Newspaper Clips
October 13, 2010

Hindustan Times, ND 13-Oct-10 p-7

Post-graduate science students get to experiment at IUAC centre

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NEW DELHI: There seems to be some ray of hope for students pursuing MTech in Nuclear Science and Technology and MSc Physics in Delhi University who have been unable to conduct experiments since the Cobalt 60 leakage incident earlier this year.

The two departments have approached the University Grants Commission (UGC) recognised Inter University Accelerator Centre (IUAC) located at Vasant Vihar to let the students conduct their experiments there.

The Atomic Energy Regulatory Board (AERB) on September 15 had withdrawn permission given to Delhi University (DU) to use any radioactive source in its labs as it failed two deadlines to submit its final report on the radiation exposure incident at Mayapuri scrap yard within the stipulated period.

> **Students have already done a few experiments at the centre and will be given marks based on those.**
> SK MANDAL, associate professor

Around 350 students from both the departments have been affected due to the ban. With just about one and a half months to go for the first semester examinations, which are scheduled in November, the students have not been able to conduct a single experiment.

The second-year students of MSc Physics with specialisation in nuclear science have already started conducting experiments there.

"Students have already done few experiments at the centre and will be given marks based on those," said professor SK Mandal, associate professor, department of Physics and Astrophysics.

But the problem for the first-year MSc Physics students whose number is 300, persists.

"We are still to figure out how to allocate the marks meant for experiments," added Mandal.

The Department of MTech Nuclear Science and Technology have also confirmed that their students will go to conduct the experiments at Inter University Accelerator Centre.

Meanwhile, the Delhi University vice-chancellor had recently convened an emergency meeting of the members of the Executive Council where the enquiry report on the Cobalt 60 leakage incident that was to be submitted to the Atomic Energy Regulatory Board was tabled.

In the same meeting, a three-member sub-committee was also formed to fix the responsibility of the persons who have been named in the report.

Hindustan Times, ND p-8
13-Oct-10

IIMs to discuss reforms today

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NEW DELHI: The Indian Institutes of Management and the government on Wednesday hope to seal a reform blueprint for the country's top B-schools based on a set of three reports aimed at enabling the IIMs to emerge as global leaders.

Greater autonomy coupled with performance evaluation of faculty and research are key aspects of the proposed reforms which IIM Directors will discuss with HRD minister Kapil Sibal, government sources told *HT*. The discussions are crucial because influential sections within the IIMs are not comfortable with some of the proposals, Institute sources said.

One of the three panels set up by the government earlier this year, headed by IIM Calcutta chairman Ajit Balakrishnan, has suggested that the IIMs focus on increasing research output from about 50 PhDs annually at present to 150.

AUTONOMY, RESEARCH, AND EVALUATION OF FACULTY TO BE DISCUSSED WITH SIBAL

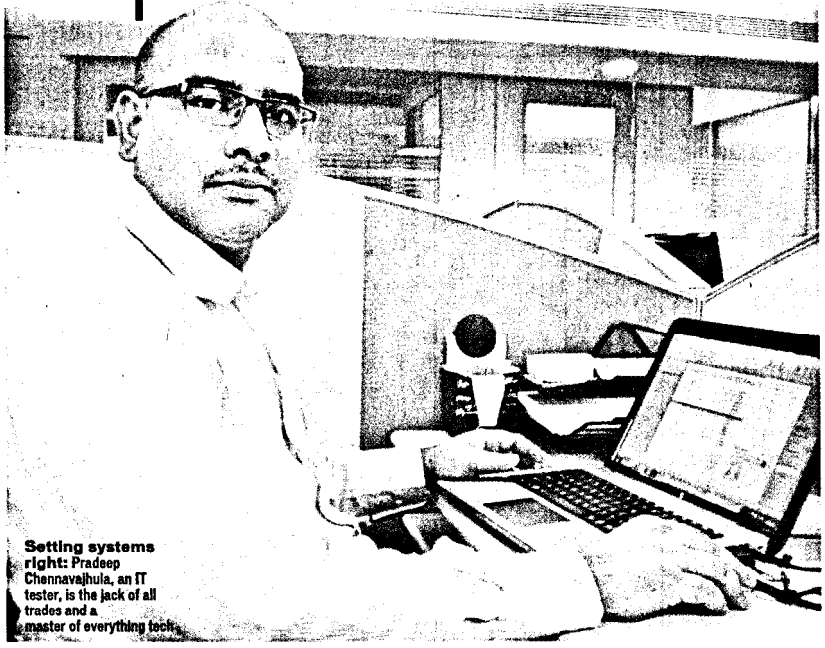
The panel has suggested the government fund up to ₹30 lakh for each PhD scholar.

"PhD research is not something from which the IIMs earn any revenue, which is why we need the government's financial support if we are to increase our PhD output," a member of the panel said. The panel has also suggested that teachers at the IIMs teach up to 160 hours in classes annually. This proposal is the subject of discussion among teachers.

Another panel— under Maruti Chairman R.C. Bhargava —whose reports will be discussed on Wednesday, has proposed streamlining of the Boards of Governors. Directors are also likely to seek greater autonomy in faculty appointments.

