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IIT  
BHU  
connect

सम्पर्क

Volume 4, Issue 1  
The Institute Newsletter, March 2019

# Editor's Desk

The editorial team is pleased to present to you the sixth edition (Volume 4 Issue 1) of IIT BHU Connect. The issue opens with an interview of Prof K K Shukla, Dean of Faculty Affairs, where he shares all the details and the developments of the process through which the teachers join the Institute. IIT BHU is very old and there are innumerable stories of the alumni. One of our seniors shares an emotional story from his student days. The column in memory of the great personalities from the yesteryears of IIT BHU brings to you the biographies of two former great teachers and administrators of this place. This year,

Global Alumni Meet and other activities were held as part of Centenary Celebrations. We take a look into all the happenings. There are research features on pet recognition system, the inner working of the brain using NMR, and Trinetra: the loco-pilot vision enhancement system. Sattvik Mess is an idea churned out of the student body and the issue presents a feature story telling about its inception. Teaching and Learning Cell, IIT (BHU) has conducted several activities in the past months and a concise report gives us a look into them. The next story is about the MCIE collaboration with

Cisco to set up a Cisco ThingQbator maker space in the campus. Lastly, we again re-live the enjoyable moments during Kashiyaatra'19 and Technex'19. We express our gratitude towards the entire faculty, staff, and student fraternity, and to all the Deans and their Offices for their valuable inputs and cooperation. The team is also grateful to our honourable Director for his encouragement and guidance. We hope you enjoy reading this edition of the newsletter. Feedback and suggestions are most welcome. The team may be reached at [studenteditor.newsletter@iitbhu.ac.in](mailto:studenteditor.newsletter@iitbhu.ac.in) and [editor.newsletter@iitbhu.ac.in](mailto:editor.newsletter@iitbhu.ac.in).

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# Interview of the Dean of Faculty Affairs

**Prof. K. K. Shukla**

**What are the selection procedures and the statistics related to the recruitment of Faculty members and the difference in this process, before and after becoming IIT?**

In the University System, the recruitment was centralised. After conversion to IIT, the idea is, the existing faculty members choose their new colleagues, thereby making it a democratic and transparent process. All the faculty members of the department have a say in the recruitment process. Applications are received centrally in the Office of Faculty Affairs. The short-listing of candidates is completed by the department/school based on the guidelines of the Institute and the necessary thrust areas of the department/school.

The process of recruitment is very transparent and every faculty members knows about the applicants. Further, the IFAC (Institute Faculty Affairs Committee) considers the recommendations of the DFAC, and finalises the list of candidates. The shortlisted candidates are asked to visit the respective department/school for interaction with the existing faculty members and for presenting research seminar and pedagogy seminar. The teaching seminar judges the candidate's communication skills and his ability to teach the fundamental subjects. After the seminar, interviews

are held in which experts from top IITs are called, and finally the appointments are made. The complete recruitment process has been documented in the form of a flowchart, available on the institute website.

**Could you please give us more information regarding Statistics of the Institute's faculty?**

After the Institute's conversion to IIT, on 29th June, 2012, 90 Assistant Professors, 13 Associate professors, and 4 Professors, a total of 107 new faculty members have been appointed. Also, 103 internal faculty members have been appointed on higher positions (65 promoted as Associate professors and 35 as Professors) after becoming IIT. The current strength of regular faculty members is 287 and other than regular faculty (includes Institute professors, Emeritus professors and Guest faculty) is 48. It makes a total of 335 faculty members of IIT BHU. More recruitments are planned in the near future. We have a rolling advertisement for the entry level position.

**What are the benefits given to the faculty members to encourage research and development culture in the Institute?**

When a new faculty member joins the Institute, he/she is provided with seed



money, to establish his/her lab. The newly appointed faculty submits a project proposal of up to Rs. 10 lakh which is considered by the Institute. They are also encouraged to submit project proposals to various funding agencies to get research grant. The Institute gives full support in this area. We also have a number of MoUs (Memorandum of Understanding) with different leading research labs and industries as well as other IITs whereby they get an avenue for research collaboration.

**What are the general concerns of the faculty and how does the Institute address them?**

Varanasi is very well connected with other parts of the country so we don't have connectivity problems. That is an advantage as compared to some other IITs which are not well connected. The main concern is campus accommodation and to address this problem, currently, 1 BHK Flats have been constructed at the GRTA and two blocks of flats, Block B and Block C are allocated for the new faculty members. Moreover, 36 new flats of 3 BHK are being constructed and are likely to be ready in the near future for allotment to the faculty members.

## Reminiscences of an Alumnus

**Shri Padmadeo Ojha**

As a young 14-year-old student, I came for the first time to the holy city of Benaras or Kashi, now known as Varanasi, to attend the Youth Rally in December 1961, to represent my district in debate competition. In those days, such rallies used to be held all over the country, every year in winter. The rallies were a grand show of

competitions among students in athletics, sports, literary and cultural arts. These were held at school level and then district level followed by state and finally national level (which was held in Delhi). I vividly remember that after my event was over, I joined a group of younger students from around my native village, who had

come to take part in P.T. Drill competition, under the patronage of their school's headmaster and went around visiting famous temples in the city. We went to Dashashwamedh Ghat, worshipped in Kashi Vishwanath Temple, did some sightseeing and then came to the BHU campus. Here, we went around various colleges and

hostels and finally came to the Vishwanath Temple within the campus. While we were worshipping and praying here, our headmaster asked us all to add a special prayer to Lord Vishwanath that He blesses us so that our higher education is imparted in this great institution. We did as he told us, the reason being our sincerity and faith in a teacher's words.

I consider myself truly blessed and very fortunate that my prayer was granted by Lord Vishwanath and I got the opportunity to study in Technical Faculty here.

We had an excellent education, good food in hostels—catering to every ethnic taste, cordial environment for our all-around growth, an opportunity to mix with and know students from all parts of the country and a strong sense of fellowship, passed on from our seniors for whom we had a lot of respect. It is not that there were no hiccups; there were because of political influence here and there. But our basic fabric of comradeship and mutual bondage remained intact. That was the tradition our seniors and professors had imparted to us, which is a proud possession for all of us till date.

Just as we do not realise the full significance and breadth of our parents' love and affection while still growing up as a child under their care, we did not appreciate completely the extent of goodwill that lay waiting for us among our seniors in the wide world outside before we graduated and were in the job market and later in jobs. I saw the first glimpse when I appeared at an interview for Kamani Enterprises at Delhi (when I stayed at IIT Hostel with Pankaj Goyal), one of the company's Directors (a BHU product, I came to know after meeting him) was interviewing the candidates and he was so happy to see me as if he had met his long lost brother. He asked relevant technical questions but many more queries from him were about the colour of buildings in our University and some professors of his time. (He also lamented, with a bit moist throat, as if chiding me, that the present generation is not upholding

the name of Malviya Ji.)

I got selected and I gained a kind of confidence from that day onwards which enabled me to face all future interviews without a trace of nervousness or fear.

More evidence of the same kind of warmth was witnessed by me when I and Amar Nath Pathak and a few others from BHU joined Durgapur Steel Plant as trainees in 1969, during the course of which we met some seniors already working there. The kind of welcome we got from them is unforgettable. We also received much-needed help in settling down there, which was a particularly difficult time for DSP (and ourselves). We were overwhelmed and were reassured that there are local guardians for us here to whom we can approach in an emergency.

Within a year or two of our joining at Durgapur, we tried to revive our Alumni Association. In January 1972, on a Sunday morning, I and Amar Nath organised an informal get together in a park in the township. About twenty persons came, a few seniors but mostly younger ones—fresh out of college like us. We had some fun and games, some snacks, a few songs were rendered by P K Mishra (1970 Mechanical Batch) and we decided to make our Alumni Association flourishing again. We did succeed in this, with a few initial hiccups, with help and support of persons like S S Garg, D K Agrawal and S B Singh. And friends will be happy to know that even now a very active and strong BHU Alumni organisation is flourishing in Durgapur with about a hundred members.

But the purpose of my narrating that small event in a park on that Sunday morning is to let our friends know what became clear to me on that day. A very senior person then working in DSP—Mr S.K. Pandey, who had graduated perhaps in 1954 or 1955 was present in the group and he explained to us the historical background of special bonding among products of BHU. He mentioned that starting from the initial days of

engineering education here, our brother graduates were largely ignored by the then rulers of India—the British—and denied any government jobs. Ours was considered a nationalistic institution and was not trusted. Under the circumstances, students coming out from our Alma Mater had to depend upon each other, seniors supporting juniors, to get jobs and receive other help which they did so eminently, mostly in private businesses and industries. He mentioned the name of a distinguished alumnus—Dr M N Dastur and a few others, who had become shining stars on their own and had created space for our brothers when the government had shut the doors on them.

This tradition of brotherhood and comradeship has been passing from generation to generation, consciously or unconsciously, and is continuing even now. It is natural that you treat others the way you are treated. In providing help and support, no rules are broken and no favouritism is done. It is rather in the nature of holding the hand of a needy brother, to steer him clear of a difficult situation. Who can object to a father or elder brother providing encouragement, guidance and help to his son or younger brother, when critically needed?

My perception is that we have kept up this tradition and I wish and hope that future generations from our Alma mater (a very meaningful term) will keep and improve upon the same.

This rather long write-up will not be complete without adding a few lines of my own experience. I tried from my side to come up to the expectations of those who approached me. And I received a warm welcome and generous help from friends when I was in need. I will be failing in my responsibility as a true chronicler as also in gratitude, if I do not mention here the names of some friends who treated me like a younger brother when I sought their help. Proshanto Banerjee, Sudhir Jain, Arvind Jain, R P Singh, L R Singh are a few names that come to my mind.

## Revisiting a visionary: Professor NK Das Talukder

Nripendra Kumar Das Talukder was born on October 10th 1936 at Kuchirgram in the district of Sylhet. Sylhet was then under the State of Assam, but after independence, it was attached to East Pakistan (now Bangladesh). He completed his matriculation from East Bengal Secondary Education Board Dacca. After passing the Intermediate examination from the University of Gauhati, he did his Bachelor of Engineering (Mechanical) in the year 1958 from Jadavpur University with 2nd rank in the examination. After graduation, he worked briefly in the industries for few years but returned to the academic world and enrolled in the Jadavpur University for his M.Tech (Mechanical) and later obtained his PhD in Mechanical engineering from the same University. He then joined Jadavpur University as a faculty member in the Department of Mechanical Engineering. He also taught briefly at R.E. College Durgapur (now NIT-Durgapur) before joining as a Reader in Banaras Hindu University Engineering College (then known as BENCO) in February 1966.

In 1973 he became Professor in the Department of Mechanical Engineering. From October 1974 to October 1978, he was the Head of the Department of Mechanical Engineering. In April 1994 he was appointed as the Director of Institute of Technology, BHU. During his tenure as the Director, a survey conducted by a reputed organisation adjudged IIT-BHU as the 3rd best engineering college in India after IIT-Bombay and IIT-Delhi.

