News Clips
May 12-18, 2018

May 18

IIT Kharagpur Invites EoIs for Installation of 5.5 MW Solar Project

https://mercomindia.com/iit-kharagpur-eoi-solar/

Institute to provide land, rooftop, and parking shed for deployment of solar PV systems

The Indian Institute of Technology (IIT) Kharagpur in the state of West Bengal has invited expressions of interest (EoIs) from project developers and contractors to set up a 5.5 MW solar photovoltaic (PV) project at its premises. The EoI submission deadline is June 8, 2018.

The project will be developed on a build, own, operate, and transfer model under RESCO model. IIT Kharagpur will provide the requisite land, rooftop, and parking shed for the deployment of solar PV systems.

Bidders who have a minimum of five-year experience in the field of design, supply, installation, testing, and commissioning and operation of a 4.4 MW solar PV project, two 3.3 MW projects, or three 2.2 MW solar PV projects or similar can participate.

With this move, IIT Kharagpur joins other educational institutions who are making the move to generate their own clean power.

Recently, Govind Ballabh Pant University of Agriculture and Technology in Uttarakhand's Pantnagar town tendered a 5 MW grid-connected rooftop solar PV project.

In June 2017, Jamia Millia Islamia, a reputed government college, tendered a 2.25 MW (AC) solar PV project to be developed under a RESCO model at Jamia Millia Islamia University premises in Delhi.

In the same month, Mercom also reported that Rajasthan Electronics and Instruments Limited (REIL), a joint venture of the Government of India and the Government of Rajasthan, tendered 950 kW of grid-connected rooftop solar to be developed on top of buildings owned by Rajasthan University in Jaipur.

In July 2017, Solar Energy Corporation of India (SECI) tendered an 8 MW (DC) grid-connected rooftop solar PV project on behalf of Banaras Hindu University, Varanasi.

May 17

Biodegradable Paper from Paddy Straw? This Project By IIT Delhi Is Doing It!

https://www.thebetterindia.com/141523/iit-kriya-labs-biodegradable-paper-paddy-straw/

A startup incubated at IIT-D's Technology Business Incubator, Kriya labs has developed a sustainable processing technology that converts agro-waste like paddy straw into a versatile pulp.

Each year, the paddy harvest season is followed by fires raging across northern India, as farmers burn off their unwanted stubble in the open. In fact, nearly 20 million tonnes of rice straw is burned every year in India.

The impact of this practice is enormous and can be felt in the lungs of the residents of the surrounding areas, including the national capital. The winter months are replete with reports of massive clouds of smoke being blown across Punjab and neighbouring states in the direction of Delhi. Contributing immensely to NCR's air pollution woes, this smoke has severe and scary consequences for public health.

So, how do we douse these pollution-causing fires? Perhaps by transforming paddy straw from useless waste into useful resource. And researchers at Indian Institute of Technology Delhi (IIT-D) are doing just this!

Understanding the fundamental reasons behind why farmers resort to stubble burning, Kriya Labs (a startup incubated at IIT-D's Technology Business Incubator) has developed a sustainable processing technology that can convert agro-waste like paddy straw into pulp.

This pulp is then utilised to make an assortment of products like paper, plates and cups that are not only completely biodegradable, they are also cheaper than their plastic counterparts!

Furthermore, unlike conventional pulp-making process, this technique doesn't require heavy machinery and can be economically integrated to small scale operations. A pre-existing paper recycling unit can use this patent-pending process to produce agro-based pulp and diversify their product range.

So how does this process work? According to Kriya Labs, the paddy straw is first treated with a natural solvent that segregates the silica and lignin (organic polymer) present in it from the usable cellulose.

"The solvent system developed for the process is also completely biodegradable, non-volatile, made of natural products and completely safe to use. With our process, we add value to the agro waste near to its generation site by facilitating setting up small scale pulp-production units in a decentralised system", explains Ankur Kumar (Co-Founder and CEO of Kriya Labs), speaking to NDTV.

PARTNER EVENT

Next, it undergoes an optimisation process that converts it into pulp. The pulp is dried and moulded into various shapes (cups, plates etc) with the help of machines. It can also be utilised for production of cardboards, bio-foams and certain furniture items. In fact, even the by-products can be used to develop a spearate chain of value added products, adding yet another layer of eco-friendly and economic viability.

As such, the additional revenue generated by easy and profitable disposal of agro-waste — from one tonne of stubble, 500 kg of pulp can be produced — can be a crucial incentive in convincing farmers not to burn their straw.

As Neetu Singh, a faculty member working on the project, tells Indian Express,

“The pulp that we make from the waste can be sold for Rs 45 per kg, even by the most conservative estimate. So it would actually be profitable for the farmers, instead of burning the straw. A one tonne processing unit will cost around Rs 35 lakh.”

The dedicated IIT graduates at Kriya Lab are now working to take their sustainable technology to governments and companies, who can then do their bit to make it more widespread. They are also providing required technical and operational training to rural entrepreneurs looking for profitable ways to dispose locally generated agro-waste.

Here‘s another a unique way to combat urban air pollution — a mobile wall of moss that can clean as much polluted air as a small forest!

Another feather in IIT Bombay’s cap!

https://www.financialexpress.com/education-2/another-feather-in-iit-bombays-cap/1171730/

Chief Hospitality Manager of IIT Bombay, N. S. Dabholkar received the award from the Editor-in-Chief, Herald Global, ERTC Media, Saimik Sen. Check what award the IIT Bombay won!