Tech perfection

Testing software is a science and not an art, says Vandana Ramnani



Setting systems right: Pradeep Chennavajhula, an IT tester, is the jack of all trades and a master of everything tech.

An aircraft has 1617 subsystems and 19 million lines of codes. Locating a defect is, therefore, like looking for a pin in a haystack. So, who does an airline depend on to keep the flying machines in ship-shape condition? The answer would be an IT tester, who is a professional who will perhaps know more about the aircraft than the man piloting it.

That's not all. People in this business are required to do a lot of firefighting. If the software used in the stock market were to crash tomorrow, the guy who may have the antidote to set it right is again an IT tester. He is literally a jack of all trades and a master of everything tech.

IT testers have to ensure that any new software produced is up to mark before it is delivered. Defects in the systems are also serviced by them.

Pradeep Chennavajhula, an IT tester, took up this profession after being in the field of software development and programming for several years. "Many customers I was dealing with were consistently unhappy about the defects in the software that had been delivered to them. I, therefore, decided to dedicate time and effort to scientifically remove software defects," he says.

"Technically, software testing is much more challenging compared to its development and programming. It is an exciting field and is technically more stimulating. Today, the complexity of software demands that the aspirants are familiar with the tools and technology used in testing. Though initially it may not be a highly paid job, it offers faster growth options to software professionals," he says.

Chennavajhula, who is an ME from BITS Pilani, is armed with an MBA from Penn State University, US, and is also a certified software tester from QAI Global Institute. What matters to the software professional is not just writing the code but also the quality of the code. "The question I would often ask myself was how come intelligent people produce defective software. My quest from that day onwards was to work towards managing the quality of the software produced. I realised that quality can be engineered into the product by systematically eliminating defects at various stages of developing a software. Finally, there was a scientific way of finding defects in the software – and that is a science and not an art!"

Testing as a job requires one to be proficient with technical knowledge and experience of the development life cycle, functional domain, and technology and tools used for testing. In addition, it requires individuals to demonstrate a high capability for logical analysis, deduction, reasoning, communication, and presentation skills. Testing is considered as a necessary business-critical skill at par with project management by many organisations today. Individuals aspiring to be testers should demonstrate a high level of observation, perseverance, and technical aptitude to excel in the field.

A tester needs to have functional domain knowledge, programming knowledge and strong communication skills. "In testing, one gets to present the bad news first — the defects in what you have done. It is important, therefore, to articulate a problem in an objective manner," he says. Testers also need to have strong observation skills. There are things that they can't learn on the job such as stock exchange functioning, mechanical aspects of how a ship or an aircraft may work etc. Companies when they hire IT testers, look for people who are quick on the uptake.

As a tester, the challenges that one may face is lack of appreciation and acceptance of engineering quality, resistance to involvement of testers in the early stages of development, lack of talent, lack of belief that testing is scientific, systematic, creative and technically more challenging and lack of management support for quality delivery.

As software becomes more complex, the demand for quality shall increase and testing will be critical for businesses in India as well as overseas.

"My advice to students is jump in now, learn, and grow," adds Chennavajhula.

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Next yr, IIMs to take CAT to Lanka

Test To Go To Other South East Asian Countries After Colombo Launch

Hemali Chhapia | TNN

Mumbai: The brutally competitive Common Admission Test (CAT) is all set for a cross-over. The Indian Institutes of Management (IIM), which conduct the entrance exam, have been approached by business schools in Sri Lanka to do a CAT for their candidates as well, a plan that will take off next year. "We refused to conduct the CAT for them this year, but will do so in 2011," confirmed Himanshu Rai, convener of CAT-2010.

BEYOND BORDERS

Indeed, Rai had hinted at such a development last month in an article he wrote for a financial daily. "CAT ought to be taken across the frontiers since that would make it more viable while bringing in the best global practices," he had written. "The road is steep but the IIMs have always had the will and the capability. They have led others to global standards and they will continue to do so."

Although the Indian market is shrinking, the IIMs feel that the CAT is likely to get fatter as it flies out. "Apart from B-schools in Colombo, several countries in South-East Asia have shown interest in admitting students through the exam. But to begin with, we will start in Sri Lanka," Rai said.

In 2009, after 33 years of a paper-pencil format, the test graduated to a computer-based one. The CAT in foreign lands, too, will follow the existing Indian model. The IIMs will hire an agency to conduct the exam; questions, however, will be designed by them, for which the IIMs have been thinking of setting up a company under Section 25 of the Indian Companies Act, 1956. "Setting up a separate entity will ensure that a handful of IIM faculty members are de-linked temporarily from teaching and are involved only in conducting the exam. Few realise it, but it is a mammoth task," said an IIM faculty.

Currently, the IIMs have signed a five-year-long contract with an American-based testing firm, Prometric, to conduct the computer-based test. While the US company is paid a fixed fee, the IIMs make their bucks through the money that flows in from applicants' registrations and from the fees they charge other B-schools for using the CAT scores to admit their candidates.

