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213	Dr. P.R. Maiti	M/s Hollow section square pipe	Asstt. Engineer Chakiya Central Subdivision CPWD, Chakiya	5,900.00
214	Prof. V. Kumar	Vetting of structural design and drawing of station building at Japla	M/s Ashok Buildcon Ltd., Jganarayan/Dhanwat Niwas, Sharkhara, Dippo Manwra Road, Rohtas, Bihar	48,600.00
215	Prof. V. Kumar	Vetting of structural design and drawing of bridges	M/s Pational Constructions Pvt. Ltd., 1/14F, Baghambari Gaddi, B.D. Puram, Prayagraj, UP	3,98,250.00
216	Dr. P.R. Maiti	Interlocking Bricks	M/s Subedar Singh, Interprises, Mekh Ghazipur	5,900.00
217	Dr. P.R. Maiti	Cube Testing	Sub divisional Officer ECTSD-III, UPPTCL, 200 K.V. Substation Jail Road, Gonda (M/s Technical Construction Co., Muzaffar Nagar UP)	3,540.00
218	Dr. P.R. Maiti	Testing of Concrete Mix Design, Coarse Sand, Stoen Grit, Bricks	Project Manager, UPRNN Ltd., Bhadohi Unit, H.No. 02, Vivekanand Nagar, Colony, Lohamandi Maldhiya, Varanasi	87,910.00
219	Dr. P.R. Maiti	Cube Testing	Dy. Mgr. (Civil) BHEL, Transmission Business Group (Northern Sector), 400/220/132 KV GIS Sub-Station, UPPTCL, Rasra Ballia, (M/s Rad Tech)	1,770.00
220	Prof. V. Kumar	Vetting of Structural design and drawing of G+2 Building of Umang Pharmacy Inside Trauma Centre, JMS, BHU	Manager M/s Umang Cure Pvt. Ltd., BHU, Varanasi	29,500.00
221	Dr. P.R. Maiti	Cube Testing	Executive Engineer ECTD, UPPCL, Mohaddipur, Gorakhupr (M/s Technical Construction Co., 40A New Mandi, Muzaffourraga (UP))	3,540.00
222	Dr. P.R. Maiti	Testing of Cement	Asstt. Engineer (Civil) Bihar State Power Transmission Co. Ld. Transmission circle (M/s KEC Intermediate Limited)	6,480.00
223	Dr. P.R. Maiti	Testing of Coarse aggregate	Executive Egg., Construction Division, UP Jal Nigam, ambedkar Nagar (M/s O.P. Gupta Contractor Pvt. Ltd.)	9,720.00

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224	Dr. P.R. Maiti	Concrete Mix Design	Executive Engg. -1 Office of the S.E., UWD, BHU (M/s S.M. Saduib)	32,450.00
225	Dr. P.R. Maiti	Interlocking Bricks	Executiv Officer Nagar Palika Parishad, Ramnagar Varanasi (M/s Shri Anil Kr. Singh)	5,900.00
226	Dr. P.R. Maiti	Concrete mix design	Executive Engg., Obra-C, Civil CD-IV, UPVRNL Obra, Sonebhadra (M/s Subhash Infra Engineers Pvt. Ltd.)	59,400.00
227	Dr. P.R. Maiti	Testing of Bricks, Cube	Executive Engg. -I Office of S.E., UWD, BHU (M/s S.M. Saduib)	24,780.00
228	Dr. P.R. Maiti	Steel Testing	Sr. Mgr. (FQA) FQA, NTPC Ltd., Vindhyachal, Vindhyanagar, Singrauli (M/s Shanter Brothers)	18,800.00
229	Dr. P.R. Maiti	Testing of Cement	M/s K.J.S. Cement C 19/40, 3 Floor, Sigra, Varanasi	7,080.00
230	Dr. P.R. Maiti	Concertina Coil	Sr. Mgr. (FQA) FQA, NTPC, Vindhyachal, Vindhyanagar, Singrauli, MP	12,980.00
231	Dr. P.R. Maiti	Cube Testing	Lokendra Kumar Karva, Gopal Bag, Varanasi	1,770.00
232	Dr. P.R. Maiti	Concrete Mix Design	Dy. Chief Engg.-II Modern Coach Factory, Raebareli (M/s Nasurllah Construction)	32,450.00
233	Dr. P.R. Maiti	Steel Testing	M/s Ayyappa Infra Project Pvt. Ltd., 70 MLD STP, Vindhyachal, Mirzapur	19,980.00
234	Dr. P.R. Maiti	Concrete Mix Design	Project Manager UPRNN Ltd., Bhadohi Unit, H. No-2 Vivekanand Nagar Colony, Lohamandi Maldhaiya, Varanasi	32,450.00
235	Dr. P.R. Maiti	Testing of Steel, Cement	Asstt. Engineer, BHU Project SD-2, CPWD, Varanasi (M/s Jyoti interprises)	53,100.00
236	Dr. P.R. Maiti	Testing of Cement, Stone	Project Manager C&DS, UP Jal Nigam, Unit-24, N 9/40 P-1, Sant Gopal Nagar, Badi Patiya, Bajardiha, Varanasi	46,610.00
237	Dr. P.R. Maiti	Cube Testing	Asstt. Engg. (Civil) Bihar State Power Transission Co. Ltd. Transmission Circle, (M/s KEC International Ltd.)	1,620.00

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238	Dr. P.R. Maiti	Steel Testing	M/s C & C ESM "JV" Comp-Jhansi, Lawanda, Chandauli	31,270.00
239	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer Nagar Panchayat, Saiyadraja, Chandauli	5,900.00
240	Dr. P.R. Maiti	Cube Testing	M/s Chloride Power System & Salection Ltd., Plot No. Y-21, Block EP, Sector-V, Salt Lake Electronics Complex Kolkata	21,240.00
241	Dr. P.R. Maiti	Cube Testing	M/s Chloride Power System & Salection Ltd., Plot No. Y-21, Block EP, Sector-V, Salt Lake Electronics Complex Kolkata	17,700.00
242	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer Nagar Palika Parishad, Ramnagar, Varanasi (M/s Nagian Enterprises)	11,800.00
243	Dr. P.R. Maiti	Testing of Building Materials Cement, Steel, Cube, Bricks	Asstt. Engg. BHU Project Division, CPWD, Varanasi (M/s Kamaladitya Construction Pvt. Ltd.)	8,00,820.00
244	Prof. V. Kumar	Inspection, Verification of Materials Govt. Medical Degree College, Paunikala, Sonebhadra	Upper Project Manager, UPRNN Ltd., Sonebhadra Unit Construction of Govt. Medicla College Agriculture Field, Mirzapur	54,000.00
245	Prof. V. Kumar	Inspection, Verification of materilals quality report of Govt. Medical College, Mirzapur	Upper Project Manager, UPRNN Ltd., Construction of 18 court building Sarpataha, Ravidas Nagar, Bhadohi	59,000.00
246	Prof. V. Kumar	Vetting of Structural desing & Drawing of super structure and sub structure of ROB at MP	M/s G.P. Infra Project Ltd., Islamnagar, Jora, Ratlam, MP	5,40,000.00
247	Dr. P.R. Maiti	Cube Testing	Executive Engineer Construction Division, UP Jal Nigam, Sonebhadra	12,390.00
248	Dr. P.R. Maiti	Concrete Mix Design	Executive Engineer, CPWD, B-26, Fertilzer Campus, Gorakhapur (M/s Anil Enterprises)	59,400.00
249	Dr. P.R. Maiti	Testing of Verification, Ceramic Tiles, Timber, Teaksoal Kota Stone, Granite block	Dy. Project Manager/Engg. DFCCIL/Mughalsarai, DFCCIL, first Floor, Old GM Office Building N.C. Railway, Valmiki Chauraha, Nawab Yusuf Road, Allahabad	41,300.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
250	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer Nagar Palika Parishad, Ramnagar, Varanasi (M/s Sanjay Kumar Sonker)	5,900.00
251	Dr. P.R. Maiti	Testing of Bricks, Aggregate Coarse Sand	Executive Engineer Nagar Nigam Varanasi (M/s Lok Lala Parishad, Delhi)	17,700.00
252	Dr. S. Mandal	Concerte Mix Design	Asstt. Divisional Engg. East Central Railway, Chopan (M/s Ashok Kumar)	32,450.00
253	Dr. P.R. Maiti	Testing of Bricks, Cement Steel	Executive Engineer Electrictiy Civil Division, PVVN Ltd., Vidyut Nagar, Hydel Colony, Varanasi	66,080.00
254	Prof. V. Kumar	Vetting of design and drawing of Bearing & Road on bearings	M/s JSP Project Pvt. Ltd. & Vijay Construction (India) Pvt. Ltd. (JV) Hot Mix Plant, KM-45, Raiganj, Bansi Siddhartha Nagar, Near Raja Rudra Pratap Singh Palace	3,24,000.00
255	Dr. P.R. Maiti	Wood testing	G.M. (Exec) NCL, Dudhichauk Project, Khadia, Sonebhadra	4,130.00
256	Dr. S. Mandal	Testing of Cement Cube, Coarse Aggregate	Executive Engineer, Obra Dam Division, Obra Sonebhadra	19,470.00
257	Dr. P.R. Maiti	Cube Testing	Sub Divisional Officer ECTSD-III, UPTCL, 220 KV Sub Station, Jail Road, Gonda (M/s Amit Construction)	5,310.00
258	Prof. Rajesh Kumar	Site Visit inspection and report preparation of RCC hopper of the CHP, NDT of RCC	General Manager, NCL, Khand Area Shaktinagar, Sonebhadra	1,35,000.00
259	Dr. P.R. Maiti	Testing of Coarse & Fine Aggregate Bricks	Dy. Mgr. (Civil) BHEL, TBG (Northern Sector) 400/220/132 KV GIS, Sub-Station UPPTCL, Rason Ballia (M/s Ped Tech.)	44,250.00
260	Dr. P.R. Maiti	Concrete Mix Design	Asstt. Vice President (F&C) M/s Grasim Industries Limited Chemical Division-Renukoot	1,53,900.00
261	Dr. P.R. Maiti	Concrete Mix Design	M/s FLEFO Biotech pvt. Ltd., Narsan Kalan Roorkee Haridwar, Uttarakhand	65,880.00
262	Prof. V. Kumar	Inspection verification of materials reports at BHU, Varanasi	Executive Engineer Cum Sr. Manager (Civil) BHU, Project-1, CPWD, Behind Central Office, BHU Varanasi	58,000.00
263	Dr. P.R. Maiti	Cube Testing Cement	M/s Ayyappa Infra Project Pvt. Ltd., 7 MLD STP at Vindhyachal, Mirzapur	9,720.00

