

पारंपरिक ईंधन का नया विकल्प कंप्रेसड बायोगैस

सफल रही 15,000 किमी तक सफलतापूर्वक की गई टेस्ट ड्राइव

एजेंसी | नई दिल्ली

भारतीय प्रौद्योगिक संस्थान (आईआईटी), दिल्ली ने हाल ही में नवीन एवं नवीकरणीय ऊर्जा मंत्रालय के सहयोग से कंप्रेसड बायोगैस (सीबीजी) से चलने वाली देश की पहली कार की टेस्ट ड्राइव की है। यह टेस्ट ड्राइव 15,000 किलोमीटर तक सफलतापूर्वक की गई। ऐसे में वाहनों में इस्तेमाल होने वाले पारंपरिक ईंधनों पर निर्भरता कम होने की उम्मीद जताई जा रही है।

गौर हो कि आईआईटी, दिल्ली ने राजस्थान के भीलवाड़ा में एक प्रायोगिक बायोगैस संयंत्र की स्थापना की है। एक बायोगैस अपग्रेडिंग प्रणाली (संयंत्र) संस्थान में ही स्थापित की गई है। इस अपग्रेडिंग व कंप्रेसड करने की प्रक्रिया का इस्तेमाल खाना पकाने और ईंधन के रूप में करने के लिए इसका पेटेंट भी करा लिया है। इस प्रक्रिया के तहत एक दिन में 500 घन मीटर से अधिक बायोगैस का शोधन किया जा सकता है जिसके लिए मवेशियों के 20 टन और सुअर



के 10 टन गोबर, मुर्गी पालन, घर के अपशिष्ट व खाद्य अपशिष्ट की आवश्यकता होगी। संयंत्र एक दिन में 200 किलोग्राम सीबीजी का उत्पादन करने में सक्षम होगा। इस प्रक्रिया का इस्तेमाल एलपीजी के विकल्प के रूप में किया जा सकता है। इसके लिए ग्राहकों को प्रति किलोग्राम 70 रुपये खर्च करने पड़ेंगे।

कार में बदलाव की जरूरत नहीं

परियोजना प्रमुख और आईआईटी के सेंटर आफ रूरल डेवलपमेंट एंड टेक्नोलॉजी (सीआरडीटी) के बायोगैस डेवलपमेंट एंड ट्रेनिंग सेंटर (बीडीटीसी) में प्राध्यापक वीरेंद्र कुमार विजय के मुताबिक टेस्ट ड्राइव के दौरान पाया गया कि कार में कोई बदलाव की जरूरत नहीं है। ऊर्जा बचत और जलवायु परिवर्तन रोकने को आज नवीकरणीय स्रोत जरूरी हैं। इसमें बायोगैस मुख्य भूमिका निभा सकता है।

Manipal University feels the Satya Nadella effect

MANU BALACHANDRAN
New Delhi, 18 March

Wall Street might have been lukewarm to Satya Nadella's appointment as the chief executive officer of Microsoft but in India the development has revived the fortunes of Manipal University, his alma mater. Consider this: the number of students applying to Manipal Institute of Technology has swelled 33 per cent to 40,000 in the ongoing admission season. The number is expected to rise further in the coming days.

While applications to engineering colleges, especially top institutes, typically rise every year, Manipal's case is different. For the past few years, the average number of applications has been about 30,000.

The institute believes Nadella is one of the reasons for the rise in the number of applications this year.

However, the institute is not

planning to raise the number of seats from the existing 1,500, even though it estimates the total applications this year to touch 50,000.

Among other private engineering colleges, Birla Institute of Technology and Science saw an increase in its total applications from 166,000 last year to 176,000 this year - a growth of six per cent.

"It is always good to get visibility and we are happy about the success of our alumni. We are not saying that their elevation has not helped us, but the institute is one of the most recognised in India. This is the dream of any institute," says Vinod V Thomas, director, Manipal Institute of Technology.

The institute, established in 1957, is rated among the top private engineering colleges in India. After Nadella, another Manipal product, Rajeev Suri, is being considered for the CEO of Nokia.

