

## Newspaper Clips

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# IIT-M wants to go the Stanford way

But the Incubation Cell at the institute will need to overcome funding hurdles

PRINCE MATHEWS THOMAS

When Kishore Natarajan and his friends turned down job offers that would pocket them ₹60 lakh a year, it was tough convincing their relatives. But for them, it was an easier decision. As students of IIT Madras, Natarajan and his four friends had founded their start-up HyperVerge in late 2013. They developed a low-cost system for Indian Railways to inspect overhead lines, from which locomotives draw power.

Success in the project spurred the youngsters, aged between 22 and 24 years, to opt for entrepreneurship over a nine-to-five job. The founders are now working on an image recognition technology for taking photographs and storing them. In their short entrepreneurial journey, "IIT-M's ecosystem has been critical," says Natarajan.

HyperVerge is one of the 30 start-ups under the premier institute's Incubation Cell, which came up in 2013. The Cell formalised an ecosystem that has been brewing in the IIT-M campus for the past three decades. "At least 20 start-ups, such as Desicrew and Midas Communications, came from IIT-M from 1980s to the 1990s. Since 2007, over 70 companies have been incubated", says Tamaswati Ghosh, In-



**Infrastructure** The most visible part of the Cell is the Research Park

Charge of the Incubation Cell.

There is a reason for the spurt in start-ups. "Most of the students are now from middle and upper-middle-class families and don't have financial obligations. So, instead of regular jobs, they can opt to become entrepreneurs," says Ashok Jhunjunwala, a Professor in the Department of Electrical Engineering. He is also the Co-chairman and Faculty-in-Charge of the Cell.

As the number of start-ups increased, there was a need to build a structure that handholds the young businessmen in their initial years. The most visible aspect of the new ecosystem is the IITM Research Park. The Park hosts 24 of the 30 start-ups and also has R&D labs of leading companies such as Tata Consultancy Services and BHEL.

The start-ups, which get a seed funding of ₹5 lakh from the Cell, can lease office space at discounted rates. The fund and the space are critical for a start-up like Ather Energy, which is developing an electric scooter with a battery that is three times smaller and lighter than existing ones.

"We continue to be guided by the faculty and have access to labs in IIT Madras. Also, with the brand of IIT backing us, we can reach out to the alumni," says Ather co-founder Tarun Mehta. That proved crucial for Ather's team when an alumnus gave them a start on building a supply chain for the electric scooter.

### Alumni support

Separately, the alumni have also been generous. Ather's first angel investor was an IIT-Madras alumnus. Similarly, when two of Natarajan's colleagues visited the US to raise funds earlier this year, they got twice the money that they needed, thanks to the alumni network.

The seniors have also come back to the campus. Senthil Nathan passed out of IIT-Madras in 1980 and co-founded two companies before selling them. Now, along with his former IIT classmate SV Ramanan, Nathan has founded RelAgent, which is based in the Research Park. "It is high time that we take IIT-Madras to the standards of Stanford and MIT," says Nathan.

# Realising true potential of NITs

Arun Kumar Jain



**TOP SPOT:** In times of intense growth possibilities, NITs must be equipped to grasp every opportunity. Ability to create global-quality products is possible only with the presence of highly motivated and qualified engineering graduates

**A**T a recent two-day conference of directors of national institutes of technology (NITs) at Rashtrapati Bhawan, attention was focused on macro factors that can make them more relevant and effective in the task of providing skilled engineering manpower for the country. It was heartening to note that the President himself had taken the lead in calling such a conference in which India's vice president and HRD minister also participated. Among the many themes discussed were: "technology-enabled learning, global relevance, creating global networks and collaborations, and delivery of cutting edge technology programmes" keeping in view the country's huge technical and skilled manpower requirements in forthcoming years.

