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**INDIAN
INSTITUTE OF
TECHNOLOGY**
BANARAS HINDU UNIVERSITY



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Editor's Desk

We are glad to present to you the fourth edition of the Institute Newsletter. 2018 is an exceptional year for IIT (BHU), as it marks the beginning of the centennial celebrations of the Institute. While the details of the programme are still being worked out and will be covered in subsequent editions of this publication, we take some time in this issue to explore some of the reasons how this Institute has withstood the test of time and continues to be a leader in education, research and social involvement.

A feature story follows the efforts of a team which is actively involved in bringing academic insights to help curb air and soil pollution arising

from brickfields in the state. In another article, we commend the efforts of the members of the team from the Civil Engineering department, who are working towards modernising jetties used in water transportation. Another significant step towards sustainable development is the installation of solar panels across various buildings encompassing the Institute. The details of the path-breaking installation, which has a capacity of 1.5 MW, provides an inspiring read. The century-old Institution has undergone several changes over time. The most recent was the welcome conversion to an IIT in 2012. An essay contest was

organised to understand student perspectives on how the ensuing changes have affected the Institute, and one of the winning entries has been published here.

We would like to express our gratitude towards the entire faculty and student fraternity, and to all the Deans and their respective offices, for their valuable inputs and cooperation has helped in shaping this edition in a better way. We hope you enjoy reading this edition of the newsletter. Feedback and suggestions are most welcome, and the team can be reached at editor.newsletter@itbhu.ac.in and studenteditor.newsletter@iitbhu.ac.in

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DoRA's Interview on Centenary Celebrations

In Talks : DoRA, The dawn of Centenary Celebrations

With the BHU having been established in 1919, the current year marks the beginning of its hundredth year. On this auspicious and proud occasion, it is the time that we reminisce our past, learning valuable lessons from it, and surge ahead leading today's world with the traits we have imbibed through our heritage. In this context, we had an opportunity to discuss with the Dean of Resource and Alumni, Professor A K Tripathi about how the institute is planning to celebrate this occasion and sow the seeds for further advancement. Here are the excerpts of the interaction :

What is the timeline of the centenary celebrations in our institute?

The institute consists of primarily three units that are identified as erstwhile colleges of BHU of which Benaras Engineering College (BENCO), which is the oldest constituent of our institute, was established in 1919. The other two units are MINMET (Mining and Metallurgy), College of Technology (Chemical, Silicate (now known as Ceramic Technology)). Also, we were the first institution in Asia to award the Pharmaceutical degree. The courses in the BENCO started in July, but the departments came into existence a little earlier, sometime in January. Since the foundation day of BHU is Vasant Panchami, therefore, to have it coincide with the mother Institution, we are going to celebrate the main centenary function on Vasant Panchami next year that is on 10 February 2019. These celebrations will conclude on Vasant Panchami, 2020. The beginning of these celebrations is on 22nd February 2018. The golden jubilee reunion of the 1968 batch of BENCO is during the same period, and we will launch the centenary

celebrations in their presence.

How will the departments contribute to these celebrations?

Achievements of Alumni are also the achievements of the department, and consequently of the Institute. Similarly, faculty colleagues who have worked in the departments also have contributed to the development of the nation or world and are also an achievement of the department. So the departments have been asked to prepare a list of eminent alumni who have made a mark in their respective profession, in R&D, in academia, or also in society. Traditionally departments have been working in their own chosen areas of specialisation.

Now the time is of inter-disciplinary initiatives in research, that is, research on the interface of two disciplines. The departments have been asked to identify the types of initiatives that can be taken in the new century of the institute.

The departments will be planning National and international academic meets in the true sense in which right professionals and academicians from important research institutes abroad and industrial organisations would come and participate. These meets will be organised as part of the centenary celebrations this year and next year also.

The idea is to bring the contemporary problems from the industrial and professional organisations for our research and undergraduate students to work on, and we also want a great deal of involvement of alumni in this respect also.

How will various organisations contribute to the Centres that you plan to form on centenary



celebrations?

Rather than just academically thinking about these things and proposing centres, we are approaching various industries. People from Railways, Mine Safety Organisation, DLW, Nuclear Power Corporation of India, Atomic Energy Commission, BARC, ISRO, DRDO will come and we will be holding event brainstorming workshops on 10th and 11th of February in which those people would come and participate. We will put four questions to them: The first question is, "If we award a Master's Degree in Dependability Engineering, will those graduates be employable?" This Master's degree course can be 2-year course after B tech programme in any engineering discipline. The second question that we are going to ask those representatives of the industry is whether they would be interested in sponsoring their people for Masters and PhD program here in that area of technology. The third question that we will be putting up to them is whether they would be providing industry problems on which research can be carried out in collaboration with their organisation. Collaborative research projects are those where the scientists and engineers working in the organisation and the students and faculty working in the department can engage in some collaborative research. Because of our B.Tech and M.Tech programs themselves

being research and innovation oriented, we can associate even 2nd-year students in these projects. The fourth question that we will be putting to those organisations is that whether they can provide some launching endowments. We will involve them at the beginning itself so that the centres can flourish with the participation of industry rather than thinking on our own about what is suitable for the national needs. We will be proposing centres of R&D around the themes of the national requirements so that various government and industrial organisations can support us.

Will there be any infrastructural developments in the institute with these celebrations?

We are proposing a few centres :-

Centre for Dependability Engineering – It will include courses on safety, security, reliability, availability, and usability, so that we can prevent the various types of losses that occur during the operation of any system like the material loss, property loss, or loss of lives etcetera. We will have brainstorming workshop on 10th and 11th of February 2018 involving the professional and industrial organisations discussing this centre.

Centre for Research in Planning, Architecture and Disaster Management – It was proposed by one of the members of Board of Governors, Mr Nitin Malhotra who is a graduate of Ceramic engineering department of IIT BHU. All the cities in the country are becoming disaster prone. It is not possible to move. Pollution is very high, because of which people are unable to go to their schools and offices. All these difficulties are there. The idea is to plan Urban and rural settlements and design architectural blueprints for urban settlements keeping in mind the disaster management. So Planning and Architecture, driven by the requirements of Disaster Management. In disaster management, there are many types of initiatives that are possible. Worst affected thing is the communication as the towers fall in a hurricane or typhoon. There are newer technologies available in which the total base station for

communication can be put on a balloon and floated into the air when the disaster occurs so that till the time reconstruction of towers takes place, the communication can be intact.

Centre for Interdisciplinary Research in Automation Control and Instrumentation – In this centre, we can pull the strengths of the department that brings in the synergetic involvement of multiple disciplines for addressing the issues of Industry 4.0. It deals with embedded systems, electronic automation and networking.

Centre for Interdisciplinary Research in Planetary and Space Sciences – A distinguished alumnus of our institute Dr Anil Bhardwaj, who is a director at ISRO, proposed that we should come up with this centre. We can have synergetic involvement of Department of Physics, Electrical Engineering, Electronics Engineering, and Mechanical engineering to work on this idea. This may also involve clubs like Astronomy club which are already exploring this vast domain in the college.

This centenary celebration is focussing on relishing the past and taking the baton of R&D, social outreach as well as humanistic studies. Collaboration with industries is also being given a serious thought, but are there any notable changes directed towards faculty?

There is no denying the fact that all IITs are starving for faculty. The greatness of an institute can be adjudged by the greatness of its faculty. Clearly, for us to be a top-notch institute, we need a faculty of high calibre. During the last 2-3 years, we have added some 100 new faculties. We should have 550 faculties but we are running short with some 250 faculties. I realize that the numbers aren't good but I see a silver lining to it. I see it as an opportunity to enrich our faculty. When you have the names of professors who have graduated from Berkeley, Stanford, Oxford etc on your faculty list, your department not only appears to look good but also gets enriched because, then, you get diverse technological perspectives and new

ideas from across the globe. We are reaching out to our alumni associations through our institute's newsletter with an effort to attract such minds. For this, infrastructure is also important better faculty houses, state of the art library, both of which are being covered in the centenary initiative.

Clearly, an institution prospers by the size of the fund. Do you have a fund raising policy for the institute?

There is an alumni registration portal which is being recast into centenary celebration website. We are also asking the Banaras Alumni Association to host mega alumni meet in Varanasi wherein alumni across the world would be participating. Because these are centenary times, we can expect the number to notch up to thousands. We do have another centenary project that is known as Corpus Fund. Like institutions such as Stanford, Oxford etc where billions of dollars are available in corpus fund, our institution will have a Shatabdi Kosh. An institute of higher learning is supposed to create knowledge, process knowledge and disseminate knowledge. A plethora of newer dimensions can be added (analogous to the Oxford Dictionary and Oxford Press in the Oxford University). This corpus fund should not be less than 20 million dollars. We are going to ask the alumni association to engage this type of corpus fund. We are thinking in terms of a technology park where various companies would come and establish R&D so that students, faculties and scientists could work together on the chosen areas of grand challenges and national needs. IBGAA has promised in one of the alumni meets that it would be generating 1 million dollars. The government of India said that if we could generate a million dollars, they would assist us in the additional funding required for establishing such information technology park. In this way, we can attract sharp minds from other countries as well for research works. Positively, we can get the very cream of SAARC countries for PhD and Masters.

Another giant leap : Harnessing the power of solar energy

A year and a half ago, honourable Director Prof. Rajeev Sangal, during an interview with the team of Institute Newsletter, had announced the initiative of installing Solar Panels having a capacity of 1.5 MW on the roofs of various buildings in the Institute. Since then, this task has been carried forward by completing the installation on almost all the hostels and many of the departments in the institute. Having had said that, in this edition, we would like to carry out a more detailed analysis of this project.

The institute consumes a total of 3 MW of electricity each month. Prior to the installation of solar panels, i.e. when this total energy was being taken from the main grid, each unit was being charged at Rs.12 by the government. After the installation of the Solar Panels, the institute has increased its self-sufficiency in terms of energy.

The solar panels have been installed in the institute with the help of Clean Max Solar, a Mumbai based private firm. Clean Max Solar is a private organisation promoting the usage of Solar energy as an alternative source of energy in Asia. The company has not levied any fee on the Institute for this purpose. The firm has also not been charging any remuneration for the maintenance of these solar panels. The solar panels, as previously pointed out, have a total capacity of 1.5 MW. The firm levies an amount of Rs.5.9 for each unit of electricity generated from these solar panels. This has helped the Institute reduce the expenditure on procurement of electricity and also paved way for sustainable development. This project had cost the contracted firm an amount of Rs.2 crores, which is being reimbursed through the aforementioned arrangement.

Coming to the functioning of this system, the energy generated through the solar panels is integrated into a grid system,



An aerial view of the IIT BHU Solar Energy Project (Photo Credits: Jaseel Muhameed Keloth)

which eventually is transferred to the area of interest.

As part of this project, the company involved trains people in the local areas in the field of maintenance and later recruits them. Thus, this initiative has been serving as a source of employment too.

We can firmly say that this has been a giant leap towards developing a system of the **clean energy system** in accordance with the **UNDP Sustainable** Development Goals. Keeping in view the further developments possible at a later period of time, such as the use of affordable solar energy storage cells and utilisation of the complete roof space, ample

amount of energy can be generated providing the opportunity to produce surplus energy attaining complete energy self-sufficiency. We hope that day is not far away.

We thank Prof. Rajesh Kumar, Chairperson IWD, for providing us the necessary information.

<p>Total Energy consumed by IIT BHU : 3 MW Electricity being acquired through Solar Energy: 1.5 MW Electricity generated in the month of January '18 through this project: 1.25 MW</p>
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Solar panel installation on rooftop of Institute Main Library building

The Transfiguration of MAIN LIBRARY, IIT (BHU)

“I have always imagined that Paradise will be a kind of library.” Jorge Luis Borges

One of the most fundamental institutions of any educational establishment is the library. The temple of thoughts and the birthplace of ideas, a good and well-organized library is a necessity for the growth of an educational facility. The **Main Library of IIT (BHU) Varanasi** is on its way to a monumental change, and we tried to understand the essence of this metamorphosis from the very people who have spent their blood, sweat, and tears in service to the betterment of the Library and the college at large. We thank Mr. Navin Upadhyay, the Deputy Librarian, who earmarked his valuable time to provide us with a deep insight into the undergoing transformation.