THE ALMA MATER OF CORPORATE BIGGIES



IT-giant Microsoft's Chief Executive Officer Satya Nadella belongs to the 1987 batch of Manipal Institute of Technology



Rajeev Suri, whose name is being considered by Nokia for the CEO post belongs to the 1989 batch of the institute

Applications to the college have shot up by more than 25 per cent in the ongoing admission season

The University is now trying to bring in either of its famed alumni for convocation slated for May.

Nadella belongs to the 1987 batch, while Suri is from the class of 1989.

On Saturday, Manipal University had issued a press release indicating that Suri, head of Nokia's telecom network

equipment division, is likely to become the Finnish group's next CEO following the sale of its handset business to Microsoft.

"I would not like to disregard the Nadella factor. But Manipal has been consistently performing well over the past few years and in today's scenario, I would be surprised if they did not see more interest from the con-

sumers. But at the same time, there are a number of engineering colleges where students can walk in and take admission because of excess supply. Across engineering, over the past decade, interest has been significantly on the rise", says Satya Narayanan R, founder, Career Launcher, which prepares students for competitive exams for

undergraduate courses.

Riding high on its alumni wave, Manipal has also decided to raise its fees for the current year by an additional 10 per cent. Currently, first-year students at the engineering college spend ₹2.46 lakh.

Even as the college has been elated over its famed alumni, the current batch is not sure if the likes of Nadella have done much for the institute. "There have been posters across the college and they are trying to bring Nadella for convocation, but the general sense is he might not turn up. Now, they are also raising the fees," says a second-year student at Manipal Institute of Technology.

"We had agreed on the fee increase much earlier and it has nothing to do with the elevation of Nadella as CEO of Microsoft. The management had decided that a 10 per cent raise in annual fee is acceptable", says Thomas.

Entrepreneurship centre announced at IIT-B campus

HT Education Correspondent

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In a bid to encourage entrepreneurship among their students, IIT-Bombay (IIT-B), with funds from the Desai Sethi Family Foundation (DS Foundation), will establish an entrepreneurship centre on their premises.

The centre, called the Desai Sethi Centre for Entrepreneurship, will include new programmes for education and research, multi-disciplinary courses, research laboratories and international partnerships.

Students who enrol for the programme will receive mentorship from the IIT-B faculty as well as guest faculty from international institutions.

“To start such a centre is part of a natural evolution, as we have always boosted the idea of entrepreneurship on our campus,” says Devang Khakhar, director of IIT-B. “We hope that this will enable IIT-B to become the hub of entrepreneurship in the region, similar to the role played by Stanford University in Silicon Valley, USA.”

The centre will focus on emerging technology areas such as nanotech and biotech. Prototype facilities will allow students to convert their innovative ideas into proofs of concept. The centre will include mentoring, micro-grants and networking with established entrepreneurs and industry leaders, and will be managed by an advisory board comprising faculty members, student representatives, industry professionals and two international experts on entrepreneurship, nominated by the DS Foundation.

“IIT-B has always been a hotbed for innovative thinkers, and this entrepreneurship center will offer a new channel to convert breakthrough ideas into viable business ventures,” says Bharat Desai, an alumnus of IIT-B, co-founder of DS Foundation and chairman of Syntel.

THE CENTRE WILL FOCUS ON EMERGING TECHNOLOGY AREAS SUCH AS NANOTECH AND BIOTECH.



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PHIL BATY

'India is the only BRIC nation not to have a top-ranking university'

Ayesha Banerjee

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The Times Higher Education World Reputation Rankings are subjective and opinion-based and finalised after isolating the 'reputation' indicator used in the Times Higher Education World University Rankings. Select academics (volunteers to are not allowed to take part in the survey) nominate no more than 15 of the best institutions in their narrow field of expertise, based on their experience and knowledge. Phil Baty, editor of the Times Higher Education World Reputation Rankings, feels it is a "rigorous global measure of academic prestige," and talks about why the results have been 'disappointing' where India is concerned

What have been your biggest surprises? Disappointments? The table has actually been very stable over time, giving us confidence in the quality of our annual survey sample.

However, one of the biggest disappointments for us this year has been that India is the only one of the so-called BRIC nations — those large, exciting developing economic powers — which does not have a university in the world top 100: mainland China has two, both in the top 50, Russia and Brazil have one each.