NITs are uniquely positioned in the country to bridge and connect the many technological, financial, cultural, and demographical 'divides' afflicting India such as: between rural-urban, too rich-too poor (one-third of population is below poverty line), digital-analogue, old-new, manufacturing-agricultural, and English-Hindi speaking natives. NITs have the necessary infrastructure, resources, and a mandate. They can do state-of-art interdisciplinary research, and at the same time, lead the grassroots innovations of our hinterlands into patentable products. I remember during the 1970s research in 'appropriate technologies' such as gobar gas plants, solar energy, bullock cart design, wheat and rice storage bins, low-cost housing based on locally available materials, among others, was revolutionising thinking in the emerging (then developing) economies. Much of this work was being done by NITs at that time. Unfortunately under the publicity and glare of IITs, these institutions have remained largely subdued and unable to realise their true potential.

NITs and other non-IIT engi-

neering colleges (and their graduates) must not suffer the question 'what can we do', but respond with 'what can we not do!' Two examples would suffice to reflect their huge potential: Sam Nadella (the Microsoft CEO) and E Sreedharan (the Delhi Metro-man). The former had his first degree from Manipal Engineering College (Karnataka) and the latter at Government Engineering College at Kakinada (Andhra Pradesh), before both went on to become iconic global figures in their respective technology and engineering fields.

I remember during the 1970s we worked on a project relating to portal hypertension in humans. Our intention was to construct a valve that could regulate and release the pressure on liver. These were perhaps the earliest experi-

ments in the nascent interdisciplinary field of bio-medical engineering, and our collaborators were doctors from AIIMS-Delhi. The research led to two research papers and a practical demo at an international conference on applied mechanics. While we (as students) had total freedom to design the experiment and choose materials for the test valve, the entire effort was the result of visionary initiatives of an energetic faculty member who instilled the excitement in us and arranged for the funds. Though we worked with rudimentary materials at that time such as perspex, we had several enquiries from international pharma and medical equipment companies interested in our valve design. (While we moved on, recently I came to know that the portal hypertension still

remains an untractable problem and ultimately liver transplant is the only solution).

There are many macro and micro-level reasons for the languishing of NITs at global recognition levels but one important factor is the rather narrow base of qualified, 'ready-for-market' engineering graduates they produce. Four years is a pretty long time to learn domain knowledge and to be skilled enough to solve technical problems, but somehow important elements of personal development and human skills escape the engineering graduate's curricula. At the individual levels, the profession of engineering requires specific mathematical and computing skills, mental ability to juggle with numbers, and logical but also creative ways of thinking. However,

with increasing automation and virtual world collaborations, the softer personality dimensions such as ability to work and thrive in multinational environment with multicultural and diverse teams, presentation and communication skills, confidence in demeanour, and an uncompromising professional integrity have assumed greater significance. Our engineering curriculum is silent on these execution aspects.

Lasting success for a NIT in a challenging technological and economic environment requires fast, flexible and determined market-based actions. NITs systematically must have at least three attributes to be successful in the new business reality: the right attitude in the leadership and faculty; efficient 3D driven and industry-linked knowledge dissemination processes that are standardised; and, a culture that encourages and fosters generation of new ideas and innovative solutions to real-time problems.

In these times of intense growth possibilities, NITs must be equipped to grasp every opportunity. Ability to create global-quality products, and innovate regularly lie at the core of national competitiveness, and this is possible only with the presence of highly motivated and qualified engineering graduates.

One way to ensure this supply is to consciously strive to become 'market-ready' through the route of competition in terms of employability of engineering graduates, faculty consultancy, and ability to find industry sources of funding for research and experiments. Thereby NITs can also become independent from the clutches of government interference. They should ask the same question that Nadella is asking at Microsoft: "what skills and qualities position us for long-term success".

