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Director's Message



The goal of the newsletter is to keep you updated with developments at IIT (BHU) Varanasi. The Institute is undergoing a transformation. Many new initiatives have been launched related to academics, research and innovation, student affairs, alumni matters, departmental laboratory/workshop upgradation, and of course civil infrastructure. This newsletter (IIT BHU Connect) will keep you posted on various initiatives from time to time.

This newsletter will also report on laurels earned by our faculty, staff and students besides reporting on major events such as the Institute Day, Convocation, etc.

The first issue is in your hands.
Happy reading.

Prof. Rajeev Sangal

From the **Editor's** Desk

The editorial team is very happy to present the inaugural issue of **IIT BHU Connect**, the biannual Institute newsletter of IIT(BHU), Varanasi. 'IIT BHU Connect' has been initiated to provide a platform for showcasing the activities and achievements of IIT(BHU). Although biannual, being the initial issue, the current newsletter gives the highlights of events and activities in the Institute

from July 2015 onwards. Besides the Chief Editor, the core of the publication team consists of student members of the Media Club functioning under aegis of IIT(BHU) Gymkhana. In the past few months the team comprising members of the Media Club along with a few volunteers obtained data, analyzed it and prepared the content. We would like to thank the offices of the Deans, the

Registrar, Heads of Departments and other functionaries for supplying the necessary information that facilitated the newsletter. While acknowledging valuable inputs received from the faculty, staff and students; we also welcome suggestions from them to help us develop the newsletter further. We can be contacted at editor.newsletter@itbhu.ac.in.

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Convocation Ceremony 2015

The 17th of November, 2015, saw IIT (BHU), Varanasi hold its Fourth Convocation in Swatantrata Bhawan, BHU, to confer degrees on the students who graduated in the year 2015.

The event began at noon where Prof. Anil Kumar Gupta, Founder, Honey Bee Network and Professor, IIM Ahmedabad and Shri Nikesh Arora, President and Chief Operating Officer, Softbank Corp. Group delivered the Convocation Address.



One day prior to the convocation ceremony, Mr. Nikesh Arora held a scintillating interactive session with the students of the institute. He talked about changing trends in the entrepreneurship sector and about how India has become a cornucopia of opportunity for the modern day student. He provided eloquent answers to the questions posed by the students and nostalgically divulged a bit about his college life. He talked about co-convening Kashiyaatra in his fourth year and about effective time management. In conclusion he implored all the students to make



optimum use of the opportunities available to them and encouraged them to aim higher.

The Convocation Address was filled with encouragement and exuded ebullience. The august gathering was left enchanted. The students, as agog as they were about the ceremony, were in high spirits after the inspirational address.

This was followed by the distribution of the degrees and medals to the respective awardees. It was an emotional moment for every student who went up to the dais to collect their degrees. Approximately 1,250 students were conferred PhD, M.

Tech./M. Pharm., IDD/IMD and B. Tech./B. Pharm. degrees of the Institute. This year 37 students were decorated with IIT (BHU) Varanasi Gold Medal and 26 students were awarded endowment gold medals. In addition to this, two endowment silver medals were also awarded.

It was a glorious affair which would be cherished by the audience gathering for years to come.



Institute Alumni Awards

A few Distinguished Alumnus awards were presented in December 2015 to the following persons who have done distinctly well in their fields of work.



MANOJ SINHA

Shri Manoj Sinha from Mahanpura, Ghazipur District, Uttar Pradesh completed his B.Tech (1979) and M.Tech in Civil Engineering from the Indian Institute of Technology (BHU), Varanasi. He is currently the Minister of State for Railways. He is popularly known for his work in backward villages. He was among the seven most honest MPs according to India Today. Mr. Sinha used all the money allotted to him as a parliament member for public welfare. A very genial person, he is of the opinion that politics is nothing but a medium of services to humanity. Awarding him with this distinction is a token of appreciation for the excellent work that he has been doing for the people of India.

JAY CHAUDHARY

Having founded a series of successful companies, including Zscaler, AirDefense, Ci-pherTrust, CoreHarbor, Air2Web and Secure IT, Jay Chaudhary is an accomplished entrepreneur. He earned his B.Tech in Electronics Engineering from IIT (BHU), Varanasi in 1980. In 1996, Chaudhary founded and led his first company, SecureIT, the first pure-play Internet security service, followed by CoreHarbor and CipherTrust, the industry's first email security gateway. He has been honoured as an Ernst & Young "Entrepreneur of the Year," an Information Week "Innovator & Influenced" and SC Magazine "Market Entrepreneur."



ANIL BHARDWAJ

Hailing from Murson, Aligarh District, Uttar Pradesh, Dr. Anil Bhardwaj received his doctorate degree in Applied Physics (Planetary and Space Science) from the institute in 2002. He is the Director of the Space Physics laboratory, Vikram Sarabhai Space Center, ISRO, Trivandrum and has been the Principal Investigator of the SARA experiment on Chandrayaan-1, the first Indian lunar mission. Dr. Bhardwaj has edited 6 books and has over 100 refereed publications and his research findings have led to several press releases by NASA and ESA.



BRIJ N. AGARWAL

Dr. Brij N. Agrawal, currently a distinguished Professor and Director of the Adaptive Optics Center of Excellence for National Security at the Naval Postgraduate School (NPS), earned his B.Sc. (Hons) in Mechanical Engineering in 1964 from IIT (BHU). Apart from making tremendous contributions to the NPS, Prof. Agrawal has formerly worked for Communications Satellite Corporation (COMSAT) and International Telecommunications Satellite Organization (INTELSAT) where he participated in the development of several satellites: INTELSAT IV, IV-A, V, and VI. Prof. Agrawal has published over 150 papers in journals and conference proceedings.



Centenary Projects

The following is a list of the various projects, approved by the Finance Committee of the institute, that would be taken up during the period from centenary year of BHU 2015-16 to the centenary year of IIT(BHU) - 2019-20.

Shatabdi Kosh

It is proposed to establish a Centenary Fund where the institute Alumni and other donors can generously contribute for appropriate use by the institution. Other well-wishers of the institute/agencies may also direct their contributions into this centenary fund, to be known as Shatabdi Kosh.

Shatabdi Goshthi Sankul

This has been proposed to meet the requirement of small and big halls at a single place for conducting various plenary, key note and small sessions during various academic meets for facilitating intense and purposeful interaction among the participants. The proposed area is the region available around the GTAC, where the guests reside.

Alumni members and other well wishers will be approached, apart from the government agencies, for development of such an infrastructure around GTAC under the name Shatabdi Goshthi Sankul.

Shatabdi Sanskritik Sankul

The institute is fortunate to have the grand Swatantrata Bhawan on the campus and the same is being used for various purposes. There is a need for special acoustics, lay out and architecture for various small and medium size halls to be able to host functions and ceremonies on various themes, genres, traditions and

cultures. Varanasi, being a cultural city, provides an opportunity for such purposes. It is therefore proposed to take up the development of Shatabdi Sanskritik Sankul around Swatantrata Bhawan.

Shatabdi Information Technology Services Centre

Information Communication Technology (ICT) is redefining the way knowledge is explored, processed and disseminated. ICT is playing a very big role in efficient execution of administrative, few financial and even social processes in an academic institution.

It is therefore proposed to develop an ICT Services Centre under the name Shatabdi Information Technology Services Centre in the same building/premises where the Library would be housed. The involvement of Alumni shall be requested for purposes of fund raising.

Shatabdi Granthagaar

An institution of higher learning has to continuously engage in the acquisition and processing of knowledge. The role of a modern library, integrating ICT based tools, services and environments, has become paramount in this regard. It is, therefore, proposed to architect, build and operate a modern library

system keeping in mind the requirements and future needs. Such a library may be named as Shatabdi Granthagaar. Key aspects are highlighted here:

1. State-of-the-art energy efficient building with approximately 17,450 sq.m, 2000 reading/sitting seats, digital library, underground parking facility, solar-powered, centralized air-conditioning system, Wi-Fi, etc.
 2. Active learning spaces; content and media production spaces; maker-spaces (with color printing, 3D printing, 3D scanning, virtual reality, motion capture, laser cutters, design jet-plotters, sewing machines, etc.).
 3. Seminar Hall with 1000 capacity.
 4. Differently Abled Section: Special library for deaf, blind and physically challenged users.
 5. Humanities Section with Meditation/ Prayer Room and unique print, digital and audio video collections on religion and philosophy.
 6. Estimated Cost of the Proposed Building and Sections: approx. Rs. 151 crores (\$23 million).
 7. Sections can bear the names of donors.
- Grant-in-Aid and funding from various sources and alumni will also be sought for the purpose.



