

**Newspaper Clips**  
**September 19-24, 2017**

**September 24**

**First-ever 'Industry Day' at IIT Delhi**

<http://indianexpress.com/article/education/first-ever-industry-day-at-iit-delhi-4858328/>

**Discussions on defence, affordable healthcare, environment and smart cities were held at the event. Scientist Anil Kakodkar and Kunal Khanna from CIPLA were among the speakers.**

The Indian Institute of Technology-Delhi Saturday held its first Industry Day to encourage collaboration between industries and the academia.

The chief guest, NITI Aayog member V K Saraswat, said there was a gap between the industry and the academia. "The capabilities of the industry are not known to academics... The academics don't know what the industry wants. I think it should be mandatory for a professor, whose career span is 30-35 years, to spend 4-5 years in the industry and get the picture on how it is performing, what are its needs, etc, and bring back valuable information to students," he said.

Discussions on defence, affordable healthcare, environment and smart cities were held at the event. Scientist Anil Kakodkar and Kunal Khanna from CIPLA were among the speakers.

**As Sushma Swaraj taunts Pakistan, IIT-D puts affordable tech on table**

<http://timesofindia.indiatimes.com/city/delhi/as-sushma-taunts-pakistan-iit-delhi-puts-affordable-tech-on-table/articleshow/60811899.cms?>

NEW DELHI: It is a simple enough, if innovative idea -filter the air that enters the nostrils to trap allergens and pollution. And it took the brilliance of a team from IIT Delhi to fabricate into what is likely the cheapest and most convenient pollution filter. NasoFilter, as it is called, is stuck to the nostril, causes no discomfort, allows easy breathability , and stops a claimed 95% allergens and PM2.5 polluting particles from reaching the airway , saving people with breathing problems much pain. NasoFilter was showcased at IIT-D's Industry Day event on Saturday , where over 200 firms were present to assess the commercial viability of the students' inventions. These were designed for various purposes and fields, ranging from defence, environmental sustenance, affordable healthcare, smart cities and energy .They included air quality monitors, sensors to detect moisture levels in the soils and regulate watering, and a self-strapping riding helmet that cosily hugged the chin at a push of a button.

Most of the exhibits were developed by students under the guidance of teachers with minimal funding and technical support, but with the objective of developing affordable items.

Speaking to TOI, V Ramgopal Rao, director of IIT-D, rued that most people were mistakenly convinced that the research done at IIT was only on a theoretical scale. On Industry Day, it showed the companies that it could create products that were both practical and market driven. Many of them need

widespread trials before industrial production. "For this to happen, we need industry's support," said Rao.

Aditya Vikram, a security systems company executive, was happy with the products, but said "some hand-holding would be required" to make them production ready. "Many engineering institutions develop gadgets as part of their class projects but there is no use for these in industry. With an event like this, IIT will see more interaction with industry and both will benefit," said Vikram.

### **First drainage master plan in 40 years**

<http://www.dnaindia.com/india/report-first-drainage-master-plan-in-40-years-ready-2547926>



***The problem is, Delhi continues to rely on a nearly four-decade-old drainage master plan made in 1976.***

Delhi does not receive rainfall comparable to Mumbai or Chennai, but a heavy spell for an hour is enough to inundate major traffic junctions and residential areas. There are over 300 major waterlogging hotspots in the city.

Delhi has 426.55 km of natural drainage and a cumulative length of 3,311.54 km of engineered stormwater drains. There are 201 natural drains in three major basins of NCT of Delhi. But most storm drains have turned into open sewers, choking the flow of water and resulting in waterlogging. Several natural drains are dotted with encroachments.

The problem is, Delhi continues to rely on a nearly four-decade-old drainage master plan made in 1976. The Indian Institute of Technology Delhi's (IIT-D) drainage master plan, prepared for the Delhi government, addresses all these issues and more.

The IIT-D team carried out multiple simulations on effective management of drainage system after collecting data from 11 government agencies. "Using rainfall data, we conducted simulations to see the impact on flooding. The points and locations that get waterlogged were included. We quantified the volume of water that needs to be drained. If the capacity is not in place, they have to change that or they have to change the incoming volume," says Professor IIT-D professor, AK Gosain

"The current practice of puncturing sewer lines and draining sewage into storm drains to deal with blockages should be stopped. DJB should use latest mechanisms such as super suckers for de-clogging sewer lines," the draft drainage master plan says.