After much ambition and planning, the first-floor reading hall has been completely setup and will be fully functional from March of this year. It will be open and running up until late night hours, and 24x7 during the exam days. With a seating capacity of over 300 and new and efficient furnishing, it looks royal. Each desk has a plug point and ample and comfortable workspace. All personal belongings are allowed in the reading room, provided it doesn't disturb the silence of the room and the peace of other people (Obviously!). We were much excited to learn that the entire ground floor: all those nooks, and crannies, we are all familiar with (or not) will undergo a complete renovation, and is expected to revamp our imaginations of what a library can be. The now assigned spaces for the reading rooms and computer room will most likely be turned in to more shelves which can only mean that more and newer books are on their way. Centralized air conditioning, new electrical wiring, and much more is in offing. Our hopes are only so high after that meeting. And for the moments



Main Library IIT BHU

when books aren't enough, and we require our favourite kind of teachers - our friends to study with, the Library has come up with an innovative solution as ideas for spaces of “collaborative learning” is being discussed, with desks designed in a way to promote group studies and discussions. The chances are that we will also be gifted with an Amul store right in the library premises, to keep us hydrated and energized during those long battles with the textbooks.

of those resources have been uploaded to the new network and are easily accessible. A few subscriptions were lost due to the recent shift from the BHU network to the new independent IIT network, which will be recovered and renewed at the earliest. The entire E-library is being redesigned with lots of new material, aiming to support a better quality of research and teaching.

Unlike the many issues in the



The Reading Space in the Library

The scene in the Computer Lab/Digital Library section couldn't get any better. A new and improved lab is strolling in the horizon, with 48 desktops more than sufficiently equipped to handle our craving for knowledge, if and when we have them. All the library housekeeping jobs will be fully computerized, all made possible by the new IIT network. All E-resources will be accessible through the new network. As of now, more than 80%

previous network when the Library didn't have any static and global IP of their own, the new network has opened up many doors and possibilities for the unit. Resource gathering, access, and management have become way more simple and efficient. Keeping track of books and journals have become quite elegant and informative, and it can only get better. With a centralized management system



The Ground Floor of the Library to be revamped

for the entire network directly governed by our institute, it has also become quite easier to check and keep records of the utilization of every resource on the network which, in turn, has made it very simple to add or drop resources depending on its usage. In short, governance throughout the entire network has become quite pleasant. Plans are underway to redesign the Library website as well, in an efficient and user-friendly manner, with the implementation of a web-scale discovery tool, which will hopefully make navigating through the website and searching material a breeze. The library is also providing premium subscriptions to web-based services such as the Grammarly and the Turnitin with high hopes

of them being helpful for the students. Even though all these facilities are still not being fully utilized by us, Mr. Upadhyay remains hopeful of the fact that one day every student of this institute will use them and be benefitted by the vast ocean of resources and subscriptions that have been provided to us.

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So many big plans, that too in such a short span of time, may seem like a far shot from reality. But with the level of dedication, everyone has been working with, all these plans are quite achievable. With skilled and devoted personnel teaming up to improve and renovate the looks and functioning of the library, we have high hopes of a better and reimagined study experience.

Getting to know the new Deans

The Deans for various administrative posts of IIT BHU have been appointed after the assent of the Board of Governors for a period of three years. Here is a glimpse into each of their profiles:

Dean of Academic Affairs (DoAA): Professor A.S.K. Sinha

Professor A.S.K Sinha is from the Department of Chemical Engineering and Technology IIT BHU and has specialized in Heterogeneous Catalysis, Chemical Reaction Engineering, and Hydrogen Engineering. He serves as a



member on the advisory board of Carve Niche Technologies Pvt Limited. He has worked as Associate DoAA, IIT BHU along with former DoAA Professor G.V.S Sastry and is known for introducing various academic reforms in the curriculum of the institute. Professor Sinha has previously worked as the Vice Chairman of the Training and Placement Cell, IT BHU, as a member of the R and D Committee, IIT BHU and as the Coordinator of IT Hostels providing him with vast administrative experience. His main areas of research include

Photocatalysis for Water Splitting and Pollution Control, Conversion of Methanol, to Hydrocarbons, Hydrogen Fuel Cell, Heterogeneous Process for Biodiesel Production, Catalytic Cracking of Methane, Production, Storage and Uses of Hydrogen, Nanomaterials, Functionalisation of Carbon Nanotubes.

**Dean of Student Affairs (DoSA):
Professor B.N. Rai**

A prominent professor of the Chemical Engineering Department, Dr B.N. Rai has more than 25 years of experience in teaching, research and educational administration and he has held quite a number of educational administrative posts including the President of IT Gymkhana 2008-09, Co-Coordinator of



Students Cultural Activity Centre, BHU, 2004, Manager of the BHU team in National Youth Festival amongst others. He took over as the Dean of Students' Affairs on 1st December 2017. His research interests include Industrial Pollution and Control, Bioremediation of Waste, and Transfer Processes. Besides, he has co-authored two books in Hindi: (1) Javiya Padarth: Ushma Rasainic Guna Dharma which was awarded second prize by ministry of non-conventional energy and (2) Taralan (on fluidization).

**Dean of Faculty Affairs (DoFA):
Professor K. K. Shukla**

Professor K K Shukla, is from the Department of Computer Science and Engineering IIT BHU, Before joining the



Institution, Dr. Shukla was with HAL where he was part of the Joint Working Group with UK engineers and actively participated in many projects of national importance, including the LCA program. He also established the Malaviya Center for Information Technology Localization in the Institute with extra mural funding from MeitY. Professor Shukla's interests comprise of Information Security, Machine Learning, Computer Graphics, and Data Mining.

**Dean of Resource and Alumni
(DoRA): Professor Anil Kumar
Tripathi**

Professor Anil Kumar Tripathi from the Department of Computer Science and Engineering is a renowned personality in the Institute with rich experience as the Dean of Resource and Alumni. He got an extension of his tenure in the latest appointments. Professor Tripathi's areas of research involve Parallel/Distributing



Computing, Software Engineering. Professor Tripathi is actively involved in building an alumni network of IIT BHU and has been the backbone of Student Alumni Interaction Cell (SAIC) since its inception. He is currently supervising the Centennial celebrations of the institute.

**Dean of Research and Development (DoRD): Professor Rajiv
Prakash**

Professor Rajiv Prakash, a gold medalist in M.Tech (Material Science) has pursued both his Masters and PhD (Chemistry) from BHU. Before joining the School of Material Science and Technology, Professor Prakash worked as a scientist at IITR-CSIR Lucknow for over seven years. His research domain covers the streams of Materials



Chemistry and Nanotechnology, Conducting Polymer and Composites, Organic Devices, and Sensors and Biosensors. A recipient of Young Scientist Award (UPCST), Young Engineers Award (INAE), and Materials Research Society's India Medal Award, Professor Prakash has over 2817 citations with an h-index of 30 and i-10 index of 80. Professor Prakash is a member of the Advisory Committee of TIFAC (DST) for India Technology Vision Plan 2035 and has 16 patents to his credit. Professor Rajiv Prakash has been the incharge of the Central Instrument Facility IIT BHU and has played a vital role in its performance to cater for the research needs.

In Talks: Vivifying your career

Professor Incharge, Training and Placement Cell, IIT BHU



An interview with Professor Anil Kumar Agarwal, the Professor Incharge of Training and Placement Cell, IIT BHU about the current Placement Session.

What are the changes in the placement scenario after conversion into IIT.

Earlier, we had to call the companies from July, but after the conversion of IIT BHU into IIT-BHU, we have been associated with the AIPC (All IIT Placement Committee): So, now the placement session starts in December. The earlier jobs were categorized into dream jobs, super dream jobs and the ordinary job but now we have a strict policy of one student-one job which enables us to start with the super dream jobs. The previous batches had to go for the low paid jobs offering Rs.4-5 lakhs per annum. The system has now become more efficient and the number of jobs and the respective packages has certainly increased and we are hoping to increase this number in the coming sessions as well.

What were the measures taken by TPO for smooth conduction of the placement session?

The functioning of the online portal of the TPO has facilitated the students by reducing the hassle and enabling them to concentrate more on their skills rather than coming to my office and asking about the company visit. Also, we allow the students to upload upto 10 resumes which allow them to go for various profiles in different companies. I have tried to facilitate the students by passing on the information, and a team was

formed consisting of students, because of which the concept of core team came into the picture which later became official. Penalty structure was also strict this year, and measures were taken against students who tried to adopt unfair means.

How would you compare the placements of the previous and this year?

This year's placement has been better than previous year's. The credit goes to the whole TPO team. The penalty structure has been strict this year ensuring that no unfair means can be practised during the exam. Any student adopting unfair means was debarred which made them prepare seriously for the placements, thus an increase in the number of students placed.

How would you comment on the less number of core companies coming to our college?

When you join a company you are involved in a lot of things, you may lead a group of people or become a part of the team. What you need is to understand the larger project and all the managerial aspects of an industry. Even if you join a core company, most of the time your job is to manage and the technicality remains in the picture upto a certain time. So, whatever subject you learn, it basically helps you to develop an understanding to find out what best solution can be there for a given problem. It is true that the number of core companies is less as compared to the non-core. There have been a lot of cases where the students after getting a job

ditched the company without any prior notice. It doesn't affect that student but the relationship between the college and the company would be fractured which eventually leads to the degradation in the number of core companies visiting the campus. Beside this, there are a fewer number of students interested in the core jobs.

Do you think that being an old institute, the placement has been affected in any way?

It does matter but at the same time, it is just like a double-edged sword. Being an old and reputed institute brings a lot of expectations and if the performance is not upto the mark then it creates a problem. But it is obvious that the expectations are always from a performer and IIT (BHU) is improving and performing very well as seen in the placement statistics of every year.

How has been your experience as the TPO head?

When I took over, I saw a lot of students going for very low-paid jobs and were satisfied as well. Getting the students involved in the TPO was a huge step which turned out very well. I have been fortunate enough to receive tremendous cooperation from the students to change the scenario. It's been a great journey and I am positive that IIT-BHU will encounter a huge number of offers in the coming years as well.

Message for the students

I would suggest that the students maintain a balance between the academics and co-curricular activities. Do well in academics and do try to make a good use of the opportunities available beyond the class. Attend your classes, complete your assignments and take your projects very seriously. Join the language classes, become part of a society or student gymkhana. It is not necessary for you to be part of a formal organization made for students. You can volunteer for a good cause as well. These societies and groups, where you get yourself attached to the people, take you to a very different platform which gives you a lot of maturity and understanding which you can't get just by reading your textbooks.

Innovating for change : Modification in the design of Jetty

“The improvisational ability to lead adaptively relies on responding to the present situation rather than importing the past into the present and laying it on the current situation like an imperfect template.”

– Ronald A Heifetz

Often, the innovations made in the small things that we encounter in our daily life are the ones that end up revolutionising the world. Be it be the diesel engine or the mobile phones over the conventional landlines, or the usage of e-services for governance, simple changes that aim at the rudimentary elements of human life have a global impact. Many times we realize the gravity of these innovations after they revolutionise the world around us. Wouldn't it be a great opportunity to learn about such promising ideas while they are in their infancy and follow them in their process of development? Well, certainly it would be and that is what we have thought of presenting you readers this time: The tale of how the students of IIT BHU have successfully contributed in bringing an innovative change in the design of jetties used for transportation on water.

The team in the limelight consists of students from the Department of Civil Engineering, IIT BHU Varanasi working towards the modernization of Inland waterways and maritime infrastructure. They are working under the mentorship of Dr Rajesh Kumar and Dr K.K. Pandey of the same department. Considering the stats of emissions per tonne per km and cost of transportation per km, the water

bodies turn out to be the most environmentally friendly and economical mode of transportation. However, the existing infrastructure isn't capable of utilizing the water-based transportation efficiently and is often hindered by seasonal/tidal fluctuations of the water level. The present infrastructure doesn't even handle the cruise-tourism sector with convenience due to the lack of solutions of port and also due to the incapability of the jetty infrastructure to accommodate both the cargo transportation and cruise tourism.

Observing the inconvenient and inefficient infrastructure, the students have started exploring the areas which demand immediate innovations to accommodate both the sectors. This pointed them towards one aspect of this sector which is the port and jetty infrastructure. The team emerged with a concept of Self-Adjusting Fixed Type Jetty (SAFTJ) which can adapt itself according to the changing horizontal and vertical water profile due to the seasonal/tidal fluctuation of the water level. The concept ensures safe and fixed free-board for the convenience of passengers using the jetty for boarding/deboarding from the ship's deck.

This also helps to reduce the cargo handling duration, thus ramping up the port handling capacity. Unlike the existing infrastructure, a jetty based on the concept of SAFTJ can accommodate both cargo and passenger transportation, thus making it even more economically viable. **The SAFTJ system responds to a certain threshold rise/fall of water level and the locking and unlocking of the structures are controlled by a state of the art in-house developed locking mechanism which uses only natural forces (gravitational and buoyant**

forces) for the actuation. This ensures the safety and reliability of structure even under adverse climatic conditions.

