Newspaper Clips

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IIT-M develops artificial blood

Pushpa Narayan | TNN

Chennai: IIT-Madras scientists have blood on their hands— and nobody is complaining. A team of scientists from the department of engineering design has been successful in creating enough red blood cells from stem cells to be used as 'artificial blood' in people who need transfusion.

Having proved their oxygen carrying capacity, the RBCs will now go into 'mass production' before starting human trials in three years, scientists said. The IIT team recently got a funding approval from the Union ministry of science and technology to produce artificial blood on an industrial scale. This blood would be tested on animals before human trials. If the trials prove successful, it will help hospitals overcome shortage of blood and save many accident victims. "We will be able to provide any amount of safe and disease free blood at half the cost of blood sold now," said the study's principal investigator, Dr Soma Guhathakurta, a visiting professor at the department of engineering design IIT-M.

In the past few months, Dr Soma and her team of researchers have made trillions of red blood cells – the carrier of hemoglobin that delivers oxygen to various body tissues and clears up carbon dioxide — on a Petri dish. They cultured adult stem cells derived from cord blood in the presence of some "easily nutritional supplements" for 17 days in the lab.

The stem cells, which are undifferentiated cells with the potential to turn into any cell, developed into red blood cells. The department of biotechnology (DBT) has recently approved a plan from the scientists to develop a bio-reactor for large-scale production of artificial blood. The reactor will be built with support of IIT's biotechnology department. "We will simultaneously process papers for performing animal trials with the artificial blood. It will first be tested on anemic mice. If they are able to accept it and survive, we will take it to the next level," he said. Globally, scientists have been working on artificial blood. While a French team has begun human trials, a UK team is set to follow suit. Dr Soma, a heart surgeon, says their research is different as unlike other cases, they have been able to exclusively produce red blood cells. So far nobody has been able to mass produce only red blood cells.

"Almost all earlier attempts have had at least 40% of white blood cells in the culture. Introducing such artificial blood into a patient with a weak immune system could be tricky. As a surgeon, I would prefer only red blood cells," she said.

The IITians say they did not use expensive enzyme or growth factors. "Despite this, the yield was a billion times high. In a typical RBC blood bag, there are about a trillion (1 followed by 12 zeros) red blood cells. On our Petri dish we had a yield of about a quadrillion (1 followed by 15 zeros) cells from the starting point of about a million stem cells," said Venkatesh Balasubramanian, associate professor in the department of engineering design.

The WHO says a country needs a minimum stock of blood equal to 1% of its population. This means India needs 12 million units of blood, but collects only nine million units annually, though demand has gone up drastically. The cost of blood has gone up in the last few years as blood has to be subjected to several tests to ensure it is disease-free, says Dr K Selvaraju, former state blood transfusion officer. This could be avoided in artificial blood.

It may take at least five years for artificial blood to be available for clinical use as large-scale trials will follow. The research hasn't been published in peer-reviewed science journals owing to the intellectual property concerns of the scientists.

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IIT-M ready for mass production of artificial blood

Scientists Say Human Trials Likely In 3 Yrs

Pushpa Narayan | TNN

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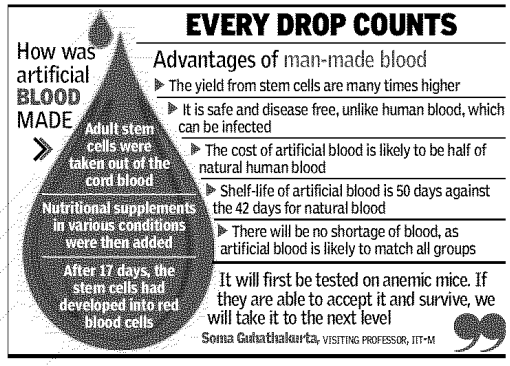


Aaj Samaj ND 13.01.2013 P-1

चेन्नई में औद्योगिक स्तर पर तैयार होगा आर्टीफिशयल ब्लड

IIT में लगेगी खून की फैक्ट्री

चेन्नई। आईआईटी मद्रास ने बड़े पैमाने पर आर्टीफिशयल ब्लड के प्रोडक्शन का फैसला किया है। इंजीनियरिंग डिजाइन साइंटिस्ट्स की टीम ने स्टेम सेल्स की मदद से रेड ब्लड सेल्स बनाने में सफलता हासिल की है। इस तैयार आर्टीफिशयल ब्लड को टेस्ट के बाद जरूरतमंद लोगों को चढ़ाया जाएगा।

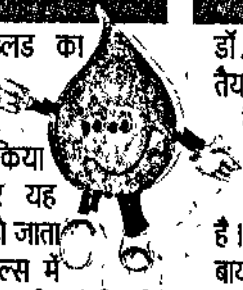
साइंटिस्ट्स के मुताबिक इनकी ऑक्सीजन ले जाने की क्षमता साबित होने के बाद अब रेड ब्लड सेल्स का मास प्रोडक्शन किया जाएगा। आईआईटी टीम की इस पहल के लिए विज्ञान और प्रौद्योगिकी मंत्रालय से फंड भी पास हो गया है, ताकि आर्टीफिशयल ब्लड का बड़े पैमाने पर प्रोडक्शन किया जा सके।

हमारी टीम आधी कीमतों पर सुरक्षित और रोग मुक्त ब्लड मुहैया कराने में सक्षम है।

डॉ. सोमा गुहाठाकुरता
प्रोफेसर, आईआईटी मद्रास

नहीं रहेगी कमी

यहां तैयार ब्लड का इंसानों से पहले जानवरों पर ट्रायल किया जाएगा। अगर यह ट्रायल सफल हो जाता है, तो हॉस्पिटल्स में खून की कमी नहीं रहेगी और एक्सिडेंट पीड़ितों की जान भी बचाई जा सकेगी।