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264	Dr. P.R. Maiti	Concrete Mix Design	M/s Namtel Technologies Pvt. Ltd., C/o Project Manager, M/s Prayagraj water Pvt. Ltd., Adani Heae, 56 Shrimali Society, Mar Mithakhali Six Road, Navrangpura, Ahmedabad	1,29,800.00
265	Dr. P.R. Maiti	Cube Testing	Executive Engg., Electricity Civil Trasmission Division UPPCL, Mohaddipur, Gorakhpur (M/s T.P.E. Industries)	5,310.00
266	Dr. P.R. Maiti	Concrete Mix Design	Dy. Project Mgr. UP State Bridge Corporation Ltd., Bridge construction Unit Chandauli	71,280.00
267	Dr. P.R. Maiti	Testing of Cement, Steel	Dy. Project Mgr. UP State Bridge Corporation Ltd., Bridge construction Unit Chandauli	27,540.00
268	Dr. P.R. Maiti	Cube, Concrete Mix Design, Interlocking Bricks	M/s Raj Construction Atair Majhganwa, Gorakhpur	39,420.00
269	Prof. Rajesh Kumar	Vetting of Structure design and drawing of ROB at Lamataha	AVP Technical, M/s Dilip Buildcon Limited, No. 77 5 stage Behind Kunvempunagar	3,54,000.00
270	Dr. P.R. Maiti	Coarse & Fine Aggregate Bricks	Dy. Mgr. (Civil) BHEL, Transmission Business Comp. (NS) 400/220/132 KV GIS Sub-Station, UPPTCL, Rasra, Ballia (M/s JSEPL)	47,790.00
271	Dr. P.R. Maiti	Testing of Cement, Coarse Sand, Coarse Aggregate, Bricks, Steel	Project Manager, UPRNN Ltd., Azamgarh Unit, New Collectorate Campus, Civil Lines, Azamgarh	1,56,940.00
272	Dr. P.R. Maiti	Cube Testing	S.E., UWD, BHU (M/s Anil enterprises)	3,240.00
273	Prof. Rajesh Kumar	Vetting of structural design and drawing of siperstructure of 84m span steel truss through type girder bridge at ajmera	M/s Gaurav Assce., Aditya Palace, Garh Road, Meerut	2,36,000.00
274	Dr. P.R. Maiti	Concrite Mix Design, Testing of steel	M/s PSP Project Ltd. Opp. Celesta courtgard opp. Lane of vikram nagar colony, ISCON, Ambali road, Ahemadabad	3,67,740.00
275	Dr. Suresh Kumar	Soil investigation	S.E., PWD., Varanasi Circle, UP	18,900.00

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276	Prof. V. Kumar	Vetting of strcutural design & drawing of ROB	M/s G.R. Infra Project Ltd., Chak No. 502 A, Varanasi Allabahad Road, Km Stone 780, Rajatalab, Varanasi	1,08,000.00
277	Dr. P.R. Maiti	Steel Testing	Dy. Mrg. (Civil) BHEL- TBG, 6 Floor, Advant Navis Business Park, Plot-7, Sector-142, Noida	34,220.00
278	Dr. P.R. Maiti	Steel Testing	M/s N. S. Associates Pvt. Ltd., B-20, Sector-23, Noida	16,520.00
279	Dr. P.R. Maiti	Testing of Cement, Fire Aggregate (Sand), Coarse Aggrigate Steel	M/s Khre & Tarkunde Infrastructure Pvt. Ltd. Comp Office, Sone Rive Bridge Project, Charchikala Kant, sonebhadra	96,111.00
280	Dr. P.R. Maiti	Testing of Flyash Bricks	Asstt. Engineer Varanasi Project Division-3, CPWD, Varanasi (M/s Gupta Constrcution pvt. Ltd.)	8,100.00
281	Prof. V. Kumar	Vetting of revised structural design and drawing of bridge in Kerala	Vice President M/s EKK Infrastructure Limited, 2 Floor Municipal Building A.M. Road, Kerala	2,36,000.00
282	Prof. V. Kumar	Inspection, verification of materilas quality	Executive Engineer Cum Sr. Manager (Civil) 1, BHU Proejct Varanasi, CPWD behind Central Office, BHU, Varanasi	58,000.00
283	Dr. P.R. Maiti	Coarse Aggregate, Fire Aggregate (Sand), Concrete Mix Design	Sr. DGM/Civil/Expert Rail Vikas Nigam Ltd., 4 floor Royal Park, Modhaila to Manduadih road, Varanasi (M/s ARSS-SCPL)	1,71,720.00
284	Dr. P.R. Maiti	Cube Testing, Concrete mix design	M/s PSP Project Ltd. Opp. Celesta courtgard opp. Lane of vikram nagar colony, ISCON, Ambali road, Ahemadabad	71,820.00
285	Prof. V. Kumar	Site visit and riport preparation of Interchange at CH 31+343 of Dasna Meerut, Expressway	M/s G.R.Infraproject Ltd., Khasra No. 1598, Bhojpur, Jalalabad, Modinagar, Ghaziabad	1,29,600.00
286	Prof. V. Kumar	Vetting of structural design and drawing of supirstructural and substructural of ROB	M/s G.R. Infraproject Ltd. 701, CTS-194/173/8, 7 Floor, Plot NO. 29, Jamgar, CHS Ltd., JPVD Scheme, West Mumbai	3,78,000.00
287	Dr. P.R. Maiti	Cube Testing	Sub Divisional Officer ECTSD-III, UPTCL, 220 KV Sub Station, Jail Road, Gonda (M/s Amit Construction)	3,540.00