A small-scale model of SAFTJ has been successfully designed, developed and tested in the Ganga laboratory, Department of Civil Engineering, IIT (BHU) Varanasi under static water flow conditions. The project was financially supported by Project Varanasi, Design and Innovation Hub (DIH), IIT (BHU) Varanasi. The concept has been filed for a patent which has recently been published and currently the team is working to transfer the technology to maritime industry and to develop an industry focused solution based on this concept. The concept was exhibited at Maritime Nation India 2017 exhibition which was held recently in Mumbai and was appreciated by the maritime industry professionals.



Patent number:

201711031587

Team members :

1. Ankit Patel
2. Achin Agrawal
3. Keshav Pathak
4. Aman Kr. Maurya

Team Mentors :

1. Dr Rajesh Kumar- Professor, Department of Civil Engineering.
2. Dr K.K. Pandey- Associate Professor, Department of Civil Engineering



A vision turned into reality :

Academia to the Field

“To learn and not to do is really not to learn. To know and not to do is really not to know.”
Stephen R Covey

All of us discuss in the classrooms that the environment is degrading day by day, and if we do not resort to remedial actions on a warfoot basis, the moment can pass away and it would be too late to do anything then. In such a formidable situation, isn't the collaboration of academia with the people who are actually working in the field out there the need of the hour? The following is a thought-provoking inspirational story of a Farmer and a Professor who have taken giant leaps towards realising this vision. The protagonists of this journey are Dr. Jyoti Prasad Chakraborty, a Professor of Reaction Engineering in the Department of Chemical Engineering and Technology, IIT BHU and Mr Subash Chandra Singh, a Farmer from the rural area of Mirzapur who are working together to optimise the methodology adopted in Brickfields through an innovative technology. Dr. Chakraborty is helping Mr Subash Chandra Singh in getting a patent for his idea in the field of 'Reducing heat loss in Brickfields.'

Brick Fields around Ganga have been a major source of pollution by contaminating the air. Besides, the heat released by them not only increases the temperature of the environment but also warms the soil resulting in the vaporisation of water present in it. This, in turn, makes the soil unfit for vegetation which is clearly a grave situation. Adding to the woes are the statistics that Uttar Pradesh is one of the worst affected areas due to these upshots. Uttar Pradesh is home to a staggering number of about 18,000 brick kilns with the adjoining areas of Varanasi and Mirzapur accounting to 1000 of them. While the deterioration of air quality in Urban areas catches our attention quite often, the situation in rural areas goes unremarked. This very condition had made Mr Subash Chandra Singh brood over the solutions to curtail this pandemic.

Mr Subhash Chandra Singh had worked for Hindalco, Renukoot for a period of over 15 years. He has had some

practical and intuitive idea about the heat transfer processes involved in the melting of Aluminium for quite some time. Despite being a regular worker, the background of him not having the slightest theoretical knowledge about the disciplines of Heat Transfer had not been able to hinder him from developing an improvised process of brick manufacturing wherein cheaper and effective materials like fire bricks and ceramic wool play the role of insulating materials. This would decrease the conductivity of the walls and hence reduce the heat loss from the walls. Isn't this a simple yet elegant idea?

In the beginning of the summer of 2017, the Head of the Department of Chemical Engineering and Technology IIT BHU, Professor P. K. Mishra had received a letter expounding about an idea of a farmer to reduce the heat losses in the brickfields and his intention to seek help from IIT BHU in this regard. Professor P.K. Mishra suggested Dr. Chakraborty take up that project. After going through the documents presented by Mr Singh, Dr. Chakraborty had come to an opinion that it would be wise to file a patent so as to prohibit anyone from wrongly



Mr Singh(Right) and
 Professor Chakraborty(left)
 at IFFCO, Lucknow

claiming the idea. For this purpose, Dr. Chakraborty enquired about the patenting process in IIT BHU and formally initiated the process of patenting. Some experimental results and figures are needed to validate the effectiveness of the process. Accordingly, Dr. Chakraborty has been performing the experiments concerning the subject at hand. Once the experiments are completed, they can submit the results and subsequently the results would be filed in the Indian Patenting Office within a period of 15 days. After this process, Mr Singh's patent will be declared officially.

Mr Singh's idea was hailed by the IFFCO (Indian Farmers Fertilizer Cooperative) and was awarded prize money of Rs. 1,00,000 under the IFFCO Rural Innovation Scholarship (IRIS) 2017. Mr Singh's innovation had emerged as the winner from among 4000 entries. Dr. Chakraborty accompanied him to IFFCO Lucknow in order to help him in explaining the technicalities of the project during the presentation. This was also praised by the national dailies then. Also, a company situated in Lucknow that connects to the farmers had been helpful in spreading the news through the

radio programmes of IFFCO which helped them to further develop their bonds with IFFCO. Dr. Chakraborty and Mr Singh went to Headquarters of IFFCO situated in New Delhi and delivered a presentation there.

Dr. Chakraborty and Professor P. K. Mishra have submitted the proposal to Project Varanasi which has been going on at a large scale in IIT BHU and has successfully received the approval of the funding of this project. The next step in the project is to construct a miniature brick field in a small 20 square feet area with half of it in the underground and the other half above the surface maintaining the surface to volume ratio of the brickfields in practice, with the model simulating the practical environment of the brickfields. Through this model, they will be manufacturing about 1000 bricks while burning coal without the insulating materials. The process is repeated again by using the insulating material this time which would help them in estimating the percentage reduction in the use of coal.

The reduction in the usage of the coal implies the reduction in the Carbondioxide emissions into the air. If adopted successfully in the industry, this would be of tremendous help in

ameliorating the atmosphere. The reduced burning of coal will also reduce the heat being emitted into the soil, voila good for vegetation. Besides being eco-friendly, the process also produces firebricks that are durable for almost 25 years and with the chances of degradation being almost nullified due to the manufacturing at high temperatures. With the patent, Mr Singh would also be able to reap the benefits of his idea financially.

The results of the experiment would be out in a month. After this, Dr. Chakraborty is planning to use different insulating materials to determine the ideal one for the use. This means that they are going to seek some additional extensions under the Project Varanasi. Also, the team of Mr Singh and Dr. Chakraborty are willing to approach IFFCO to seek their financial help in setting up a brickfield for Mr Subash Chandra Singh which would act as a source of livelihood to him.

We hope that the fraternity of IIT BHU would come up with many more initiatives like this leading the path of Sustainable Development and Connecting Academia with the Industry and People.

Revisiting a visionary : Professor TR Anantharaman

Professor Tanjore Ramachandra Anantharaman (fondly referred to as Prof. TRA by his students), a guiding spirit for all modern metallurgists in India, was a man of transformation and brought in key changes in whichever path of activity he undertook. Thus, it is apt to say that Professor TRA, through his distinguished contributions to metallurgical education and research, by nurturing several centres for Advanced Studies in Physical and Mechanical Metallurgy, Materials Characterisation, Yoga Sadhana, Acharya Kul and the like at Varanasi and by inspiring generations of students,

teachers and Karmacharis, had augured a vibrant academic atmosphere on the campus in general. This had tremendous influence on the growth of Metallurgy in Independent India. As quoted in a citation, "The primary credit for the outstanding profile of present day Indian Metallurgical research rightly belongs to him". He was born in Tamil Nadu, India, on November 25, 1927. He was a brilliant student right from his school days, be it in oriental or occidental studies, some part of which he completed in Rajahmundry where his father was a Sanskrit teacher in Oriental College, which paved way for him to

obtain his B.Sc. (Hons.) degree in Chemistry from Madras University in 1947 and eventually his doctorate Degree for his researches in Physical Metallurgy at Oxford University, England, the D.Phil. (Oxon) degree in 1954 besides two other Degrees in between. As he secured the First Rank in all University examinations, he was the only Indian to be awarded Rhodes scholarship of 1951. Later he was awarded the D.Sc. (Oxon) degree in 1990 in recognition of his outstanding research output in many areas of Metallurgy and Materials Science.

Prof. TRA's professional career spanning over nearly six decades starting as Research Associate, Max Planck Institute for Metallurgical Research, Stuttgart, Germany (1954-56), took him to the highest Office of Rector and Acting Vice-Chancellor, Banaras Hindu University which included a six-year period as Faculty at IISc, Bangalore and Director, Institute of Technology, Banaras Hindu University. After his retirement from active services at Varanasi, He also served as Director, Thapar Institute of Engineering & Technology (Deemed University), Patiala (1989-92) and also as CSIR Emeritus Scientist (1987-89, 1993- 95) and INSA Senior Scientist (1995-2000), spending the 1993-2000 period at the National Physical Laboratory, New Delhi.

Prof. TRA's research accomplishments encompass a broad spectrum of topics in Physical Metallurgy and Material Science. However, his most creative efforts were pioneering contributions on Rapidly Solidified Alloys and Metallic Glasses. Professor Anantharaman published over 250 scientific articles and he co-authored along with his colleagues a book on Rapidly Solidified Metals: A Technological Overview in 1987. Outside his field of S&T activity, Professor TRA had been actively engaged in studies related to India's Scientific and Technological Heritage, which culminated in a monograph entitled The Rustless Wonder: A Study of the Iron Pillar at Delhi, published by Vigyan Prasar, Government of India, in 1996. This monograph has been translated into Hindi and Tamil, its CD-Rom has proved popular and it has stimulated further researches and publications on India's Metallurgical Heritage.

Several National Academies, Trusts and Institutions awarded Professor Anantharaman Medals and Prizes such as Kamani Gold Medal of the Indian Institute of Metals (IIM) in 1960, Shanti Swarup Bhatnagar Prize of the Council of Scientific and Industrial Research

(CSIR) for Engineering Sciences in 1967, Federation of Indian Chambers of Commerce and Industry (FICCI) Award for Individual Initiative in Science and Technology in 1972, Bhatnagar Medal of the Indian National Science Academy (INSA) in 1982, Outstanding Teacher of an Engineering Institution - National Award conferred by Indian Society of Technical Education (ISTE) and Uttar Pradesh Government in 1991, IIM Platinum Medal, the highest conferment of the Indian Institute of Metals, in 1996, First-Ever Lifetime Achievement Award in Metallurgy, instituted by Union Ministry of Steel and Mines in 2004.

Prof. TRA was elected Fellow of the Indian Academy of Sciences (1964), the Indian National Science Academy (1972), the Institution of Metallurgists, London (1968), Indian National Academy of Engineering (1987 - its Foundation Year) and the ASM International (1990). In 1989, he became the first Afro-Asian to be conferred the highly coveted Sorby Award of the International Metallographic Society for his life-long contributions to Metallography. He was elected as President of the Indian Institute of Metals (IIM) in 1979 and The Electron Microscope Society of India in 1980.

Having established a world-renowned school of metallurgists, Professor TRA directed his attention to Spirituality, Philosophy and Religion, in particular the Vedic and Yogic traditions of India. During the sixties and seventies, inspired by Acharya Vinoba Bhave, he participated in several programmes of the Gandhian Sarvodaya Movement. In 1974, he took steps to establish the Yoga Sadhana Kendra (Centre for Yoga) as an interdisciplinary academic unit of BHU and directed its activities for four years. This Centre is still active and popular in the BHU Campus. He also took steps to launch the Indian Academy of Yoga as a



Learned Society in 1981. He was Founder-President of the Academy during 1981-83.

Apart from over 50 articles on Philosophy, Religion and Ethics, Prof. TRA also authored several books on Bhagavad Gita and meditation in German and English and a couple of them are mentioned here; Ekenntis durch Meditation (Knowledge through Meditation) published in 1977 by the Deutsch-Indische Gesellschaft, Stuttgart and a monograph entitled Ancient Yoga and Modern Science was brought out in 1997 by PHISPC, the National Project on History of Indian Science, Philosophy and Culture. In recognition of his Sanskrit scholarship, the Kashi Pandita Sabha (Scholars Guild of Varanasi) conferred on him in 1980 the title Vidya-Vachaspati, this conferment being equivalent to a Doctorate degree in Philosophy and Religion. In 2001, he was conferred the Dr. B.C. Roy National Award for 'Eminence in Philosophy', the third person and the first scientist to receive it during the last four decades.

After retirement from his active academic work Prof. TRA functioned as Kula Acharya (Chancellor) of Ashram Atmadeep, a Research Institute for the Seculo-Spiritual Heritage of India (RISHI) which he so passionately created. He envisioned it as Headquarters of a Unique Movement for the Third Millennium to rejuvenate the Human Family through Secular Spirituality and Scientific Yoga. The Ashram is located just south of Delhi, in DLF City, Gurgaon. The Spiritual light left for its heavenly abode on 18th June, 2009.

Faculty Achievements

Professor Pradeep Kumar Jain of Electronics Engineering has been appointed as the Director, NIT Patna.

Professor B Mishra of Pharmaceutical Engineering and Technology has been conferred with the Pharma Ratna 2017 Lifetime Achievement Award.