प्रपोजल अप्रूव

डॉ. सोमा और उनकी टीम द्वारा तैयार अरबों आरबीसी हेमोग्लोबिन कैरियर के तौर पर शरीर के अलग-अलग हिस्सों में ऑक्सीजन भेजने में सक्षम है। आईआईटी मद्रास के बायोटेक्नोलॉजी डिपार्टमेंट ने बड़े पैमाने पर आर्टीफिशयल ब्लड प्रोडक्शन के लिए बायो-रिएक्टर के प्रपोजल को अप्रूव कर दिया है।

Dainik Bhaskar ND 13-Jan-13 P-15

आईआईटी मद्रास कृत्रिम खून के औद्योगिक उत्पादन के लिए तैयार

चेन्नई . आईआईटी मद्रास के वैज्ञानिक अब कृत्रिम खून का औद्योगिक स्तर पर उत्पादन करने को पूरी तरह से तैयार हैं। वे अब पर्याप्त मात्रा में लाल रक्त कणिकाओं (आरबीसी) का निर्माण कर सकते हैं। इंजीनियरिंग विभाग की वैज्ञानिक डॉ. सोमा गुहाठकुरता ने बताया कि कृत्रिम आरबीसी से उन लोगों को फायदा होगा, जिन्हें ब्लड ट्रांसफ्यूजन की जरूरत पड़ती है। आरबीसी में भरपूर ऑक्सीजन है। इस आरबीसी का तीन साल बाद इंसानों पर प्रयोग किया जाएगा। औद्योगिक स्तर पर उत्पादन के लिए केंद्रीय विज्ञान एवं तकनीकी मंत्रालय ने फंड दिया था।

ये होगा फायदा

- इंसानों में टेस्टिंग के बाद कृत्रिम खून का औद्योगिक उत्पादन शुरू हो जाएगा।
- अस्पतालों और ब्लड बैंकों में खून की कमी नहीं होगी।
- अभी मिलने वाले खून से आधी कीमत पर मिलेगा।

Veer Arjun ND 13/01/2013 P-2

आईआईटी में सामान्य श्रेणी की फीस बढ़ाकर आखिर क्या चाहती है सरकार?

क्या यह गधे की नियति है कि चूंकि वह बोझा ढो सकता है इसलिए उस पर थोड़ा और बोझा लाद दिया जाए? सरकार आईआईटी की फीस बढ़ाकर तो कम से कम यही साबित करना चाह रही है। आईआईटी में 2007 तक सालाना फीस 25,000 रुपये थी। 2008 में बढ़कर यह 50,000 हो गयी और अब यह बढ़कर 90,000 हो गयी है। मानव संस्थाधन विकासमंत्री एलएम पल्लमराजू की अध्यक्षता में आईआईटी काउंसिल की बैठक में बीटेक कोर्स के लिए फीस बढ़ाने का फैसला किया गया। लेकिन इस फैसले में जो खराब बात यह है, वह यह है कि फीस की बढ़ोत्तरी सिर्फ सामान्य वर्ग के छात्रों के लिए की गयी है। फीस बढ़ाने की मजबूरी यह बतायी गयी है कि आईआईटी के पास संसाधनों की कमी है जिस कारण वह देश के प्रबंधन सस्थानों की तरह अपने खर्च निकाल पाने में असमर्थ है।

यह एक गैर जरूरी और भटकाने वाला बहाना है। इस बहाने के संदर्भ में यह बहाना भी बेकार का है कि भारत में पहले से ही पढ़ाई बहुत सस्ती है। सवाल यह है कि क्या भारत में आम लोगों या जिसे मध्यम या निम्न मध्यम वर्ग की श्रेणी में रखते है, उन लोगों की आय इतनी है कि वे पढ़ाई में उतना पैसा खर्च कर सकेंफ जितना दूसरे देशों के छात्रा करते है। अगर ऐसा नहीं है तो यह तर्क या यह बहाना क्यों दिया जाता है कि भारत में पहले से ही शिक्षा सस्ती है? सरकार के गैर योजनागत खर्च 72,000 करोड़ से ज्यादा के है। क्या उन खर्चों में 0.5 फीसदी की कटौती नहीं की जा सकती जिससे कम से कम देश के भविष्य को बिना और ज्यादा आर्थिक बोझ डाले शिक्षा दी जा सके? सरकार के इस मायनें में तर्क बड़े बेहूदा है।

मानव संसाधन विकास मंत्रालय का कहना है आईआईटी आत्मनिर्भर नहीं है जिस कारण फीस बढ़ाना मजबूरी है। सवाल है क्या आईआईटी की गाइडलाइन में उसे आत्मनिर्भर बनाने का प्रावधान है? निश्चित रूप से दुनिया के तमाम बेहतरीन प्रौद्योगिकी संस्थान, प्रबधन संस्थान और विश्वविद्यालय तक अपना खर्च खुद अपनी मेहनत से निकलते है। लेकिन हिदुस्तान में तो इस तरह के माहौल को प्रोत्साहित ही नहीं किया गया। हमारे यहां से निजी स्तर पर मोलभाव करके उनके लिए उपयोगी तकनीकी उपलब्धा करा सके? एक नहीं दर्जनों पेंच निकल आएगे। इसलिए यह कहना अपने आपमें बड़ा विरोधाभासी तर्क है कि आईआईटी की मजबूरी है कि वह फीस बढ़ाए।

