

Newspaper Clips

August 19-22, 2017

August 22

IITs, IIMs may be told to rate, certify institutes

<http://economictimes.indiatimes.com/news/politics-and-nation/iits-iims-may-be-told-to-rate-certify-institutes/articleshow/60166284.cms>

New Delhi: The Centre is looking to rope in IITs and IIMs to share the job of evaluation and accreditation, in its effort to ensure transparency and cut time taken for accreditation of institutes of higher education.

HRD minister Prakash Javadekar said that a meeting with eight IITs and eight IIMs is on the cards to expand the base of evaluating agencies. Currently, accreditation is carried out solely by the National Assessment and Accreditation Council (NAAC), an autonomous institution under the UGC. While the government think-tank Niti Ayog had recommended that the ministry allow accreditation by reputed private players earlier this year, Javadekar said that the government was instead looking at using resources from within. "We have a huge talent pool of teachers and students who can use the entire exercise of evaluation as a learning tool," he said.

Even though some IITs have shown their reservations towards participating as agencies citing faculty shortage.

Time for IITs to rock to 'patriotic' songs

https://www.telegraphindia.com/1170822/jsp/nation/story_168523.jsp

New Delhi, Aug. 21: The Indian Institutes of Technology and central universities are set to rock soon - to patriotic music.

The human resource development ministry today wrote to these institutions asking them to host rock groups that would perform on campuses under a programme dubbed " *Yeh India Ka Time Hai*" (This is India's time).

According to the plan, conceived by information and broadcasting minister Smriti Irani, the bands - around half a dozen have been identified - would visit campuses and perform patriotic numbers, mostly from Bollywood.

Senior HRD ministry officials said minister Prakash Javadekar had agreed to the suggestion from Irani, whose ministry is likely to bear the cost of the performance by the rock bands in about 80 central government institutions over the next month.

A private entertainment firm has identified the rock bands that would visit the campuses.

The programme has been organised to celebrate 70 years of India's independence and 75 years of the Quit India Movement this year.

Earlier, the University Grants Commission (UGC) had asked the institutions to organise a series of programmes like quiz contests and administer to students an oath to make possible the Prime Minister's vision of a New India free of evils like corruption, casteism and communalism.

Swachh events

Following a directive from the HRD ministry, the UGC has written to vice-chancellors of all universities to organise Swachhta Pakhwada events from September 1 to 15 to spread the message of cleanliness. It has prescribed a day-wise action plan to be implemented in the institutions.

"It is requested to constitute a committee of teachers and students for organising these events and for ensuring highest participation from the student community. A documentation of the activities may be maintained at the institutional level which may be placed on Facebook and publicised through Twitter," the circular issued by UGC secretary P.K. Thakur said.

Students have been advised to participate in an essay competition on "What I can do for a Clean India".

According to the schedule, all students of every university and college would participate in a "Clean Campus Day" on September 1, followed by "Clean Hostel Day" on September 2, "Green Campus Day" on September 3 and "Clean Mess Day" on September 4.

On Teachers' Day on September 5, the students will participate in the essay competition while carrying out various activities for "Clean Surrounding Day" to be observed from September 6 to 12.

A "Clean Hostel Room" competition would be organised on September 13 while elocution contests on health and hygiene would be held on September 14 followed by distribution of prizes on September 15.

JEE(A) 2018 questions won't be just multiple-choice

<http://timesofindia.indiatimes.com/city/kolkata/jeea-2018-questions-wont-be-just-multiple-choice/articleshow/60166402.cms>

KOLKATA: Next year's IIT-JEE (Advanced), set to go online, as reported by TOI on Monday, will also do away with the only-multiple-choice question (MCQ) pattern. Short answer-type questions may be set, for which examinees will need to key in answers.

Till 2017, JEE (Advanced) had only MCQ, with either one or multiple correct answers. Examinees had to shade in the correct answer bubbles in an optical response sheet with a pencil. "Now, with the introduction of a computer-based test, candidates will have access to keyboards. They will be able to write and provide correct answers through calculations, if necessary," said a source in the Joint Admission Board (JAB), which conducts the examination. "When the question pattern was multiple-choice, examinees often used the process of elimination to guess the answer. Now, such opportunities will be limited."