In Talks : Undergraduate Curriculum Review

Excerpts from an interview with Prof Devendra Kumar, Chairman, Undergraduate Curriculum Review Committee

The curriculum for the new entrants has been changed this year. What is the reason behind it?

The syllabus or the curriculum has been changed in the year 2014, and minor changes have been made in 2015 just to balance the courses in the odd and the even semesters. But the nature as well as the title of the courses remain the same.

Regarding the recently made modifications in the syllabus/curriculum, what has been the response of the student community?

The students have already given their course feedback in the institute portal. We have not received this feedback from the institute in a systematic manner yet. So, only time can answer this question.

Why has the committee made it mandatory, for the first and second yearites, to pursue some non-academic courses like human values, creative practices etc.?

We believe that our students should excel not only in academics but in other fields also. It is therefore important that we focus on the overall development of the student. Further, this was what Malaviya Ji had in his vision for the institute when he established Asia's largest residential university, BHU. We had discussed this issue and came to the conclusion that we should proceed with this philosophy of education. The creative practice course topics mostly come under the various components of the cultural council of the Student Gymkhana. Earlier, it was the club members who would impart the relevant skills. But now, this has been formalized into courses. Students have the freedom to opt which course in creative practice they want to pursue. The institute will provide mentors from the Faculty of Performing Arts and the Faculty of Visual Arts for each of these courses. So, the students will get a suitable environment to develop their

skills. The human values course is not like an ethics course. This is a course for students who have just completed their intermediate education so that they can reflect on themselves, their family, and about the society at large. So, a mentor and a small group of students discuss on some general topics about one's own life. What our experience says is that there has been some significant change in the quality of their life, the way the students are thinking and the overall perspective of the students.

Sir, BHU has a rich amount of courses which even our students would like to pursue. Does a student have a provision of getting admission into some of these courses along with their core discipline?

IIT (BHU) has provided the students with all such provisions. Not only can one undertake courses in BHU, but can also enroll in courses anywhere else. There is also a provision of credit transfer or waiver of credits. If you want to get admission into one of their courses, there are some minimum requirements, and if you fulfill those then you are eligible to get credits for that course. In B.Tech, one can earn upto 60 credits from anywhere else whereas in IDD, it is 80. These credits will be counted in the final degree.

Why have some departmental courses been included in the first year itself?

Initially, the students as well as some faculty members did not appreciate this idea. They were apprehensive about the need for introducing the departmental courses in the first year. Through discussions, it was agreed upon, over time, that making such changes to the curriculum is very important for a better understanding of the department. Anyhow, updating of the syllabus is a continuous process. Our committee has decided to include a practical course in addition to the departmental course. We have always



tried to encourage a more hands-on approach to the learning process. The practical courses should comprise the application of what they have learnt in the theory classes, so that it leads to a better understanding of the subject.

What are the future plans of UGCRC? What plans are in the pipeline for modifying the courses to make the engineering courses more interesting or better for the students?

The first thing is that whatever provisions are being made, they should be utilized and implemented properly. So it is very important to have a good interaction and understanding between the students and UGCRC, students and teachers, among teachers, teachers and UGCRC. If this objective is achieved then the benefits will follow automatically.

As a step towards promoting interdisciplinary education and research, we have introduced multi-course and multi-program electives from the third year in the undergraduate curriculum. This means that a course similar in nature with some other course from another department, will be titled as a multi-core course. A particular department will be coordinating for operational purpose, but any professor across departments, with a sufficient expertise in the area, will be eligible to teach that course. Similarly, this rule applies to the electives also. Every semester, from third year onwards, there will be two electives available to the students. One elective is the departmental elective and the other is an open elective which has to be chosen from other departments, and we have made this compulsory.

Design & Innovation Hub

"Innovation is not a result of chance, it is the result of action. It is not a thing to wait for, it is a thing to do."

Introduction:

The Design and Innovation Hub boasts of over two hundred projects being completed in just under 2 years. Back in March 2014, a workshop on "design and innovation" was attended by academic thinkers, design, grass roots inventors, scientist and engineers, social activists and people from liberal arts. The workshop concluded with a mutual agreement for the need of a platform where students are provided with guidance, facilities and support to get their hands dirty.

Philosophy of Design & Innovation Hub:

The goal of Design and Innovation Hub is to produce students of three qualities:

1. Analytical ability.
2. Building ability (Ability to design with creativity).
3. Caring and character (sensitivity to act for others and courage to act on one's abilities).

These are the ABC's of technical education. A and B pertain to "how to do" and C pertains to "what" and "why" of life. Many students, when they enter engineering are full of enthusiasm to understand new areas, to build systems and to experiment and play with them. The primary goal of the Design and Innovation Hub (DIH) is to tap this enthusiasm and to direct it to exploration and sustained pursuit by the student which may result in the development of a deeper interest in the

chosen area or topic of study. The students would be encouraged to do research and undertake design and build on their dreams, thus converting this hard work into a journey of joy. The DIH also encouraged the faculty members to blend the creativity and zeal of the students with their own rich experience and come up with solutions on societal or industrial problems.

Working of Design & Innovation Hub:

Design and Innovation Hub would sponsor the following types of projects:

1. Summer projects that can be undertaken by the students in their summer vacations.
2. Projects that are carried out by the students to compete in international events or events of repute.
3. *Suo moto* running for longer durations (Can be subdivided into smaller summer projects, or can also be extended summer projects).
4. Extended summer projects (can be continued as a B Tech project).

For a project to qualify under the Design and Innovation Hub, the project should distinctly have elements of innovation and should be strictly bound by clear objectives, deliverables and work plan. Students are encouraged to come up with innovative projects in the area of their liking. It is also expected that projects would be floated by the faculty members, who would take the responsibility of these projects.

Financial Assistance Provided by The Centre:

1. Living expenses (stipend) to students of the institute who work on the project during summer vacation.
2. Minor equipments, components and consumerables to be used in the project. No extra man power can be hired for the project.
3. Registration fee and travel for participating in international technical events or events of repute.
4. Books, standards, software and contingencies.

Achievements:

1. 180 summer projects involving more than 450 U.G. students have been completed till the last summer in 2015.
2. Around 50 one-year projects were completed in March 2016. Around 100 new one-year projects commenced for the next year.
3. Sponsoring students for events like SAE INDIA BAJA-2015, Mahindra group Rise Prize, Challenge, Shell Eco Marathon Asia 2015, etc.

How can a student get his/her project approved under DIH?

Every year around January, announcements are made inviting project proposals from students for DIH Extended project (of one year duration). Similarly every year in April announcements are made for DIH summer project.

The project proposals are scrutinized by the core committee and if found to have elements of innovation and are strictly bound by clear objectives, deliverables and work plan are approved. The students whose projects have been approved, are required to fill a detailed project report (DPR) wherein they are required to give the details of budget required, team members and mentor.



Engineering Entrepreneurs

Malaviya Centre for Innovation Incubation and Entrepreneurship (MCIE) was registered in the year 2008 as a not-for-profit society under India's society registration act of 1860. The Technology Business Incubator is the flagship programme of MCIE. MCIE is governed by its own board. The president of the society is the Director, IIT (BHU) (ex-officio); the present secretary and the coordinator of the organisation is Prof. P.K. Mishra of Department of Chemical Engineering and Technology, IIT (BHU) Varanasi and the members of the society comprise of eminent academicians and entrepreneurs of the region.