This should be a cause for concern for India. While we only officially rank the world's top 100 institutions, I can reveal that India is some way off the pace. Its

THE TIMES WORLD REPUTATION RANKINGS

The survey is available in 10 languages and is distributed based on United Nations data to ensure that it accurately reflects the global distribution of scholars. Times Higher Education does not allow volunteers to take part in the survey and, importantly, accepts no nominations from institu-

tions or any third party. The survey is carried out by Ipsos MediaCT for Thomson Reuters, data supplier to the Times Higher Education rankings. The 2014 World Reputation Rankings are based on 10,536 responses from 133 countries to the survey distributed in March-May 2013.

most prestigious institution, based on the results of our expert global opinion poll, is the Indian Institute of Science - but it sits roughly around the 200th ranking position and has fallen further since last year. The IITs — Bombay, Delhi and Kanpur — are also top of India's ranking, but again, they fall below the 200th rank and slipping. For a country with India's great intellectual history and huge economic potential, this will be seen as a concern. Strong universities that can compete on a world stage are essential to India's future success.

You have said six London institutes have made it to the top 100 in this year's rankings? Does the city where the institute is located make a difference?

It's hard for us to say — as this is a subjective ranking, based on the opinion of academics, we cannot tell what causes them to nominate particular institutions.

However, it has been suggested that a 'halo effect' in London, for example, might have something to do with it, with success

breeding success.

In simple terms, this means that the excellent reputation that some of these London based institutions already have for research and the best international staff and students, is rubbing off on others — the London brand, if you will, is strengthening.

What makes a Harvard or an MIT better than an Oxford or a Cambridge?

There is no simple, single recipe for success when it comes to improving reputation, but there are several factors that are bound to help. For a start, increased investment ensures that the best faculty is attracted to a university, and allows for the provision of facilities to attract the best students. It also permits the proliferation of world-class research papers — all this will not go unnoticed by the academic community.

■ Phil Baty, editor of the Times Higher Education World Reputation Rankings

How have the Indian institutes fared this time round? Can you give us some details?

The Indian Institutes have actually experienced a collective drop in their positions for reputation according to this year's ranking, meaning that no Indian institution features above 200. Whilst we do not officially rank institutions below 100, we can exclusively reveal that the Indian Institute of Science continues to be the most highly rated universities in India, although it has seen its position drop from around 130th place to just below 200 in the world. IIT, Bombay has also dropped to the 210-220 group, while IIT, Delhi and IIT, Kanpur both now feature just below 250th position in the world.



Do rankings really make a difference to students?

Ayesha Banerjee

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How attractive are university rankings to students? Should they make a choice based purely on how renowned a university or college is? Popular opinion veers towards the right fit. If you find a course of a college that offers a programme that seems to be tailor-made for you, just apply, no matter what the rank.

Rankings could be important as they play a role in a candidate's decision to apply to a school, says Pejay Belland, director of marketing, admission and financial aid at INSEAD, considered one of the top B-schools in the world. "The main rankings in which we participate have typically been the globally recognised ones such as FT, Business Week and the Economist. It's clear that rankings such as QS and Poets & Quants are also becoming increasingly influential and we're very proud, for example, to be ranked number one by QS," she says.

However, advises Belland, once students have identified their top list, they need to do more research by talking to alumni, reaching out to the school and ensuring that the school(s) they choose really fit their needs.

Rankings matter most to students when they first come to seek advice, says Arjun Seth, director of EdBrand (www.edbrand.com), who leads a group of independent college admissions counsellors assisting students in identifying 'right-fit' colleges or universities abroad.

Once made aware of their options and after investing time on online research and talking to current students, the students are open to institutions that they may not have heard of earlier, Seth adds.

The reason why many young people today want to go abroad is that they don't have the high scores needed to get into a college in India. Also, they are attracted to the liberal arts system in the US, which allows them the freedom to explore various courses before selecting their major. Other big draws are the student life on campus with opportunities for pursuing any interest they might have; research and internship opportunities missing in India; small class sizes and the quality of teaching in the smaller colleges; prestige of the big national universities, says Seth.

His advice to them is that the right-fit matters the most. Often rankings lead

the students to a wrong path in their search for right fit colleges. To get to the top rung, a B-school should have a number of accreditations such as AACSB, EQUIS and AMBA, which provide it an internationally recognised seal of quality. A strong alumni network across the world also enforces the reputation of the school globally, Belland adds.

