News Clips
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Help government use tech as a force multiplier, President Kovind urges IITians
http://www.newindianexpress.com/nation/2018/jun/29/help-government-use-tech-as-a-force-multiplier-president-kovind-urges-iitians-1835385.html

President Ram Nath Kovind on Thursday urged students of IIT, Kanpur to help the government use technology to maximise the reach of its people-centric initiatives.

President Ram Nath Kovind on Thursday urged students of IIT, Kanpur to help the government use technology to maximise the reach of its people-centric initiatives. The President was addressing the 51st convocation of IIT-K, where he gave away degrees to over 1,500 students.

In his convocation speech, Kovind said: "Today's India offers unprecedented hope and avenues... .Our fast-growing economy offers you huge scope. With your talent, your education and your IIT degree, each of you can be a gamechanger for India."

He said the government has undertaken many initiatives to improve the quality of life of citizens, like the Atal Mission for Rejuvenation and Urban Transformation or AMRUT, the Deen Dayal Upadhyaya Gram Jyoti Yojna, Digital India, Make in India, Start-up India and the Swachh Bharat Abhiyan.

"Technology can be a force multiplier for all these programmes. As you build your careers, please attempt to contribute to such national missions," he said.

Kovind also asked them to contribute towards re-imagining Kanpur as an industrial and commercial hub. Kanpur, he said, was central to the success of Centre's ambitious Namami Gange programme to the clean up the Ganga.

"The city is also critical to the success of Namami Gange. This is a programme to not merely de-pollute the Ganga and conserve it from industrial effluents. It goes further. It seeks to rationalise the allocation and usage of the river's waters as well as to develop the Ganga basin," he said.

Electricity from Eggshells: IIT Kharagpur Finds Novel Way to Power Wearable Gadgets!
https://www.thebetterindia.com/147901/eggshells-electricity-iit-kharagpur-news/

A team from IIT Kharagpur is trying to find a green alternative to present energy and power sources.

Scientists at IIT Kharagpur, have found an interesting way to use eggshell proteins to develop tiny devices that can harvest electricity from body movements, reports Business Standard. These could power wearable sensors and devices in the future.

You will never again throw eggshells away, without thinking about this!

According to researchers, eggshell membrane proteins have piezoelectric properties, allowing them to produce electricity under mechanical stress. Non-toxic and bio-compatible, bio-inspired piezoelectric materials are considered an excellent energy harvesting source, which can give our energy deficient world enough power, without increasing environmental pollution.

The humble eggshell, can become a source of power, claim researchers at IIT Kharagpur.

Bhanu Bhusan Khatua, a professor at IIT Kharagpur, in West Bengal, told PTI over the phone, that bio-based green energy is still to be effectively explored, so the energy demand of contemporary humankind can be fulfilled.

The team isolated the soft membrane present inside eggshells, and coated it on both sides with thin copper tapes, attaching gold electrodes to them. The arrangement was then encapsulated in a silicon-based organic polymer. Assembling 5 of these devices can power over 90 green LED's, and according to findings, this can be commercialised.

Ultra-sensitive towards any minute pressure arising from the pulse, body motions at rest and walking conditions, and water drops, the device can be used to power numerous applications like fitness trackers, health monitors and sensors.

Khatua, who has led the research published in the journal 'Materials Today Energy', said that this innovation would provide considerable benefits to future energy science, especially in-vivo biomedical applications.

According to researchers, the device may be able to replace conventional ways of powering medical devices, in the near future.

Researchers from the Pohang University of Science and Technology in South Korea collaborated with the researchers at IIT.

The researchers claim this work would help uplift the green energy harvesting technology, as self-powered and wearable electronics. They also said that these non-traditional biomechanical energy sources could replace batteries.

Khatua and his team, have also worked with an onion peel-based piezoelectric nanogenerator, focused on using cellulose-based materials for energy harvesting applications.

The professor sounds optimistic about using non-traditional sources to generate power and says the team is exploring other biomaterials, like natural silk, cellulose-based nano-fibres, etc., which may have higher piezoelectric coefficient and output performances, for broad application areas, including healthcare monitoring.

June 28

Most JEE-Adv toppers have IIT-Bombay as first choice

https://www.hindustantimes.com/mumbai-news/most-jee-adv-toppers-have-iit-bombay-as-first-choice/story-BebNol19NBWisvofnLqAYO.html

The seat allotments for Indian Institutes of Technology were released on Wednesday morning.

This is the first year when all institutes have kept aside 14% (800) extra or supernumerary seats for women students.

Computer science and the Indian Institute of Technology, Bombay (IIT-B) have emerged the preferred choice of course and institute among the Joint Entrance Examination-Advanced (JEE-Adv) toppers.

The seat allotments for Indian Institutes of Technology were released on Wednesday morning.

According to the data released by the Joint Seat Allocation Authority (JoSAA), the four-year computer science course received the maximum applications, especially from top rank-holders and the top choice of institute was IIT-Bombay, followed by Delhi, Madras, Kharagpur and Kanpur.

All-India Rank 1 in all categories, including the general, women, SC, ST, OBC, have made it to the computer science course in IIT-B. Officials did not release all details at the time of going to press.

"I was sure I would get a seat in the computer science course at IIT-B. I'm very happy that things are falling into place. While I haven't yet charted out my plan, I currently want to focus on studies and then decide the specialisation," said Rishi Agarwal (AIR 8) and Mumbai topper in JEE Adv.

Admissions to IITs depend on the JEE-Adv scores of students, results for which were declared on June 10.

While 18,138 students were eligible for admissions to IIT, a request from the human resource development (HRD) ministry brought down the eligibility scores (from 126 out of 360 to 90) and ensured that 31,988 (27,809 men and 4,179 women) got to apply for 11,290 seats across 23 IITs (including Indian School of Mines-Dhanbad).

"All seats, expect for some which had no takers, have been allotted in the first round itself. Over the next six seat allotment rounds, we will keep re-filling the vacant seats with more applicants and by the end of seven rounds, we hope there is no vacancy in IITs," said a senior official from JoSAA, on condition of anonymity, as he is not authorised to speak to the media.

This is the first year when all institutes have kept aside 14% (800) extra or supernumerary seats for women students, in accordance with the HRD ministry's plan to ensure gender balance in all institutes.

Modi government to dissolve UGC, set up new Higher Education Commission

https://economictimes.indiatimes.com/industry/services/education/modi-government-announces-repeal-of-ugc-act-new-higher-education-commission-to-be-set-up/articleshow/64761001.cms

 In one of the biggest move towards reforming higher education in India, the Modi government today announced a complete overhaul of the apex higher education regulator University Grants Commission, repeal of the UGC Act, 1951 and a fresh legislation to set up the Higher Education Commission of India (HECI).

 Stopping short of setting up a single higher education regulator subsuming all regulatory bodies as was envisaged earlier, the Human Resource Development (HRD) ministry has decided to revamp UGC and its parent legislation completely so that the HERC focusses on setting up academic standards and ensure their implementation rather than invest its energies on grant giving. The HECI will also be backed with penal powers to order closure of institutes that violate set norms, imposition of fines where necessary and provisions for imprisonment up to three years where necessary.

The HECI Act, 2018 is expected to be piloted in Parliament in the upcoming monsoon session. Considering that the Modi government's term is coming to an end, it will be challenging to get parliamentary passage for a fresh legislation.