Professor Shri Ram of Mathematical Sciences has been elected as the Fellow of the Royal Astronomical Society.

Dr Santanu Das of Ceramic Engineering has been elevated to the level of Senior Member of IEEE. Senior Member is the highest professional grade in IEEE to which a member may apply.

Dr Shyam Kamal of Electrical Engineering has been elected as a Guest Editor of the Journal of Complexity (Impact Factor 4.621) for the Special Issue on 'Bio-inspired Learning and Adaptation for Optimisation and Control of Complex Systems.'

Dr Abhishek Kumar Srivastava of Physics is an Indian member of ISSI-BJ International Team on "Pulsation in Solar Flares: Matching Observations and Models", and participated in its first meeting during October 2017 at NSSC, Beijing, China.

Professor S K Sharma of Mechanical Engineering has been appointed as the Observer for the National Youth Festival to be held in

Ranchi from 16-19 February 2019. He also worked as the observer for the South Zone Youth Festival held at Hindustan College of Technology and Science between 18-22 December 2017. These Youth Festivals are the initiatives of Ministry of Youth Affairs and Sports, and the Association of Indian Universities, New Delhi.

Dr. Nawal Kishore and Professor Sanjay Kumar Sharma of Mining Engineering have co-authored a book under the title, '26 Practice Sets for Competitive Mining Exams' published by Denett and Co, Nagpur.

Professor Shailendra Kumar Shukla of Mechanical Engineering will be acting as a Board Member in the Scientific and Technical Committee of ICEER-2018 to be held in Prague from 23 July 2018-27 July 2018.

Professor Yogesh Chandra Sharma of Chemistry was elected as the Fellow, Bio-Tech Research Society of India (BRSI). Professor Yogesh was conferred the Lifetime Achievement Award, 2017 in Chemical Sciences by VIRA International, Chennai.

Dr M S Muttu of Pharmaceutical Engineering and Technology has supervised the project that has won the first prize in Poster Presentation under Nanotechnology domain at the International Conference on 'Innovation in Pharmaceutical Research by

Interdisciplinary Research,' NIPiCON-2018 held between 23-25 January 2018 in the Nirma Institute of Pharmacy, Ahmedabad, Gujarat. Ahmedabad, Gujarat.

Dr. Manoj Kumar Meshram of Electronics Engineering has been awarded the INSA-DFG Fellowship 2018. He has also visited the Stuttgart University during 1 July 2017-28 August 2017.

Dr Marshal Dhayal of Biomedical Engineering has received the Young Scientist Award from the Society for Biomaterials and Artificial Organs (India) during the jointly organized XXVII National Conference of SBAOI, Asia Pacific Society for Artificial Organs Meeting (APSAO 2017) and the 6th Asian Biomaterials Congress (ABMC6) with a theme 'Innovative Biomaterials: Technologies for Life and Society' between 25-27 October 2017 at Thiruvananthapuram, India.

Dr Somak Bhattacharyya of Electronics Engineering has been offered Individual Membership from the International Union of Radio Sciences (URSI).

Professor S N Ojha of Metallurgical Engineering has been conferred the 'Eminent Emerging Engineer Award' of the Institution of Engineers during the 31st convention held at Kolkata on 19 January 2018.

Invited Talks

Jeyakumar Kandasamy of Chemistry delivered a lecture at the conference 'Contemporary Facets in Organic Synthesis' (CFOS 2017), IIT Roorkee during 22-24 December 2017 at the conference titled, 'Emerging Chemistry and Biology of Carbohydrates' (ECBC-2017) (CARBO-XXXII) organized at IIT Kharagpur between 18-20 December 2017.

Abhishek Kumar Srivastava of

Physics delivered a guest lecture at the AOGS 2017 held between 6-11 August 2017 in Singapore. Dr Abhishek Kumar has also presided on the topic 'High-Frequency Torsional Alfvén as an Energy source in the Solar Corona' in the international conference, 'Our mysterious Sun: Magnetic coupling between solar interior and atmosphere' held in Tbilisi, Georgia between 25-29 September 2017.

Chandana Rath of Material Science and Technology delivered a lecture at the Department of Physics, University of Girona, Spain. She has also presided at the Chemical Engineering Department, University of Girona, Spain. Dr Chandana Rath has also delivered a lecture at the Nanoparticles National Conference on Condensed Matter Days conducted in the Department of Physics, Tezpur University, Tezpur between 28-31 August 2017.

M. K. Verma of Mechanical Engineering has delivered expert lectures on various topics of power systems at YCCE, Nagpur under the Visiting Professor scheme between 18-21 December 2017.

Yogesh Chandra Sharma of Chemistry delivered a lecture at Vaal University of Technology, Johannesburg on 18 Oct 2017. Professor Yogesh Chandra has also delivered a lecture at NFEA 2017, Teaching Learning Cell (TLC), IIT BHU Varanasi.

Kamalesh Singh of Metallurgical Engineering delivered a lecture on the topic, 'How to get during the Science and Technology Sensitization Programme for the Women leading towards Entrepreneurship on 6 Oct 2017, at National Metallurgical Laboratory, Jamshedpur, which was organized jointly by National Academy of Science, India and NML Jamshedpur.

Bhupendra Singh of Ceramic Engineering delivered a guest lecture at

the second International Conference on Power & Energy Engineering held at Munich, Germany on 17-18 July 2017.

Sanjay Kumar of Mathematical Sciences delivered a lecture in Invertis Inspire, at Invertis University, Bareilly, UP, India during 5-7 October 2017. He also delivered a lecture at the second International Conference on Modern Mathematical Methods and High-Performance Computing in Science and Technology at Inderprastha Engineering College, India during 4-6 January 2019.

Manoj Kumar Meshram of Electronics Engineering delivered a lecture at Samrat Ashok Technological Institute, Madhya Pradesh.

Marshal Dhayal of Biomedical engineering delivered an invited talk at Deccan College of Medical Sciences, Hyderabad. He has also delivered an invited talk at S S Jain Subodh PG (Autonomous) College, Jaipur.

Kishor Prabhakar Sarawadekar of Electronics Engineering delivered a

lecture at the 4th Annual Global Congress of Knowledge Economy-2017, Qingdao, China, during 19-21, September 2017. Dr Sarawadekar has also presided at the BIT's 11th World Congress of Regenerative Medicine & Stem Cell, Singapore, during 14-16 November 2017. He has also delivered a lecture at the International Conference on Cognitive Informatics and Soft Computing held in VBIT Hyderabad.

S. N. Ojha of Metallurgical Engineering delivered a lecture during a national conference on the strategy of steels production of 300 MT by 2030, organised by The Institution of Engineers on 19-20 January 2018 in Kolkata.

Hiralal Pramanik of Chemical Engineering and Technology has delivered a presentation at the International Conference on Advanced Energy Material (AEM-2017) held from 11-13th September 2017 at University of Surrey, England.

Publications

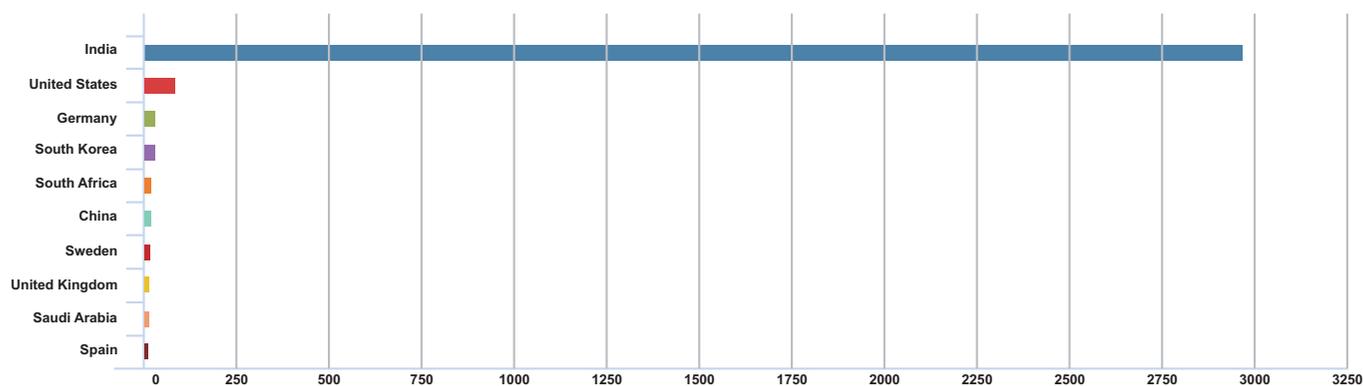
IIT BHU is committed to being a leading research institution. Since January 2017, over 800 papers have been published in reputed international and national publications.

Collaborations

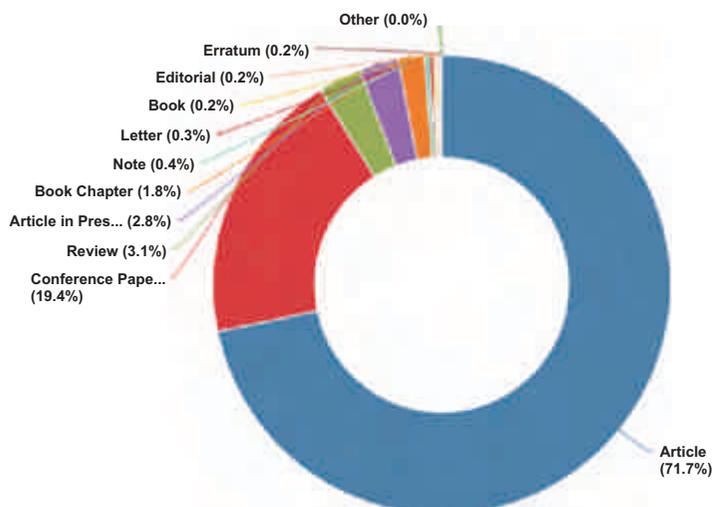
IIT BHU has performed research in collaboration with over 157 Educational and Research Institutions from 48 countries. Internationally collaborative research is performed with top Institutions and research centers including Nanyang Technological University (Singapore), National University of Ireland, Texas A & M University and National Oceanic and Atmospheric Administration (US), Korea Institute of Science and Technology (South Korea), Swinburne University of Technology (Australia), Nanjing University (China). Besides sister IIT's and other top universities IIT BHU collaborates with leading national research centers such as the Bhabha Atomic Research Centre, Central Drug Research Institute, Indian Maritime University, International Centre for Agricultural Research and the Indira Gandhi Centre for Atomic Research.

Documents by country/territory

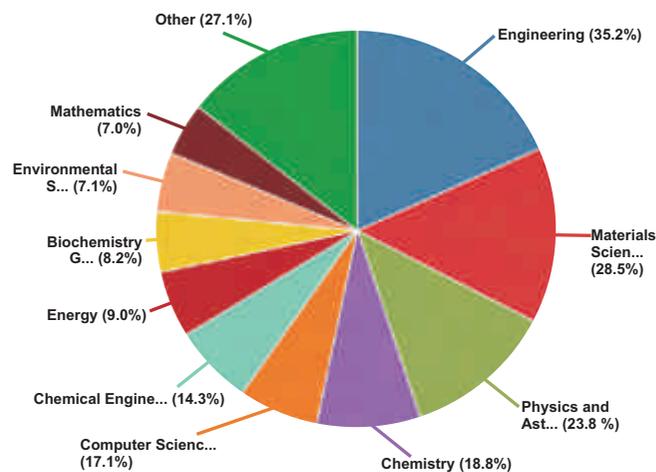
Compare the document counts for up to 15 countries/territories