Genesis and Journey Forward

Technology Business Incubator (TBI) at Malaviya Centre for Innovation Incubation and Entrepreneurship (MCIE) at Indian Institute of Technology (Banaras Hindu University) was set-up with this view point in the year 2008. The TBI became fully functional since 2011. Till the year 2014-15 it remained largely supported by National Science and Technology Entrepreneurship Development Board (NSTEDB) under

Department of Science & Technology (DST), Government of India. Since 1st April 2015 the recurring expenditure of TBI is being met by fund provided by IIT (BHU). The Ministry of MSME, Government of India has also pledged their support under their scheme "Support for Entrepreneurial and Managerial Development of SMEs through Incubators". Under this scheme the ministry is to provide the business incubator between Rs.4 lakh and Rs. 8 lakh per idea/unit nurtured, to be passed on to the start-ups. The support by the ministry under this scheme is limited to a total of Rs. 62.5 lakh for the ten units.

Facilities Provided

The TBI presently offers only physical incubation and the standard residential period for the start-ups is that of two years. TBI at IIT (BHU) has a separate premise and building. It has furnished office spaces for incubated companies; a conference room; a well-equipped laboratory; a training hall with a sitting capacity of 75 audiences; high speed internet and other value added support services.



Awards & Recognitions

Bridgedots Techservices Pvt. Ltd.
Winner of DST-LOCKHEED MARTIN Award 2015.
Kritika Polycorp Pvt. Ltd.
Winner of gold medal in India International Trade Fair, Pragati Maidan, New Delhi in 2013.
Bridgedots Techservices Pvt. Ltd.
Semifinalist Masterpreneur CNBC, first Season 2013.
ET Media Labs Pvt. Ltd.
Among Top 30 Start-ups of Global Student Entrepreneur Award.
Magzhub Services Pvt. Ltd.
Winner of Startup 20-20 Weekend Competition, at CUE, IIM-Ahmedabad, 2013.
Fasket
Among top 25 start-ups of TATA First Dot powered by NEN 2013.



Startup Organizations

1 Bridge Tecservices Pvt. Ltd.

2 Magzhub Pvt. Ltd.

3 Karpa IT Solutions LLP

4 Agati Health Care Pvt. Ltd

5 Anaglob Technology Services Pvt. Ltd.

6 iMinBit TechIndia Pvt. Ltd.

7 Kashi Handicrafts Pvt. Ltd.

8 Shrimali Organics Pvt. Ltd.

9 Nblik

10 Grub Street

11 ET Midea Labs Pvt. Ltd.

12 ArtEye Software Solution

13 Sigrid Educational Pvt. Ltd.

Events & Programs organized by MCIIE

Training Programs:

DST NIMAT Programs supported by NSTEDB, New Delhi & EDII, Ahmedabad:
Faculty Development Program
Entrepreneurship Development Program
Entrepreneurship Awareness Camp
Technology Entrepreneurship Development Program

National & International Conferences:

InSPIRE-Varanasi, 2016

A Conclave cum exhibition on InSPIRE (Inclusion for Smart city Planning of India using Renewable energy and Energy efficiency) was organised by MCIIE, IIT (BHU), Varanasi along with Indian Institute of Management - Ahmedabad, Indian Biogas Association, New Delhi and Department of Chemistry, Institute of Science(BHU), Varanasi on 29th & 30th January, 2016 at K.N. Udappa Auditorium, IMS (BHU).

Kashi Katha

"Varanasi: Kal Aaj aur Kal" organized during 8th-9th February 2015 at K. N. Udappa Auditorium, Banaras Hindu University.

"Kashi Katha 2016: Kashi in 21st century" during 6th - 7th February 2016 at K. N. Udappa Auditorium, Banaras Hindu University.

Workshops and Forums:

Summer School cum Workshop on Water and Wastewater Treatment

Organized at Indian Institute of Technology (BHU) Varanasi, UP, during May 21 - June 05, 2015, wherein, experts from IIT (BHU), BHU, NTs, NEERI, ISM and other reputed national academic institutions and organizations has delivered expert lectures on various topics.

Women Entrepreneurs' Forum

On 8th August 2015 Malaviya Centre for Innovation Incubation & Entrepreneurship (MCIIE), IIT (BHU) Varanasi along with FAB Women Foundation Trust organised a Women Entrepreneurs' Forum to promote women entrepreneurship.

Discussion Forum on Strategies to Save Ganges

On 4th October 2015 (Sunday) a 'Discussion Forum on Strategies to Save Ganges' was organized by Prof. G. D. Agrawal (Swami Saanand) at MCIIE, IIT (BHU) Varanasi.

Smart City Public Participation Workshop

A participatory workshop was organized on theme of Varanasi Smart City Development at Malaviya Centre for Innovation, Incubation and Entrepreneurship (MCIIE) at IIT (BHU) Varanasi on October 30, 2015.

China - India Youth Exchange Workshop

Shengwei Zhao, Founder - China India Youth Union, visited MCIIE to improve understanding between Chinese and Indian youths aims to facilitate partnerships in social sectors, business, academia, sport, arts, etc.

CommenceMINT Workshop

A Startup workshop was organized on theme of "Life of your STARTUP after Campus - 2016" at MCIIE, IIT (BHU) Varanasi. Mr. Subash Dhar, Mr. Arun Singh, Mr. Sanjay Dutt Founders-Commence MINT, co-organized the event.

Green Cell: Towards a Cleaner, Greener Campus

"We do not inherit the world from our ancestors, we borrow it from our children."



IIT (BHU) has always worked towards maintaining a sustainable environment, habitable for generations to come. A significant step in this respect, is the formation of a dedicated Green Cell, which came into shape formally on 9th January, 2014. It comprises a number of active professors under the chairmanship of Prof S.H. Hasan. In a meeting held in December the same year, the committee resolved to set up a Green Club to act as an interface between faculty members and students of the campus to achieve the objectives of green auditing of the campus. The objectives include developing a green vision policy and framework for the institute, encouraging the efficient use of resources with the goal of zero wastage of food, electricity and water, establishing an efficient waste management policy, developing indigenous sustainable issues for environmental issues, reaching out to nearby villages, as well as to assess the environmental and health impact of current practices so as to develop best practices to reduce carbon footprint in the campus. A panel of hostel representatives and student volunteering team was formed, along with club representatives, for the purpose. In the 2014-15 session, the actions implemented under the Green Cell include installation of meters in several hostels to monitor electricity and water consumption, development of a complaint cell whereby students can directly send a text message to the

plumbers in case of water leakage in any hostel, and an elaborate publicity drive in the campus through videos, flexes and posters.

In a joint meeting of BHU and IIT (BHU) in October 2014, several ideas were discussed and finalized, including:

1. Development of a Zero Plastic Zone: Creating a plastic free campus by banning the use of plastic wares in mess, functions, parties, conferences, shops etc.
2. Management of Biological waste: Composting pits would be prepared near hostel premises for managing biological wastes generated by the hostels.
3. Potable water quality monitoring: Periodically drinking water would be monitored for regular quality check.
4. Awareness drive: Educating Maharajs, mess workers and shopkeepers about cleanliness and green drive.
5. Channelizing civic bodies of the campus: SSS, EWS and UWD would be synchronized to achieve the desired results through their collective effort.

As our contribution towards the Swachh Bharat Abhiyan launched by Hon. Shri Narendra Modi, the cell oversaw a road cleaning initiative by the institute students in October 2014, under the leadership of our honourable director, Prof Rajeev Sangal. On the same day, a Paper Bag Campaign was organized to make the campus plastic free for which Mr. Abdul Muzeeb, popularly known as Paper Bag boy was made its Brand

Ambassador to motivate students to ban Plastic bags and use Paper bags instead.

A number of initiatives taken in the academic year 2015-16 include :

1. Devoting an entire year to remove all the metal scrap from the junk yard near the workshop and IIT Cafeteria.
2. Displayed banners with motivational quotes written at Limbdi Corner on the occasion of 15th August 2015.
3. Conducted two Plantation Drives, with the first phase beginning on 15th August and second phase on 19th September.
4. Organized a Clean Campus Drive in October 2015 at DG Corner and making the place cleaner.
5. Celebrating a Green Week in which many pro-green initiatives like plantation, cleaning drives, adopt a sapling, etc. were conducted for an entire week.

Several innovative and sustainable ideas are also in the pipeline, with renovation of mess kitchens, developing a Sustainability guide for the institute to be followed by students, establishing a centralized food storage system for all the messes in IIT(BHU), introducing a lecture series on green jobs related to various departments by eminent speakers, installing solar water heaters in hostels and even collaboration with various institutes and industries for live projects, being on the high priority list.

