Newspaper Clips
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IITs way down the list in Shanghai engineering rankings

http://www.hindustantimes.com/education/iits-way-down-the-list-in-shanghai-engineering-rankings/story-hxVSonvtrERX2q7hdjk3cL.html

None of India's premier institutes, except for Mumbai University (world ranking 151-200), could make it to the world's top 200 in the Shanghai Global Ranking of Academic Subjects 2016, released on Wednesday. Compiled by the Centre for World-Class Universities at Shanghai Jiao Tong University, the ranking was topped by American universities such as University of California at Berkeley, Massachusetts Institute of Technology, and Stanford University.
The United Kingdom's University of Cambridge, University of Oxford and Imperial College, London, also outshone others in different subjects.

The institutes were ranked in seven subjects, including chemical engineering, civil engineering, electrical and electronic engineering, energy science and engineering, environmental science and engineering, materials science and engineering, and mechanical engineering. While research was the prime criteria, institutes were assessed for research productivity, high and top quality research, average global research impact, international collaboration, extent of academic-corporation collaboration, researchers with global academic influences, and academic awards.

Mumbai University was ranked 151-200 in chemical engineering and the Indian Institute of Science (IISc) was slotted among 201-300 universities. A total of 724 universities were ranked and the top 300 published. No Indian institute found a place in the top 100 in civil engineering. Among institutes for electrical and electronic engineering, IISc, IIT Delhi and IIT Bombay were ranked 201-300. The US dominated the top places in this field with 45 universities finding a place in the top 100 list. A total of 937 universities were ranked in this subject and 400 published. For environmental science and engineering, IISc was ranked 301-400. The institute was also placed 201-300 in materials science and engineering with IIT-Kharagpur. IIT Bombay, IIT Delhi, IIT Kanpur and IIT Madras were ranked 401-600. Among the institutes for mechanical engineering, IIT Kanpur and IIT Madras were ranked 201-300.

IIT Delhi students create device that turns waste cooking oil into biodiesel

http://www.hindustantimes.com/delhi/iit-delhi-students-create-device-that-turns-waste-cooking-oil-into-biodiesel/story-DN0E4BbYzowPngq88OkbpI.html

The process, known as trans-esterification, converts carboxylic acid ester into a different carboxylic acid ester. Apart from the waste cooking oil, it requires water, alcohol and a catalyst.

A team of three IIT Delhi students have come up with a prototype called FAME One. Their innovation can help small-scale hotels, restaurants and households to convert waste cooking oil into biodiesel. Their innovation, which looks like a washing machine, is not only eco-friendly but also affordable. Taking roughly an hour to complete the process, it can be used in rural setups to convert oil seeds into diesel.

“We read somewhere that India generates the highest amount of waste cooking oil and this is what drove us towards creating a technology that could actually compensate for more that 30% of the country’s energy deficit. If people adapt to this change we can have a better India,” said Mohit Soni, a student.

The students have tested the product for feasibility and said this is an efficient way to not only cut down on diesel usage, but also sustainably dispose of the waste oil that hotels generate every day.

“The project in its current state is suitable for big hotels while for an individual consumer, this technology may need further development. The demand for eco-living is not every high in the Indian setup as of now but people will gradually realise its value,” said Harshit Agarwal, who worked on the innovation.

The project is being taken forward under the guidance of Prof Ashok N Bhaskarwar, department of Chemical Engineering, who is helping the students develop it further from the first version prototype that they have produced.

Abhishek Sharma (left) and Harshit Agarwal (right) along with Mohit Soni have come up with this idea.

The professor will help the students add automation, generate possible sources of Intellectual Property Rights and most importantly conform to the global quality standards. “There is a dire need for the product to find its use beyond the hotel industry so that people can use this technology as an eco-friendly, energy efficient and easily adaptable source to our existing energy scheme,” said Abhishek Sharma, another innovator.

Despite having the potential of a biodiesel producer, India hardly contributes to 0.1% to global biodiesel production. Students feel that hours spent in collecting waste cooking oil from their own homes and the hostel mess was finally worth the trouble.

“If India produces so much waste cooking oil, we thought that there has to be a way to use it in a productive manner. So we connected with hotel chains and utilised the oil that gets wasted every day,” said Mohit.

The students say the technology is simple and adaptive. The process, known as trans-esterification, converts carboxylic acid ester into a different carboxylic acid ester. Apart from the waste cooking oil, it requires water, alcohol and a catalyst. The amount of biodiesel generated is the same as the amount of oil fed into the system. The system cost them Rs 30,000. The students, who recently won the GE Edison challenge and a cash prize of Rs 10 lakh, plan to utilise the amount on further research on the product and its market launch.