This year, apart from the IIMs, 157 B-schools across the country will use the CAT marks to select their students from a pool of 2.06 lakh Indians who will sit for the test.

Publication: The Times Of India Delhi;Date: Oct 13, 2010;Section: Times Business;Page: 26;

'IT cos face competition from China'

Times News Network

New Delhi: China could give a serious competition to Indian IT companies in coming years, said HCL Technologies CEO Vineet Nayar. China would pose a serious challenge to Indian IT companies over the next five years because of its low labour cost," he said.

At the same time, he felt if the Indian companies plan properly China could also provide huge opportunities for them. Indian companies should take advantage by setting up shops in China. HCL Tech has a presence in China. It had set up a development centre with a seating capacity of 150 employees in 2007. The company is planning to increase its headcount.

Nayar in an open session with HCL employees said that the success of Chinese companies in the filed of technology intensive sectors like telecommunication and electronics hardware clearly suggests that they are capable of much more than cheap labour factor.

Nayar said in the software sector Indian companies are much ahead of their Chinese counterpart but to maintain their lead they must keep on moving up the value chain.

TAPPING ALUMNI

IIMs to raise funds Yale University style

By Prashant K. Nanda
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NEW DELHI

The elite Indian Institutes of Management (IIMs), which largely rely on government support, may soon raise money from their alumni.

On Wednesday, the IIMs will discuss the report of a government-appointed panel that outlines the need for professional fund-raising by setting up dedicated offices and appointing experts, two human resource development (HRD) ministry officials said.

The committee has suggested an initial plan for the four oldest IIMs—at Ahmedabad, Kolkata, Bangalore and Lucknow—to raise ₹400 crore from their alumni.

The plan follows Yale University's fund-raising model, under which the institutes will identify prospective fund givers, solicit money from them and keep them informed about how it is being used.

"The committee has given its report and has some forward-looking proposals. It will be discussed at the IIMs meeting, chaired by HRD minister Kapil Sibal," one of the officials said. "The proposal for raising an initial ₹400 crore by four IIMs over a period of three years is an achievable target, looking at the wide alumni base of these institutes."

The committee which was set up by the HRD ministry, is headed by Hari S. Bhartia, chairman of the board of governors of IIM Raipur and co-chariman of **Jubilant Life Sciences Ltd.** The promoters of Jubilant and **HT Medla Ltd**, which publishes *Mint*, are closely related, but have no cross-holdings.

Bharat Gulia, manager of education at audit and consultancy firm Ernst and Young, said the Indian Institutes of Technology (IITs) have been successful at pooling resources from alumni.

"These B-schools have not done so. Their students are in good positions worldwide and it would be great to leverage it," he said. "IIMs are looking for greater financial autonomy and this is a positive step."

He added that unless professionals are hired, the fund-raising effort won't succeed.

The second HRD ministry official said IIMs are gradually becoming global brands, and raising funds professionally to fuel their growth is an important step for them.

"A growing brand like IIM cannot entirely depend on government money. This effort suggested by the committee is one of the alternative ways to become financially robust," the official said. Both officials declined to be named.

The Bhartia committee has proposed that, like Yale University, the four IIMs should reach out to former students who can contribute by making presentations and inviting them on campus for further interaction. Those who cannot spare the time should be given the option of donating through telephone or Internet banking. They should also be allowed to donate in cash and kind, another model followed by Yale.

Besides the four schools mentioned in the report, India has six more IIMs at Indore, Kozhikode, Shillong, Rohtak, Ranchi and Raipur. While the older IIMs receive ₹20 crore a year from the government, the new ones at Rohtak, Ranchi and Raipur will receive ₹400 crore each over the next eight years.

"This is just the beginning. We have submitted the report, and a final decision will be taken on Wednesday by the HRD minister," said a member of the Bhartia committee, also requesting anonymity.

Besides government funding, IIMs also raise some money through executive programmes and consultancy.

The Wednesday meeting, to be attended by the directors and chairpersons of all IIMs, will also discuss governance, curricula and branding of IIMs.

Business Line ND
13/10/2010 p-19

IIM-A Golden Jubilee Year

Our Bureau

Ahmedabad, Oct. 12

The Indian Institute of Management-Ahmedabad (IIM-A) will launch year-long celebrations of its Golden Jubilee Year in December 2010, marked with a convocation on March 26 next year, for which it has invited the Prime Minister, Dr Manmohan Singh, as the chief guest.

Since its establishment in 1961, IIM-A has produced more than 8,000 alumni who have worked across the world and brought laurels to their alma mater in the last five decades.

Among the speakers at various conferences to be organised to mark the year will be Mr Ratan Tata, Nobel Laureate Mohammed Yunus of Bangladesh and Mr Sam Pitroda, said Prof Atanu Ghosh, Dean-Alumni (External Relationships), at a press conference here today.