On how INSEAD does it right, Belland says the diversity of the programme both in terms of student body, campus locations, and course content is clearly interesting for international students who learn about business from many different cultural perspectives not only from the faculty but also from their peers. "We're proud to have over 80 different countries across our two intakes, with no dominant culture. This means that wherever a student studies, whether in Asia or in Europe, the experience is a truly international one," she adds.

"I think rankings are one component that students should keep in mind when they decide on the universities, but not the only component. To some students, geography, geographical climate, proximity to home also matters," says Anant Agarwal of edX.

'Clean drains in 3 wks'

New Delhi: The National Green Tribunal has directed the municipal corporations and Central Public Works Department to clean all drains within three weeks from Tuesday. The bench was hearing a plea by environment activist Manoj Misra against covering of storm water drains.

The court had formed a committee headed by IIT professor A K Gosain to look in the environmental impact of covering of drains. The committee told NGT that stormwater drains should not be covered and sewage should not be permitted in them. TNN

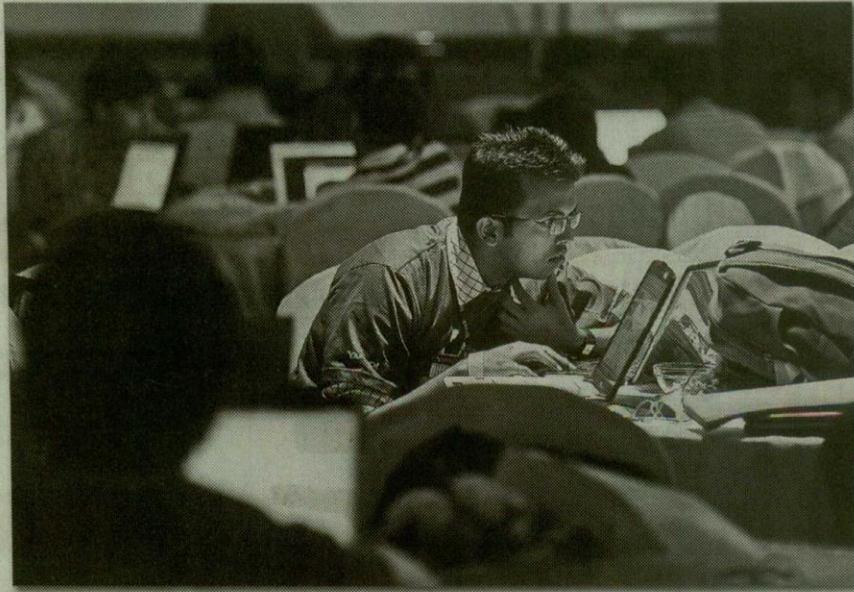
The future of technology in education

PREDICTING what future technology could do in the domain of education is certainly a difficult task. Mainly because the student community is looking at education from different angles, and technology itself is undergoing a massive change. One must realise that the future is clouded, and must be filtered through the ability of teachers — in the past and present — to think about the impact of technologies on student learning and capacity of the teaching community to undergird research in technology. We must remember that technologies are not the content of education; rather they provide a cornucopia of tools for learning.

The technologies we know will now undergo enormous change at an increasingly rapid pace. In 1965, founder of Intel Gordon Moore had predicted the exponential growth of technology. Moore's law postulates that the processing power and speed of any electronic calculating device will double every 18 months. At the same time, the price for that technology will decline approximately 35 per cent a year relative to the power. If this continues to be true, researchers will have an abundance of exciting new tools to use as they study the curriculum and children of the future. Those instruments will not only be more powerful than those we have now, but will cost less, making them affordable for research, schools and families.

Educational research will undergo huge paradigm shifts that we can only imagine. Because we live in a revolutionary time of astonishing advances in technology and a world of constant and

Arun Nigavekar



PROSPECTIVE PURVIEW: In this 2010 file photo, IIT's information technology (IT) professionals work on their laptops during an 'Open Hack Day' programme organised by a global search engine in Bangalore

unrelenting change, new concepts appear before the implications of their predecessors are digested. The critical gear we carry on the research trail into the future is our mindset, mainly because we are not willing to explore and investigate. The fact that we are not ready to accept new ways of doing new things makes the situation much worse.