Survival tips every incubatee must know

http://paper.hindustantimes.com/epaper/viewer.aspx

Young entrepreneurs see immense benefits in getting their business ideas incubated. Incubators act as accelerators for young startups. Several engineering and management institutes in India offer incubation support to aspiring entrepreneurs. As a part of any incubation cell, entrepreneurs can get an office space and easier access to lawyers, accountants, and potential investors apart from mentorship advice. However, clearing the rigorous selection process before getting your business plan incubated is just the first step to their entrepreneurial journey.

Success of an incubatee depends upon several factors. Here are seven survival tips every incubatees must be aware of:

1 Address a need: Identify a gap in the market, and see whether the technology under development (either offered as a product and/or service) is addressing/solving a critical problem

2 Develop a model: Prepare the proof of concept/business model with real data points and market validation

3 Avoid premature scaling: Avoid investing considerable amount of money on segments like marketing, hiring etc before a working business model is identified or burning rate is too fast while failing to secure further financing

4 Get the right team: Creating a team with good balance between technical and business expertise is crucial

5 Motivate the team: Motivation and determination for creating wealth for the country using intellectual properties is important

6 Robust revenue model Sound financial support with infusion of capital at several stages of the product development cycle including prototyping, field trial, pilot job, redesign and scaled up manufacturing of final product, further product development are very important, especially for manufacturing based products

7 The right mentor: The right mentorship from domain experts plays a significant role in refining business strategies, and meeting dynamic needs of the market.

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From IIT-M: Capsule in body to count calories, diagnose cancer

http://timesofindia.indiatimes.com/city/chennai/From-IIT-M-Capsule-in-body-to-count-calories-diagnose-cancer/articleshow/52771201.cms?

Chennai: Sensors in capsules that can wirelessly communicate data from within the body are getting smarter.

Researchers from IIT-Madras and the University of Nebraska, Lincoln (UNL) are working on an ingestible capsule that will stay put in the body - potentially for close to a week - with sensors that will take readings of an individual's calorie intake, eventually help in diagnosis of diseases such as cancer and allow for sustained delivery of drugs.

As part of the trial, researchers are studying the effect of the capsule on pigs that have remarkably human-like digestive systems.

The pill, in its current form, carries a sensor to read core body temperature. The microcapsule has a vacuum-powered 'sucker' surrounded by tiny needles, similar to the hooks a tapeworm uses to embed itself in the gastrointestinal tract.

"The capsule, made of biocompatible materials, works like a parasite by latching on to the intestinal wall," said Benjamin Terry, assistant professor, department of mechanical and materials engineering, UNL. The attachment mechanism, he said, caused no damage to the intestine of the pig, which carried it for six days.

Terry said the big breakthrough for the research team was to ensure the body did not immediately reject the capsule, which is 25mm in length and 12mm in diameter.

"Tissues are slippery and resistant to solid mechanical structures attempting to anchor to them," Terry said. "They also constantly contract and elongate. On an average, the device initially stayed inside only for two hours."

The team overcame this by testing numerous types and sizes of suckers, along with the number and angle of needles surrounding them. They settled on a configuration that yielded the strongest adhesion - one that was 5mm in diameter with six needles set at 45 degrees within it. The team's study recently appeared in the journal Biomedical Microdevices.

The sensors communicate their readings to an external device through low-intensity radio waves.

"The device is kept a metre away from the body. We use only low intensity waves that don't harm the body," said P V Manivannan, assistant professor in mechanical engineering, IIT-Madras.

Terry's team is collaborating with IIT-Madras to take the device to the next step - to measure calorie intake. Manivannan's team create the system and controls for this.

Experts say biosensors could help monitor factors that influence digestive health. Such prolonged data sources could help in diagnosis of diseases such as cancer and eventually permit the sustained delivery of pharmaceutical drugs.

Terry said the mechanism could also serve as a long-term vessel for capsule endoscopes, the ingestible pill-shaped cameras that permit physicians to record images of the gastrointestinal tract.
"One of the shortcomings of current capsule endoscopy technology is its relatively quick migration through the gastrointestinal tract," said Terry. "Pausing at a location of interest, such as a polyp or ulcer, is desirable. Our technology will make this possible.

Help group' cushion for freshers at IIT-Kharagpur

http://timesofindia.indiatimes.com/home/education/news/Help-group-cushion-for-freshers-at-IIT-Kharagpur/articleshow/52763049.cms

KOLKATA: The initial jubilation that follows the cracking of IITJEE (Advanced) and securing a seat at one of the technology institutes often fades away within a few weeks of classroom lessons. More than 20% of the youngsters, who were eulogized for being the "brightest lot" not so long ago, find themselves at sea, unable to cope with the deluge of papers they are confronted with. Failure either throws them into the grip of depression or they simply drop out.

To pull the freshers out of the pit, faculty members and senior students at IIT-Kharagpur will now form a team and prepare tutorial modules so that they can address the weaker students right at the start of the academic session, starting in August. This "help group" is the fruit of an experiment by the Students' Gymkhana a couple of years ago, which caught the attention of the administration that has regularized it from this year. "It takes years of hard work to crack IIT. Most candidates are drained out by then and many take time before they reboot and take the plunge again. The kind of work that you do at plus-two and even when you coach for IIT-JEE is very different from what you have to do at the IITs. Slips are not unnatural, but with help, most can turn around," said Sovan Panigrahi, the student vice-president.