Gosain says part of the plan's implementation will start soon.

## **September 23**

### **Smart traffic monitoring system invented by IIT Delhi**

<https://www.brainbuxa.com/education-news/smart-traffic-monitoring-system-invented-by-iit-delhi-7168>

A smart traffic monitoring system has been installed by the IIT Delhi in its campus which helps in identifying the speeding vehicles. The camera detects the number plate and through this a warning message is sent to the drivers. The campus has put smart notice boards- digital notice boards where notices are filtered as per the target audiences.

*"We have put in place these traffic monitoring systems installed with a mechanism which identifies cars which are speeding. As of now there is one camera placed near the hospital which collects this data. If the car belongs to our teachers or students, they get an SMS alerting them they have been found speeding," Deputy Director (Strategy & Planning) M Balakrishnan said.*

He was speaking at the press preview of IIT Delhi's Industry Day. The main aim of the event is to increase the collaboration between industry and academia. The five main themes of the event were environment, defense, affordable healthcare, smart cities and energy.

Important personalities such V K Saraswat from NITI Aayog, Industrialist Kumal Mangalam Birla and Nuclear Scientists Anil Kakodkar were present at the event.

The smart traffic monitoring system is developed in collaboration between Vehant Technologies – a start up by an IIT alumnus.

Elaborating on the same, Balakrishnan said, "As of now we have just one camera installed near the IIT hospital which collects all this data, but we want to expand it over time. Since, we can't send SMSs to cab drivers, their numbers simply flash on a board near the main gate, to make them aware."

## A comedy night at IIT Delhi

<http://timesofindia.indiatimes.com/city/delhi/a-comedy-night-at-iit-delhi/articleshow/60793922.cms>



It was a night dedicated to engineers and comedy as Angad Singh Ranyal, stand-up comic and a graduate from Guru Tegh Bahadur Institute Of Technology and Vinay Sharma, an alumnus of IIT Bombay, performed at IIT Delhi. The IIT Delhi Alumni Association, in collaboration with Speranza and Literati (a literature fest), organized the comedy night with Vinay and Angad for the current students and alumni.

'This is the first time that I am performing at a college for the alumni as well as current students' Before beginning his act, Angad Singh Ranyal told us, "I was unable to pass my entrance at IIT. Yahan toh MBA mein bhi admission nahi hua tha, aaj jab stand-up comic ban gaya hoon toh yahan perform karne aaya hoon. This is the first time that I am performing at a college where there are members from the alumni as well as students from the current batch so I am really looking forward to it."



Angad Singh Ranyal

Vinay Sharma said, "In this rivalry of IIT Delhi and IIT Bombay, IIT Delhi jeet hi gaya. Batao Mumbai se entertain karne ke liye bulaya hai paise deke. But it is fun, and I am expecting it to be a great show since I have written many jokes on my college life as well as my life after college so I hope students and alumni here will be able to relate to it."



Former and current IIT Delhi students came together for the comedy night

'It was fun to have them both here at IIT'

Prabhat Kumar, president of the IIT Delhi Alumni Association told us, "The students were having their literature fest so they asked us if the alumni and current students can join hands together for an event. We told them that we can organize a concluding event and that is why we organized this event with the stand-up comics."

Divyam Gupta, one of the students from the organizing committee added, "It was fun to have them here at IIT."

### **US journal blocks access for IIT Bombay after unusually large downloads**

<http://www.hindustantimes.com/mumbai-news/us-journal-blocks-access-for-iit-bombay-after-unusually-large-downloads/story-DerQbKhFpNY0Iy01HBSifL.html>

The American Physical Society restored access after a couple of days, following a request by the institute to the publisher.

A United States-based scientific organisation blocked access for students and researchers at the Indian Institute of Technology Bombay (IIT-B) to its journal, after a student was allegedly found to have downloaded a large number of papers from their website.

The American Physical Society (APS) restored access after a couple of days, following a request by the institute to the publisher. Meanwhile, the institute has launched an investigation into the incident, even though the student, who is from IIT-B's electrical department, has denied any wrongdoing, revealed sources.

