

Inside this Issue

Centenary closing ceremony

Reminiscences of an Alumnus

NEP-2020

Department of Architecture

Magnetic Explosions in the
Sun's Atmosphere

Bricks from Waste

Making Computers Accessible
to the Visually Impaired

Studying in a Foreign
University

हिन्दी पखवाड़ा

राजभाषा सम्मेलन

Student Counselling Service:
SAKHA

Start-ups

Publications

Sponsored projects, Patents
and MoUs

Faculty appointments and
retirements

Faculty achievements

Student Achievements

FMC Weekend 2019

Technex'20

Kashiyatra'20

CELEBRATING CENTENARY



INDIAN
INSTITUTE OF
TECHNOLOGY
BANARAS HINDU UNIVERSITY

IIT
BHU
connect

सम्पर्क

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Editor's Desk

The editorial team is pleased to present the seventh edition of the institute newsletter IITBHU Connect. It comprises a wide range of articles charting the legacy of the institute from its enviable past to its promising current happenings. The publication of the newsletter got delayed because of the unfortunate COVID-19 lockdown. The issue begins with a report of the Centenary closing ceremony. The chief guest, one of our Alumni, shared the story of his journey in the institute. Next is an enlightening article on the salient features

of the New Education Policy by our honorable Director. A new section showcases an article on Foreign University experiences by our alumnus. A column on the Institute Student Counselling Service makes you understand the impact of SAKHA on student life through its activities. It also displays the entrepreneurial culture in the institute and various success stories of the startups initiated by our students. There are three research features by our faculty members and their groups. Lastly, we again relive the enjoyable moments of FMC

Weekend'19, Kashiyaatra'20, and Technex'20. We express our gratitude to the entire faculty, staff, student fraternity, and deans & their offices for their valuable inputs and cooperation. The team is also grateful to our Director for his encouragement and guidance. We hope you enjoy reading this edition of the newsletter. Feedback and suggestions are most welcome. You can reach the editorial team by email at

editor.newsletter@itbhu.ac.in.

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Student Editors since the inception of the Institute Newsletter (IITBHU Connect)



**Mr. Bhavya
Pruthi**
(2016)



**Mr. Prasanjan
Mitra**
(2017)



**Mr. Dhanushamanth
Yenugu**
(2018)



**Mr. Deepak
Singhalwaal**
(2019)



**Mr. Raghavendra
Saddalagari**
(2020)

CENTENARY CLOSING CEREMONY

It has been an extraordinary year for the Institute celebrating its centenary. Centenary Celebrations started on the 22nd of February, the day of Basant Panchami, 2018. As part of the celebrations, the Institute held the Global Alumni meet (8th-12th of February 2019) in the presence of eminent public leaders such as the honorable Chief Minister Shri Yogi Adityanath and Shri Manoj Sinha as the guests. The Institute celebrated the Closing Ceremony of Centenary on the 29th of January 2020. The event was hosted along with the Golden Jubilee Reunion of 1970 Batch. All Alumni Associations of IIT(BHU) in India and abroad to maximize attendance in the historic event. The Closing Ceremony started with the floral tributes to the great visionary, and founder of BHU Mahamana Madan Mohan Malaviya, by Prof. P.K. Jain (Director of IIT BHU), Prof Rakesh Bhatnagar (Vice-Chancellor, BHU),

BHU, Prof. Ramji Agrawal, a former student of metallurgical engineering of 1982 batch and P Ramachandran, who owns the company BENCO, provided a fund of Rs 70 lakh for its resurrection.



The celebration continued in Swatantrata Bhavan with the respectable Chief Guest, Shreenivas Gururao Deshpandey.



and Alumni of 1970 batch at Malaviya Bhavan.

On this auspicious day, the director inaugurated the re-fabricated BENCO Chimney and Integrated Teaching Learning Centre (ITLC). The Chimney was established in 1922 when BHU used to generate 1,000 KW electricity in its thermal power plant for its consumption. Later, the plant was closed and the Chimney got damaged. Following the initiative of President of Banaras Alumni Association of IIT

Prof. Ramji Agrawal (President of Banaras Alumni Association) greeted the Golden Jubilee Batch. He thanked the alumni for their considerations and contributions to the Institute. Prof. Pramod Kumar Jain, Director of IIT BHU) spoke about the efforts the Institute is making to fit into the IIT ecosystem and various developments in the Institute that were taken up as centenary initiatives. A few of them are Construction of two new boys' hostels, about 150 faculty

apartments, and two new research centres. In total, seven projects are already approved by the ministry for funding, and five more projects are in active consideration by the end of this financial year. He also talked about the services that are offered by the 1st Super Computer in the country that is installed in the Institute by honorable Prime Minister, Narendra Modi.



Prof. Anil Kumar Tripathi (DoRA), applauded the alumni who have made efforts to make IT-BHU into the prestigious IIT BHU, an institute of national importance. The motto of centenary celebrations was to pave a path for the Institute in the coming years. Prof. R K Mishra (Chairman of Organizing Committee, Centenary) concluded the meeting by appreciating the efforts of everyone who made the centenary celebrations a grand success. The historic event concluded with the Cultural Night VIRASAT organized in association with S P I C MACAY.



Reminiscences of an Alumnus

Shreenivas Gururao Deshpandey is an alumnus of BHU, who retired as Joint Labor commissioner in Karnataka. He is a philanthropist and strives to improve the lives of the underprivileged. He shared his experiences during the Centenary closing ceremony.

Dear brothers and sisters,

Thank you very much for giving me this opportunity to be back in the BHU campus. It has been a very pleasant emotional experience for me.

I came to BHU Campus as a young man in 1946 from a small village in Karnataka. It was a mind-expanding experience for me. I had never been outside of 30 miles from my village. I was a very different person by the time I left BHU in 1948. Thank you, BHU, for the education and the experience which has helped me throughout the rest of my life.

Our country and BHU were very different places in 1946. The facilities were not as developed. When I came first, I was put in a temporary accommodation called Dharamajeet lodge outside of the campus. In the second year, I got to live in the Morvi hostel. We had messes for all the regions of the country. I chose the South Indian mess, and I loved the food. I hope they have continued to maintain quality.

We were under British rule when I entered BHU in 1946. 15th August 1947, was a historical day for us at the campus. We celebrated that day with plenty of sweets and excitement. I left as a citizen of a free country in 1948.

I also experienced two sad days when I was on campus. On 12th November 1946, we lost our founder Bharat Ratna Pandit Madan Mohan Malaviya. Later, on the 30th of January 1948, we

lost Mahatma Gandhi. Gandhiji's ashes were brought to Allahabad for the immersion in Triveni Sangam. Most of us on the campus went to Allahabad in a crowded train and participated in the procession. We got to see Pandit Jawaharlal Nehru and Sardar Vallabhai Patel. It was a sad and very turbulent day in the country.

BHU was one of a handful of Universities in India in 1946. When I was here, Sir Sarvepalli Radhakrishnan was the vice-chancellor, and Dr. N N Godbole was the principal of the College of Technology. I distinctly remember that we went on a study tour in December 1947 to Agra, Lucknow, Kanpur, and Modinagar. We also attended the science congress in Delhi in 1948.

In those days, the primary purpose of Universities was to train administrative staff for the British Bureaucracy. However, Pandit Malaviya had a grand vision of educating the youth for the industry. I was a beneficiary of his vision.

It is widespread these days for the students of BHU to go abroad. Even those days, some of my classmates went all over the world. And those who did not, had leadership roles in the industry started many companies.

As for my own experience, I have had a very fulfilling life. I moved back to Karnataka after BHU and founded a company to make and distribute malaria medication. Unfortunately, I had to shut it

down after a year because of a dispute with my co-founder. I have four children, eight grandchildren, and nine great-grandchildren. I am glad that my son and three grandsons have become entrepreneurs to fulfill my ambition.

I then joined the Government and served in Mumbai until 1956. After the state reorganization, I moved to Karnataka. I retired in 1980, 40 years ago, as the joint-labor commissioner. During the Government service, I had the opportunity to pursue more education in Calcutta and then in London. I was selected to study in London in 1971 under the Colombo plan.

After retirement, I settled in Hubballi, Karnataka. After all my four children were well settled, I dedicated my life to social service. For the last 20 years, I have been working actively in improving my small village Sishuvinal near Hubballi.