*(The writer is a professor of strategy and corporate governance, IIM-Lucknow)*

# SMARTENING UP FOR IIT

## With barely a few months left for India's toughest examination, find out how to prepare for the challenge, wisely

By Education Mail Bureau

**E**VERY engineering aspirant dreams of getting into an IIT. But clearing JEE Main or the primary hurdle that puts them on track to their destination (qualifiers then go on to compete in JEE Advanced for a seat at the IITs) is not only about studying hard or getting good scores in your class X examination. It involves a combination of factors.

With barely a few months away from IIT-JEE (Main) 2015 (scheduled to be held from April 4 to 11), Education Mail spoke to Akash Chaudhry, Director, Akash

**It is a myth that brilliant students can easily crack IIT**

Educational Services, a leading coaching institute based in Dwarka, on the best way to prepare for the exam. According to Chaudhry, there are certain prerequisites to clear the exam. This includes completing the entire syllabus on time, giving equal attention to class XII board exams as well as JEE preparation, learning how to manage time and setting apart sufficient time for revision.

"It is a myth that students who are brilliant in studies can easily crack JEE. There have been instances when even students who have scored really well in their class X have failed to crack the exam," says Chaudhry.

This uncertainty can prompt many to drop a year to prepare for the exam. But decision comes with its own risks and should be taken thoughtfully and wisely after assessing candi-

date's personal capabilities. "Students who crack JEE in the first attempt, albeit with a low rank, do not realise the risk they take by letting go off the seats they are offered," says



**Students who let go off their seats after cracking IIT-JEE in the first attempt, albeit with a low rank, do not realise the risk they are taking**

—AAKASH CHAUDHRY, DIRECTOR  
AAKASH EDUCATIONAL SERVICES

Getting a seat at the IITs require more than just grey matter. Students at IIT-Delhi (right, below and far-right)



as this college also enjoys a good reputation," says Chaudhry. Yet another option would be to secure seats in other engineering colleges such as NITs as it can save them a year and also lay out a certain career path instead of getting stuck in an uncertain future.

**T**HOSE who failed to clear the preliminary cut, however, should be prepared for some harsh realities. They should ask themselves if engineering is really the career they want to pursue or was it just a stroke of bad luck. "These students should assess themselves and understand the reasons behind their failure," he says.

And when it comes to opting for right stream, Chaudhry believes Computer Science Engineering and Electronics and Communication Engineering offer the best career prospects.

"They are the two most in-demand engineering branches at any engineering college," he says. "Therefore it is a good idea to go for the best branch than to be stuck with a particular college," says Chaudhry.



### TIPS TO BE ON THE RIGHT TRACK

- Pay attention to what is taught in school. This is the best way to prepare for IIT-JEE
- Include IIT-JEE video lectures in your preparation to avoid boredom
- Aspirants should prepare for at least three to four hours on a regular basis
- Cracking IIT-JEE requires hard work and smart work, so don't take the exam lightly
- Don't depend on last minute preparation tips as these are not going to help

# Mangalyaan stirs China's Mars dream

## Robotic Rover To Be Tested In Tibet's Rugged Terrain Beijing showcases pics taken by lunar orbiter

**Beijing:** Seeking to catch up with India's Mangalyaan mission, China has unveiled its Mars rover being developed to scurry the Red Planet's surface for signs of water and life and plans to test it in the rugged terrain of Tibet.

The China Aerospace Science and Technology Corporation has displayed the machine at an air show at Zhuhai being attended by defence attaches of all countries, including India.

The rover was to crawl over the rough Martian terrain with a powerful six-wheel drive. At a glance it looks similar to Yutu or Jade Rabbit that China has sent to Moon to explore the lunar surface. But the Chinese scientists carried out some significant design changes to deal with different environment on



**RED MISSION:** A prototype of a Mars rover designed and built in China is on display at the China International Industry Fair in Shanghai

Mars, the Hong Kong-based South China Morning Post reported.

While Mangalyaan caught Chi-

na by surprise, it fascinated them as it was sent with a modest budget of less than \$100 million. ¶11

**Beijing:** China on Monday published photographs of Earth and Moon together taken by the orbiting service module of the country's first unmanned lunar orbiter, which returned to Earth earlier this month.