The HECI will not subsume the All India Council for Technical Education (AICTE) and the National Council for Teacher Education (NCTE) as was originally envisaged as there were concerns red flagged over cadre merger and other technical issues. Both, the AICTE Act and the NCTE Act will be revised to fall in tune with the new HERC Act and reflect the same basic principle of focus on effective regulations for academic standards rather than administrative grant giving functions, sources told ET. The provisions of the new HECI Act, 2018 will override the Architects Act as far as academic standards are concerned.

Course Correction

Specify learning outcomes for courses | Lay down standards for teaching, assessment, research, curriculum development, teacher training

Annually evaluate academic performance of institutions on laid down criteria

Bring in a robust accreditation system | Provide for mentoring of deficient institutions

Order closure of institutions which fail to comply with minimum standards | Advise central govt or any state govt on issues referred

Prescribe proactive public disclosure of various academic parameters and outcomes | Specify norms for fixing of fee and advise on making education affordable for all

The key thrust areas of the HECI will be downsizing over governance of institutions, bring in disclosure based regulatory regime and powers of enforcement of regulations. A huge focus will be there on academic quality with emphasis on improving learning outcomes, evaluation of academic performance by institutions, mentoring of institutions, training of teachers, use of technology and so on. The HECI will also set standards for opening and closure of institutes, provide greater flexibility and autonomy to institutes and lays tankards for appointments to critical leadership positions at institutions across spectrums and even for those falling under state laws.

An advisory council with the HRD minister, Higher Education Secretary and state higher education council heads besides experts will be set up under the HERC Act to advise on various issues every six months.

The UGC and its regulatory regime have been criticised by a number of committees and their reports for its restrictive and suffocating processes. Several committees including the Prof Yash Pal committee and the National Knowledge Commission of the UPA era and the Hari Gautam committee in the Modi regime have recommended a single education regulator to rid higher education of red tape and lethargy.

While plans for a single regulator were at an advanced stage, these were dropped after a May meeting chaired by the HRD minister in Mussorie.

The meeting saw concerns being raised about the feasibility of merging bodies like UGC and AICTE besides the challenges of establishing a full-fledged new regulatory structure, with a fresh legislation.

The AICTE had red flagged at the Mussorie meeting that they had already brought in several reform measures in their regulatory approach and their merger at this stage into a HEERA like body was hardly then justifiable. That a range of measures for reform in UGC were brought in following announcements in the 2017 budget was also pointed out. Building on these, it is being felt, may be easier than starting from scratch on a new regulator.

Accordingly, while UGC will undergo a major overhaul, the legislation's governing AICTE and NCTE will be amended to bring in changes if necessary.

June 27

IIT-Delhi students shatter period taboos with fun games

https://www.outlookindia.com/newsscroll/iitdelhi-students-shatter-period-taboos-with-fun-games/1338572

In a bid to break the myths and taboos surrounding menstrual hygiene, students from IIT Delhi have designed a set of games for young girls and women to spread awareness about periods in a fun, engaging manner.

Consisting of a set of three games - a jig-saw puzzle, a memory game, and roulette, the module focuses on the basics of menstrual hygiene, such as how often sanitary napkins must be changed and how they should be disposed.

"We thought of designing these games when we found out about the lack of knowledge about menstruation among women, despite the verbal awareness sessions. The verbal sessions tend to be boring, so these women usually forget what they hear," Ritika Chaplot, who is pursuing Production and Industrial Engineering, told PTI.

"To calculate the difference that these games make, we conducted a survey where we asked the women to fill out questionnaires on menstrual health after a verbal session and again, after playing these games," said Ishita Gupta, a Biotechnology student at Indian Institute of Technology (IIT) Delhi.

"On an average, only six out of 10 questions were correctly answered post a verbal session, while engaging with the module made the women answer 8.6 questions correctly," Gupta said.

A typical awareness session, conducted by these students starts with an ice-breaking activity, a verbal session, followed by games from the module.

"We make the women play the games in front of us and help them out in doing so. We keep correcting them if they make any mistakes, in order to ensure that there are no misconceptions left in their minds whatsoever," Gupta said.

"I remember talking to one of the girls in an awareness session, where she told me how it was very difficult for her as a young girl to convince the women in her family to shift to sanitary napkins form the cloth piece that they were accustomed to," said Tanvi Bhamnawat, from IIT Delhi.

"This project, therefore, aims to educate not just young school girls, but also grown women in order to be able to make a substantial difference," the 19-year-old civil engineering student said.

The initiative, called 'Project Titli', has managed to educate over 1,500 women in different public schools and outside in collaboration with various NGOs so far.

Almost four such sessions are conducted every week in different parts of Delhi, with another one coming up tomorrow at Uttam Nagar in collaboration with 'Protsahan', an NGO fighting against child abuse with a focus on adolescent girls.

The demand for these modules, however, is not restricted to just New Delhi. The students have sold these modules to NGOs in different states like Jharkhand and Karnataka as well.

"We have made these modules keeping in mind a pan-Indian audience and we aim to breakall the stereotypes and myths pertaining to this issue in every part of India, and beyond," another student from the team said.

Since 2016, the students have been working under Enactus, which provides internationally recognised, experiential platform to young entrepreneurs.

The students strive to spread awareness and develop a sustainable model for production and distribution of sanitary napkins.

Their target community currently is Kapashera, a small town located in the South West District of Delhi where they are producing and distributing sterilised, cloth sanitary napkins to the women.

"We teach these women how to stitch the sanitary napkins and it is they who are using them and earning the profits too," Kamya Aggarwal, a chemical engineering student said.

The sterilisation and the packaging of these pads are done by these IIT Delhi students, who are currently distributing them free of cost.

However, they hope to create a long-term demand to make the women of the community entirely self-sufficient.

IIT-D ALUMNI ASSOCIATION TO PLANT SAPLINGS IN VILLAGES ADOPTED BY IT

http://www.dailypioneer.com/city/iit-d-alumni-association-to-plant-saplings-in-villages-adopted-by-it.html

At a time when Delhites are emulating a "Chipko" styled movement in a bid to save the city's lungs~ its trees, the alumni association of Indian Institute of Technology -Delhi (IIT-D) will plant saplings of indigenous varieties of trees in each of the 100 villages adopted by it as part of the initial phase of its "Swachhta" initiative.

The 50,000 strong alumni association of IIT-D, inspired by the "Swachhta Abhiyan" of the Union Government, has started its initiative to adopt villages whereby one or more than one village is adopted by the alumni interested for its development.

The initiative will kick-start from "Pahari" village near Pataudi in District Gurugram of Haryana on 1 July. "Haryana Chief Minister Manohar Lal Khattar will inaugurate it and about 500 trees of native indigenous varieties would be planted in the village," said Atul Bal, president, alumni association, IIT-D.

As a part of the rural adoption plan about Rs.10 to 15 Lakh would be invested in each of these villages with focus on developing sewage system & waste management, renovation of Panchayat and

community centres, opening of small libraries for villagers especially for the children and plantation of native varities of trees like Peepal, Neem, Banyan, Mango, Jackfruit, Jamun etc.

"In just three weeks starting from first week of June, 35 alumni's have adopted 100 villages. RH Dalmia has alone adopted 55 villages and has planned to adopt 20 more. We reached our alumni through website, email, mobile and other communication channels," said Bal.

He said that in the initial phase Rs 10-15 lakhs would be spend per village but efforts would be made to increase the amount later on depending upon the need. Further, informing that bio-gas plant would also be developed in the villages.

Bal informed that an standard operating plan/ procedure would be developed for the villages and each village would be developed according to it.