Institute Lecture Series

"Educate to innovate and innovate to change" is the tag line of Institute Lecture Series (ILS) which was inaugurated in presence of Jal Purush Rajendra Singh on 8th November 2013. ILS is an initiative of Dr. Rajeev Sangal, Director, IIT (BHU) Varanasi. The prime objective of ILS is to motivate students through interactions with personalities who have done exceptionally well in their respective fields. As stated by Prof. Sanjay Kumar Sharma, The Chairman, ILS "The only criteria for inviting the speakers for ILS is that they should have done well with their lives and their lecture should be able to inspire at least some section of the institute. It is not necessary that the speakers have core engineering or technology background; they can be from other sectors too. Many elegant personalities from different parts of world have delivered lectures in the ILS and enlightened not just students but faculty members too. These comprise not just lectures, but are also followed by an interactive question-answer session, where the audience members can get their queries answered by the speaker.



Professor David Richard Bell, Professor of Marketing, Wharton Business School, University of Pennsylvania delivered a lecture on "Prevailing E-commerce Issues". There was humongous participation from students' side in this lecture. Dr. Jitendra Nath Goswami, Director, Physical Research Laboratory, Allahabad delivered the lecture on "Exploration of the Moon, Mars and Beyond: The Indian Scene". Dr. Virindra Kumar Raina, Senior Expert & Con Senior Expert & Consultant to World Bank and United Nations, spoke on "Nepal Earthquakes and Its

Rehabilitation Issues". Apart from these, uptill 9th March 2016, 18 institute lecture and 2 non institute lectures have been delivered. These lectures have also been uploaded on the YouTube channel of ILS, IIT (BHU). Students look forward to ILS lectures with a lot of enthusiasm and zeal. It has positively influenced the life of students, and they continue to attend these events in growing numbers. There is also a plan in the pipeline to expand its scope and conduct think-talks and lectures in Technex and TEDx IITBHU, under the banner of ILS.



Institute Day

IIT (BHU) once again showed its concern towards the environment and the river Ganges by celebrating its Institute Day on April 2-3, 2016 with the aforementioned theme in mind. A perfect blend of technology and innovation with the environment, the institute showcased some of its major achievements in research and innovation to help benefit other budding researchers. The institute day was inaugurated by the director of IIT (BHU) Varanasi, Prof. Rajeev Sangal in the Senate Hall, Swatantrata Bhawan, BHU at around 11 am. As quoted by the Director himself, "The role of the Institute Day is to showcase the research and innovation taking place in the institute". In fact, the director himself emphasized the importance of the interdisciplinary work as well as making the localites aware of the work being done at the Institute.

The event promoted both business and environmental concern with two panel discussions being held; one between industrialists and entrepreneurs of the region and the academia, and the other with notable social groups for environment and society to tackle their technological problems with special mention of water harvesting and conservation techniques. The events took place on the 2nd and 3rd of April in the Senate Hall, Swatantrata Bhawan. A short



play "Ganga and Gangi" was staged from 5 pm in Swatantrata Bhawan Foyer on the 2nd of April to enlighten the people about the plight faced by the Ganges in the country in the hands of its own countrymen and also promote efforts to save the holy river. Besides, a puppet show was organized on the 2nd day of the two-day meet to highlight the neglect faced by the traditional arts in India, especially Benaras.

One of the biggest highlights of the two-day affair were the various projects showcased under research (UG/PG/Research separately) and innovation at both the Departments' level and the overall Institute level. In fact, they were judged by a committee comprising highly experienced experts from all over

India (including former directors of IITs) and awards were given in each of the categories during the Valedictory ceremony held at 4pm on 3rd April, 2016.

Individual departments and schools showcased their research work in the Swatantrata Bhawan lawns on both days and the event even promoted interdepartmental collaboration. Each department was given individual stalls to help showcase how their work involved innovations which can directly connect with the masses. The institute nomination of In-Residence Programme at Rashtrapati Bhawan went to Mr. Gaurav Modanwal. Team Averera was also awarded during the ceremony.

Students as well as research scholars and PhD students showcased their work through working models and posters for which TLC had organized workshops earlier in March, 2016. With participation from technical colleges, industries, handicraft clusters and social organizations, the two-day gathering was a success and gave a strong message to the society towards the need to incorporate technology and innovation in our attempts to save nature and its creations.



Student Achievements

IIT (BHU) students have distinguished themselves in various competitions of national and international repute:

1. Imprint Essay Competition

An all India essay competition was organized, inviting essays from students of IITs, IISc, IISERs and NITs on research and education policies in any of the ten listed topics, (viz. Advanced Materials, Defense, Manufacturing etc).

Advanced Materials:

1st-Shrinivas Vithal Kulkarni (Material Sciences Engg. Part IV) and Vishwateja Reddy (Material Sciences Engg. Part IV)

Defense Category:

2nd Shrinivas Vithal Kulkarni (Material Sciences Engg. Part IV)

3rd-Shubham (Mechanical Engg. Part III)

Healthcare:

2nd-Ramdhari Maddheshiya

Vishwateja Reddy (Material Sciences Engg. Part IV): Offered admission to ISB's Young Leaders program.

Team Spitzenreiter:

A group of 25 members designed and fabricated an All-Terrain Vehicle (ONYX) with a max speed of 55 kmph, gradient capacity of 45deg along with off-roading capability.

Tech-Fest, IIT Bombay:

1. Suraj Panigrahi (Mechanical Engg. Part II): Third Prize, Technocrane Event.

2. Perikala Manasa: (Engg. Physics Part IV): First Prize, Ideate Event.

3. Shams Ahmed: (Civil Engg. Part II): Third Prize, Aviator Design.

Shubham (Mechanical Engg. Part III): Secured 2nd position in Aeronave Event (Remote Controlled Plane) in Cognizance 2015 at IIT Roorkee.

Dhawan Gupta: Won IEEE Student Enterprise Award 2015 for the project proposal on "Hand Gesture to Speech Conversion Device".

Rohit Anil Gupta: awarded scholarship under Panasonic Scholarship Program.

Akash Rai: awarded the S.N. Bose Scholarship 2016 by the Indo-U.S. Science and Technology Forum

(IUSSTF).

Umang Gael secured International rank - 28 and All India Rank - 8 in June Long Challenge 2015 conducted by CodeChef.

A team comprising of three Computer Science & Engg. students, Vaibhav Aggarwal, Prasoon

Varshney and Ayush Mehta were invited to Goldman Sacs, Bangalore office to present their solutions to the GS Quantify championships.

7 teams qualified for the Amritapuri regionals, 3 for the Chennai Regionals and one team qualified for the Kolkata regionals of the International Collegiate Programming Contest conducted by the Association for Computing Machinery.

Google Summer of Code:

The Google Summer of Code (GSoc) is an annual program to all students who successfully complete a requested free and open-source software coding project during the summer. 14 Students of IIT BHU were selected for the program in 2015.

1. Ankush Sharma (ECE12) GNU Mailman

2. Gorantla Sai Krishna (CSE13) OSUQSL

3. Sumit Sahrawat (MNC13) Haskell

4. Sartaj Singh (MNC13) PSF (SymPy)

5. Srijan Mishra (CSE10) RouteFlow

6. Abhijeet Kislay (EEE11) PSF (Pgmpy)

7. Shubhangi Gupta (EEE11) Beagleboard

8. Prince Kumar (MST13) P2PSP.org

9. Aditya Verma (CSE12) LLVM Compiler Infrastructure

10. Vineet Kumar (CER11) OpenMRS

11. Shivam Malhotra (CSE11) Copleft Games

Culturals:

1. IIT (BHU) Street-Play team won first prize at BITS, Pilani cultural festival, Oasis.

2. Shriya Chandrakar: Second Prize in



solo singing at Oasis, BITS Pilani.

3. Rajat Jain & Dhruv Chawla: Second Prize in National Debate at Aligarh Muslim University, Yendrebam Manoj Singh: First position in Carvature event in Mood Indigo, IIT Bombay.

Sports & Games:

1. Basketball Achievements:

a. Boys:

i. Won Silver Medal in Sportech 2016 (annual sports-fest of IIT DELHI).

2. Chess:

a. Won Gold Medal at Udghosh, IIT Kanpur and Best Player Award to Abhishek G. (freshman year).