स्वायतत्ता की तमाम दुहाईयों के बावजूद समूची शैक्षणिक व्यवस्था चाहे वह प्राथमिक स्तर की हो, उच्च स्तर की हो, तकनीकी हो या प्रबंधकीय हो। हर जगह सरकार और नौकरशाही का शिकंजा है। ऐसे में आईआईटी अपने खर्च निकालने के लिए कोई उद्यम करे भी तो कैसे कर सकती है। क्या देश में ऐसा माहौल है कि आईआईटी औद्योगिक संस्थानों फीस बढ़ाना भी समझ में आता है-लेकिन उसमें कोई तार्किकता तो हो। क्या किसी सामान्य श्रेणी के छात्रा की फीस में इसलिए बढ़ोत्तरी कर दी जाए क्योंकि वह फीस दे सकता है? बड़ी तादाद में सामान्य श्रेणी के छात्र गांव से आते है। मां-बाप सामान्य किसान होते है और किसी तरह से अपने बच्चों को पढ़ाने के लिए अपनी जिंदगी को दांव पर लगाए होते है। सैकड़ों नहीं, हजारों नहीं बल्कि इससे भी ज्यादा तादाद में ऐसे छात्रा है जिनके मां-बाप बच्चों को पढ़ाने के लिए अपनी जमीन-जायदाद तक गिरवी रख देते है या बेच देते है। क्या उनका दुर्भाग्य सिर्फ इतना ही कि वे सामाजिक ब्यौरे के हिसाब से उच्च जातियों मे पैदा हुए है? उच्च जाति में पैदा होना अगर अपराध है, अगर अभिशाप है तो याद रखें यह अभिशाप उन छात्रों ने नहीं किया जिनका नाता उच्च जातियां से है। फिर उन्हें इसकी सजा क्यों दी जाए? यह तर्क अपने आपमें घोर ज्यादती की मानसिकता दर्शाता है कि तमाम दूसरी श्रेणियों के छात्रों को ट्यूशन फीस से लेकर खाने पीने और आवास शुल्क तक में छूट दी जाए या रियायत दी जाए और सवर्ण या सामान्य श्रेणी के छात्रों को हर जगह सिर्फ इसलिए दबाया जाए क्योंकि उनका नाता उफंची जातियों से है।

सामाजिक बराबरी और सामाजिक न्याय की मांग करने वालों को जल्द यह बात समझ मे आएगी कि यह उलट ब्राह्मणवाद कही देश में नए तनाव और आक्रोश का जरिया न बन जाए। आईआईटी में या किसी भी शैक्षणिक संस्थान में वक्त आ गया है कि छूट आर्थिक आधार पर दी जानी चाहिए। चाहे वह किसी भी जाति, किसी भी वर्ग से, किसी भी धर्म से रिश्ता रखने वाला छात्रा हो। सरकार और वो तमाम बुद्धिजीवी भले इस बात पर खुश हों किस पिछड़े वर्गों, दलितों और अल्पसंख्यकों को वह आर्थिक रियायतें देकर उन्हें सामाजिक रूप से उन्नत करने की दिशा में भूमिका निभाते है। मगर असलियत यह है कि इससे दोनो वर्गों के बीच एक अनदेखा आक्रोश पैदा होता है। जिस वर्ग को इसका लाभ मिल रहा होता है, उन्हें लगता है कि वह लाभ उनका हक है और जिन्हें लाभ नहीं मिल रहा होता, उन्हें लगता है कि उनके हक पर डाका डाला जा रहा है। इस तरह के विरोधाभास से बचने का सही तरीका आर्थिक कसौटी ही है। हर उस छात्रा को आर्थिक रियायत मिलनी चाहिए जो निर्धन परिवार से ताल्लुक रखता हो न कि सुविधाओं के लिए जाति और धर्म के आधार पर फैसला हो।

आईआईटी के फीस बढ़ाने के फैसले को देश के तमाम नौकरशाह मध्यम वर्ग के खुशहाल बुद्धिजीवी और स्थितियों को सिर्फ तथ्य के आधार पर देखने वाले सही ठहराते है। लेकिन यह इतना श्याम श्वेत मामला नहीं है। यह मामला निश्चित रूप से तमाम प्रबंधकीय कौशल, सरकार के उत्तरदायित्व और वेलफेयर स्टेट के फर्जों से जुड़ा मामला भी है। भारत इस समय दुनिया के उन राष्ट्रों की कतार में सबसे आगे है जहां मानव संसाधन के विकास की सर्वाधिक उर्वर परिस्थितियां है। आज हिंदुस्तान हर साल 20 अरब डॉलर से ज्यादा उन्नत मानव संसाधन की बदौलत ही हासिल कर रहा है। यह वह कमाई है जो हमारे प्रोफेशनल्स दूसरे देशों को अपनी ज्ञान सम्बंधी सेवाएं देकर हासिल कर रहे है। इसमें हमारे तमाम प्रोफेशन शैक्षणिक संस्थानों की अहम भूमिका है। इसलिए सरकार को इन संस्थानों का विस्तार करना चाहिए, इनके बजट में बढ़ोत्तरी करनी चाहिए और देश के ज्यादा से ज्यादा नौजवानों को आकर्षित करने की कोशिश करनी चाहिए। लेकिन हो उलटा रहा है। जिस तरह से सामान्य श्रेणी के छात्रों को पिछले चार सालों के अंदर दो बार तकरीबन 100 फीसदी फीस बढ़ाकर सांसत में डाला गया है, उससे लगता है सरकार इन्हें प्रोत्साहित नहीं, हतोत्साहित करना चाहती है।

लोकमित्र

Hindustan Times ND 13-Jan-13
P-11

School, college students to get 5 million tablets

FREEBIES Govt in final stages of acquiring the low-cost devices for ₹700 crore

Manoj Gairola
letters@hindustantimes.com

NEW DELHI: Here's some good news for school and college students. The government is planning to buy five million low-cost tablets that it will distribute to students of government-run schools and colleges across the country.