The photos were taken by the service module at a point 5,40,000km from Earth and 9,20,000km from Moon after it was separated from the return capsule of test lunar orbiter on November 1, ending its 80-day mission.

It was the world's first mission to Moon and back in about 40 years, with China

becoming the third country in the world to do so after the former Soviet Union and the US.

The service module went back into orbit and conducted more tests after the November 1 separation, the State Administration of Science, Technology and Industry for National Defence, which released the photos, said in a statement.

Launched on October 24, the orbiter traversed 8,40,000 km in eight days in a mission that saw it go around the far side of the moon. ¶11

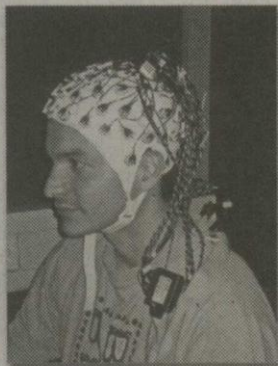
# Scientists achieve brain-to-brain communication

PRESS TRUST OF INDIA  
Washington

SCIENTISTS, led by an Indian-origin researcher, have successfully linked the brains of two people, allowing one person to control the hands of another using just their thoughts. Researchers from the University of Washington replicated a direct brain-to-brain connection between pairs of people as part of a scientific study following the team's initial demonstration a year ago.

In the new study, which involved six people, researchers were able to transmit the signals from one person's brain over the internet and use these signals to control the hand motions of another person within a split second of sending that signal.

"The new study brings our brain-to-brain interfacing paradigm from an initial demonstration to something that is closer to a deliverable technology," said co-author Andrea Stocco, a research



**MIND GAME:** A person is linked to an EEG that reads brain

assistant professor of psychology.

"Now we have replicated our methods and know that they can work reliably with walk-in participants," said Stocco. The research team led by Rajesh Rao, a UW associate professor of computer science and engineering, combined two kinds of non-invasive instruments and fine-tuned software to connect two human brains in real time.

The process is fairly straightforward. One partici-

pant is hooked to an electroencephalography machine that reads brain activity and sends electrical pulses via web to the second participant, who is wearing a swim cap with a transcranial magnetic stimulation coil placed near the part of the brain that controls hand movements.

Using this setup, one person can send a command to move the hand of the other by simply thinking about that hand movement.

## Nai Duniya ND 11.11.14 P-3

# गजभिए का वेतन रोकने सीबीआई ने कानपुर आईआईटी को लिखा पत्र

■ जांच में सहयोग नहीं करने  
और पूछताछ के लिए नहीं  
मिलने पर की कार्रवाई

**सागर (ब्यूरो)।** डॉ. हरीसिंह गौर केंद्रीय विवि के पूर्व कुलपति प्रो. एनएस गजभिए पर शिकंजा कसने के लिए सीबीआई (सेंट्रल ब्यूरो ऑफ इन्वेस्टीगेशन) ने कार्रवाई कड़ी कर दी है। सीबीआई ने गजभिए का वेतन रोकने के लिए आईआईटी कानपुर को पत्र लिखा है। प्रो. गजभिए द्वारा सागर विवि के नियुक्ति घोटाले की पूछताछ में सहयोग न करने और पूछताछ के लिए उपस्थित नहीं होने के चलते सीबीआई ने यह कदम उठाया है।