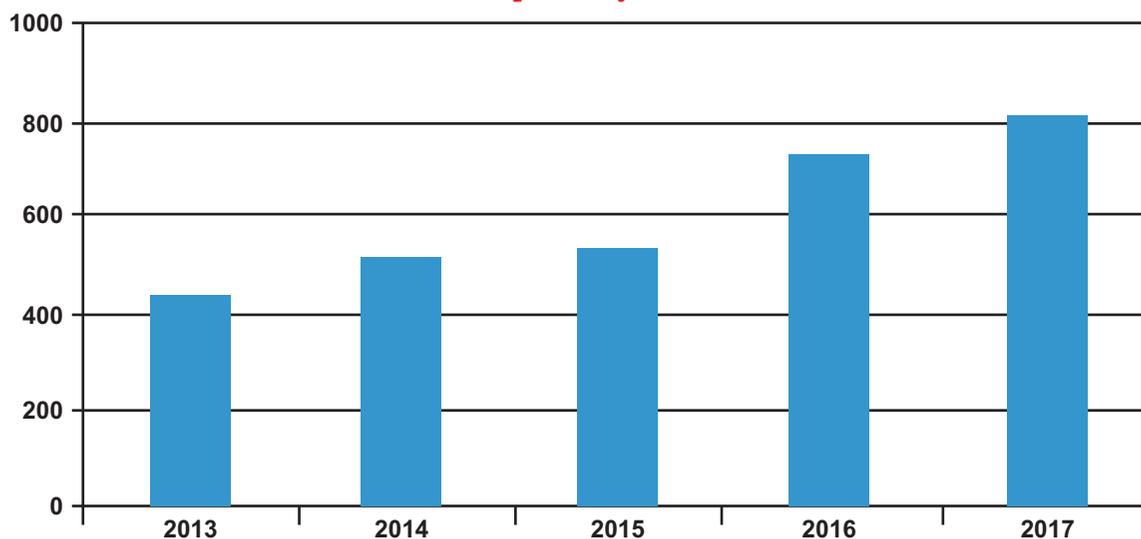
Documents by type



Documents by subject areas



No. of research papers published in respective years



List of Sponsored Projects

Sponsored Projects sanctioned between August 2017 to January 2018

S. No.	Title of Project	Name of PI/Co-PI	Date of Sanction	Duration	Agency	Value of the Project
1	Development of Portable electrochemical sensor for hydrogen peroxide	Prof. P.C. Pandey	01.08.17	3 Yrs.	BRNS, DAE	Rs. 34,92,750
2	Development and structural characterization of coolant and sensors	Dr. Joysurya Basu	03.08.17	1 Yr (initially) (Proposed:3Yrs.)	UGC-DAE	Rs. 2,46,600 (1st installment) (Proposed: Rs. 18,18,000)
3	Design and Development of Combined Cooling and Power Generation System	Prof. Shailendra Kumar Shukla	9.11.17	2 Yrs.	CST, UP	Rs. 9,60,000
4	Incorporating Intelligence in Email System	Dr. Ruchir Gupta	29.11.17	2 Yrs.	BRNS, DAE	Rs. 13,68,000

List of patents filed between August 2017 to January 2018

S. No.	Name of Inventor	Title of the Invention	Department
1	Dr. P.K. Roy, S.K. Saddam Hossain	A method to prepare low temperature co-fired ceramic matrix composite of ferrite and ferroelectric for EMI filter applications.	Ceramic Engineering
2	Prof. Pralay Maity & Arpan Biswas	Hybrid shape memory polymer for self-expandable stent application.	SMST
3	Dr. K.K. Pandey, Dr. Rajesh Kumar, Ankit Patel, Achin Agrawal	Self-adjusting fixed type jetty	Civil Engineering
4	Dr. S. Krishnamurthy, Mr. Pankaj Paliwal, Mr. S.K. Arepalli	Novel Oral Formulation of medicated bioactive glass and its use in treating gastroduodenal ulcers.	Pharmaceutics & Ceramic Engineering
5	Dr. S. Krishnamurthy, Mr. Pankaj Paliwal	Novel therapeutic strategy using medicated biomaterial for treatment of cerebral ischemia.	Pharmaceutics
6	Dr. Sanjay Kumar Singh, Debanjan Sadhya, Anshul Sharma, Ravi Shankar Singh, Kundan Kumar, Rishav Singh	System and method for cattle management using smart devices and unique biometric identifiers	Computer Science & Engineering
7	Dr. Bhupendra Singh, Aman Bhardwaj	Novel Solution Phase Route for the Synthesis of Titanium (IV) Pyrophosphate Compounds	Ceramic Engineering
8	Dr. P.K. Roy, S.K. Saddam Hossain	High-temperature applicable binder from Egg Shell and a method of synthesis thereof	Ceramic Engineering
9	Dr. S. Krishnamurthy, Mr. Pankaj Paliwal, Shreyasi Majumdar, Mr. S.K. Arepalli	Novel biomaterial scaffold in the treatment of peripheral nerve injury and neuropathic pain	Pharmaceutics & Ceramic Engineering
10	Prof. Rajiv Prakash & Narsingh Raw Nirala; Monika Srivastava	A sensor for early and accurate diagnosis of prostatic cancer based on Prostate-specific antigen (PSA) using PSA Aptamer and PSA - antibody modified electrodes and process thereof.	SMST
11	Dr. Santanu Das, Shaikh Mohammad Zaeem	Green and fast reduction of graphene oxide using organic acid solution/organic solvent and make the supercapacitor devices with high charge-discharge	Ceramic Engineering
12	Dr. P.K. Roy, S.K. Saddam Hossain, Ram Pyare	Manufacture of Ceramics from a river silt and a method of synthesis thereof	Ceramic Engineering
13	Dr. S.K. Singh, Dr. G. P. Modi, Mr. D. Kumar, Ms. R. Swetha, Mr. C. Gayen, Mr. A. Ganeshpurkar	Novel sulfonamide derivatives as selective Matrix Metallo Proteinase (MMP) and acetylcholine esterase (AChE) inhibitors as potential therapeutic agents for the treatment of Alzheimer's disease.	Pharmaceutics
14	Dr. P.K. Roy, Deepshikha Shekhawat	High energy product hard magnet having improved magnetic properties and method of making same	Ceramic Engineering
15	Dr. Santanu Das, Shaikh Mohammad Zaeem, Nitish Agrawal	Development of a novel method for the reduction of graphene oxide to produce high surface area reduced graphene oxide for high-efficiency electro-catalytic applications.	Ceramic Engineering
16	Dr. Nand Kishore Prasad, Prof. R.K. Mandal, Manas Srivastav	AC magnetic field dependent magnetic hyperthermia for controlled heating near therapeutic temperature (~315 K)	Metallurgical Engineering
17	Dr. P.K. Roy, S.K. Saddam Hossain	Synthetic wollastonite derived from waste materials and a method of synthesis thereof	Ceramic Engineering

List of MOUs signed by IIT (BHU) between August 2017 to January 2018

National MOUs :

1. TATA Motors Limited, Mumbai on 31.08.2017
2. Indian Refractory Makers Association (IRMA), Kolkata on 17.10.2017
3. HP India Sales Pvt. Ltd., No. 24, Salarpuria Arena, Hosur Main Road, Adugodi, Bangalore, Nalanda Foundation, D-35 Defence Enclave, New Delhi, Drstikona Consultancy and Program Management Services Pvt. Ltd., F-124, Sarita Vihar, New Delhi on 12.01.2018
4. Council of Science & Technology, UP (CST, UP), Lucknow on 17.01.2018

International MOUs :

1. Louisiana State University Health Sciences Centre - New Orleans, USA (LSUHSC-NO) on 06.05.2017
2. Institute of Inorganic and Materials Chemistry, University of Cologne, Cologne, Germany on 29.6.2017

Citizen's Charter/नागरिक घोषणापत्र

भारतीय प्रौद्योगिकी संस्थान (काशी हिन्दू विश्वविद्यालय) की प्रशासनिक निगरानी समिति द्वारा तैयार किये गए सिटिजन चार्टर को संस्थान के निदेशक महोदय द्वारा समिति के सदस्यों, संस्थान के अधिष्ठाताओं, प्रभारी आचार्यों, कुलसचिव व अन्य वरिष्ठ अधिकारियों के साथ विस्तृत चर्चा के बाद अनुमोदित कर दिया गया है।

संस्थान में सिटिजन चार्टर को स्वीकृति मिलने से यहाँ के प्रशासनिक, वित्त, शोध एवं अनुसंधान, शैक्षणिक आदि कार्यों में तत्परता और तीव्रता आएगी। साथ ही संस्थान में विभिन्न विभागों में किये जाने वाले कार्यों को पूरा करने की निश्चित तिथि तय हो गई है। इससे किसी भी छात्र या कर्मचारी का कार्य तय समय-सीमा के भीतर ही संबंधित विभाग द्वारा कर दिया जाएगा।



हिन्दी पखवाड़ा (सितंबर 1-15, 2017)



उद्घाटन समारोह 01.09.2017



हिन्दी की पुस्तकों की प्रदर्शनी 04.09.2017



हिन्दी टिप्पणलेखन एवं पत्राचार प्रतियोगिता 06.09.2017



हिन्दी दिवस समारोह 14.09.2017

कर्मचारी पुरस्कार एवं उपलब्धि तालिका

संस्थान के विद्युत अभियांत्रिकी विभाग में कार्यरत श्री सतीश कुमार सिंह, वरिष्ठ तकनीशियन को अनुकरणीय सेवाएं देने हेतु प्रशस्ति पत्र प्रदान किया गया है। अंतर भारतीय प्रौद्योगिकी संस्थान कर्मचारी खेल-कूद प्रतियोगिता जो कि भारतीय प्रौद्योगिकी संस्थान, मद्रास में 25 से 30 दिसम्बर 2017 के बीच आयोजित हुई थी, में संस्थान के कर्मचारियों ने विभिन्न खेल प्रतियोगिताओं में भाग लिया। उक्त प्रतियोगिता में संस्थान को भाला फेंक (जैवलिन थ्रो) प्रतियोगिता में स्वर्णपदक, क्रिकेट में रजत पदक व वॉलीबाल, बैडमिंटन एवं लंबी कूद प्रतियोगिताओं में एक-एक कांस्य पदक प्राप्त हुए।

वॉलीबाल प्रतियोगिता में कांस्य पदक विजेता प्रतिभागियों के नाम इस प्रकार है :

क्र.सं.	नाम	पदनाम	विभाग
1.	श्री आर.बी. भण्डारी (कप्तान)	वरिष्ठ तकनीशियन	सिविल अभियांत्रिकी विभाग
2.	डॉ. बी.एन. राय	आचार्य	रासायनिक अभियांत्रिकी एवं प्रौद्योगिकी विभाग
3.	डॉ. प्रभाष भारद्वाज	सह-आचार्य	यांत्रिकी अभियांत्रिकी विभाग
4.	श्री नीतिन कुमार यादव	वरिष्ठ सहायक	प्रशासनअनुभाग
5.	श्री विजय कुमार	वरिष्ठ तकनीशियन	मुख्य कार्यशाला
6.	श्री अमित कुमार सिंह	वरिष्ठ तकनीशियन	सिविल अभियांत्रिकी विभाग
7.	श्री भागमल सिंह	तकनीकी अधीक्षक	सिरामिक अभियांत्रिकी विभाग

Winners of Inter IIT Sports Meet (Staff)



Winners of Flower Show



8.	श्री पूरन सिंह राना	कनिष्ठ तकनीशियन	रसायन विभाग
9.	श्री रविन्द्र कुमार	वरिष्ठ तकनीशियन	मुख्य कार्यशाला
10.	डॉ. सेन्थीलराजा ए.	सह-आचार्य	भैषजकीय अभियांत्रिकी एवं प्रौद्योगिकी विभाग

बैडमिंटन प्रतियोगिता में कांस्य पदक विजेता प्रतिभागियों के नाम इस प्रकार हैं :

क्र.सं.	नाम	पदनाम	विभाग
1.	डॉ. सी.के. बेहरा (कप्तान)	सह-आचार्य	धातुकीय अभियांत्रिकी विभाग
2.	डॉ. संजय कुमार पल्लई (उप-कप्तान)	सह-आचार्य	खनन अभियांत्रिकी विभाग
3.	डॉ. तरून वर्मा	सहायक-आचार्य	खनन अभियांत्रिकी विभाग
4.	डॉ. अमितेष कुमार	सहायक-आचार्य	यांत्रिकी अभियांत्रिकी विभाग

लंबी कूद प्रतियोगिता में कांस्य पदक विजेता श्री राज कुमार तिवारी, कनिष्ठ सहायक, संकाय कार्य।

क्रिकेट प्रतियोगिता में रजत पदक विजेता प्रतिभागियों के नाम इस प्रकार हैं :

क्र.सं.	नाम	पदनाम	विभाग
1.	डॉ. ओम प्रकाश सिंह (कप्तान)	सह-आचार्य	यांत्रिकी अभियांत्रिकी विभाग
2.	श्री अभिषेक पाण्डेय (उप-कप्तान)	कनिष्ठ सहायक	जिमखाना
3.	डॉ. तरून वर्मा	सहायक आचार्य	खनन अभियांत्रिकी विभाग
4.	श्री अखिलेश कुमार जैसवार	वरिष्ठ तकनीशियन	सिविल अभियांत्रिकी विभाग
5.	श्री कमलेश मिश्रा	वरिष्ठ तकनीशियन	धातुकीय अभियांत्रिकी विभाग
6.	श्री दिनेश कुमार	वरिष्ठ तकनीशियन	यांत्रिकी अभियांत्रिकी विभाग
7.	श्री ओमप्रकाश श्रीवास्तव	कनिष्ठ सहायक	संकाय कार्य
8.	श्री ऋषभ तिवारी	कनिष्ठ सहायक	धातुकीय अभियांत्रिकी विभाग
9.	श्री अजीत कुमार यादव	कनिष्ठ सहायक	सामान्य प्रशासन अनुभाग
10.	श्री नवनीत कुमार पाण्डेय	कनिष्ठ सहायक	राजपुताना छात्रावास
11.	श्री रवि कुमार भारती	कनिष्ठ सहायक	संगणक विज्ञान एवं अभियांत्रिकी विभाग
12.	श्री समीश कुमार सिंह	वरिष्ठ तकनीशियन	धातुकीय अभियांत्रिकी विभाग
13.	श्री महेन्द्र कुमार पटेल	कनिष्ठ तकनीशियन	वस्तुपरक विज्ञान एवं प्रौद्योगिकी स्कूल
14.	डॉ. सुनिल कुमार	सहायक आचार्य	गणितीय विज्ञान विभाग
15.	श्री अमृतेष त्रिपाठी	कनिष्ठ सहायक	वेतन अनुभाग