Since there is no order about framing questions in a particular way, question-setters will be at liberty to introduce a variety of questions, breaking trends. Examinees will be required to think harder, and not just rely on techniques or memorisation to crack the questions, said a JEE official. "Concept-based questions will increase. The question pattern will change," the official added.

The decision to shift to a computerised testing system had been taken to eliminate printing errors and translation goof-ups, which had caused severe loss of face for the board, creating problems for candidates and necessitating grace marks this year. "The printing and transportation of question papers, which was a huge logistical exercise, will also be done away with," the source said. The shift from pen-and-paper to online was met with some resistance from JEE implementation committee members during Sunday's meeting at IIT Madras.

"JAB members feared rural candidates would be at a loss and may have difficulties with accessing computers," said another official. To address such fears, JAB has set up a sub-committee to explore options of holding mock exams a week before the actual test so that rural candidates get acquainted with the new test pattern.

"It has been proposed that if necessary, these candidates from villages and rural areas will be allowed to appear in mock tests at the selected exam venues. The sub-committee will be set up under the guidance of IIT Kanpur, which will conduct the next IIT-JEE (Advanced)," the official explained.

Till this year, examinees were allowed to take a copy of the optical response sheets back home as proof of their appearance in the exam. From next year, the computer will record the responses and a soft copy will be mailed to each candidate's registered email.

"The next steps will be similar. Like every year, the answer keys will be uploaded and candidates will be allowed to challenge the answers. The results will take a shorter time to be published," the official added.

IIT Madras turbine may generate power from ocean waves

<http://energy.economictimes.indiatimes.com/news/power/iit-madras-turbine-may-generate-power-from-ocean-waves/60168105>

The 'impulse' turbine works with a unidirectional rotor powered by a generator. The system will be tested in oceans by the end of the year.



CHENNAI: A team of 25 faculty members and students from the ocean engineering department in Indian Institute of Technology Madras have begun testing a prototype of a turbine they have developed which converts wave energy into electricity. The 'impulse' turbine works with a unidirectional rotor powered by a generator. The system will be tested in oceans by the end of the year.

Associate professor Abdus Samad said the turbine prototype was selected from close to 30 different designs with different number of blades in the rotor. All the designs were tested through computer simulations and the design parameters of the turbine was optimized through numerical modelling. The power output for all the turbine designs was calculated before one simple commercially viable design was chosen to be developed into a prototype.

Unlike wind turbines that generate electricity from wind energy with three blades, the impulse turbine rotors will have more than 20 blades. "We have tested the turbine for a three-minute duration and the data is being analysed," he said. "We have chosen a simple design that has just one moving element so the system is more reliable and lasts longer."

Scientists said the turbine works on a 'oscillating water column theory' where the system has a water column that acts like a piston moving up and down as the waves forcing air out and back into the chamber. This airflow is then converted into energy.

Wave energy has potential to produce 40 GW to supply to the Indian grids, approximately 13% of the total production capacity in India, the team said. Another advantage is that the energy density per square meter of wave energy is 5 and 10 times more than the wind and solar energy, respectively.

Samad said their challenge is to create a design with high efficiency in the midst of extreme weather conditions like tsunami. "There is so far no wave energy convertor that has been commercialized anywhere in the world. There are more than 1000 patents in the world including in Japan and Europe for wave energy convertors but only a few have been tested," he said.

CR seeks IIT's advice on preventing accidents on Ghats

<http://timesofindia.indiatimes.com/city/mumbai/cr-seeks-iits-advice-on-preventing-accidents-on-ghats/articleshow/60164748.cms>

MUMBAI: Central Railway plans to approach the Indian Institute of Technology and Research Development and Standards Organisation (RDSO) to suggest measures to prevent boulders from falling on the vulnerable 28km Ghat section between Karjat and Lonavla.

It is also exploring the possibility of installing CCTV camers along the stretch. This is the second incident where boulders have fallen on railway tracks in as many months. On July 18, a CST-Hyderabad Express locomotive derailed after it collided with a fallen boulder between Thakurwadi and Monkey Hill. Vertical cliffs of the hillocks cannot be secured by mesh. An official said, "We have asked a firm to give a presentation of whether the mesh can secure this type of topography as well."