In his three decades of association with Banaras Hindu University, he was extremely popular with the student community and was credited with creating the IT Gymkhana along with other colleagues and students. Prof. Talukder was a member of various committees of UGC, Ministry of Education and UPSC, various governing bodies of Engineering & Technical Institutions, Advisory Committee of All India Radio at Varanasi and Member of the Technical Committee of Chief Minister of Uttar Pradesh. He was also the Vice President of Indian Society for



Theoretical and Applied Mechanics in 1976 and 1977.

He was an active researcher and besides producing 3 PhDs in his line of specialization, he has also published more than 40 technical papers in National & International journals.

Professor Talukder is settled in Kolkata after his retirement and remains active in professional life after retirement through his participation in a large number of seminars and symposia and also through involvement as Honorary Advisor & Member of Board of Governors of Haldia Institute of Technology, Haldia West Bengal.

## हिंदी भाषा : प्रयास एवं प्रगति

शशांक पाठक, कनिष्ठ हिन्दी अनुवादक

भाषा केवल संप्रेषण का माध्यम नहीं रह गई है। इसका अर्थ शिक्षा, राजनीति और सामाजिक परिप्रेक्ष्य प्रभाव व प्रसार में देखा एवं समझा जा सकता है। यह कहना गलत नहीं है कि जिस देश में शिक्षा से लेकर तकनीकी तक उसी देश की स्व-भाषा में है वह देश ज्यादा विकसित एवं उन्नत है। भारत भाषाई बहुलता एवं विविधता वाला देश है। जिसमें हिंदी माध्यम भाषा, संपर्क भाषा, जनभाषा एवं संचार भाषा के रूप में उभरी है। इसकी लिपि सरल एवं शब्दकोष समृद्ध है। जैसा कि हिन्दी भाषा के विषय में **राष्ट्रकवि श्री मैथिलीशरण गुप्त** ने लिखा है :

“है भव्य भारत की हमारी  
मातृभाषा हरी भरी।  
हिंदी हमारी मातृभाषा और

लिपि है नागरी।”

देश में आजादी के बाद से ही किसी एक भाषा को राजभाषा के रूप में मान्यता देने की अत्यंत आवश्यकता प्रतीत होने लगी थी। हिंदी को राजभाषा बनाने हेतु कई अभियान चलाये गए। उन्हीं प्रयासों की बदौलत, भारतीय संविधान ने 14 सितंबर, 1949 को देवनागरी लिपि में लिखी गई ‘हिंदी’ को संघ की राजभाषा के रूप में स्वीकार किया। विगत कुछ वर्षों में हिंदी भाषा के प्रचार, प्रसार एवं विकास हेतु कई प्रयास किए जा रहे हैं इसमें भारत सरकार का राजभाषा विभाग, केंद्रीय प्रशिक्षण हिंदी संस्थान, हिंदी शिक्षण योजनाएं केंद्रीय अनुवाद ब्यूरो, राजभाषा विभाग का क्षेत्रीय कार्यान्वयन कार्यालय, मानव संसाधन विकास मंत्रालय का राजभाषा

प्रभाग, केंद्रीय हिंदी निदेशालय, वैज्ञानिक तथा तकनीकी शब्दावली आयोग एवं नगर राजभाषा कार्यान्वयन समितियां, माइक्रोसॉफ्टएसी डैक इत्यादि संस्थाएं निरंतर कार्यरत हैं।

देश के विभिन्न स्थानों पर हिंदी पखवाड़ा/ हिंदी सप्ताह/हिंदी दिवस तथा कार्यशाला सम्मेलन संगोष्ठी के माध्यम से इसके प्रति जागरूक किया जा रहा है।

यह सर्वमान्य है कि काशी में हिन्दी पली, बड़ी और पोषित हुई। हिन्दी के विकास में वाराणसी का अद्वितीय योगदान है और राजभाषा विभाग, गृह मंत्रालय द्वारा उत्तरी क्षेत्रों का क्षेत्रीय राजभाषा सम्मेलन का आयोजन 09 फरवरी, 2018 को वाराणसी में आयोजित हुआ। इस सम्मेलन में आए श्री

प्रभास कुमार झा, सचिव, राजभाषा विभाग ने वाराणसी शहर को हिंदी का कारखाना कहा।

हिंदी भाषा के लिए देश में एवं साथ ही विदेशों में भी कई प्रयास किए जा रहे हैं जिसमें इन दिनों काफी तेजी आई है। इसका प्रत्यक्ष उदाहरण मॉरीशस में 18-20 अगस्त, 2018 को आयोजित 11वां विश्व हिंदी सम्मेलन है जिसका संचालन विदेश मंत्रालय, भारत सरकार तथा मॉरीशस सरकार के सहयोग से किया गया जिसमें हिंदी को संयुक्त राष्ट्र संघ की आधिकारिक भाषा बनाने की मांग उठी है।

प्रौद्योगिकी ने हिंदी को सरल एवं सुगम बनाया है। इसकी सहायता से हिंदी भाषा में काफी उन्नति हुई है। अनुवाद हेतु राजभाषा विभाग द्वारा सी डैक की मदद से विकसित 'मंत्र' (अनुवाद साधित सिस्टम), 'कंठस्थ'

(ट्रांसलेशन मेमोरी पर आधारित सिस्टम) तथा गूगल का गूगल ट्रांसलेट तथा हिन्दी में टाइपिंग हेतु गूगल वाइस टाइपिंग ए इन्स्क्रिप्ट की-बोर्ड तथा हिन्दी स्वयं शिक्षण पैकेज-लीला, प्रवीण, प्राज्ञ, प्रबोध एवं पारंगत है। इसके अलावा केंद्रीय हिन्दी प्रशिक्षण संस्थान द्वारा इनहाउस एवं आउटरीच माध्यम से हिन्दी शब्द संसाधन हिन्दी टंकण के प्रशिक्षण कार्यक्रम संचालित किए जाते हैं। मानव संसाधन विकास मंत्रालय के तत्वावधान में प्रतिवर्ष अखिल राजभाषा संगोष्ठी का आयोजन किया जाता है। यूनिकोड टूल की मदद से अब सीधे हिन्दी में टाइप कर कहीं भी भेज सकते हैं और यह सभी जगह सपोर्ट करती है। विभिन्न आई.आई.टी. संस्थानों में अनुवाद सॉफ्टवेयर तैयार किये जा रहे हैं।

एक सर्वेक्षण के दौरान यह पाया गया कि हिन्दी भाषा सीखने वालों की संख्या में काफी

बढ़ोत्तरी हुई है और यह विश्व में सबसे ज्यादा बोली जाने वाली भाषा चीन की मंदारिन से आगे निकल गई है। इन्टरनेट की दुनिया में इसके प्रयोग में काफी इजाफा हुआ है। सोशल मीडिया में इसके बढ़ते प्रचलन के कारण यह सभी की पसंद बनती जा रही है। वाट्सएप, फेसबुक, ट्विटर पर धड़ल्ले से लोग हिन्दी में टाइप कर संदेश का आदान प्रदान कर रहे हैं। इनमें हिन्दी का प्रयोग ज्यादा देखने को मिल रहा है जिसका मुख्य कारण आम समझ है। विभिन्न कंपनी भी अपने उत्पादों के नाम अब हिन्दी में कर रहे हैं जिसका कारण भारत का बड़ा उपभोक्ता बाज़ार है। अब न्यायालयों में भी मांग करने पर आदेश की प्रति हिन्दी एवं क्षेत्रीय भाषा में उपलब्ध कराने की शुरुआत हो चुकी है। हिन्दी राजभाषा के रूप में तेजी से आगे बढ़ रही है।

## Centenary Celebrations & Global Alumni Meet (GAM)

The 2019 GAM was a part of the ongoing IIT BHU centenary celebrations. The centenary GAM celebrations had two aspects. One was the celebration per se, means merry making, having cultural programme evenings like Kavi Sammelans etc. The other point was to take stock of the situation, the journey that we have had, the contributions we made in India and internationally and to consider the challenges lying ahead and chalk out the direction of the development of the institute in the next hundred years and possibly some strategic planning for the next ten-fifteen years.

The Banaras Alumni Association of the institute, which has its members drawn from places in and around Varanasi, was entrusted with the responsibility of organizing this alumni meet in collaboration with other alumni associations. There are three important alumni associations, one is the national alumni association of IIT BHU alumni, then there is the IIT BHU Global Alumni Association headquartered in US and also the the Western India Alumni Association. The

Golden Jubilee alumni reunion of 1969 batch was also a part of it. After becoming IIT the Institute is celebrating the Golden Jubilee Reunion every year. It was befitting for the Banaras Alumni Association, to

(BoG) of IIT (BHU).

The centenary celebrations on occasion of the GAM had eminent public leaders such as honorable Chife Minister Shri Yogi Adityanath and Shri Manoj Sinha as the guests



identify Mr. Nitin Malhotra our alumnus of 1976 Ceramic Engineering batch as the chairman of the GAM. Mr. Malhotra is also a member of the Board of Governors

during the ceremony. Our institute along with IIT Kanpur has been chosen as the knowledge the defense corridor partner of UP Government in initiative which is effectively a project

of the Government of India. On this occasion, our Director emphasized that for adding newer dimensions to our development, we need to have an outreach centre somewhere in the NCR. He requested the honourable Chief Minister, Yogi Adityanath for some area in the Noida region of the NCR.

Shri Manoj Sinha, the present Minister of Communications and the Minister of State (Railways), is an alumnus of

Associations, primarily the Benaras Alumni Association in collaboration with other Alumni Associations. The nominations were received from alumni around the globe. A jury comprised of eminent personalities like Lt. Gen. Arvind Mahajan, Shri Vinod Sidhu, Prof. BB Dhar identified alumni with path-breaking achievements drawn since the times of BENCO, MINMET, and TECHNO and awarded them under the categories-

coveted awards in person.

The most remarkable is the participation of our eldest alumnus, Shri Jinendra Jain who is completing his 100 years in the year 2019. Born in 1919, the year of establishment of BENCO, he completed his graduation as the batch of 1942. His company was overwhelming for the participants of the Global Alumni Meet and the IIT BHU family.

Another interesting contribution from an alumnus was the resurrection of the 98 year-old chimney, which was built in 1922 to produce about one thousand Kilo Watts of power. The old chimney was taken down and the new chimney, manufactured by the company BENCO, was installed behind the supercomputing centre. BENCO is owned by P. Ramachandran, who is a 1982 batch graduate from IIT (BHU). It cost around sixty lakh rupees. Ramachandran says that not only the professors have an emotional connection with the chimney but also the alumni who visit their alma-mater on occasions. It is an effort to keep alive the memories and a sign of respect to the Institute's long history.

Dean of Resources and Alumni, IIT (BHU) congratulates the students of the institute, particularly from the Student's Parliament, the Student Alumni Interaction Cell, and the Councils of Gymkhana.

"The alumni were impressed by our students and praised them for the deep emotional connections established during these three days. They appreciated students for their excellence in both academics and extra-curricular."