Business Line ND 13/10/2010 p-9

'For the Nobel, we focus only on the discovery'

Vanitha Srinivasan
Recently in Stockholm

It was just two hours to go on Monday, October 4, before the winner of the 2010 Nobel Prize in Physiology or Medicine was to be announced. And there I was at the Karolinska Institutet in Stockholm, which was entrusted, by no less than Alfred Nobel himself, with the responsibility of awarding the Nobel Prize in Physiology or Medicine. The person I was interviewing, Ms Harriet Wallberg-Henriksson, 54, the first woman President of Karolinska Institutet, was privy to the name of the winner but her lips were sealed till the official announcement.

Ms Wallberg-Henriksson is one of 50 members of the Nobel Assembly that short-lists the Physiology or Medicine winner annually. She is an accomplished scientist herself having made an important breakthrough with a thesis that described the mechanism of sugar transport into cells. And she continues to break new ground as Member of the Nobel Assembly. Ms Wallberg-Henriksson has an interest in physical activity that extends beyond the research laboratory. She was a football coach and a competitive cross-country skier in her youth. In an interaction with a group of international journalists on a visit sponsored by the Swedish Institute to study higher education in Sweden, Ms Wallberg-Henriksson outlined the key criteria while awarding the Nobel and some of the emerging research areas in medicine.

Excerpts from the interview:

What did the members keep in mind this year while voting for the winner?

We always keep in mind the will of Alfred Nobel that was written in 1895. It says that the prize should be for a discovery that benefits mankind.

While deciding on the Prize, we don't think about the gender, nationality or age.

HARRIET WALLBERG-HENRIKSSON, PRESIDENT, KAROLINSKA INSTITUTET AND MEMBER, NOBEL ASSEMBLY

While nominating, is the focus on blue skies or agenda-driven research or was it beyond all this?

It differs. When a person or a group of people eventually receive the prize, it is awarded for a discovery made 15-20 years earlier. They have been in the process for a long time. We make a very careful investigation of the work done; short-list the various options and weigh them against one another.

In the last 5-10 years, prizes have been awarded in varied fields such as basic research, medicine or physiology or clinically relevant research.

The socio-political dynamics across the world is changing. Is the focus on the country or the individual?

While deciding on the Prize, we don't think about the gender, nationality or age. We focus only on the discovery and it is very important to keep that in mind. For instance, almost all panels have been criticised for not giving women enough prizes or for awarding too many prizes to countries such as the US and Europe. It must be understood that in the last 20-30 years, there were not too many women doing research, and leading research was taking place in the US and Europe.

Now, quite a few Asian countries, besides others, are laying emphasis on research. Having interacted with several universities in China during my visits, I am really impressed and, considering they form part of a large population, I am sure that there will be not one, but several Nobel laureates from that country.

As President of the Karolinska Institutet, what do you think are the emerging research areas in medicine in the last 2-3 years across the world?

One of the areas that is gaining in importance is stem cell research. Another is normal medicine, where we work together with engineers and technically-skilled people. It is an interdisciplinary area, where there will be a lot of development. In future, you will not see isolated medical faculty.

Proteomics (large-scale study of proteins) is yet another emerging area. Mapping of the human genome was a tremendous breakthrough in medical research. Genes code for proteins which do all the work in the cell. If we know more about the proteins, we could develop more efficient drugs to cure diseases.

Apart from the quality of research, is there any other criterion in awarding the Nobel?

It is very important for scientists to publish in the best of journals in the area of biomedicine. It does not necessarily have to be a citation; it must be a paper that people recognise and that changes the way we look at the complex world.

How long have you been part of the panel? Do you find it challenging?

I have been part of the Nobel Assembly for the last 10 years. The members are elected by the college. There are 50 members who are professors at the Karolinska Institutet, each specialising in a particular area. Together, we have to judge and offer the best of science. This forces us to work hard and be very smart and understand things. Besides being challenging, it has made us aware of what is going on around the world which is good for the development of research.

What role does bio-ethics play in research activity?

We have to pay more and more attention to bio-ethics because of technical developments. Especially in areas such as embryonic stem cell research, it is important to keep in mind what we are allowed to do.

Sweden was one of the first countries to put in place a regulation to govern this in 2002-03. I was then with the Swedish Research Council that submitted proposals to the Government on what regulations we should have in place in this regard.

Pioneer ND 13/10/2010 p-5

India, Scotland ink education pacts

PNS ■ NEW DELHI

India and Scotland on Tuesday signed four Memoranda of Understandings (MoUs) in various fields of education on Wednesday. They are aimed at promoting student and faculty to strengthen educational links between the two countries exchange and encourage joint degree development.

They were signed in the presence of Human Resource Development Minister Kapil Sibal and Scotland's First Minister Alex Salmond here.

Terming the signing of the MoUs as "truly historic", Sibal said the agreements will open up further opportunities for institutes of both countries and help them find solutions for problems like global warming. He said there was a need to set up a regulatory authority soon to encourage manufacture of standard medical equipment in the country.

The Minister reminded that a legislation was already under process and hoped that it will be passed soon. "We intend to empower our students by providing access to the finest university education the world has on offer. Further, Scotland has high traditions of learning that dates back to the age of Renaissance," he added.