भाला फेंक (जैवलिन श्रो) प्रतियोगिता में स्वर्ण पदक विजेता श्री बिपिन कुमार राय, वरिष्ठ तकनीशियन, मुख्य कार्यशाला।

मालवीय स्मृति-पुष्प प्रदर्शनी प्रतियोगिता-2017 में संस्थान के प्रशासनिक प्रखण्ड के उद्यान कर्मियों को विभिन्न प्रतियोगिताओं में तीन प्रमाणपत्रों के माध्यम से दो द्वितीय एवं तीन तृतीय पुरस्कार एवं नकद रुपये 925/- पुरस्कार राशि के रूप में प्राप्त हुआ। इसके अतिरिक्त खनन अभियांत्रिकी विभाग के उद्यान कर्मी को प्रमाणपत्र के माध्यम से तृतीय पुरस्कार प्राप्त हुआ।

विजेता उद्यान कर्मियों के नाम इस प्रकार हैं :

क्र.सं.	नाम	विभाग
1.	श्री धनंजय कुमार	प्रशासनिक प्रखण्ड
2.	श्री संजय कुमार	प्रशासनिक प्रखण्ड
3.	श्री संतोष कुमार	प्रशासनिक प्रखण्ड
4.	श्री पंकज कुमार	खनन अभियांत्रिकी विभाग

Enhancing the working conditions : Training Programmes in the Institute

A training programme meets the needs of both the staff members and the organisation and keeps the organisation growing and changing for the better. With this aim, the Institute has been organising training programmes for its non-faculty members from time to time. Two Training Programmes were organised from 9-10 September 2017, and from 7-8 December 2017 for the employees. The training programmes were held in GTAC, IIT (BHU) and Committee Room, Ground Floor of the Department of Mechanical Engineering, IIT (BHU).

First Workshop Programme "Two day training Programme of E - Procurement" (9 - 10 September, 2017).

This workshop was conducted in one batch by Shri M. Rama Amirtham, Technical Director, e-Procurement



Implementation Division, NIC New Delhi in the Committee Room of the Department of Mechanical Engineering of the Institute. A total of 78 participants attended the programme.

Second Workshop Programme "Workshop on Noting & Drafting, Office Procedures, Communication Skill and Conduct Rules" (7-8 December 2017).

This workshop was conducted in one batch by Shri K.S. Kumar, Ex-Faculty,

ISTM, New Delhi during 7 December 2017 to 8 December 2017 in GTAC of the Institute. A total number of 17 Junior Superintendents attended the programme. Shri K.S. Kumar discussed the matters related to receipt letter, procedures on receipt letters, filing, docketing, file numbering, referencing, letter and office note, Office Procedures, Conduct Rules, and different types of communication techniques etc. The participants became aware of the rules and procedures of Noting and Drafting,



List of faculty members, who joined during 01.08.2017 to 31.01.2018

S. No.	Name of Employee	Designation	Department/School	Date of Joining
1	Dr. Asha Gupta	Assistant Professor	Chemistry	07.12.2017 (FN)
2	Dr. Murali Krishna Vemuri	Professor	Mathematical Science	04.10.2017 (FN)
3	Dr. Rajeev Singh	Assistant Professor	Physics	20.10.2017 (AN)
4	Dr. Pradip Paik	Associate Professor	Bio-Medical	15.11.2017 (FN)
5	Dr. Somnath Nag	Assistant Professor	Physics	27.12.2017 (F/N)

List of faculty members, who retired/resigned during 01.08.2017 to 31.01.2018

S. No.	Name of Employee	Designation	Department	Date of Retirement	Remarks
1	Dr. A. K. Kapoor	Professor	Electrical Engineering	31.09.2017	
2	Dr. Ashish Mathur	Assistant Professor	Electronics Engineering		Resigned on 23.12.2017 (A/N)
3	Dr. R. B. Mishra	Professor	Computer Science and Engineering	31.01.2018	

Science and Technology Council

Science and Technology Council (SNTC), one of the most sought-after councils of the college under IIT BHU Gymkhana that lets the curious minds run azure into the technology space, is a council that makes the students of IIT BHU acquainted with different frequently-used technologies and disseminates knowledge of the various scientific and technological concepts. It is responsible for fostering the technical prowess of the entire fraternity of the institute. And time and again, through a series of events, including competitions and workshops, SNTC has manifested that it is one of the most vibrant councils of the college.

Sci-League – This is the semester-long celebration of science and technology, involving the successful completion of some intriguing and fascinating events. The students are encouraged to come up with novel approaches to the existing problems, provoke creative thinking and gain knowledge of the elemental gizmos frequently used.

Envisage'17 was organized by Technical and Rural Outreach Club and Green Club to give the students a platform to present their innovative ideas to solve the problem of Sanitation by innovating ways to make alternative use of it.



Envisage'17

Robotron'17 organized by Robotics Club IIT BHU involved participants



Robotron 2017

competing against each other with their self-made bots in a football match depicting an alternate reality controlled by two programs Clue and Tron.

Automotive Quiz by Society of Automotive Engineers IIT BHU was organized to test the knowledge of the basics of Automobiles and the top 10 winners were given a fortuitous opportunity to visit Diesel Locomotive Works, Varanasi.



Automotive Quiz 2017

Telescon'17, conducted by Astronomy Club IIT BHU, tested the participants' skills in designing and handling of the

Telescopes, the delightful objects that help people savvy the intricacies of the Universe.



Telescon
2017

Hult Prize BHU, organized by the Technical and Rural Outreach Club, IIT BHU and Club of Economics and Finance, IIT (BHU), acted as the regional round of the renowned and internationally acclaimed social entrepreneurship program, The Hult Prize.



Hult Prize 2017

COPS Week conducted by the Club of Programmers had exciting competitions based on Competitive Programming, Machine Learning, and Cryptography.

Recycle Mania organized by Green Club promulgated awareness about the recyclability of waste materials and motivated students to take initiatives in



Recycle Mania 2017

this direction.

Vichaar successfully initiated by the Technical & Rural Outreach Club, was an online event through which students were

able to give innovative ideas to solve the daily life problems. The club also organized a visit to Assi Ghat where the students identified the problems faced by common man and tried to come up



Vichaar (Assi Ghat Trip)

technical solutions.

A couple of **Guest Talks** were held by the Club of Economics and Finance IIT BHU for the students to gain an idea of the career opportunities and application of technology in this domain. The first talk was given by Mr Raghav Mittal on "Career and Internships in Finance" and the second talk by professionals from Prodigy Finance pertained to "Fin-tech and International Mobility".

Apart from these events, a variety of workshops were organized by the clubs which encompassed topics like Mobile & Web Development, Suspension & Transmission, Arduino, RC Plane Design, Stars & Galaxies, Multi-Rotors, Computer Vision etc. Observatory sessions were also organized for the sky-gazers.

A couple of workshops were organized even beyond the college premises. The Aero-Modeling Club organized a workshop on Glider on November 4, 2017, in GCRG Lucknow. The Robotics Club organized a workshop on Basics of Arduino on November 9, 2017, in UCER Allahabad.

Sci-Camp

The council organized a winter school, Sci-Camp for the sophomores. Sci-Camp

gave a platform to all budding innovators of IIT-BHU to unleash their creativity and combine it with technology to unravel extraordinary ideas. The first edition of the camp proved to be a great

success with 5 projects (Water Levitation, Human-Computer Interaction, Voice controlled quad copter, Smart Dashboard and Musical Tesla Coil) being certified.

The most monumental initiative of the SNTC was to overcome the hurdle of time, resources and place and coming up with the Technical Activity Centre (TAC) of the institute. Located in the midst of the academic area, TAC is a new home to all the tinkerers where they can collaborate and use all the resources, be it any tool or a machine. The facility which is open 24*7/365, now allows the students to dedicate long hours to work and continue to build on their ideas incessantly. It publishes its bi-annual magazine, SNTC Snapshot to brief the students about the technological developments in the IIT (BHU).

With an emboldened vision, fervor and an unyielding tenacity, the SNTC continues to inspire and ignite in bright young minds of the institute a passion for science and technology by providing an environment more conducive to ingenious thinking and development through the means of a plethora of activities, workshops, and competitions all throughout the year.

Changes that I see at IIT (BHU)

The institute organised an essay writing competition on the topic, “Changes that I see after IT-BHU became IIT BHU.” Students actively took part in this competition penning down their narratives recollecting their experiences. The winners of this event were:

Name of the Awardee	Course	Branch	Prize
MD Taslim Raja	IMD	Physics	First Prize
Suraj Panigrahi	B.Tech	Mechanical Engineering	Second Prize
Prasanjan Mitra	B.Tech	Electrical Engineering	Consolation Prize
Rajat Verma	B.Tech	Chemical Engineering and Technology	Consolation Prize

All these students were honoured on the occasion of the Institute Day held between 16-18 February 2018. **Given below is the article by Mr Suraj Panigrahi, B.Tech. 3rd year Mechanical Engineering on the above topic written in April 2017.**

Changes that I see after IT-BHU became IIT BHU.

A motivating line which I came across once is “The journey is the ultimate destination.” I am writing about the journey of the oldest yet one of the youngest premier institutes of the country, that is a part of the Banaras Hindu University. Conceived from the ideas of a few legends, realized by the sacrifice of the common masses, the institute spans an unbeatable legacy, being the torch-bearer of the Indian education system for over 98 years. Founded in 1919, blossoming from a small institute BENCO to getting integrated to form Institute of Technology and then finally gaining the status of an IIT in 2012 and then carrying its own legacy, this certainly is not an easy journey.

The transition from IT to IIT is not merely about autonomy or allocation of more funds, but more about developments in terms of infrastructure, facilities, quality of education, research and more governance. I became a part of IIT (BHU) in 2014. I have witnessed a lot of changes in the college in the last two and a half years. I would like to cite an

example here. In 2014, while selecting an IIT befitting to my rank, I was browsing about the curriculum structure of Mechanical Engineering in IIT (BHU). Other established IITs had a well-defined course readily available for reference on the web. I browsed the web, but it was futile. However, I guess no student after 2015 would have faced this problem. This is just the tip of the iceberg of changes in the college after the transition to IIT.

Talking about Academics, IIT (BHU) has a well-defined and well-documented course structure for every department, which IT never had. The absolute method of grading has been done away and a relative method of grading is in practice. The course curriculum didn't have the humanities subject. I read in a survey that an ideal engineering curriculum should have 12.5% of the humanity courses. Humanity courses are supposed to instill ethics and morality in engineers and give further insight into the society for which we have to contribute. Now, humanities form a part around 10% of the credits, which was non-existing earlier. The Induction Programme for the first year batch of 2016 was a novel experiment which received huge applause. There have been discussions in the intellectual circuit to emulate this programme in other IITs and central government institutions. The programme aimed at making the new entrants comfortable to the college environment,

which is really a big endeavour to make learning stress-free. A mentoring network comprising the senior students helped the new students to sink into the college atmosphere. It also promoted a sense of bonding with the faculties and senior students. This highlights the shift in vision towards a holistic education, a vision which no one had before.

Discussing further on academics, the floating of Open Elective courses has opened the doors for inter-disciplinary research. Further, the choices offered to the students are quite large and there is much flexibility in opting for these courses, which has led to the success of open electives. I will cite an example to reassure my stance. For example, a student of mechanical engineering with a strong interest in materials science has the choice to opt for subjects not only from materials science, but also other similar subjects like composite materials from Metallurgical Engineering, biomaterials from Biomedical Engineering and ceramic technologies from Ceramic Engineering. The provision for B.Tech with Honours has already given an impetus to the student research in the institute and will surely give a surge to the number of academic publications and collaborations in the coming days. Creative Practices which include performing arts, visual arts and fine arts have become a regular part of the curriculum. However, these are only introductory courses enabling the

students to explore their interests. Several QIPs (Quality Improvement Programs) for faculties are now being conducted around the year. In collaboration with MHRD, GIAN courses for the students of the native as well as students from other institutes have come into effect. 10+ GIAN courses have been reported to be conducted in IIT (BHU) in the last one year. It is quite evident that the academics in terms of curriculum as well as its flexibility have undergone a sea change with the addition of an 'I' to 'IT' in a matter of 4 years. Even the student-teacher ratio has improved over the years, but it is still not on par with the national standards and it is a major challenge for the coming years.