The literature on change describes levels of initiation and acceptance of innovations. Teaching communities are divided into groups; there are forerunners, innovators, persons who build on what others do, those who try what the earlier groups have found out, and lastly, people who lag behind or who are great critics. As we negotiate the wilderness

trails ahead, accepting and adjusting to paradigm shifts in teaching and learning will become the survival tool for education's future.

The focus of future's research agenda must remain on children and youths, learners and teachers, and how to find strategies to harness the power of the technologies in this endeavour. Educationists must grip the technology revolution quickly. They should design and use new learning experiences; and teach more process skills than ever before. A mindset that encompasses creativity and subsequent innovation will be required if we are to explore and exploit the potential offered by technology. Futurists and educational reformers argue that new educational

institutions are needed for a new age, and that the social power of technology will force people to redefine education — a task that will require a different mindset than educators have had in the past.

The debate between those who espouse standard-based testing founded on the knowledge of the past, and those whose position is firmly in the process-based curriculum for the future, will figure prominently in the redefinition of education. In addition to reading, writing, and arithmetic, children and youths must develop process skills in problem solving and critical thinking, communication, technical reading and writing, applied technical reasoning, information literacy, and new personal skills, new

mindset skills, and new curricula. Crucial questions revolve around new strategies related to making changes, applying what we already know about change, and bringing research findings quickly to practice.

While there is no need to reinvent the wheel (a time-worn but accurate cliché), that is what sometimes happens in educational technology practice. We use good old examples in new application-oriented software applications. Indeed, our technology experts do the same and support softwares that are also based on faulty application of developmental theory.

Today, the education scenario reflects what was true 15 years ago, when technology was combined with the curriculum in a very conservative manner. But remember, technology represents a pervasive set of changing tools for learning and teaching. It is a tidal wave flooding the whole world, touching all aspects related to human life. It will not disappear in the next few years because the youths use interactive softwares that require a range of cognitive, communication, and social processes.

Researchers and educators alike must move away from entrenched positions. One of the most critical needs at present is that of finding new ways to connect learners and teachers with the results, implications, and procedures of educational research.

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(The writer is former chairman of UGC, former vice-chancellor of University of Pune and founder director of NAAC)

NATURE'S CALL

Dust storms in Asia mean healthier monsoon in India

Vanita Srivastava

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NEW DELHI: Analysis of satellite data reveals a link between dust in North Africa and West Asia and stronger monsoons in India. The study shows that dust in the air west of India absorbs sunlight, warming the air and strengthening the winds carrying moisture eastward. This results in more monsoon rainfall about a week later in India.

In a study in *Nature Geoscience* on March 16, a research team led by scientists of IIT Bhubaneswar and researchers at Pacific Northwest National Laboratory in US showed that desert dust plays a hand in intensifying monsoons.

The scientists arrived at the result after analysing data from NASA satellite and using computer climate model simulation for nearly ten years.

SATELLITE RECORDS SHOWED THAT HIGHER AMOUNTS OF SMALL PARTICLES, CALLED AEROSOLS, SEEMED TO BE CONNECTED TO HEAVIER MONSOON

Satellite records showed that higher amounts of small particles called aerosols over North Africa, West Asia, and the Arabian Sea seemed to be connected to heavier monsoon in India around the same time. The team wanted to see if they could verify this and determine how those particles might affect rainfall.

"Aerosols are small particles suspended in the atmosphere which originate from a variety of sources and natural dust is one of them. Our study has

shown that large dust activity / storms over West Asia, North Africa or the Gulf Region, can lead to absorption of solar radiation. This leads to warming of the atmosphere over a vast area, strengthening the moisture transport from Arabian Sea, thereby enhancing the monsoon rainfall over India," said Dr V Vinoj of IIT Bhubaneswar, the lead author of the study.

"We found that dust plays a role in strengthening the monsoon, although this natural phenomenon does not overpower other influencing effects such as temperature differences between land and ocean, land use changes, and the local effect of pollution around India."

"The strength of monsoons has been declining for the last 50 years," said Dr Philip J Rasch, chief scientist for climate at PNNL and a co-author of the paper.