Though IIT-B did not give details about the date of the incident, sources said that it happened around two weeks ago.

Colleges subscribe to various academic journals to help students with their research work. While the students are allowed to access these journals online and download papers published in them, the publishers usually put restrictions on the number of downloads to prevent distribution of these papers to non-subscribers.

IIT-B also has a policy in place regarding usage of online content.

The APS journal has been described as a “lifeline” for researchers of many departments. The librarian of the institute had to “plead” with the publishers, before the access was finally restored, HT has learnt.

Varsha Apte, the head of IIT-B's computer centre, said that as soon as the institute learnt about violation of its policy, it suspended the online account of the erring student, and a probe was launched to look into the incident. “The abuse of the journal facility took place from within the campus,” she said.

When the authorities confronted, the student insisted that he is innocent. Apte, nevertheless, has taken all the information regarding his mobile and laptop for further investigation.

A large number of downloads by a student often suggests that its being done for the purpose of illegally distributing to researchers outside the campus. “The students sometimes download the papers from journals in IIT-B for their friends who don't have access to these publications. They either do it manually or use computer programmes designed for mass downloads. There's a possibility that these papers could have been freely made available on online portals,” said PhD scholar from the institute.

One of the famous cases of unauthorised downloading of academic articles involved internet activist Aaron Swartz, who committed suicide in 2013. Swartz had connected a computer to the computer network at Massachusetts Institute of Technology, US, and set it to download academic journal articles systematically using a guest user account issued to him by MIT.

Earlier this year, a New York district court awarded a publisher of scientific journals US\$15 million in damages for copyright infringement by several websites publishing pirated papers.

Apte said that the publishers raise a flag when they detect unusually high rate of downloads from a particular account. “When the publishers find that the rate downloads has crossed a particular limit, they suspect that the student is doing it for someone else, and not for his own reading,” she said.

In April, IIT-B was served a notice from a major proprietary software developer because many people inside the institute were using its software in an unauthorised manner.

## **September 22**

### **IIT-Guwahati researchers show combination therapy may improve treatment of blood cancer**

<http://www.apnlive.com/technology-news/iit-guwahati-researchers-show-combination-therapy-may-improve-treatment-blood-cancer-27837>



***Treatment with certain molecules to block cancer propagating biological pathways can sensitize the resistant cells, say scientists***

New Delhi: A group of Indian scientists have identified a new way to re-sensitise cells that become resistant to chemotherapy in some blood cancer patients.

Blood cancer or Chronic Myeloid Leukemia (CML) occurs when a subset of blood cells start dividing in an unregulated manner ultimately resulting in bone marrow failure. A drug –Imatinib Mesylate (IM) – is used to treat this cancer. But, oncologists are seeing growing number of cases of resistance to this drug, resulting in recurrence of the cancer.

Typically, Imatinib disrupts the activity of BCR-ABL, an abnormal protein which is generated due to certain chromosome level changes. This protein promotes unregulated proliferation of blood cells. In many cases, however, cancer cells become unresponsive to the drug leading to treatment failure or recurrence. Scientists at Indian Institute of Technology, Guwahati have sought to address this problem. Results of their study have been published in journal Science Reports.

“Our investigation shows that some key factors are responsible for such resistance which is in fact mediated by neighbouring non-cancerous cells. By blocking these molecules, the resistant cancer cells can be killed,” explained Dr Bithiah Grace Jaganathan, senior researcher at IIT Guwahati.

The research team has demonstrated in laboratory cell-based studies that by a combined approach – preventing adhesion of cancer cells with neighbouring healthy cells and inhibiting certain biological pathways – resistant cells can be re-sensitized to drugs. “Such an approach will help in treating patients who have become unresponsive to the mainline cancer drug,” hopes Dr Jaganathan.

The researchers feel the study could help in effective treatment management as well. The prevention of adhesion between cancer cell and healthy cells during early phase of a patient’s treatment can eliminate development of drug resistance, while treatment with certain molecules to block cancer propagating biological pathways can sensitize the resistant cells thereby ensuring complete elimination of CML and prevention of recurrence. The study provides a promising lead for further evaluation.

