

Newspaper Clips September 30, 2014

Indian Express ND 30/09/2014

P-9

Super 30 founder invited to speak at MIT and Harvard

PRESS TRUST OF INDIA

NEW YORK, SEPTEMBER 29

INDIAN mathematician and founder of Super 30, Anand Kumar, has been invited by the prestigious Massachusetts Institute of Technology (MIT) and Harvard University to speak on his globally-acclaimed effort to mentor students from the underprivileged sections for admission to IIT.

Kumar, who could not study at Cambridge University years ago due to acute financial constraints, will speak at MIT Media Lab, an interdisciplinary research laboratory, on September 30, a media release said.

On October 1, he will speak at the International Education Policy programme of



ANAND KUMAR

Harvard University. The programme promotes global social justice through their unparalleled and effective leadership of innovative and sustainable education reform worldwide, the statement said.

Kumar's pioneering Super 30 initiative has captured the attention of global media for successfully mentoring stu-

dents from underprivileged sections for Indian Institute of Technology (IIT).

"I will talk about how the world can be a better place using inclusive education as a powerful tool to usher in psychological and societal change. What I have done in the last 14 years in the backwaters of my home state Bihar is a small initiative to provide the right opportunity to a bunch of talented and passionate students from the underprivileged sections, but the results have been astonishing," said the Super 30 founder.

"It needs to be replicated on a larger scale, as education alone has the power to tackle all the world's problems," he said.

आईआईटी के छात्रों को पढ़ाई के साथ कार्यस्थल का भी अनुभव हासिल होगा

पढ़ाई के साथ छात्र करेंगे नौकरी

छात्रों का फायदा

नई दिल्ली | रोहित पंगार

आईआईटी दिल्ली में इनोवेशन को बढ़ावा देने के लिए जल्द ही इंडस्ट्रीयल रिसर्च पार्क खुलेगा। इसमें दुनियाभर की कंपनियां, आईआईटी के शिक्षक और छात्र एक साथ इनोवेशन और शोध करेंगे। खास बात यह है कि कैम्पस में ही छात्रों को इन कंपनियों में पार्ट टाइम नौकरी मिलेगी।

रिसर्च पार्क बनाने का मसौदा फाउंडेशन फॉर इनोवेशन एंड टेक्नोलॉजी ट्रांसफर (फिट) ने तैयार किया है। फिट संस्थान की इनोवेशन का काम देखने वाली आधिकारिक संस्था है। फिट से जुड़े प्रोफेसर अनिल वाली ने बताया कि आईआईटी मद्रास के रिसर्च पार्क की तर्ज पर दिल्ली में पार्क बनेगा।

योजना को अंतिम रूप दिया जा रहा है। उधर, मैकेनिकल विभाग के प्रो. पीवीएम राव का कहना है कि पार्क में



चेन्नई स्थित इस मद्रास रिसर्च पार्क की तरह दिल्ली में बनेगा रिसर्च पार्क। • फाइल फोटो

हार्वर्ड और स्टेनफर्ड से सीखा

दुनिया के नामी विश्वविद्यालय में शुमार हार्वर्ड और स्टेनफर्ड यूनिवर्सिटी में रिसर्च पार्क की सबसे पहले शुरुआत हुई। सबसे बड़ा और आधुनिक रिसर्च पार्क स्टेनफर्ड यूनिवर्सिटी का है। 2008 से 2010 मार्च तक अमेरिका की सॉफ्टवेयर कंपनियों के उत्पाद में इस पार्क में हुए शोध से 10 गुना इजाफा हुआ। इन विश्वविद्यालयों के अनुभव के बाद आईआईटी मद्रास में इसकी शुरुआत की गई।

विभिन्न क्षेत्र की कंपनियों को परिसर उपलब्ध कराया जाएगा। वे शोध के लिए अपनी यूनिट खोलेंगी। छात्र कंपनियों के

साथ इन यूनिट में शोध करेंगे। इस दौरान उन्हें कंपनियां पार्ट टाइम नौकरी पर भी रखेंगी।

कंपनी के अधिकारी पढ़ा सकेंगे

इससे जुड़ने के लिए कंपनियों को पंजीकरण कराना होगा। उन्हें किराये पर परिसर उपलब्ध होंगे। इससे इतर आईआईटी छात्रों को बाजार की बारीकी सिखाने के लिए कंपनी से जुड़े शीर्ष अधिकारियों का सहयोग लेगी। अधिकारी बतौर शिक्षक पार्ट टाइम पढ़ा सकेंगे। बीटेक, एमटेक व पीएचडी स्तर पर पार्ट टाइम कोर्स में वैज्ञानिकों के साथ पढ़ाने का अवसर होगा।

छात्र सीधे जुड़ेंगे कंपनी से

अब तक सिर्फ छात्र विभिन्न समूह में शिक्षकों के दिशानिर्देश में शोध को अंजाम देते रहे हैं। लेकिन इसमें छात्र सीधे कंपनियों की परियोजनाओं से जुड़े सकेंगे। आईआईटी मद्रास रिसर्च पार्क के सीओओ राजेंद्र मुथा का कहना है कि इनोवेशन के क्षेत्र का अगल चरण रिसर्च पार्क है। जो छात्र बेहतर करेंगे उन्हें कैम्पस में ही पार्ट टाइम नौकरी का अवसर मिलेगा।