The HRD Minister asked institutes from Scotland to see whether cooperation can be forged with institutes in India for providing vocational education as well. The vocational courses will sharpen skills which will help in the growth and development of the nation, he added.

Asian Age ND 13/10/2010 p-4

I&B focuses on HRD for mass media industry

AGE CORRESPONDENT
NEW DELHI

Oct. 12: Union information and broadcasting ministry has decided to focus on the human resource development for the entertainment and mass media industry in an effort to provide adequately trained manpower for the industry.

Official sources stated that over the past few months, the ministry has been able to embark on the expansion of facilities, like IIMC, setting up of a global film institute and establishment of a animation and gaming institute to develop manpower adept for these skilled sectors.

Sources stated that this is the first time that such major initiatives have been taken to develop the human resource component of these sectors.

"There has been a focus on this sector in the UPA-II regime and Union information and broadcasting minister Ambika Soni has decided to focus on issue herself," sources added.

Sources stated that over the past few months, the ministry has been able to embark on the expansion of facilities, like IIMC

Amongst the steps taken by the ministry are establishment of four new IIMCs. Apart from expansion of the premier journalism and mass communication institute, the ministry has also decided to revamp the course content. The minister has also directed the IIMCs to give more weightage to training in regional languages as well. "This will also help the regional media industry in getting a trained manpower," sources added.

The I&B ministry has also taken steps to develop India into a global giant in movie technology. A blueprint has been cleared for the establishment of Global Film School at Pune. The proposal is to upgrade the existing Film and Television Institute of India at Pune to Global Film School. The blueprint has proposed that the Global Film School be established as an institute of national importance, its diplomas will be equivalent to degrees.

Another major in initiative to develop skilled manpower in the sector is a plan to establish a National Centre for Excellence in Animation, Gaming and Special Effects. The establishment of National Centre for Excellence in Animation, Gaming and Special effects will be the first government foray into the high end commercial sector with immense growth potential.

Indian Express ND 13/10/2010 P-5

India, Scotland sign 4 MOUs

NEW DELHI: Four MoUs were signed on Tuesday between India and Scotland to strengthen education links in the presence of Union Minister of Human Resource Development Kapil Sibal and the First Minister of Scotland Alex Salmond. The MOUs were signed to promote joint research and student exchange programmes.

Hindu ND 13-Oct-10 p-7

First trial with human embryonic stem cells

WASHINGTON: U.S. doctors have begun the first tests of human embryonic stem cells in patients, treating a man with spinal cord injuries in a landmark trial of the controversial process, said the Geron Corporation on Monday.

The patient began the pioneering treatment on Friday with an injection of the biotech company's human embryonic stem cells, as part of a clinical trial that aims to test safety and efficacy toward regaining sensation and movement.

The treatment took place at the Shepherd Center in Atlanta, Georgia, a spokeswoman for the hospital told AFP, declining to give further details due to patient privacy concerns.

The Phase I trial is expected to involve around 10 patients. Participants in the human trials must be severely injured and start treatment with Geron's product, GRNOPC1, seven to 14 days after sustaining their injury.

Patients will be given a single injection of two million of Geron's GRNOPC1 cells in the trial.

Those taking part will be followed up for one year to monitor safety and also to see if they have regained any sensory function or movement in their lower extremities.

If the initial group of subjects shows no negative side-effects, Geron plans to seek FDA approval to extend the study to increase the dose of GRNOPC1 and to include patients with "as broad a range of severe spinal cord-injured patients as medically appropriate".

The ultimate goal for GRNOPC1 is to inject it directly into the spinal cord lesions of injured humans where it would, Geron hopes, prompt damaged nerve cells to re-grow, enabling patients to eventually recover feeling and movement.

- **To test efficacy toward regaining sensation**
- **Improved locomotion in the treated animals**

Geron began working with human embryonic stem cells in 1999.

Back then, "many predicted that it would be a number of decades before a cell therapy would be approved for human clinical trials," Geron's president and chief executive Thomas Okarma said in a statement.

Mr. Okarma described Monday's start of the clinical trial as "a milestone for the field of human embryonic stem cell-based therapies".

GRNOPC1 is made up of cells containing precursors to oligodendrocytes — multi-tasking cells that occur in the nervous system.

Oligodendrocytes are lost in spinal cord injury, resulting in myelin and neuronal loss which cause paralysis in many patients.

Preclinical studies of GRNOPC1 found that when it was injected into the injury site of animals with spinal cord injuries, it migrated throughout the lesion site and matured into oligodendrocytes.

Those oligodendrocytes then re-lined axons with myelin, the insulating layers of cell membrane that wrap around the axons of neurons to enable them to conduct electrical impulses.

The process produced biologicals that enhance the survival and function of neurons, resulting in significantly improved locomotion in the treated animals.

In the animal trials, GRNOPC1 was injected seven days after the injury was sustained.

Backers of the research believe the field holds huge potential for treating serious diseases including cancer and Alzheimer's, and even for reversing paralysis.

Opponents argue that living embryos are destroyed to obtain the potentially life-saving embryonic stem cells.