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288	Prof. V. Kumar	Vetting of Dismantting scheme for super structure of Lalgang ROB	Asstt. Vice President (Project) M/s CDS Infra Projects Pvt. Ltd., 301, Ground floor, Udyag Vihar, Phase II, Gurgram Haryana	1,18,000.00
289	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer Vagar Palika Parishad, Ramnagar, Varanasi M/s Shri Niti Construction C/o (Lokendra Srivastava)	5,900.00
290	Prof. Rajesh Kumar	Vetting of structural design and drawing of proposed group housing plan, Shivpur, Varanasi	M/s SRV Premiters B38/47, K-8,H Gokul Nagar Colony, Mahmoorganj, Varanasi	2,26,800.00
291	Dr. P.R. Maiti	Cube Testing	Executive Engineer Varanasi Nagar Nigam, Varanasi (M/s Krishna Infrastructure)	1,770.00
292	Prof. V. Kumar	Inspection, Verification of marerials quality report at Govt. Medium College Campus Kannauj	Unit Incharge UPRNN Ltd., Govt. Medical College Kannauj	1,65,200.00
293	Prof. V. Kumar	Inspection, Verification of materials quality report of Institute of Oppthalamology at SS Hospital, IMS, BHU	Executive Engineer (Civil)-3, BHU Project Division, CPWD behind Central Office, BHU Varanasi	57,820.00
294	Dr. Medha Jha	Petrography test and Alkali Rectivity test by Petrography method of Coarse Aggregate	Mr. Amrjit Pallav M/s Ram kripal Singh Construction Pvt. Ltd.	32,400.00
295	Dr. P.R. Maiti	Fine Aggregate (Sand)	M/s J.S. Mining and Construction	10,030.00
296	Dr. Medha Jha	Petrography test of fine aggregate (sand)	M/s J.S. Mining and Construction	8,850.00
297	Dr. P.R. Maiti	Concrete Mix Design	Asstt. Executive Engineer, BHU roject SD-4, CPWD, Varanasi (M/s K.K. Construction & Builders)	59,400.00
298	Prof. Rajesh Kumar	Vetting of structural design and drawing of major bridge	AVP Technical M/s Dilip Buildcon Limited, NO. 77, 5stage	9,44,000.00
299	Dr. P.R. Maiti	Concrete Mix Design	Executive Engineer Cum Sr. Manager (Civil) 2, BHU Project Varanasi PWD, Varanasi (M/s R.K. The Aluminium People)	64,900.00
300	Dr. P.R. Maiti	Cube Testing	S.E., UWD, BHU (M/s K. Construction)	3,540.00
301	Dr. P.R. Maiti	Stone Grit, Fire aggregate (Sand)	Executive Engg. Kanhar Nahar, Project Division-5, Duddhi, Sonebhadra	30,090.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
302	Dr. P.R. Maiti	Cube Testing, Concrete Mix Design	Asstt. Engineer BHU Project Division-2 CPWD Varanasi (M/s Kashiyapi Infrastructure Pvt. Ltd)	70,740.00
303	Dr. P.R. Maiti	Cube Testing	Executive Engg. ECTD, UPPCL, Mehaddipur Gora Nipur (M/s Krishna Associate)	3,540.00
304	Dr. P.R. Maiti	Interlocking Bricks	Executive Officer, Nagar Palika Parishad, Ramnagar, Varanasi (M/s Shri Baji Lal)	5,900.00
305	Dr. P.R. Maiti	Concrete mix Design	Executive Engg. Chardauli Project Division, CPWD, Chandauli (M/s Kamaland Associates Pvt. Ltd.)	1,75,230.00
306	Dr. P.R. Maiti	Concete Mix Design	Executive Engg., BHU Project Subdivision, CPWD, Varanasi (M/s Kashyapi Infrastructure Pvt. Ltd.)	59,400.00
307	Prof. Rajesh Kumar	Vetting of structural design & drawing Bearing of ROB	AVP Technical Ms Dilip Buildcon Limited, flat No. 401/502/503/504/505 MJR Apartment, Opp. Hanuman Temple Kothuru Kanigiri rakasam Andhra Pradesh	59,000.00
308	Prof. V. Kumar	Vetting of design and drawing of Launching string Girder	M/s Galvano India Pvt. Ltd., E-95-97, Site-B, UPSIDC Ind. Area, Surajpur, Greater Noida, Gautam Budh Nagar (UP)	2,21,400.00
309	Dr. Medha Jha	Petrography test and Alhali reactivity test	AGM (FQA) GQA, VTPC Limited, Patna Bihar (M/s RDL Concrete (I) Pvt. Ltd.)	42,480.00
310	Prof. V. Kuma	Vetting of structural design and drawing of composite steel girder	M/s KCC Buildcon pvt. Ltd. BU-5, SFS, Flat, Near IT Colony Ring Road, Pitampura, Delhi	1,62,000.00
311	Dr. P.R. Maiti	Testing of Cement, oarse Aggregate, Fine aggregate (Sand), Concrete Mix Design, Steel testing	M/s RKI Builders Pvt. Ltd. C/o AGM (FQA & Safety) KBUNL, Kanti thermal, Muzaffarpur, Bihar	3,65,210.00
312	Dr. Medha Jha	Petrography test and Alkali reactivity test by petrography method	M/s RKI Builders Pvt. Ltd. C/o AGM (FQA & Safety) KBUNL, Kanti thermal, Muzaffarpur, Bihar	35,400.00
313	Dr. P.R. Maiti	Testing of Mud Bricks, Mud Block	Hindalco Industries Limited, Renukoot	11,340.00
314	Prof. B.K. Shrivastava	Scientific study in contr. Miner panel of SK mine	M/s SCCL, Telengana	5,90,000.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
315	Prof. B.K. Shrivastava	Scientific study in Panel A-4 of GDK Incline RG	M/s SCCL, Telengana	7,22,750.00
316	Prof. B.K. Shrivastava	Mumerical Modelling	M/s ECL, Sitarampur, W.B.	4,06,000.00
317	Prof. A. Jamal	Coal Analysis	M/s Aravali Power Co. Pvt. Ltd., Jhajjan, Haryana	1,68,480.00
318	Prof. S.K. Sharma	Scientific sutdy to plan & design ultimate pil slope of mechanised opencast	M/s CCL, Pindra colliery, Kiju Area, Jharkhand	4,24,800.00
319	Prof. A. Jamal	Comprehensiv study for Dipka and Gevra OCPs regarding corrying capacity of the Eco system	M/s SECL, Bilaspur	17,70,000.00
320	Prof. B.K. Shrivastava	Slope stablity	M/s NTPC, Raigarh	2,78,400.00
321	Prof. S.K. Sharma	Determination of SDR for outsourcing work	M/s SECL, Bilaspur	12,07,500.00
322	Prof. B.K. Shrivastava	Desing of built slope stabilization at JDA Jammu Bus stand	M/s Indigo Infra Projects Pvt. Ltd., New Delhi	1,29,800.00
323	Prof. B.K. Shrivastava	Scientific study in Dahernanagi Patch Rajmahal OCP for Past working to deal	M/s ECL, Jharkhand	5,40,000.00
324	Dr. G.S.P. Singh	Scientific Study & preparation of Amaeland oCP of Jamuna Kotma	M/s SECL, Jamuna, Kotma Area	7,19,800.00
325	Dr. A.K. Verma	Chittor Sample for test	M/s S.M. Consultants, New Delhi	1,45,750.00
326	Prof. A. Jamal	Grading of Coal	M/s Shree Singaji Thermal Power Project, Khandwa, M.P.	12,980.00
327	Prof. B.K. Shrivastava	Slope Stability of Mine Slope	M/s Sadam Power Ltd., Navi Mumbai, Maharastra	5,88,000.00
328	Dr. A.K. Verma	Concrete Creep Analysis	M/s Hindustan Construction Company Ltd., Palyhar, Maharashtra	26,550.00
329	Prof. B.K. Shrivastava	Evaluaction of Materials	M/s NTPC, Sikkim	59,000.00
330	Prof. S.K. Sharma	Testing of Rock samples of vindhya Mine, SECL	M/s JMS Mining Pvt. Ltd., Kolkata, WB	1,35,110.00
331	Dr. A.K. Verma	Chittor Sample for test	M/s S.M. Consultants, New Delhi	2,39,756.00
332	Prof. A. Jamal	Validation of Data relating to Mine water utilization is SECL for coal JAL App	M/s SECL, Bilaspur	58,52,800.00
333	Prof. S.K. Sharma	Scientific study for suitable method of northing ultimate pit slope and dump slop and monitoring of slope stability	M/s ECL, Madhaipur colliery paschim Bardhaman, W.B.	13,20,161.00
334	Dr. G.S.P. Singh	Scientific study for stability of parting between contigen coal area Bagdew	M/s SECL, Bagdewa U.G. Mine Korba Area, SECL	4,81,000.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
335	Prof. B.K. Shrivastava	Slope Stability analysis	M/s NCL India Ltd., Neyveli	34,98,000.00
336	Dr. A.K. Verma	Sample for concrete geep Analysis	M/s Dipka S. Pimple Engineers & Contractors Palighar	1,41,600.00
337	Prof. B.K. Shrivastava	Scientific study in Lalgatwa Dumping Area Rajmahal OCP, ECL	M/s ECL, Rajmahal Area, Bara Simra	7,08,000.00
338	Dr. A.K. Verma	Chittor Sample for test	M/s S.M. Consultants, New Delhi	51,100.00
339	Prof. B.K. Shrivastava	Bench & Dump slope stablity at Gondegaon	M/s WCL., Nagpur	16,40,170.00
340	Prof. A. Jamal	Coal Analysis	M/s Mr. Sunil, DRM office, EC Railway, Mugalsarai	5,310.00
341	Prof. S.K. Sharma	Scientific study to plan and design ultimate pit slope of one number of pit mechanical OC at Pindra Colliery, Kuju Area, CCL	M/s CCL, Pindra colliery, Kiju Area, Jharkhand	7,08,000.00
342	Prof. S.K. Sharma	Scientific study for Prap. Of streja control and monitoring plan (SCAMP)	M/s SECL, Hasdeo Area, Korea, Chattisgarh	3,98,250.00
343	Prof. S.K. Sharma	Scientific study for preparation of streja control and monitoring plan (SCAMP) for Jhiria UG Mine of Hasdeo Area, SECL	M/s SECL, Hasdeo Area, Korea, Chattisgarh	3,98,250.00
344	Prof. S.K. Sharma	Scientific study for preparation and formulation of SCAMP of Brijuri Mine, SECL	M/s SECL, Hasdeo Area, Korea, Chattisgarh	3,98,501.00
345	Dr. A.K. Verma	Geotechnical assesment report of Bangwar U/G	M/s IMS Mining Pvt. Ltd., Kolkata	30,000.00
346	Dr. A.K. Verma	Snow bridge at MSP-02, MSP-05, MSP-03 & MSP01 designed by case & Consultancy for slope stabilization	M/s Border Road organization Headquarter, Chief Engineer project Rohtang Tunnal	11,80,000.00
347	Prof. P.K. Mishra	Contact Angle	Dr. G.S. Mahobia, Deptt. Of Metallurgical Engg., IIT(BHU)	400.00
348	Prof. A.S.K. Sinha & Dr, H.L. Pramanik	CHNSO & Coal Analysis	Ms. Jyoti Singh C/o Dr. Vishal Mishra, Deptt. Of Biochemical Engg., IIT(BHU)	2,950.00
349	Dr. H.L. Pramanik	Coke Testing	Mr. P.K. Awasthi, Naini, Allahabad	12,390.00
350	Prof. M.K. Mandal	Testing of water	Sai Construction, Gazipur	708.00
351	Prof. P.K. Mishra	Testing of CNHS Analysis	Mr. Kuldeep Kumar, Deptt. Of Botany, Inst. Of Science, BHU	3,375.00
352	Prof. M.K. Mandal	Water Testing	Sai Construction, Gazipur	708.00
353	Prof. P.K. Mishra	CHN Analysis	Mr. Jitendra Kumar, Deptt. Of Pharmaceutical Engg., IIT(BHU)	3,101.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
354	Prof. P.K. Mishra	BET Analysis	Dr. A.K. Mishra, Deptt. Of Maretial Scicence, IIT(BHU)	1,500.00
355	Prof. P.K. Mishra	XPS Analysis	Dr. S. Tripathi, Deptt. Of Physics, IIT(BHU)	800.00
356	Prof. P.K. Mishra	Contact angle analysis	Dr. Mohmd. Imteyaz Ahmd., Deptt. Of Ceramic Engg., IIT(BHU)	1,000.00
357	Prof. P.K. Mishra	Contact angle analysis	Dr. Mohd. Zaheer Khan Yusufzai, Deptt. Of Mechanical Engg., IIT(BHU)	500.00
358	Prof. P.K. Mishra	XRD Analysis	Mrs. Deep Jyoti Singh, Ph.d Scholalr, Deptt. Of Civil Engg., IIT(BHU)	700.00
359	Prof. P.K. Mishra	SEM Analysis	Mr. Rohit Kushwaha, Deptt. Of Civil Engg., IIT(BHU)	275.00
360	Prof. M.K. Mandal	Water Testing	M/s Sai Construction, Gazipur	708.00
361	Prof. P.K. Mishra	XRD Analysis	Dr. Scoeta, Deptt. Of Chemical Engg., IIT(BHU)	588.00
362	Prof. M.K. Mandal	Water Testing	M/s Nutritions Glacier, Enterprises	708.00
363	Prof. P.K. Mishra	Contact Angle	Mr. Ashutosh Roushan, Deptt. Of Mechanical Engg., IIT(BHU)	500.00
364	Prof. P.K. Mishra	Sem Ecls	Dr. J.P. Chakreborty, Deptt. Of Chemical Engg., IIT(BHU)	68.00
365	Prof. P.K. Mishra	XRD & TGA	Dr. Sukruth G., Deptt of ParaShastra, Faculty of Ayrveda, IMS, BHU	400.00
366	Prof. P.K. Mishra	XRD, BET	Prof. V.L. Yadav, Chemcial Engg., IIT(BHU)	481.00
367	Prof. P.K. Mishra	SEM Analysis	Dr. Manoj Kumar, Deptt. Of Chemcial Engg., IIT(BHU)	344.00
368	Prof. P.K. Mishra	XRD Analysis	Mr. Amarjit Jena, Deptt. Of Chemcial Engg., IIT(BHU)	50.00
369	Prof. B.N. Rai	Water Testing	Mr. J.S. P. Singh, Incharge IWSS, Shaktinagar, Sonebhadra, UP	18,360.00
370	Prof. P.K. Mishra	Methane Content	M/s VA Tech. Wabag Ltd.	6,254.00
371	Dr. H.L. Pramanik	Coal Testing	M/s Royal Industries Carporation Nehru Road, Chirkunda, B Dhanbad	2,065.00
372	Dr. H.L. Pramanik	Coal Testing	M/s Royal Industries Carporation Nehru Road, Chirkunda, B Dhanbad	6,195.00
373	Prof. M.K. Mandal	Water Testing	M/s Sai Construction, Gazipur	708.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
374	Prof. P.K. Mishra	XRD Analysis	Prof. V.L. Yadav, Chemcial Engg., IIT(BHU)	200.00
375	Prof. P.K. Mishra	XRD Analysis	Dr. Manoj Kumar, Deptt. Of Chemcial Engg., IIT(BHU)	50.00
376	Prof. P.K. Mishra	BET Analysis	Prof. Y.C. Sharma, Deptt. Of Chemistry	3,000.00
377	Prof. P.K. Mishra	C,H,N,S Testing	Mr. Amit Kumar Singh, Deptt. Of Metallurgical Engg.	1,329.00
378	Prof. P.K. Mishra	XRD Analysis	Dr. Sweta, Deptt. Of Chemcial Engg. & Technology, IIT(BHU)	100.00
379	Prof. P.K. Mishra	CHN Analysis	Mr. Amit Kumar Singh, Deptt. Of Pharma. Engg.	3,101.00
380	Prof. P.K. Mishra	SEM Analysis	Dr. Manoj Kumar, Deptt. Of Chemcial Engg., IIT(BHU)	550.00
381	Prof. M.K. Mandal	Water Testing	Sai Construction, Gazipur	708.00
382	Prof. P.K. Mishra	Angle Test	Mr. Akash Subhash Awab, Deptt. Of Mechanical Engg., IIT(BHU)	300.00
383	Prof. P.K. Mishra	FTIR Analysis	Dr. S.V. Singh, Deptt. Of Chemcial Engg., IIT(BHU)	100.00
384	Prof. P.K. Mishra	ETP Analysis	M/s Shobha woolens Pvt. Ltd., Vill. Hariyana, Distt. Bhadohi, UP	47,200.00
385	Prof. P.K. Mishra	XRD, FTIR, W-DRS	Mr. Mohit Kumar, Deptt. Of Chemical Engg.	450.00
386	Prof. P.K. Mishra	SEM Analysis	Ms. Monika Singh, School of Biomedical Engg., IIT(BHU)	1,100.00
387	Prof. P.K. Mishra	XRD Analysis	Mr. Amarjit Jena, Deptt. Of Chemcial Engg., IIT(BHU)	50.00
388	Prof. P.K. Mishra	FTIR, XRD, SEM	Ms. Ayushi Nagar, Deptt. Of Chemical Engg., IIT(BHU)	192.00
389	Prof. B.N. Rai	Water Testing	Inchare, IWSS Shaktinagar, Sonebhadra	18,360.00
390	Prof. P.K. Mishra	XRD Analysis	Dr. Sweta,. Deptt. Of Chemical Engg., IIT(BHU)	150.00
391	Prof. P.K. Mishra	FTIR Analysis	Mr. Ravi Kr., Chemical Engg., IIT(BHU)	150.00
392	Dr. H.L. Pramanik	Coal Testing	M/s Royal Inclustries corporation	6,195.00
393	Prof. P.K. Mishra	DSC Analysis	M/s Kanchan Bharti, Deptt. Of Pharmaceutical Engg. & Tech., IIT(BHU)	1,000.00
394	Prof. B.N. Rai	Water Testing	Incharge, IWSS, NCL, Sonebhadra	18,360.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
395	Prof. P.K. Mishra	DSC Analysis	M/s Kanchan Bharti, Deptt. Of Pharmaceutical Engg. & Tech., IIT(BHU)	1,000.00
396	Prof. M.K. Mandal	Water Testing	Sai Construction, Gazipur	1,416.00
397	Prof. P.K. Mishra	TGA & DSC Analysis	Mr. Satyarat Tripathi, Deptt. Of Bio-chemical Engg., IIT(BHU)	1,625.00
398	Prof. P.K. Mishra	XRD analysis	Ms. Saumya gulati, Deptt. Of Rasashastra Faculty of ayurveda, IMS, BHU	800.00
399	Prof. P.K. Mishra	FTIR Analysis	Dr. Pradeep Kumar, Deptt. Of Chemical Engg., IIT(BHU)	200.00
400	Prof. P.K. Mishra	XRD Analysis	Mr. Kailash Pd. Mahto, Deptt. Of Chemical Engg., IIT(BHU)	100.00
401	Prof. P.K. Mishra	XRD Analysis	Mr. Amit Kr. Suman, Deptt. Of Chemical Engg., IIT(BHU)	100.00
402	Prof. P.K. Mishra	BET Analysis	Mr. Satyendra Pratap Singh, Deptt. Of Chemistry, IIT(BHU)	500.00
403	Prof. P.K. Mishra	SEM Analysis	Mr. Kedar Sahu, Deptt. Of Chemcial Engg., IIT(BHU)	275.00
404	Prof. P.K. Mishra	XRD Analysis	Mr. Sukruth G., J.R. II, Deptt. Of Rasashastra & Bhashayya kalapon, faculty of ayurveda, IMS, BHU	200.00
405	Prof. V.L. Yadav	Water analysis	Incharge, IWSS, Khadia, NCL	18,360.00
406	Prof. V.L. Yadav	Water analysis	CPCB, Delhi	53,85,984.00
407	Prof. V.L. Yadav	DSC Analysis	Ms. Kanchan Bharti, Deptt. Of Pharmaceutical Engg., IIT(BHU)	2,000.00
408	Prof. M.K. Mandal	Water analysis	Sai Construction, Gazipur	708.00
409	Prof. P.K. Mishra	TGA Analysis	Mr. Sunil Kumar yadav, Department of Mechanical Engg., IIT(BHU)	800.00
410	Dr. H.L. Pramanik	Fuel Testing	M/s Renew Ocean foundation, TBI, IIT(BHU)	4,248.00
411	Prof. B.N. Rai	Water Testing	Incharge, IWSS, NCL, Kadia, Sonebhadra	18,360.00
412	Prof. V.L. Yadav	Medicine Testing	Dr. Heena A. Maheshwari (Jr-2), Faculty of Ayurveda, IMS, BHU	3,500.00
413	Prof. V.L. Yadav	Medicine Testing	Dr. Hemlata Patel, (Jr-2), Faculty of Ayurveda, IMS, BHU	3,700.00