3. Weight Lifting:

a. Weightlifting district competition:

i. Ram Prasad Meena - Bronze Medal.

ii. Sumit Swarnamaya - Silver Medal.

b. Sportech, IIT Delhi:

i. Sonu Kumar Meena - Bronze Medal.

ii. Koushik Konwar - Gold Medal and Best Weight-lifter award.

iii. Ram Prasad Meena - Bronze Medal.

4. Hockey:

a. Bronze Medal at Sangram'15, the annual sports festival of IIT Roorkee.

b. Silver Medal at Inter-IIT Sportech, IIT Delhi.

Social Work:

Team Aparigraha organised its annual cloth collection drive and collected more than 850 kg of clothes and more than 200 pairs of shoes and sandals, all of which were repaired, washed, ironed and distributed to the needy.

Faculty Achievements

Arun Prasad was invited by School of Civil & Environmental Engineering, Nanyang Technological University, Singapore as Visiting Research Scientist for a period of one year during 2014-15.

Brind Kumar was engaged with the team of the Inland Waterway Authority of India in finalising the Multimodal Terminal at Ramnagar, U.P. for the National Waterway No. 1 on 04.02.2016.

N.K. Mukhopadhyay has been appointed as a fellow of the West Bengal Academy of Science and Technology.

R.K. Mandal has been appointed as a member of the Research Council at Defence Materials & Stores Research & Development Establishment, Kanpur from 2015 to 2017.

Ashutosh Kumar Dubey has received the R. L. Thakur Memorial Award in the Young Scientist Category. The honour

was conferred by the Indian Ceramic Society.

S. Mukhopadhyay has been appointed as a Math-Reviewer at the American Mathematical Society.

A. P. Harsha, served as Chairperson at Malaysian International Tribology Conference 2015, 16-17 November 2015, Penang, Malaysia.

J. Sarkar, became Editorial Board Member of American Journal of Engineering and Applied Science.

A.K. Srivastava has been elected has a Life-time Member of the International Astronomical Union (IAU).

A.K. Srivastava has been appointed to serve on the Editorial Board of the Journal of Astrophysics & Astronomy published by SPRINGER.

K.K.Shukla has been appointed as the Editor of ICTACT Journal on Soft

Computing.

A.K. Agarwal has been appointed as an Independent Director in Northern Coalfields Limited board for a term of three years starting Dec. 2015.

B. Mishra was invited to the 31st Meeting of Scientific Body of Indian Pharmacopoeia Commission on 25th July, 2015.

S.K. Shrivastava, has been awarded the "Illustrious Alumnus Award, 2016", by the Department of Pharmaceutical Sciences at H.S. Gour University, Sagar.

M. A. Quraishi has been awarded the International Life Time Achievement Award by the International Science Congress Association (ISCA) in December 2015 and was a Member of the Executive Council of the World Academy of Chemistry at Kolkata in September 2015.

Sponsored Projects

List of sponsored projects started in 2015/2016

1. Study of Magnetospheric Wave-Particle interaction, Aurora, Airglow and Conductivities on Planets and their satellites-under Dr.D.Giri as a government project in the Physics Department, funded by ISRO for a 3 yr. period w.e.f. 23rd October 2015.

2. Development of SrTiO₃ based Anode Materials for Intermediate Temperature Solid Oxide Fuel Cells-under Dr. Prabhakar Singh as a gov. project in Physics dept. funded by BRNS for a 3 year time period w.e.f 30th June 2015.

3. Evaluation and Optimisation of Biodiesel Production from Microalgae-under Prof. Yogesh C.Sharma as a gov. project in Chemistry dept. funded by DST for a 3 yr.duration w.e.f 21st April 2015.

4. Development of Electropulsing Facility for Synthesis of Bulk Nanostructured Materials-under Dr. R.Manna as a gov. project in Metallurgical Engineering Dept. funded by BRNS for a 2 year time period w.e.f 21st Sept. 2015.

5. Design, Development and Fabrication of an Incremental Sheet Hydro-forming Machine Setup-under Dr. Santosh Kumar as a gov. project in Mechanical Engg. dept. funded by SERB for a 3 year time period w.e.f 26th March 2015.

6. De Novo Synthesis of orthogonally protected uronic acid building blocks: Access to various important oligosaccharides-under Dr. J. Kandasamy as a gov. project in Chemistry dept. funded by SERB for a 3 year time period w.e.f 14th October 2015.

7. Study of Neutron Diffraction on CoCrO₄ by A/B Site Mixing-under Dr.Chandana Rath as a gov. project in SMST dept., funded by UGC, New Delhi for a 3 yr. duration w.e.f 7th January 2015.

8. NO_x Removal from Diesel Exhaust by combined NO_x Storage Reduction and NH₃ SCR System-under Dr. Sweta as a gov. project in Chemical dept. funded by SERB for a 3 year time period w.e.f

11th August 2015.

9. Electromagnetic Analysis, Design and simulation of an X-band Gyro-Twystron Amplifier-under Dr. M. Thottappan as a gov. project in Electronics dept. funded by SERB for a 3 year time period w.e.f 14th October 2015.

10. Study and Analysis of Mathematical Models of Nonlinear Fractional Order Diffusion Equations-under Dr. Subir Das as a gov. project in Mathematical Sciences dept. funded by SERB for a 3 year time period w.e.f 29th April 2015.

11. GPU Accelerated Image Processing in Swachh Bharat App-under Dr.N.S.Rajput awarded on Nvidia Tesla K40 GPU through Nvidia's nationwide program as well as further support through Nvidia in March 2016.

12. Development of low-voltage, low-power, colloidal quantum dot light-emitting transistors for next generation display technology under Dr. Bhola Nath Pal as gov. project in SMST dept.

Faculty : Appointments & Retirements

Appointments:

1. **Dr. Ashutosh Kumar Dubey**
(Assistant Professor) - 10.12.2015
- Ceramic Engineering.
2. **Dr. Akansha Dwivedi**
(Assistant Professor)- 14.12.2015
- Ceramic Engineering.
3. **Dr. Preetam Singh**
(Assistant Professor) 31.12.2015
- Ceramic Engineering.
4. **Dr. Md. Imteyaz Ahmad**
(Assistant Professor) - 01.02.2016
- Ceramic Engineering.
5. **Dr. Ankur Verma**
(Assistant Professor)- 01.10.2015
- Chemical Engineering.
6. **Dr. Manoj Kumar**
(Assistant Professor)- 03.10.2015
- Chemical Engineering.
7. **Dr. Ravi Prakash Jaiswal**
(Assistant Professor) - 01.10.2015
- Chemical Engineering.

8. **Dr. Anil Kumar Singh**
(Assistant Professor)- 07.08.2015
- Computer Sci. & Engg.
9. **Dr. Hari Prabhat Gupta**
(Assistant Professor) - 02.11.2015
- Computer Sci. & Engg.
10. **Dr. Joysurya Basu**
(Associate Professor) 04.02.2016
- Metallurgical Engineering.
11. **Dr. Nawal Kishore**
(Assistant Professor) 21.12.2015
- Mining Engineering.
12. **Dr. M.S. Muthu**
(Assistant Professor) -
01.12.2015 - Pharmaceuticals.
13. **Dr. Prasanta Kumar Nayak**
(Assistant Professor)- 14.12.2015
- Pharmaceuticals.
14. **Dr. Sunil Kumar Mishra**
(Assistant Professor) 02.09.2015
- Physics.

15. **Dr. Avanish Singh Parmar**
(Assistant Professor) 23.09.2015
- Physics.
16. **Dr. Saurabh Tripathi**
(Assistant Professor)- 06.10.2015
- Physics.
17. **Dr. Swapnil Patil**
(Assistant Professor)- 26.10.2015
- Physics.
18. **Dr. Ankit Gupta**
(Assistant Professor) - 17.11.2015
- Civil Engineering.
19. **Dr. Shradha Mishra**
(Assistant Professor) - 27.11.2015
- Physics.
20. **Dr. Prasun Dutta**
(Assistant Professor) - 11.12.2015
- Physics.
21. **Dr. Santanu Das**
(Assistant Professor) - 02.03.2016
- Ceramic Engineering.