Legislation passed by Congress in 1996 bans federal funding for research in which human embryos are either destroyed or discarded.

In lifting the ban on embryonic stem cell research, the Obama administration argued the research does not require disposal or destruction of the embryos, which were created for in-vitro fertilization treatments but never used.

Last month, a U.S. appeals court ruled that the federal funding can continue, dissolving a lower court's ban. — AFP

Hindu ND 13-Oct-10 p-15

Cabinet nod for Bengal engineering varsity takeover

Special Correspondent

NEW DELHI: The Union Cabinet on Tuesday approved the takeover of the Bengal Engineering and Science University (BESU) at Shibpur in West Bengal for converting it into an Indian Institute of Engineering Science and Technology (IIEST).

The five-year project will be set up at a cost Rs.592.20 crore (Rs.300.30 crore as non-recurring cost towards capital expenditure and Rs.291.90 crore as recurring expenditure).

The BESU will be turned into the IIEST by amending the National Institutes of Technology (NIT) Act, with the inclusion of special clauses, reflecting its exclusive character. The IIEST will be an 'institute of national importance' covered under the NIT Act and its organisational and governing structure will be on the lines of the National Institutes of Technology (NITs).

The new IIEST will integrate undergraduate and postgraduate education and research in engineering and science under the same umbrella. It promises to be an institution of international standards and to produce quality manpower for the strategic sector of the country, research laboratories and quality teachers for engineering and science institutions.

The Centre constituted an expert committee in 2005 to evaluate and suggest a plan of action for upgrading seven institutes, including the BESU, which had earlier been identified by the S.K. Joshi Committee. The expert committee had recommended the establishment of a new system of IIESTs as institutes of national importance through an Act of Parliament. The committee also recommended upgrading five institutes, including the BESU, to IIESTs. Admissions to the IIEST will be through the All-India Engineering Entrance Examination.

Hindu ND 13-Oct-10 p-9

Sir Isaac Newton, the alchemist

The 17th century genius' other career rivalled and sometimes surpassed in intensity his devotion to celestial mechanics.

Natalie Angier

Sir Isaac Newton was a towering genius in the history of science, he knew he was a genius, and he didn't like wasting his time. Born December 25, 1642, the great English physicist and mathematician rarely socialised or travelled far from home. He didn't play sports or a musical instrument, gamble at whist or gambol on a horse. He dismissed poetry as "a kind of ingenious nonsense," and the one time he attended an opera he fled at the third act. Newton was unmarried, had no known romantic liaisons and may well have died, at the age of 85, with his virginity intact. "I never knew him to take any recreation or pastime," said his assistant, Humphrey Newton, "thinking all hours lost that were not spent on his studies."

No, it wasn't easy being Newton. Not only did he hammer out the universal laws of motion and gravitational attraction, formulating equations that are still used today to plot the trajectories of space rovers bound for Mars; and not only did he discover the spectral properties of light and invent calculus. Sir Isaac had a whole other full-time career, a parallel intellectual passion that he kept largely hidden from view but that rivalled and sometimes surpassed in intensity his devotion to celestial mechanics. Newton was a serious alchemist, who spent night upon dawn for three decades of his life slaving over a stygian furnace in search of the power to transmute one chemical element into another.

Newton's interest in alchemy has long been known in broad outline, but the scope and details of that moonlighting enterprise are only now becoming clear, as science historians gradually analyse and publish Newton's extensive writings on alchemy a million-plus words from the Newtonian archives that had previously been largely ignored.

Speaking last week at the Perimeter Institute for Theoretical Physics in Waterloo, Ontario, William Newman, a professor of the history and philosophy of science at Indiana University in Bloomington, described his studies of Newton's alchemical oeuvre, and offered insight into the central mystery that often baffles contemporary Newton fans. How could the man who vies in surveys with Albert Einstein for the title of "greatest physicist ever," the man whom James Gleick has aptly designated "chief architect of the modern world," have been so swept up in what looks to modern eyes like a medieval delusion? How could the ultimate scientist have been seemingly hornswoggled by a totemic psuedoscience like alchemy, which in its commonest rendering is described as the desire to transform lead into gold? Was Newton mad perhaps made mad by exposure to mercury, as some have proposed? Was he greedy, or gullible, or stubbornly blind to the truth?

In Mr. Newman's view, none of the above. Sir Isaac the Alchemist, he said, was no less the fierce and uncompromising scientist than was Sir Isaac, author of the magisterial *Principia Mathematica*. There were plenty of theoretical and empirical reasons at the time to take the principles of alchemy seriously, to believe that compounds could be broken down into their basic constituents and those constituents then reconfigured into other, more desirable substances.

Miners were pulling up from the ground twisted bundles of copper and silver that were shaped like the stalks of a plant, suggesting that veins of metals and minerals were proliferating underground with almost florid zeal.

Pools found around other mines seemed to have extraordinary properties. Dip an iron bar into the cerulean waters of the vitriol springs of modern-day Slovakia, for example, and the artefact will emerge agleam with copper, as though the dull, dark particles of the original had been elementally reinvented. "It was perfectly reasonable for Isaac Newton to believe in alchemy," said Mr. Newman. "Most of the experimental scientists of the 17th century did."