BHU has come a long way since I left in 1948. It is now very advanced in technology and having a profound impact on our country. I hope, true to the vision of our founder Pandit Malaviya, this institute will continue to train students who will move our country forward in the 21st century.

I am now 95 years old. Coming back to the campus has energized me. I leave the university just as enthusiastic as I was when I left it in 1948.

National Education Policy 2020

Putting India on the Path to a Knowledge-based Economy

Prof. Pramod Kumar Jain

Director, Indian Institute of Technology (Banaras Hindu University), Varanasi

On Wednesday, 29 July 2020, Union Ministers Shri Prakash Javadekar, Ministry of Information and Broadcasting (I&B) and Shri Ramesh Pokhriyal Nishank, Ministry of Human Resource Development (MHRD) unveiled the National Education Policy (NEP) 2020. It is a comprehensive framework for educational reforms in the country that aims to propel the country's education system towards a much-needed transformation. While significant changes in school education have been envisaged with the new "5+3+3+4" design, the policy also espouses vocational education and skill-based holistic learning at school and higher education levels. The NEP has a huge focus on universalizing access to higher education, integrating out-of-school children, and making dogged efforts targeted at socio-economically weaker groups. The early childhood education will be delivered through a newly designed curriculum that emphasizes play-based and activity-based pedagogical practices. Along with the national task for initial literacy and numeracy, NEP 2020 will boost the critical phases of learning responsible for building a robust and sustainable foundation of the Indian education system. Further, the concerted focus on multilingual education and the directed efforts to improve the knowledge of India have been incorporated in the framework to restore the country's

glorious educational heritage, creating a system that is modern yet deeply rooted.

There is a huge emphasis on integrative learning with a clear objective of empowering colleges and universities to become multidisciplinary by 2040, the NEP implementation deadline. In the contemporary scenario, the differences between disciplines are gradually dissolving, hence all areas need to be brought together in an interdisciplinary way for holistic and applied learning. The multidisciplinary education will help students acquire better skills and manage their career development holistically. The framework will also help to attract international students to India. Increasing the education budget from around 4% to 6% of the GDP will facilitate the implementation of NEP strategically.

The provision of multiple entry and exit options in higher education gives the much-needed flexibility to students to improve their skills and interests. Multiple entry/exit points in higher education will ensure that students can complete their education with a certificate, diploma, or degree as per their need, choice, and interest. Students need not be restricted to a narrow domain as a refurbished curriculum, adult education, lifelong learning will ensure that learners acquire at least one or a few vocational skills in the next few years. The new direction intends a paradigm shift

from the conventional education system towards applied learning.

The policy also provides opportunities to foreign universities among the top 100 world rankings to open campuses in India and address the hitherto limited participation of foreign universities in India only through collaborative programs. The NEP will promote India as a global study destination for premium education at affordable costs. It is worth mentioning that currently an estimated 7.5 lakhs Indian students spend almost over Rs 40,000 crores a year for their study abroad. These educational reforms will considerably slow down the outflow of students and financial drain. The NEP also aims at quadrupling the number of overseas students in India by 2023, providing a net inflow of foreign exchange and support to the economy.

To date, India doesn't have an inclusive system for regular, trustworthy, and comparable assessments of learning outcomes. It is also inspiring to see the establishment of a National Assessment Centre called the PARAKH (National Centre for Performance Assessment, Review, and Analysis of Knowledge for Holistic Development). The newly proposed educational assessment center will be a game-changer in maintaining the quality of education.

The creation of an academic credit bank is beneficial for students who

have a break in their education. They can have their earned credit in credit banks and rejoin education again without repeating the courses. It will also help students achieve while learning as they can take a break from education, work and rejoin education, and continue with the earned credit. The newly proposed “The National Research Foundation” will provide a fresh

impetus to research and development in India. The motivation for research, graded autonomy, internationalization, and the development of special economic zones are vital to reframe India as a global higher education destination.

Finally, it can be concluded that NEP marks an overhaul of the governance architecture of

education in favour of a simplified and cogent structure. It is based on a practice-based curriculum with local vocational skills learning and supports the Prime Minister's dream of “Lok Vidya” and “Vocal for Local.” The NEP is a big step in India's journey towards quality education — the fourth goal of sustainable development.

Department of Architecture, Planning & Design

Department of Architecture, Planning, and Design was inaugurated on 23rd July 2019 as a centenary initiative of IIT (BHU), Varanasi. Visualizing the large infrastructural development in the country, this department will serve the society by producing able Architects and Planners in the future. At present, only three IITs, namely IIT Roorkee, IIT Kharagpur, and IIT (BHU) Varanasi, have such a Department.

Courses to be offered:

1. Bachelor of Architecture
2. Bachelor of Planning
3. Bachelor of Design (B.Des.)
4. Masters and Research Programs

Objectives:

- ◆ Rejuvenating and Re-engineering of existing urban settlements to enhance their efficiency and functionality
- ◆ Research issues in the development of Architectural blueprint of urban settlements and

cities.

- ◆ Providing solutions for efficient use of energy, water, and other resources
- ◆ Protecting occupant health and improving employee productivity.
- ◆ Reducing waste, pollution and environmental degradation

Research Areas:

- ◆ Architectural design

- ◆ Building Materials and Innovative
- ◆ Community and regional planning
- ◆ Community and Behavioral studies in planning
- ◆ Green and sustainable habitat
- ◆ Conservation of Heritage architecture
- ◆ Smart City and town planning



Discovery of New Magnetic Explosions in the Sun's Atmosphere

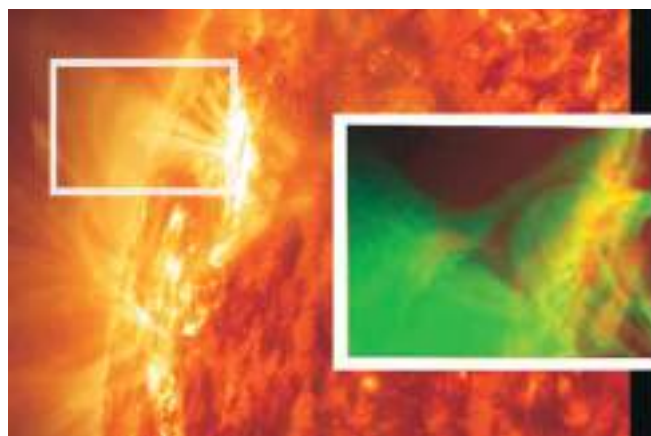
The discovered forced reconnection in the localized Sun's corona (Credit: Srivastava et al. 2019; NASA-GSFC) The Sun is a magnetically active star

whose outer atmosphere is magnetized as well as maintained at around million-degree Kelvin. The unresolved question is that how the

temperature of the outer atmosphere of the Sun, namely “corona,” is maintained at mega-Kelvin if the surface photosphere lying few

thousand kilometers deeper has an average temperature of 5800 K! This paradox spawns one of the outstanding problems in solar astronomy that does not have any firm scientific answer yet. Sun's outer atmosphere consists of conductive plasma tightly woven with the magnetic fields. The tangled magnetic field lines self-reorganize and magnetic energy is liberated in form of heat and plasma propulsion. This type of magnetic explosion is known as spontaneous magnetic reconnection. IIT (BHU) physicists discovered a new kind of magnetic explosion in the Sun's corona and studied its properties by the computer modelling. Using the spaceborne Extreme Ultra-violet imaging using Atmospheric Imaging Assembly (AIA) onboard the Solar Dynamics Observatory (SDO), they firstly discovered that oppositely directed magnetic field lines in the

Sun's corona, forming a thin sheet of ionized plasma gas, is perturbed by an external force causing its heating. A cool plasma gas hanging against the gravity in the nearby region of the Sun's corona erupts and pushes this thin sheet of ionized plasma to forcibly release the energy via this new magnetic explosion. This physical phenomenon is termed as "The Forced Reconnection", which has been firstly directly observed by the IIT (BHU) scientists. The newly discovered forced reconnection can be potentially replicated into the laboratory plasma to produce the energy and to optimize its confinement and stability.



About Dr. A.K. Srivastava:

Dr. Abhishek Kumar Srivastava (Associate Professor of Physics at IIT(BHU)) has published more than 100 papers in various peer-reviewed reputed international journals including the Nature journals. He has recently got the prestigious Laxminarayana & Nagalaxmi Modali Award 2019 from the Astronomical Society of India.