The Indian Institute of Technology, Bombay has a new feat tagged to its name. On May 12, IIT Bombay was given the “Prestigious Brands of India and Brands of the Decade 2018” award. Chief Hospitality Manager of IIT Bombay, N. S. Dabholkar received the award from the Editor-in-Chief, Herald Global, ERTC Media, Saimik Sen. The other famous person who was present at the occasion was playback singer Udit Narayan Jha.

The ceremony where the institute was given the award was in Mumbai’s prestigious Sahara Star Hotel. The research was carried out by BARC Asia in three phases. This was done to select the brands for the listing of these brands.

Along with Representatives from IIT Bombay, executives from ICICI Bank, HCC, Aptech, Motul, Numeric – Legrand, Bajaj Electricals, TTK Prestige, Tanishq, Ashok Leyland, McDonald's, IDBI Capital, Jeep, Tata Housing, Shriram Housing Finance, APC By Schneider Electric, Redmi Phones, Fino Payments, Essel Finance, Future Supply Chain Solutions, Century Ply, Kellogg's , Emami Fair and Handsome, Reliance Infrastructure, HCL Technologies were present at the occasion.

Other than the award given to IIT Bombay, the event also witnessed, "Prestigious Brands of India, Brands of the Decade 2018" coffee table book and Herald Global Magazine's special issue (May Edition). It was based on 50 Most Inspiration Women of Maharashtra and Most Admired Workplaces.

Other awards given during the evening was "Inspirational Women of Maharashtra – Women Achievers Award 2018". This award was given to Sonali Bendre, Dr. Shubha Raul, Geeta Kapur, Ashwini Kalsekar, Dr. Firuza Parikh, Neena Kulkarni, Dipika Kakar, Priyanka Khimani, Grace Pinto, Madhurika Patkar.

Meanwhile, Four Indian varsities have made it to the top 50 in the Emerging Economies University Rankings for 2018 released by Times Higher Education. The Emerging Economies University Rankings, previously known as the BRICS University Rankings, includes select universities that are located in India, Brazil, Chile, Cyprus, Indonesia, Malaysia, Pakistan, the Philippines and South Africa. While India's Indian Institute of Science (IISc) Bangalore and Indian Institute of Technology (IIT) Bombay made the cut to enter top 30, China's Peking University and Tsinghua University claimed the top two places in the list for the fifth year in a row.

IIT Professor Designs Low-Cost Solar 'Jugnu' Backpack For Kids in Remote Regions!

https://www.thebetterindia.com/141909/iit-professor-designs-low-cost-solar-jugnu-backpack-for-kids-in-remote-regions/

The bag charges the light with solar power whenever exposed to sunlight. The LED light then can be used whenever needed.

Meet Jugnu! A solar bag, developed by Charu Monga at the Department of Design, Indian Institute of Technology, Guwahati. Jugnu uses solar panels, which are integrated into the bag to store power for an LED light!

Charu Monga announced her design of a low-cost solar bag on twitter. She claims that it will be useful for kids living in the unelectrified parts of the nation.

'Jungu' low cost solar bag for kids living in the non electrified parts of India. Kids in hilly terrain travel through high altitude areas and experience dangerous roads to get back home in time to complete their homework before sunset. This little one is all excited with 'Jugnu'

In most hilly regions, kids have to trek to reach their schools. And undoubtedly, have to trek all the way back. By the time they reach home, it's near darkness.

The bag charges the light, which is fixed on the bag itself, whenever exposed to light. The light then can be used whenever needed.

PARTNER EVENT

The bag is not only for kids but can also be used by anyone who can make use of the design!

Twitterati raised some legitimate doubts–like–"won't be the bag be a little more heavy cause of the device?" Charu was quick to clear their doubts stating, "It's a well crafted modular design, also light can be detached and can be used in other places."

And some people also asked her about the inspiration behind Jugnu. For which Charu had an awesome reply:

"This bag is devoted to all the children's, respected Indian soldiers, local women & men, travellers who climb the mountains region and all the common people who live in hilly terrain."

Charu's design was met with praise and respect. She announced that Jugnu will be releasing shortly. We, too, are waiting for it eagerly!

May 16

Scientists develop new model to determine monsoon variations across India

https://www.livemint.com/Science/57gUJu4zoTkYVSFg25p8gO/Scientists-develop-new-model-to-determine-monsoon-variations.html

The method developed by IIT Kharagpur, IITM, Pune and INCOIS, Hyderabad can be applied to improve the existing weather forecasting models of Indian monsoon

An Indian farmer works in a field as monsoon clouds gather overhead in Agartala.

Scientists have developed a new model for estimating variability and trends in rainfall over different climate regions of the country, which is set to help in improving the existing weather forecasting for both the southwest and northeast monsoons.

The new statistical model based on multiple linear regression (MLR) has been developed by scientists from the Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL), IIT Kharagpur, the Indian Institute of Tropical Meteorology (IITM), Pune, and the Indian National Centre for Ocean Information Services (INCOIS), Hyderabad.

“Indian monsoon, both southwest and northeast is complex. It depends on various climatic forcings (conditions) like El Nino, Indian Ocean Dipole, which affect rainfall in different regions, in different ways. We studied these factors and assigned a value to each,” said professor Arun Chakroborty from IIT Kharagpur.

Researchers highlight that current dynamic models used for monsoon forecast face two major problems. First, they respond a little too much to El Nino Southern Oscillation (ENSO). Second, the relationship between Equatorial Indian Ocean Oscillation (EQUINOO) and summer monsoon in models has been found to be opposite to actual observation.