IIT Bombay and ISRO's SCL indigenously augment their 180-nanometer Technology for versatile and powerful chips

<https://indiaeducationdiary.in/iit-bombay-isros-scl-indigenously-augment-180-nanometer-technology-versatile-powerful-chips/>

Mumbai: Internet-of-Things (IoT) connects sensors & appliance to computers and the internet to make an intelligent system. Essentially, this network of system will "see" situations instantaneously (through sensors), make "smart decisions" (using the internet / computer) and respond (with tool/appliance) seamlessly. It requires many specialized integrated circuits (ICs) to create this network in different environments of national interest e.g. a home, hospital, factory or paddy field.

For example, a sensor IC may measure (e.g. soil moisture or room temperature or blood oxygen level in a patient) and communicate to a controller IC to enable a response (e.g. optimal irrigation or energy-efficient air-conditioning or timely drug delivery respectively). The sensors are normally “analog” as it reports a specific value of moisture/ temperature/ oxygen within a range – while this is converted into a simplified “digital” information in a computer for decision-making. Thus such new age applications require versatile ICs capable of processing both analog and digital information (i.e. mixed signal).

Bi-CMOS (short for Bipolar-CMOS) technology enables mixed signal ICs. It combines two transistor technologies in one chip – the high-speed and high power Bipolar Junction Transistor (BJT), and low speed and low power Complementary Metal Oxide Semiconductor (CMOS). In simple terms, CMOS are equivalent of miniature on-off switches (i.e. digital) while BJTs are like miniature fan regulator dials (i.e. analog) that smoothly control the fan-speed. The result is a versatile technology platform in terms of integrated digital-analog (i.e. mixed) signal ICs, with optimal performance based on choice of high speed (BJT) and low power (CMOS), which strongly enables IoT applications.

India’s strategic needs is served by the 180-nanometer CMOS technology at Semi Conductor Labs Chandigarh. A team from IIT Bombay lead by Prof. Udayan Ganguly has been collaborating with SCL to add BJT technology to the existing CMOS manufacturing baseline at SCL to indigenously develop BiCMOS technology. In May 2016, Dr. Piyush Bhatt kick-started the project by developing process design for nano-fabrication based on existing SCL capabilities and demonstrating the technical feasibility through computer simulations. Next, the equivalent process was implemented in the IC fabrication lab by a team under Mr. H S. Jatana at SCL. In June 2017, the fabricated devices showed first signs of life! The device amplified the input signal a 100 times at the output! In fact, it worked so well that this amplification is sufficient for the first version of BiCMOS technology.

Prof. Devang Khakhar, Director of IIT Bombay notes, “Such successful joint technology development attests to skill and the readiness of the Indian Agencies to indigenously enhance our capabilities – which is a first step towards market competitiveness in technology.”

India’s electronic consumption could outstrip its oil consumption by 2020 according to National Electronics Policy 2011. The Government of India is pushing mega-fabs (large-scale chip factories) to support this need. Mr. Surinder Singh, Director of SCL has the enviable experience of already running a smaller but high-tech CMOS fab in India.

“Mega-fabs are necessary but the ultimate goal is technology autonomy – enabled by indigenous technology development capability. Here, we have leveraged the world-class expertise of IIT Bombay to enable a manufacturable technology development at SCL. This collaborative model works!” remarks Singh.

Strategic agencies have always needed to innovate around various international technology restrictions. An Indian semiconductor manufacturing enhanced with the ability for indigenous technology development significantly improves national access to technology that is custom, unique and secure focused on national needs and priorities.

Spurred on by the success, the team is working towards higher frequency BiCMOS technology. This involves further engineering to incorporate of new materials into the SCL fab using advanced processes. For example, replacing Silicon atoms with Germanium distorts the crystal and speed up electrons to enable 1000x faster systems. Such high-speed systems are used in high-end communications systems.

Prof. Udayan Ganguly's team works at the bustling Center of Excellence in Nanoelectronics (CEN) at IIT Bombay, which was seeded by the Ministry of Electronics and IT (MeitY) in 2005. Debashis Dutta, Group Coordinator, R&D in Electronics, MeitY says, "The research success of CEN at IIT Bombay is well known. However, the technology translation stories are coming out only now. I believe these are signs of great things to come – which is essentially the realization of vision of our Ministry for Make in India in ESDM (Electronics Systems Design and Manufacturing)".