In the initial phase IIT-D alumni's have expressed interest for developing villages located in Haryana, Uttar-Pradesh, Orissa, Uttarakhand and Delhi. Expressions of interest have also been made for development of pocket of 69 villages located in the Najafgarh area of Delhi.

IIT-Delhi researchers improvise models to better predict storm surges
https://telanganatoday.com/iit-delhi-researchers-improvise-models-to-better-predict-storm-surges

Across the world Jelesnianski cyclonic wind model predominantly used but model did not work satisfactorily under Indian conditions

Researchers at India Institute of Technology, Delhi, have come up with an improvised prediction model that promises to help make more accurate forecast of storm surges due to cyclone and other storms arising on the eastern flank of the country, in Bay of Bengal.

Many models are available to predict the effect that wind speed can have upon storm surges. However, across the world scientists use a model called Jelesnianski cyclonic wind model predominantly due to its simplicity.

The researchers at IIT-D wanted to verify if this model can be used in the Indian context also. They tested it out to predict the winds that formed during several cyclones that occurred in the Bay of Bengal since 2010 – Jal (2010), Thane (2011), Phailin (2013) and Hudhud (2014). The model did not work satisfactorily. It was found to underestimate the magnitude and was inaccurate in predicting the direction.

The scientists dwelt on the equations that go into the making of the model and have developed a modified version, which could make predictions that were in tune with the actual speed and direction.

The elevation of water in the sea is determined by factors such as shape and geometry of coast, depth of water in the sea, tides and the wind that generates waves. The wind speed along with its direction is important as it directly affects the generation of storm surges.

Speaking to India Science Wire, professor AD Rao, who conducted the study in collaboration with his colleague, Smita Pandey, expressed confidence that though the improvised model had so far been proven right only on hindsight basis, it would prove to be correct in future too.

"We want to continue this study to test this hypothesis for more cyclonic events in the future. IIT-D has been involved in development of models for predicting storm surges and associated vulnerability for many years. The models which are developed at IIT-D are being used by many Indian Ocean rim countries, besides Indian Meteorological Department, for operational purposes."

Storm surges are a major threat to lives of people in coastal areas, apart from the damage they can cause to property and biodiversity. India has a more than 7,500 km long coastline encompassing nine States which are highly vulnerable to damage by the elevation of sea level due to tropical cyclones that emerge from the Bay of Bengal and the Arabian Sea.

Incidences of storm surges are increasing and are expected to increase due to climate change. Accurate prediction of the intensity of storm surges is, therefore, a research priority as it can help in planning the disaster management strategy.

The study, supported by the Indian National Centre for Ocean Information Service (INCOIS), has been published in journal Natural Hazards.

Students welcome JEE, NEET twice a year

https://www.deccanchronicle.com/nation/current-affairs/270618/students-welcome-jee-neet-twice-a-year.html

Y.K. Jayaramappa, CEO, BASE, opposes the move saying it would pressurise first-time candidates expected to learn more in less time.

The move which is expected to benefit lakhs of aspiring doctors and engineers will be put in practice after the official announcement of the same by the National Testing Agency (NTA), the new independent body formed to conduct national entrance tests in the country.

BENGALURU: Starting December 2018, Joint Entrance Examination (JEE) Mains for admission into engineering colleges, and the National Eligibility cum Entrance Test (NEET), the gateway to medical and dental colleges across the country, is likely to be held twice.

The move which is expected to benefit lakhs of aspiring doctors and engineers will be put in practice after the official announcement of the same by the National Testing Agency (NTA), the new independent body formed to conduct national entrance tests in the country. While most students find the move beneficial, it has evoked a mixed reaction among experts.

Welcoming the move, Dr Sridhar G., MD, Deeksha said this would see better performance from aspiring candidates. "Two years of intense preparations boil down to a single day and the pressure on candidates to perform at their single opportunity is too much. A bad day for them would affect their entire future and hence another chance would see them putting their efforts in the right way," he said.

The new agency should see to it that clear cut instructions are given and guidelines on how, when and how many times an individual candidate can take the exams should be released in a robust manner, he added.

Rajshekhar Ratrey, VP, Education Content, Toppr—.com, a personalised learning application said students would be relieved as pressure has been eased to focus on – the boards, then the entrance. "It isn't clear yet if a student's best score would be considered, if that is the case, it would give students a second chance to crack the exam, without dropping a year," he said.

Y.K. Jayaramappa, CEO, BASE, opposes the move saying it would pressurise first-time candidates expected to learn more in less time.

"Also, fewer students will opt for December, as it will be picked mostly by repeaters. If the first test is to be December before the regular tests in May, it implies that the teaching schedule will also be reduced with the quality of academic delivery even at specialised coaching centres being affected," he said.

"Instead, a second opportunity given in the following month (June) would make it easier for candidates to learn from experiences and qualify with a supplementary exam-like effect," he said.

Swapna, an aspiring doctor, says, "Another opportunity for candidates like me will be a blessing and I'm sure I can perform way better than how I did earlier this year as I was suffering from unexpected health problems then," she said.

IIT Roorkee students develop inflatable safety helmet for bikers

https://qrius.com/iit-roorkee-students-develop-inflatable-safety-helmet-for-bikers-all-you-need-to-know/

Three engineering students from the Indian Institute of Technology (IT) Roorkee have come up with an ingenious design of an inflatable helmet. The helmet can be worn around the neck and remains folded like a collar, till the time impact is detected.

The helmet comes equipped with sensors to measure several parametres such as acceleration, lean angle, and velocity to identify impact or collision. As soon as impact occurs, the helmet inflates and forms a cushion around the cranium. It has been reported that this cushion is more effective in reducing impact under peak acceleration, which is normally transferred to the head.

The concept of an inflatable helmet is said to be inspired from inflatable space structures as they are widely used in several space applications. Moreover, they cost less.

Sarang Nagwanshi, one of the three inventors, told the Economic Times: "We got the idea of inflatable helmet while we were working on an inflatable space antenna at ISRO during our internship. As this helmet is being developed for the first time in India we got very limited help from any external source and our learning curve was steep. The results obtained are very encouraging and we are working towards converting this idea into a reality."

Another of the three inventors, Rajvardhan Singh mentioned that the helmet is made of Kevlar, a synthetic fibre used in making bullet-proof jackets. Singh claimed that the inflatable helmet offers better protection than traditional helmets.

"The traditional helmets protect only against skull fractures and not against internal brain bleeding and damage caused by the rapid de-acceleration during an accident. Our impact assessment showed inflatable helmets can reduce the peak crash acceleration up to four times, meaning it absorbs the kinetic energy generated during the crash and then releases it slowly, lowering damage from impact," Singh told the Hindustan Times.
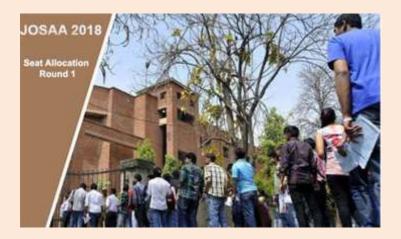
When the three inventors conducted impact tests under standard testing conditions, results revealed that the helmets are capable of manifold reduction in peak acceleration after impact created by collision. It was also found that the force experienced by the dummy head was four times less.

The inflatable helmet will be of immense help to bikers, simply because it will help in reducing the force experienced by the head during impact. Moreover, since the helmet is made of kevlar, additional foam and coating inside the helmet might not be required. In addition to this, if designed appropriately, bikers might not be inconvenienced while wearing the inflatable helmet. In the same vein, the government previously looked at redesigning the helmet.