Sl. No.	Name of Faculty Member	Title	Industry	Amount
414	Prof. V.L. Yadav	Medicine Testing	Dr. Pankheri Hitesh (Jr-2), Faculty of Ayurveda, IMS, BHU	2,500.00
415	Prof. V.L. Yadav	Medicine Testing	Dr. Neelam (Jr-2), Faculty of Ayurveda, IMS, BHU	2,600.00
416	Dr. H.L. Pramanik	Coal Testing	M/s Royal Industries Corporation Neharu Road, Chirkunda, dhanbad	6,195.00
417	Dr. H.L. Pramanik	Coal Testing	M/s Renew Ocean Foundation	1,062.00
418	Prof. B.N. Rai	STP Treatment	M/s P & A Engineering, Hanumanpur, Bhelupura, Varanasi	7,080.00
419	Prof. P.K. Mishra	CHNS analysis	Mr. Amit Kumar Singh, Deptt. Of Metallurgical Engg., IIT(BHU)	7,974.00
420	Dr. Praduman Ghosh	Vetting of Design & Drawing of VC Project (JV)	Avian Infrastructure and Energy Pvt. Ltd., Rukanpura, Patna	3,31,875.00
421	Dr. Vinod Tiwari	Herbal formulation (Tinosporo Cordifollia & Carica Papaya Extracts)	M/s Sanat Products Ltd.	1,33,099.00
422	Dr. Vinod Tiwari	Acute Toxicity studies for sunova Bioslim, Erotican & Sunova Anti-Stress Capsules sample	M/s Sanat Products Ltd.	80,622.00
423	Prof. Sairam K.	Retainer Consultancy	M/s Natreon Inc., consultant	3,60,000.00
424	Dr. Sanjay Kr. Jain	Retainer Consultancy	Dharmapal satyapal Ltd., Dharampal Satyapal Road, Sector-67, Noida, Gautam Budh Nagar	16,78,500.00
425	Dr. Vinod Tiwari	Acute Toxicity studies for sunova Bioslim, Erotican & Sunova Anti-Stress Capsules sample	M/s Sanat Products Ltd., B-8, Industrial	42,444.00
426	Prof. Sairam K.	Retainer Consultancy	M/s Natreon Inc., consultant	1,20,000.00
427	Dr. Ankit Gupta, Deptt. Of Civil Engg.	Payment towards organization of CEP-Road Safety Travelling Workshop from 19-25 July, 2019 and at IIT(BHU) Varanasi for nominated UP PWD Engineers	Office of the Engineer in Chief and Head of the Department U.P. Public Works Department, 96, Mahatama Gandhi Marg, Lucknow	4,80,000.00
428	Prof. Anil Kr. Agrawal, Deptt. Of Mechanical Engg.	Talent Management and Career Progression for 94 Participiants	DGM (MC), ALTTC, BSNL	45,00,000.00
429	Dr. Ankit Gupta, Deptt. Of Civil Engg.	Design and Construction of Long Lasting Flexible Pavement		2,48,485.00
			Total	6,47,82,268.00

30. Malaviya centre for innovation, incubation and entrepreneurship

Malaviya Centre for Innovation, Incubation and Entrepreneurship (MCIIE) was registered in the year 2008 as a not-for-profit society to promote innovation and entrepreneurship. MCIIE is an umbrella organisation at IIT (BHU) Varanasi for fostering entrepreneurship and nurturing tech start-ups. It administers following sub units:

1. NCL-IIT(BHU) Incubation Centre
2. RKVY-RAFTAAR Agribusiness Incubator
3. CISCO thingqbator
4. Entrepreneurship Cell (E-Cell)
5. Institute Innovation Council

Core Strengths

Technology Commercialization in the sector of Agricultural, Agri-Business, Cleantech, Food Safety & Testing, Information Technology & E-Commerce, Bio-Technology & Health Sector

Services

Mentoring, Counselling, Training, Financial Linkages, Seed Funding, Lab Facility, Office Facility, Networking support etc.

Strategic Collaborations

SUB UNITS

Technology Business Incubator: Established in 2008, Technology Business Incubator at IIT (BHU) is continuously providing start-up support system not only to the students and alumnus of IIT (BHU) / BHU but also to other potential talents in this region.

RKVY-RAFTAAR Agri Business Incubator (R-ABI): Agri-Business Incubator program is supported under "Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation" (RKVY-RAFTAAR) RKVY-RAFTAAR leveraging start-ups in Agri Business & Allied sector through RKVY-RAFTAAR scheme of Govt of India.

CISCO thingQbator: IIT (BHU) has partnered with CISCO in collaboration with NASSCOM Foundation to work towards provide an Internet of Things based platform for students of IIT (BHU) and BHU.

The Platform – 'thingQbator' will help students test their ideas and enhance their skills in new and upcoming technologies.

E-Cell: Entrepreneurship Cell(E-cell) is set up to foster entrepreneurship among the students. Run by students and driven by the management of the institutes. Students learn important & useful trait about entrepreneurship. Even though students do not take up entrepreneurship as a full-time profession, the skill sets learned as E-Cell members would be extremely helpful to them in any job.

Institute Innovation Council: Ministry of Human Resource Development (MHRD), Govt. of India has established 'MHRD's Innovation Cell (MIC)' to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs) with a mandate to encourage, inspire and nurture young students by supporting them to work with new ideas and transform them into prototypes while they are informative years.

Major Activities

- Incubation in the field of Agri-Tech, Water-Tech & Environment / E-Commerce / IoT, AI & ICT / Social, Education & Skill Development

- Entrepreneurial Activities for the students
- Hackathon, Boot camps for AICTE recognized colleges
- Technology Innovation / Entrepreneurship Development / FDP and other activities for Diploma & AICTE colleges

With the financial support from NCL various initiatives taken by NCL-IIT(BHU) Incubation Centre at IIT (BHU) Varanasi to tap the start-ups of this region intended to build a strong eco-system for nurturing innovation and Startups that will drive sustainable economic growth and generate employment opportunities.

In order to meet the objectives of this initiative, various in-house and outdoor workshops/seminar/webinar have been organized to accelerate spreading of the Startup awareness.

In addition, the centre conducted exhaustive training programs to assist startups through their lifecycle with specific focus on important aspects like obtaining financing, feasibility testing, business structuring advisory, enhancement of marketing skills, technology commercialization and management evaluation etc.

Our Incubation Center has particiapted in UP Startup Conclave on 13th September 2019 at Indira Gandhi Pratishthan, Lucknow, wherein.