The human resource development ministry has prepared the proposal, which is expected to be approved by the Union cabinet soon.

"We expect the tendering process to be completed by March. All the tablets will have to be supplied by the end of 2013," said an official of the communications & IT ministry, which will formulate the tender conditions, approve the specs and test the devices.

The exact specs will be finalised by the end of the month.

The UPA hopes to woo young voters and their families with this scheme before the 2014 Lok Sabha elections.

Called "low cost access device", these tablets will come preloaded with educational content and related apps that are being developed by the IITs. Students will be free to load other apps of their choice once they get the devices.

In order to ensure that the tablets are delivered within the prescribed time period, the government will select multiple vendors to execute this order. It has earmarked about ₹700 crore for the project. This implies that each tablet will cost ₹1,400. The exact price, however, will be subject to negotiation with the vendors.

The tablets will be acquired on a contract basis, depending on their cost-effectiveness and quality. FILE PHOTO

"The total budget for procuring devices may vary depending on the price quoted by the companies," said the official.

In 2011, the government floated a tender for supply of 1,00,000 Aakash tablets. Canada-based DataWind won the bids by quoting a price of ₹2,263. But the tablets did not meet the required specifications.

The upgraded Aakash 2 tablets will also be eligible to bid for this contract.

Financial Express ND 13/01/2013

P-1

New year, new science

From stem-cell trials to the impacts of climate change, let's take a look into the key findings and events that may emerge in 2013

Richard Van Noorden

STEM-CELL TRIALS

Landmark results from an early-stage clinical trial using human embryonic stem cells (hESCs) should appear this year. Biotechnology firm Advanced Cell Technology of Santa Monica, California, is injecting hESC-derived retinal cells into the eyes of around three dozen people with two forms of non-treatable degenerative blindness. It is the only company currently testing hESC therapies with US Food and Drug Administration (FDA) approval, and it hopes that the agency will give it the green light to test stem cells induced from adult cells in patients this year.

DIAGNOSTICS CONTROVERSY

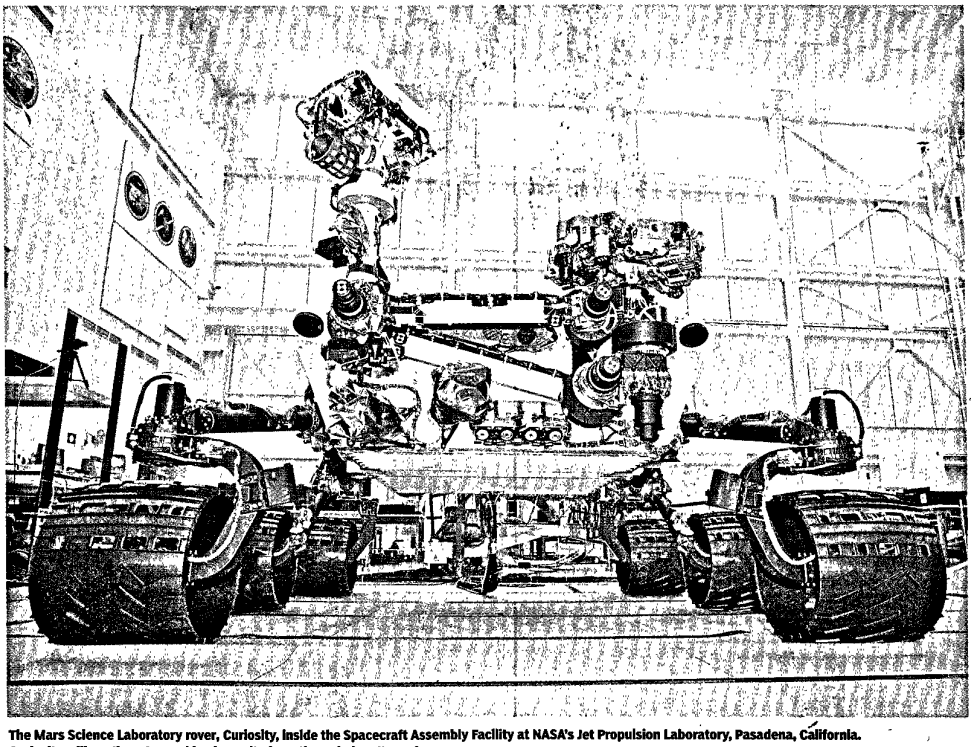
The American Psychiatric Association will publish the fifth edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-5) in May, the first major update in 19 years to the standard reference guide for diagnosing mental illnesses. It will lead to controversial changes in clinical and research protocols, including restructured diagnoses for autism and major depression, although as a "living document", the DSM-5 will see further revisions.

CLIMATE ASSESSMENT

Climate scientists have spent years preparing the fifth assessment report from the Intergovernmental Panel on Climate Change, its first update since 2007. Part of that report is due to appear in September: the conclusions of Working Group I, which summarises the basic science of global warming. In the US, the Global Change Research Programme's second assessment will detail the national impacts of climate change.