An undated portrait of Sir Isaac Newton. – PHOTO: AP

Moreover, while the alchemists of the day may not have mastered the art of transmuting one element into another an ordeal that we have since learned requires serious equipment like a particle accelerator, or the belly of a star their work yielded a bounty of valuable spinoffs, including new drugs, brighter paints, stronger soaps and better booze.

"Alchemy was synonymous with chemistry," said Mr. Newman, "and chemistry was much bigger than transmutation."

For Newton, alchemy may also have proved bigger than chemistry. Mr. Newman argues that Sir Isaac's alchemical investigations helped yield one of his fundamental breakthroughs in physics: His discovery that white light is a mixture of colored rays, and that a sunbeam prismatically fractured into the familiar rainbow suite called Roy G. Biv can with a lens be resolved to tidy white sunbeam once again.

"I would go so far as to say that alchemy was crucial to Newton's breakthroughs in optics," said Mr. Newman. "He's not just passing light through a prism he's resynthesising it."

Consider this a case of "technology transfer," said Mr. Newman, "from chemistry to physics."

The conceptual underpinning to the era's alchemical fixation was the idea of matter as hierarchical and particulate that tiny, indivisible and semi-permanent particles come together to form ever more complex and increasingly porous substances, a notion not so different from the reality revealed by 20th-century molecular biology and quantum physics.

With the right solvents and the perfect reactions, the researchers thought, it should be possible to reduce a substance to its core constituents its corpuscles, as Newton called them and then prompt the corpuscles to adopt new configurations and programmes. Newton and his peers believed it was possible to prompt metals to grow, or "vegetate," in a flask. After all, many chemical reactions were known to leave lovely dendritic residues in their wake. Dissolve a pinch of silver and mercury in a solution of nitric acid, drop in a lump of metal amalgam, and soon a spidery, glittering "Tree of Diana" will form on the glass. Add to this the miners' finds of tree- and rootlike veins of metals and alchemists understandably concluded that metals must be not only growing underground, but ripening. Hadn't twined ores of silver and lead been found? Might not the lead be halfway to a mature state of silverdom? Well, no. If mineral veins sometimes resemble botanical illustrations, blame it on Earth's molten nature and fluid mechanics: When seen from above, a branching river also looks like a tree.

Yet the alchemists had their triumphs, inventing brilliant new pigments, perfecting the old red lead oxide, yellow arsenic sulfide, a little copper and vinegar and you've got bright green verdigris.

The chemistry lab replaced the monastery garden as a source of new medicines. "If you go to the U.K. today and use the word 'chemist,' the assumption is that you're talking about the pharmacist," said Newman. "That tradition goes back to the 17th century." — **New York Times News Service**

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NET-qualified researchers to get higher fellowship

Aarti Dhar

NEW DELHI: There is good news for National Eligibility Test (NET)-qualified researchers, who will get higher fellowship.

The Union Human Resource Development Ministry, in consultation with the Finance Ministry, has approved the revision which will come into effect from April 1, 2010. However, the Finance Ministry has sought from it a separate proposal for increasing the number of researchers from 3,200 to 6,400.

Junior Fellowship and Senior Research Fellowship for the NET-qualified candidates have been revised from Rs. 12,000 to Rs. 16,000 a month for the first two years and from Rs. 14,000 to Rs. 18,000 for the remaining three years. This follows a similar revision of fellowship by the Council of Scientific and Industrial Research.

The host institutions would review the performance of research fellows at the end of two years through committees constituted by their heads. Extension of the fellowship beyond two years will be subject to satisfactory progress reports.

The last revision of fellowship was done in 2007-08.

In addition, house rent allowance will be admissible to junior and senior research fellows where hostel accommodation is not provided by the host institutions. Those selected junior and senior research fellows would also be encouraged to register for higher degrees, for which the tuition fee would be reimbursed by the UGC.

Amar Ujala ND 13/10/2010 p-7

आईआईटी की टीम ने की समीक्षा

अमर उजाला ब्यूरो

ग्रेटर नोएडा। आगामी 29 अक्तूबर से हाईटेक सिटी स्थित इंडिया एक्सपो मार्ट में पूर्व आईआईटियंस की अंतरराष्ट्रीय संगोष्ठी पैन आईआईटी 2010 कॉन्क्लेव का आयोजन होने जा रहा है। आईआईटी के टीम ने इस महा आयोजन के चलते मंगलवार को एक्सपो मार्ट का दौरा कर तैयारियों की समीक्षा की । वहीं समिति के मुखिया ने प्राधिकरण सीईओ से भी बैठक कर इस बाबत चर्चा की।

उत्तर प्रदेश सरकार द्वारा प्रायोजित इस अंतरराष्ट्रीय संगोष्ठी में आयोजन समिति के मुखिया और आईआईटी कानपुर के प्रोफेसर अनुराग गोयल ने मंगलवार को मुख्य कार्यपालक अधिकारी रमा रमण से मुलाकात की। प्राधिकरण सीईओ ने उन्हें आयोजन स्थल की भव्यता और पूर्व में हो चुके तमाम अंतरराष्ट्रीय आयोजनों की सफलता के बारे में जानकारी दी।