Apart from Dr. Jaganathan, the research team included Atul Kumar and Jina Bhattacharyya from IIT, Guwahati and Guwahati Medical College. The work was funded by Indian Council of Medical Research (ICMR) and Department of Biotechnology (DBT).

## September 21

### **IIT Delhi Joins Hands with Industry Experts to Create Tech-enabled Solutions for Society**

<http://bwdisrupt.businessworld.in/article/IIT-Delhi-Joins-Hands-with-Industry-Experts-to-Crete-Tech-enabled-Solutions-for-Society-/21-09-2017-126765/#gist>

*Participants can look forward to catch a glimpse of the visionary innovations, networking opportunities and discussing some prime issues concerning the relationship between industry and academia based on current societal requirement*



Indian Institute of Technology (IIT Delhi) invites industry experts to its first Industry Day on Saturday, September 23rd, 2017 in the IIT Delhi premises. The event is aimed towards breaking down silos to catalyze academic-industry collaborations.

IIT Delhi has always been known for its projects and research driven curricula and the Industry Day will showcase the institute's creativity and talent as an attractive business partner. The salient themes of the event – Defence, Environment, Affordable Healthcare, Smart Cities, and Energy – are focused to kindle new ideas and approaches to build leading-edge partnerships, while getting insights and feedback from experts and influencers.

Participants can look forward to catch a glimpse of the visionary innovations, networking opportunities and discussing some prime issues concerning the relationship between industry and academia based on current societal requirement.

Speaking about the annual technical exposition, Prof. V. Ramgopal Rao, Director IIT Delhi, said, "Industry Day provides an opportunity for fostering cross-fertilization of ideas through collaborations between industry and academia. As a common platform, it will bring together the industry, academia and research community to discuss the problems faced by the industry and form partnerships to create effective solutions, thereby strengthening a talented and responsive network to serve "innovation-hungry" global marketplace."

Anurag S. Rathore, Professor, Department of Chemical Engineering and Coordinator, DBT Center of Excellence for Biopharmaceutical Technology highlighted the fact that how health has been the last priority for many people today. "When we face a major health issue, we realise its importance with respect to other dimensions of our busy lives. IIT Delhi recognizes the value of human health and as such we have picked 'Affordable Healthcare' as one of the key topics of the Industry Day."

Energy, Smart City, Environment and Defence are the other four topics that will be the focus of the event. Affordable Healthcare would highlight the importance of making it accessible to a common man by showcasing some of the key technologies and products that researchers at IIT Delhi have created for the industry. Sub topics include, efforts to make biotherapeutics affordable to the common man. A key project in this area is that of continuous processing for production of biotherapeutics, a project that has the potential to lower the cost of production by 50-70%. Another topic of interest is diagnostics for diseases such as sepsis and typhoid. Researchers will be demonstrating a product that can enable early detection of these diseases and thereby significantly improve the chances of patient survival. Efforts to improve drug delivery by use of innovative nanoparticles will also be presented. Products such as dental implants as well as artificial skin, products that are novel with respect to indigenous production for the country will also be showcased.