THE BIG BANG'S GLOW

One of the stunning images of the year could be provided by the comet ISON, which will pass close to the sun in November and could outshine the full moon as its surface boils away into space. Just as spectacular will be the Planck space telescope's map of the faint microwave afterglow from the Big Bang, which could even reveal ripples from gravitational waves generated during an initial period of cosmic "inflation". In other missions, NASA's LADEE spacecraft will orbit the moon to study lunar dust; its MAVEN mission will launch to explore Mars' upper atmosphere; and the Curiosity rover will continue to send back results from the red planet's surface. Back on earth, the massive 66-dish Atacama Large Millimeter/submillimeter Array in Chile will be completed.



The Mars Science Laboratory rover, Curiosity, inside the Spacecraft Assembly Facility at NASA's Jet Propulsion Laboratory, Pasadena, California. Curiosity will continue to send back results from the red planet's surface

DIET, MICROBES & CANCER

Scientists increasingly suspect that our intestinal zoo of microbes might be the key link between diet and diseases such as cancer. A study last year connected a higher-than-normal proportion of the bacterium Escherichia coli to colorectal cancer in mice with inflammatory bowel disease. More studies this year will unpick the effect of diets on the gut microbiome and their implications for disease risk. Meanwhile, GlaxoSmithKline should find out whether the FDA approves its melanoma treatment trametinib, potentially the first in a new class of compounds that inhibit a kinase signalling pathway regulating cell growth.

ONE OF THE STUNNING IMAGES OF THE YEAR COULD BE PROVIDED BY THE COMET ISON, WHICH WILL PASS CLOSE TO THE SUN IN NOVEMBER

PARTICLE SEEKING

After contradictory sightings of dark-matter particles from various underground experiments, the Large Underground Xenon detector at the Sanford Underground Research Facility in Lead, South Dakota, may this year boost or rule out some of the claims. The king of particle hunters—the Large Hadron Collider at CERN near Geneva—will shut down until 2015 for an upgrade to enable more powerful collisions, but physicists will continue to pore over the data collected so far for hints of supersymmetry.

THE LOWER DEPTHS

Data will start flowing from the first completed segments of a giant under-water surveillance network, the US Ocean Observatories Initiative, which will cost $386 million to build and will be completed by March 2015. It will monitor everything from undersea earthquakes and the effects of climate change on ocean circulation, to shifting ecosystems and ocean chemistry—all the way from the air to the seabed at seven sites around the globe. Meanwhile, British, American and Russian teams will be hoping to find out what kind of life, if any, exists in three deep, subglacial Antarctic lakes.

MAGICAL MATERIALS

Samarium hexaboride might be the next star of materials science, following hints last year that it is a topological insulator—conducting electricity on its surface, but behaving as an insulator inside. Graphene will remain a major celebrity, so expect a flood of reports about copycat materials such as boron nitride, tantalum disulphide and other two-dimensional sheets that can be stacked or sandwiched in precise layers.

GENES IN COURT

The US Supreme Court could decide a number of cases with science implications in 2013. It will re-examine whether genes are patentable as part of a three-year lawsuit considering the validity of patents held by Myriad Genetics in Salt Lake City, Utah. It may also rule on a challenge to seed firm Monsanto, based in St Louis, from a farmer who wants to plant seeds gathered from previously grown genetically-modified crops, rather than buying new stock from the company. And the court will consider whether brand-name pharmaceutical companies can pay generic makers to delay their launch of generic drugs.

SAMARIUM HEXABORIDE MIGHT BE THE NEXT STAR OF MATERIALS SCIENCE. IT CONDUCTS ELECTRICITY ON ITS SURFACE, BUT BEHAVES AS AN INSULATOR INSIDE

PAPER MONEY

A UK policy that requires publicly-funded researchers to make their results freely available will take effect from April. Other countries could soon follow—a Global Research Council meeting is set to discuss the matter in May. But many scientists will be worrying more about budgets, with the US considering drastic spending cuts that could take effect early this year, and Europe set to continue debating the proposed 80 billion euros ($104 billion) in funding for its 2014-20 research programme, Horizon 2020.

NYT Syndicate

January 14

Indian Express ND 14/01/2013

P-6

IITs launch war on student suicides

Task force report in; resolve to improve counselling to check suicidal tendency

ANUBHUTI VISHNOI
NEW DELHI, JANUARY 13

IITS decision to hike tuition fee by 80 per cent got the most attention but the meeting of the IIT Council held last week also addressed a grave issue: all IITs agreed to put in extra effort to check suicide and suicidal tendencies among their students.

The council accepted the report of the task force constituted to prevent suicides and promote wellness in the Centrally Funded Technical Institutions — such as IITs, NITs — and resolved to improve counselling and hand-holding of new students. They have every reason to: the report, accessed by *The Indian Express*, reveals that in such institutions, 18 students attempted and 12 committed suicide in the past two years. Seven of the 12 belonged to SC, ST or OBC.

The report notes that the reasons for the suicides were quite complex, not uni-dimensional; they ranged from relationship issues, personal problems, mental stress, family problems, and in one case, multiple factors such as poor results, personal issues and inability to cope with teaching methods.

Most suicides, the report adds, were not linked to a particular period such as examinations, results, thesis submission, soon after admission or at the time of placement.

It, however, notes that a new IIT student is particularly vulnerable to suicidal thoughts: most new entrants adjust to the pressures of IIT within the first 3 to 6 months but there is a fraction of students that gets stuck in a vicious loop of missing classes, poor performance, inability to share, loneliness, stress, depression and relationship issues. A very small percentage may also have a history of illness and may resort to self-harm when they experience the first setbacks in academic or personal relationships.

The report suggests a four-level action plan to check suicides at CFTIs. One, if a student attempts suicide, he should immediately be provided medical help and his confidentiality, privacy and dignity guarded.