Bricks from Waste

"Innovation is seeing what everybody has seen and thinking what nobody has thought."

Justifying the above quote, Dr. Nikhil Saboo and his team of research scholars comprising Nirmal Prasad, Mayank Sukhija, Mohit Chaudhary from the Department of Civil Engineering of IIT (BHU) have developed a brick that can pass water through it. They are aiming to use these bricks in the construction of roads or pavements directly, facilitating water harvesting as it can percolate water through it. The team got this idea after seeing the accumulation of rainwater on roads during heavy rains. So they thought of creating these bricks.

The best thing about the developed brick is that it has been made using waste, i.e., RAP in technical terms along with three other ingredients. As these days, natural ingredients



are depleting, and the government is also focusing on reusing the existing materials, keeping this point in mind, Dr. Nikhil Saboo and his team decided to use RAP material to develop these bricks. Reclaimed asphalt pavement (RAP) is the term given to removed/reprocessed pavement materials containing asphalt and aggregates. The team has already completed the

first phase of their work and evaluated the strength after replacing the natural aggregate with RAP in different percentages. The team is looking further to increase the strength of bricks so that it can be used in highways. Apart from being environmentally friendly, it is economical too, as it has been made only with cement, waste(RAP), and water.

Enabling the Visually Impaired through User-Developed Dactylology to Interact with Computer

Have you ever thought of why we wave our hands while explaining the answer to our teacher? According to human psychology, gestures are part of the way we talk and express ourselves. What is even more fascinating is that visually impaired students—even those blind from birth—also produce gestures while speaking. It means that people do not learn to gesture by watching other speakers. Instead, it is intuitive.

Nowadays, computers have become an essential part of our daily life. Due to its widespread use, it is expected that everyone—sighted or visually impaired—should be able to interact with computers. Usage of a computer requires visual presentation of information for the input—hand-eye coordination to operate computer mouse/keyboard—as well as the output—to see the information displayed on a computer screen. Hence, visually impaired users are unable to interact with computers by conventional means of Human-Computer Interaction (HCI). Braille and other traditional methods have limitations while entering data on the computer. Can these gestures be used to help visually impaired to interact with

the computer? The answer is yes! According to recently published work by Modanwal and Sarawadekar in IEEE Transactions on Human-Machine Systems, Visually impaired can also interact with the computer using a dactylology (a language of fingers). This dactylology was developed as an outcome of a user evaluation study conducted on 25 visually impaired users.

According to Modanwal and Sarawadekar, the recent advancement in gesture recognition algorithms and low-cost hardware development has made the use of gesture as an indispensable choice of interaction. Hand gestures provide this capability in a more flexible, natural, and expressive form. Research has already confirmed that vision is not responsible for the production of gestures. Every human being—even those blind from birth—produces hand gestures during the interaction. The gestures produced by the visually impaired are almost similar to the gestures of the sighted users. Although much work has been performed in the human-computer interface, visually impaired users still feel it is not very easy for them to



interact with the computers. One of the major stumbling blocks is the lack of knowledge about the hurdles faced by them and their preferences towards hand gestures.

The proposed system enables the blind community to interact with the computer and to connect with the cyber world. More than 15 million blinds reside in India, among which less than 5% receive any education. This innovation will help them to improve their expertise in handling computers or computerized systems, which are the most common today, and they become a part of this digital age.

Gourav Modanwal, Research Scholar at IIT BHU, was honored by Former President of India, Shri Pranab Mukherjee, for his research contribution, and he was one of the invited members of the "In-Residence Programme" held in Rashtrapati Bhavan, New Delhi.

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 :

- (क) शैक्षणिक
- (ख) गैर-शैक्षणिक एवं
- (ग) 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 पं. 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 सदीप 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 प्रो. 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 नदियाँ 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।

राजभाषा सम्मेलन (25 मई, 2019)

विषय : तकनीकी क्षेत्र में हिंदी का प्रयोग

संस्थान में 'तकनीकी क्षेत्र में हिंदी का प्रयोग' विषय पर एक दिवसीय राजभाषा सम्मेलन (25 मई, 2019) का आयोजन एनी बेसेंट व्याख्यान कक्ष संकुल में किया गया।

आचार्य सुशांत कुमार श्रीवास्तव, सदस्य, राजभाषा कार्यान्वयन समिति ने सम्मेलन में आए समस्त प्रतिभागियों का स्वागत किया। आचार्य अनिल कुमार त्रिपाठी, अधिष्ठाता (संसाधन एवं पूर्व छात्र) एवं उपाध्यक्ष, राजभाषा कार्यान्वयन समिति ने अपने सम्बोधन में विश्व स्तर पर हिंदी के बढ़ते प्रयोग

एवं महत्त्व को बताया। संस्थान के कार्यवाहक निदेशक महोदय ने अपने अध्यक्षीय सम्बोधन में कार्यक्रम की सफलता की शुभकामनाएँ दीं एवं राजभाषा हिंदी के प्रचार-प्रसार हेतु राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा किये जा रहे प्रयासों से अवगत कराया।

सम्मेलन में उपस्थित लोगों ने हिंदी में काम करने में आ रही समस्याओं से विशेषज्ञों को अवगत कराया, जिसमें हिंदी में टंकण, अंग्रेजी से हिंदी अनुवाद, हिंदी में लेखन इत्यादि के बारे में अपनी समस्याओं को

बताया। दोनों आमंत्रित विशेषज्ञों ने उक्त समस्याओं का समाधान बताया। अंत में सभी उपस्थित लोगों ने संस्थान द्वारा राजभाषा सम्मेलन आयोजित किये जाने की सराहना की तथा अपने-अपने विभागों में इस प्रकार के आयोजन करने का निर्णय लिया।

सम्मेलन का समापन सभी सहभागियों एवं आमंत्रित विशेषज्ञों को धन्यवाद ज्ञापन के साथ हुआ।

The experience of studying in a Foreign University

Suraj Panigrahi

I completed my Bachelor of Technology in Mechanical Engineering from the Indian Institute of Technology (BHU) in 2018. Currently, I am pursuing a Common European Master's Degree in Biomedical Engineering (CEMACUBE) at Trinity College Dublin, Ireland, and RWTH Aachen, Germany. I interned in France during my Bachelor's. So, I have quite some exposure to the European education system.

Based on my experience, here are some points on how the experience here is different from that in Indian universities. If we talk about academics, the exam pattern in Ireland has a resemblance to the exams at IIT BHU than that in Germany. In Ireland, critical thinking based continuous assessments through assignments form a significant component of your overall score. In Germany, the engineering exams at RWTH Aachen, unlike at IIT BHU, never delved into lengthy derivations and long descriptive answers. The professors sought particular keywords in the answers.

Another thing I saw here is the freedom and respect the students

get. India is not different in this matter, but at some points, we can learn from their models. The professors never force something on you. They treat you like adults capable of making choices. Since foreign universities have students coming from different races, countries, and cultures, professors are aware that students may be susceptible to comments.

Another area is Academia-Industry collaboration in which these institutions stand out. This is fairly common in European universities. In Germany, one can pursue the research Master's or Bachelor's thesis in industry. All you need is a professor willing to grade you. The students get paid for the thesis as well. I do agree that Indian universities lack the right set of funding to achieve such infrastructure.

Student Jobs is another thing that you see in other countries, different from India. Students don't usually work part-time in our colleges and rely on parents till they graduate. Most international students typically take up Research Assistant jobs

(Hilfsenwissenschaftler) in universities or technical jobs in companies during the study.

Apart from academics, life is different in several ways. One way is food. Time is scarce due to a hectic graduate school schedule. I had eight subjects in the first semester, and it's almost twice of that in most regular postgraduate courses in the UK or American universities. Under such a circumstance, you need to save time with food. Sometimes I had to cook for myself and me being not so acquainted with cooking at IIT (BHU), tried methods of bypassing.

We cannot compare the colleges aggressively, but it is a diverse experience studying in a foreign university, and there is much to learn from their education system.