Retirements

Dr.S.K. Balasubramaniam retired as a Professor in the Department of Electronics Engineering on 30th April, 2015. He had previously served as Head of the Department, and had done extensive work in fields of microelectronics and VLSI design.

Dr BN Dwivedi, retired on 31st May 2015, is now an Institute Professor of Physics at the institute. He has over thirty-five years of teaching experience in India, and broad experience in Solar and Space Plasma Physics, with involvement in almost all major solar space experiments conducted so far. He has published over 255 research papers, reviews, book chapters, and articles in various reputed publications, and has been honoured with several national and international awards in his career.

Dr. Om Prakash retired as Professor in the Department of Ceramic Engineering on 31st October, 2015. His research interests included Electronic Ceramics, Polymer Matrix composites and Bio-Ceramics.

Dr S.N. Ojha, Professor at the Department of Metallurgical Engineering, retired on 31th July 2015, following a long and illustrious career at the institute, with over 123 research papers, 27 conference presentations and multiple honours and awards received over this period.

Dr. A.K. Agrawal, Professor at the Department of Computer Science and Engineering completed his Masters from IIT Kanpur and PhD from Stony Brook University, New York. In a carrier spanning 42 years he taught at leading institutions such as City University of New York and IIM Lucknow besides IIT (BHU). In 1989 along with S.Krishnamurthy he authored the first computer book in an Indian language when he published "Computer Praveshika" in Hindi.

Non-Teaching Staff Retirements:

1. Sri Jitendra Jha (Technical Superintendent) - 31.01.2015 - Physics
2. Sri Ramji (Jr Technical Superintendent) -31.03.2015 - Main Workshop
3. Sri Anil Kumar Singh (Technical Superintendent) - 30.04.2015 - Electronics Engg
4. Sri Gopal Ji (Technical Superintendent) -31.05.2015 - Mining Engg
5. Sri Krishna Gopal (Technical Superintendent) - 30.06.2015 - Ceramic Engg
6. Sri Hareram Ram (Senior Technician) -30.06.2015 - Mining Engg
7. Sri Awadh Narain (Technical Superintendent) - 31.07.2015 - Computer Engg.
8. Sri Ghanshyam Lai (Technical Superintendent) - 31.07.2015 - Ceramic Engg
9. Sri Chhote Lai (Technical Superintendent) - 31.07.2015 - Pharmaceuticals
10. Sri C.P. Srivastava (Technical Superintendent) - 30.09.2015 - Mining Engg.
11. Sri K.B. Goswami (Technical Superintendent) - 31.01.2016 - Mechanical Engg
12. Sri Siya Ram Singh Yadav (Technical Superintendent) - 31.01.2016 - Electronics Engg.
13. Sri Doodh Nath Singh (Jr Technical Superintendent) - 31.01.2016 - Main Workshop

Publications and Short-Term Courses

Publications:

IIT (BHU) is proud to participate in cutting-edge research in an attempt to solve humanity's most crucial problems. According to Scopus, researchers affiliated with IIT (BHU) have had 695 papers and articles published in major national and international journals during the years 2015-16. Around 455 papers were published in 2015 and 240 have been published in 2016 until July. With consistent output from every department, IIT (BHU) has made significant contributions to the frontiers of science and technology in nearly every other relevant field as well.

IIT (BHU) is happy to have had a great academic year in research and will actively target new heights in every field in the incoming year.

Short-Term Courses:

1. Department of Computer Science and Engineering organized a Quality Improvement Program (QIP) Sponsored Short-term course on Wireless Sensor Networks (WSNs). This course covered topics relevant to the knowledge and understanding necessary to do research in WSNs. The course includes both theoretical lectures and hands on practice sessions on topics related to WSNs.

2. Dr. Medha Jha, (Civil Engineering) organized a Workshop on QGIS on 8th October 2015 along with Dr. Anurog Ohri.

3. A three-day Workshop was organized in Metallurgical Engineering Department for Non-Metallurgist, IIT(BHU) (December 2015) with Prof. R.K. Mandal as Chairman, Dr. R. Mania and Dr.

Kausik Chattopadhyay as Convener.

4. Short term course on 'Application of numerical modelling in strata control' was organised in May 2015.

5. Short term course on 'Social cost benefit analysis for the projects' was organised in Jan 2016.

6. Prof. P. Ghosh organized Global Initiative of Academic Networks Course from 5-16th Jan, 2016, aimed at tapping the talent pool of scientists and entrepreneurs internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

Collaborations & MOU's

IIT (BHU) aims to serve the nation through collaboration with various organisations such as railways, WWF, Power grid Corporation and patient safety foundation. Most notably the Malviya Chair for Railway Technology was inaugurated by the honourable ministers Shri. Prabhu and Shri. Manoj Sinha on 8th June, 2015. An endowment of Rs. 5 crore will be utilised for research, arranging seminars, and appointing short term visitors both from within the country and abroad. Recently, on 16th of February, 2016, representatives from IIT (BHU) visited Research Design and Standards Organisation, Lucknow to deliver a talk to railway officers.

The representatives included Prof. R. K. Mandal, Prof. Vakil Singh and Prof. S N Ojha. Two of the projects initiated under this refer to polymer composite materials used in fans for air conditioning. Prof. Rajeev Prakash of the School of Material Science and Engineering is exploring alternative materials for fan-blades in order to conserve power. Indian Railways has expressed appreciation for this innovation and aims for optimal application in order to obtain exceptional results.

MOU's with National Organizations

- ▶ Bhabha atomic Research Centre, Trombay, Mumbai
- ▶ Tata Consultancy Services Limited, Chennai
- ▶ Power Grid Corporation of India Ltd., Gurgaon
- ▶ American Society for Quality India Pvt. Ltd., New Delhi
- ▶ CSIR-National Environmental Engineering Research Institute, Nagpur
- ▶ CSIR-Indian Institute of Petroleum, Dehradun
- ▶ Establishment of Centres of Excellence for Training and Research in Frontier Areas of Science & Technology (FAST), Centre for Energy and Resources Development (CERD), (MHRD)
- ▶ WWF-India (World Wide Fund for Nature-India)
- ▶ National Institute of Technical Teacher Training and Research, Chandigarh
- ▶ Ministry of Human Resource Development (MHRD), Design and Innovation Centre between BITU and IIT (BHU)
- ▶ Stem Cure Pvt. Ltd., Ahmadabad
- ▶ Union Department for Science and Technology
- ▶ Patient Safety and Access Initiative (PSAI) of India Foundation
- ▶ IIT-BHU, IIIT-Hyderabad and Expert Software Consultants Ltd., Dwarka, New Delhi

MOU's with International Organizations

- ▶ Lawrence Technological University, USA
- ▶ Swinburne University of Technology, Australia
- ▶ Institute of Frontier materials, Deakin University, USA
- ▶ Universidad De Los Andes, Bogota, Colombia
- ▶ Finnish Higher Education Institution, Finland
- ▶ Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Kitakyushu, Japan
- ▶ University of Applied Science Wiesbaden Rüsselsheim, Germany
- ▶ University of California, Santa Cruz

IIT (BHU) has built mutually beneficial relationships on academic, scientific and cultural cooperation with various International universities. Partnerships with academic institution are established with an aim to generate reciprocal benefits in the form of student and faculty exchange, joint research projects and participation in events and seminars.

Project Varanasi

Project-Varanasi is an initiative under the Design and Innovation Hub of the Institute. The initiative seeks to undertake the study of the different aspects of the extraordinary city of Varanasi and its surroundings. Innovative interdisciplinary group projects, addressing the problems of, or having relevance to the people and the city are adopted under this scheme. Initially, faculty members submit their proposals for funding, the project proposals are



thereafter peer-reviewed for need based innovation or research. At present there are 15 projects being run by faculty members of several different departments, under the leadership of Prof. D.Singh of the Department of Electrical Engineering. The total fund amount sanctioned for the projects is around Rs 1.2 crore. Presently, the faculty members involved with various projects include Dr. A.K. Singh; Dr. P.K. Mishra, Dr. Vinay Singh, Dr. P.K. Singh, Dr. A. K. Maurya, Dr. N. S. Rajput, Dr. P. Ghosh and Dr. M.A. Quraishi.