August 21

IIT Entrance Exam to be conducted via online mode only from 2018

<https://criticismnews.com/news/education/iit-entrance-exam-conducted-via-online-mode-2018-4172.html>

The Joint Admission board have decided on Sunday to make the Indian Institutes of Technology(s) entrance examination online. From 2018, students will be able to take the JEE advanced exam through online mode only. Prof Bhaskar Ramamurthi and Director, IIT Madras said that the "It has been decided that the Joint Entrance Exam (Advanced) would be conducted in online mode from 2018. Further information regarding this issue would be provided by JAB later". The Joint Admission Board which is the IIT policy making body took this decision on Sunday in a meeting in Chennai.

IIT Kharagpur to launch Genomics Study for beginners

<http://indiatoday.intoday.in/story/iit-kharagpur-to-launch-genomics-study-for-beginners/1/1030296.html>

IIT Kharagpur has launched an ambitious programme to encourage beginners of undergraduate engineering courses at the institute to enrol for Genomics Study.

"To engage the brightest young engineering minds in biology research, particularly in genomics and genome engineering, IIT Kharagpur is going to start the genomics laboratory facility for engineering students from all the branches of engineering," Prof Sudip K Ghosh of Department of Biotechnology said today.

He will be heading this lab.

Though there are few laboratories of similar nature abroad, this will be the first of its kind in India, Prof Ghosh said.

The primary objective of this laboratory will be to teach all the students at the second year the basic techniques of life sciences that will include microscopy-based observation, molecular biology, protein structure and function and lastly, bioinformatics.

"These experiments will teach the students about building blocks of life, construction of protein structure from DNA sequence, mutation and its effect on enzyme structure," he said.

"They will be engaged in DNA and protein profiling and will also be able to identify the biological father of a baby by simulation of DNA gel electrophoresis (the movement of charged particles in a fluid or gel under the influence of an electric field) using the whole genome.

"Students will be able to visualise protein inside the bacteria and animal cell using fluorescent microscopy and conduct many experiments to get an overall idea from the cell to the genome," he said.

Third year onwards, they will be allowed to plan and execute experiments on their own under the mentorship of faculties from Biotechnology, Bioscience, Chemistry, Medical Science and Technology and Computer Science and Engineering.

The lab, to function 24x7, will be equipped with all the essential equipment required for cell and molecular biology, biochemistry, sequencing facility and microscopy facility.

Genomics is a branch of molecular biology dealing with the structure, function, evolution and mapping of genomes that contain DNA information.

Genomics which helps researchers discover why some people get sick from certain infections, includes the scientific study of complex diseases such as heart disease, asthma, diabetes and cancer because these diseases are typically caused more by a combination of genetic and environmental factors, than by individual genes.

Varieties of bioinformatics based experiments like understanding evolution and protein structure prediction will be done in the existing computational facilities of the institute.

IIT-Bombay helps 160 colleges set up their own entrepreneurship cell

<http://indianexpress.com/article/education/iit-b-helps-160-colleges-set-up-their-own-entrepreneurship-cell-4805901/>

At the heart of this campaign is a National Entrepreneurship Challenge (NEC), which is now in its fifth edition. It will be launched on August 31, when the first set of assignments will be rolled out. Last year's challenge saw participation from 601 colleges from across the country

THE ENTREPRENEURSHIP Cell (E-Cell) of the Indian Institute of Technology, Powai, has spread its wings beyond the campus and helped set up similar student-run organisations in 160 colleges across the country. IIT-Bombay's E-Cell is a student-run organisation that introduces students to the startup ecosystem and eggs them on to realise their latent entrepreneurial instincts through workshops, seminars and investor interactions.

IIT-B boasts of a thriving startup ecosystem, especially because of active support groups such as E-Cell and the Society for Innovation and Entrepreneurship (SINE) — a model that many educational institutes and the All India Council for Technical Education are trying to emulate. While the E-Cell works to spread awareness through workshops and speaker sessions, the SINE is an incubator that mentors startups. "It is a synergy of the two groups that has worked best," said Hardik Patil, a spokesperson for the E-Cell.