## Establishment of the Supercomputing facilities at IIT BHU

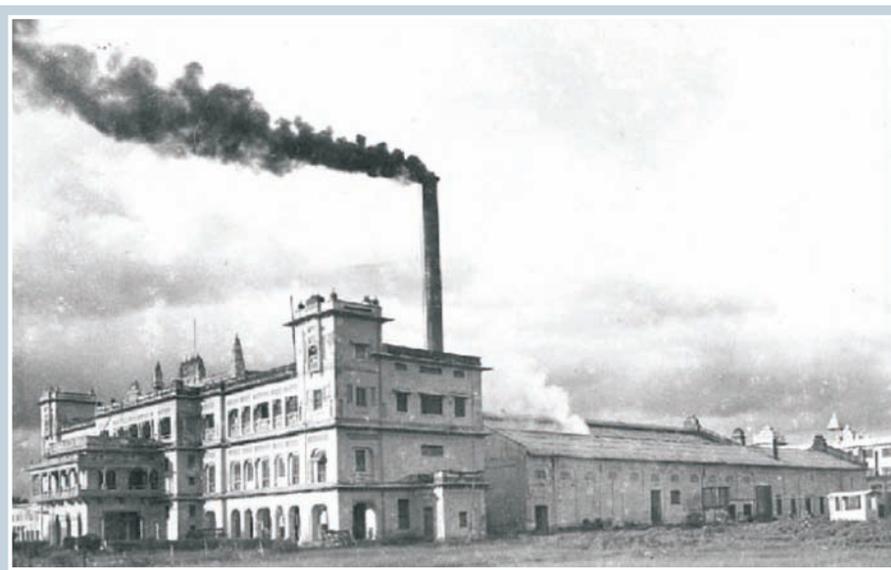
Recently, Supercomputing Facilities have been inaugurated by honorable Prime Minister Shri Narendra Modi. The inauguration of Supercomputing Facilities is an initiative under the National Supercomputing Mission of the Government of India and yes, a part of the Centenary establishments.



the Civil Department of IIT (BHU). He has also promised to look into the possibility for collaboration of the offices under him and IIT (BHU) in solving certain problems of the nation. One center for 5G and Communications Engineering is to be established during the centenary year.

Centenary Awards were conferred upon the distinguished alumni who have brought laurels to the nation through their exceptional contributions. The awards were given not by the Institute but by the Alumni

"Alumnus of the Century," "Alumnus of the Century in the Making," "Distinguished Alumnus dedicated to Alma Mater," and "Special Service to the Institute Award." We received the families of Late Shri Krishan Kant (the former Vice President of India), Late Shri Ashok Singhal, Late Col. Wahi (former chairman, ONGC), Late Prof. SS Saluja (Principal, MINMET). We also enjoyed the pleasant company of alumni Prof. S Bandhopadhyay, Prof. Pankaj Chandra, Prof. Yoginder P Chugh who came to collect their



Liasioning with the Government and the initial project submission etc had begun more than an year ago. With the persuasion and efforts of the Institute, the Government of India identified that IIT (BHU) is a place where a supercomputer needs establishment. In the educational sector, it is only IIT (BHU) which has been made a part of the National Supercomputing Infrastructure. "Param Shivay" is an 880 teraflops supercomputer that has been upgraded from the earlier decided capacity of 500 teraflops. It will be an excellent opportunity for the scientists and the engineers of our institute, other scientists from BHU and nearby institutions.



## Monitoring of Pet Animals

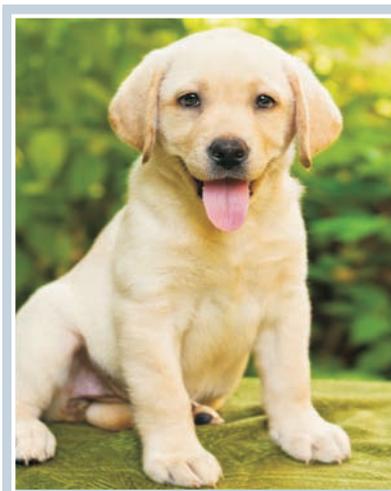
**Professor Sanjay Kumar Singh**, Department of Computer Science & Engineering

Monitoring of pet animal in smart city is a big challenge for authorities concerned. The classical animal identification and monitoring methods fail to provide the required level of security and management of pet animals. Animal biometrics based recognition systems are considered a good alternative for the health management, tracking, identification, and security of pet animals. . A low-cost system for monitoring of pet animals (dogs) based on their primary animal biometric identifiers has been developed by Department of Computer Science & Engineering, IIT (BHU). The recognition approach uses the one-shot similarity and distance metric based learning methods for matching and classifying the extracted features of face images for recognition of pet animals (dog). Department of Computer Science &

Engineering IIT (BHU) also developed a prototype for evaluating the accuracy of the recognition system. The efficacy of proposed pet animal recognition system evaluated under identification settings yields 96.87% recognition rate.

### Highlights

- The pet recognition system recognizes individual dogs by their biometric facial features.
- The system uses the one-shot similarity and distance metric based learning methods for matching of facial features of pet animals (dog).
- A prototype for evaluating the accuracy of the recognition system has also been developed.
- The efficacy of pet animal recognition system prototype is 96.87%.



## Sattvik : Success Story

Sattvik Mess A (Annapurna), Sattvik Mess B (Madhurima), Sattvik Canteen, Sattvik Mobile Application.....

It all began on 26 August 2012 when three boys decided to take things in their own hands and opened up a

small mess of just 24 people where people could have healthy vegetarian food without onion and garlic.

One of the major challenges was how to accommodate an increasing number of students. The popularity of

Sattvik Mess was steadily increasing and the number of students registering for it was increasing and created huge queues during lunch time. To accommodate a large number of students the Mess had to be shifted from the smaller hall in Ramanujan hostel to the larger

hall in Visvesvaraya Hostel under the able guidance of Shubham Siddhi Shah (Final Year Mechanical Engineering). The Sathvik mess was also the first mess in IIT BHU to introduce the concept of online mess feedback. To increase the transparency, details of each student's diet was compiled into a list every month which could then be verified by the students. Despite the great work, the team wanted to make the system more transparent, modern and convenient both for the mess workers as well as for the students. This was the major inspiration to build the Sattvik mess Mobile Application. Shregansh Jain, a student of Electrical Engineering (and student manager at Sattvik mess A) started working on the application during his Junior Undergraduate Year. He did not have much idea about application development initially, so he had to invest a lot of time and effort in building the application. Inspired by his idea Abhinav Dangi, (an alumnus of our college) and Anant Jain Gowadiya (Final year Electronics Engineering) decided to partake in the venture. The application took around 10 months to build. The journey was riddled with many impediments but none could deter them from the goal. One of the major challenges was to handle meal cancellation requests of the students and implement real-time meal cancellations at the same time integrating them onto a simple UI without compromising the UX of the applica-



tion. The app was designed taking into consideration all the cases of holidays, extras in billing, special diets of Saturdays, canceling breakfast for a whole month etc. Apart from the aforementioned feature, the app has other features such as menu checking, feedback options, and expense viewer. This application has not only made the students' lives convenient but has also reduced the work of the mess workers to a great extent. This has reduced manual maintenance and chances of human error. Apart from the technical issues in the project, he also had the issue making mess workers familiar with technology. Despite all the obstacles they were successfully able to implement the mobile application. The app has received huge appreciation from all students and Council of Warden Office and has been a huge success for the whole team. It is being

used daily for meal cancellation and feedback by a large number of students. The Sattvik App will soon be updated to include new features like online polling, dynamic menu update, etc. This application will be extended to all the messes of our college ushering in an era of digitization.

The team consists of Tanish Jain, Nimesh Jain, Bharat Jain, Shreya Munshi, Himanshu Badhera, Pulkit Gupta and Kushagra Sharma. The Sattvik Team also has Dr P K Singh of the Department of Civil Engineering and Dr D Khan of the Department of Mechanical Engineering as their Mentors. They have helped and guided the entire Sattvik Team throughout this journey. It is through the collective effort of everyone that Sattvik Mess has been able to achieve success.

## Living the life gracefully : Harnessing Brain's network functioning

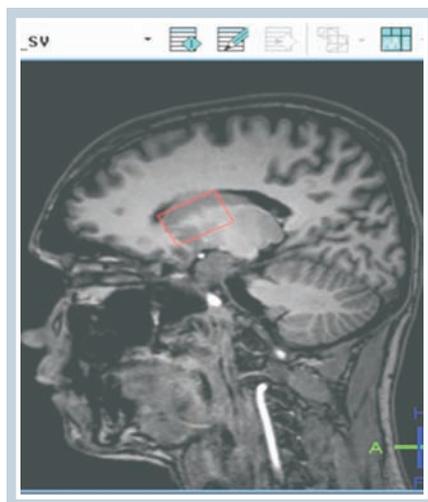
Having a productive life of wellbeing is a strong instinct of everyone, and so emphasizes Tennyson's poem "Ulysses" by spelling his coveted desire of "drinking life to the lees". However, as longevity has increased dramatically in India, the life's journey may not become smooth, and here comes ageing disorders, the epitome of which is neurodegenerative disease or dementia, where one suffers dementia, i.e. loss of mentation or proper mental functioning. This is a silent yet most significant epidemic

looming across the world. It affects nearly 10 million Indians, with a cost reaching Rs. 44,000 crores in decade's time. Indeed, unlike the West, the emerging countries as India and China may become aged before they become rich.

Nevertheless, there are many individuals who majestically age, become centenarians, without showing any significant mental decline. Is it possible to study these living and working individuals and their brains, and decipher the factors that help the

brain to cope with ageing satisfactorily? Knowing these factors enables one to develop neuroprotection measures to counter dementia. It is this quest that is persistently pursued by a team of researchers led by Prof. Prasun K. Roy, Professor, Neuro-Imaging Laboratory, School of Biomedical Engg., IIT (BHU). A ready way to noninvasively investigate the inner workings of the living human brain is by its 3-D analysis using an NMR technique, now referred to as MRI scanning.

Thinking of the human brain, reminds one of drawing parallels with computers. In digital parlance, the two main constituents of the brain are the Grey Matter (the neural cell processing units, corresponding to CPUs) and the White Matter (the interconnecting myelin-coated fibres, corresponding to IC platform connectivity). A vital question is how these two information processing/communication compartments biologically interact between themselves, while a person ages across the life-span. To answer this query, Prof. Roy and his group published last October their analysis of the brain ageing process by investigating MRI scans of a large number of normal healthy individuals (177 subjects), spanning the lifeline, from youth to senescence (aged 20-90). The group developed large-scale neuroimaging connectivity platform to study Brain Connectomics organization of this populace. For deciphering cross-scale interaction, the team assessed Grey matter's macro-structural parameters by MRI technique of voxelated morphometry,



and White matter's micro-structural properties by MRI Diffusion Tensor imaging that clearly show nerve fibre.