“In observation, we find a positive co-relation between EQUINOO and monsoon, but it is opposite in the models. So, if we can improve our understanding of EQUINOO’s impact on monsoon, then we can make corrections in the dynamic model and improve our teleconnections. This will help us get an

accurate monsoon forecast," said Dr P.A. Francis, from INCOIS, highlighting that it is also one of the objectives of the National Monsoon Mission.

The study published recently in Scientific Reports also analysed changes in the monsoon from 1979 to 2017 and found a significant positive trend (0.43mm/day/decade) in northwest India for the southwest monsoon. "But it showed a decline in south and northeastern states," said first author P.J. Nair, from IIT Kharagpur.

"It's significant to note that the increase/decrease of rainfall, for both summer and winter monsoon is not uniform in all regions and so is the effect of these climatic factors. For instance, for most of mainland, El Niño is bad, but for the northeastern parts of the country, it is not that bad," said co-author Professor J. Kuttippurath from IIT Kharagpur.

The research is one of the first to have analysed the variability of the Indian monsoon because of these factors together. It confirmed with statistical analysis, that ENSO and EQUINOO are two major drivers for Indian monsoon and explain around 50% variability in monsoon.

With the accuracy of current monsoon forecast models limited because of the lack of data and adequate information on climatic processes, researchers said such studies would help scientists to better tune their models for accurate weather prediction.

The research assumes significance as the monsoon decides the livelihood of more than a billion people and influences the agrarian economy which is largely dependent on its accurate forecast. The situation warrants continuous surveillance of Indian rainfall.

Excelra and IIT-Kharagpur Form Strategic Partnership to Advance Drug Repurposing Using NLP and Machine Learning Approaches

http://www.prnewswire.co.in/news-releases/excelra-and-iit-kharagpur-form-strategic-partnership-to-advance-drug-repurposing-using-nlp-and-machine-learning-approaches-682752631.html

Excelra Knowledge Solutions (http://www.excelra.com), a leading global bio-informatics Company and IIT-Kharagpur, announce a multi-year collaboration aimed at accelerating research in Drug Repurposing. The alliance will leverage diverse skill-sets and domain expertise of the two partners and integrate Natural Language Processing (NLP) and Machine Learning (ML) technology in Excelra's Drug Repurposing engine.

With mounting costs involved in drug development, Drug Repurposing is seen as a rapidly evolving field aimed at identifying new therapeutic uses of pre-existing or failed drugs. Excelra's proprietary Global Repurposing Integrated platform (GRIP) is driven by a rich proprietary database combining over 40 public data sources with in-house developed curated databases and various algorithms. The team of scientists from Excelra and IIT-Kharagpur will use publicly available ontologies and Excelra databases with Drug-Disease-Target relationships for training NLP and ML algorithms. These algorithms will be instrumental in extracting biologically relevant information from different data sources and building a scientific rationale for a novel therapeutic potential of a drug.

"We are thrilled to partner with a prestigious institution like IIT-Kharagpur reputed for its talent pool. The technical prowess at IIT-Kharagpur and the pharma analytics expertise at Excelra will give a tremendous boost to Drug Repurposing. This is an innovative approach that will accelerate research and enhance the opportunity to promote drug discovery and development," said Dr. Nandu Gattu, Vice President, Pharma Analytics, Excelra.

"Academia-industry collaborations are becoming increasingly important for dissipation of knowledge and promotion of entrepreneurship. NLP and ML are being used extensively for text analytics to understand contextual inference of the extracted information. We are glad to partner with Excelra in the pursuit of bringing more drugs into the market by significantly cutting down development costs and time," said Prof. Sudeshna Sarkar, Head, Department of Computer Science and Engineering, IIT Kharagpur and PI of the Project.

About Excelra

Excelra (http://www.excelra.com) is a leading global Biopharma Data and Analytics company. Its roots spun-out of GVKBio, one of Asia's top Contract Development and Manufacturing Organization (CDMO). Excelra focuses on scientific data curation and analytics services for the Biopharma industry. With over 15 years of high-fidelity curation engine, Excelra has created valuable data assets from drug chemistry (for medicinal drug discovery scientists) to biomarkers (for translational biologists) and clinical outcomes (for pharmacometricians and clinical developers). The analytics team, which is driven by top-notch scientific talent (PhDs and above), is continuously engaged in science consulting for custom projects in computational chemistry and biology, bioinformatics, drug-repurposing and life science software development.

Excelra has developed proprietary databases for Structure Activity Relationships (GOSTAR), Biomarkers (GOBIOM) and Clinical Trials Outcome (CTOD). The Pharma Analytics unit within Excelra has a strong focus on data analytics across the Pharma value chain, right from Discovery to Commercialization.

About IIT-K

IIT Kharagpur is one of India's premier academic and research institutes for engineering established in 1951. It is recognized as an institute of national importance by the Indian government and offers a number of undergraduate and postgraduate degrees. IIT-Kharagpur, with its multi-disciplinary research areas, is ranked among the top technical institutes in the country.

May 15

IIT Roorkee DMS achieves high placements

http://www.thehansindia.com/posts/index/Young-Hans/2018-05-15/IIT-Roorkee-DMS-achieves-high-placements/381431

IIT Roorkee DMS achieves high placements

Roorkee: Indian Institute of Roorkee's Department of Management Studies (DMS) celebrates 20 years of excellence in techno-management. Over the years, the Institute has witnessed a surge in placements with an increase in the number of offers and eminent and new recruiters.

During this year's placement season (2016-18), the Institute witnessed a fruitful placement with many big names across a diverse range of industries like KPMG, Dunnhumby, HDFC, ICICI and Bristlecone hiring. The top 50% of the batch took home an average package of Rs 10.7 LPA. The diversity in the preferred job roles stood out with students going for analytics, consulting, sales, presales, marketing, operations and finance profiles. The Institute placed 71 out of 80 students; 9 students opted out of placement process due to entrepreneurial inclination.