In 2017, the death toll of helmet-less riders increased to 195 percent in India. This necessitates the wearing of a helmet while riding, and the inflatable safety helmet might just be a more viable option for bikers and pillion riders.

JoSAA 2018: First Round of Seat Allocation today

http://www.ummid.com/news/2018/June/27.06.2018/josaa-2018-first-round-of-seat-allotment-today-at-josaa-nic-in.html

JoSSA 2018 Seat Allocation: The Joint Seat Allocation Authority (JoSAA) is set to announce online the First Round of Seat Allocation for the academic year 2018-19 today on Wednesday June 27, 2018 on its official website.

Candidates can access the JOSAA First Round Seat Allocation on the official website of the JoSAA, www.josaa.nic.in from 10:00 am today.

JoSSA 2018 Seat Allocation (Round 1)

Click here to go to the official website: josaa.nic.in

Click on the tab marked with "Round -1: View Allotment Results and Pay Seat Acceptance Fee"

Enter JEE Main 2018 Roll No, Password and Security Pin

Click on Login

If a candidate has registered for JEE (Advanced) 2018 then he or she should use JEE (Advanced) 2018 password. Otherwise use JEE (Main) 2018 password.

Remember to enter the required details gender, state code of eligibility and nationality, fill your choices of institutes and branches in decreasing order of preference. Once done, the candidate must ensure to lock their choices.

Candidates should also note that there is separate link to print locked choices. Candidates should also note that First round reporting for Seat Acceptance is from June 28 to July 02, 2018 - both days included from morning 10:00 to 05:00 pm.

Display of seats filled/availability status will be done at 10:00 am on July 03, 2018. Second Round Seat allocation (2nd round) will be displayed on the same day i.e. July 03, 2018at 05:00 pm.

The Joint Seat Allocation Authority (JoSAA) will release the First Seat Allocation (Round 1) after completing the First Round of Mock Seat Allocation 1 on June 19 and Second Round of Mock Seat Allotment 2 on June 24, 2018.

The seat allotment through the official website josaa.nic.in is done for admission to IITs, NITs, IITs and other GFTIs. About 36,000 seats are available in 23 Indian Institute of Technology (IITs), 31 National Institute of Technology (NITs), 23 Indian Institute of Information Technology (IIITs) and 20 government funded technical institutions (GFTIs) are offering admissions to the students this year.

The IIT JEE Admission authority had started the online Registration and Choice Filling for seat allocation conducted by the Joint Seat Allocation Authority (JoSAA) for admission to various institutions including IITs, NITs, IIEST, IIITs and Other-GFTIs for the academic year 2018-19 from Friday June 15, 2018 at 10:00 am.

The Joint Seat Allocation Authority (JoSAA) 2018 has been set up by the Ministry of Human Resources Development (MHRD) to manage and regulate the joint seat allocation for admissions to 97 institutes for the academic year 2018-19.

About 36,000 seats are available in 23 Indian Institute of Technology (IITs), 31 National Institute of Technology (NITs), 23 Indian Institute of Information Technology (IIITs) and 20 government funded technical institutions (GFTIs) are offering admissions to the students this year. Admission to all the academic programs offered by these Institutes will be made through a single platform.

IISc Artificial Leaves to Produce Fuel

https://academia.electronicsforu.com/iisc-artificial-leaves-produce-fuel

These artificial leaves absorb carbon dioxide to produce fuel and release oxygen
To reduce carbon-dioxide in the environment, Researchers from Indian Institute of Science (IISc) have made artificial leaves that absorb carbon dioxide to produce fuel.

Artificial Photosynthesis
The quantum leave absorbs carbon-dioxide in the atmosphere and releases oxygen in the process, simulating artificial photosynthesis.

In their study, researchers claimed that this quantum leaf for artificial photosynthesis is 100 times more efficient than a natural leaf in absorbing carbon-dioxide. They also said that the leaf is made up of completely biocompatible, inexpensive and earth-abundant materials.

Fuel Production
During the process of artificial photosynthesis, it converts carbon-dioxide into bicarbonate form to 'formate' (derivative of formic acid) that may be used as fuel. While pursuing this process, the scientists turned to nano-crystals to develop the process of absorbing carbon-dioxide from the

atmosphere. The quantum dots — semiconducting nano-crystals — made of specific materials, act as a catalyst in the reaction.

The researchers claim this to be a classic way to achieve two things at the same time as it reduces carbon-dioxide in nature to produce oxygen as well as can serve as a source of renewable energy. "This is the most energy-efficient method to convert carbon dioxide into fuel and oxygen using only sunlight," said one of the researchers. "While most plants convert less than one per cent of the available solar energy into chemical energy, the material developed by us can convert about 20 per cent of the incident solar energy into chemical energy in the form of fuel and oxygen", he added. The team also explained that people have tried to replicate the artificial photosynthesis in the past but the efficiency of this new quantum leaves is much more and is very close to the maximum efficiency that can possibly be achieved artificially.

AICTE issues directions to technical institutions over fee structure
https://telanganatoday.com/aicte-issues-directions-to-technical-institutions-over-fee-structure

The apex technical body in the country pointed out that some technical institutions were found charging fee in violation of the structure approved by the State fee regulatory committee.

All the technical institutions would now have to adhere to the prescribed fee structure or face consequences, including withdrawal of their approval.

The All India Council for Technical Education (AICTE) spelt out its stand on the matter and issued notices to all the technical institutions directing them to collect fee fixed by the Admission and Fee Regulatory Committee. If not, the council said, the institutions would face action including withdrawal of approval.

The apex technical body in the country pointed out that some technical institutions were found charging fee in violation of the structure approved by the State fee regulatory committee.

Directive to institutes
The AICTE asked all the technical institutions approved by it to strictly adhere to the fee structure fixed by the committee. "Any violation of instructions issued by the AICTE shall call for punitive action, including withdrawal of affiliation," the notice read.

The apex technical body has also warned the institutions not to reduce the number of faculty members due to revised faculty-student ratio norms. Recently, the AICTE revised the faculty-student ratio from 1:15 to 1:20. This had been a major demand from the college managements in the State.

The AICTE said it has already issued necessary directions to technical institutions under its ambit that reduction of teaching faculty due to revision of the faculty-student ratio norms would not be accepted in any case.

Faculty-student ratio
The technical body wanted the institutions to adjust the faculty-student ratio only on superannuation of faculty or resignation on their own. Further, the AICTE asked the State government and universities to ensure that the institutions do not downsize faculty due to revised norms.

"Before enhancing the faculty-student ratio, AICTE had approved having 20 per cent of adjunct faculty in the institutions. Now that the ratio has been increased, there is no requirement of the adjunct faculty in the institutions," Srini Bhupalam, vice-president, All India Federation of Self-Financing Technical Institutions said.

From IIT to Amrita University; here are institutions where Cisco will set up innovation labs

https://www.financialexpress.com/industry/from-iit-to-amrita-university-here-are-institutions-where-cisco-will-set-up-innovation-labs/1222330/

US-based tech giant Cisco today said it is setting up a network of 'Cisco thingQbator' labs in five academic institutions in India, aimed at enhancing digital skills development and entrepreneurship among the student community.

This goal is aligned to Cisco's global vision of impacting 1 billion lives worldwide by 2025 through digital solutions.