A revealing finding emerged, namely that the White matter's micro-scale status (as diffusivity) causatively influences the Grey matter's macro-structural status (as size). As per the team's results, higher the values of the fibre's axial transport parameter (diffusivity), more the transport of trophic stimulation to grey matter, which increases grey matter synaptic

meshwork and grey matter size. And it is this process that indicates a therapeutic intervention for maintaining the brain's wellness as ageing occurs. White matter integrity (myelination of nerve fibres) undergoes enhancement by repurposed therapeutic agents, as pioglitazone and riluzole, whereby grey matter can be protected. It is the crucial causative link found by the team ("White matter axial integrity Grey matter augmentation") which furnishes an incisive therapeutic leverage for the repurposed drugs. Since independence, health care progress has doubled the longevity of Indians, which however comes at a critical cost: neurodegeneration under ageing.

Investigations of Dr Roy and his group offers a new vista towards resolution of this dilemma.



### Gandhian Young Technological Innovation (GYTI) Award : 2018

## Loco-pilot Vision Enhancement System

### (TRINETRA : The Third Eye to Prevent Railway Accidents)

The Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI) celebrates the spirit of researchers' innovation in the fields of engineering and technology by hosting more than 2,50,000 innovations and research projects. With the goal of the promoting these innovations, SRISTI celebrates the spirit of innovations by honouring outstanding innovative projects of the innovators, with Gandhian Young Technological Innovation (GYTI) Awards, annually hosted by President of India at Rashtrapati Bhavan, New Delhi. The SRISTI and GYTI team have appreciated and valued the enthusiastic participation of IIT (BHU) innovators during GYTI 2018 award ceremony. The Hon'ble President of India and Hon'ble Minister for Science &

Technology heartily congratulated the IIT (BHU) Community for their sterling performance in technological innovations at Rashtrapati Bhavan, New Delhi from March 19-23, 2018. The grassroots innovators of TRINETRA: The third eye to prevent railway accidents, Professor R.K.Saket (Department of Electrical Engineering) and his Ph.D. research scholar Er. Anand Kumar K.S. (External Research Scholar from CSIR-National Aerospace Laboratories, Bangalore) were awarded the Gandhian Young Technological Innovation (GYTI) Award: 2018 by President of India at Rashtrapati Bhavan, New Delhi on March 19, 2018. In this prestigious ceremony, Dr. R.A. Mashelkar (Chairperson, Research Advisory Committee, SRISTI and NIF), The Chief Secretary (DBT and



Chairperson, BIRAC) and Hon'ble Science & Technology Minister Dr. Harsh Vardhan appreciated the innovative prototype of TRINETRA under socially relevant innovation during the festival of innovation and entrepreneurship at auditorium, Rashtrapati Bhavan cultural center.

The TRINETRA is the abbreviation of "Technological Research and Innovation for National Empowerment of Trains to Reduce Accidents". The Hindi word TRINETRA is translated as 'The Third Eye' in English. TRINETRA: The third eye

promises easy passage for trains in unknown environments such as zero visibility situations, fog, smog and heavy rain. It is based on integration of a camera, radar and laser. The camera is used to catch a long range view of the track and present it live on a mini screen fixed in the loco pilot cabin. A combined short, mid and long range radar sensor system is used to continuously detect obstacles on track particularly for collision avoidance assistance at high speed. It proposes a long range laser infrared illuminator with a wide range of color

and mono camera to aid clear and precise monitoring in zero visibility conditions. The camera-radar-laser integration approach named as TRINETRA is proposed to fix in the front portion of the locomotive / engine to prevent accidents on tracks. The design concept, experimental observations, prototype model and other technical specifications were presented at Rashtrapati Bhawan during the festival of innovation and entrepreneurship from March 19-23, 2018.

## Faculty Achievements

**Dr. Nikhil Saboo** of Civil Engineering has been conferred with Construction Industry Development Council (CIDC) Vishwakarma Award (Academician Category) in March 2019.

**Prof. Brahmeshwar Mishra** of Pharmaceutical Engineering received Certificate of Appreciation, by Pharmaceutical Council of India, for his contribution towards the Quality Advancement Initiative of PCI as a member of B. Pharm/ M. Pharm. Syllabus Committee, New Delhi.

**Ajinkya Nandkumar Tanksale** of Mechanical Engineering has been appointed as Editorial Board member of 'International Journal of Industrial Engineering: Theory, Applications and Practice' on February 28, 2019

**Dr. Vishal Mishra** of Biochemical Engineering received Young Scientist Award for the year 2015-2016 by

Council of Science and Technology on October.2018

**Dr. Suprakash Gupta** of Mining Engineering received a Certificate of Outstanding contribution in reviewing by Safety Science- ELSEVIER.

**Dr. Arnab Sarkar** of Mechanical Engineering was nominated as the Convenor of Indian Standard IS15498:2004 for improving the cyclonic resistance of low-rise houses and other building/structures for CED 57 of Bureau of India Standards on November 2018

**Prof. Devendra Kumar** of Ceramic Engineering was appointed as a member of Research Council Central Glass and Ceramic Research Institute Kolkata.

**Prof. Tanmoy Som** of Mathematical Sciences published a book on "Intuitionistic Fuzzy Quantifier and It's

Application in Feature Selection", International Journal of Fuzzy Systems, Jan 2019. He also published books on "Tolerance-based intuitionistic fuzzy-rough set approach for attribute reduction", "Intuitionistic Fuzzy Neighborhood Rough set Model for Feature Selection" and Springer book: Advances in Mathematical Methods and High-Performance Computing: Advances in Mechanics and Mathematics, (Jan 2019)

**Prof. Prasun Kumar Roy** of Biomedical Engineering has become a Member, Council for Science, Training & Infrastructure, International Neuroinformatics Coordination Facility, Karolinska Institute, Stockholm, Sweden. And also, Expert in the Evaluation Committee, Small Business Innovation Research Initiative (SBIRI), Biotechnology Industry Research Assistance Council (BIRAC).



**Prof. N K Mukhopadhyay** of Department of Metallurgical Engineering became member of the Programme Advisory Committee of Science and Engineering Research Board. SERB is a statutory body under the Department of Science & Technology.

**Dr. Vishwanath Dhital** of Department of Humanistic Studies was awarded Maharshi Vadarayan Vyas Samman (President Award).

शास्त्रों के प्रचार एवं प्रसार के लिये किए गये प्रयासों का उच्च मूल्यांकन करते हुए इस प्रकार के कार्यों के प्रोत्साहन हेतु डॉ विश्वनाथ धिताल, असिस्टेंट प्रोफेसर मानवतावादी अध्ययन

विभाग, आईआईटी (बीएचयू) को माननीय राष्ट्रपति भारत सरकार के द्वारा प्रदत्त “महर्षि बादरायण व्यास सम्मान” को 04.04.2019 को दिल्ली स्थित अशोक होटल में समादरणीय उपराष्ट्रपति श्रीमान वेंकैया नायडू जी के द्वारा उक्त सम्मान पत्र प्रदान किया गया।

05.05.2019 को महामहिम राष्ट्रपति श्रीमान रामनाथ कोविन्द जी के द्वारा राष्ट्रपति भवन में आमंत्रित कर के जलपान और फोटोग्राफी का आयोजन किया गया।

**Dr. N S Rajput** of Department of Electronics Engineering was awarded the MHRD's Teaching Innovator Award from the Minister, MHRD Shri Prakash Javdekar Ji. This award has been

bestowed to the country's top 15 teachers who have significantly innovated the teaching practices in higher education.

**Prof. A.S.K. Sinha** has been appointed as Director of Rajiv Gandhi Institute of Petroleum Technology (RGIPT), Ratapur Chowk, Rae Bareilly, Uttar Pradesh by the Ministry of Petroleum & Natural Gas (Govt. Of India).

**Prof. Sanjay Singh**, Head of Department of Pharmaceutical Engineering has been appointed as the Vice Chancellor of Babasaheb Bhimrao Ambedkar University, Lucknow.

## Invited Talks

**Ram Sharan Singh** of Chemical Engineering and Technology delivered an invited lecture at IIT, Dhanbad & BIET Jhansi.

**Nikhil Saboo** of Civil Engineering delivered an invited lecture at the 'National Conference on Advanced Structures, Materials and Methodology in Civil Engineering' (ASMMCE 2018) at NIT Jalandhar.

**Sukhada** of Humanistic studies has given an invited talk on "The Importance of Sanskrit in the era of Science and Technology" at Sant Gani Nath Rajkiya PG College, Mohammadabad Gohna, Mau, Uttar Pradesh.

**Somak Bhattacharyya** of Electronics Engineering delivered an invited talk at CSIR-Central Electronics Engineering Research Institute Pilani on 8th October 2018. He also delivered a lecture at India-UK Second International Conference on "Advanced Nanomaterials for Energy, Environment and Healthcare Applications" in Bishop Heber College, Trichy on 4th February 2019.

**Shyam Kamal** of Electrical Engineering delivered a lecture on "A Transition from PID Controllers to Sliding Modes, FDP on "Modern Trends in Power Electronics and Control" at Govt. Engg. College Thrissur", India on 12th December 2018. He also delivered a lecture on

"A Transition from First Order to Higher-Order Sliding Modes" at NIT Silchar on 3rd December 2018.

**Brahmeshwar Mishra** of Pharmaceutical Engineering and Technology delivered various lectures on different topics as given below -

1. "Risk Management for Effective Medication" on 10th August 2018 during 80th orientation course at UGC-Human Resource Development Centre, Banaras Hindu University, 21st July- 17th August 2018, Varanasi.
2. "Risk Management for Effective Medication" on 6th December 2018 during 81st orientation course at UGC-Human Resource Development Centre at Banaras Hindu University, 17th November - 14th December 2018, Varanasi.
3. "Health Management - Food and Nutrition" on 5th September 2018 during Advanced Faculty Training Program at Centre for Food Science and Technology at Banaras Hindu University, Varanasi.

**N. C. Karmakar** of Mining Engineering gave invited lectures on various topics - "Tracer Gas", "Education and Living", "Controlled Recirculation" & "Design of Evasee" at NIT Surathkal on 31st January 2019.

**Ankit Gupta** of Civil Engineering

delivered an invited talk in "National Symposium on Sustainable Cities: Planning and Designing for Green Urban Mobility" at School of Infrastructure Design and Management at IIT Kharagpur, West Bengal during 1st-3rd November 2018.

**Shailendra Kumar Shukla** of Mechanical Engineering delivered invited talk on "Water Purification and Application of Solar Energy" under Royal Society UK Workshop on Q-dot-NMat-2019 workshop at C-MET, Pune during 20th-21st February 2019.

**Kausik Chattopadhyay** of Metallurgical Engineering delivered a lecture on "SMAT and its effect on microstructure, low cycle fatigue and corrosion behaviour of Al 7075 alloy" at Dept. of Metallurgical and Materials Engineering at IIT Kharagpur on 28th February 2019.

**M. K. Verma** of Electrical Engineering Delivered invited talks on following topics in a Short Term Course at MMMUT Gorakhpur:

1. "Voltage Stability Monitoring and Control in Smart Grid Architecture" on 13th September 2018.
2. "Smart Distribution System" on 14th September 2018.

**Arnab Sarkar** of Mechanical Engineering delivered the following invited talks on -

1. Wind Energy: Current and Future Perspective, Renewable Energy and Applications (REA-2018) in December 2018 at NIT Patna.
2. Wind Power Meteorology: Wind Data Modeling for Wind Resources Assessment, Advances in Power Generation from Renewable Energy Sources (APGRES-2019) at Govt. Engineering College, Banswara, Rajasthan in February 2019.