During the placement process of 2015-17 batches, recruiters like Amazon, VKL Spices, Patanjali etc hired talent from the campus. In the placement season, 53 out of 57 got placed, including 3 getting PPOs/PPIs, and 3 students opting out of placements. The average package was Rs. 9.18 LPA; the highest CTC was Rs. 14.5 Lakhs per annum with top 50% securing an average package of Rs. 10.24 Lakhs per annum.

Department of Management Studies has been ranked #9 among top Management institutes category in the India Rankings 2018 conducted by the National Institutional Ranking Framework (NIRF), Ministry of Human Resource Development, and Government of India. The Institute has been ranked the 2nd best Institute in the country in terms of Research, Professional Practice & Collaborative Performance (RPC) parameter.

The teaching faculty at the Department consists of renowned professors in the country for their research excellence and teaching acumen, bringing their perspectives into the mix and enriching the learning experience further.

Dr. Zillur Rahman, Associate Professor and Head, Department of Management Studies, IIT Roorkee, was honoured with the 'Commendable Faculty Award' at the Careers360 Faculty Research Awards in New Delhi.

He received the award at the hands of Hon' Union Minister of Human Resources Development, Shri. Prakash Javadekar. The award mentions that Dr. Zillur Rahman is the most research proficient faculty

of India in the year 2018 in the field of Business, Management and Accounting. Dr. Rahman's research work leads to 55 publications in 2015-17, a cumulative of 805 citations and 17 h-index.

Speaking about the Department, Dr. Zillur Rahman, said, "With eyes to the future it is our duty, one which we embrace with pride and great responsibility, to remain a place that stimulates new ideas, creativity, professionalism and humility among talent that finds its way into our humble classrooms and hallways."

The Institute's alumni work is spread across a wide spectrum of industries such as Management Consulting, Technology, Finance, Marketing, IT, Telecom, Automobile, Energy and Healthcare.

The Institute has esteemed alumni including, Manish Asthana, Assistant Vice President, ICICI Lombard; Ashish K Varun, Head of International Sales and Marketing, Nelito System Private Limited, Tata Group Company; Richa Dubey, Global Director Consumer Insights, Carlsberg Group; Vivek Sharma, Zonal Sales Manager, Audi India; Anuj Dua, General Manager, Royal Enfield; Prashant Tyagi, Assistant Vice President, Tata AIA Prudential; and KingShuk Majumder, Country Manager Sourcing, IBM India Pvt Ltd.

IIT-H mentors 35 girls to pursue career in STEM

https://timesofindia.indiatimes.com/home/education/news/iit-h-mentors-35-girls-to-pursue-career-in-stem/articleshow/64179728.cms

HYDERABAD: In order to encourage more number of girls to pursue career in science, technology, engineering and mathematics (STEM), the Indian Institute of Technology, Hyderabad is hosting 'Vigyan Jyothi,' a two-week residential training programme.

The programme, which commence on May 12, is training 35 class 11 meritorious girls. Speaking about the importance of the programme, Prof UB Desai, director, IIT Hyderabad, said -- "Girls participation in technology development is a must. This workshop by the Teaching and Learning Center at IITH and the faculty of IITH will help in achieving gender parity in engineering and technology profession."

Taken up this year as a pilot project, it also includes lectures, seminar, lab visit, hands on sessions, do and discover, business quiz, students outing, personality development, yoga, newspaper reading and so on.

Funded by the department of science and technology, government of India, the programme will also deal with mental and physical fitness, emotional resilience, personal health and hygiene and most importantly, exposure. The students would be taken to various laboratories such as 3D printing, robotics, tinkerer's, materials science, physics, chemistry and others. They would also be taken on a heritage tour to Qutab Shahi, Golconda and museums besides to the Birla Planetarium and the National Institute of Rural Development.

"Vigyan Jyothi Scholars program is addressing a key issue that despite the high priority that is placed on STEM in schools, efforts to expand female interest and employment in STEM and computer science are not working as well as intended. This is especially true in technology and engineering," said Deepthi Ravula, chief executive officer of WE- Hub, an incubation centre exclusively for women launched by the Government of Telangana.

May 14

JEE (Advanced) 2018 original admit cards to be issued at exam centre

https://timesofindia.indiatimes.com/home/education/jee-advanced-2018-original-admit-cards-to-be-issued-at-exam-centre/articleshow/64153029.cms

Candidates appearing JEE (Advanced) 2018, scheduled to be held on May 20, will time get their original admit cards at their respective exam centres. However, for receiving the same the candidates will first have to download the admit card from either of the websites: https://cportal.jeeadv.ac.in or https://jeeadv.ac.in and clicking on the 'Candidate Portal' icon. The original admit card would be issued to the candidates at the exam centres before the exam begins.

Aspirants will be able to download the admit cards from today. The candidates need to mention their JEE (Advanced) 2018 registration number, date of birth, JEE (Main) 2018 registered mobile number and JEE(Main) 2018 registered e-mail address to login to the portal.

Talking to TOI, organising chairman, JEE Advanced, IIT-Kanpur, professor Shalabh said, "The candidates are required to download the admit card from the web portal, the details of which we released on Sunday. They are also required to produce this downloaded admit card at the exam

centre where they would be issued an original admit card (before the start of the exam of first shift) which they should retain till the second shift. The JEE (Advanced) 2018 second shift which would be conducted from 2 pm to 5 pm."