In 2013, the E-Cell decided to survey foreign universities to get a better idea of the entrepreneurship-support trends outside India. It then became clear that there was a need to look beyond the boundaries of IIT-B and set up functioning E-Cells in colleges across India. Since then, the Cell has helped establish 160 similar E-Cells in 80 cities, including Mysore, Indore and Jaipur.

At the heart of this campaign is a National Entrepreneurship Challenge (NEC), which is now in its fifth edition. The annual challenge calls for participation from colleges for prizes worth Rs 6 lakh and mentorship from IIT-B. Each college has to first set up an E-Cell with at least five students. The students are then assigned tasks to complete over a period of five months. Tasks include workshops and seminars to initiate dialogue about entrepreneurship among the student community.

The fifth edition of the NEC will be launched on August 31, when the first set of assignments will be rolled out. Participants will be judged based on three milestones over the next five months. Last year's challenge saw participation from 601 colleges from across the country.

August 20

Big announcement; scholars doing PhDs to get whopping Rs 70,000 per month but it has a condition

<http://www.financialexpress.com/jobs/research-fellowship-scheme-of-pm-narendra-modi-scholars-doing-phds-to-get-whopping-rs-70000-per-month-but-it-has-a-condition/816390/>

Research fellowship scheme of PM Narendra Modi: It's a big good news for PhD scholars!

It's a big good news for PhD scholars! In a major development, Union higher education secretary Kewal Kumar Sharma has announced that as part of the research fellowship scheme of Prime Minister Narendra Modi, the Centre will provide Rs 70,000 as a monthly fellowship to PhD scholars. But, this has a condition – Centre will provide Rs 70,000 as monthly fellowship ONLY to those researchers who are doing their PhDs in IITs or IISc. As of now, researcher-students get Rs 25,000 as monthly scholarship at IITs.

“As part of the research fellowship scheme of Prime Minister Narendra Modi, we wish the meritorious students who are being forced to leave the country for purely financial reasons stay within the country,” Union higher education secretary Kewal Kumar Sharma.

Kewal Kumar Sharma made this big announcement at the 67th Foundation Day of IIT Kharagpur at its Kharagpur campus in West Midnapore district, according to news agency PTI.

The research fellowship will be given for a period of five years. However, the scholarship recipients can't do any other job, the senior official said.

Kewal Kumar Sharma says, “This will also enable meritorious researchers, keen to further their research but forced to opt for corporate jobs for higher pay, to pursue their goal.”

Cabinet nod yet to come

“The Cabinet nod for the proposal should come soon. We are hopeful to start it from the next session,” he said.

IIT-KGP director Partha Pratim Chakrabarti later said, “This is a very good proposal.”

Govt may adopt IIT formula to package coconut water

<http://timesofindia.indiatimes.com/city/kolkata/govt-may-adopt-iit-formula-to-package-coconut-water/articleshow/60137582.cms>

KOLKATA: A method, discovered by scientists of IIT-Kharagpur to increase the shelf life of coconut water without using preservatives, has found takers in the state government. In tandem with chief minister Mamata Banerjee's stress on the food processing industry, the state government has decided to approach the IIT-Kharagpur team to adopt the procedure and produce packaged coconut water.

Officials of the food processing department said they will approach IIT-Kharagpur to find out if the method can be scaled for industrial use and the cost involved in producing and retailing the coconut water.

Food processing minister Abdur Rezzak Molla said, "We are interested in the new methodology."

Tender-coconut water, untreated, usually can't last more than 24 hours even with refrigeration, but the scientists at IIT-Kharagpur have been able to increase the shelf life to 18 weeks, all the while retaining the original taste without using preservatives or any other artificial means. The study has been published in the Journal of Food Engineering.

"The technology to keep coconut water fresh for months is called cold sterilization of tender coconut water by hollow fibres," said Shirshendu De, professor and head of the department of chemical engineering, IIT-Kharagpur, who has supervised and assisted research scholar Sankha Karmakar in the experiment. A membrane-based separation process was employed using a 44 kiloDaltum (kDa) cut-off ultrafiltration membrane. The process eliminated suspended particles through a nylon mesh and sterilized the tender-coconut water through a hollow polyacrylonitrile fibre tube for an hour. This removed bacteria and other microbes and helped the liquid, refrigerated in a wax-sealed glass or polypropylene bottle, last months. The drink was tested every month for quality.