To tap agriculture specific entrepreneurs, we have also conducted several programs in this

region. List of some of the outreach programs:

- 2nd June 2019 - Farmers meet at Jamuhar, Mirzapur
- 5th June 2019 - School students meet at E-Hall, MCIIE, IIT (BHU) Varanasi
- 9th June 2019 - NGO meet at E-Hall, MCIIE, IIT (BHU) Varanasi
- 15th June 2019 - College students meet at Nandan Bandan College, Mirzapur
- 27th August 2019 - Technology & Management Students meet at Ashoka Institute of Technology & Management, Varanasi
- 29th August 2019 - IIT Students meet at E-Hall, MCIIE, IIT (BHU) Varanasi
- 12th September 2019 - Agriculture Students & Research Scholars meet at Institute of Agricultural Sciences, BHU
- 20thSeptember 2019 - Agriculture Students meet at RGSC BHU, Burkachha

Outreach Programs

2nd June 2019 Jamuhar Mirzapur

5th June 2019 E-Hall, IIT (BHU), Varanasi

27th August 2019 Ashoka Institute Varanasi

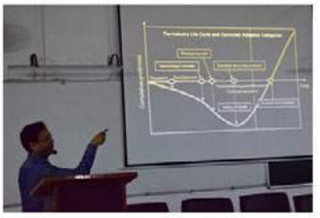
12th Sept 2019 Institute of Agricultural Sciences, BHU

Further, for the selected agripreneurs, we have organized three AOPs (Agripreneurship Orientation Program).

AOP Activities

Launch of EOP

Participants with chief guest Shri P S Ojha



Training sessions

Valedictory by Hon. Director of IIT (BHU)

Agricultural Sciences Lab Visit

Farm Visit

Industry Visit

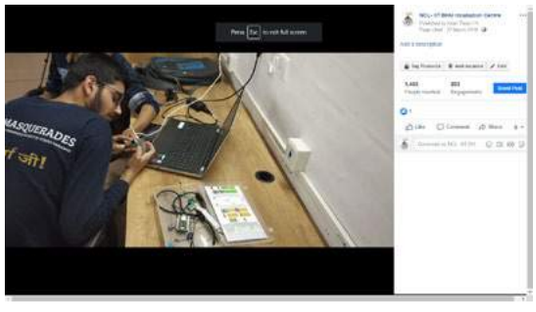
To target specifically IoT (Internet of Things) related ideas we tapped startups through CISCO thingQbator (a unit of NIIC) by various programs like:

- Hackathon
- Ideation Workshop
- Webex workshop on 'Image Processing'
- Summer Internship
- Workshop by Li2 Technologies
- Open interaction session
- Workshop on 'Building IoT Applications'

Ideation round selection for Cohort

24hr Hackathon at Cisco thingQbator

Two day hands-on workshop on
"ADVANCED EMBEDDED DEVICES FOR IoT"



Workshop on

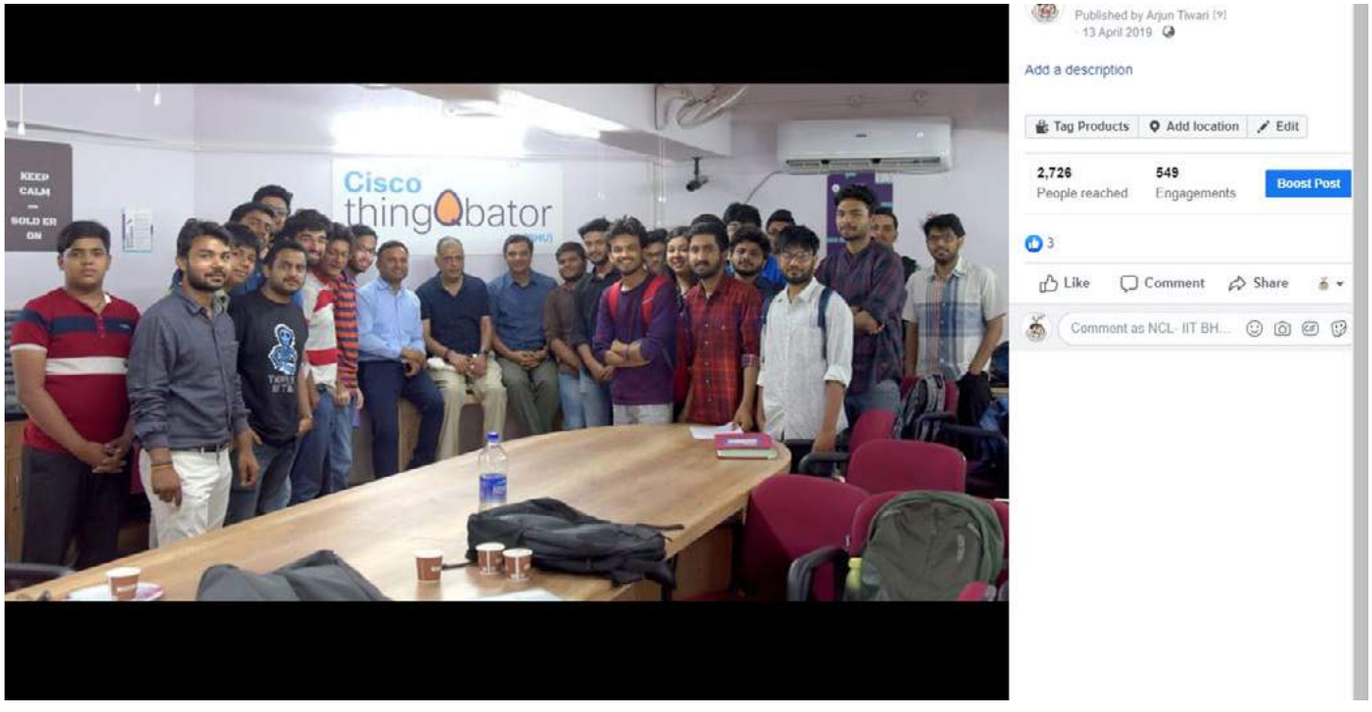
"Building IoT Applications With Raspberry Pi"

The workshop covers various topics like Introduction to raspberry Pi, Linux terminal and SSH, Basic of Python and GPOIs, Interfacing sensors and actuators, Serial communication using I2C, Communication between NodeMCU and RPi via MQTT, Sending an SMS, Cloud Database with Raspberry Pi, Home Automation using Raspberry Pi, Introduction to VNC Viewer, Using the RPi camera to take image and video.

Mid- Cohort Hackathon

Judges - Dr. S N Upadayay, former Director IIT(BHU), Lyle Rodericks and Prasanth Choudhary

An open interaction session was conducted at NIIC, IIT-BHU, wherein, **Sh. B V Jagadeesh, Managing Partner of KAAJ Ventures** and a successful serial entrepreneur, Angel Investor and a Philanthropist interacted with the students of IIT (BHU). 10 teams of cohort-1 & 2 have participated in this session. They have presented their ideas and explained that how their prototype will be helpful to common people and how it will solve the basic problems of our country. The whole session was coordinated by Prof. P. K. Mishra, Coordinator, NIIC and Sh. Chandrasekhar Raman from CISCO.



Two days workshop by Li2 Technologies on 9-10 April 2019 at NIIC. This workshop was conducted by Mr. Arvind Nadig, Co-founder, CEO at Li2 & Brahma3. The topic of workshop was "Entrepreneurship is for everyone".

To promote entrepreneurship in women we invited 80 students from Abhinav Vidyalaya, Arazi lines, Varanasi, on 23-Feb-2019. They have interacted with the start-ups of NIIC and knew about their achievements. The students have also got the opportunity to explore various innovative prototypes made by IIT (BHU) students.In this visit, the students got the oppurtinity to explore the technical sector.

On the Occasion of World Environment Day Malviya Centre for Innovation, incubation & Entreprenureship, IIT(BHU) held an awareness programme were involved in Distribution and plantation of more than 100 plants.This programme was solely for the purpose of making people aware about the importance of plants and trees. It was one of the welcome step taken by MCIIE,IIT(BHU) Varanasi to make the world a bit more greener and

cleaner.

NIIC conducted an Ideation Workshop on 30thSep, 2019 which was followed by Hackathon 3.0 on 24-01-2020

Our qualified facilitators, Lyle Rodericks and Prashant Choudharyfrom CISCO apprised the various stages of the Ideation process from the generation of the idea to bringing it to life and all the stages in-between.

Apart from these events, we have also held few meetings of Joint program committee of NCL Singrauli and IIT-BHU for brainstorming on R&D and consultancy.

E-Summit-2020 IIT (BHU) witnessed an overwhelming response as hundreds enthusiastic participants fromall over the nation, headed their way towards one of the largest entrepreneurial extravaganzas of the nation. Presented by The Entrepreneurship Cell, NIIC, IIT (BHU) Varanasi, the two-day long frenzy attracted various sponsors, partners, and various eminent personalities around the world too had accepted to be a part of this grand event as juries/mentors.

NIIC, IIT (BHU) has organized an event 'thingQbator influx' on 7th Feb 2020 at Cisco thingQbator. On this occasion, Mr. Dominic Scott, Vice President, Government Affairs, Strategy, Asia-Pacific at Cisco Systems and Mr. Harish Krishnan, Managing Director at Cisco Systems India and SAARC Co-Founder Public Affairs Forum of India visited IIT (BHU) Varanasi and met Hon'ble Director, IIT (BHU) Varanasi to discuss upon extending collaboration between CISCO and IIT (BHU) for the benefit of the students of IIT (BHU) and the region in and around Varanasi.

3 team shortlisted for felicitation Event in Cisco Bangalore on 2nd July 2019 where the selected teams pitched and showcase their prototypes in front of investors and other relevant people from the ecosystem

Team Name	*Idea Description*	*Team Member*
Doctor Around You	Doctor access platform. App which connects patients and Doctors better.	Sumit Bhatt, Yash Jipkate, Vaibhav Tyagi Kautilya
Trash Cash	Trash Cash is working on incentivising garbage throwing in the bin	Shashwat Agarwal, Vibhu Vardhan Singh,Shristi Singh, Neeraj moitra, Ishika Mittal,Ishita Asthana
Solar Tracker Robot	Solar trackers generate more electricity than their stationary counterparts due to an increased direct exposure to solar rays.	Ashish Kumar, Saksham Srivastava, Pranati Tyagi, Kshitij Pandey

VISIT ofFormer Chairman cum Managing Director, Coal India Limited and ChiefManaging Director, Northern Coalfields Limited

The center overwhelmed on the visit of Shri Anil Kumar Jha, Former Chairman cum MD, Coal India Limited and Shri P. K. Sinha, CMD, Northern Coalfields Limited at NCL- IIT BHU Incubation Centre on 27-02-2020. They visited various facilities created at the center. Prof. Pradeep Kumar Mishra briefed them about various programs happening in IIT BHU Varanasito boost entrepreneurial ecosystem.

The dignitariesthen interacted with the start-ups and appreciated various innovations happening in the Incubation center. They assured all possible help from NCL. Entrepreneurs and innovators were highly motivated with this interaction.

Prof. Rajiv Prakash, Dean(R&D) and Prof. Sanjay Kumar Sharma from IIT (BHU) and Sh. Pradeep Kumar, Asst. Manager (IE), NCL were also present during this meeting.