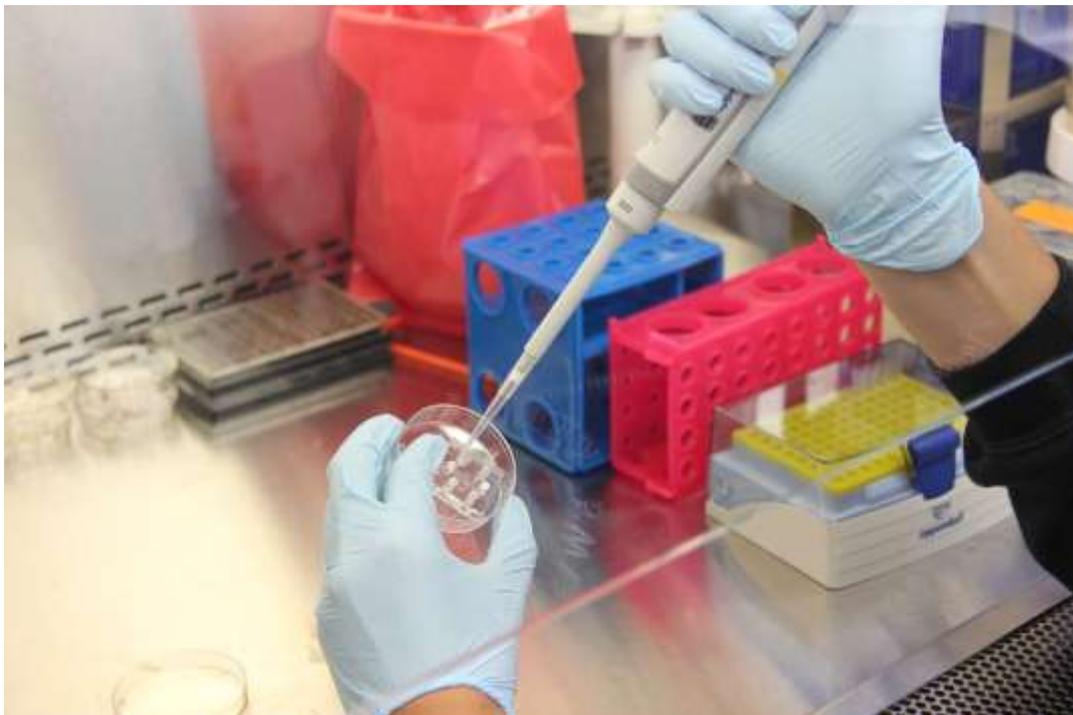
Over 200 industry experts such as Kumar Mangalam Birla, Chairman - BOG, Dr. V.K Saraswat, Member - NITI Aayog, Manpreet Singh, Director - KPMG, Dr. Maharaj Kishan Bhan, Former Secretary - DBT, GOI, Dr. Sanjay Singh, CEO, Gennova Pharmaceuticals, Dipakshi Mehandru, Policy Advocacy & Government Affairs, DELL are expected to attend the day-long event where faculty and students will showcase their ongoing work and technology available for transfer. The major attributes of the Industry Day entail talks by key-note speakers exploring avenues of possible fusion pertaining to research and

consultancy, as well as panel discussion to find plausible solutions to bridge corporate expectation with academic training.

## **IIT Ropar researchers working on a low-cost method for Detection of Early Skin Cancer**

<https://www.biospectrumindia.com/news/68/9568/iit-ropar-researchers-working-on-a-low-cost-method-for-detection-of-early-skin-cancer.html>

In this method, the surface of the skin is cooled with the help of cold gel pack for a short period of time post which the skin surface is allowed to recover from cold stress under a stabilized room condition



Researchers at the Indian Institute of Technology Ropar are working on a new, personalized and cost-effective method for detection of early stage skin cancer.

Led by Dr. Ramjee Repaka, Department of Mechanical Engineering, IIT Ropar, the team has successfully managed to perform early stage cancer detection using Dynamic Thermal Imaging (DTI) in a simple clinical setting. The main concept behind this research is the fact that the thermal properties of cancer and blood are different due to which few features appear at the skin surface quickly than the other under the DTI setting.

In this method, the surface of the skin is cooled with the help of cold gel pack for a short period of time post which the skin surface is allowed to recover from cold stress under a stabilized room condition. During this period, the changes in the temperature distribution is recorded as images and videos using a thermal camera. These recorded images and videos are then analyzed to identify the differential changes in the thermal contrast between healthy and cancerous regions. The study

revealed that in a physiologically hot region, the early cancer/small size cancer can be detected within first few minutes of the recovery period featuring large thermal contrast.

Moreover, the microcirculation of blood in the skin plays a vital role in many skin disorders including skin cancer. The microcirculation of blood in the subsurface region leads to temperature changes which can assist in detecting abnormal thermal texture. This abnormal texture is often regarded as early signs of cancer before the formation tumor/lump.

Talking about the research, Prof. Ramjee Repaka, Associate Professor, Department of Mechanical Engineering, IIT Ropar, said “Even today, it is challenging to detect early stage skin cancer due to no lump formation and unavailability of simple imaging systems. At present, we are using DTI for detection of small size mimicking tumor in the tissue phantom with subsurface vascular structures. Further plans are to extend to in vivo experiments for the determination of early skin cancer with possible collaboration with medical institutes.”