A group of independent experts (comprising professors from IIT-Kharagpur's chemical engineering department, PhD students, athletes and two children) tested the liquid and ranked it in terms of aroma, taste, odour, texture, colour and acceptability. They found the treated coconut water maintained all nutritional properties even after weeks of storage. The process was better than conventional sterilization, like hot pasteurization or freezing, because it is economically viable, easily accessible and has a high storage capability.

IIT-KGP to overcome language barrier through humanities

<https://www.brainbuxa.com/education-news/iit-kgp-to-overcome-language-barrier-through-humanities-6983>

On the occasion of addressing the IIT-KGP 67th foundation day, MHRD higher education secretary KK Sharma said that language must not become a barrier for the students at IITs and he urged the IIT-KGP to take the help of the humanities field to overcome the language barrier in the institute.

Humanities can also help the students in maintaining the mental well-being as they tackle the academic pressure.

"You must make good use of humanities education, to the extent courses/institute allows. Language becomes a bit of a challenge for some students who have different mother tongues (and are not well versed in English)," Sharma said.

"I am requesting the students to make sure none of the (younger) students should think that language can be a handicap. I am happy to know that you have a language lab here and this lab should be available for students throughout the year so that language should not really be a hurdle. I think humanities education should be expanded further and students must make the most of it. I am requesting the director that you should help with the language for all students, at any point of time," he said.

Sharma stressed on the importance of having a balanced academic life and said that there are students who feel enormous stress in being away from family and friends and hence, I would like to request the department of happiness and other departments to chip in for their every possible help.

Researchers give positive confirmation on replenishment of groundwater storage in India

<http://timesofindia.indiatimes.com/india/researchers-give-positive-confirmation-on-replenishment-of-groundwater-storage-in-india/articleshow/60148901.cms>

KOLKATA: The dwindling groundwater resource of India has been a cause of concern in recent years with almost 60% of the country being regarded as water stressed. The government over the years has undertaken several projects to replenish ground water through efficient ground water management and utilization policies. However, the effects were not known until now.

For the first time, researchers from India and abroad have given positive confirmation on the replenishment of groundwater storage at regional scale. A research team from IIT Kharagpur in collaboration with NASA scientists has reported regional-scale groundwater storage (GWS) replenishment through long-term (1996-2014, using more than 19000 groundwater observation locations) ground-based measurements and decadal-scale (2003-2014) satellite-based groundwater storage measurements in large parts of India.

Lead author Soumendhra Bhanja noted that in recent times, large parts of the country reels under severe water crisis during each summer. India, which has been the largest consumer of global groundwater is going through a 'groundwater drought', with every possibility that the drought may continue and aggravate in impending future. This pervasive, unregulated abstraction for enhanced irrigation of water-intensive cultivation is resulting to one of the most rapid and drastic groundwater depletion in human history.

"Our study shows that recent paradigm shift in the Indian groundwater withdrawal and management policies for sustainable water utilization, probably have started replenishing the aquifers by increasing storage in western and southern parts of India" said research lead Abhijit Mukherjee from IIT Kharagpur.

In parts of western (Gujarat) and southern (Andhra Pradesh) India, groundwater storage has been decreasing at the rate of -5.81 ± 0.38 km³/year (in 1996-2001) and -0.92 ± 0.12 km³/year (in 1996-2002), respectively. But this was reversed to replenish at the rate of 2.04 ± 0.20 km³/year (in 2002-2014) and 0.76 ± 0.08 km³/year (in 2003-2014), respectively.

The team used numerical analyses and simulation results of groundwater management policy change effect on groundwater storage changes in western and southern India for this study. Dr. Matthew Rodell, NASA Chief of Hydrological Sciences Laboratory helped in interpreting the NASA satellite (GRACE) data (2003-2014) of groundwater storage changes in India for this study.