सूत्रों से मिली जानकारी के मुताबिक सीबीआई प्रो. गजभिए को लगभग 6 बार पूछताछ के लिए बुला चुकी है। इसके बावजूद भी प्रो. गजभिए सीबीआई के सामने पेश नहीं हो रहे हैं। इसी वजह से सीबीआई ने अब आईआईटी कानपुर को पत्र लिखकर वेतन न देने के निर्देश दिए हैं। **गजभिए के षडचिन्हों पर चल रहे सिम्हाद्री :** पूछताछ से बचने के लिए जिस प्रकार प्रो. गजभिए बार-बार सीबीआई को घुमा रहे हैं, उसी तर्ज पर पटना विश्वविद्यालय के कुलपति प्रो. वायसी सिम्हाद्री भी काम करने लगे हैं। सूत्रों का कहना है कि प्रो. सिम्हाद्री को सीबीआई दो बार तलब कर चुकी है।

## NATIONAL EDUCATION DAY

# Govt to launch single-window platform for academic information

BY PRASHANT K. NANDA  
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NEW DELHI

The human resource development (HRD) ministry will launch a single-window platform for higher educational institutes on Tuesday that will allow millions of students to access all academic information in one place.

On 11 November, observed as the National Education Day, the government will launch the new initiative called Know Your College, on the lines of a similar initiative in Gujarat. It will allow students, administrators and experts access to all the information from faculty status to lab facility, and from admission cut-offs to regulatory adherence, two HRD ministry officials said on condition of anonymity.

The ministry believes this will promote transparency and will be key for higher education reform. "There are too many institutions without enough information in the public place. So, we have tried to put in place a single window to give all information about all institutions. It's a one-stop shop," said the first official.

The official said one of the biggest challenges for higher education is the shortage of teachers but the exact situation can only be known if information flows from institutes. The transparency factor needs to improve. So, institutions under both the University Grants Commission (UGC) and All India Council for Technical Education (AICTE) will be brought on the new platform. India has more than 38,800 colleges under UGC and over 10,000 institutions under AI-

## The Know Your College initiative will be on the lines of a similar scheme in Gujarat

CTE.

However, initially, the platform may not have all the data. "More than 30,000 colleges is what we looked at," said the second official.

The students will also have details like whether a particular institution is government-approved or not, their pictures, video links, infrastructure, fee structure and scholarship provisions. Gujarat chief minister Anandiben Patel had launched a similar scheme in July.

The official said the ministry thought three key areas—access to information, de-duplication of teaching staff and students' grievance—can be tackled by putting all institutions on a single online platform. Often, institutions make claims despite not having enough facilities. Now, any student can flag it on the website, leading to authorities initiating action.

"Information, accountability and grievance redressal will be three key pillars of this scheme," the official said. The initiative will be launched by President Pranab Mukherjee in the presence of HRD minister Smriti Irani in New Delhi, an invitation from the ministry said.

Manas Panda, a private college teacher in Delhi said self-disclosure by educational in-

stitutions will help teachers, students and managements. It will lead to less litigation as everyone will have access to all the information.

On Tuesday, the ministry will also formally launch Unnat Bharat Abhiyan, a scheme under which Indian Institutes of Technology (IITs) will adopt model villages for sustainable development. All the 16 IITs will adopt 10 villages each and the main thrust would be technology infusion.

The IIT officials have already met HRD minister Irani, rural development minister Nitin Gadkari and officials of several ministries as part of the scheme, *Mint* reported on 31 October.

In his Independence Day speech, Prime Minister Narendra Modi had asked parliamentarians to adopt at least one village each in their constituency. On 11 October, Modi unveiled the blueprint for the Saansad Adarsh Gram Yojana (SAGY). It encourages parliamentarians to identify and develop one village in their constituency as a model village by 2016, and two more by 2019. Unnat Bharat is modelled on the same idea.

The government is planning to start a credit transfer system that will make it easier for students and working professionals to switch between education and jobs. The credit equivalent framework will be from Class 9-12 level. It will also allow seamless transfer of credit between formal education and skill education, Irani had told delegates at a panel discussion at the India Economic Summit, organized by the World Economic Forum, *Mint* reported on 5 November.