Two, the student should be counselled daily for at least a week and watched, with his consent, by peers and volunteers. If necessary, he should be shifted out of his hostel room and put under the supervision of a parent or guardian. His close friends and peers who may be traumatised by the incident should also be counselled.

New students should be taken special care of; the first fortnight of the session should focus on building their social, communication and interpersonal skills to encourage self-esteem, emotion management, problem solving and time management skills besides warning against substance abuse.

Three, faculty should be alert to stress symptoms in students and conscious of the impact of their words and actions on their self-esteem. Confidential counselling should be made available to the faculty, staff and their dependents for any personal and professional conflicts.

Four, each IIT must clear rules on failure, termination, appeal, reinstatement and attendance of students as well as cut-off for grades. The task force also recommends a sophisticated counseling structure at every institute.

LIVES CUT SHORT

5.7%
or 7,696 of all suicides are by students

74%
students who commit suicide are 15-29 years old

3%
suicides are by graduates and post graduates

THE REASON

2,000
after failing exams

4,586
due to love affairs

Data: National Crime Records Bureau, 2011

Financial Express ND 14/01/2013 P-7

National Interest

Proud to pay

Power to rail, LPG to IIT, why the pragmatic new India doesn't want freebies

SHEKHAR GUPTA

ALL of Prime Minister Manmohan Singh's critics are unanimous that irrespective of how good or bad the times, he looks the same: worried. I can tell you, however, that one of his biggest worries has remained as it was 15 years ago. Which is when I had a conversation with him on board a morning Indian Airlines flight from Delhi to Bombay. The NDA had just come to power and was making some reformist promises. But my interlocutor on that flight was speaking both as an economist and a politician. He was so worried, he said, because he feared that India's growth, even economic stability, was under threat going ahead because of its people's disinclination to pay real prices for goods and services provided by the government, and the politicians' inability, and lack of courage, to persuade them to do so. He mentioned fuel, foodgrain, rail and bus fares, electricity and water. If we look back carefully at what has been accomplished over the past 12 months or so, he might wish to revisit that view now, and happily so. It is still work in progress, but there is evidence now that our people are changing. And, as almost invariably happens in democracies, the political class has failed to foresee this welcome change, or embrace it.

The increase in rail fares last week went through almost bloodlessly. So bloodlessly, in fact, that you worry if this is some deceptive calm before all hell breaks loose this week. But it won't. As it didn't when diesel prices were hiked substantially and a rude LPG cylinder cap introduced in September last year. Streets did not go aflame, and the departure of Mamata Banerjee from the UPA was an inevitable moment of liberation. The threatened Bharat Bandh, in spite of the Left and the BJP coming together with Mulayam, Mamata and Karunanidhi, was a flop like any other protest against fuel price hikes before this. The only places where it was visible were West Bengal and Kerala. But you can bring those states to a standstill even if you call for a bandh because Brazil did not win the World Cup. These states are ever so bandh-ready. I saw Kochi come to a pause as news came in that Saddam Hussein had been hanged and several parties had given bandh calls. I was, at that precise moment, floating as a tourist in Mattancherry, the heritage quarter of Kochi harbour. And was witness to the fact that the first people to pull the shutters down and join the bandh were the shopkeepers on the ancient Jew Street.

The increase in rail fares last week went through almost bloodlessly. So bloodlessly, in fact, that you worry if this is some deceptive calm before all hell breaks loose this week. But it won't. As it didn't when diesel prices were hiked substantially and a rude LPG cylinder cap introduced in September last year. Streets did not go aflame. The threatened Bharat Bandh was a flop like any other protest against fuel price hikes before this. The only places where it was visible were West Bengal and Kerala. But you can bring those states to a standstill even if you call for a bandh because Brazil did not win the World Cup.

CONSIDER some other recent user price increases. There have been heavy increases in bus fares in Tamil Nadu, Punjab, Karnataka and even Kerala. While all of us, particularly the pink papers, fret over the health of the power industry and state utilities, do you know how many states and union territories have hiked power tariffs in the past 12 months? It is 31. The average of this increase is a robust 16 per cent. Tamil Nadu has instituted the highest increase (37 per cent), and it was the state's first hike after nine years. And even the formidable DMK was not able to exploit it to rebuild its broken politics, it could only secure a tiny rollback. Kerala followed with a 30 per cent hike, Mumbai 28 per cent, Delhi 20, UP 17.6, Maharashtra 16.5, and Punjab and Himachal 12 per cent. Two facts need to be underlined here: Delhi saw some protests, mostly not from the poor or the middle classes, but the Resident Welfare Associations (RWAs) of the pampered South Delhi colonies. No wonder the Kejriwal bijli-jodo campaign ended so abruptly: there is no sympathy for power thieves any more, as there is none for corrupt netas. Second, Himachal, which announced one of the lowest increases, of 12 per cent, rolled it back indirectly by announcing a subsidy cushion after some protests in the election year. But why is tiny Himachal so important?

The only people protesting, in the cocktail circuit and on TV channels, are the rich. For them, subsidies are an entitlement, and not a necessity. Go to the petroleum ministry website that now has a sensational list naming each individual subscriber and how many subsidised LPG cylinders they have been using so far. Look at the centurions: they are all members of your political and financial A-lists. There has never been any voluntary movement on the part of the really rich, or powerful, like our ministers, MPs, even judges of higher courts, to say they willingly give up even the six cheap LPG cylinders as an undeserved subsidy.