Start-up Summary of Incubation Programs

(TBI / RKVY-RAFTAAR / CISCO thingQbator)

Present Start-ups TBI

Sl. No.	Company Name	Founder	Idea
1.	M/s iMinBit TechIndia Pvt. Ltd.	Mr. Rohit Mittal	Water saving RO water filters
2.	M/s YSIID Solutions Pvt. Ltd.	Mr. Niraj Kr. Srivastava	building the necessary skills through networking
3.	M/s Rosehub Edutainment Private LTD	Mr. Sagar Das	Promoting innovation and creativity in Education
4.	M/s TechMachienery and More	Mr. Gaurav Kedia	online market place for trading of new and used machinery and related services
5.	M/s Smurlikanti Technologies PVT. Ltd.	Mr. Shantanu Sinha	Hyper local Service commerce
6.	M/s Garden on Concrete	Mr. Avishek Kumar	Gardening Services
7.	M/s Freshnic Agribusiness Pvt. Ltd.	Mr. Hemant Kumar	Delivery of Freshly prepared Cold Pressed Juices
8.	M/s Reservefree Pvt. Ltd.	Mr. Ishu Darshan	Platform to diners which enable them to order Food
9.	M/s Ringel Web Pvt. Ltd.	Mr. Harshit Bhatt	Tour package comparions information portal
10.	M/s Abhiprerana ATE World Tak	Mr. Ayush Keshri	creating a library of Human Experience and Expertise
11.	M/s Cobra online Services Pvt. Ltd.	Mr. Mrityunjay Singh	VGMSecurity – Anti Theft For Mobile Tracker
12.	M/s HXRX Automation Pvt. Ltd.	Mr. Krishna Upendra Pandey	Healthcare services and facilities automation system
13.	M/s Shoppingkart24 online Services Pvt. LTd.	Mr. Prateek Singh	Global platform to many weavers/artisans/craftsmen/ farmers,providing an online/offline channel to showcase the unique & versatile line of products
14.	M/s. Egosmart Vehicle Pvt. Ltd.	Mr. Vikram Jogi	BUILDING CONTROLLER, BMS AND DIGITAL TOUCHSCREEN DISPLAY FOR ELECTRIC SCOOTY
15.	M/s. Creamson Intelli Pvt. Ltd.	Mr. Sanjoy Paul	Cross platform English learning solution
16.	M/s. IERA Startups Pvt. Ltd.	Mr. Saurabh Mishra	service for patient caring to and fro industry
17.	M/s. ScooC Tech Mobility Pvt. Ltd.	Mr. Vijay Kaushik	First and Last mile connectivity
18.	M/s. Algo Innolab Pvt. Ltd.	Mr. Kapil Chawla	Mobile application platform of audio Travel guide app
19.	M/s. Aryo green tech (OPC) Pvt. Ltd.	Mr. Subhankar Pandey	Superconducting Magnetic Engine
20.	M/s. Kalusyam Tech. Pvt. Ltd.	Mr. Nirankar Yadav	build a device(product) to absorb the pollutants from the exhaust of the Heavy Diesel Vehicles
21.	EXPERIENCE ZONE PRIVATE LIMITED	Mr. Akhouri Anand	Theme Park-Based on Augmented, Virtual, Mixed Media Reality

Present Start-ups RKVY-RAFTAAR

Sr. No.	Applicant Name	Concept	Contact Number
1.	Mr. Chandra shekhar Mishra	Organic detergent	9935287295, 8004270168 kashiorganic@gmail.com **Kashi Organic Care Pvt Ltd**

Sr. No.	Applicant Name	Concept	Contact Number
2.	Mr. Janardan Singh	Ayurvedic food & nutritional products	9598976439, 8853869531 **Kashi Organic Natural Product Pvt Ltd**
3.	Shri. Gaurav Singh	Low maintenance pond water pump	9889101020, 9559368303 dignitygauravsingh@gmail.com **Allywing Solutions Pvt Ltd**
4.	Mr. Vaibhav Pandey	Low cost material for cold storage	6394995677 vaibhavpand.rs.cer17@itbhu.ac.in
5.	Mr. Kumar Rohit Srivastava	Bio degradable packaging film using agri waste	9721199199, 7607401669 krsrivastava6@gmail.com
6.	Mukesh Kumar Pandey	Vaidik Krishi Kendra - chain of small farmers of vermicompost manufacturer, vegetable and grain producer	+91-7007436796 mukesh.sikhar@gmail.com
7.	Nisha Niranjan	Medicinal fungus Cordycepsmiltaris products, formulation for diabetes, anti-aging supplements	+91-8878868783 niranjannisha96@gmail.com
8.	Dr. Sumit Saxena	Bio fertilizer, bio pesticides, fish food, poultry food and dog food using green waste	+91-8851513115 dawakhana4online@gmail.com
9.	Shipra Sandilya	Herb based A2 ghee	+91-8601212333 prabhuticreations@gmail.com
10.	Ms Dipti	Family farmer - agri products selling platform	8935035826 grihstha@gmail.com **Grihastha Georgic Pvt Ltd**
11.	Mr. Satyaprakash Dev Pandey	Products from aromatic plants	9792860001, 9936441058 satyaprakashdevpandey@gmail.com **Sonanchal Aroma Pvt Ltd**
12.	Mr. Ram Kumar Rai	Peas preservation through renewable energy	7753073362, 9415352539 ramkumarrai25@gmail.com **Shivashraya Agro Pvt Ltd**
13.	Dr. Dharmendra Kumar Mishra	Agri products and Agro Tourism	9450872823 dharmendrakakun@gmail.com **Kakun Orgainc Agro-Food Pvt Ltd**
14.	Mr. Awadhesh Dikshit	Agri Rendezvous	9807606000 dixitgbhu@gmail.com **Anand Kanan Agri Tech Pvt Ltd**
15.	Mr. Awani Kumar Shukla	Farm intrusion prevention system	7618991111, 7985788954 jetu.shukla07@gmail.com **Secure Hub Pvt Ltd**
16.	Dr. Kamini Singh	Moringa products	8009271230, 8840346183 kamini.cish@gmail.com **JVKS Agro Tech Pvt Ltd**

Sr. No.	Applicant Name	Concept	Contact Number
17.	Ajay Kumar	Smart Solar Tree & Air Water Generator. The combination will create a renewable energy source and water for sustainable agriculture	+91-9825416063 cto@titlisindia.co.in Titlis Engg & Projects Pvt Ltd
18.	Ashok Manwani	Freshwater and marine based pearl culture	+91-9271282561 indianpearlculture@yahoo.com
19.	Dr. Mani Upreti	Nutritatva- Healthy snacks using fruits, vegetable, seeds and nuts	+91-9899369527 mani.upreti@nutritatva.com Nutritatva Foods Pvt Ltd
20.	Sanjay Bhalla	A2 Ghee making center in villages	+91-9811032815 sanjay@thewaywewere.in
21.	Shri. Vishal Kanchan	ICT based e-market mobile app	7838447489 info@brenstech.com **Arka Brens Tech Pvt Ltd**
22.	Mr. Rahul Pandey, Kshitij Pandey	Fluid purity checker device	7678394361 nirol.founder@gmail.com
23.	Mr. Prabhat Yadav	Bio fertilizers production	9987906909 prabhat.tiss@gmail.com **Avakar EnviroSource Pvt Ltd**
24.	Ram Krishna Pathak	Production of High Zinc Aata to fight Malnutrition	
25.	Pravin Srivastava	Vermi compost production	
26.	Mr. Sandip Dogra	F & V mart Agriculture supply chain to connect farmers and consumers	9563915920 sandip@khetra.com **KhetraAgriTech Pvt Ltd**
27.	Akshay Kumar Shrivastav	Low cost Bio-Fertilizer using Bio waste	+91-7905756156, 9454273086 akshaysri35@gmail.com
28.	Amit Kumar Singh	Coco peat, mulch mat and vermi compost from tender coconut shell.	+91-7408660088, +91-7651906462 amit_kumar9371@yahoo.in Avnesh Jaivik Crop and Farms Pvt Ltd
29.	Raghaw Agrawal	One stop solution for all plantation related problems (community-based or personal space plantations)	+91-8920954177 raghawbgw@ducic.ac.in
30.	Dr. Shampa Sahay	Cook Safari - Proprietary spices towards creating perfect taste of rich traditional Indian food for more than 50 recipes	+91-9310657047, +91-120-4242467 shampasahay@ekaninfocook.com Ekan Info cook LLP
31.	Sanjay Bhalla	A2 Ghee making center in villages	+91-9811032815 sanjay@thewaywewere.in

Present Start-ups thingQbator

Sr. No.	Start-up	Concept	Email
1.	Kshitij Pandey	fuel purity detection	nirol.founder@gmail.com
2.	Kunal Kumarsaw	pollution, threat to marine life, unemployment	kunal.kumarsaw.ece19@itbhu.ac

Sr. No.	Start-up	Concept	Email
3.	Kailash Chandra Bhakta	Crossover	kchandra.bhakta.bme16@itbhu.ac.in
4.	Pratyush Choudhury, Arjun Salyan, Prateek Sahoo, Ishika Mittal	Healthcare	pratyush.choudhury.bme16@iitbhu.ac.in
5.	Abhinav Anurag , Satish Jojare , Satish Kumar , Satendra Raj	Road Saftey	satendra.raj.civ19@itbhu.ac.in
6.	Sagar , Anurag , David	Vendeur	david.garg.phe19@itbhu.ac.in
7.	Piyush Sharan, Sahil Jain, Jinesh Jain	Climate Change	piyushsharan.ece18@itbhu.ac.in
8.	Harsh Narayan Tiwari, Nidhi Malhotra	Sleep Disorders	harshnarayan.tiwari.bce16@itbhu.ac.in
9.	Vibhu Vardhan Singh	Empowering Hydrogen Economy	vibhuvardhansingh@gmail.com
10.	Aditya Kumar	Industrial Problems : Pipe Leakage Detection & Inspection ; Locating potential deployment areas of oil rigs ; River health monitoring and control ; Underwater inspection and exploration	adityakr.cd.mec17@itbhu.ac.in

Incubation Model

Pre-Incubation

- support given to potential entrepreneur in developing his business idea, business model and business plan

Incubation

- support given to the entrepreneur from the startup to the expansion phase including Seed Fund Support

Graduation

- Branding
- Business support services
- Connect to Introduction to Angel investors/VCs/financial institutions

IMPACT FACTOR

Total Start-ups - 62	Graduated Companies – 10	Jobs created - 138
Professionals trained - 570	Patents Filed – 3	Technology Commercialized - 1

Successful Start-ups

edulution technologies	E T Media Labs http://etlabs.in/	Raghav Kansal	Digital Marketing Solutions
Sigrid Education	Sigrid Education Services Private Ltd http://www.sigrideducation.com/	Akash Kasaundhan	India Intelligence Test content co-creation Platform "Sigrid Notes".
Arteye	Arteye Softwares http://www.eteach.co.in/	Ajit Maheshwari	A technology platform for co-creation of multi-media educational content in an intuitive, easy and cost effective manner
bridgedots Technology Research & Consultancy	BridgedotsTechservicesPvt. Ltd. http://www.bridgedots.com/	Nikhar Jain	Technology development related to Cleantech, Polymers and Advanced Materials
BRISIL Products for better future	Brisil Technologies Pvt. Ltd. http://www.brisil.com/	Tanmay Pandya	Brisil is addressing the problem of rice husk ash utilization.
AGATI Healthcare Pvt. Ltd.	Agati Healthcare Pvt. Ltd. http://www.agatihealthcare.co.in	Mamta Sharma	Nutraceutical & Colostrum based Products