2012 में परीक्षा देने वालों के लिए नियम

# 2013 में पास तो जेईई मेन नहीं दे सकेंगे

नई दिल्ली | कार्यालय संवाददाता

आईआईटी, एनआईटी और शीर्ष इंजीनियरिंग कॉलेजों में दाखिले के लिए जेईई मेन की परीक्षा के लिए आवेदन शुरू हो गया है। यदि किसी छात्र ने 2012 में 12वीं की परीक्षा दी लेकिन 2013 में परीक्षा उत्तीर्ण की है तो ऐसे छात्र सीबीएसई बोर्ड की जेईई मेन की परीक्षा में बैठ नहीं पाएंगे। छात्रों को तीन मौके मिलेंगे। आवेदन 18 दिसंबर तक किया जा सकता है।

सीबीएसई ने नियमों का साफ करते हुए कहा कि सत्र 2015 में इंजीनियरिंग कोर्स में दाखिले के लिए तीन से अधिक मौके नहीं दिए जाएंगे। नियमों के मुताबिक, जिन्होंने 2013 में 12वीं की परीक्षा दी और उसी वर्ष उत्तीर्ण की और 2014 में परीक्षा देकर इसी वर्ष पास हुए हैं, ऐसे छात्र आवेदन कर सकेंगे। इसके अलावा जो छात्र 2015 में 12वीं की

## ऑफलाइन परीक्षा का शुल्क ज्यादा

आवेदन के लिए शुल्क का भुगतान ऑनलाइन होगा। डेबिट व क्रेडिट कार्ड से भुगतान होगा। ऑफलाइन परीक्षा के लिए छात्रों के लिए 1000 रुपये और छात्राओं के लिए 500 रुपये शुल्क तय किया गया है। इसके अलावा ऑनलाइन परीक्षा के लिए छात्रों को 500 रुपये और छात्राओं को 250 रुपये शुल्क देना होगा।

परीक्षा देंगे वे भी आईआईटी जैसे संस्थानों के लिए मेन की परीक्षा दे सकेंगे। लेकिन 2012 में परीक्षा देकर 2013 में पास होने वाले योग्य नहीं होंगे। बहरहाल, आवेदन सिर्फ ऑनलाइन होगा। छात्रों को [www.jeemain.nic.in](http://www.jeemain.nic.in) पर जाकर फॉर्म भरना होगा। दो तरह से परीक्षा दी जा सकती है।

## दो तरह के आते हैं पेपर

जेईई मेन में दो तरह के पेपर आते हैं। पहला पेपर बीई व बीटेक करने वालों को पास करना होता। दूसरा पेपर बैचलर ऑफ आर्किटेक्चर व प्लानिंग की पढ़ाई करने वाले छात्रों को पास करना होता है। छात्र चाहें तो दोनों पेपर दे सकते हैं। दोनों पेपर में ऑब्जेक्टिव सवाल पूछे जाते हैं। ऑफलाइन माध्यम में बीटेक व बीई की सीट के लिए पहला पेपर की परीक्षा

सुबह साढ़े नौ बजे शुरू होगी। तीन घंटे की परीक्षा होगी। इसके बाद आर्किटेक्चर के लिए दूसरे पेपर की परीक्षा चार अप्रैल को ही दोपहर दो बजे से शाम पांच बजे तक आयोजित की जाएगी। इनके अलावा ऑनलाइन माध्यम से पहला पेपर 10 अप्रैल 2015 को सुबह साढ़े नौ बजे और दूसरा पेपर 11 अप्रैल को दोपहर दो बजे दिया जा सकेगा।

# IIM Bangalore ranked top business school in Central Asia

<http://indiatoday.intoday.in/education/story/iim-banglore-has-been-declared-as-the-top-business-school-in-central-asia-by-eduniversal-business-school-ratings-and-rankings/1/399965.html>

The Indian Institute of Management Bangalore (IIM Bangalore) has retained the top position amongst all business schools (B-schools) in Central Asia.

This has happened for the seventh year in a row, according to Eduniversal Business School Ratings and Rankings 2014.