The 'IIT' status has burgeoned the research and development of the institute. There is no better way to validate a hypothesis than statistics, facts and figures. A recent paper in *Current Science* (Vol. 112, No. 5) by researchers from South Asian University (Delhi), BHU and the National Institute of Science, Technology and Developmental Studies (Delhi), analysed the research performances of IITs. Among the new IITs, IIT (BHU) lies ahead of its contemporaries. The number of academic papers published between 1999-2008 was less than 900 and that between 2010-2014 is 1443. The total citations of various papers between 2010-2014 are 2110 while it is below 1800 over the period of 1998-2008. The rationale behind these figures can be attributed to not only in the increase in the intake of PhDs in the last 4 years, but also the availability of better and advanced instruments and dedicated research centres. The establishment of CERD (Centre for Renewable Energy Development), Central Instrumentation facility, a new Computation unit and some other labs imply an emerging future of research in IIT (BHU). The Central Instrumentation Facility has some modern equipment like Nano-indenter, Scanning Electron Microscope (SEM), Magnetic Property Measurement

System, with a plan to install Raman Spectrometry soon.

Establishment of Design and Innovation Hub (DIH) is a testimony to the endeavour being taken by the institute to promote innovation. DIH offers the flexibility to students to come up with their own ideas and it definitely provides the means to shape the ideas. It boasts of over 200 completed projects in less than 3 years of its inception. It has also sponsored students for events like SAE India BAJA, Shell Eco-Marathon etc. The Shell Eco-Marathon Team brought laurels for the institute finishing first in the country and seventh in the world. Apart from this, Advanced Research Centre for Iron and Steel (ARCIS) has been established in the Department of Metallurgy by the Ministry of Steel, Government of India. This centre will cater to the education and research of iron and steel in the institute. Malviya Chair for Railway Technology has been established by Ministry of Railways, Government of India to have collaborations with IIT (BHU) in Materials Science and Engineering. A Design and Innovation Centre (DIC) has also come into effect in 2015 as a joint project of IIT (BHU) and BHU. IIT (BHU) will specifically take care of the engineering and technical aspects of the design and innovation projects. Establishment of infrastructure and allocation of funds for various projects are the stepping stones towards shaping a quality idea or realizing a project. The establishments of these dedicated centres surely raise the hopes of illustrious projects in future.

The number of awards in various national events, particularly Inter-IIT Sports and cultural has gone up. The techno-management fest Technex, the cultural fest KashiYatra and the Sports Fest Spardha have seen new heights witnessing a surge in the budget, sponsorship, participation. I was the joint secretary of the Creative Design Club, a club under FMC. I have witnessed an increase in inventories over

the 3 year period, like Dictaphones, DSLRs, graphics tablets etc. The student gym has got a new look. IIT (BHU) is one of the few campuses in India with floodlight facilities. This has given a new experience to the students and especially allowing practising for a longer duration. College magazine was foreign to IIT (BHU). The student magazine 'The Quest' has come into picture since 2014 updating us with the buzzing college activities. The inception of 'FMC TV' is a creative dissemination of the buzzing campus life of the students and multifarious events organized in the college. FMC Weekend was initiated in the year 2014. Over the three editions, FMC Weekend has garnered a national reputation and has established its foothold in the hearts of the students. Club of Economics and Finance came into effect in 2016. Student-driven social initiatives like Blood Donation camps, cloth collection drives were in fullswing even before. However, the establishment of a Social Service Council under the Gymkhana is likely to further promote connecting with the society for greater good. IIT (BHU), being a part of BHU, became a torchbearer of a legacy of attending the convocation in kurta pyjama and in sarees. This model has got national acclaim and has been recently emulated in IIT Bombay.

The placements have got a major boost after IIT was converted to IIT. This can be justified with IIT (BHU) emerging as the top-ranked institute in terms of placements in MHRD rankings for the year 2016. Even entrepreneurship has got a major boost. Till 2014-15, Technology Business Incubator (TBI) at MCIIE was supported by DST (Department of Science and Technology). However, after 2015, it is funded by IIT (BHU) and that has led to greater autonomy and promotes the entrepreneur aspirations among the students. Currently, it is supporting over 15 start-ups. Some of them have been appreciated at the national level.

Student Parliament has led to the direct involvement of students in the governance of the institute. The involvement of students and the response of the institute to the immediate demands of the students in the situations of crisis are quite commendable and this justifies that the institute has evolved a mentality to adopt changes. The student parliamentary elections have given a choice to elect the right people to represent the students. This has led to the development of various infrastructures and enactment of several laws regarding the security of students, particularly girls.

We lag behind many IITs in various fields. The research and development and the security facilities in this college are still at an embryonic stage. The recent slip in the MHRD rankings just emboldens the challenge that lies ahead of us all. With steps being taken to establish its own LAN infrastructure, Student Activity Centre and the expansion of the library, the future of IIT (BHU) looks promising. I have often come across grumbles regarding the institute. But looking down the line of 4 years, it is unequivocal that IIT (BHU) has come a long way since its conversion

from IT to IIT. Steve Jobs once said, "You can't connect the dots looking forward, you can only connect them backwards." I can relate to these words when I write about the changes I have seen in this college. The journey ahead is full of insecurities. But I loved being a part of the journey so far, often contributing insignificantly for its development. The institute has to strive for excellence which is the ultimate destination and excellence is a never-ending process. As I conveyed in the beginning, the journey will be the ultimate destination.

STUDENT ACHIEVEMENTS

Dr Bharat Kumar Allam of Chemistry has been awarded the prestigious **Department of Science and Technology (DST)**- Science and Engineering Research Board's **Overseas Postdoctoral Fellowship**.

Prakhar Doorwar of Chemical Engg. has published and presented his research work at the **International Conference of the American Institute of Chemical Engineers, AIChE Annual Meeting 2017** in Minneapolis, US.

Priya Singh of Biochemical Engineering has been awarded the **renowned 'DAAD IIT Master Sandwich Program' scholarship**.

The team of Dhavala V S Aditya, Priyanshi Porwal, Shaswat Trivedi, and Adarsh Kumar has reached the Semi-Finals of the Ericsson Innovation Awards 2018 placing them among the 15 teams from a total of 1500 teams across the globe.

Varun Kansal of Chemical Engineering and Technology has secured a **percentile of 99.96** in the prestigious **CAT examination**.

Parth Sharma of Civil Engineering has secured a position in the top 20 Campus Ambassadors for the renowned Social Entrepreneurship programme Hult Prize from across the globe and has been the only person from India to have achieved it.

The team of Pratyush Choudhury, Swapnil Kulkarni, Jaseel Muhammad, Vaishnav Menon has entered the **Global Quarter Finals of the Ericsson Innovation Awards 2018**.

Md Ershad of Ceramic Engineering has won the **IIM-Springer Award (Second Prize) for best Oral and Poster presentation in the field of Material Science and Engineering** at the International Conference of the NMD-ATM 2017 held at BITS Pilani Goa campus.

Shailendra Singh of Electrical Engineering has been selected for the esteemed **Bhaskara Advanced Solar Energy (BASE) Programme** supported by the Department of Science and Technology and the Indo-US Science and Technology Forum (USSTF) under which an internship for a period of six months would be provided at the National Renewable Energy Limited (NREL), Department of Energy, Colorado, US.

Thacker Parth Paresh of Mechanical Engineering has been awarded the OPJEMS Scholarship.

Abhishek Yadav has presented a paper titled, '**Framework for Road Safety Audit of higher educational Institute: A case study of IIT BHU Campus**' at the **International Conference on Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC)**, IIT Bombay.

Shubham Aggarwal of Electrical Engineering has a research paper titled '**Line of sight stabilisation of two-dimensional gimbal platform**' to his credit which was accepted for oral presentation at the **IEEE International Conference on Power, Control, Signals and Instrumentation Engineering** and also has been approved for **publication in the IEEE Xplore Digital Library**.

Spardha'17

We all know that sports, besides the display of strength are a manifestation of the all-round development of the individual as well as the team. The 34th edition of the biggest sports Event of the Indian Institute of Technology, Banaras Hindu University, IIT (BHU) 'Spardha-17' was held at IT Gymkhana grounds during 27-29 October 2017. This sports meet has blossomed into one of the largest inter-collegiate sporting events of India taking the spirit of the game to the next level each year by bringing together participants from several renowned institutions such as the IITs, NITs, and many other Universities. The three-day juggernaut of the sporting fest filled the participants, as well as the spectators with energy and zest.

Transgressing the boundaries of a sports event, for the second time, Spardha IIT (BHU) organized a Mashaal Handover Ceremony which was held on the 5th of October 2017, three weeks prior to Spardha'17. The Chief Guest for the ceremony was Ms Tania Sachdev, the Indian chess star who is an International Master, a woman grandmaster and an Arjuna Awardee. The Ceremonial Mashaal which was passed onto her at the end of her inspiring speech marked the beginning of Spardha'17.

The Opening ceremony of Spardha'17

took place on 27th of October in the Gymkhana Ground. The chief guest for the Ceremony was Mrs Anjum Chopra, former Indian Women's Cricket team Captain. She shared her delightful experience in Varanasi, felicitating the opening of the annual Sports fest of IIT (BHU). Noted female Indian Cricketer Ms Shikha Pandey graced the occasion as the Guest of Honor. The Special Guest for the evening was Mr Dilip Tirkey, former Indian Hockey player and ex-captain of India Hockey Team, a recipient of the prestigious Arjuna Award, and also an esteemed member of the Rajya Sabha best known for his penalty corner hit. Their thoughts helped to realize the motto of the event, 'Glory Awaits.'

Spardha'17 included almost all the popular games played worldwide along with informal events and adventure activities. A total of more than 1500 participants from all across India participated in Spardha'17, along with a footfall of more than 2000 Spectators. Salient among the initiatives that had been introduced in the Spardha this year was the UDBHAV, an inter-school quiz competition, where enthusiastic and zealous students from various schools of Varanasi had taken part and cherished their dreams of competing in a healthy and knowledgeable environment. Each year, thousands of participants who take part in Spardha put in arduous efforts relentlessly to prove their mettle in a vast array of sports. If this doesn't catch



your attention, the bustle of the crowd on the campus streets surely will. It's them who make Spardha the festival it is - a celebration of three long days. The participants showed unparalleled zeal and enthusiasm in sporting events on the field of Athletics, Badminton, Basketball, Boxing, Carrom, Cricket, Football, Handball, Hockey, Kho-Kho, Kabaddi, Powerlifting, Weightlifting, Squash, Table Tennis, Taekwondo, and Tennis & Volleyball nonetheless.

The famed Limbdi corner and the street

that runs along the Rajputana Hostel had been lit up with lamps that shone off a beautiful handmade paper basket. The decorations had just been a glimpse of the festive weather that Spardha'17 offered.

One of the many firsts of Spardha was a Guest talk. Ms Tanvie Hans, a budding Indian female footballer who has played for the clubs Tottenham Hotspurs and Fulham Ladies FC shared her story filled with struggles and grit to overcome them as she still fights for herself to play for the Indian female football team. The Guest of Honor for the closing ceremony held on 29 October 2017 at the Gymkhana Grounds was Mr Sajjan Singh Cheema, a former Basketball Player from India who represented India in the 1982 Asian

Games. The Chief Guest addressed the audience about the importance of Sportsmanship and perseverance.

In the end, it's all about making memories and living them. Every time you win a race or lose your voice cheering for your team, it adds up to your moments.

–Convenor,
Spardha.