US-based tech giant Cisco today said it is setting up a network of 'Cisco thingQbator' labs in five academic institutions in India, aimed at enhancing digital skills development and entrepreneurship among the student community. The Internet of Things (IoT) makerspaces or innovation labs are being set up in collaboration with the Nasscom Foundation and will enable students to get hands on with technology and conceive digital solutions to solve local problems, Cisco Senior Vice President (IT) and CIO (International) V C Gopalratnam told reporters here at the Cisco India Summit 2018.

He added that the five academic institutions chosen for setting up these 'thingQbator' makerspaces are Indian Institute of Information Technology and Management, (IIITMK), Kerala, IIT-BHU Varanasi,

Amrita University Coimbatore, Indira Gandhi Delhi Technical University for Women- Delhi and Trident Academy of Technology Bhubaneswar.

Gopalratnam said the company is undertaking various initiatives and programmes in the country that will "positively impact 50 million beneficiaries in India by 2025". "This goal is aligned to Cisco's global vision of impacting 1 billion lives worldwide by 2025 through digital solutions," he added.

He explained that the company — which has over 10,000 people in India — is engaged with the government and community organisations in the country in various areas like education, economic empowerment, and environmental sustainability. "We are also supporting N/Core, an incubator for social sector startups, to launch N/Core tech – an exclusive track focussed on incubating early-stage non-profits that leverage digital technology to positively impact society," Gopalratnam said.

N/Core tech will primarily focus on incubating companies that are developing solutions in the areas of critical human needs, education, and economic empowerment, he added.

"Cisco will support up to 20 organisations during the first year in two cohorts. Each selected startup will receive an innovation grant of Rs 10 lakh. In addition, the startup will have access to a set of mentors and technology experts from Cisco along with N/Core partners," he explained.

June 26

Centre steps in as 50% engineering seats go vacant, IIT-Delhi asked to draft 'plan'

https://www.financialexpress.com/education-2/centre-steps-in-as-50-engineering-seats-go-vacant-iit-delhi-asked-to-draft-plan/1220403/

The plan will analyze the current situation of the industry and job creation. This plan will predict the demand for technical courses in the near future and help the All Indian Council for Technical Education (AICTE) to decide over approvals to new institutes and seats

Amidst reports that seats in technical education courses were still vacant, the central government has directed the Indian Institute of Technology (IIT)-Delhi to come up with a comprehensive blueprint, which will keep the national perspective in mind, to project the requirement for education programmes in engineering, management and architecture, among others, over the next decade.

The plan will analyze the current situation of the industry and job creation. This plan will predict the demand for technical courses in the near future and help the All Indian Council for Technical Education (AICTE) to decide over approvals to new institutes and seats, The Indian Express reported.

Last year, AICTE had set up a committee to draft such a plan. Former vice-chancellor of Vishveswarya Technological University, Belgaum, Professor H P Khincha was heading that panel. The committee had suggested that AICTE take out a tender seeking the private sector's help in collating data.

The central government had intervened and asked IIT-Delhi to coordinate with an IIT/ IIM/ NIT in each state to prepare a state perspective plan. Subsequently, based on the state plans, it will draft a national perspective plan. IIT-Delhi needs to finish the task within four months, according to IE report.

It has been learnt that the largest chunk of technical education seats (70 per cent) are in the engineering discipline. Management (MBA), pharmacy, computer applications (MCA), architecture, town planning, hotel management and 'applied arts and crafts' form the rest. Of the 15.5 lakh BE/ BTech seats in 3,291 engineering colleges across the country, over half (51 per cent) were vacant in 2016-17, according to AICTE data. Last year, again, half of the 14.76 lakh engineering seats had no takers.

Earlier this month, in an unprecedented move, the Joint Admission Board (JAB) of the Indian Institute of Technology (IIT) had issued an extended merit list after the HRD Ministry asked them to do so. The revised merit list has as many as 31,980 candidates as having qualified for the JEE-Advanced. The first list, which was released on June 10, had 18,138 candidates.

IIT-M, CPCL to improve amenities in three villages
http://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/iit-m-cpcl-to-improve-amenities-in-three-villages/article24258148.ece

In Nagapattinam district

Three villages in Nagapattinam district are set to benefit from an agreement signed between the Indian Institute of Technology – Madras and Chennai Petroleum Corporation Limited (CPCL).

Vellalapakkam, Gopurajapuram and Panangudi villages near the CPCL refinery in Cauvery basin will soon be assured of solar power, safe drinking water and better sanitation. A preliminary survey of 600 households in the three villages by the IIT– M found that in many households the toilets were soak pits.

In its detailed proposal, the institute has recommended converting the pits into septic tanks to minimise environmental hazard and contamination of groundwater. The households would also get compost yards.

The IIT–M will assist in building rainwater harvesting system for the villages at an estimated cost of Rs. 60 lakh, which will reduce seawater incursion during monsoon and improve groundwater quality. This, in turn, could rejuvenate waterbodies adjacent to the villages, according to a release from the institute.

The institute will also assist in construction of reverse osmosis (RO) plants and design drinking water distribution systems in the village schools and anganwadis. It has also proposed to improve pedagogy and infrastructure in all the village schools and anganwadis.

In the project, estimated at Rs. 14.49 crore and to be executed in the next two years in coordination with the State government, the IIT–M has committed to participating in skill development and health care activities in the villages.

Ravindra Gettu, Dean (Industrial Consultancy and Sponsored Research), IIT–Madras, and M. Sankaranarayanan, Chief General Manager (HR & Legal), CPCL, signed the MoU recently.

Two professors from the institute had already visited the villages along with CPCL officials.

Environment Ministry seeks better pollution management system before winters

https://www.business-standard.com/article/news-ians/environment-ministry-seeks-better-pollution-management-system-before-winters-118062600006_1.html

The Union Environment Ministry on Monday held meeting with expert institutions including ISRO to discuss the satellite-based measurement for improving air quality information and management ahead of the winters.

The expert group, the ministry said, aims at better air quality management in next three months before the onset of winters.

The meeting headed by Envrionment Secretary C.K Mishra also included experts from Department of Science and Technology, Council of Scientific and Industrial Research's National Physical Laboratory, IIT Delhi, IIT Mumbai, the National Environmental Engineering Research Institute, the India Meteorological Department, the Indian Institute of Tropical Meteorology and the Bureau of Indian Standards.

During the meeting, experts discussed use of satellite-based Aerosol Optical Depth data for estimating groundbased PM2.5 or particle with diameter less than 2.5 microns.

The monitoring aims at early warning system and dissemination protocol to inform public and enforcing agencies about episodic high pollution events in advance, said an Environment Ministry statement.

In November 2016 and 2017, the air pollution levels of Delhi crossed the severe level, compelling the government to impose several restriction on industrial and construction activities, close down the schools and warn people to avoid outdoor activities including morning walks.

"The meeting discussed the issue of assessment of air pollution mitigation technologies and implementing solutions found technically feasible on a pilot basis, before the onset of winter," the statement said.

The Ministry also explored the idea of setting up of a system for certification of air quality emission monitoring instruments, which it said that will provide a boost to local manufacturing such instruments as since calibration and certification could be done domestically.

It also decided that DST will the lead on technology interventions for its possible use before the onset of winter when the pollution levels shoot.

"National Physical Laboratory will be the certification agency for air quality measurement instruments. Certification of PM2.5 and PM10 volume samplers will commence from September, 2018," a ministry official said.