Among the 1,281 students joining the Kharagpur campus, a little more than 300 are likely to fare poorly in subjects, like programming and data structure, mechanics, electrical technology and mathematics.

"It is one thing to crack IITJEE (Advanced) and quite another to grasp programming and data structure. Our Gymkhana student leaders had been, for the past couple of years, tirelessly coaching these students who would fail the exams in certain subjects. We were amazed to see that the number of failures last year went down to merely 20. Impressed, the institute has joined hands with the students to form a formal mentoring group," said dean of undergraduate studies Rajendra Singh.

While the Gymkhana initiative was restricted to programming and data structure till last year, the institute has decided to extend the lessons to other subjects, such as mechanics, electrical technology and maths. "These are the subjects in which a sizable number of first year students fail, right from the first 14 weeks or the first semester," Singh said. Faculty members, who will be part of the team, are preparing the student volunteers for the classes. "The top 10 brightest senior boys and girls from third and fourth years will be leaders of the team, working under the faculty members. We will call them super mentors. Besides, at least 50 more student volunteers will be selected. But they will have to take a test to prove they were good enough to teach the first years," Singh added.

IIT experts give the go-ahead to East-West Metro Project

http://www.thehindu.com/todays-paper/tp-national/iit-experts-give-the-goahead-to-eastwest-metro-project/article8734294.ece

Setting aside the concerns of the Archaeological Survey of India (ASI) that tunnelling for the East-West Metro project will damage the protected monuments of the city, a team of experts from the Indian Institute of Technology, Kharagpur, has said that there will be no “adverse effect” on the structures.

Three protected monuments — Currency Building, an Italian structure, which housed one of the first banks of the country, and two 19th century Jewish monuments, Maghen David Synagogue and Beth-El Synagogue — are dangerously close to the tunnels planned for the project.

After objections by the ASI, the Kolkata Metro Rail Corporation (KMRC), the implementing agency, had engaged a team of experts from the IIT to conduct an impact assessment study.

“The IIT report indicates that there would be no adverse effect on the protected monuments due to tunnelling and station construction,” a letter from KMCR Chief Engineer (Civil) Biswanath Dewanjee to Regional Director Eastern Region of ASI P K Mishra said.

Seeks NOC

Mr. Mishra has sent the letter to the National Monuments Authority, for a no-objection certificate for the project. As per existing rules, construction and mining operations are prohibited within 100 metres of protected monuments and all the three monuments come within 100 metres of the metro tunnelling. While Currency Building is 24 metres from the metro alignment, Beth-El Synagogue is about 17 metres and Megan David Synogogue 9.8 metres away.

Close to other heritage sites

A lot of other heritage buildings in and around the region also stand close to the metro alignment. They include St. Andrews Church (11 metres from the metro alignment), Writers Buildings (24- 23 metres), and Raj Bhavan (about 8 metres to the right side). In fact, a closer look at the DPR reveals that 7 metres of the historical Lal Dighi pond would be required to construct a metro station.

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UGC bows to teachers, rolls back workload norms

TIMES NEWS NETWORK

The education regulator has decided that there would be no retrenchment on account of academic performance indicators and workload. The only demand to be rejected was the one on scrapping appraisal by students

New Delhi: The University Grants Commission on Wednesday accepted most of the demands of agitating university teachers barring appraisal by students. **TOI** had reported on June 10 that the UGC was likely to accept the demands.

In its 516th meeting, UGC made a fourth amendment — subsuming all earlier ones — to the regulations. It has been decided that there will be no retrenchment on account of Academic Performance Indicators and workload. It was also clarified that ad-hoc teachers are against sanctioned strength so there is no need to retrench them.

However, the briefing was done by education secretary Vinay Sheel Oberoi and senior ministry officials. Though Oberoi did not answer a direct query on UGC's role in complicating API, ministry sources said, "The problem could have been sorted out much earlier if the UGC had listened to the government."

Direct teaching hours have been restored. Now, assistant professors will have to teach 16 hours per week while associate professors and professors will have to teach 14 hours each per week. Direct teaching hours will include tutorials, practicals, field work apart from lectures and project supervision. Mentoring by professors and teachers will be recognised while calculating direct teaching score.

Oberoi said a cap on API has been removed except for sub-category of invited lectures. "It has been capped at four," he said. On the contentious issue of list of journals, a middle ground has been found. The UGC will maintain a list of journals for the consideration of API score. However, even universities can suggest a list of journals to the UGC standing committee, which will have to take a decision within 60 working days.

Change has also been made in the mode of appointment of college principals. While giving second term to an incumbent an external peer review of his term will be done, which will then be sent for consideration of the selection committee.