Spardha Results

Sports	Winners (Boys)	Winners (Girls)
Athletics	IIT BHU	IIT BHU
Badminton	IIT Kharagpur	NIT ROURKELA
Basketball	IIT BHU ALUMNI	IIT BHU
Boxing	IIT BHU	IIT BHU
Carrrom	BBD LUCKNOW	REC
Chess	IIT BHU	NIT KKR
Cricket	IIT BHU	*
Football	IIT BHU	*
Handball	IIT BHU	*
Hockey	IIT BHU	*
Kabbadi	CIMAGE	NIT KKR
KHO-Kho	IIT BHU	IIT BHU
Lawn Tennis	IIT BHU	IIIT DELHI
Powerlifting	IIT BHU	*
Table Tennis	MAHARAJA	IIT ROPAR
Tae-kwon-do	IIT BHU	*
Squash	IIT BHU	*
Volleyball	IIT BHU	IIT BHU
Weightlifting	IIT BHU	*



Spearheading the all-round development of students : Gymkhana's Activities

Fim and Media Council

Achievements

At the Inter IIT Cultural Meet, held at IIT Kanpur, Cine Club, IIT BHU secured the second position in the 48-hour short filmmaking competition and Photography Club bagged the second prize in the Online Photo Story competition. Mohammed Zeeshan and Ravindra Kumawat bagged the first and second position respectively in the Online Photography competition of Antaragni 2017, the cultural festival of IIT Kharapur. Mohammed Zeeshan has also won the second prize in Online Photography competition of Rendezvous, cultural festival of IIT Delhi. Khayati Mittal stood second in the Online Digital Painting event held in Mood Indigo, the Cultural Festival of IIT Bombay. Vetri Selvan succeeded in winning the second place in the event Assistante Literaria (A competition comprising of the Literary quiz, spell-bee, and creative writing) at Anweshya 2018, the cultural festival of IIT Patna while Satyam Saxena and Vyom Agarwal stole the limelight by bagging the third prize in the Autoquiz. At the same venue, in the NTPC East India Regional Business Quiz, Satyam Saxena and Vyom Agarwal stood third in the prelims and was the only external team (among 76 other teams) to have been qualified for the final round.

Activities

The Fim and Media Council maintains a Facebook and YouTube channel under the name FMC TV, which summarizes the weekly activities such as various events, sports competitions, festivals, etc. going on in the college. It also covers various fun facts about the campus. Currently, they are working on making a campus video of IIT BHU portraying the life in the institute. They have recently launched a broadcasting channel under the name IIT BHU Broadcast, which will act as an interface between the students (both the ones currently studying as well as the new entrants) and the administration. Its regular episodes will showcase the interviews of the administration and the

academic facilities of IIT BHU and its working so that students would get more acquainted with the various elements and organs of the institute. The Media Club releases a monthly magazine, known as The Quest, which encompasses all the information about the various activities going on in the college (academic/non-academic) as well as surveys on several topics of interest to the college fraternity. It is distributed in every room of the hostels and also to all the faculty of the institute. The Photography and Cine Clubs comprehend all the photo and video related activities in the college including all the festivals like Kashiyaatra, Spardha, Technex, FMC Weekend etc. The annual photography exhibition of the Photography Club, Vista was organized on 9 February 2018.

Games and Sports Council

Achievements

IIT BHU stood second in the Inter IT March Past. Kartik Gajjala stood fourth in the 200m backstroke at the Inter IIT Sports Meet held in IIT Madras. The women's Basketball team of IIT BHU won Bronze at Udgosh, IIT Kanpur. The Football team of IIT BHU bagged Gold Medal at the Inter IIT Sports Meet, IIT Madras while it was victorious with Silver Medals at DLW Five A Side tournament and the Varanasi B-Division Football League. The Hockey Team had earned a Bronze at Inter IIT Sports Meet, IIT Madras. At the District Weightlifting competitions Parash Sonowal, Akash Aggrawal, and Pawan Kumar won Gold while Piyush Agarwal and Deep Chauhan brought home the Bronze Medals. Parash Sonowal also stood fourth in the State Weightlifting Competition. In weightlifting, at Inter IIT Sports Meet held at IIT Madras, Parash Sonowal and Pawan Kumar bagged Silver and Bronze respectively while Akash Aggrawal and Piyush Agarwal stood in fourth and fifth position respectively. The Women's Volleyball team triumphed with Silver at the Inter IIT Sports Meet, IIT Madras while it was the turn of Men's Kho-Kho team to bring home the Silver from Udgosh, IIT Kanpur.

The Handball Team prevailed with a Gold at Udgosh, IIT Kanpur.



Besides, IIT BHU reached new heights by beating all other institutions at Spardha 2017 and emerged as the Overall Champion. The teams have stolen the show in almost all the competitions held.

Activities

Various internal tournaments such as Girls Weekend, Intra-freshers, Inter-hostel Sports Meet, Athletics Meet, Inter Year Sports Meet, Adel Memorial, and Invitational Hockey League have been hosted to allay the hunger of the sporting souls. A self-defence camp was organised for girls for about five days in which about 120 students had taken part. Two courts each for Lawn Tennis, Volleyball, and Basketball have been constructed along with the provision of sanitary facilities in Adel Grounds.

The proposals for a Multipurpose Indoor Stadium in Rajputana Ground and the Swimming Pool are being given serious consideration along with efforts being made to launch a Games and Sports Council website.

Cultural Council

Achievements

At the Inter IIT Cultural Meet, IIT BHU opened the curtains for the dawn of a new era by standing fifth on the overall score tally.



Inter IIT Cultural Meet, IIT Kanpur

Position	Event
Winner	Hindi Story
Second runner-up	Online Book review
First runner-up	Hindi Poetry slam
Second runner-up	Literary and Quizzing event
Winner	Dramatics Overall
Winner	Street Play
Second runner-up	Dance Overall
Second runner-up	Street Dance Battle
First runner-up	General Quiz
First runner-up	Sports Quiz
Third runner-up	Sci-tech Quiz
First runner-up	Do It (Dance)
Second runner-up	48 hrs Short Film Making

Western Music Club of IIT BHU secured the first position in Unplugged-the acoustic event at Effervescence, IIIT Allahabad. Quiz team of Rishi Raj and Kaustubh Singh secured the first position in Cognoscenti (general Quiz) at the same event. At Antaragni, the cultural festival of IIT Kanpur, Vaibhav Dixit won the English Poetry Slam while Shubham Shriram Yadav bagged the third position in Hindi Debate and Siddhartha Shukla triumphed with the second prize in Hindi Extempore. In the same cultural meet, the trio of Yathart Dahiya, Richi Mishra, and Ved Vineet secured the third position in the TV Quiz while the triplet of Yathart Dahiya, Ved Vineet, and Aditya Dhavala stood third in the Movie Quiz. At Waves, the cultural festival of BITS Pilani Goa Yudhishtar Charan reached the top three

of the solo singing event- Jukebox (western) while Indrajeet Pala complemented his victory by standing second in the solo singing event-Jukebox (Indian). Yash Shukla secured the third position in the Solo Instrumental event at Waves, BITS Pilani Goa. During the same extravaganza, the Indian Musical Club-the musical team of IIT BHU turned out to be victorious with a second prize in the Classical Choir while the DFZ-the Dance team won Natyanjali. At Alcheringa, the cultural festival of IIT Guwahati, IIT BHU's students have won first and third positions in Rangoli Making, and a second position in Costume Designing. Interestingly, two students have secured the third position in the Lip Art. At Anwasha, the cultural festival of IIT Patna, Indian Musical Club of IIT BHU rocked the stage with the first position in Band competition, while DFZ-the Dance Club stood as the runner-up in Group Dance. In the same arena, MASQUERADES-The Dramatics Society of IIT BHU Varanasi secured the first position in the Street Play Competition, Maidan-e-Jung, while Team Mirage-the fashion show team of IIT BHU has brought home a second prize from the fashion event, Verve. Hammad Nezami as selected as Mr Anwasha. With a hub for scintillating talent, IIT BHU has once again glittered when Vikrant Satvik and Rohan Bhardwaj won the IITK MUN'17's Best Commendation Award and the IIMUN's Best Delegate Award respectively.

Science and Technology Council Achievements

In the Codechef December 2017, Dhiraj Singh stood first in India and among the top 8 in the world. The trio of Manish,

Tarang Srivastava and Balram Gupta secured the third position in the Case study event of Khanan, the Mining Engineering festival of IIT (ISM) Dhanbad. Team Acquivo won the E-Summit held at IIT Kanpur in 2017. At Kshitij 18, the technical fest of IIT Kharagpur, the team of Parth Shyara, Ekansh Gupta, Tanmay Agarwal, Sriman Upadhyaya bagged 1st position in FORTRESS - an image processing robotics event. In the same event, team of Mukesh Deogune and Ankur Sonawane bagged second position in EMBETRONIX - a maze solving robotics event. The team of Mayank Bansal, Pratyush Sahoo, Deepak Maurya bagged second position in STAX- an autonomous robotics event. The team of Amrtanshu Raj, Ananya Gupta, Sourav Jaiswal and Omkar Shrimali bagged 3rd position in STAX- an autonomous robotics event. The Udnkhatola startup has received a pre-incubation support from iB Hubs. Arpit Chaudhary, Prayas Jain and Vikhyat Chadha bagged a second prize in Brain Waves 2k17-18 organised by Society Generale Global Solution Centre while Abhijeet Singh was also selected for the onsite finals of the same event. In the renowned Techfest, Technical Festival of IIT Bombay, 5 teams from IIT BHU have won prizes in the Boeing National Aeromodelling Competition and 2 teams went on to become the quarter finalists in the RC car event - Full Throttle. The participants gave a mesmerizing performance in the event MESHMERIZE (Robotics Event) claiming an overall 6th position.

Inter IIT Tech Meet

Achievements	Events
5th and 8th position	Engineer's Conclave Projects
4th Position	Overall ranking in Engineer Conclave
4th Position	Warehouse Inventory Check
Bronze	Fiducial Localisation in Medical Imaging

Activities

Google Startup Weekend was organised to promote entrepreneurial activities

Kashiyatra 2018

Kashiyatra, the annual cultural festival of IIT(BHU), Varanasi is a three-day fiesta, aimed towards mesmerizing everyone with enchanting literary, musical and artistic events. Its grandeur has earned it the fame of being North India's largest cultural festival. Celebrating the spirit of Kashi, the annual cultural fest of IIT-BHU, Kashiyatra, had A Stygian Dawn as the theme this year; this three-day extravaganza had had multifarious events. This edition of Kashiyatra was held in institute from the 19-21 January 2018. In the presence of Dr Chetan Singh, Deputy Director of Centre for cultural resources and training (CCRT), KY 18 marked its beginning. Kashiyatra 2018 broke last year record of participation with a rise in participation by a margin of 300 this year and a total number of participants crossing the mark of 1700. Students from more than 100 colleges from Bhubaneswar, Kolkata, Lucknow, Delhi, Hyderabad, Allahabad, Kanpur, and Patna had participated in Kashiyatra this time.

A pre-event of KY, called Bliss was organized which was an inter-school competition in various fields comprising of music, dance, art and quiz in which students from various schools of Varanasi had participated.

This year KY launched its own app which provides the details regarding the events of Kashiyatra. International presence was also marked in the event as Spanish artist Murray Molloy (Sword Swallower) showed his outstanding talent with swords that had mesmerized the audience. Eminent Hindi poets of different zones like Popular Meerutia, Vishnu Saxena, Sarvesh Asthana, Bhuwan Mohini, Abhay Nirbhik enthralled the audience in Kavya Manzari held on the pre-eve of the KY'18. The most enthusiastic three day Pronite series started with the

performance of the western band Sartek (EDM Night) on the eve of 19th of January which was followed by the Indian band Underground Authority on the next day.



And on the ultimate day i.e on 21 February, 2018, the most-awaited, celebrity night performed by the famous singer, Music composer, and lyricist Amit Trivedi and his amazing team left the audience with a feeling of awe and wanderlust. This Pronite marked the footfall of more than ten thousand people and is one of the most successful events of KY'18. Mirage, the fashion design event based on the theme of Colors of India was like an illusion that bound every viewer with ethereal beauty.

This year crosswinds, one of the musical events of Kashiyatra, had organized the

road trip for the multi-city elimination round to ensure high-quality of participation from all over the nation which lead to a tight battle at the event. Some ideas implemented in Kashiyatra

2018 include workshops for Dance(Hip-hop), fine arts, and literature. The number of events was increased this year by the introduction of Xtasy, a Video making competition, Sargam, a group singing competition, Mr KY which was a Fashion Event, Nritya, Fog dance, What's The Word, a word game, Ink It, a Tatoon making competition, MELO, a Music, Entertainment, Literature and art related Quiz, The Legend of SIR SPEAKS-A-LOT (Samvaad), livesketching, and Insurance Quiz. The main sponsors were Lava, Integrity, Camiline, Colors of Youth.



Bandish, The Musical Competition: A breathtaking performance on the drums



Imagination at its best : Masterpiece created during the Fine Arts Competition.

"This year's Kashiyatra was awesome and added another feather to the cap of the institute. Rather than comparing to the previous editions as the situations are always dynamic, I would like to say that we are overwhelmed due to the response and reviews coming from the students of the college and the external participants who had been a part of this cultural celebration. I am optimistic that Kashiyatra would reach greater heights in the future."

– Convenor, Kashiyatra.



Pronite