## **September 20**

### **IIT-R research scholar awarded Biotechnology Ignition Grant**

<http://www.thehansindia.com/posts/index/Education---Careers/2017-09-20/IIT-R-research-scholar-awarded--Biotechnology-Ignition-Grant-/327776>

Hyderabad: Sidharth Arora, A PhD research scholar from the Indian Institute of Technology Roorkee has been awarded Biotechnology Ignition Grant (BIG) by the Biotechnology Industry Research Assistance Council (BIRAC), Government of India.

Sidharth Arora, was awarded a grant-in-aid of up to Rs 50 Lakh for a period of 18 months for his project on the production of a thermo-tolerant and acid stable Phytase in a novel solid-state fermentation (SSF) bioreactor. Foundation for innovation and Technology transfer (FITT) in IIT Delhi is one of the BIG partners and is associated with Sidharth for providing mentoring support and project monitoring.

Speaking about his grant, Sidharth Arora, said, “I am happy to receive the ignition grant from BIRAC. The guidance which I received from my mentors, especially my PhD supervisor Sanjoy Ghosh, at IIT Roorkee has been extraordinary and I am thankful for their untiring support.

We have also prepared a revenue model/ scale-up plan for the next 5 years, which shows the Phytase production capacity and growth in revenue generation over a period of time using our SSF Bioreactor technology. We hope to bring in a new cost-effective method of producing Phytase, which is a need for the animal feed industry today.”

### **Shantanu Prakash Foundation felicitates underprivileged meritorious school children**

<http://indiaeducationdiary.in/shantanu-prakash-foundation-felicitates-underprivileged-meritorious-school-children/>



New Delhi, September 19: The Shantanu Prakash Foundation, a non-profit sponsored by noted education industry leader Shantanu Prakash, has donated tablets to deserving students identified by education support NGO Alika.

Alika Educational and Health Society (Alika EHS) is an NGO working to help students in the weaker economic strata that are doing very well in their education.

Alika EHS conducted their annual award Ceremony on 16th September 2017 in the Auditorium of Faculty of Engineering, Jamia Milia Islamia New Delhi where meritorious children who have scored exceedingly well in Class X and XII examinations securing CGPA 9 and above were awarded Laptops, Tablets, Trophies and Cash Prizes.

The Tablets were sponsored by Shantanu Prakash Foundation (SPF), a non-profit sponsored by noted education industry leader Shantanu Prakash. SPF collaborates and cooperates with identified initiatives in education that helps the underserved or deserving with limited means.

Mr. Ghayoroul Hasan Rizvi, Chairman, National Minority Commission was the Chief Guest whereas Prof. Ram Gopal Rao, Director IIT Delhi, Dr. Majid Deoband, Vice Chairman Urdu Academy and Mr. Arif Mohammed Khan were the guests of Honour.

### **UGC providing grants to few deserving students**

<https://thehimalayantimes.com/kathmandu/university-grants-commission-providing-grants-deserving-students/>

The University Grants Commission awarded grants to 1.5 per cent of the total deserving students, spending less than 0.5 per cent of its whopping Rs 10 billion budget in the fiscal 2014-15.

The UGC record shows that it provided Rs 5 million in grants to a total of 244 students out of 14, 838 deserving graduates.

Formed as an autonomous institution, UGC awards grants for research, scholarship and fellowship programmes. Twenty-three students were awarded PHD fellowship in 2014-15.

Similarly, 42 out of 120 M Phil students and 99 masters level students out of 14,630 graduates were awarded grants.

UGC said students were receiving an average Rs 25,000.

Educationist Bidhya Nath Koirala said UGC was providing grant to the candidates on the basis of political influence. He opined that UGC should disperse grants to colleges and universities rather than students themselves.

Similarly, students who are receiving grants from the UGC grant are also not satisfied with the money they receive.

Dr Saligram Pokharel completed his PHD thesis in 2016 and is frequently visiting the UGC.

He is hoping to receive Rs 60,000 for his continuous seven years of efforts. "UGC does not respect hard working researchers," he said.