One of the projects involves building the Swachh Bharat mobile app. The project was recently selected as one of ten top innovative concepts by DEITY. The Project involves various government bodies and industry giant IBM. Besides, a master

project related to documentation and preservation of traditional knowledge, culture and heritage is also being undertaken under this scheme. The projects undertaken under this are on the world famous Ramlila of Ramnagar; The cultural heritage of Varanasi; Preparation of medicinal/herbal garden and creation of awareness among school children of Varanasi and surrounding areas.



A comprehensive list of the current projects under Project Varanasi includes

Title of the Project	Duration of Project	PI(s) & Co-PI(s)
▶ Developing Translators Workbench and Enhancing Language Resources of Sampark MT System for User Organization	Two Years	1. Prof. Rajeiv Sangal, Professor and Director, IIT (BHU). 2. Prof. Dipti Misra Sharma, Professor and Head- LTRC, IIT-Hyd. 3. Dr. Anil Kumar Singh, Faculty, IIT (BHU). 4. Dr. Mukul Sinha, Director, Expert Software Company
▶ Development of Anusaraka Support Modules	Two Years	1. Dr. Anil Kumar Singh, Department of Computer Engineering IIT (BHU)
▶ Resources and Tools for Bhojpuri, Maithili and Magahi Machine Translation System	3-5 Months	2. Dr. Sanjukta Ghosh, Department of Linguistics, Faculty of Arts, Banaras Hindu University.
▶ Machine Readable Dictionary of Bhojpuri, Magahi and Maithili	5-7 Months	1. Dr. Anil Kumar Singh, Department of Computer Engineering IIT (BHU) 2. Dr. Dr. Swasti Mishra, Department of Computer Engineering IIT (BHU)
▶ World Famous Ramlila of Ramnagar; The Cultural Heritage of Varanasi	Two years	1. Prof. Rajeiv Sangal Director, IIT (BHU) 2. Dr. Anil Kumar Singh, Department of Computer Engineering IIT (BHU) 3. Dr. Dr. Swasti Mishra, Department of Computer Engineering IIT (BHU) Prof. P.K. Mishra, Department of Chemical Engineering, IIT (BHU) Varanasi,
▶ To develop low temperature ceramic colors to decorate ceramic wares, especially for Varanasi and Chunar Potters	One year	1. Dr. Vinay Kumar Singh, Department of Ceramic Engineering,
▶ Development Intelligent Air Cooling System	12 months	1. Prof. Rajeiv Sangal (PI) 2. Prof. Devendar Singh (Co-PI) 3. Prof. R.K.Mishra (Co-PI) 4. Dr. Pradyumna Ghosh (Co-PI) 5. Dr. M.Z.Khan (Co-PI)
▶ Pedestrian Flow Characteristics Along Side Walks in IIT (BHU) and Proposed Pathways	12 months	1. Dr. Ankit Gupta, Civil Engineering Department
▶ Design of Low Cost Pyrolysis Machine for plastic wastes conversion into liquid hydrocarbon fuel	---	1. Prof. M.A. Quraishi, Department of Chemistry IIT (BHU)

Invited Talks

S.N. Ojha

- Keynote Lecture in the "International Conference on Simulation of Thermo-mechanical Processing and Modeling (SimPro-2016)" held at Ranchi, during February 10-12, 2016.
- Invited Lecture in the Seminar on Automotive Materials, Pune, February 29-March 1, 2016.

R.K. Mandal

- Lecture Delivered in Department of Physics, Delhi University (December 2015).
- Invited lecture in Metallurgy for Non-Metallurgist, IIT (BHU) (December 2015).
- Invited lecture at Research Design and Standards Organisation, Lucknow (February 2016).

N.K. Mukhopadhyay

- Invited lecture in International Conference on "Metastable Micro structure & Electron Microscopy" IISc, Bangalore, July 6-7, 2015.
- International Conference on Electron Microscopy & XXXVI Annual Meeting of Electron Microscope Society of India (EMSII), July 8-10, 2015.

R. Manna

- 4th International Conference on Thermo-Mechanical Simulation and Processing of Steels (SimPro 16), February 10-12, 2016, RDCIS, SAIL, Ranchi.
- International Conference on Rolling and Finishing Technology of Steel, September 8-10, 2015, Ispat Bhawan, Ranchi, India.
- National Conference on Thermomechanical Processing of Steels and 5th Gleeble user workshop in India (GUWI-2015), August 6-7, 2015, CSIR-NML, Jamshedpur, India.

G.S. Mahobia

- Delivered a lecture on Welding Metallurgy in the Indian railways National Welding.

Prabhat Kumar Singh

- Invited Lectures on : Expert lecture entitled 'Options of Low Cost Sanitation' in National Seminar on Low Cost Housing Models for Urban and Rural Areas of UP, Organized by Department of Technical Education, Government of Uttar Pradesh and Department of Civil Engineering, HBTI, Kanpur, Nov.26, 2015.

S. Bose Dasgupta

- Invited speaker at OMICS: World Congress on Biotechnology 2015, New Delhi, October 2015
- Invited for a talk at CSIR-IICB, Kolkata in August 2015.
- Invited for a talk at Department of Biotechnology, IIT-KGP, October 2015
- Invited to participate as a guest speaker/delegate in the "6th World Congress on Biotechnology" held at Delhi, India (Oct. 05-07, 2015).

Sandeep Kumar

- Invited talk on "Wavelets", Short Term Advanced Training Programme on Integral transform, Distribution and Wavelet analysis, ISM Dhanbad, Dec 14-18, 2015.
- Invited talk on "Wavelets in Computer Graphics", Keynote address in 2015 IEEE International Conference on Computer Graphics, Vision and Information Security, Nov 2-3, KMT University, India.
- Invited talk on "Customized Scale Orthogonal Wavelets for

Solution of PDEs", BARC-BRNS Theme Meeting, Homi Bhabha National Institute, Mumbai, June 16-17, 2015.

A. R. Harsha

- Given keynote address on the topic entitled "Bio-Tribology" at National conference on product design and manufacturing (NCPDM-2015), Nov. 21-22, 2015 MNIT, Allahabad, UP.

Rajesh Kumar

- Invited talk on 'Boundary Lubricated Wear' in National Conference on Advances in Mechanical Engineering NCAME 2016 at B S Anangpuria Institute of Technology and Management, Faridabad on 12th March 2016.

M. Vashista

- Guest lecturer in Department of Mechanical Engineering at Moradabad Institute of Technology, Moradabad on 02-11-2015 topic - 'Grinding and super-abrasive process'.
- Guest speaker in International conference on Technological Drift in Mechanical and Automobile Engineering on 19-20 Feb., 2016 at Dr. K. N. Modi University Newai, Tonk, Rajasthan. Delivered talk on Technology drift in manufacturing.
- Guest speaker in Indian railway national welding seminar - 2016 organized by DLW Varanasi. Topic - Residual stress assessment using Barkhausen Noise analysis. Delivered on 04-03-2016.

B. Mishra

- Invited talk on Role of smart materials and process in controlled and pulsatile delivery of drug for better management of Asthma" at United Institute of Pharmacy, Allahabad on 23rd January, 2016 during Faculty Development Programme on smart materials and drug delivery from January 19-23, 2016.
- Invited talk on "Osmoregulated and Pestillation Technology based drug delivery systems" delivered on 17 February 2016 at GTU, Ahmadabad at a workshop conducted during Pharmacy Research Week-2016 from February 11-19, 2016.
- Invited talk on "Quality of Academic Research-Potential to be Explored" in symposium -Education - Best Practices at 67th Indian Pharmaceutical Congress, 19-21 December, 2015, Mysore.
- Invited talk on "Understanding about expiry dates and effective medication" at Kailash institute of pharmaceutical technology and management, Gorakhpur, 2nd December, 2015.

V. Kumar

- Invited talk on the success story of St. John's Wort: "National Conference on Phytochemicals as Bio therapeutics Unravelling the Mystery of Natural Products HERBESCON 2016, organized by the Department of Biomedical Sciences, Sri Ramachandra University, Porur, Chennai, February 17-18, 2016.

G.P. Modi

- Invited talk on Current Trends in Medicinal Chemistry and Pharmaceutical Sciences in Drug Discovery, 8th NIPER (RBL)-CSIR-CDRI Symposium, held on 18th-19th March, 2016.