क्या है पैन आईआईटी

देश के विकास को पंख लगाने के लिए और नए भारत के सतत रूपांतरण के लिए देश के सर्वश्रेष्ठ इंजीनियरिग संस्थान आईआईटी के पूर्व छात्र एक जुट होंगे। 29 अक्तूबर से प्रारंभ हो रहे इस तीन दिवसीय आयोजन में दुनिया भर में फैले पूर्व आईआईटियंस के अलावा विभिन्न क्षेत्रों के दिग्गज मौजूद होंगे।

प्रमुख वक्ता

केंद्रीय मानव संसाधन विकास मंत्री कपिल सिब्बल, केंद्रीय नव एवं सतत ऊर्जा मंत्री फारुख अब्दुल्ला; विज्ञान एवं प्रौद्योगिकी मंत्री पृथ्वी राज चाह्वाण, मुख्यमंत्री दिल्ली शीला दीक्षित, कोलंबिया विवि के निदेशक जेफ्री डी सैक्स, इग्नू के कुलपति प्रो. वी.एन. राजशेखरन पिल्लई, सिस्को सिस्टम्स के सीटीओ पदमश्री वरियर, यूआईडीआईए के चेयरमैन नंदन नीलकेणी मौजूद होंगे।

आईआईटिएंस आएंगे

दुनिया भर में फैले आईआईटी कानपुर के 452, दिल्ली के 421, खड़गपुर के 261, बाम्बे के 179, रुड़की के 162, मद्रास के 117 और गुवाहाटी के 21 मिलाकर कुल 3016 पूर्व छात्रों आदि ने संगोष्ठी में शामिल होने के लिए पंजीकरण करा लिया है।

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आईआईएम की सीटें बढ़ीं आवेदक घटे

बी-स्कूलों की भारी फीस और ऑनलाइन कैट बना वजह

अमर उजाला ब्यूरो

- अगले सत्र से बढ़ रही हैं 500 सीटें
- चार सालों में 36 फीसदी की गिरावट

ऐसे हुए हैं उतार चढ़ाव

- 2007 में कैट आवदेकों की संख्या 22 फीसदी बढ़ी
- 2008 में आवेदकों की संख्या 12 फीसदी घटी
- 2009 में कैट पहली बार ऑनलाइन हुई
- इस साल 15 फीसदी की हुई है गिरावट
- पिछले 4 सालों में संख्या 36 फीसदी कम हुई
- बी स्कूलों की फीस डेढ़ गुना तक बढ़ना बड़ा कारण
- 2011 के सत्र से 13 आईआईएम में होंगे दाखिले

नोएडा। आईआईएम संस्थानों में अगले सत्र से 500 से ज्यादा सीटें बढ़ रही हैं जबकि आवेदकों की संख्या में भारी गिरावट हुई है। आईआईएम के मुताबिक कॉमन एडमिशन टेस्ट (कैट) के आवेदन में इस साल 15 प्रतिशत की गिरावट हुई है। पिछले चार सालों से कैट में बैठने वालों की संख्या में 36 फीसदी की कमी आ चुकी है। प्रबंधक बनने की चाह कम होने की बड़ी वजह, बी-स्कूलों की फीस बढ़ोतरी और ऑनलाइन कैट के लिए छात्रों का कंप्यूटर फ्रेंडली न होना है।

कैट 2007 में दो लाख 76 आवेदन, 2008 में दो लाख 46 आवेदन, 2009 में दो लाख 42 हजार और 2010 में दो लाख 6 हजार आवेदन आए हैं। 2008 में आवेदकों की संख्या में लगभग 12 फीसदी की गिरावट हुई थी जो पिछले दस सालों में पहली बार हुआ। टाइम इंस्टीट्यूट नोएडा शाखा के निदेशक उल्हास वैरागकर का कहना है कि आईआईएम समेत देश के टॉप-50 बी स्कूल के दायरे में आने वाले छात्रों की संख्या पर कोई फर्क नहीं पड़ा है। कार्य अनुभव बढ़ाने के लिए इंजीनियरिंग पेशेवरों के आवेदन कम हुए हैं। इस साल अगर कैट में तकनीकी खामियां न हुई तो अगले साल ये आंकड़ा फिर से बढ़ जाएगा। दरसअल, कैट में 40 फीसदी दूसरी श्रेणी के बी स्कूलों में दाखिले के लिए बैठते हैं, जिनकी संख्या में कमी हुई है। वहीं आईआईएम को इस आंकड़े के तीन लाख तक पहुंचने की उम्मीद थी। कैट-2010 के आधार पर 13 आईआईएम में दाखिले दिए जाएंगे। छह नए आईआईएम की फीस महंज तीन लाख रुपये सालाना ही है, जबकि पुराने आईआईएम की फीस 12.5 लाख रुपये सालाना है।