STUDENT COUNSELLING SERVICE : SAKHA

The Wellness team endeavors for the holistic well-being of the students involving physical, emotional, social, intellectual, and spiritual wellness. The Wellness team provides personal counseling for the students by the on-campus counseling psychologists. It is developing a well-equipped state-of-the-art Psychotherapy Lab for facilitating the same.

Academics

The Academics team attempts to assist students in their academic difficulties. The team pioneers in conducting the Remedial Classes - the team's flagship program is to provide support to students facing difficulty in following the regular classes. The Academics team also conducts interaction sessions before the exams for exam preparation guidance.

Career Development

The Career Development team efforts to help the students in finding career options that will best suit them and define possible career objectives according to the individual's interests, knowledge, and skills. The team conducts workshops on less-explored career opportunities like Product Management and Consultation and provides counseling on possibilities for Higher education & research and help the students in their interview preparation on an individual basis.

Skill Development

The Skill Development team provides a platform for the students to hone the relevant skills to realize their dream careers. The group conducts expert workshops for



boosting linguistic, managerial, analytical, and professional skills.

International Exchange

The International Exchange Team aims at boosting the international exchange opportunities at IIT BHU.

The team works with two prime objectives, one to guide and support the students of the institute in getting research or training opportunities abroad and scholarships for covering the same.

MCIE : START-UP SUCCESS STORIES

Malaviya Centre for Innovation, Incubation & Entrepreneurship (MCIE) has been supporting and encouraging start-ups initiated by the students of IIT BHU since 2018. Out of them, our current edition is bringing, few successful start-up stories incubated at MCIE.

Bridgedots TechServices

Team: Mr. Nikhar Jain, Mr. Tanmay Pandya, Mr. Abhishek Poddar

Annual Turnover: 26 Lakhs

Jobs Created: 6

The Bridgedots Techservices P. Ltd. is founded by a team of Chemical Engineers from IIT BHU who shared a common passion for chemical technologies. The key functional areas of Bridgedots are Industrial Waste, Polymers & Membranes, and Advanced Materials. Bridgedots also provide technology consultancy and undertake contract research to fund its operational expenses. It was awarded the prestigious DST - Lock Heed Martin Innovation Award for this year. It has been placed among the Top 10 most innovative companies and will be mentored by the IC2

Institute of Texas, Austin. Bridgedots was one of the 15 most promising start-up companies of the Nation selected in the competition Masterpreneur, a competition started by CNBC Awaaz.

Brisil Technologies

Team: Mr. Tanmay Pandya [B Tech, IIT BHU, Chemical Engg. 2009]

Annual Turnover: 1.5 Crore

Jobs created: 15

Brisil Technologies Pvt. Ltd. is a spin-off company of Bridgedots Techservices P. Ltd. It is addressing the problem of rice husk ash utilization to produce Silica. Currently, it supplies Silica for all major applications, including tires, rubber, toothpaste, paints, plastics, etc.

ET Medialabs

Team: Mr. Raghav Kansal, Mr. Rajeev Garg, Mr. Saurabh Singh

Annual Turnover: 4 crore

Jobs created: 27

ET Medialabs Pvt. Ltd. (Previously Edulution Technologies Pvt. Ltd.) was started in 2009. Its primary objective was to set and oversee the



delivery of a credible industry standard for digital audience measurement, which means quantifying audiences in terms of people, not browsers or machines.

Some of its achievements include helping a multinational FMCG brand launch their TVC over digital media & helping them reach a scale of 15 million unique users; managing the digital marketing for a reputed Healthcare brand with a clear objective of driving their footfalls to over 500 and counting.



Weekends with Entrepreneurs : StartUp 101

The Entrepreneurship Cell (E-Cell) is an Institute body run by the students of IIT BHU, devoted towards acting as a symbiotic link between the entrepreneurs of IIT BHU and the existing startup ecosystem.

Startup 101 is a new initiative by E-Cell in addition to the other events to support the growing entrepreneurship culture in the institute. Startup 101 hosts high-end speakers who have an interaction with the startup enthusiasts on the key concepts and business tools that will help students in their entrepreneurial journey. These interactions open their mind to real-life scenarios. They get a complete idea of how firms approach problems, keeping the consumer in mind, ideate solutions, and finally launch the solution for their customers. The idea is to catalyze the undergraduates' entrepreneurial aspirations with the rich experience of industry experts from diverse backgrounds. Every weekend students gather in the E-hall to discuss their doubts and curiosities with an experienced Speaker. Every

Speaker chooses a specific topic or a problem most faced while stepping into an entrepreneurial journey. Students also get a chance to network with the Speaker further for their queries to get resolved. Students have been working at different stages with their solutions- ideation, prototyping, MVP stage, and others. Students' problems either get solved or upgraded to the next step as they advance with their ideas and startups. Startup 101 has successfully conducted 10+ sessions with renowned speakers such as Kaustubh Dhargalkar (*Design Thinking Consultant*), Avelo Roy (*MD & CEO Kolkata Ventures*), Robert T. Smits (*Supervisory Boards at Trymax Semiconductors*), Deepak Gandotra (*Founder of OPD Lift*), Jai Shankar (*Manager- Data Privacy and Protection at KPMG India*), Diganntaa Sircar (*CEO at Data Secure LLP*) and many others pioneers from different sectors.

Recently, the session was

held on the topic of Data Privacy by Jai Shankar and Diganntaa Sircar. They made the students' view clear about the role privacy plays in their life and how they can use it in their life to make a successful venture. The talk was highly anticipated, and speakers were delighted with the enthusiasm of the students. These interactions will bring each one of them close to the sweet spot, which lies at the intersection of user experience, technical, and business expertise. Such initiatives are a small step into the direction of rich entrepreneurial culture at the institute that E-Cell promises to setup. Such action by E-Cell is highly appreciable and lies with its vision.



National MOUs signed by IIT (BHU) from March 2019 to till February 2019

S.No.	Particulars	Date
3	CSIR-Central Glass and Ceramic Research Institute (CGCRI), Kolkata	29.03.2019
4	M/s Ants Ceramics Pvt. Ltd., Palghar	22.04.2019
5	M/s Ants Ceramics Pvt. Ltd., Vasai (East), Maharashtra	07.05.2019
6	Defence Research and Development Organisation (DRDO), Ministry of Defence, Govt. of India, New Delhi	07.05.2019
7	Esri India Technology Ltd., Noida	31.05.2019
8	Indian Institute of Technology, Roorkee	13.06.2019
10	U.P. State Bio-energy Development Board (UPSDBD), Lucknow	05.07.2019
11	Delta Magnets Limited, Nashik, Maharashtra	01.08.2019
12	Defence Research and Development Laboratory, Kanchanbagh, Hyderabad	06.08.2019
13	Renew Oceans Foundation, Pune, Maharashtra	13.08.2019
14	CSIR-Structural Engineering Research Centre, Chennai	23.10.2019
15	Varanasi Smart City Limited (VSCL), Sigra, Varanasi	22.11.2019
16	Ministry of Road Transport & Highways Govt. of India, New Delhi	13.01.2020
17	Mahamana Pandit Madan Mohan Malaviya Cancer & Homi Bhabha Cancer Hospital, Varanasi	12.02.2020

International MOUs signed by IIT (BHU) from 01.03.2019 to till date

S.No.	Particulars	Date
5	Florida International University, Miami, Florida, USA	07.02.2019
1	South Asia Institute (SAI), Ruprecht-Karls-Universität Heidelberg, Germany	08.03.2019
2	Institute of Cultural Studies of East and South Asia, Julius-Maximilians Universität Würzburg, Germany	08.03.2019
3	Universidad Politecnica De Madrid	29.03.2019
4	Nagoya Institute of Technology, Japan	13.05.2019
6	Vrije Universiteit Amsterdam, Netherlands	27.06.2019
7	University of Cambridge Judge Business School	06.11.2019
8	University of Genoa, Genoa, Italy	19.11.2019
9	Stiftung Universität Hildesheim, Germany	12.12.2019
10	University at Buffalo, New York	27.12.2019
11	University of Porto, Portugal	07.01.2020
12	The Ecole Normale Supérieure De Lyon (ENSL), France	13.01.2020
13	Consortium of Finnish Universities, Finland	12.02.2020