**Devendra Kumar** of Ceramic Engineering delivered a lecture on "Liquid Phase Sintering" at Aditya Birla Insulators, Vadodara on 18th February 2019.

**Kavya Krishna K.R.** of Humanistic Studies delivered invited talk titled "Narrating Trauma: Thinking Through the #MeToo Movement" at National Seminar on 'Trauma: Experience and

Language' organized by Dept. of English, Government College, Kottayam, Kerala from 18th-19th December 2018. He also delivered a Plenary Talk titled "Is there a Cultural Studies Way of Reading a Text?" at National Workshop on 'Understanding the Text: Approaches to Literary Studies and Academic Writing' conducted at Mahila Maha Vidyalyaya, BHU from 30th August to 1st September 2018.

**M. S. Muthu** of Pharmaceutical Engineering and Technology delivered talk on topic "Nanotheranostics for early diagnosis and therapy of cancer" in International Conference on Advanced Nanomaterials for Energy, Environment and Healthcare applications (ANEH) held on 4th-6th February 2019 in Trichy, India.

**Tanmoy Som** of Mathematical Sciences delivered a lecture on "Farey Sequence and Continued Fractions" at the State DST sponsored National Seminar on Recent Trends in Mathematics and its Applications held at Sarojini Naidu College, Kolkata jointly with Calcutta Mathematical Society on 11th January 2019.

**Ravi Shankar** of Computer Science & Engineering Delivered keynote lecture on "Think Parallel: Parallel Computing for Scientists and Engineers" in International Conference ESAR 2019 on 15th March 2019 at Kanpur. He also delivered invited talk on "Combinatorial problems and dynamic programming" in the 34th National Conference of The Mathematical Society, BHU on 23rd February 2019.

## List of Running Sponsored Projects in IIT(BHU) between 01/08/2018 to 06/02/2019

Sl. No.	Title of Project	Name of PI/Co-PI	Date of Sanction	Agency	Duration
1	Detailed lecture based curriculum development for science subjects as part of Induction Programme in AICTE COLLEGES	Dr. Indrajit Sinha	21/06/2017	AICTE	2 YRS
2	Leadership for Academicians Program (LEAP)	PI: DORA. Co. PI: DOFA Co. PI: Chairman, LTC Advisor: Dr. Yogesh Velankar	30/07/2018	MHRD	1.5 Years
3	A Robust medical image forensics system for smart healthcare	Dr. Tanima Dutta	26/09/2018	SERB	02 Yrs
4	Development of glasses as plant nutrients	Prof. Ram Pyare	24/09/2018	SERB	03 Yrs
5	Modeling self assembly and phase separation kinetics in the complex soft materials	Dr. Awaneesh Kumar Singh	26/10/2018	SERB	03 Yrs
6	Ramanujan Fellowship	Dr. Bidya Binay Karak	28/11/2018	SERB	05 Yrs
7	Design Modelling and simulation of linear Induction Drive for Propulsion Applications	Prof. R.K. Srivastava	10/07/2018	CARS, DRDO	02 Yrs
8	Generation and analysis of light source with unconventional structure	Dr. Rakesh Kumar Singh	24/12/2018	SERB	06 Months at IIT BHU
9	Metal hexacyanoferrate modified screen printed electrodes for the removal of radio nuclides	Prof. P. C. Pandey	11/06/2018	DRDO	03 Yrs
10	Mott transistors based Neuromorphic memory device	Dr. Shrawan Kumar Mishra	04.09.2018	DST	3 years

11	Minimizing hysteresis in magnetic shape memory Heuslersloys for reversible magnetocaloric effect	Dr. Sanjay Singh	24.08.2018	SERB	3 years
12	Phytochemical and pharmacological evaluations of bioactivity guided fractions of medicinal plants of Tripura	Dr. A.N. Sahu	28.09.2018	DBT	3 years
13	Development of an intelligent evaporative cooler for composite climate	Dr. Jahar Sarkar	23.08.2018	DST	2 years
14	Targeted drug delivery of methotrexate/gallic acid-folate conjugated Poly L-Lysine	Dr. Abha Mishra	08.09.2018	DBT	3 years
15	Active Vibration Control of Smart Composite and Sandwich Structures in hydro-thermal Environment	Dr. Rosalin Sahoo	16.02.2017 (Transferred to IIT(BHU) on 24.09.2018)	SERB	3 years
16	Investigation on dynamic response analysis of shallow foundation resting on pond ash deposits	Dr. Supriya Mohanty	07.09.2016 (Transferred to IIT(BHU) on 24.09.2018)	SERB	3 years
17	Low cost ammonia gas sensor based on polymer/polymer nanocomposite device formed by novel floating film transfer (FTM) technique	Prof. Rajiv Prakash	04.01.2019	SERB- IMPRINT	2 years
18	Development and assessment of asphalt mastic from typical Indian and Austrian filler materials with a new test method	Dr. Nikhil Saboo	13.11.2018	DST	2 years

### List of International MoUs w.e.f. August, 2018 to 15.02.2019

S. No.	Particulars	Date
1	Bilateral Proposal with the Russian Science Foundation (RSF) and Belarusian Road Research Institute	29.08.2018
2	University of Udayana (UNUD), Indonesia	04.09.2018
3	University of Chicago Trust, Chicago	10.10.2018
4	Penn State Executive Programs Smeal College of Business, Pennsylvania State University, US (LEAP) Leadership for Academicians Program	07.12.2018
5	Kursk State University, Russia	10.12.2018
6	Ecole Nationale Supérieure Des Mines De Saint-Etienne (Mines ST-Etienne), France	11.12.2018

### List of Patents Filed:- 01/08/2018 to 31/01/2019

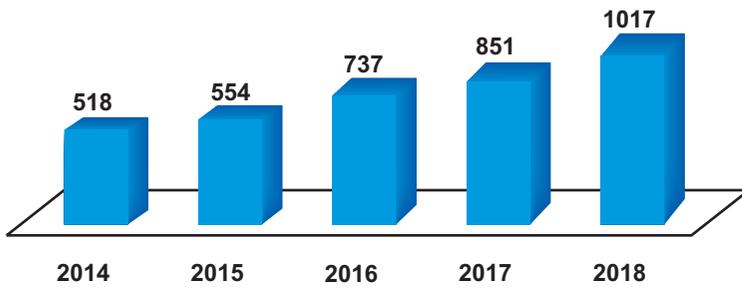
S.No.	Name of Inventors	Title of the Invention	Department	Date of Filing
1	Dr. S. Krishnamurthy, Mr. Pankaj paliwal	A Novel Formulation of Dabigatran Solid Dispersion Formulation and A Method of Preparation Thereof	Pharmaceutics	03-08-2018
2	Dr. Sanjeev Kumar Mahto, Ajay Kumar Sahi, Snehalata Rai	A Syringe with Controlled Volume Dispensing System	Bio Medical Engg	14-08-2018
3	Dr. Alakh N. Sahu, Dharmendra Yadav	A Multi-Utility Equipment	Pharmaceutics	06-09-2018
4	Dr. S. Krishnamurthy, Mr. Pankaj paliwal, Smriti Gupta	A Novel Barium Bioactive Glass (Babg) Formulation and A Method Thereof	Pharmaceutics	10-09-2018
5	Dr. Santanu Das, Mr. Rajarshi Bhattacharya, Dr. Tapas Kumar Bhattacharya, Dr. Somak Bhattacharya, Prof Pralay Maiti	A Cyclodextrin Grafted Polyurethane Hydrogel For Drug Delivery and A Method of Making The Same	Ceramic Engg, SMST, Electronics Engg	24-09-2018

6	Dr. Arup Kumar Mandal, Prof O. P. Sinha	An Insulation Brick and Method of Preparation Thereof	Metallurgical Engg	
7	Prof. Pradeep Srivastava, Satyavrat Tripathi, Divakar Birendra kumar Singh	A Bioreactor For Culturing of Living Cells or Tissues	Bio Chemical Engg	13-10-2018
8	Dr. S. Krishnamurthy, Mr. Pankaj paliwal	A Bioactive Glass Drug Formulation For Bone Repair and Regeneration and A Method of Preparation Thereof	Pharmaceutics	24-10-2018
9	Dr. Santanu Das	An Alkaline Earth Metal Doped Zinc Oxide Nanosheets and Method of Preparation Thereof	Ceramic	28-11-2018
10	Dr. Pradip Paik	A Novel Hydrogel with High Mechanical Stability and A Method of Making The Same	Biomedical	01-12-2018
11	Dr. O.P. Singh	Solar Air Heater	Mechanical	04-12-2018
12	Prof. P. Maiti	A Novel Polymeric Patch For Treating Melanoma Cancer and A Method Thereof	SMST	05-12-2018
13	Dr. P.K. Roy	A Strontium Based Rare Earth Free High Energy Permanent Magnet For Dc Motor Application and A Method of Synthesis Thereof	Ceramic	22-12-2018
14	Dr. P.K. Roy	A Novel Nano-binder In Castable Refractory and A Method of Preparation Thereof	Ceramic	27-12-2018
15	Dr. Vishal Mishra	Hopper	Biochemical Engineering	29-12-2018
16	Dr. Vishal Mishra	An Improved Segregator	Biochemical Engineering	03-01-2019
17	Dr. Gyan Prasad Modi	A Multifunctional Hybrid 3-(4-hydroxy-3-methoxy-phenyl) Prop-2-enoic Acid and Substituted Aminepiperazine Derivatives for The Treatment of "a"	Pharmaceutics	03-01-2019
18	Dr. Gyan Prasad Modi	Compounds and Methods for Treating Chronic Microbial Infections	Pharmaceutics	30-11-2018
19	Dr. Santanu Das	Magnesium Zinc Ferrite-polyurethane Nano Composite	Ceramic	04-01-2019
20	Prof. P. Maiti	A Metal Ceramic Joint Adhesive	SMST	23-01-2019

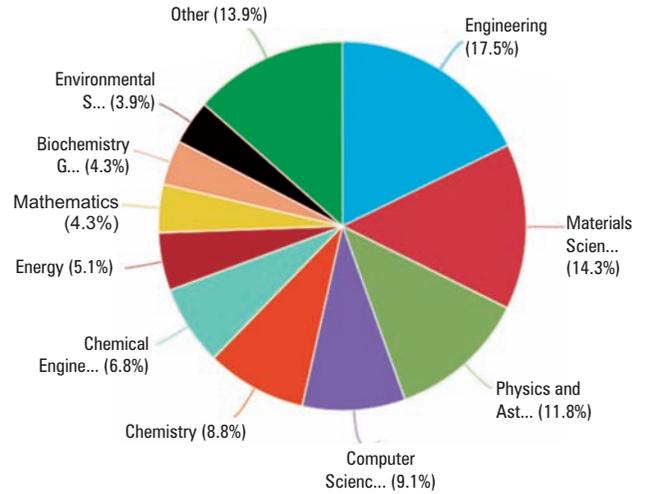
## Publications

IIT (BHU) has performed research in collaboration with over 160 Educational and Research Institutions from 48 countries. Internationally collaborative research is performed with top Institutions and research centers.