June 25

Ultrafast Laser Camera to Capture Electron Movement
https://researchmatters.in/news/ultrafast-laser-camera-capture-electron-movement

A study in IIT Bombay can help determine properties of substances at the molecular level.

Did you know that many molecules have a 'handedness'? That is, these molecules are distinguishable from their mirror image, like our left and right hand. But why should we care about it? It turns out that certain drugs and medicines may have their "mirror-twin" which could be toxic rather than medicinal! Through his theoretical contribution to quantum mechanics and ultrafast optics, Prof. Gopal Dixit of Indian Institute of Technology Bombay, with his collaborators in Germany, has developed a way that can help identify the handedness of substances.

Understanding the handedness (of molecules) is important because many biological molecules including DNA, proteins, carbohydrates, lipids, steroids, etc. have handedness. What makes identification of handedness difficult at the molecular level? The size of the molecule being very small and which also moves fast, one needs a special kind of light to observe the activity at a molecular level. An ultrafast laser light, called the attosecond (or a billionth of a billionth of a second which is 10-18 s) laser is a solution which can the capture motion at the molecular level. But to identify the handedness, a specific state of the laser pulse, called polarisation, needs to be known. It is like saying, the handedness of the laser pulse must be known to find the handedness of the molecule. Prof. Dixit's theoretical approach makes this possible.

"As the handed attosecond pulses have a wavelength comparable to the size of the molecules, the pulses can easily see the full structure of the handed molecules," says Prof. Dixit.

Polarisation of a light wave specifies the direction of oscillations of the electric field in the electromagnetic waves. The direction of oscillation can rotate to the left or to the right, thus imparting a handedness to light. A major breakthrough in attosecond laser research in recent past is to produce pulses of circular polarization. Unfortunately, there were no methods to determine the exact polarisation state or the 'handedness' of these attosecond pulses. Prof. Dixit and his collaborators have predicted using mathematical models that the attosecond laser pulses imparted different energies to the electrons in the molecules depending on the polarisation state (handedness) of the pulses. They devised a theoretical method to reconstruct the complete polarization state of the attosecond pulse. This for once and forever has solved the challenge of identifying circularly polarized, partially polarized, and unpolarized pulses.

Going forward the scientists expect this method to become an integral part of attosecond measurements of many processes.

"Apart from molecules, our work is also important to study a whole series of novel materials. These could include superconductors, which can conduct electricity without electrical resistance, or topological materials that exhibit an exotic behaviour, the research of which earned a Nobel Prize in Physics in 2016," remarks Prof. Dixit.

Prof. Dixit and his team at IIT Bombay hope to pioneer attosecond laser research in India and make India an important player in the field.

JEE Advanced 2018: 800 seats only for female candidates but only 14 girls in top 500 ranks for IITs

http://www.timesnownews.com/education/article/jee-advanced-2018-800-seats-only-for-female-candidates-but-only-14-girls-in-top-500-ranks-for-iits/245368

This year, about 800 seats have been added as female only category across the IITs to bridge the gender disparity. However there are only about 14 girls in the Top 500 Ranks of JEE Advanced 2018 and just about 46 in Top 1000. Report.

IIT Admissions: 800 seats extra but only 14 girls in top 500

JEE Advanced 2018 Counselling is underway for admissions into the top engineering colleges of the country. To bridge the gender gap at the country's premier engineering institutes, the centre had this year proposed the introduction of supernumerary seats at various IITs for girls. As many as 800 seats have been created for admissions to IITs for girl candidates. As per the statistics available, there are only about 14 girls in top 500 ranks of JEE Advanced and a total of 46 in top 100 ranks.

This year, only about 18,000 students had qualified the JEE Advanced 2018 for 11,279 seats at various IITs in the country. However, after intervention from the MHRD, a revised list of candidates was released. This year, there is also a provision of 800 additional seats for female candidates which are supernumerary in nature. Here is how the supernumerary seats be filled.

As per the reports published in TOI, there are just 14 girls in the top 500 ranks of JEE Advanced. With an increase of another 500 ranks, the number goes only till about 46. Of the total number of candidates who have qualified for JEE Advanced 2018, only about 1202 girls have found a rank in the top 12,000.

Female candidates, as per the IITs, would follow the same process as the reservation norms. That is, first they would be offered a seat from the female only pool. Once that is exhausted, the candidates would then be eligible for a seat from the gender neutral pool of the category she belongs to.

A member of the IIT Bombay faculty noted out that this would, however, be filled by female candidates in the top 10,000 itself. Speaking to TOI, the faculty member pointed out, "But if you see the number of female candidates in the top ranks, they are very few and most will opt for the female-only pool to get into a popular course and a better institute."

The supernumerary seats of 800 were added across the IITs to ensure a more balanced gender divide. To begin with the goal is to ensure that there are at least 8% girls in the IITs. The overall gender parity number is at 14% where the number of seats for girls would be increased. The old IITs would have an additional 3% seats for only female candidates this year.

Overall numbers, however, don't bode that well for the plans. This year only about 3000 girls have been shortlisted by the Joint Admission Board as qualified for admission to IITs. The number in the top ranks is abysmally low with just about 410 girls in top 5000 and a total of 935 girls in top 10,000. The seat allotment would commence from June 27, 2018.

MHRD Toughens PhD Anti-Plagarism Norms, Asks Universities to Use 'Turnitin' Software

https://www.ndtv.com/education/phd-anti-plagiarism-norms-toughened-1872982

Union government has decided to implement 'Turnitin' software to curb the practice of plagiarism in PhD theses.

PhD Anti Plagiarism Norms Toughened

In order to improve the quality of education and research in Indian universities, the Union government has decided to make use of 'Turnitin' software to curb the practice of plagiarism in PhD theses. As per reports, the HRD Ministry has approved the UGC draft policy for anti-plagiarism that was drafted in September 2017. The UGC (Promotion of Academic Integrity and Prevention of

Plagiarism in Higher Education Institutions) Regulations 2017, as a draft, was recommended by a Committee of experts to look into issues of Plagiarism and recommend some institutional mechanism to eliminate the scope of this menace in higher education system in the country.

According to HRD Minister Prakash Javadekar, the Central government has taken strong steps to keep a check on such practices of plagiarism in Ph.D research.

The HRD minister has also said that those people whose dissertations have plagiarised content would not get the doctorate degree in the coming days.

"One person's Ph.D. thesis has been wrongly used by some others to complete their theses. As such cases are on the rise, we have decided to use software such as 'Turnitin' and others to keep a check on such theses," the Mr. Javadekar told reporters in Shirdi.

As per the UGC Regulations 2017, 'every faculty, researcher and M.Phil/ Ph.D students should be provided account in plagiarism detection tools for checking the content of their scripts.' For non-core cases, similarities up to 10% is non-punishable. For similarities within 10%-40%, the students shall have to submit a revised script within 6 months. For similarities above 60%, 'student shall not be given any mark and/or credit for the plagiarized script and his/ her registration for that course to be cancelled.'

Each supervisor, thereafter, shall submit a certificate indicating that the work done by the researcher under his guidance is plagiarism free. Institutes are also required to develop a policy on plagiarism and get it approved by the relevant statutory body of the University. The Institutes are also required to submit soft copies of all M.Phil. and PhD dissertations on INFLIBNET.

In addition to this, the draft policy also includes those cases where the degree or credit has already been obtained. As per the policy, in such cases the degree shall be temporarily suspended for a period decided by the Academic Misconduct Panel and Plagiarism Disciplinary Authority.