List of Sponsored Projects Sanctioned from 01.03.2019 - Till Date

Sl. No.	Title of Project	Name of PI/Co-PI	Date of Sanction	Agency	Duration	Value of the project (Rs.)
1.	National Geotechnical Conclave on "Development of Early warning system (EAWS) for Landslide Hazard Mitigation on 21-22 March, 2019	Dr. A.K. Verma	01.03.2019	DST	One time grant	550000
2.	Development of Hgh Alumina (Al ₂ O ₃) & DOPED High Alumina materials for Ceramic Catridge Applications	Dr. Santanu Das	07.03.2019	Yantransh Auto Pvt.Ltd.	initially for 06 months	60500
3.	Applications of Spectral graph theory in analyzing the structural properties of large scale networks	Dr. Lavanya Silveganeshan	08.03.2019	SERB	03 Yrs	660000
4.	Investigations of new lead free perovskite materials for solar cells	Prof. Prabhakar Singh	11.03.2019	SERB	03 Yrs	3809391
5.	RKVY-RAFTAAR, Agribusiness Incubators (R-ABI) under RKVY-RAFTAAR Scheme	Prof. P.K.Mishra	13.03.2019	DACFW	02Yrs	23300000
6.	Controlled synthesis of MoO ₃ nanoparticles inside mesoporous materials for oxidative dehydrogenation of organic molecules with CO ₂	Dr. Vijay Maruti Shinde	14.03.2019	SERB	03 Yrs	3229430
7.	Strategies towards generation of functional tissue engineered construct for orthopedic application	Prof. Pradip Srivastav (PI) Prof. Amit Rastogi (CoPI-BHU)	15.03.2019	SPARC-MHRD	02 Yrs	2325950
8.	Removal of Benzene, Toluene, Ethylbenzene and Xylene (BTEX) using Adsorption and Bioremediation	Prof. RS Singh (Chemical)(PI) Prof. BN Rai (CoPI) (Chemical)	15.03.2019	SPARC-MHRD	02 Yrs	5402420
9.	Harnessing the synergy of low band gap organic semi-conductor and highly facile floating film transfer method for low cost efficient organic electronic devices	Prof. Rajiv Prakash (PI) Prof. Praddep Kumar Jain (CoPI-electronics Engg.)	18.03.2019	SPARC-MHRD	02 Yrs	4285375
10.	Construction of Non-monotonic Lyapunov Function for the Dynamical Systems governed by differential inclusions	Dr. Shyam Kamal	18.03.2019	SERB	03Yrs	660000
11.	Direct cooling of the Silicon Photovoltaic Module Enabled by an Array of Micro channel built in the backside EVA-Layer	Dr. Ravi Prakash Jaiswal	18.03.2019	SERB	03Yrs	4152280
12.	Virtual synchronous generator for microgrid applications	Dr. N.Krishna Swami Naidu	25.03.2019	SERB	03Yrs	4554930

13.	Approximation methods for problems in fractional calculus of variations	Dr. Rajesh Kr. Pandey	26.03.2019	SERB	03Yrs	2156264
14.	Structural characterization training on Table Top SEM	Prof. Rajiv Prakash	28.03.2019	Applied Materials Bengaluru	One time grant	1731500
15.	Whole body Vibration Exposure on HEMM Operators in Surface Coal Mines – An Assessment of Various Contributing Factors	Dr. S.K. Palei	28.03.2019	SERB	3 years	4003762
16.	Role of short range ordering in designing high entropy alloys	Dr. Vikash Jindal (PI) Dr. NK. Mukhopadhyay (CoPI)	28.03.2019	SERB	03 YRS	4136000
17.	Aging studies and estimation of thermal properties of Liner Materials	Prof. Pralay Maiti	28.03.2019	DRDO	2 years	15685030
18.	Design and development of Micro Seismic based technique for monitoring and prediction of slope failure in Pandoh, Himachal Pradesh, India	Dr. A.K. Verma	29.03.2019	SERB	3 years	4977040
19.	NRDC Innovation Facilitation Centre	Prof. Rajiv Prakash	04.04.2019	National Research Development Centre	3 years	40,00,000
20.	Chemical modification of Gaur Gum to improve its properties	Prof. Pralay Maiti	05.04.2019	Hindustan Gum Pvt.Ltd	1 year	770000
21.	Pharmacological evaluation of anti-diabetic effects of some natural drugs	Dr. Sairam Krishnamurthy	11.04.2019	Natreon Inc.	2 years	2887500
22.	Development of complex Aluminium Shell Part High pressure die-casting	Prof. Santosh Kumar	May, 2019	DRDL Hyderabad	1 year	2485000
23.	Cyclic thermochemical fuel generation	Dr. Randhir Singh (PI), Dr. Bratindranath Mukherjee (CoPI)	13.05.2019	SERB	3 years	5263920
24.	How Beclin 1 mediates cross-talk between apoptosis and autophagy via ITS C-Terminal Fragment?	Prof. Vikash Kumar Dubey	17.05.2019	CSIR	3 years	2916000
25.	Assessing the Suitability of warm mix asphalt (WMA) Technology Using Tribological and Performance Characteristics	Dr. Nikhil Saboo	20.05.2019	SERB, ECRA	3 years	3670680
26.	Natural Template Based Novel Neuroprotective Molecules for the management of Alzheimer's Disease	Dr. G.P. Modi	20.05.2019	SERB- CRG	3 years	3720240
27.	Development of transition metal based nanocatalysts for bioinspired water oxidation	Dr. Arindam Indra	20.05.2019	CSIR	3 years	1600000
28.	Design and Development of Affordable Myoelectric Prosthetic Hand	Dr. Shiru Sharma	29.05.2019	SERB-CRG	3 years	1001000
29.	Output feed back controller design for linear parameter varying systems	Dr. Sandip Ghosh (PI), Dr. Shyam Kamal (CoPI), Dr. NKS Naidu (CoPI), Dr. SK Singh (CoPI)	05.07.2019	SERB	3 years	5732760
30.	Impact of Carbon Nanomaterial based Photocatalyst on Microalgae Growth and Lipid for improved Biodiesel	Prof. Rajiv Prakash	05.08.2019	DBT	3 years	730000
31.	Rheophysics of semi-rigid road building materials and optimization of their composites for the perception of heavy transport load	Dr. Nikhil Saboo	13.08.2019	DST	2 years	1040000
32.	Development of magnetically recyclable visible light photocatalysts for H2O2 Production	Dr. Indrajit Sinha (PI), Prof Rajiv Prakash (CoPI)	23.08.2019	BRNS	3 years	3405850
33.	Development of novel near infrared fluorescence imaging probes for detecting amyloid beta species in eyes of Alzheimer's disease animal model	Dr. Gyan Prakash Modi	05.09.2019	ICMR	3 years	3700000
34.	Electromagnetic Analysis, Design and Simulation of Dual Frequency (S- and C-band) Relativistic Backward wave Oscillator–A HPM Source	Dr. M. Thottapan & Dr. Somak Bhattacharya	01.10.2019	DRDO	3 years	4685000
35.	Development of high strength ceramic magnet for rotating machine applications	Dr. Pradip Roy	11.10.2019	SERB- IMPRINT	3 years	2591600