Mukherjee pointed out at the recent changes in Indian central/state government policies on groundwater withdrawal and stress on management strategies, such as restriction of subsidized electricity for irrigation, separate electricity distribution for agricultural purpose (e.g. Jyotigram Yojana), construction of large-scale, regional enhanced recharge systems in water-stressed crystalline aquifers (Tapti river mega recharge project), artificial recharge of 85 Billion cubic meter/year in ~ 0.5 million km² through ~ 10 million structures (e.g. Pradhan Mantri Krishi Sinchayee Yojana), enhanced recharge by interlinking of river catchments (e.g. Narmada-Sabarmati interlinking), which will probably start replenishing the aquifers by increasing groundwater storage in near future.

IIT-Kanpur students design unmanned helicopter prototype, bag award in international competition

<http://timesofindia.indiatimes.com/home/science/iit-kanpur-students-design-unmanned-helicopter-prototype-bag-award-in-international-competition/articleshow/60148666.cms>



KANPUR: A team of postgraduate students of Aerospace department of IIT-Kanpur have been successful in developing a prototype of an 'unmanned helicopter' named "Vibhram" which can fly continuously for 24 hours while carrying a payload of 80 kg. The novel design of this helicopter helped the students bag the third place in the graduate category of 34th Annual Student Design Competition organized by the American Helicopter Society (AHS). IIT-Kanpur students beat teams from University of Liverpool, a second team from Georgia Tech, Nanjing University of Aeronautics and Astronautics (China) and some other prestigious institutions of world fame.

Meet Karthik S. (Team leader, MTech), Rahul Ramanujam (Team technical leader, PhD), Ramdas (PhD), Diksha Aggarwal (MTech), Sakshi Gupta (MTech), Avinash Shet (MTech), Vishesh Kumar Singh (MTech), Naba Kishore Routray (MTech) who developed 'Vibhram' helicopter under the guidance of Assistant Professor Abhishek of Aerospace engineering department and Prof C. Venkatesan (Emeritus Fellow Professor in Aerospace Department).



Talking to TOI, Assistant Prof Abhishek said, "The design of Vibhram is very innovative. It has novel dissimilar coaxial rotor concept which was conceived for this competition by PhD student Rahul Ramanujam (a patent has already been filed on this concept). This rotor concept has been predicted to be more efficient than any existing helicopter concept such as conventional (single main rotor and tail rotor) and regular coaxial helicopters by 15-30%. This revolutionary new design is expected to have a strong impact on the future of helicopter technology. A research paper on the design authored by Rahul would be presented in September at European Rotorcraft Forum in Milan, Italy."

He said that such a type of a helicopter design does not exist anywhere in the world and its prototype has been developed by the students in only six months starting in January this year. "We were required to submit a 100 page report, an executive summary of the project and a video of the operational helicopter which we had provided to AHS for taking part in the competition. The hardwork by the students bore fruits and they won the third prize", he added.

He further mentioned that this is for the first time in 34 years that a team from Asia has finished on the podium of this competition in the graduate category.

"The objective of this year's competition was to carry out conceptual system level design of an unmanned helicopter that can fly continuously for 24 hours while carrying a payload of 80 kg", he said.

The entire design work was carried out as part of AE 660: Preliminary Design of Helicopter course taught by Assistant Professor Abhishek in the previous semester. Professor C. Venkatesan gave his guidance to the team.

The professor said that he and his team of students are now working on scaling up the version of this helicopter.

August 19

IIT Kharagpur, Tata Medical Center to Launch Inter-Disciplinary Research

<http://www.ndtv.com/education/iit-kharagpur-tata-medical-center-to-launch-inter-disciplinary-research-1739447>

IIT Kharagpur and Tata Medical Center will go for institutional collaboration in education, research and outreach programmes in the field of inter-disciplinary medical research.



IIT Kharagpur, Tata Medical Center To Launch Inter-Disciplinary Research

KOLKATA: IIT Kharagpur and Tata Medical Center will go for institutional collaboration in education, research and outreach programmes in the field of inter-disciplinary medical research. "The primary objective is to promote interaction and collaboration between faculty, medical professionals and students of the two institutions to carry out joint academic and research programmes," Prof Suman Chakraborty, faculty at the Department of Mechanical Engineering and programme coordinator at IITKGP said today. It will be carried out under the joint supervision of undergraduate, masters and doctoral students on a reciprocal basis and as part of collaborative research projects, he said.