As of now, official notification about the approval of UGC Regulations 2017 has not been notified by UGC.

June 24

खुशखबरी : आईआईटी में 14 फीसदी सीटें लड़कियों के लिए, 'फीमेल ओनली पूल' बनाया गया

https://www.livehindustan.com/national/story-in-iits-14-percent-of-seats-reserved-for-girls-female-only-pool-created-2031220.html

आईआईटी में इस बार लड़कियों को 14 फीसदी सीटों पर दाखिला मिलेगा। इसके लिए अलग से 'फीमेल ओनली पूल' बनाया गया है और अलग से कटऑफ भी तैयार की गई है। छात्राओं को पहले इस श्रेणी

में सीट हासिल करने का मौका मिलेगा। इसमें असफल रहने पर जेंडर न्यूट्रल पूल में अवसर दिया जाएगा।

मानव संसाधन विकास मंत्रालय ने आईआईटी में लड़कियों का प्रतिनिधित्व बढ़ाने के निर्देश दिए हैं। इसी के तहत यह फैसला लिया गया है। पिछले साल तक आठ फीसदी छात्राओं को प्रवेश मिल पाता था। लड़कियों का कोटा बढ़ाने के लिए 6% सीटें सृजित की जाएंगी। इससे लड़कों की सीटें कम नहीं होंगी। जो कोर्स शुरू हो रहे हैं, उसमें सभी 14% सीटें फीमेल ओनली पूल में रखी गई हैं। आईआईटी को यह व्यवस्था करनी है कि दोनों पूल में लड़कियों की संख्या 14 फीसदी तक पहुंच जाए।

National Digital Library aims to add 3cr users in a year

https://www.sundayguardianlive.com/news/national-digital-library-aims-add-3cr-users-year

Books to be made available free of cost, even as copyright challenges remain.

The initiative of the Ministry of Human Resource Development (MHRD) to build the National Digital Library of India (NDLI) will target to add three crore users on the platform in a year. Apart from research material, NDLI also provides study material for competitive examinations and will soon introduce mock test facilities on the platform for free. However, major copyright challenges have not made it possible for NDLI to be able to provide full-text available as it faces hurdles.

Launching the digital library, HRD Minister Prakash Javadekar had said, "Currently, the platform has 30 lakh users, but in a year's time, it aims to reach a target audience of three crore, especially among those income groups where students find it particularly difficult to buy books."

As of now, NDLI has procured those books that did not have copyright issues; books whose rights were shared with NDLI by various stakeholders or those that could be partially made available but requires authorisation for complete access.

Even as the NDLI intends to provide books, articles, manuscripts, thesis free of cost, copyright challenges have not make it entirely possible. The initiative, however, has helped India become a key player in the discourse on copyright issues. A key achievement of NDLI is to become a central search engine to find books across libraries in India and request access to them online through a single search window.

While it is easy to find a book through the search window on NDLI, it might not always be available for immediate consumption. The NDLI has collaborated with libraries in Indian educational institutions, public libraries as well as big international libraries to get access to books on a wide range of subjects.

While CBSE books are available free of cost, some sources like IISER, Bhopal, will provide only part of the text, while the full-text will require authorisation; other sources will allow access to the full-text upon subscription, for example Springer; another source, IIT Jodhpur, which has also contributed content from its library, would require authorisation through a separate login, moreover, there is content where the full-text is available as long as it is accessed from a member account on NDLI.

As of now, NDLI has collaborated with Rightsstatements.org which has drafted 12 standardised statements on digital cultural heritage to overcome challenges of digital rights. NDLI has collaborated with Europeana Foundation, an organisation tasked with developing a digital cultural heritage platform for Europe.

Speaking to The Sunday Guardian about India's role in digital rights, Nanda Gopal Chottopadhyay, Chief Technical Officer, NDLI, said, "As of now, India has two representatives on the international steering committee that deals with copyrights issues of digital libraries. This will allow us to put our inputs on the issue and help in policymaking on digital rights of intellectual property. Soon, the homepage of rightsstatements.org could be read in Hindi and the statements will be available in Hindi and Bengali. The purpose of translating these international documents into regional languages is to improve their access and understanding among local librarians."

However, in its quest to provide free books, NDLI also had to get tangled in s legal battle when it was reported that Satyajit Ray's "Red Note Books", with his handwritten notes, were being downloaded and sold in 2017 from the NDLI's portal, thus resulting in removal of the print option from pdf and watermarking of every page.

The NDLI website had to be temporarily shut down after several books sourced from the Digital Library of India attracted notices of alleged breaches of copyright. NDLI also received rights violations notices from its European partners which were duly addressed.

NDLI is a digital library that boasts of 2 crore resource materials, out of which 40 lakh are books and has a collection of 1.26 crore articles. The platform has been built by the MHRD in collaboration with IIT-Kharagpur.

June 23

IIT Roorkee makes drones to monitor rail tracks: Happy train journey

https://www.newsheads.in/lifestyle/travel/iit-roorkee-makes-drones-to-monitor-rail-tracks-happy-train-journey/article/15973.html

The drones are currently being technically examined on the tracks around the Uttarakhand town.

There is positive news coming from the department of Indian railways. Accordingly, the railways will soon start deploying drones to monitor rail tracks. This step could help the national transporter dive forward on the safety aspect which remains the special concern for the government.

As per the aforesaid initiative of the telecom industry and the railways, Indian Institute of Technology in Roorkee has developed the drones which are currently being technically examined on the tracks around the Uttarakhand town.

"The Indian Railways is in the advanced stages of considering deploying unmanned aerial vehicles to monitor rail tracks using the technology developed by IIT-Roorkee," said Anurag Vibhuti, deputy director of TCOE India.

It has been learnt that the drones will work alongside and may eventually replace the conventional system, which makes use of either human inspectors or trolleys pulled by workers and is a tough job during extreme weather and in remote places. It is often heard that most train accidents take place due to human error and improper monitoring of tracks. Use of drones to monitor tracks and modern technologies to analyse the data they capture is expected to reduce the chances of error.

The railways also has plans to expand the use of drones to more functions, including monitoring of projects and other infrastructure as well as relief and rescue operations and crowd management. The best part is that it has already tested the devices for project monitoring in some places.

"It has given directions to zonal railways to procure such (drone) cameras. This is in line with the government's desire to use technology including artificial intelligence to enhance safety and efficiency in train operations," said RD Bajpai, a spokesperson for the Indian Railways. The Jabalpur, Bhopal and Kota divisions already used this technology for monitoring railway works, he added.

"For IIT-Roorkee, the next stage of the project is utilising artificial intelligence and Big Data to analyse the images and information captured by the drones and make the monitoring work more real-time to predict faults on tracks", Vibhuti said.
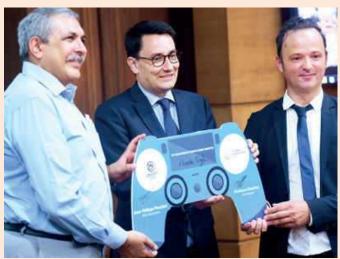
A faculty member at IITRoorkee and coordinator for the project at the institute, Dharmendra Singh, said the UAV-based monitoring system is cost effective and easily implementable. "Our system makes use of drones, which capture videos as well as still images of railway tracks," he said. These images are processed to find various kinds of faults as well as ensure proper working of the tracks.

The study is in pilot mode and the team had already analysed the gauge distance (the distance between two rail tracks) from the images captured by the drones, using various computer vision and image processing techniques. "Further, we are doing a check for components of the railway tracks like fishplates, fasteners, sleepers, etc. to ensure that no component is missing," said Singh.