M. A. Quraishi

- Invited lecture on International Conference on Oil Country Tubular Goods (OCTG) and metal materials from 18th to 20th December 2015 at Southwest Petroleum University,

China.

- Invited lecture in 5th International Science Congress on 8th - 9th Dec. 2015 at Tribhuvan University, Kathmandu, Nepal.
- Invited lecture at Birmingham University, U.K. on 25 September 2015.

P. C. Pandey

- Chaired a session and delivered an invited talk on "Nanomaterials for Biomedical Application" at Materials Research Society held on November 30 - December 5, 2015 in Boston, USA.

I. Sinha

- Invited talk entitled "Synthesis and catalytic properties of Ag, Cu and magnetic iron oxide nanoparticles in the international workshop on Advanced Materials Challenges for Alternative Energy Solutions held on 18-19 December 2015 in New Delhi, India.

D. Pandey

- Invited talk at International Workshop on Relaxor Ferroelectrics to be held in Shimane in June, 2016.
- Invited talk at Max Planck Institute for Chemical Physics at

Dresden, Germany in May 2016

- Invited talk at EMN at San Sebastian Spain, Sep., 2015.

Rajiv Prakash

- Invited talk in United Pharma, Allahabad Feb. 2016
- Invited talk in Indo-Poland workshop at NASI, Allahabad, Feb 2016
- Invited talk in International conference on Nanobiotechnology at MNNIT, Allahabad, Feb 2016
- Invited talk on Sensors for Environmental Monitoring in University of Applied Sciences, Russelsheim, Germany 5th June 2015.

Chandana Rath

- Invited Talk on "Monoclinic to Hexagonal Phase Transformation and Anomalous Properties in ZnO-SrAl₂O₄ Composites" 8th National Conference on Thermophysical Properties NCTP-2015, Department of Physics: MNIT, Jaipur, December 14-16 2015.
- Invited Talk on Ar⁺ Ion Irradiation Induced Anatase to Brookite Phase Transformation in TiO₂, Low Energy Ion Beam Facility Workshop, IUAC, New Delhi, November 3-4 2015.

Student Festivals & Events

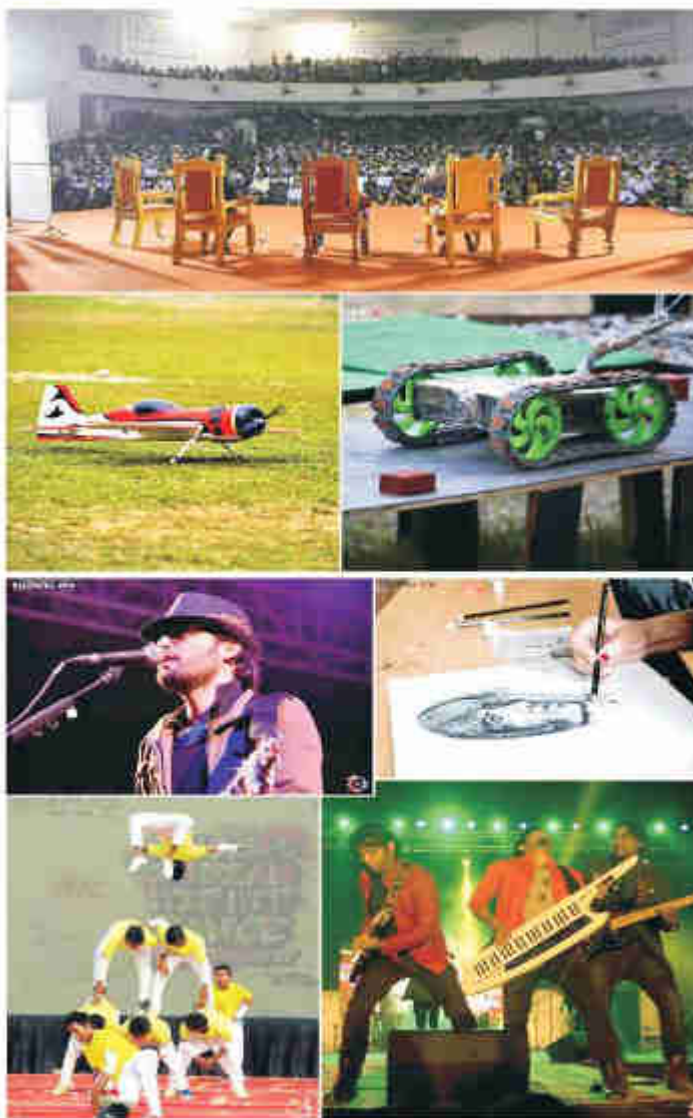
IIT (BHU) Varanasi hosts a plethora of activities and events all through out the year in the areas of science and technology, cultural, sports and games, and film and media. Student organizations manage most of these events themselves, and develop essential teamwork and soft skills.

Technex

The 77th Edition of Technex brought three days of passion, excitement and wonder. Technex '16 saw 1300 participants from 200 colleges across India. The participants competed in over 45 competitions in various fields such as robotics, computer science etc. Various guest lectures with eminent personalities from organizations like NASA, CERN, IDSIA Switzerland were organized, besides talks from leading corporate executives such as Ms Vinita Bali and Mr Santosh Desai. Multitude of exhibits were held including India's first 3-D printed humanoid robot, Manav, Swarm Robotics and the ubiquitous Veer Bhadra Mishra memorial airshow. In order to rejuvenate the mind, body and soul, many awesome events were held this year including a fun-filled comedy night by YouTube channel TVF (The Viral Fever), graffiti art performance and a freestyle bicycle show.

Kashiyatra

IIT (BHU), Varanasi witnessed the extravaganza of its annual socio-cultural fest, Kashiyatra, during 18th - 21st February this year. Casted in a three day long fiesta, it was a blend of various musical, artistic and literary events. From the soulful classical singing to aggressive metal, Kashiyatra experienced a wide range of music with singers like Padmashree Bharti Bandhu and Nikhil D'Souza to bands like Undying Inc. and Asitiva. Endorsing a huge external participation with a total prize money of around 5 lakhs, these three days of IIT (BHU) hosted a plethora of events covering each aspect of the cultural society by organising events of theatre, dance, fashion-show, Indian and western music, quiz, literary skills and fine arts. Living up to its theme of 'Myth Just Got Real', KY16 included all elements encompassing one's fictional fantasy.





Department Of Physics; Anveshan, the annual fest of the Metallurgical Engineering Department; Mettle by the Mining Engineering department; Codefest, an initiative of the Department of Computer Science and Engineering; Spirit, from the department of Pharmaceutics, Udyam and Prastuti by the Electronics Engineering and Electrical Engineering Departments respectively; Karamas by the Ceramic Engineering Department; Udbhav, organized by the Dept. of Chemical Engineering; and Shilp, hosted by the Civil Engineering Department. These tests bring together like-minded individuals from across the nation, through a host of events including paper presentations and simulation-based model building, as well as coding contests and business case study presentations. Guest lectures and lively prizes further make these departmental tests a grand affair.

Spardha

Spardha '15 is the annual games and sports festival of IIT (BHU), Varanasi. Spardha was held between 30th October to 1st November, 2015. Padma Shri Mohammed Saeed, a former field hockey player and an Olympic Gold Medallist, was the Chief Guest for the opening ceremony. In its glorious history of over 30 years, Spardha has grown to become the largest and one of the most awaited sports festivals of northern India, where athletic competition is drawn from all over the country. Mr. Anurag Bhadoria, the honorable minister of sports of Uttar Pradesh and the founder of IGCL, was the guest of honor. The well-known sportswoman, Mrs. Neelu Mishra was the chief guest for the occasion. The special guest was Ms. Manisha Singh. Spardha '15 saw over 200 participants from 40 different colleges.

Department Festivals

The three main institute fests are not all that students get to celebrate here at IIT (BHU). Each of the departments inherits a legacy and a heritage that cherishes the privilege of providing the world with intellectuals who have left impeccable footprints on the sands of time. The respective departmental fests are nothing less than a celebration of disciplines that shall define a future engineer, a celebration of knowledge, technology and the zeal that drives us forward and makes us who we are and will be.

In the previous academic year, the organized departmental fests were COMET, by the Dept. of Mechanical Engineering, Jigayasa, organized by the