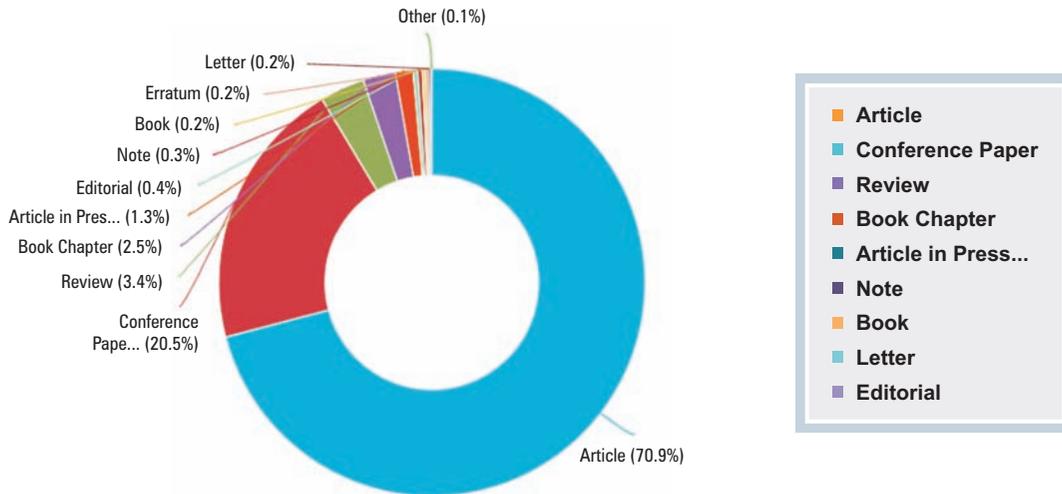
No of research papers published in respective years



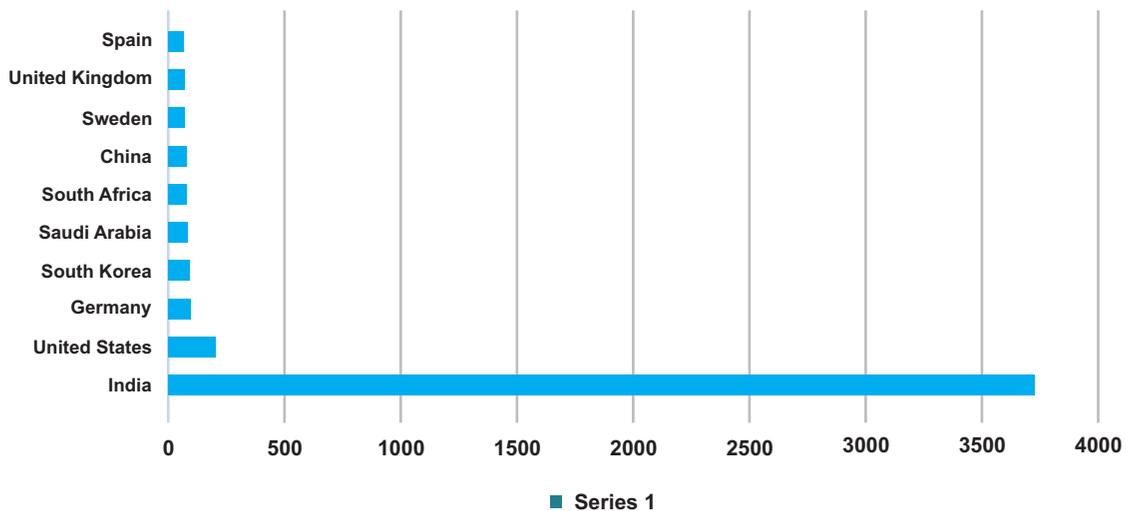
Documents by subject areas



Publication Type



International Collaborations



# TLC, IIT(BHU) :

## September 2018 - March 2019

Teaching Learning Cell at IIT (BHU) has conducted several programs for faculty and student capacity building as per its mandate. The highlights of TLC programs conducted during the above mentioned period are mentioned below.

### A. Half Day workshop on "Experience Sharing and Best Practices in Teaching and Learning" held on 29th September 2018 in the Department of Metallurgical Engineering, IIT (BHU)

It is a part of the exercise that the TLC would like to undertake for the entire academic departments/ schools of the Institute by selecting a cluster of Departments and Schools together for logistics as well as for closer interactions.

In the first session of the workshop as a part of introductory remarks, Professor V.V. Menon emphasised that learning is a lifelong process. He elaborated why a faculty member should be aware of the best as well as the worst practices in teaching learning. This Workshop was coordinated by Prof. R. K. Mandal (Dept. of Metallurgical Engg.) and Dr. Amrendra Kumar (Dept. of Mining Engg.).

### B. TA/Tutor Orientation workshop held on January 12, 2019

Aiming to provide an orientation on

improving the teaching (and tutorial) skills of teaching assistants (TA) and postgraduate student tutors of IIT(BHU), a half-day workshop was held on January 12, 2019, at ABLT under the aegis of Teaching Learning Cell (TLC), IIT (BHU), Varanasi.

Dr. Laltu Chandra (Dept. of Mechanical Engg.) in the first session discussed various topics such as role and responsibilities of a TA/Tutor, preparation for tutorial and laboratory sessions. The second session, conducted by Dr. Yogesh Velankar (Department of Humanistic Studies), was focused on the role of proper communication during tutorial and laboratories sessions.

Program Coordinators: Dr. Vikas Jindal (Dept. of Metallurgical Engg.) and Dr. Amrendra Kumar (Dept. of Mining Engg.).

### C. Academic Writing for Research Scholars during January 15-19, 2019

Academic writing is often highly problematic but always potentially transforming activity. This workshop has been designed to help participants come to terms with the challenges of writing a doctorate thesis, a journal article, struggling with reviewers' comments, or drafting a research proposal by offering them a graded exposure to the world of Academic Writing. Total of 92 Ph.D.



Dr. Laltu Chandra conducting the session during TA/Tutor Orientation Program

students registered for this workshop.

Program Coordinators: Prof. Prasanta Kumar Panda (Dept. of Humanistic Studies) and Dr. Ajit K. Mishra (Dept. of Humanistic Studies) some of the expert resource persons were: Dr. A. Behura (ISM, Dhanbad), Prof. A.K. Tripathi [DORA, IIT (BHU)] and others.

### D. Faculty Induction Program (FIP) during 28 January – 26 February 2019: [Induction Training of Faculty (MHRD Mandate) covering core and elective modules]

Under the aegis of Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) Scheme by Ministry of the Human Resource Development, Government of India, the Teaching Learning Centre (TLC) of IIT (BHU) organized a Faculty Induction Program for newly recruited faculty from all higher education disciplines from 28th January to 26th February 2019.



The sessions during Academic Writing for Research Scholars

The goal of this induction training program was to orient the newly inducted faculty to various generic aspects of teaching-learning, instructional methodologies, assessment and evaluation techniques, ICT enabled teaching-learning. FIP was organized under the chairmanship of Prof. Prashant Shukla (Coordinator of TLC), who was assisted by Prof. Devendra Mohan (Dept. of Civil Engg.), Dr. A.K. Mishra (Dept. of Humanistic Studies) & Dr. A.K. Singh (School of Biochemistry Engg.).

Several expert resource persons delivered sessions during this program. Some of the expert resource persons were: Prof. T.V. Prabhakar (IIT Kanpur), Prof. Mallickarjun Joshi (BHU, Varanasi), Dr. Sushma Kulkarni (Director, Rajarambapu Institute of Technology, Maharashtra), Dr. Shefali Nagpal (Director, UGC-HRDC, BPSMV, Sonapat), Dr. S. Balamurugan (AVV, Coimbatore), Dr. Parvathi Rangasamy (Vellalar College for Women, Tamilnadu), Prof. Indu Khandoori (Director, HMBG University, Uttarakhand), Dr. Felix Bast (Central University of Punjab, Punjab), Prof. B. K. Tripathi (Director, IUCTE, BHU, Varanasi) and others.

### E. Sharing Teaching-learning Experience Conference (STEC2019)

The Teaching Learning Centre of IIT (BHU) Varanasi, under the MHRD scheme of PMMMNMTT organized Sharing Teaching-Learning

Experience Conference (STEC2019) on March 8-9, 2019 at ABLT Complex of IIT (BHU) Varanasi. STEC2019 consisted of 13 academic sessions including a keynote speech by Professor Sundar Sarukkai (NIAS, Bangalore), 4 invited talks, 2 panel discussions and 30 paper presentations from 30 different institutions from across the country. More than 100 faculty members and students across the country participated in STEC2019, was organized under the chairmanship of Prof. Prashant Shukla, the Chairman and Coordinator of TLC, who was assisted by Dr Anil Thakur (Dept. of Humanistic Studies) and Dr. V. Ramanathan (Dept. of Chemistry) besides TLC staff members and students volunteers.



**Prof. T. V. Prabhakar** conducting the session during Faculty Induction Program



**Prof. Indu Khandoori** during Faculty Induction Program



The sessions during STEC 2019

## Departmental News

Raj N. Singh Sc.D., Williams Companies Distinguished Chair & Regents Professor, Director Energy Technologies, School of Materials

Science & Eng., Oklahoma State University (OSU) USA has joined the Department of Ceramic Engineering, IIT (BHU) as Adjunct Faculty. He

started on 12th January and is spending his sabbatical at the Department. He will be here till end of April 2019.