Few Earlier Achievements

- Recognised as top 20 incubators of India by Entrepreneur Magazine.
- Bridgedots Techservices Pvt. Ltd. winner of DST-LOCKHEED MARTIN Award 2015
- Kritika Polycorp Pvt. Ltd. winner of gold medal in India International Trade Fair, Pragati Maidan, New Delhi in 2013
- ET Media Labs Pvt. Ltd., among Top 30 Start-ups of Global Student Entrepreneur Award
- Magzhub Services Pvt. Ltd. winner of Start-up 20-20 Weekend Competition, at CIIE, IIM-Ahmadabad, 2013
- iMinBit TechIndia
    - CII Industrial innovation awards 2016-Top 10 promising Start-up.
    - In Top-20 innovative start-ups in Global Cleantech Innovation Programme 2016 for SME in India organised by United Nations-UNIDO, Top 50 Start-ups by Amrita TBI.
    - Invited to Hello Tomorrow Summit in Paris, with the support of the French Ministry of Economy, in October 13-14th, 2016
    - Aquvio won the Dr. APJ Abdul Kalam Centre Start-up Impact Challenge 2017
- Incubated Company Rosehub recognised as start-up, has produced 4 major Video and print documentation projects for National Bank for Rural and Agriculture Development (NABARD), Uttar Pradesh
- Incubated and Mentored Company Algae Next, declared winner of HultPrize BHU represented India in Dubai for HultPrize International. Mr.Dhruv Goel, Mr. Dhruv Chawla & Debjyoti Biswas secured 6th rank in international round of Hult Prize.
- Agati Health Care Pvt. Ltd. is recognized by FICCI one top 50 innovator start-ups for US delegations

Facilities

- Offices for the incubates (13)
- Conference Hall
- Training Hall
- Library
- Computer systems with printers in the TBI office and offices of all the incubated companies
- Internet, FAX, Photocopier
- Telephone lines with EPBAX and individual extension lines
- Manufacturing and Testing area
- Power backup using online 5 KVA UPS and 15 KVA DG Set
- Utilities

Lab and production facility

- Laminar Airflow
- Lyophilizer
- BOD incubator
- CO_2 Incubator
- Centrifuge
- Spectrophotometer
- Vertical Autoclave
- Orbital Shakers
- Cold room
- Fermenters
- Chemical workstation
- Hot air Oven
- PCR
- Gel Doc Systems
- Gel Electrophoresis
- RI detector
- Deep Freezer
- Cell Sonicator
- Polarizing Microscope
- Other Lab Equipments
- Server

31. Institute works Department

Ever since its inception in the year 2014, Institute Works Department (IWD) in IIT(BHU) shoulders the onus of major/ minor repairs, maintenance, retrofitting, renovation and development of infrastructure along with proper operation and sustenance of existing utility lines. The upkeep and functioning of water distribution system, sewerage network, electrical overhead/underground cable lines, distribution sub-stations (DSSs), power sub-stations (PSSs) and SCADA system also pertain to the prime responsibility of IWD.

In addition to repair and maintenance of the hostels, guest house, faculty apartments/quarters and academic buildings, road side development and maintenance of the pavements/bituminous roads are duly undertaken by IWD. Depending upon the extent and quantum of work, IWD floats online tenders to award work-contracts to various vendors/contractors to execute maintenance/development related works of IIT(BHU) under compliance of GFR and standard practices of Civil/Electrical Engineering.

Major works in progress by CPWD during the period from April' 2019 to March' 2020:-

Sl. No.	Name of work	AA&ES amount (Rs. in Crores)
1.	Supply, installation, testing and commissioning of 13 passengers MRL lift in School of Material Science and Technology building at IIT (BHU) Varanasi	0.28
Total		0.28

Major works completed by CPWD during the period from April' 2019 to March' 2020:-

Sl. No.	Name of work	AA&ES amount (Rs. in Crores)
1.	Vertical extension of 2nd and 3rd floor (LHS & RHS wings) of School of Materials Science and Technology (SMST) building at IIT (BHU), Varanasi	03.02
2.	Renovation and upgradation of ground floor of existing Library building and other allied construction works etc. at IIT (BHU) Varanasi	02.98
3.	Construction of Teaching Centre (G+1) building at IIT(BHU) Varanasi	05.72
4.	Construction of Girls Hostel (G+6) alongwith boundary wall etc. at IIT (BHU), Varanasi	56.30
Total		68.02

List of civil works completed/being carried out by IWD during the period from April' 2019 toMarch' 2020:-

Sl. No.	Name of work
1.	Providing and fixing aluminium partition with WPC hybrid board and tile flooring work of Architecture Department, IIT (BHU)
2.	P/F alulminium partition, false ceiling, construction working platform with granite and painting work in Room No. 10 and renovation of various toilet in Department of Pharmaceutics & Technology Engineering, IIT (BHU)
3.	Renovation of toilets G.F and F.F. of South Side 2 Nos) mess side (4 nos) and painting with oil bound distemper and making of damage sewer line of toilets area in Morvi Hostel of IIT (BHU)
4.	Construction of 1 No. soil badminton court, making cemented area between old and new GSMC mess water drainage toilet and bathroom four canteen, bathroom maintenance and boundary wiring fencing in GSMC (Ext.), IIT (BHU)
5.	Bathroom renovation (2 nos.) and bathroom maintenance (2 nos.) ramp repair, renovation of back side room (right side), aluminium doors and tiles in office and gurudwara in Rajputana Hostel, IIT (BHU)
6.	Distempering and painting works of common place area of all room in Rajputana Hostel, IIT (BHU)
7.	Repair to patch plaster and scrapping putty, distempering work in corridor at first floor of chemical Engg., IIT (BHU)
8.	Renovation of kitchen block including dismantling old window and door, P/F of uPVC window and panelled door, P/L vitrified tiles, plastering of wall, putty and distempering at first floor of SC De Hostel, IIT (BHU)

Sl. No.	Name of work
9.	Renovation of bathroom (4 nos.), soil badminton court (2 nos.), courtyard repairing (outside), mess No. 1 and sewer repair and plastering behind canteen in SC De Hostel, IIT (BHU)
10.	P/F of aluminium frame window with mosquito net in rooms, common hall and mess area of GSMC (old), IIT (BHU)
11.	Renovation of kitchen block including dismantling old window & door, P/F of uPVC window & panelled door, P/L vitrified tiles, plastering of wall, putty and distempering at first floor of Vishwakarma Hostel, IIT (BHU)
12.	Guniting or rooms between room No. 142 to 188, Painting with OBD, doors and windows repairing at right side 1st floor (North side) of Dhanrajgiri Hostel, IIT (BHU)
13.	P/F of aluminium frame, window with mosquito net in first floor, Visveswaraiya Hostel, IIT (BHU)
14.	Construction of mezzanine floor to implement RKVY-FARTAAR scheme in Tinkering Lab, Department of Chemical Engineering, IIT (BHU)
15.	Construction of boundary wall outside of SC De Hostel, IIT (BHU)
16.	Modification of common place and service counter area, IIT (BHU) Cafeteria
17.	Renovation of Toilets and Bathroom 2 Nos. in GF and 2 Nos. in FF (in back side) and Tiles in Office Room & Warden Room in S. C. De Hostel, IIT (BHU) Varanasi
18.	Water proofing treatment of roof of Department of Metallurgical Engineering, IIT(BHU), Varanasi
19.	Water proofing treatment of root and repairing of patch plaster, finishing walls with acrylic smooth exterior outer wall, Department of electronics, IIT (BHU)
20.	Construction of light weight structure for (With panel roofing/puff panel wall including internal false ceiling and vitrified tiles flooring on the fluid mechanic building for Architecture Engineering Department, Iit(BHU) Varanasi
21.	Water proofing treatment of roof and repairing of paths plaster in Dept. of Electrical Engg. And Ceramic Engg. IIT (BHU)
22.	Water proofing treatment of roof and repairing of path plaster in Dhanrajgiri& S.C. De Hostel IIT (BHU)

Major electrical works completed/being carried out by IWD during the period from April' 2019 to March' 2020:-

Sl. No.	Name of work
1.	Supply and laying of LT power cable from IT DSS to TLC building, Library Extension and ABLT Ext., IIT (BHU)
2.	Supply, installation, testing and commissioning of Battery Charger and Battery Bank in IWD, IIT (BHU) Varanasi
3.	Electrical Work in the 47 rooms and corridor of First Floor (North Wing) in Dhanrajgiri Hostel IIT(BHU) Varanasi
4.	Supply and laying of LT power cable from IT DSS to Feeder Pillar, Near Library Square, IIT (BHU) Varanasi
5.	Illumination work from Rajputana Hostel feeder Pillar to Vishwasraiya square of the IIT (BHU)
6.	Supply and laying of LT power cable from DSS A to SMST Building , IIT (BHU)
7.	Providing and Installation of power point on benches in class room LT-1 in IIT, (BHU), Varanasi
8.	Sport court light work in various court in Rajputana Gymklhana Ground IIT (BHU)
9.	Supply, Installation, testing and commissioning Battery Charger and Battery Bank in Vivekananda DSS, IIT (BHU) Varanasi
10.	Supply, Installation, testing and commissioning of outer door type power distribution panel of power rearrangement in GTAC, IIT (BHU) Varanasi
11.	Supply and Installation of main switch has flood light in Courts and cabling work for power supply control of court light in Gymkhana and Rajputana Ground IIT(BHU)
12.	Supply, Installation, testing and Commissioning of Battery Charger and battery Bank on DSS-IT of IIT (BHU) Varanasi
13.	Street light work from IIT square to Dhanrajgiri square IIT (BHU)

32. Central Instrument Facility

Overview: Central Instrument Facility (CIF) is one of the Specialized Core Facilities at Indian Institute of Technology (Banaras Hindu University), Varanasi developed with mission to provide futuristic research infrastructure and quality education services in support of advanced instrumentation.The centre is offering a complement of sophisticated instruments and technical expertise to support faculty/student research and industrial R&D. The CIF is headed by Dr. Rajiv Prakash, Professor Materials Science & Technology, along with full time professional staff / scientists, each with their own specific expertise. PG student assistants are also available for smooth operation of the instruments.

1. Approximate number of internal students user of CIF facilities: 750 Approx

2. Number of Department/school user of CIF facilities:14 Departments/Schools

3. Approximate number of students/researchers/Industries from outside the institute who have used the CIF facilities: 125-150 students approx form BHU(Physics/ Chemistry/ Botany/ Zoology/ Bio Technology/ Geology, Food Science, Soil Science) IMS- BHU, IIT (ISM) Dhanbad, B.C. Roy College of Pharmacy- West Bengal, NIT Patna, MNIT Allahabad, Allahabad University, Govt. Ayurvedik College- Bhopal, Wadia Inst of Himalayan Geology, MMMUT, Gorakhpur, DAV College – Kanpur, RGIPT Amithy .