This method includes the automated task of monitoring railway tracks and their component and analysing the images using computer-vision technology. "This is highly accurate and precise in detecting faults on the railway track," Singh said. "It is safe to say that our system can greatly reform the present methods being employed for railway track maintenance."

Gaming technology centre to boost research at IIT-B

https://mumbaimirror.indiatimes.com/mumbai/other/gaming-technology-centre-to-boost-research-at-iit-b/articleshow/64705023.cms

Director of IIT-B Devang Khakhar, ambassador of France to India HE Alexandre Ziegler and MD of Ubisoft India Jean-Phillipe Pieuchot .

Ubisoft to set up the unit that will use AI, machine learningfor research work

Research work at IIT-B will receive a shot in the arm with the setting up of a specialised centre for carrying out studies on game automation with the help of artificial intelligence.

Ubisoft, one of the top videogame developers in the world, will establish the Ubisoft Innovation Unit at IIT-B's research park, situated on its sprawling 400-acre campus. The agreement was signed on Friday. Seven other companies have already set up their units at the park and are carrying out researches in tandem with IIT-B.

According to the statement issued by the institute, the unit will carry out research work on game automation using machine learning and artificial intelligence. "We look forward to its success, and we are expecting quality output from the collaboration," said Devang Khakhar, the director of IITB.

Khakhar added that the institute has started work on a new facility for the research park — a 14-storey building spread over 400,000 sqft. "We expect it to be ready over the next couple of years."

Managing director of Ubisoft India Jean-Phillipe Pieuchot said that they were hoping to forge a strategic partnership with the institute. "It will take time, but the association will reap dividends in the long run," said Pieuchot.

Elaborating on the nature of the collaboration, Pieuchot said that they will be harnessing data scientists, technology and engineering prowess of the institute.

Ubisoft said that it is looking to collaborate with other institutions as well but that its relationship with IIT-B remains unique, adding that India is poised to become a global leader in video game production.

"The benefits of developing this technology is not just limited to video games but will have implications in other fields as well. For example, VR (virtual reality) was first developed for video games but is used in several other industries now. The same will be applicable for AI (artificial intelligence)," said an official associated with the project.

█ **According to the statement issued by the institute, the unit will carry out research work on game automation using machine learning and artificial intelligence.**

Only 13% of PM's research fellowships likely to be offered

https://indianexpress.com/article/education/only-13-of-pms-research-fellowships-likely-to-be-offered-5229647/

A total of 43 selected students — the highest — have been offered research opportunities in IISc, followed by IIT Bombay (24) and IIT Delhi (20).

The government is likely to offer only 135 out of the 1,000 fellowship positions announced under the recently launched Prime Minister's Research Fellowship (PMRF) this year, The Indian Express has learnt.

Announced by Finance Minister Arun Jaitley in the Union Budget earlier this year to fight 'brain drain', the PMRF aims to give 1,000 students direct admission to doctoral (PhD) programmes in Indian Institutes of Technology (IITs) and Indian Institute of Science (IISc) for carrying out research in cutting-edge science and technology domains, with focus on national priorities.

The opportunity, however, is limited to students who have either completed or are pursuing the final year of their B Tech or integrated M Tech or integrated M Sc from either IISc, IITs, National Institutes of Technology (NITs), Indian Institute of Engineering Science and Technology (IIEST) or Indian Institutes of Science Education and Research (IISERs).

As per the latest status report, shared by IIT Hyderabad —tasked with screening applications and final selection — out of the 2,035 applicants interviewed across 18 disciplines, about 135 have been offered direct admission to PhD programmes in IISc and IITs in Mumbai, Delhi, Madras, Kharagpur, Kanpur, Roorkee, Guwahati, Hyderabad and Gandhinagar.

A total of 43 selected students — the highest — have been offered research opportunities in IISc, followed by IIT Bombay (24) and IIT Delhi (20). The biggest chunk of admissions offered have been cornered by candidates seeking to pursue research in mechanical engineering (26), material science and metallurgical engineering (24), interdisciplinary programmes in science and engineering (21), electrical engineering (21) and civil engineering (20). Stringent selection procedure, government officials say, is the reason behind utilisation of just 13% of fellowship this year.

"This is the first year of the fellowship and the IITs and IISc set the bar really high for screening candidates. We want the brightest minds for this fellowship. The response is expected to improve with each passing year," said a senior official, without wishing to be named.

Under PMRF a fellow will receive a monthly stipend of Rs 70,000 in the first two years of research, Rs 75,000 in the third year and Rs 80,000 in the last two years of PhD. That apart, each fellow is also eligible to receive an annual research grant of Rs 2 lakh.

While launching the scheme in February this year, HRD Minister Prakash Javadekar had said that the fellowship is expected to attract best talent in the country, which could go a long way in addressing faculty shortage in the country. "The initiative will convert brain drain into brain gain," he had said then.

ALL WOMEN'S TEAM WINS SMART INDIA HACKATHON AT IIT KHARAGAPUR, BAG RS 1 LAKH

HTTPS://WWW.FIRSTPOST.COM/TECH/NEWS-ANALYSIS/ALL-WOMENS-TEAM-WINS-SMART-INDIA-HACKATHON-AT-IIT-KHARAGAPUR-BAG-RS-1-LAKH-4576571.HTML

Coimbatore's Whistling Cookers of Avinashilingam Deemed University for Women bagged a cash prize of Rs 1 lakh by winning the Smart India Hackathon 2018 – Hardware Edition on 22 June.

The first runner-up was from the same college – Team Buddies. And the second runner-up was Team Askurvara from the Silicon Institute of Technology.

The winner and runners-up were all women's team, an IIT Kharagpur release said.

The two runner-ups were won cash prizes of Rs 75,000 and Rs 50,000 respectively.

Smart India Hackathon 2018.

SIH2018 - Hardware edition is the first-of-its-kind innovation challenge initiated by the Union Human Resource Development to provide a national platform to young technical minds of India to showcase their disruptive innovations and creative products which can bring about revolutionary changes in crucial sectors like agriculture, health, clean water, waste management, automotive, smart communication, and education.

The event has seen unique student innovations in smart drip irrigation, technology-powered mechanical harvesters and soil testing, and cost-effective detection of the status of fruits and vegetables.

The winning team designed a prototype for "non-destructive estimation of sugar content of fruits using visible-light imaging".

Prof. Partha Pratim Chakrabarti, Director, IIT Kharagpur and Chairman, SIH2018, said: "I think innovation challenges such as SIH2018 are going to bring a new era in innovation and transform the process by which we teach engineering."

The nine competing teams at IIT Kharagpur were judged by an external jury made up of some of the top entrepreneurs and partners of leading business incubators in the agri-tech sector, such as a-IDEA, Omnivore, AgNext, Bharat Innovations Fund and Ankur Capital.

Nine teams worked continuously for five consecutive days to build their hardware solutions as a working prototype.

Said Pranav Gawande and Chirag Patil of Team Scrap Stars of G.H. Raisoni College of Engineering, Nagpur, who devised a sugarcane cutting machine: "The competition was stiff as all the teams had great potential. Irrespective of the result, it was great to be in IIT Kharagpur."

M. Charugayathri of Team Buddies, one of the two all-women teams from Avinashilingam Deemed University for Women, Tamil Nadu, said: "Making it to the finals itself was a great experience."