## हिन्दी पखवाड़ा ( सितंबर 1-15, 2018 )

संस्थान में हिन्दी पखवाड़ा का आयोजन दिनांक 01.09.2018 से दिनांक 15.09.2018 तक किया गया। हिन्दी पखवाड़ा के दौरान निम्नलिखित आयोजन किये गए।

### 1. हिन्दी पखवाड़ा का उद्घाटन

संस्थान में हिन्दी पखवाड़ा (सितंबर 1-15, 2018) के अंतर्गत दिनांक 01.09.2018 को एनीबेसेंट व्याख्यान कक्ष संकुल में हिन्दी

पखवाड़ा के 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 2017-18 के

दौरान हिन्दी में किए गये कार्यों की आख्या प्रस्तुत की। इस अवसर पर निदेशक महोदय द्वारा संस्थान कर्मचारियों को कार्यालयी कार्य अधिकाधिक हिन्दी में करने हेतु अपील जारी की गई। साथ ही श्री जगदीश नारायण राय, संयोजक, केंद्रीय सचिवालय हिन्दी परिषद, वाराणसी द्वारा प्रतिभागियों को संघ की राजभाषा नीति एवं उसके कार्यान्वयन के बारे में बताया गया।



## 2. “तकनीकी शिक्षा में राजभाषा हिन्दी का योगदान एवं चुनौतियाँ” विषय पर निबंध प्रतियोगिता

दिनांक 01.09.2018 से 08.09.2018 के मध्य “तकनीकी शिक्षा में राजभाषा हिन्दी का योगदान एवं चुनौतियाँ” विषय पर निबंध प्रतियोगिता का आयोजन निम्नलिखित चार वर्गों में किया गया :

पूर्वछात्र	शैक्षणिक
गैर-शैक्षणिक	विद्यार्थी



पूर्व छात्र के लिए निबंध प्रतियोगिता हेतु अधिष्ठाता (पूर्व छात्र), शैक्षणिक एवं गैर-शैक्षणिक कर्मचारियों के लिये प्रतियोगिता हेतु समस्त विभाग व अनुभाग तथा विद्यार्थियों के लिए अधिष्ठाता (छात्रकार्य) से अनुरोध

किया गया। उक्त प्रतियोगिता में 1 शैक्षणिक एवं 11 गैर-शैक्षणिक कर्मचारियों के निबंध प्राप्त हुए।

## 3. हिन्दी पुस्तकों की प्रदर्शनी

दिनांक 04.09.2018 को संस्थान के मुख्य पुस्तकालय 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 एवं पत्राचार प्रतियोगिता

दिनांक 06.09.2018 को हिन्दी टिप्पण लेखन एवं पत्राचार प्रतियोगिता का आयोजन एनीबेसेंट व्याख्यान कक्ष संकुल में किया गया, जिसमें कुल 31 गैर-शैक्षणिक कर्मचारियों ने भाग लिया।

यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता :

दिनांक 10.09.2018 को संस्थान के प्रथम वर्ष संगणक प्रयोगशाला, यांत्रिक अभियांत्रिकी विभाग में यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता का आयोजन किया गया। इसमें कुल 20 गैर-शैक्षणिक कर्मचारियों ने भाग लिया।

## 5. हिन्दी दिवस समारोह

दिनांक 14.09.2018 को संस्थान में हिन्दी दिवस समारोह का आयोजन एनीबेसेंट व्याख्यान कक्ष संकुल में किया गया। कार्यक्रम का आयोजन पं० मदन मोहन मालवीय जी की प्रतिमा पर माल्यार्पण एवं

दीप प्रज्वलन के साथ हुआ। आचार्य सुशांत कुमार श्रीवास्तव, भैषजकीय अभियांत्रिकी एवं प्रौद्योगिकी विभाग एवं अध्यक्ष, हिन्दी पखवाड़ा आयोजन समिति ने कार्यक्रम में आए सभी अतिथियों एवं सहभागियों का स्वागत किया।

कुलसचिव महोदय ने हिन्दी पखवाड़ा की अवधि में संस्थान में दिनांक 01.09.2018 से 14.09.2018 के मध्य आयोजित कार्यक्रम व प्रतियोगिताओं की आख्या प्रस्तुत की।

तत्पश्चात् आचार्य सुशांत कुमार श्रीवास्तव ने माननीय गृहमंत्री जी का हिन्दी दिवस के अवसर पर जारी संदेश का पाठन किया। इसके बाद आचार्य अनिल कुमार त्रिपाठी, उपाध्यक्ष, राजभाषा कार्यान्वयन समिति ने विश्वस्तर पर हिन्दी के बढ़ते प्रयोग एवं प्रत्येक क्षेत्र में इसकी महत्ता पर प्रकाश डाला।

## 6. पुरस्कार वितरण

कार्यवाहक निदेशक महोदय ने दिनांक 01.09.2018 से दिनांक 10.09.2018 के मध्य आयोजित सभी प्रतियोगिताओं के प्रथम, द्वितीय एवं तृतीय निम्नलिखित विजेता कर्मचारियों को पुरस्कृत किया :

दिनांक 06.09.2018 को आयोजित हिन्दी टिप्पण लेखन एवं पत्राचार प्रतियोगिता में प्रथम स्थान प्राप्त श्री प्रदीप कुमार धनवडे, कनिष्ठ सहायक, स्थापना अनुभाग, द्वितीय स्थान प्राप्त श्री आदर्श कुमार श्रीवास्तव, कनिष्ठ सहायक, निदेशक के निजी सचिव अनुभाग एवं तृतीय स्थान प्राप्त श्री संदीप





प्रजापति, कनिष्ठ सहायक, निदेशक के निजी सचिव अनुभाग को पुरस्कृत किया गया।

दिनांक 10.09.2018 को आयोजित यूनिकोड के माध्यम से हिन्दी टंकण प्रतियोगिता में प्रथम स्थान प्राप्त श्री अजीत कुमार यादव, कनिष्ठ सहायक, सामान्य प्रशासन अनुभाग, द्वितीय स्थान प्राप्त श्री संदीप प्रजापति, कनिष्ठ सहायक, निदेशक के निजीसचिव अनुभाग एवं तृतीय स्थान प्राप्त श्री अंकित जैन, कनिष्ठ सहायक, संस्थान निर्माण विभाग को पुरस्कृत किया गया।

दिनांक 01.09.2018 से दिनांक 08.09.2018 के मध्य आयोजित “तकनीकी शिक्षा में राजभाषा हिन्दी का योगदान एवं चुनौतियाँ” विषय पर निबंध प्रतियोगिता के गैर-शैक्षणिक कर्मचारी वर्ग में प्रथम स्थान प्राप्त श्री सिद्धार्थ कुमार गुप्ता, कनिष्ठ सहायक, छात्रवृत्ति अनुभाग, द्वितीय स्थान प्राप्त श्री राजेश प्रसाद, कनिष्ठ सहायक, संस्थान निर्माण विभाग एवं तृतीय स्थान प्राप्त श्री अंकित कुमार जैन, कनिष्ठ

सहायक, संस्थान निर्माण विभाग व श्री गौरव कुमार, कनिष्ठ सहायक, सामान्य प्रशासन अनुभाग को पुरस्कृत किया गया।

संस्थान में वर्ष 2017 के दौरान हिन्दी में उल्लेखनीय एवं उत्कृष्ट कार्य करने वाले कर्मचारी को भी उक्त अवसर पर पुरस्कृत किया गया। हिन्दी में उत्कृष्ट कार्य करने हेतु श्री राजेश प्रसाद, कनिष्ठ सहायक, संस्थान निर्माण विभाग एवं हिन्दी में उल्लेखनीय कार्य करने हेतु सुश्री आरती गुप्ता, कनिष्ठ अधीक्षक, सामान्य प्रशासन अनुभाग व श्री शिशिर कुमार, कनिष्ठ सहायक, अनुसंधान एवं विकास को पुरस्कृत किया गया।

इस अवसर पर संस्थान के कार्य वाहक निदेशक महोदय ने अपना संबोधन प्रस्तुत किया, जिसमें उन्होंने कर्मचारियों को अधिकाधिक हिन्दी में कार्य करने की अपील की।

हिन्दी दिवस समारोह के अवसर पर अतिथि वक्ता प्रो. अवधेश प्रधान, हिन्दी विभाग, काशी हिन्दू विश्वविद्यालय द्वारा हिन्दी भाषा पर व्याख्यान प्रस्तुत किया गया। उन्होंने

बताया कि भाषा केवल साहित्यकारों, कवियों एवं नाटककारों के हाथों में आकार नहीं लेता बल्कि भाषा का विकास आम जनता के कारण होता है जिनके द्वारा यह बोला जाता है। भाषा का निर्माता एवं उत्तराधिकारी आमजनता है। भारत में अभी भी 250 से अधिक भाषाएँ हैं। देश में लगभग आधी जनता द्वारा हिन्दी बोली एवं समझी जाती है। दयानन्द सरस्वती, सुभाष चन्द्र बोस आदि महापुरुष अंतर्राष्ट्रीय मंचों पर अपने विचार अधिक से अधिक हिन्दी में ही व्यक्त करते थे।

उन्होंने यह भी बताया कि हिन्दी में शोधकार्य एवं इंटरनेट पर हिन्दी में किसी विषय की उपलब्धता अभी भी कम है। तकनीकी संस्थानों द्वारा हिन्दी को आगे बढ़ाने का प्रयास किया जा रहा है। उनके द्वारा हिन्दी के क्षेत्र में कार्य करने से हिन्दी का और अधिक विकास होगा।

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

## Students Achievements

**Mayank Bansal** and his team won the prestigious Ventura cup in Startup fair in Technex'19.

**Abhishek Das** was a delegate in Harvard University in Asia region

(Kuala Lumpur) under the project "Harvard project of Asian and International relation (HPAIR) in 2018.

**Pratap Digvijay** was the winner of online photography competition

(#9wshortstories) hosted by Jet Airways all over India.

**Debashish Dutta** published a research paper (4 SCI), published a book (GMBH, Germany), published a

chapter in book (Taylor Francis), and is also a member of Editorial board (SciencePG USA), National training (BARC Mumbai), AICTE QIP training (IIT BHU).

**Yamini** won the best poster award for the session Total Solar Irradiance (TSI) and Spectral Solar Irradiance (SSI) at "International astronomical unit symposium 340" held at BM Birla, Jaipur, India during 19th-24th February, 2019.

**Atif Sufyaan and his team** was the winner of Hult prize BHU and got selected for Hult prize Kuala Lumpur Regional finals.

**Navneet Kumar** secured 2nd position in Glide A-RAMA (RC Plane Event) in Techniche, IIT Guwahti.

**Anmol Agarwal and his team** was selected amongst top 6 teams in Dubai regional finals of the prestigious Hult prize. Hult prize is a

global social Entrepreneurship competition and is known as noble prize of student entrepreneurship.

**Raghav Bagri** and his team won 1st position in National Sustainability case challenge held on 19 Jan 19 organised by BIMTECH held at Greater Noida His team also won a cash prize of 1 lakh.

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

## Startups initiated by IIT(BHU) students

Name of the Startup	Field / Sector	Name of the CEO	Department	Year	Description	Startup Stage	Achievements
Trash Cash	Waste Management	Shashwat Agarwal	Mechanical Engineering	3	Gamify the waste throwing experience by incentivising people to throw wastes inside the dustbin	Prototyping	Won first prize in innovation category in Solve4India competition organised by My Gov.in. Finalists in the UK-India Social Innovation Challenge 2018.
Doctor Around You	Healthcare	Sumit Bhat	Electronics	2018' Batch	Online healthcare service provider.	Pilot	Selected for NASSCOM 10K Program
qLock	Security	Akash Verma	Chemical	2	Uses QR code to create dynamic passcode facility	Prototyping	NA
Checkin	IT Services	IshuDarshan	Mining	4	Mobile application to make the in house order in restaurants seamless for the user.	On-going pilot	2nd Runner up in VNIT Startup Conclave. Selected for NASSCOM 10K Program. Raised Seed investment 18 Lakh from MCIIE. Top 10 in Conquest BITS Pilani.
Travostel	Hospitality	Priyanshu Mahar	Civil	4	Mobile/web platform to enable customers to book their stay from minutes to months from a variety of stay options to choose from.	Prototyping	NA
Stodict	Artificial Intelligence	Anurag Singh	Engineering Physics	4	Stodict detects the earliest indication of high impact events and critical breaking information in real time for news and financial agencies.	Showing demo to clients	Partnered with Quint and backed up by television producer Mr. Rohit Gandhi, former Editor-in Chief of CNN.
qLock	Security	Akash Verma	Chemical	2	Uses QR code to create dynamic passcode facility	Prototyping	Shortlisted for entrepreneurship campus challenge.