IIM Bangalore has been selected from over 120 B-schools based in 60 countries that took part in the rankings.

IIM Bangalore has also acquired the 53rd position among the top 70 B-schools offering Open Executive Education Programmes in accordance to another ranking organisation.

Moreover, in a research conducted by the Stanford University's Graduate School of Business on the topic of Business and Management segment of a study on Indian social science research, IIM-B was rated as the top business school wherein the study rated Indian institutes and universities on the basis of their output in the field of social science research.

Eduniversal is one of the top global ranking organisations that rank institutions providing higher education which is assessed by the French consulting and rating agency SMBG. These rankings offer as a useful tool to students across the globe to know the ratings of the B-schools located in Eduniversal's nine geographical zones in the five continents.

As per the Eduniversal Evaluation System (EES), IIM Bangalore continues to be in the Eduniversal top category of schools in the "5 Palmes League of Excellence" - universal business schools that have made a strong presence internationally. The evaluation method is managed by a global scientific committee consisting of nine independent experts, in each of the nine geographical regions.

As per 2014's Eduniversal ranking, the title of 'The Best Business School in the World' was given to the Copenhagen Business School, Denmark and from amongst the other business schools based in Central Asia, IIM Ahmedabad and IIM Calcutta have obtained the second and third positions respectively.

In the process of evaluation for this ranking the vote of a dean is a major component, under which deans/directors of the top 1,000 B-schools from around the world offer their recommendation for each school belonging to the 154 countries.

The total number of recommendations received by a business school decides the rating of the schools in each country as well as Palme league.



# Scientists evolve 'nano-drug' for osteoporosis

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<http://www.bangaloremirror.com/Bangalore/Others/Scientists-evolve-nano-drug-for-osteoporosis/articleshow/45103423.cms>

A team of researchers from IISc and Al-Ameen College of Pharmacology has developed a nanoparticle that can deliver drugs and stimulate bone-forming cells - an effective, side-effects-free cure for the painful condition of osteoporosis, that too using a single dose.

Osteoporosis is a progressive bone disease, mainly among elderly women. In this condition, the bone loses both its mass and density, thereby becoming increasingly weaker.

Around 9 million bone fractures occur each year due to osteoporosis, mainly because the bone has lost its mass and density and can crack under one's own body pressure or movements.

The current treatment regime for this degenerative disease involves restricting further bone damage without restoring the lost bone cells (for mass) and density.

But the nanoparticle developed by the IISc and Al-Ameen researchers is capable of delivering the drug directly to the specific affected locations, and is considered the best mode of boosting the bone cells in order to regenerate what has been lost. This, it does by delivering the drugs straight to the affected areas.

This is considered as a significant development for treatment of osteoporosis.

Until now, Zoledronic acid (ZOL), which is the commonly used drug, has been successfully reducing the risk of fractures in post-menopausal women; but prolonged use of this drug can cause several adverse effects like unwanted alterations in the bone structures. The IISc-Al-Ameen team has come up with a modified ZOL drug which can be delivered using nanoparticles.

But here is the trick: They made the drug-delivering nanoparticles out of synthetic hydroxyapatite (HA), which is present in our bodies in its natural form. HA makes up bone mineral and the matrix of our teeth and it stimulates the bone forming cells. In short, they developed a double booster - the modified drug, and that drug delivered by a nanoparticle which stimulates bone-forming cells.

The modified ZOL drug used in the study has a high affinity to bone, and prevents further bone loss. "We have designed a new formulation, wherein the ZOL is first adsorbed on nanoparticles of hydroxyapatite and carried to osteoporotic bone by intravenous injections," said lead author Deepak Kumar Khajuria. "We were able to demonstrate successfully that this formulation not only prevents further bone loss, but also stimulates bone growth." The study found that ZOL bound extremely well with the synthetic HA to effectively deliver two important minerals for bone structures - calcium and phosphate - ensure bone regeneration.