36.	Development of Functionally Graded Armour Composites (FGACs) Materials	Dr. Vikas Jindal (PI), Dr. Kaushik Chattopadhyay (CoPI)	16.10.2019	DRDO	3 years	9166240
37.	Modelling & simulation of ultra-high temperature coating on substrate using CVD/CVI Process	Dr. Vijay Maruti Shinde	25.10.2019	DRDO	2 years	981000
38.	INSPIRE Faculty Award	Dr. Suryadeo Yadav	02.11.2019	DST	5 years	3500000
39.	Detailed study on the effect of mining as well as Thermal Power Stations on Natural water bodies in Singrauli Region and Recommendation Thereof	Prof PK Mishra	04.11.2019	NCL	3 years	5877000
40.	Developing Superior Nobel Metal free Oxygen Evolution Catalyst for Electrochemical Water oxidation and Metal-Air Battery	Dr. Asha Gupta	11.11.2019	SERB	2 years	2464000
41.	Promoting water Oxidation Reaction with Electrochemically Synthesized ultrathin Layered double Hydroxide Nanosheets	Dr. Arindam Indra	06.11.2019	SERB	2 years	2651000
42.	Prospects of power converters for integration of electric vehicle charging stations with the existing distribution system in India	Dr. Santosh Kumar Singh	07.11.2019	SPARC-MHRD	2 years	4978635
43.	Targeting kinesins Mediated regulation of nociceptors for the Treatment of Neuropathic Pain	Dr. Vinod Tiwari (PI), Dr. Sanjay Singh (CoPI)	07.11.2019	SPARC-MHRD	2 years	4753775
44.	Wear corrosion and biocompatibility of Tantalum (Ta) coated 316 L, Stainless steel for Orthopedic Applications	Dr. CK Behera	29.11.2019	SERB	3 years	4493240
45.	Regional characterization of atmospheric aerosols at Varanasi Region	Dr. RS Singh (PI), Dr. Tirthankar Banerjee (CoPI)	20.11.2019	ISRO	3 years	NA
46.	Research & Experiment in the area of advanced data structures and methodologies to represent and process large terrain datasets for efficient rendering	Prof Rajiv Srivastav (PI), Dr. NS Rajput (CoPI)	24.10.2019	DRDO	7 months	995000
47.	On understanding the solar activity and preparing for space weather prediction using a state of the art dynamo model	Dr. Bidya Binay Karak (PI), Dr. Dipankar Banerjee (CoPI)	04.10.2019	ISRO	3 years	3099000
48.	Optimization Of capacity utilization of draglines deployed in NCL through Big data Analytics	Prof. Suprakash Gupta	04.11.2019	NCL	3 years	8397000
49.	Study for impact assessment of back filling of fly ash in abandoned ghorbi mine and treatment/management of acidic water to avoid contamination of ground water and soil	Prof. Aarif Jamal	04.11.2019	NCL	2.5 years	12480000
50.	Contribution of Neighboring Industries over the air quality of mining area	Prof. Aarif Jamal	04.11.2019	NCL	3 years	13400000
51.	Evaluation of ground behaviour in open cast and underground excavations using TDR	Prof. Sanjay Kumar Sharma	04.11.2019	NCL	2 years	3444000
52.	Stability Evaluation of dump slopes & developing slope stability model for design of Long Term Stable Dump Slopes through proper benching & vegetation : Part A	Dr. Rajesh Rai	04.11.2019	NCL	3 years	6680000
53.	Stability Evaluation of Dump Slopes and Developing Slope Stability Models for Design of Long Term Stable Dump Slopes through Proper Benching and Vegetation – Part B	Prof. G.S.P. Singh	04.11.2019	NCL	3 years	14113000
54.	Equipment for Coal Laboratory at IIT(BHU)	Dr. Aarif Jamal	04.11.2019	NCL	1 years	19500000
55.	Novel Milk Exosomes for the combination therapy by using selected natural medicine (Paclitaxel & Colchicine) for the efficient management of breast cancer	Dr. Ashish kumar Agrawal	06.11.2019	SERB	2 years	1767000
56.	Safer Roads: Development of Mix Design Methodology for OGFC Mixes	Dr. Nikhil Saboo	08.11.2019	CST-UP	3 years	414000
57.	Assessment of Structural Vulnerability through Characterisation of Tornado for a NPP Site	Dr. Arnab Sarkar	14.11.2019	BRNS	3 years	2097875

58.	Development of Simulation Software for Spintronic Device & Circuit Simulation	Dr. Shivam Verma	26.11.2019	SERB	2 years	1068255
59.	Slope stability monitoring and analysis using hyperspectral imaging	Dr. Tarun Verma	05.12.2019	SERB	3 years	3595000
60.	Understanding the engineering behavior of unsaturated geomaterials and implementing it in limit analysis for solving geotechnical problems	Dr. Manash Chakraborty	17.12.2019	SERB	2 years	2274000
61.	Bioluminescence based monitoring of tumor progression and treatment by apoptotic pathway	Dr. Deepak Kumar	19.12.2019	DBT	5 Years	1050000
62.	Development of ORC technology for waste heat utilization for the generation of electricity	Dr. Jahar Sarkar	20.12.2019	BRNS	3 years	1206150
63.	Tuning self assembly of fluorescent Protein Nanodots for Melanoma Skin Cancer	Dr. Avanish Singh Parmar (PI) Dr. SK Yadav (CoPI)	24.12.2019	SERB	3 years	3668522
64.	Synthesis and evaluation of diverse N- functionalized heterocyclic hybrids as multi target directed ligands for neuroprotective neurorestorative therapies	Dr. Senthil raja	31.12.2019	MHRD SPARC	3 years	2274000
65.	Metal Nanostructure assisted plasmonic hot electron induced phase transformation in 2D- Transition metal di-chalcogenides for hydrogen evolution reaction	Dr. Santanu Das (PI), Dr. Bratindranath Mukherjee (CoPI)	31.12.2019	STARS-MHRD	3 years	9790000
66.	Development of high performance, CMOS compatible and color selective narrow-bandphoto- detector for high resolution imaging application	Dr. Bholanath Pal	31.01.2020	SERB	3 years	4945000

List of Faculty Members, who joined IIT(BHU) w.e.f. 01.03.2019 to till March, 2020

S. No.	Name of Employee	Designation	Deptt./School	Date of Joining
1	Dr. Debdip Bhandary	Assistant Professor	Chemical Engg. & Tech.	28.06.2019
2	Dr. Surya Deo Yadav	Assistant Professor	Metallurgical Engg.	06.08.2019
3	Dr. Shivam Verma	Assistant Professor	Electronics Engg.	27.08.2019
4	Dr. Subhasis Sinha	Assistant Professor	Metallurgical Engg.	16.09.2019
5	Dr. Rajnish	Assistant Professor	Pharmaceutical Engg. & Tech.	28.10.2019
6	Dr. Deepak Kumar	Assistant Professor	Pharmaceutical Engg. & Tech.	04.11.2019
7	Dr. Rajesh Kumar Upadhyay	Associate Professor	Chemical Engineering	20.11.2019
8	Dr. Sanjeev Sharma	Assistant Professor	Electronic Engineering	02.12.2019
9	Dr. Pranjal Chandra	Assistant Professor	Bio-chemical Engg.	04.12.2019
10	Dr. Binita Pathak	Assistant Professor	Mechanical Engineering	23.12.2019
11	Dr. Anubhav Sinha	Assistant Professor	Mechanical Engineering	24.12.2019
12	Dr. Aditya Pratap Sanyal	Assistant Professor	Architecture, Design & Planning	17.02.2020

List of faculty members, who retired w.e.f. 01.03.2019 to till March, 2020

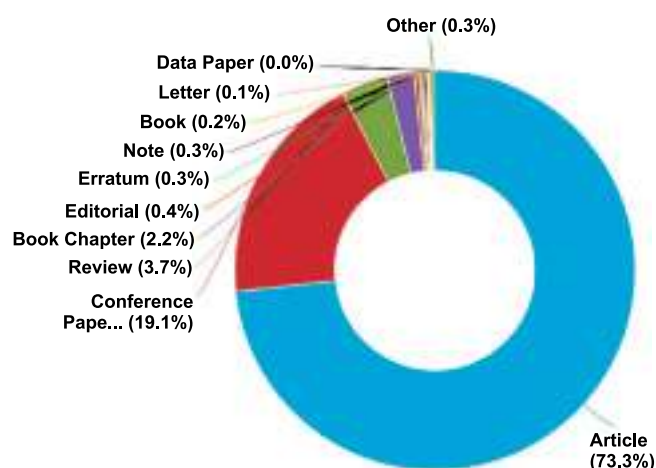
S. No.	Name of Employee	Designation	Department	Date of Retirement/Relieving
1.	Dr. (Mrs.) Ranjana Patnaik	Professor	Bio-Medical Engineering	31.05.2019
2.	Dr. A.K. Verma	Professor	Chemical Engg. & Tech.	31.07.2019
3.	Dr. S.P. Tiwari	Professor	Mechanical Engineering	31.08.2019
4.	Dr. Devendra Kumar	Professor	Ceramic Engineering	30.09.2019
5.	Dr. (Mrs.) Mira Debnath Das	Professor	Bio-Chemical Engineering	30.11.2019
6.	Mr. S.K. Shah	Associate Professor	Mechanical Engineering	29.02.2020

Publications

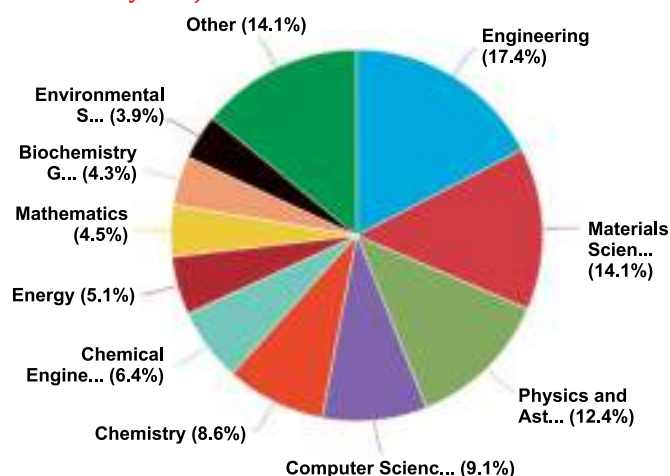
IIT BHU has performed research in collaboration with over 160 Educational and Research Institutions from 48 countries. These include international collaborative research with top institutions and research centers.