4. List of facilities operation in CIF:

(Additional facilities created in the current financial year may be separately highlighted)

ATEM with EDS
HR-SEM with EBSD
SEM with EDS
Bench Top XRD
High Resolution XRD
MPMS
SPM
Ion Chromatography
Tribometer
PCB prototyping
FTIR
DSC
TGA
NMR

New Facilities FY- 2019-20

XPS with UPS
ICP-MS
BET
Table top SEM

5. Number of publications from CIF facilities: List not available

6. Any other achievements or highlights (in a paragraph):

XPS: - **X-ray photoelectron spectroscopy** (**XPS**) is a surface-sensitive quantitative spectroscopic technique that measures the elemental composition, empirical formula, chemical state and electronic state of the elements that exist within a material. Samples containing free sulphur and Iodine are prohibited as instrument detector sensitive for these elements.

ICP-MS:-Inductively coupled plasma mass spectrometry (ICP-MS) is a type of mass spectrometry that uses an Inductively coupled plasma to ionize the sample. It is used to detect metals and several non-metals in liquid samples at very low concentrations (ppb & ppt).

BET: -It is a technique to determine surface property of solid material using theory under the exposure of gas absorbent. Physisorption process involve the basis of specific surface area measurement with pore size distribution , while chemisorptions process involves the basis of quantitative measurement of surface active sites particularly promotes the catalytic reactions.

33. Main workshop

Introduction.

The vision of the founder of Banaras Hindu University, Pt. Madan Mohan Malviya ji, regarding the engineering education in this university can be seen in his own Wordings as stated below.

"To advance and diffuse such scientific, technical and professional knowledge combined with necessary practical training as is best calculated to help in promoting indigenous industries and in developing the material resources of the country."

It is with this idea that Malviya ji went for a full scale Workshop in this engineering college, which was christened as Banaras Engineering College (BENCO).This workshop was used to produce every engineering item that was used in construction of producing machine tools – such as, Lathe and other product like electric fans, etc. This unit was providing technical assistance to Martin Burn Electricity Co. and also Diesel Locomotive Works for the maintenance and fabrication of their several items. It may kindly be noted that for a long time, this unit was a part of teaching department, i.e., the Mechanical Engineering Department. To make good use of the resources, both in terms of machines and manpower with the unit, it was providing technical and on the job technical training to less privileged section of the society. This was making extra manpower available to the University for producing useful products and taking various kinds of maintenance work, thereby saving enormous amount of money of the University. For example, the whole fleet of University vehicles was maintained by this workshop.

1. Activities (IIT-main workshop 2019-20)

The Main Workshop of the Indian Institute of Technology (BHU) is offering the following services to the Institute/ University/Outsiders.

At Institute level

- Training to B.Tech. Pt-I students of all branches and B.Tech. Pt-II Mech. Engg. Students to expose them to various manufacturing practice and processes.
- Providing facilities for fabrication involved in project work to all the engineering students.
- Helping students by way of fabricating the models and equipments for research.
- Helping students by way of fabricating the models for Institutional Tech. Fest & Department fest like: Technex, Comet, etc.
- Helping students in shaping the product that come out of their creative & innovative thinking.
- Inspecting the furniture supplied to the different hostels of IIT (BHU).
- Providing technical and support services in purchase and maintenance of the University vehicles of all types.
- Providing facilities and also the technical know-how for development of industrial and innovative products.

To outsiders

- Training to the students of other engineering colleges.
- Providing processing and production facilities to outsiders.
- Providing Summer Training to the undergraduates of different
- Engineering College.

Core team of the main workshop

- Prof. V.K. Srivastava (Prof. Incharge)
- Dr. Sankara Rao L. (Sr. Technical Officer) (Transferred in Dept. of Mechanical Engg on 08.02.2020)
- Shri Basudeb Rajak (Sr. Technical Officer)
- Dr. S.K. Mandal (Sr. Technical Officer) (Transferred in Dept. of Mechanical Engg. on 08.02.2020)

Data of staff details (name of shop)

Sl. No.	Emp. No.	Name of Employee	Designation	Shop/Lab.
1.	50090	Sri Ravi Kumar Sonkar	Junior Asstt.	Office (Transferred in Dept. of Arch. Engineering on 05.12.2019)
2.	18668	Sri G.K. Shukla	Senior Technician	Office
3.	19274	Sri Gopal Rana	Senior Technician	Office
4.	18669	Sri Arvind Kumar Singh	Technical Supdt.	C.N.C
5.	18676	Sri Ashwani Kumar Tiwari	Senior Technician	C.N.C
6.	19266	Sri Bed Prakash Singh	Technical Supdt.	C.N.C Auto
7.	18672	Sri Vinay Kumar Singh	Senior Technician	CNC Auto
8.	13628	Sri Shree Kumar	Technical Supdt.	Carpentry
9.	13626	Sri Mahendra Kumar	Technical Supdt.	Carpentry
10.	13632	Sri Jagdish Prasad	Junior Technical Supdt.	Carpentry
11.	13633	Sri Vikrama Prasad	Junior Technical Supdt.	Carpentry
12.	18675	Sri Jagdish	Senior Technician	Carpentry
13.	18664	Sri Brijesh Kumar Singh	Senior Technician	Black Smithy
14.	13619	Sri Munna Lal	Sr. Technical Supdt.	Sheet Metal (Retd. On 31.01.2020)

Sl. No.	Emp. No.	Name of Employee	Designation	Shop/Lab.
1.	13623	Sri L.B. Singh	Sr. Technical Supdt.	Sheet Metal
2.	18646	Sri Gopal Kumar Kharwar	Senior Technician	Sheet Metal
3.	19268	Sri Ravi Shankar Singh	Technical Supdt.	IDC
4.	18070	Sri Chandra Bhushan	Junior Technical Supdt.	IDC
5.	13636	Sri Lallan Prasad	Junior Technical Supdt.	IDC
6.	13631	Sri Lal Prakash Singh	Junior Technical Supdt.	IDC
7.	18032	Sri Sunil Kumar	Senior Technician	IDC
8.	18607	Sri Karun Vishwakarma	Senior Technician	IDC
9.	18670	Sri Kunwar Bahadur	Senior Technician	IDC
10.	18671	Sri Dheelep Kumar B.	Senior Technician	IDC
11.	18667	Sri Banarasi Rao	Senior Technician	IDC
12.	13630	Sri R.K. Sharma	Junior Technical Supdt.	Fitting
13.	18665	Sri Bipin Kumar Rai	Senior Technician	Fitting
15.	18666	Sri Billu Guria	Senior Technician	Fitting
16.	16534	Sri Ram Bhaju Prasad	Junior Technical Supdt	Foundry

Sl. No.	Emp. No.	Name of Employee	Designation	Shop/Lab.
17.	11561	Sri Bhola Nath	Technical Supdt.	Foundry
18.	18031	Sri Lakhmi Chand	Sr.Technical Supdt.	Auto Mobile
19.	18663	Sri Jitendra Kumar	Senior Technician	Auto Mobile
20.	13634	Sri T.B. Singh	Junior Technical Supdt.	Electroplating
21.	18604	Sri Anil Kumar Vishwakarma	Senior Technician	Electroplating
22.	19267	Sri Chandra Mohan Singh	Technical Supdt.	Machine
23.	18044	Sri Santosh Kr. Maurya	Junior Technical Supdt.	Machine
24.	18603	Sri Vijay Kumar Singh S/o Sri R.P.Singh	Senior Technician	Machine
25.	18605	Sri Ajay Kumar Yadav	Senior Technician	Machine
26.	18602	Sri Ravindra Kumar	Senior Technician	Machine
27.	18606	Sri Rajendra P. Vishwakarma	Senior Technician	Machine
28.	18051	Sri Vijay Kumar S/o Sri Sohan	Senior Technician	Machine
29.	18017	Sri Satya Prakash	Sr. Technical Supdt.	Welding
30.	18052	Sri Dilip Kumar Sharma	Junior Technical Supdt.	Welding
31.	18040	Sri Vijay Kumar Singh S/o Sri Ram Alam Singh	Junior Technical Supdt.	Welding

Any other information:

Library facilities: 85 Nos. of Video CDs related to Power Hand Tools, Welding, CNC, Foundry, Carpentry, Mechanical Engineering manufacturing techniques & Safety are available in Workshop for instruction to the students of B. Tech during workshop practice classes.

INDIAN INSTITUTE OF TECHNOLOGY (BHU), Varanasi
BALANCE SHEET AS AT 31.03.2020

Amount in Rupees

SOURCE OF FUNDS	Schedule	Current Year	Previous Year
Corpus/Capital Fund	1	4,931,587,801	4,408,661,475
Designated / Earmarked Funds/Endowment Funds	2	1,349,452,208	1,343,881,847
Current Liabilities & Provisions	3	4,428,631,053	538,613,341
TOTAL		**10,709,671,062**	**6,291,156,663**

APPLICATION OF FUNDS	Schedule	Current Year	Previous Year
FIXED ASSETS	4		
Tangible Assets		2,112,872,142	2,129,597,150
Intangible Assets		45,796,771	67,124,150
Capital Work-In-Progress		351,474,374	340,424,886
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5		
Long Term		1,267,965,439	706,240,480
Short Term		2,330,236,250	2,118,612,965
INVESTMENTS - OTHERS	6	-	
CURRENT ASSETS	7	3,510,377,374	243,268,007
LOANS, ADVANCES & DEPOSITS	8	1,090,948,712	685,889,025
TOTAL		**10,709,671,062**	**6,291,156,663**

INDIAN INSTITUTE OF TECHNOLOGY (BHU), Varanasi

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st MARCH 2020

Amount in Rupees

Particulars	Schedule	Current Year	Previous Year
INCOME			
Academic Receipts	9	544,673,818	498,094,663
Grants / Subsidies	10	2,659,135,000	2,273,700,000
Income from Investments	11	123,048,323	196,102,051
Interest earned	12	430,945	266,730
Other Income	13	330,839,793	255,994,346
Prior Period Income	14	-	
TOTAL (A)		**3,658,127,879**	**3,224,157,790**
EXPENDITURE			
Staff Payments & Benefits (Establishment exp.)	15	1,890,821,875	1,486,144,465
Academic Expenses	16	559,066,532	412,801,655
Administrative and General Expenses	17	444,793,721	479,485,480
Transportation Expenses	18	1,011,434	1,173,587
Repairs & Maintenance	19	50,163,282	56,449,380
Finance Costs	20	999,073	135,992
Depreciation	4	327,117,972	276,784,343
Other Expenses	21	-	-
Prior Period Expenses	22	-	-
TOTAL (B)		**3,273,973,889**	**2,712,974,902**
Balance being excess of Income			
over Expenditure (A-B)		384,153,990	511,182,888
Transfer to/ from Designated			
fund			
Balance being Surplus (Deficit)		384,153,990	511,182,888
Carried to Capital Fund			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अनुगम समारोह 2019
Orientation/Induction Programme
WELCOME TO INDUCTION / ORIENTATION
PROGRAMME 2019


(BHU)
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