"Plans are underway for joint research programmes with external funding. Exchange programmes will be promoted through creation of visiting faculty/posts of scientists with access to laboratory facilities for joint research and exchange of data," Mr Chakraborty, who also heads the School of Medical Science & Technology and is the Associate Dean of Sponsored Research and Industrial Consultancy at IITKGP said.

The integrated M.Sc.- Ph.D. programme, which has been planned, will focus on medical physics, nuclear medicine and molecular medical microbiology in its first phase.

As part of the programme which would be jointly developed by both the institutions, students will spend at least one semester in each institute with joint supervision by faculty and scientists of both institutions.

The degree will be awarded by IITKGP.

Additionally, an outreach programme is being planned for working professionals with customized training modules as per requirement of the organization to cater to specific needs.

This Coordinated Certification programme will include direct contact and lab modules, live video streaming, visiting faculty contact and distance modules.

The superspecialty hospital at IITKGP is scheduled to start in mid-2018.

Centre to Give Out Rs 20,000 Crore to 20 Educational Institutes to Achieve International Rankings

<http://www.india.com/education/centre-to-give-out-rs-20000-crore-to-20-educational-institutes-to-achieve-international-rankings-2412673/>

In June, not a single institute had appeared in the top 100 list of the Times Higher Education (THE) World Reputation Rankings.

In an attempt to improve the global rankings, the Centre has decided to dole out Rs 20,000 crore to 20 state-run and private educational institutions across the country. The government plans to give out the sum of money over the next five years to propel them to get into the top 100 institutions across the world.

According to the reports, each institute will receive Rs 1,000 crore from the ministry of human resource development (HRD). Addressing students and faculty members during the 67th Foundation Day of IIT Kharagpur, higher education department secretary Kewal Kumar Sharma said, "Institutions will have to write to the ministry for availing the financial aid. You can ask for it too."

HRD minister Prakash Javadekar had also said that the Modi government has been making efforts to reform the education sector in India. He said, "India will achieve international rankings in the next 10 years."

Sharma also said that the HRD ministry has also decided to give out a monthly allowance of Rs 70,000 to every research fellow, who is covered under the Prime Minister Research Fellowship programme. The IIT Kharagpur students, however, said that the research fellows currently receive around Rs 25,000 a month. "This is a very good scheme. It will help research projects and the nation in the long run," said IIT Kharagpur director Partha Pratim Chakrabarti, *HT* reported.

In June, not a single institute had appeared in the top 100 list of the Times Higher Education (THE) World Reputation Rankings.

IIT Madras builds research facility to help CERN

<http://timesofindia.indiatimes.com/city/chennai/iit-madras-builds-research-facility-to-help-cern/articleshow/60125988.cms>

Indian Institute of Technology, Madras (IIT-M) is setting up an exclusive centre on its premises for research, and to develop a silicon tracker detector that will go into upgrading the massive 14,000 tonne CMS (compact muon solenoid) detector, which is studying a wide range of physics including the dark matter that makes up the universe. The CMS detector is installed by CERN, the European Organisation for Nuclear Research, in France.

The dedicated Silicon Detector Research and Development and Application Centre to be set up at IIT Madras at a cost of Rs 6 crore, will be part of India-CMS collaboration. The Centre is expected to be operational by end of 2018.

"The main purpose of this centre is to work with other Indian collaborating institutes to build a '2000 silicon detector module' that will be part of the CMS detector at CERN," said Prafulla Kumar Behera, associate professor, department of physics, IIT-Madras.

The main CMS detector in France will undergo upgradation in 2025 when the existing silicon tracker detector dies out. The silicon tracker detector is one of the four subdetectors in the main CMS detector. Data from the main detector installed 100m below ground may help scientists understand the evolution of the universe better.

Prof Behera said the centre not only aims at conducting cutting-edge research with advanced machine tools but will also train students in the process. "IIT-Madras is also offering summer internships at CERN for our undergraduate students since 2015," he said.

Scientists said the sensor that goes into the detector a technology for which is available only in a few countries has several potential spinoff applications like medical imaging that can help the Indian healthcare sector. "If we could get such technologies, may be in the future we can use them if we are going to build such detectors in our country," Behera said.

IIT-M became the first IIT to be made a full member of the CMS experiment at CERN in 2014. India became as associate member of CERN in 2016.