This year IIT-Kanpur is conducting JEE (Advanced) for the first time through fully Computer Based Test (CBT) mode. The exam would be held in two shifts - 9 am to 12 pm and 2 pm to 5 pm.

As many as 1,64,822 students would be appearing in JEE Advanced 2018 this year. Of the total strength, 38,231 candidates would be appearing the exam under the IIT-Madras zone followed by 31,884 candidates under the IIT-Delhi zone. The total number of foreign candidates appearing in JEE-Advanced this year is 36.

A total of 28,813 candidates will write the exam under IIT-Bombay zone. Under IIT-Kanpur zone, 20,428 candidates would write the exam. In this zone, 75 exam centres have been made spread across 10 districts of Uttar Pradesh, Madhya Pradesh and Uttarakhand.

These centres have been made in Bhopal (7), Indore (10), Jabalpur (3), Allahabad (7), Faizabad (3), Gorakhpur (7), Jhansi (4), Kanpur (8), Lucknow (11) and Varanasi (15). It is for the first time that the exam centres have been made in Faizabad and the highest number of centres are in Varanasi.

Under IIT-Kharagpur zone, 19,145 students would be writing the JEE Advanced. A total of 14,414 candidates will write the exam under IIT-Roorkee zone. The least number of candidates -11,907- would appear for the exam under IIT-Guwahati zone, informed professor Shalabh.

May 13

In a green push, IIT-Delhi gets new app to make cycle sharing popular

https://timesofindia.indiatimes.com/city/delhi/in-a-green-push-iit-delhi-gets-new-app-to-make-cycle-sharing-popular/articleshow/64142165.cms

To encourage the culture of environment-friendly cycling inside the 325-acre IIT-Delhi campus, the institute has upgraded its public bicycle sharing (PBS) scheme.

Students can now access and pay for the bicycles parked at 13 docks through a customised mobile app. Users will have to pay Rs 2 for 15 minutes. According to Student Affairs Council of IIT, the number of active users, which is now around 600, is likely to go up with the new app.

Greenolution, the PBS service providers at IIT since 2017, has introduced an operation system that is a combination of both traditional docking station and the dockless sharing system, said Veerendra Chopra, an executive of the company. The students and the faculty of IIT can use the QR code at the docking stations and pay, following which cycle locks will open automatically, he added.

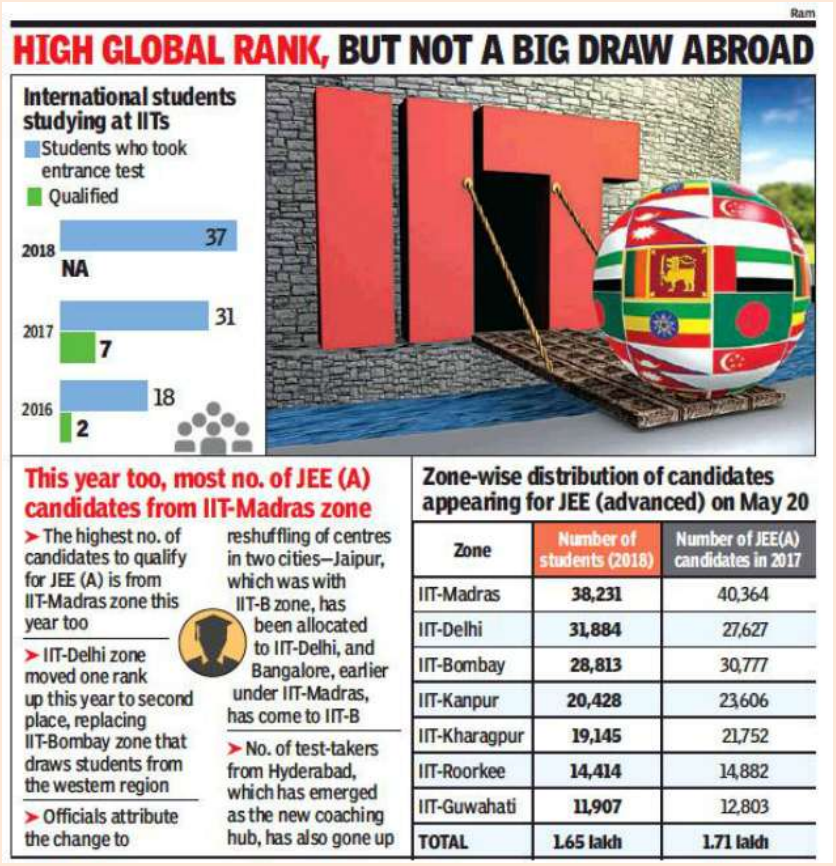
Students are also hopeful that the app, LetUsCycle, will increase the number of users. “We face lots of problems commuting in the campus. Often those who own cycles are fined for not parking at a designated spot. Now they can just take a bicycle on rent from an app-based docking station whenever required,” Aryaman Garg, deputy general secretary of the students’ council.

Lauding the cheap rent, Garg said this move would further encourage students to avoid buying cycles.

‘To attract foreign students to IITs, India must offer safety & good life’

https://timesofindia.indiatimes.com/city/mumbai/to-attract-foreign-students-to-iits-india-must-offer-safety-good-life/articleshow/64142577.cms

The efforts being made by IITs to attract foreign students are clearly not paying off. “We have been releasing admission details from time to time on our website and are also taking all measures to promote the institutes in these countries. We approach Indian embassies in the selected countries with all the admission data required to ensure smooth conduct of the test,” an official from the JEE (advanced) organizing committee said.