## Cisco ThingQbator

Malviya Centre for Innovation, Incubation & Entrepreneurship (MCIIE) has been supporting and encouraging start-ups since 2008. It provides seed funding of up to 15 lakh rupees and an incubation period of six

months. Collaboration with Cisco ThingQbator after the establishment of E-Cell has boosted the entrepreneurial culture at the institute. Cisco ThingQbator is a network of makerspaces (or collaborative work

spaces) in partner Universities where students can learn about digital technologies in a hands-on environment, turn their ideas into working prototypes and in the process come up with local solutions to local

problems. Cisco has come up with the concept of "ThingQbator for Universities" to help universities and academic institutions to set up IoT (Internet of Things) makerspaces to help them accelerate innovation around IoT and digital technologies in their campus.

MCIIE is looking forward to bring the Internet of Things (IoT) labs, 3-D printing labs to support Bio-Pharma and Agri-Tech companies. Students' ideas have got more support from the collaboration of our institute with Cisco ThingQbator. The network of marketplaces of Cisco ThingQbator provides our student with a platform to learn digital technologies in a hands-on-environment, turn their ideas into a working prototype and in the process come up with local solutions to local problems. A Cohort is a batch of participants registered in teams which are supported by ThingQbator in their efforts. The first batch of Cohort, which happens once in six months, has been running successfully for the past three months helping 30 aspiring teams to achieve their goals by a series of workshops followed by providing resources to the deserved. The first workshop under Cisco came up with a topic "PI WITH AN EYE" hosted by Li2 technologies at



MCIIE focusing on projects & applications using Raspberry Pi, communication between a device like NodeMCU & Raspberry Pi and visual based projects using Pi camera & OpenCV.

On the occasion of Global Alumni Meet 2019, E-Cell IIT(BHU), in collaboration with Technex, IIT-BHU organized a lecture series by two of the most renowned alumni of our very own institute, Mr. Viswanathan Iyer, VP Sales and Architecture, Cisco and Mr. Suhas Mansingh, VP Engineering, Cisco in which they delivered a talk on 'Get Ahead or Stay Behind' which was based on their success stories.

The cohort culminates with a demo-day wherein decisions are made on how to proceed with the prototypes

built by the cohort. A Demo Day for 1st Cohort organized at MCIIE, IIT(BHU) was presided over by Prof. P.K Mishra, Coordinator, MCIIE, IIT(BHU), Dr. S.N Upadaya, former Director IIT-BHU, Vish Iyer, Vice-President, Sales, Cisco, and Harish Krishnan, Managing Director, Public Affairs, Cisco. In this demo day, every team came up with really mesmerizing prototypes. Some astonishing prototypes of the day were presented by Team\_TrashCash, team\_ironfist, team\_qlock, team\_doctoraroundyou. A 10th standard student from Kendriya Vidyalaya, Kshitij Pandey had built a system to detect impurities in fuels, which was one of the most remarkable prototypes of that day.

## KASHIYATRA-THE ESSENCE OF KASHI

The beautiful evening was about to end. It was Day Zero of 'Kashiyatra', the annual socio-cultural festival of IIT (BHU). It is a three-day fiesta where participants from all over the country compete in the field of literature, music and arts to find the best amongst themselves. Its grandeur has earned it the fame of being North India's largest cultural festival. Mirage had made the normal evening, a great joyful event. With the last couple walking on the stage, showcasing their fashion, Mirage ended. A shadow of disappointment was there on everybody's face but since it was also the starting of Kavya Manjari, a little excitement was present too. 'Kavya Manjari', an evening with poets and poetry, Dr. Rahat Indori, Gauri



Mishra, Rupesh Saxena and all the other poets awakened the inner critics and admirers of romantic words inside everyone in the Swatantrata Bhawan. The Hindi poet Alok Saxena introduced all other poets. Gauri

Mishra started her recitation with Goddess Saraswati's prayer. The complete Swatantrata Bhawan hall felt the presence of Saraswati there when Gauri started singing. Rahat started with a little humour and

directed the whole audience's mood to inspiration at the end.

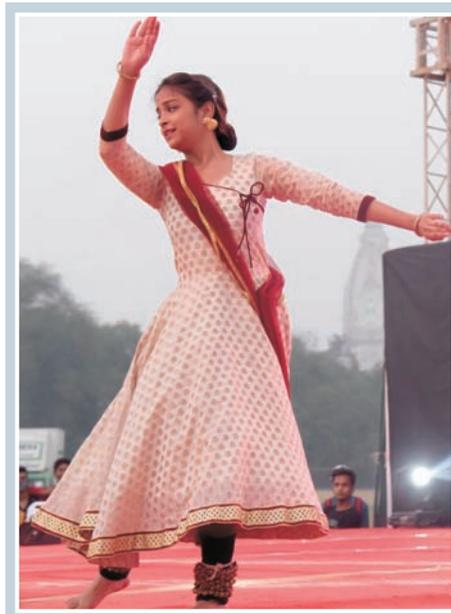
The night had passed in waiting for the next day. Day 1 of Kashiyatra started with the 'Street play'. They performed it wonderfully and spread an equally necessary social message. 'Sur Prelims', the singing competition auditions were also going in parallel at G-11. Following that, literary events kick-started in Lecture Theatre-3 in the afternoon. Swatantrata Bhawan rocked with guitars and music when Advaita began. In Rajputana Grounds 'Ecstasy' was going on since the morning which is the competition where you can witness the best dancers in the region. After a tiring day, there was one thing everybody was waiting for, which took away all the fatigue. The aura in ADV Grounds was inexplicable in words, it can only be assumed that something awaited for more than a month was at the doorstep. After some initial build-up tunes, the rapper DIVINE took the stage. That night, the songs "Apna Time Aayega" & "Kaam Pachchees" were on everyone's mouth.

The next day started with the stage play at G-11. Simultaneously, in the Rajputana Grounds, 'Solo' & 'Duo Dance' started. It is either a curse or a boon of BHU that every building here is miles away from each other. I walked around with my friends to every venue; I didn't want to miss anything. 'Samwaad' was going on at

LT-3 when I reached to witness the best debaters of the institute. Me, along with my two friends, set off for Swatantrata Bhawan. 'India Quiz' was organized there by famous quizzier 'Arul Mani', who in his career has organized hundreds of quizzes. We could not do much there. During our return, we stopped at Rajputana Grounds to enjoy the dance performances. Again, the evening was eventful but the wait was for the night. The programs in the queue for the night were from 7 PM onwards, starting with standup by the famous comedian 'Akash Gupta' followed by a concert by "TRAP", the band. Whatever be the program, with friends you can enjoy every music beat.

It was the last day of the extravaganza, still, we were quite energetic. Alike the previous two days, many more programs were scheduled for the day. To name a few- FAC's 'Rangbaazi', 'Face Painting', Dance Club's 'Group Dance Prelims', Theatre's 'Mono Act', IMC's 'Sanlayan Sur' were some of them. At the same time, the 'Business Club's Quiz 'Biz Tech' & 'Dance Club's finals of "Group Duo Dance" were at their pace. The last night of the fest was the one I was waiting for, most eagerly. KK was to perform at ADV Grounds. I have always loved his songs. Watching him perform on the grand stage was like a dream come true for me. He has the voice which can rule anyone's heart. Love was in

the air on the Ground, the surroundings were blossoming and KK's voice, in addition, was dispersing fragrance in the air.



'Kashiyatra'19' was a three-day journey, away from the hustle of everyday college life, infecting you with new vigour and enthusiasm when you witness the best talents of the country on a single stage. The cultural activities remind you of the invaluable gifts that the bright minds of this country have. You come across the diversity of your surroundings, eventually knowing more about yourself.

## Technex'19

Technex, the annual techno-management fest of IIT (BHU) Varanasi, saw its 80th edition this year from March 8 to March 10 2019. As one of the continent's oldest college festivals, it is a three-day long spectacular display of the machines and skills. One can witness fierce competition between machines made by students, guest lectures by eminent personalities, science and technology workshops, exhibitions, colourful evenings and much more. Every year, it is getting bigger. This year, it saw participation from more than 700 colleges from all over the country,

bringing a footfall of over 25000.

The ambience of the fest started to fill the campus long before it happened in the month of March. Technex, along with Institute Lecture Series, brought many distinguished guests from the science and technology world to deliver talks.

Technex'19 started with a bang, kickstarting with a large number of events and competitions. In the morning, Robotics events were crowd pulling. Pixelate, Hurdlemania required skills like image processing which guided the bots. The maze explorer event involved completely

autonomous bots racing against each other to win the cash prize. Robowars was awesome, with the metal machines armed with cutters and spears, fighting in the arena. Prizes worth INR 1,70,000 were up for grabs. Ascension, the competition of the airborne machinery included four events. La Trajectoire was a competition of manoeuvring and showing stunts with remote-controlled aeroplanes. Drone Tech was highly fascinating in which drones controlled by radio signals took a flight. Momentum and D'AeroGlissuer were equally exciting. Besides, the water

rocket competition also saw huge participation. Riqueza under Technex organized Krackat-a mock CAT test aimed at giving the students an idea of the nature of the prestigious examination. Mock Aptitude tests were also held as a part of the Technex, which enabled students to hone their analytic skills. Coding events like Hackathon also saw huge participation with enthusiastic coders from all over the country turning up to showcase their skills. Three-time Oscar winner cinematographer and inventor of Steadicam Garrett Brown shared his experiences and gave an insight into what it takes to invent something new. Students also had the chance to interact with Nobel laureate John C Mather. Eventually, the day ended with the crowd laughing in the Swatantrata Bhawan when the stand-up comedian Rahul Subramanian was on the stage.

The second day of Technex'19, witnessed an inspiring talk in the evening by Ms. Laxmi Agrawal, an Indian campaigner for Stop Acid Sale

and TV host. The crowd also enjoyed stunning performances by jugglers and Guinness World Record Holder Hari Om Kumar. Apart from these events there were think talks delivered by Dr R.S. Sodhi the managing director of Amul India's largest dairy corporation. He discussed the factors behind the grand success of Amul and explained how with great leadership and integrity among the employees can take a small idea to grow and achieve massive heights. The talk was preceded by a magic show which received a thunderous applause from the crowd. Corporate Conclave saw sessions by Publicis Sapient and Mentor Graphics. The day ended with a movie screening which cheered the audience up for the next and final day of the fest.

The last day of Technex'19 was a memorable and fun-filled day. Mornings saw the participants eagerly waiting for results of their respective competitions. The Startup story of 'Dharamveer Singh Chouhan', Co-founder of Zostel - the biggest hostel

brand of India filled the listeners with zeal and courage. The most anticipated event of Technex'19, the final day pronite started with a roar in the evening hours. DJ Olly Esse took the stage and made the crowd sway their hands and bodies with her tunes. It was followed by an unforgettable and energy-packed concert by the Punjabi singer, Guru Randhawa. He sang his famous hits and the audience went back with a memory of an amazing night which was the closing act for the three-day extravaganza.