In this period, IIT BHU faculty members have also filed 54 patents.

Documents by type

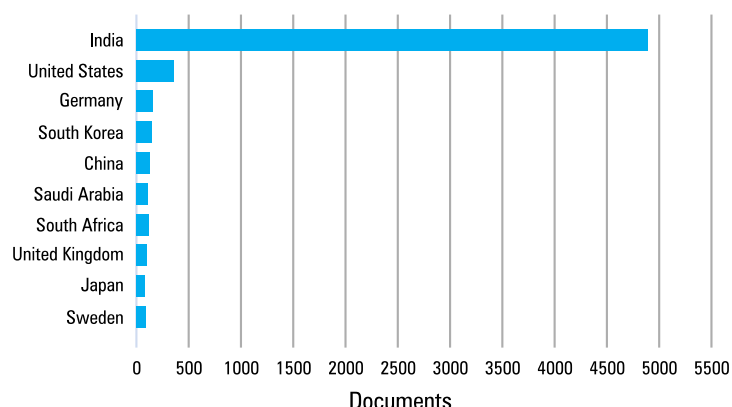


Documents by subject areas

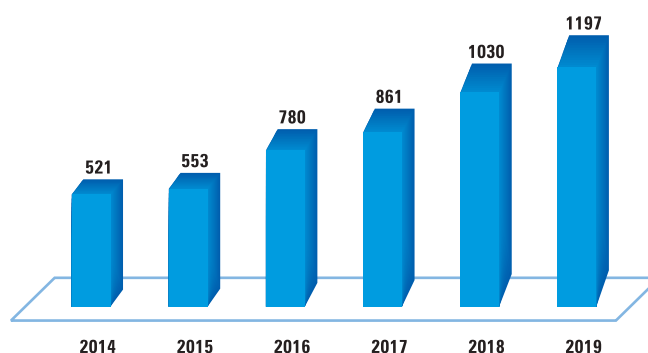


Documents by country or territory

Compare the document counts for up to 15 countries/territories



No of research papers published in respective years



Faculty Achievements

Prof. Prasun K. Roy of Biomedical Engineering has become

- (a) Member of Program Review & Steering Committee, Information Technology Research Academy, Ministry of Electronics & Information Technology.
- (b) Member, Specialty Panel, National Academy of Medical Sciences (NAMS), New Delhi.
- (c) Member, Program Review & Steering Committee, Information Technology Research Academy (ITRA), Ministry of

Electronics & Information Technology.

- (d) Member, Expert Committee, Scheme for Young Scientists and Technologists, Dept. of Science & Technology (DST).

Dr. Hiralal Pramanik of Chemical Engineering's research received the Best Poster Presentation Young Scientist Award in the international conference ICOMS-2019 at NCL Singrauli.

Prof. Pradeep Ahuja of Chemical Engineering has authored the book,

Introduction to Numerical Methods in Chemical Engineering, PHI Learning, New Delhi, 2019.

Dr. Ankit Gupta of Civil Engineering joined as Editorial Panel Member for International Journal Institution of Civil Engineers-Transport. He also received Volvo Research and Educational Foundations (VREF) Fellowship of 2000 USD to attend International Urban Freight Conference 2019 at Long Beach, California, USA.

Prof. Rajeev Srivastava of

Computer Science and Engineering was elected as Senior Member, IEEE, USA in November 2019.

Dr. Shyam Kamal of Electrical Engineering won the INAE (Indian National Academy of Engineering) YOUNG ENGINEER AWARD 2019 for research contribution in control theory. He was also a Visiting Research Fellow RMIT University Melbourne and Visiting Professor Harbin Institute of Technology, Shenzhen, China.

Prof. R. K. Saket of Electrical Engineering joined as an Associate Editor in IET Renewable Power Generation. He also became an Editorial Board Member in the Journal of Electrical Systems from

January 2020.

Prof. Rajnesh Tyagi of Mechanical Engineering was inducted as Editorial Board Member of International Journal named "FRICTION" Publisher Springer, from Jan 2020.

Prof. Sandeep Kumar (Mech. IIT-BHU), Dr. Ashish Pathak (BHU), Dr. Debashis Khan (Mech. IIT-BHU) authored the book, "Mathematical Theory of Subdivision: Finite Element and Wavelet Methods". It was published by Chapman and Hall/CRC on July 12, 2019.

Dr. Arnab Sarkar of Mechanical Engineering was nominated as the Convener of the Cyclone Resistant

Committee in BIS.

Prof. Vakil Singh of Metallurgical Engineering received Patent on 'Effect of Surface Nanocrystallization on Osseointegration of CP-Titanium.' Patent No.: 31541, Govt. of India.

Dr. Senthil Raja A of Pharmaceutical Engineering and Technology was awarded the Outstanding Scientist in Pharma-ceutical Chemistry 2019, by Venus International Foundation, Chennai, in September 2019.

Dr. Bidya Binay Karak of the Department of Physics received prestigious INSA Young Scientist Medal (2019) from Indian National Science Academy.

Students Achievements

Biswajit Mishra won the first prize at BTDD 2019 in Oral presentation (Cash Prize of 2500 and certificate) held at NML, Jamshedpur during 5-6 September 2019.

Mohit Kumar Garg and team won the first prize at IIT Madras in Carbon Zero Challenge.

Tanay Kedia was honored on IIT Bombay website (<https://om.fossee.in/chemical/flowsheetin-g-project/completed-flowsheet>) for submitting a Chemical flowsheet.

Pankaj Gautam was awarded the AMU Prize for the year 2019 for presenting the best research paper at the 85th Annual conference of the Indian Mathematical Society

Ritwik Ghorui and his team's Startup Agrinext was selected in the Cohort II (Ankuran Programme) of R-ABI incubation centre.

Suraj Amarbahadur Yadav won the Best Oral Presentation in Student Category at ISG-ISRS National Symposium 2019.

Shashwat Agarwal and his team secured the award for the best student startup in the UP Startup Conclave for their startup TrashCash. TrashCash also secured the gold medal in 8th Inter IIT Tech Meet held at IIT Roorkee in December 2019.

Amit Barwal won gold medal in 5000 m race at Sportstech, sports fest of IIT Delhi.

FMC Weekend'19

The FMC Weekend'19 gave every creative individual a platform to showcase their art. It is one of the only fests in India which is entirely and only dedicated to digital art. It was an exuberant celebration of creativity in every individual. The 2019's theme was "To Infinity and Beyond," wherein the infinity symbolizes the infinite creative potential of every individual.

It brought together everyone with a desire to create, and to live the beauty of the world through varying art forms. These encompass

Photography, Filmmaking, Animation, Design, Outreach, and Media.

The design and photography skills of the participants were put to test with events like Badge el Desino, 3-Draw, and Infocus. In contrast, events like montage, snapchase, and 48-hour film-making examined their teamwork and taste for great art. RJ hunt and write-o-maniac revealed the literary and verbal prowess of the contestants, and with escapade, the participants shared their travel experiences.