However, all this is not translating into numbers for the country's elite group of institutes. "Our country must offer good liveable and social conditions, safety and security to international students to make it a lucrative destination. Why do our students prefer studying in the western part of Europe and not eastern Europe? Why do we prefer going to northern America instead of southern. It is the same case here. People look at options to study abroad also for a prospective career destination. Holding exams in select countries may not yield desirable results," a professor said.

A large majority of students taking exams from international centres are Indians. Meanwhile, IITs continue to perform well on global ranking indicators such as academic and employers' reputation, and research.

IIT-Delhi and IIT Bombay have managed to make it to the top 200 universities globally in 2018. Indranil Manna, former director of IIT-Kanpur, said that getting international students is a must to improve the standards of higher education in the country, to bring competitiveness and also to bring diverse culture on campuses.

"It is always desirable to have international students on campus. We, however, need to have a more defined strategy to attract students. We should hold online exams such as GRE and GMAT across nations and not restrict ourselves to a few countries. There are good students everywhere. Creating

good infrastructure for international students, including hostels and dining facilities, and charging them actuals instead of subsidized rates could also prove to be helpful," Manna said.

UP Police interested in advanced tech, likely to sign MoU with IIT-K

https://www.moneycontrol.com/news/cricket/ipl-clocks-10-million-social-media-mentions-a-month-dhoni-is-most-talked-about-player-2565715.html

The IIT would also audit and provide consultation on the cyber and forensic lab.

The Uttar Pradesh Police is interested in using advanced technologies, including drone surveillance, to enhance safety of citizens and desires to enter into an agreement with IIT-Kanpur in this regard, the institute's deputy director said. Director General of Police (DGP) O P Singh had a detailed conversation with Indian Institute of Technology (IIT), Kanpur, officials on the matter on Friday, and the state police is interested in signing an memorandum of understanding (MoU) with the institute within a week, Deputy Director, IIT-K, Manindra Agarwal said.

The Uttar Pradesh police is looking for technical assistance from the institute on cyber crime, crowd management and database of criminals, a police spokesman in Lucknow said.

The IIT would also audit and provide consultation on the cyber and forensic lab that is being set up in the state on the directions of the Union Home Ministry, he said.

The deputy director said the proposed collaboration will be about effectively ensuring security of citizens through advanced research in fields of analysis, training, security, problem solving, management, communication and drone surveillance.

IIT-Kanpur officials will help the state police by analysing data obtained through calls made on 'UP-100' as well as from information on social media, Agarwal said.

The institute will also train police personnel on using advanced technologies to solve cyber crimes and other challenging cases, he said.

Researchers at IIT-Kanpur will also focus on enhancing the quality of communication systems of the Uttar Pradesh Police and modernising traffic management systems.

The police along with the institute's officials will also work on cyber security and cyber forensics to solve crime related to information technology, the deputy director said.

The IIT will also help the state police in determining effectiveness and functioning of drones and other advanced equipment during purchases, he said.

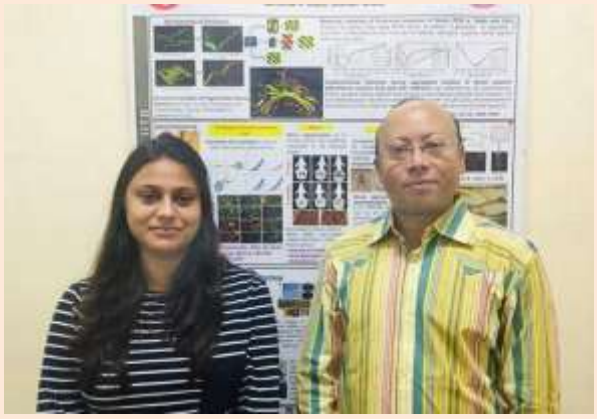
The IIT official said experts will aid the police in setting up a high-tech social media lab, improve transfer of information from police wireless systems, facilitate purchase of low cost breath analysers and also provide guidance in crowd management analytics.

The MoU will help smoothen the working of the state force, he said.

May 12

IIT Delhi team increases the usability of donated corneas

http://www.thehindu.com/sci-tech/science/iit-delhi-team-increases-the-usability-of-donated-corneas/article23865300.ece



Confirmation: 'Decellularised corneas that were combined with the chemical showed no immune response', says Sourabh Ghosh (right).

Corneal transparency is compromised by tissue engineering techniques

As much as 20-30% of human corneas taken from cadavers and transplanted into patients get rejected. Unlike in the case of other tissues, the conventional tissue engineering technique that uses polymer scaffolds to seed cells and culture tissues in the lab do not succeed in the case of cornea as transparency, which is vital for cornea, gets compromised. Against this backdrop, a team of researchers led by Prof. Sourabh Ghosh from Indian Institute of Technology (IIT) Delhi have found corneas taken from goats and transplanted into rabbits are not rejected and transparency is not compromised. The work was done in collaboration with clinicians from All India Institute of Medical Sciences, Delhi.

Dr Radhika Tandon, Professor of Ophthalmology at AIIMS and one of the authors of a paper published in the journal ACS Biomaterials Science & Engineering is optimistic of study's translation potential. "These findings open up maximal utilisation of donor corneas. Human donor corneas, which for various reasons are categorised as unsuitable for keratoplasty [where abnormal corneal tissue is replaced by a healthy cornea], can be processed in this manner and be useful for successful transplants for patch grafts and anterior lamellar keratoplasties," she says.

Though there is no blood supply to corneas (avascular), lymphatic system is absent, and the blood-eye barrier greatly minimises the chances of rejection, cornea from one species to another gets rejected. Removing all traces of protein, cellular and nuclear material from the cornea without destroying the anatomical microstructure and extracellular matrix of the cornea is therefore essential to minimise the chances of rejection.