Most of the masters level students of Nepali literature in Ratnarajya Laxmi Campus said they didn't know the UGC grant programme even existed.

Asked why so few students received research grant, UGC Director Deepak Kumar Khadka said, "We hear the ministers stressing the need for research-based higher education, but the budget the government provides is largely used to pay employees. We, however, are trying our best to provide grants to as many students as possible."

UGC spends most of its Rs 10 billion budget on salaries and infrastructure development of Tribhuvan University, its constituent colleges and community colleges.

## **September 19**

### **IIT-Delhi's 'industry day' on weekend**

<http://timesofindia.indiatimes.com/city/delhi/iit-ds-industry-day-on-weekend/articleshow/60739044.cms>

NEW DELHI: With an aim of connecting its research with society with the help of industry and an attempt at translating these technologies into real products, Indian Institute of Technology-Delhi is organising its first 'Industry Day' meet on September 23. The theme of the meet is 'building a desirable ecosystem', and it will provide a platform for the industry, academia and research community to come together to discuss the problems faced by the industry and form partnerships to create effective solutions.

Announcing the event, professor V Ramgopal Rao, director, IIT-D said, "IIT-D has more than 2,500 PhD students, over 500 faculty members, 2,000 research publications and more than 100 patents are filed

each year, and through this Industry Day, we want to strengthen the delivery part of our research ecosystem by collaborating with industries."

The event is expected to bring together experts from the industry to discuss some prime issues concerning the relationship between industry and academia based on current societal requirement in the fields of defence, environment, affordable healthcare, smart cities and energy.

### **IISER scientists develop wood-pulp balls to clean oil spills**

<http://economictimes.indiatimes.com/news/science/iiser-scientists-develop-wood-pulp-balls-to-clean-oil-spills/articleshow/60730637.cms>

NEW DELHI: IISER Kerala scientists have found an inexpensive and efficient way to clean up marine oil spills by using marble-sized balls made of wood pulp. Marine oil spill is one of the common disasters worldwide, which has long-lasting, negative impacts for economy and the environment.

Apart from leading to huge economic losses, such accidents affect the flora and fauna. There is a lot of interest in developing methods to recoup the oil from such spills. Researchers from Indian Institute of Science Education and Research (IISER) in Kerala wanted to look for methods that can both clean the water as well as recover the precious spilt oil.

"We thought there is an urgent need to address this issue in economically viable way," Kana M Sureshan, Associate Professor at IISER Kerala, told PTI. Current methods of cleaning up oil spills include on-site burning, which do not efficiently remove the oil, researchers said. Moreover, there is no way to recover the spilt crude oil.

"We have made small balls of cellulose and dipped them in a solution of the gelator," Sureshan said.

The gelator repels water and only absorbs the oil. It congeals the absorbed oil, which could be recovered by applying pressure or through distillation.

"We have chosen these material because the cellulose pulp is very cheap and biodegradable," said Sureshan, one of the authors of the study published in the journal *Angewandte Chemie*.

Each cellulose ball can absorb oil 16 times its own weight. After the oil is recovered, the left-over pulp can be recycled, he added. "The gelator being cheap can have a huge market potential to develop active adsorbent materials for tackling oil spills," said Soumyajit Roy, associate professor at Chemical Science Department of IISER Kolkata.

"However exact cost calculations, scaling up the synthesis of the gelator coupled with scaled up pilot studies would be important to realise the exact translation to industry in my opinion," said Roy, who was not involved in the research. The researchers, including Annamalai Prathap from IISER Kerala, have filed a patent for their product in India and are planning to file international patents soon.

The Indian coast guard and Oil and Natural Gas Corporation (ONGC) have shown interest to mass produce the material with the help of IISER scientists develop wood-pulp balls to clean oil spills government support, Sureshan said.

The researchers tested their material on various crude oil varieties from various parts of the world including Saudi Arabia and Kuwait.

All crude oils were instantaneously absorbed by the material, researchers said.