The government panicked and subsidised some of that increase, hoping it would make the voter happy. Just as, following the same, stale, old-school politics, it presumed that the Centre's LPG cap, "suicidal" so close to the Himachal elections, would win it a second term. The BJP built a campaign around LPG and rising prices, and threw in an imaginative freebie as well: free induction heaters. And what was the result? It got thrashed. That is why tiny Himachal is important. Because it tells you Indian voters are moving on. And there are real economic and social reasons behind this welcome change. Himachal, for example, has a very high percentage of government employees, and now, with the rise of some industrial areas (Baddi, in particular) in the plains and foothills, also a growing population employed in the organised sector. These can be described as VDA-Indians. VDA stands, obviously, for Variable Dearness Allowance, which rises at quick, often quarterly, intervals with the price index, giving this growing population an inflation hedge.

THIS, the increase in the number of Indians employed in the organised sector, is the reason why these price hikes have been absorbed. Last week, the IITs increased their tuition fee by 80 per cent. Did you see thousands of parents march to Rajpath? Our airlines have fully established the principle of fuel surcharge, thereby protecting themselves from wild increases in crude prices. The only complaints you have seen were from some in the media. Planes are full.

Welcome, then, to this pragmatic new India. Where some in the middle classes are VDA-hedged, and others have seen their incomes grow so fast they can pay more for better services rather than insist on sarkari freebies. Of course, the poor are in a different category altogether. But the sad truth is, most of the poor do not benefit from these subsidised prices. Our subsidies mainly go to the middle classes, and the rich. For the poor, the basics, foodgrain, fuel, and even power tariffs, are protected at the low levels of consumption they can afford. The only people protesting, in the cocktail circuit and on TV channels, are the rich. For them, subsidies are an entitlement and a status symbol, and not a necessity. Go to the petroleum ministry website that now has a truly sensational list naming each individual subscriber and how many subsidised LPG cylinders they have been using so far. Look at the centurions: they are all members of your political and financial A-lists. There has never been any voluntary movement, any offer, and mobilisation, on the part of the really rich, or powerful, like our ministers, MPs, even judges of higher courts, to say they willingly give up even the six cheap LPG cylinders as an undeserved subsidy. But what do you expect from elites who will be outraged if you just removed that obscenity of a signboard at every highway toll plaza listing those exempted from paying a piffling toll? How you wish that one day, a Chief Justice of India will take the lead and voluntarily give up at least that one privilege. He wouldn't even need a PIL to pronounce on that.

But we are digressing. The basic point is, the Indian voter is changing for the better. She wants to be delivered better services and goods and with greater dignity, and won't mind paying more for them. It is for the leaders now to understand this welcome change and build a new politics around it, fuelled by aspiration, growth and performance, not mere freebies as in the past.

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More undergrad seats to reduce IIT pressure within 5 years

The central government has asked the existing IITs to undertake a significant expansion of the number of seats.

By **Ritika Chopra** in New Delhi

THE CUT-THROAT competition for admission to the Indian Institutes of Technology (IITs) is set to ease a little over the next five years.

With the 12th five year plan not promising any new Indian Institutes of Technology (IITs), the government at the Centre has asked the existing IITs to undertake a significant expansion of the number of seats.

In other words, apart from the proposed increase in the enrolment of Ph.D scholars by 2020, the IITs are also set to increase their seats significantly for undergraduate programmes over the next five years.

"The 12th plan does not have any new IITs, but the expansion cannot stop. The Kakodkar Committee has recommended that each of the IITs, which, currently, have about 4,000 to 5,000 students, should aim for having student strength of about 20,000 by the year 2020. We would like the increase to be divided equally between undergraduate and postgraduate seats," a senior official in the ministry of human resource development (MHRD), said.

Although, this wasn't discussed at the last meeting of the IIT Council, according to sources, the IITs have been asked to prepare their expansion plans for the 12th plan period and submit it to the HRD ministry. "The government will not shy away from its responsibility of providing adequate funds to ensure that the infrastructure facilities keep up with the expansion in seats. So as incentive, the government will start funding the IITs on per students basis," added the official.

Apart from the proposed increase in the enrolment of Ph.D scholars, IITs will increase their seats for UG programmes

Gautam Barua, director IIT Guwahati, confirmed the expansion plans but said that the increase in seats at IIT will be on a different scale. "In fact the increase in seats at the new IITs will be much more than their older counterparts," he said.

For instance, IIT Guwahati, in its plans sent to ministry, has proposed that its seats should go up from 4,500 to 6,000 in the next five years. "Currently, 48 per cent of our seats are for postgraduate programmes and 52 per cent for undergraduate programmes. We would want to increase 1,500 seats and divide them more or less equally between UG and PG programmes," Barua added.

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कारोबारी शिक्षा

शुल्क वृद्धि से नहीं मिलेगा सहारा

आईआईटी के परिचालन खर्च में शिक्षण शुल्क की अहम भूमिका

कल्पना पाठक और
एम सरस्वती

भारतीय प्रौद्योगिकी संस्थानों (आईआईटी) ने अपने चार वर्षीय पाठ्यक्रमों का शिक्षण शुल्क 80 फीसदी तक बढ़ाकर सालाना 90,000 रुपये कर दिया है, जो अभी तक 50,000 रुपये था। मगर इससे इन संस्थानों की वित्तीय हालत दुरुस्त करने में मामूली मदद मिलेगी।

आईआईटी संस्थानों का कहना है कि उनके परिचालन खर्च में शिक्षण शुल्क का हिस्सा छोटा सा ही है। इनका 80 फीसदी खर्च मानव संसाधन विकास मंत्रालय (एमएचआरडी) से मिलने वाले अनुदान के माध्यम से किया जाता है।