Corneal transparency

"Corneal transparency is determined by the orderly alignment of collagen fibres in a particular direction and regular spacing between the fibres so light does not get diffracted and instead passes through the cornea," explains Prof. Ghosh, corresponding author of the paper.

By directly passing a detergent at very precise flow rate and direction through the cornea, the researchers had already demonstrated the ability to remove all cellular and nuclear material without affecting the integrity of corneas. However, the secondary collagen alignment or confirmation still gets distorted leading to certain hidden antigenic sites getting exposed.

Thus there are chances of immune response getting evoked leading to rejection when the decellularised cornea is transplanted.

To overcome this problem, the team used a chemical (chondroitin sulphate) naturally found in a cornea to combine with the decellularised cornea. "The chemical combines with the decellularised cornea and restores collagen alignment thereby increasing the chances of integration of the cornea, and reducing the chances of evoking immune response and a possible rejection," says Juhi Chakraborty from IIT Delhi and first author of the paper.

Enhanced integration

The researchers hypothesised that combining the chemical with the decellularised cornea will result in enhanced graft integration, reduced immune response and less inflammation. To test this they used cornea without removing any cellular or nuclear material, corneas with cellular and nuclear material removed and finally decellularised corneas with the chemical combined to them. "During in vitro studies we found some immune response in the case of decellularised corneas but decellularised corneas was conjugated [combined] with the chemical showed no immune response," says Prof. Ghosh.

The researchers implanted the three types of goat corneas in rabbits and tested the immune response. Three rabbits were used for each group. "Decellularised cornea showed the most inflammation and blood vessel formation [vascularisation]. Interestingly, the decellularised cornea combined with the chemical had less inflammation and vascularisation," says Chakraborty.

Only 36 students from abroad in JEE (A) race

https://timesofindia.indiatimes.com/city/mumbai/only-36-students-from-abroad-in-jee-a-race/articleshow/64142431.cms

Despite their impressive global rankings, IITs have failed to catch the fancy of international aspirants this year.

Only 36 candidates have registered for JEE (Advanced)—the entry level test for admission to IITs—as against 69 last year. Eventually, only 31 had appeared for the test last year and seven qualified.

IITs have been making efforts over the last few years to increase diversity of students on campus. Only last year, the premier institutes decided to reach out to international students in Sri Lanka, Nepal, Singapore, Bangladesh, Ethiopia and the UAE, and held exams in the countries.

"We have been releasing admission details from time to time on our website and are also taking all measures to promote the institutes in these countries. We approach Indian embassies in the selected countries with all the admission data required to ensure smooth conduct of the test," an official from the JEE (advanced) organizing committee said.

However, the efforts are not translating into numbers for the country's elite group of institutes. "Our country must offer good liveable and social conditions, safety and security to international students to make it a lucrative destination. Why do our students prefer studying in the western part of Europe and not eastern Europe? Why do we prefer going to northern America instead of southern. It is the same case here. People look at options to study abroad also for a prospective career destination. Holding exams in select countries may not yield desirable results," a professor said. A large majority of students taking exams from international centres are Indians.

Meanwhile, IITs continue to perform well on global ranking indicators such as academic and employers' reputation, and research. IIT-Delhi and IIT-Bombay have managed to make it to the top 200 universities globally in 2018.

Indranil Manna, former director of IIT-Kanpur, said that getting international students is a must to improve the standards of higher education in the country, to bring competitiveness and also to bring diverse culture on campuses. "It is always desirable to have international students on campus. We, however, need to have a more defined strategy to attract students. We should hold online exams such as GRE and GMAT across nations and not restrict ourselves to a few countries. There are good students everywhere. Creating good infrastructure for international students, including hostels and dining facilities, and charging them actuals instead of subsidized rates could also prove to be helpful," Manna said.

IISc Bangalore, IIT Bombay among top 30 institutes in BRICS, emerging nations; check full list

https://www.financialexpress.com/education-2/iisc-bangalore-iit-bombay-among-top-30-institutes-in-brics-emerging-nations-check-full-list/1163284/

Four Indian varsities have made it to the top 50 in the Emerging Economies University Rankings for 2018 released by Times Higher Education.

India's Indian Institute of Science (IISc) Bangalore and Indian Institute of Technology (IIT) Bombay made the cut to enter top 30.

Four Indian varsities have made it to the top 50 in the Emerging Economies University Rankings for 2018 released by Times Higher Education. The Emerging Economies University Rankings, previously known as the BRICS University Rankings, includes select universities that are located in India, Brazil, Chile, Cyprus, Indonesia, Malaysia, Pakistan, the Philippines and South Africa. While India's Indian Institute of Science (IISc) Bangalore and Indian Institute of Technology (IIT) Bombay made the cut to enter top 30, China's Peking University and Tsinghua University claimed the top two places in the list for the fifth year in a row.

Phil Baty, the Editorial director of global rankings, said, "The famous "BRICS" acronym – coined in 2001 by the economist Jim O'Neill to highlight the major emerging economic powerhouses of Brazil, Russia, India and China, with South Africa added later. But now we have dropped the "BRICS" from our name." He added that the change in the name of the ranking is not to belittle any country's hard-won achievements but is rather aimed at recognising the exceptional strength in the wide diversity of the emerging economy nations, BRICS and all.

This year's Emerging Economies Rankings has been formulated on the basis of 13 performance indicators. These performance indicators were grouped into five areas- Teaching (the learning environment); Research (volume, income and reputation); citations (research influence); International outlook (staff, students and research); and industry income (knowledge transfer).