### **NITI Aayog's Three-Year Action Plan Promotes Inequality in Education Instead of Solving It**

[http://www.huffingtonpost.in/vineet-john-samuel/niti-aayog-s-three-year-action-plan-promotes-inequality-in-education-instead-of-solving-it\\_a\\_23190318/](http://www.huffingtonpost.in/vineet-john-samuel/niti-aayog-s-three-year-action-plan-promotes-inequality-in-education-instead-of-solving-it_a_23190318/)

**An unfair hierarchy in higher education.**



The 9<sup>th</sup> of August saw thousands of scientists take to the streets in defence of the scientific temper and against budget cuts and the proliferation of pseudoscience that has plagued various fields of knowledge and academia within the country. Just a few months before the protests came the NITI Aayog's three-year action plan which contained within it a section on higher education reform. Though at the time, the plan created quite a furore, discussion around the topic had slowly died down by the time the March for Science took place. It was a pity since it would have been an opportune moment to focus on what the action plan would mean for research in the sciences and social sciences in the foreseeable future.

In that spirit, it would perhaps be prudent to revisit the Higher Education Plan and break it down to some of its essential recommendations.

**The proposed model allows greater autonomy to the highest tiered universities and provides them with a lion's share of limited funds... Meanwhile, other universities face drastic funding cuts, while having to "make education accessible to all."**

The first recommendation revolves around creating a list of 20 world-class universities (10 public and 10 private) that will then receive a lump sum of the budget allocated to higher education which currently stands at a meagre ₹33,329 crores or less than 1.5% of GDP (within which a majority of the 10% hike has gone to the IITs and NITs). The second recommendation is tied to the first and third, which revolves around a tiered system of universities, with the top tier given great autonomy in matters of fees, curriculum, etc. with an increasing level of regulation as we proceed down to the third tier.

Next, we have the fourth suggestion which has to do with researcher specific grants, with grants being awarded purely on the basis of ability to clearly specified problems, for the purpose of redirecting funds especially towards and within the fields of science and technology.

For the purpose of this article, we will attempt to understand the tiered model around which this action plan revolves and for that we must first start with the fundamentally flawed and linear conceptualisation that the NITI Aayog has of higher education per se. It seems that the minds of the policy planners have clearly defined parameters of a quality university (i.e. a tier-1 institute that produces scientific and technical research that can lead to innovation and immediate solutions to India's ailments) and a poor university (i.e. a tier-3 one whose primary purpose is to "offer education to all"). The fact that these are classified as mutually exclusive categories points to two critical flaws in the approach adopted by the NITI Aayog.

One is that both of these are mutually exclusive categories and the second, that somehow only research which reaps clear and immediate dividends deserves funding. More troublesome, however, is the impact that this tiered system will have on higher education as a whole, creating multiple glaring inequalities by virtue of its funding and regulation patterns. The proposed model allows greater autonomy to the highest tiered universities and also provides them with a lion's share of the limited funds available in higher education. Meanwhile, other universities face drastic funding cuts, while having to shoulder the burden of "making education accessible to all".

**The new action plan reduces the list of educational temples receiving state patronage. It will come at the cost of many who will now no longer be able to reach the temple steps.**

At first glance it would seem like those who make the top 20 on this list would be the beneficiaries of the scheme, but even within them, the document proposes to give a lion's share (within the lion's share) to the top two public universities. From the language of the document and its emphasis on immediate solutions and innovation in the fields of science and technology, one would be led to believe that it will inevitably be either an IIT or an IISc (who already command a lump sum of the budget).

On the ground, this translates to an even greater percentage of the budget being allocated to a handful of technical universities, while also providing them with autonomy in fee setting. This, in turn, means that an already unequal higher education system, which few have access to, will go on to become even more unequal with likely fee hikes and fewer, economically accessible institutions, for quality learning. Those institutions that find themselves in the third tier will be starved of funds while attempting to perform their responsibility of offering quality education to the millions who pass their 12th-grade examinations, at a time when they are already failing to shoulder this burden.

The rationale provided for this entire endeavour of creating a tiered system has been that, as a nation, we mustn't spread our funds too thin and instead focus on two top universities. However, on deeper examination, it is a policy proposal that fails to address the funding drought that has persisted in the sector since the first generation of higher education policies that sought to create temples of higher learning instead of attempting to make education accessible to all. The new action plan reduces the

list of educational temples receiving state patronage. It will come at the cost of many who will now no longer be able to reach the temple steps.