Most enriching moments were with our guests who shared their knowledge with us. In this year's edition, a total of 8 workshops, by industry experts, were conducted, covering every aspect of digital art. The Photowalk with Ashish Sulkh, Ganesh Bagal, and Yogesh Manhas instilled moments in the camera, which are cherished, and the most exciting part was their stories as a photographer. In the session with

Danny Wilson, animation enthusiasts explored the world of animation and VFX and got an insight into how the industry works. The co-founders of The Scribbled Stories shared enriching ideas in the field of writing. On the other hand, Nazneen Bhatiya gave insights on how to write, shoot, and make a full-fledged documentary. Lastly, our alumni, Mr. Phani Tetali, the head of

IDC, School of Design, IIT Bombay, conducted a workshop on creative designing.

This year we saw an exponential increase in participation in online as well as offline events. This year's edition sets a benchmark by seeing international cooperation apart from the exhilarating involvement of cities like Delhi, Lucknow, and Prayagraj (Allahabad). In total, we

saw a registration of over 3000 for our events and workshops.

There was also entertainment with the fantastic comedian Ravi Gupta and the evening movie screenings, where the whole college came to enjoy under the starry night. The upcoming editions of FMC Weekend will keep giving the budding digital artists a platform to showcase their talents.

TECHNEX'20

Technex, the annual techno-management fest at IIT BHU Varanasi, was organized from 14th to 16th February 2020. The theme for Technex'20 is 'Back To The Future'-to rediscover technology from the past and escalate it with innovation for future generations. The three enthralling days had a jam-packed schedule with a plethora of events like various exhibitions, think talks, workshops, corporate conclave, kaleidoscope, gaming dungeon, and many more.

Technex began on Day 1 with events like Robowars, Hackout, La-Trajectoire, etc. Think Talks from renowned personalities like Mr. Ajai Choudhry and Dr. Didier Patrick Queloz were far-sighted and refreshing. The main attraction of the day was a kaleidoscope that included live sessions of Sophia, the

first humanoid robot who also has citizenship.

Alan Emtage and the whistleblower Katharine Gun set the grandeur for Day 2. The mystical magic show took everyone's enthusiasm to the next level. The exhibitions by the Indian Army, Air Force, DLW, etc. with other tech-exhibits were the center of attraction. What could be a better end to a long tiring day than a high spirited comedy night by Nishant Suri?

The final day was a not-to-be-forgotten occasion. MnC participants eagerly waited for the results of their respective events. The talk by Hon'ble Mr. Justice Arijit Pasayat, a retired judge of the Supreme Court of India, filled the listeners with new perceptions and courage. At the closing ceremony, we celebrated the success of

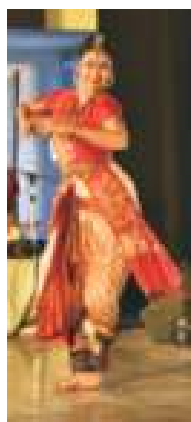


Technex and felicitated the winning participants and teams. At night, during Kaleidoscope, DJ Carnivore set the stage on fire. The day ended with the unforgettable concert of the one and only, Jubin Nautiyal who had the audience rocking on his famous tracks.

It took a team of dedicated members to pull out a great fest of this level. The team was led by Aniket, convener Technex'20, along with co-conveners Tanmay Agarwal, and Vaibhav Gupta. The continuous support and able guidance of Ankur Verma, councilor Technex'20 made it all possible.

KASHIYATRA'20

Kashiyatra, the annual socio-cultural fest of IIT(BHU), the three-day fest brimming with Indian culture fused with the enthusiasm of the youth, was held successfully in full swing. This year's theme was 'Rendition of the Retro.' From breathtaking dances, spellbinding musical performances, astounding art pieces, mind-



boggling debates, and a lot more, the three-day extravaganza sends a wave of hysteria and zeal all over the campus of IIT(BHU). Kashiyatra saw massive participation from all over the country. With a footfall of 3000+ and around 350 colleges participating, broke new grounds this year.

A splendid evening of Day-zero began with Mr and Miss KY Prelims, followed by the grand Inauguration Ceremony and cultural night Virasat 2020- featuring the performances of celebrated

performers Vid. Lalgudi GJR Krishnanand, Vid. Lalgudi Vijaylaxmi and Vid. Rama Vaidyanathan.

After a showy day zero of the fest, which saw a very high influx of the crowd, the momentum carried on to Day-01. The day got off to start with the street play event with a motto of highlighting the social issues. The event saw the participation of many teams from various colleges. Besides that, the TLC (travel, living, and culture) Quiz was held, which was an edifying event for the

participants. Cypher of Mobs, the street dancing competition under the banner of Natraj turned out to be a huge crowd-puller. The crowd was captivated by enthralling performances by various colleges. The Hall was filled with music as Sanlayan; the solo instrumental competition began in full swing. It was followed by the elimination round of Sur, the event of Indian music, where solo contestants enthralled the audience with their acoustic play of music. Out of them, the best made the final cut. Advaita, the band competition of Bandish was held, and participants from various colleges gave their best performances.



In the Foyers of the Swatantrata Bhawan, the contestants carved their funkiest of imaginations on the soap. While Soap carving witnessed artists competing for the championship, different teams were seen showing their creativity with white T-shirts as their canvas. The prowess of words to sway minds was identified when contestants faced each other in the prelims of Hindi and English debates. While the finalists of Miss KY and Mr. KY mesmerized the judges Pankhuri Gidwani, former Miss India runner up and Asmita Marwa with their wit, beauty, and grace. The finalists of Design Elegante left them awestruck with their creativity and stunning models. Ritviz-the multi-talented DJ, singer, as well as a music producer, was in the house with his peppy tracks which never fail to make the crowd jump on his beats. A heart-throbbing show followed this power-packed performance by The Local Train, a



band whose raw music, intense lyrics, and glandular concerts sweep the youth off their feet.

Series of events lined-up under the banner of the International Carnival was the cynosure of all eyes.

Highly talented international artists flew to the ancient city of Kashi to create an amalgam of cultures. Darren Morrissey, the guitarist from London, brought some fresh music with him. A breathtaking performance was seen by Mario Gonzalez Serrano, a world-famous puppeteer from Spain. Red lama, a Powerful Seven-Piece Rock Band from Denmark, took the center-stage with their rocking performance. Alessandro Vasta, Stefan Gillis, and Borja Catanesi are some other international personalities who performed at Kashiyatra'20.

After a terrific Day-01 of Kashiyatra, Day-02 had a lot more in store. The day began with astounding theatre performances in Rangmanch, judged by supremely talented Rajesh Khattar. Lined up were the Sur Elims, which saw massive participation, followed by the Rapid Marathon STB Foyer. While Ecstasy Prelims were held in Rajputana grounds, the Battle of Bands Zonals took place in ADV ground, and both saw a large turnout for entering the competition. Raagsamar, the unplugged event of Indian music, was carried out in the Shatabdi Bhawan. While personalities like Akanksha Grover and Mohit Dobhal served as the judging panel, teams from colleges throughout India showcased their talent. Besides this, General Quiz took place in the morning, and participants checked their stock of knowledge with Major Chandrakant Nair as the quiz master. Cut-a-rug Prelims started with some peppy beats, and dynamic moves while the judging panel had dancing stars,



Isha Dang and Rohit Chawla. Shipwreck Cove commenced with some witty and entertaining impromptu performances and ended with roars of

laughter and cheers. After rocking and lively performances by stand-up comedian Zakir Khan and sensational EDM performers, UNEVEN day-two ended, leaving the crowd mesmerized.

Day-03 began with Rangbaazi and Face Painting in the Shatabdi Bhawan Foyer. Enquizta organized the MELA (music entertainment literature arts) Quiz, which was a fun-packed session along with being a store of knowledge. Asmita, the mono act event, saw some spellbinding performances from students of various colleges. The prelims of the group dance competition, Bliss, were held in the Rajputana Grounds and attracted people in huge numbers as the participants grooved to the enthralling peppy beats. Cheshta, the mime event, left the audience awestruck with its robust and influential acts. The much-vaunted Sur Finals commenced in the afternoon with the stakes much higher this time and saw performances better and more exciting than ever. In the Ecstasy and Bliss Finals, the finalists threw all they had into the competition, and the performances got more and more gripping. In the last session, the India Quiz took place in LT-01, and the contestant's knowledge in a versatile range of fields was checked. Kashiyatra 2020 came to a remarkable end with the blazing performance by the renowned Bollywood singer brother-duo Salim - Sulaiman. The audience was



delighted and grooved to the peppy Bollywood beats.