Check the names and rank of the Top 10 Indian Universities included in the list-

Rank 13: Indian Institute of Science (IISc) Bangalore
Rank 26: Indian Institute of Technology (IIT) Bombay
Rank 45: Indian Institute of Technology (IIT), Kharagpur
Rank 49: Indian Institute of Technology (IIT), Kanpur
Rank 56: Indian Institute of Technology (IIT), Roorkee
Rank 63: Indian Institute of Technology (IIT), Delhi
Rank 70: Indian Institute of Technology (IIT), Madras
Rank 99: Tezpur University
Rank 114: Indian Institute of Technology (IIT), Guwahati
Rank 117: Jadavpur University

Emerging Economies University Rankings for 2018: Top Universities-

Rank 1: Peking University, China
Rank 2: Tsinghua University, China
Rank 3: Lomonosov Moscow State University, Russian Federation
Rank 4: Fudan University, China
Rank 5: University of Science and Technology of China, China
Rank 6: Zhejiang University, China
Rank 7: Shanghai Jiao Tong University, China
Rank 8: Nanjing University, China
Rank 9: University of Cape Town, South Africa
Rank 10: National Taiwan University, Taiwan

IIT KGP explores French connections for academic and research collaborations

https://timesofindia.indiatimes.com/home/education/news/iit-kgp-explores-french-connections-for-academic-and-research-collaborations/articleshow/64123610.cms

IIT KGP recently organized a two-day R&D Club meeting for India-based French Companies in collaboration with the French Embassy. The collaborative event was aimed to promote academic and research collaborations and people exchange between industrial sector in France and India. The event focused on defining and delivering joint academic programs for deep scientific cooperation while enabling enterprises and companies to work with researchers in India. Among some of the key French corporate houses which participated were Saint-Gobain, Total Oil, Solvay, Lumiplan and others. The Indo-French Centre for the Promotion of Advanced Research (CEFIPRA) which is funded by governments of both countries and the Consulate General of France in Kolkata was also among the participants.

IIT KGP proposed an idea for establishing joint critical science institute - an Indo-French Institute led by IIT Kharagpur where all the IITs and select French companies could be partners. “IIT KGP can play the role of the central coordinating institute and would be happy to take the proposal to the Government of India provided the French corporations and government bodies are interested. Such collaboration will cut across disciplines and bring in people in large scale instead of building one to one relationship” opined Partha Pratim Chakrabarti, director, IIT KGP.

Two more thrust areas were identified which included the Indo-France heritage corridor of Bengal and a French vertical in the National Digital Library. “France is a powerhouse of art and culture on one hand and science and technology on other. We are in the advanced stages of signing MoUs with four French universities for collaborative opportunities on all areas” said Baidurya Bhattacharya, Dean, International Relations. IIT KGP at present has collaborations with top French brands in India such as AirBus, TOTAL.

Baidurya Bhattacharya, dean, International Relations. IIT KGP at present has collaborations with top French brands in India such as AirBus, TOTAL. The delegation visited various laboratories and interacted with the faculty members on the second day of the event. The Institute highlighted several domains including advanced manufacturing, clean energy, rubber technology, urban infrastructure, petroleum engineering etc.

The French Consul General Damien Syed expressed keen interest to focus more on people to people exchange including student exchange.

IIT-Madras working on technology to develop ultrasound with highest ever resolution

https://www.livemint.com/Home-Page/90XxWWaRlUxnBwV7NLwhyN/IITMadras-working-on-technology-to-develop-ultrasound-with.html

The new technology would bring down the cost of diagnostic evaluation and treatment in biomedicine

Researchers from the Indian Institute of Technology (IIT) Madras are working on a technology to provide the highest ever resolution of Ultrasonic Imaging in what could possibly complement and eventually replace X-ray and computed tomography (CT) systems used in medical diagnostics.

The researchers are the first to have experimentally demonstrated the highest resolution in micrometres for an ultrasound which was in the range of 1/25 of the incident wavelength. The current ultrasonic imaging systems can typically yield resolution of up to 0.5 millimetres.

The research was published in Scientific Reports, a Nature group journal.

At present techniques like X-ray computed tomography, magnetic resonance imaging (MRI) and microscopy are used for medical diagnostics as they can yield resolution in the micro to nano-meter range, which is required for imaging of tissue and bone. However, the major drawback is that these systems are expensive and carry a risk of radiation.

Ultrasound imaging (UI), on the other hand, does not involve the risk of radiation. However, the technique is not used much in biomedicine as conventional ultrasound methods offer poor resolution.

“There are several approaches underway to improve resolution of ultrasound, but we have been the first to successfully to demonstrate the proof of concept. Now the aim is to develop this Super Resolution Ultrasonic Imaging (SUI) system for use in medical diagnostics,” said Dr Prabhu Rajagopal from IIT Madras, who is leading the research along with Professor Krishnan Balasubramanian for more than four years.

The technology would also bring down the cost of diagnostic evaluation and treatment in biomedicine. “Unlike expensive and radiation-prone electromagnetic (EM) wave approaches, including X-ray, it would be cost-effective and affordable. A regular X-ray machine costs over a crore, while this technology would cost Rs30-40 lakh,” said Dr Rajagopal.

Apart from proving to be an aid in existing non-invasive diagnostics, the technology will also help in industrial imaging for engineering materials, where an X-ray suffers a constraint of not being portable enough.

“This would be a super resolution ultrasound, with enhanced capabilities. The great dream is that one day we can use it for medical diagnosis and bring down the cost of diagnostic evaluation,” he said.