आईआईटी-बंबई के निदेशक देवांग खखर ने कहा, 'आईआईटी में शिक्षा बेहद ऊंची सब्सिडी पर दी जाती है। सिर्फ परिचालन लागत की बात करें तो हम सालाना प्रत्येक छात्र पर लगभग 2.5 लाख रुपये खर्च करते हैं। हम छात्रों के शुल्क से पूरे खर्च (पूंजी और परिचालन लागत दोनों) का बोझ उठाने की उम्मीद नहीं कर सकते हैं।'

आईआईटी-बंबई का सालाना खर्च 250 करोड़ रुपये है। संस्थान को एमएचआरडी से लगभग 200 करोड़ रुपये का अनुदान मिलता है और बाकी छात्रों से वसूले गए शिक्षण शुल्क व अन्य शुल्कों से अर्जित किए जाते हैं। आईआईटी-बंबई के बिजली और अन्य बिलों के साथ ही वेतन व कार्यबल की लागत हर साल लगभग 10 फीसदी तक बढ़ जाती है। आईआईटी संस्थानों का कहना है कि वेतन और कार्यबल की लागत स्थिर रखने के साथ ही उन्हें अन्य खर्चों के लिए भी बजट की व्यवस्था करनी पड़ती है। बाकी बची रकम को कैंपस के विकास से संबंधित गतिविधियों में लगाया जाता है।

कैंपस की लागत

- आईआईटी संस्थानों का 80 फीसदी खर्च मानव संसाधन मंत्रालय से मिले अनुदानों से होता है पूरा
- एससी/एसटी श्रेणी के लिए आरक्षित 22 फीसदी सीटों पर दाखिला लेने वालों का शुल्क पूरी तरह माफ होता है
- 25 फीसदी छात्र, जिनके अभिभावकों की आय सालाना 4.5 लाख रुपये से कम है, भी शुल्क में छूट के हकदार

आईआईटी में एससी/एसटी श्रेणी के 22 फीसदी छात्रों को शुल्क से पूरी तरह छूट दी जाती है। इसके साथ ही 25 फीसदी छात्रों जिन के माता-पिता की सालाना आमदनी 4.5 लाख रुपये से कम है, भी शुल्क में छूट के हकदार होते हैं। बाकी छात्रों को पूरा शुल्क देना पड़ता है।

आईआईटी गुवाहाटी के निदेशक गौतम बरुआ ने कहा, 'शुल्क को बढ़ाया जाना था। हालांकि शुल्क हर साल नहीं बढ़ाया जा सकता, इसलिए सरकार हमें भुगतान करती है।' आईआईटी गुवाहाटी का सालाना खर्च 110 करोड़ रुपये है और इसका लगभग 15 फीसदी (15 से 16 करोड़ रुपये) शुल्क से आता है। बरुआ ने कहा कि इस बढ़ोतरी से यह योगदान 17 फीसदी तक पहुंच जाएगा।

इसके विपरीत देश के शीर्ष 20 निजी इंजीनियरिंग संस्थान प्रत्येक छात्र से सालाना 40,000 रुपये से 1 लाख रुपये वसूलते हैं। लगभग हर साल शुल्क बढ़ाने वाले इन संस्थानों का कहना है कि उन्हें भी इस साल ऐसा ही कुछ करना पड़ सकता है।

बिट्स पिलानी अगले शैक्षणिक सत्र के लिए अपने स्नातक इंजीनियरिंग पाठ्यक्रमों के शुल्क बढ़ाने की योजना बना रहा है, जो फिलहाल सालाना 1.4 लाख रुपये से 1.7 लाख रुपये के बीच है। संस्थान का कहना है कि उसे महंगाई के असर को कम करने के लिए शुल्क में बढ़ोतरी करनी है। 2011 में संस्थान का शुल्क 1.25 लाख रुपये था। वह उद्योग से मिली रकम के माध्यम से इस पाठ्यक्रम पर शुल्क में छूट देता है।

दूसरी तरफ आईआईटी का शुल्क हमेशा से कम रहा है। जब आईआईटी ने 1953 में परिचालन शुरू किया था, वह अपने प्रमुख इंजीनियरिंग स्नातक कार्यक्रम के लिए सालाना 500 रुपये वसूला करते थे। इससे पहले आईआईटी दो बार 1998 और 2008 में शुल्क में संशोधन कर चुका है। 2008 में आईआईटी ने अपने स्नातक पाठ्यक्रमों का शुल्क दोगुना करके 25,000 रुपये से 50,000 रुपये कर दिया था।

आईआईटी दिल्ली के निदेशक आर के शेवगांवकर ने कहा, 'आईआईटी का शुल्क हमेशा से कम रहा है। ये अच्छी फैकल्टी और शिक्षा के साथ अग्रणी संस्थान हैं, इसलिए इनका शुल्क बढ़ाया जाना चाहिए।' आईआईटी दिल्ली का सालाना खर्च लगभग 160 करोड़ रुपये है। इसका लगभग 8 से 10 फीसदी छात्रों के शुल्क से आता है और बाकी की भरपाई एमएचआरडी से मिले अनुदान के माध्यम से की जाती है। हालांकि सभी निदेशक शुल्क बढ़ाए जाने से सहमत नहीं हैं। नाम जाहिर नहीं करने के अनुरोध के साथ एक नए आईआईटी के निदेशक ने कहा, 'आईआईटी के छात्रों की पृष्ठभूमि आर्थिक रूप से काफी कमजोर होती है। सामान्य मजदूर, राजमिस्त्री और टैक्सी चालकों के बच्चे हमारे पास आते हैं। शुल्क में यह बढ़ोतरी उनके ऊपर बड़ा बोझ होगी। मैं इससे सहमत नहीं हूं।'