The study was carried on 12-week-old female mice whose ovaries were removed to simulate the menopausal stage among elderly women.

"The key aspect that intrigued us was that the carrier (the mice) showing amplified benefit toward overall therapeutics...," said Prof Rema Razdan, head of pharmacology department at Al-Ameen College of Pharmacy.

"It took us years to design a scheme of investigation and a method of correlation through various biochemical tests and mechanical testing of bone samples to establish the underlying complex process of nano-functionalized therapeutics and the efficacy of a single-dose", said Prof Roy Mahapatra.

# Only 3.5% universities follow UGC safety norms

Hindustan Times (Mumbai)

**Commission to send reminders before taking action; Mumbai university says it has taken initiatives but is yet to respond to the UGC letter**

[From page 3](#) MUMBAI: Of the around 650 universities across the country, only 20 have complied with the University Grants Commission (UGC) recommendations for making college and university campuses safer for women.

## FOR SAFER CAMPUSES

**Two months ago, the UGC** directed vice-chancellors of all affiliated universities to chalk out measures for women's safety on campus.

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**According to the commission's** gender sensitisation department, only 20 universities have responded with definitive plans.

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**The commission recommended** steps such as starting counselling centres, training staff, conducting gender audits and structural changes to ensure women's safety on campus.

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**The UGC had also asked around** 65 colleges to frame a course on

gender sensitisation which would later be made compulsory during orientations.

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**Pune University has taken** several steps such as starting bus services for women students, setting up nodal agency for handling matters related to sexual harassment on university and college campuses and counselling centres.

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**Mumbai University** is strengthening its women development cell, intensifying surveillance after sunset and encouraging women staff to leave campus before 6pm.



**University of Mumbai has implemented the norms.** HT

HT University of

Mumbai has implemented the norms.

This means, only 3.5% of the country's universities have taken up initiatives for ensuring a safe campus for women students.

The commission, in a letter dated August 28, had asked vicechancellors of affiliated universities to take up measures such as gender auditing, beefing up security at women's hostels on campus and making redressal cells available for complaints, among others.

"So far, we have received responses only from 20 universities which have taken steps to introduce safety measures," said H Devaraj, UGC vice-chairman.

Devaraj said they will have to prod universities for their responses as women's safety is a serious matter.

"We will send reminders to the universities, telling them to inform us of their approaches toward making campuses safer. If they

directed vice-chancellors of all affiliated universities to chalk out measures for women's safety on campus. gender sensitisation department, only 20 universities have responded with definitive plans. steps such as starting

counselling centres, training staff, conducting gender audits and structural changes to ensure women's safety on campus.

65 colleges to frame a course on fail, the commission will have to take action," he added.

A report by a 10-member task force of the UGC, in its report in March, had found that most colleges took the issue lightly, with only 57% of the colleges admitting to have a sexual harassment policy.

Pune University is one of the few institutions which has taken steps for a safer campus. It recently started shuttle services gender sensitisation which would later be made compulsory during orientations.

several steps such as starting bus services for women students, setting up nodal agency for handling matters related to sexual harassment on university and college campuses and counselling centres.

is strengthening its women development cell, intensifying surveillance after sunset and encouraging women staff to leave campus before 6pm. for women from the hostel to the university and improved lighting at secluded areas on the campus.

Others such as Karnatak Un i ve rs i t y (Dharwad in Kar nataka) and Burdwan University (West Bengal) have also responded to the commission with ideas on gender sensitivity.

Although University of Mumbai has not responded in writing to the UGC yet, registrar MA Khan said initiatives such as empowered complaint cells, sensitisation workshops and surveillance are being taken up.

"We will write to the UGC soon about the initiatives we have taken in accordance to the Vishakha guidelines, UGC recommendations and our own women cell recommendations. Colleges also have their own methods to ensure safety," said Khan.