IIT-Indore director trashes staff's allegations

<http://timesofindia.indiatimes.com/City/Indore/IIT-Indore-director-trashes-staffs-allegations/articleshow/43805161.cms>

INDORE: Director of Indian Institute of Technology-Indore, Pradeep Mathur on Monday refuted charges levelled against him by an institute staff in an e-mail to Union minister for HRD Smriti Irani recently and termed them false and baseless. In an exclusive talk with TOI, the director replied threadbare to various issues pertaining to permanent campus, faculty recruitment, skewed distribution of funds, promotions, autocratic functioning and uncontrolled expenses.

About permanent campus he said, it is baseless to allege that I 'fought' with state government when both stakeholders would like such a prestigious institute as IIT to flourish in Indore. "While most of the new IITs started their operations in 2008, IIT-Indore along with a couple of few others started operations in 2009. But still IIT-Indore's progress on the permanent campus development has been at par with all new IITs," said the director.

He added process of land acquisition was long awaited due to various agencies involved and everything was legally finalized in July 2014.

On faculty recruitment, he said, "It is certainly not true that two disciplines have 44% of the faculty. We are recruiting faculty in disciplines that need more faculty but it is an ongoing process and the figures will keep changing accordingly."

"Funds are distributed according to research needs of different departments and faculty members of various disciplines," said Mathur on being asked about skewed distribution of funds adding there is no disparity between departments.

On allegation of improper recruitment, he said, "The recruitment is transparent with multiple checks and balances. Selection committee is composed of eminent academicians including the highest national award winners in the field of science and research - Bhatnagar awardees and fellows of national academies who are all external members." Faculty recruitment has to be approved by the board of governors (BOG) of the institute, he said. IIT-Indore has set a benchmark for selection committee to be active researchers in particular areas of research of the applicants, he said.

Clarifying on allegations about autocratic functioning at the institute, the director said most faculty members are part of important decision making committees. "There is decentralization of roles and responsibilities, academic senate have members from all departments/ disciplines including heads and deans and all decisions are taken after thorough deliberation and discussion. ToI regrets not carrying the director's detailed version in its Monday issue.

Hindustan Times, ND
30/09/2014 P-9

UGC okays self-certification of documents

NEW DELHI: The University Grant Commission (UGC) has asked all universities to accept documents with self attestation, providing much relief to students applying for courses in universities.

The decision is in keeping with PM Narendra Modi's push for self certification.

The UGC on Monday sent a communication to vice-chancellors of universities across the country asking them to initiate "urgent steps" for implementing the measures.

"It is requested that the process of abolition of affidavits and adoption of self-certification may be complied with at the earliest and compliance report be sent to UGC within a week of issue of the letter," the Commission said in its communication.

Once the universities comply with the UGC decision, students would no longer need to get their documents attested by a Gazetted officer saving them a lot of hassle.

HTC

THE HINDU, ND 30/09/2014 P-10

SC orders spot inspection of deemed varsities

J. Venkatesan

NEW DELHI: The Supreme Court has directed the University Grants Commission to conduct a physical inspection of deemed universities sought to be de-recognised on the basis of a UGC panel report.

A Bench of Justices Dipak Misra and Vikramajit Sen passed this order after hearing Additional Solicitor General Maninder Singh for the UGC and Additional Solicitor General Tushar Mehta for the Centre and counsel for various institutions.

The Bench, in its order on the petition filed by advocate Viplov Sharma, said: "The singular grievance that has been agitated in the applica-

tions is that the UGC instead of taking recourse to physical inspection of the concerned institutions, have adopted an innovative modus operandi by inspecting through photographs and video camera. We cannot conceive of such a situation. In our considered opinion, inspection would mean in all its connotative expanse, physical inspection from all scores and spectrums."

The Bench directed the UGC to conduct physical verification of the institutions covered in the applications within 12 weeks.

It said: "After the inspection, it would be an obligation of the UGC to point out the defects so that the institutions can rectify them."

Veer Arjun, ND 30/09/2014 P-2

आईआईटी खड़गपुर का वार्षिक प्रबंधन उत्सव क्षितिज 30 जनवरी से

वीर अर्जुन संवाददाता

नई दिल्ली। आईआईटी खड़गपुर का वार्षिक प्रौद्योगिक प्रबंधन उत्सव, अपनी अद्वितीय महिमा, बेजोड़ प्रतिभा और सर्वश्रेष्ठ जन ज्ञान से पूर्ण प्रतियोगिताओं के लिए लोकप्रिय है। इस साल यह 30 जनवरी से दो फरवरी तक होगा। 2004 में स्थापित होने के बाद से ही क्षितिज निरंतर ऊंचाइयों को छूता रहा है और अभी एशिया का सबसे बड़ा प्रौद्योगिक प्रबंधन उत्सव है। क्षितिज का प्रभुत्व इसके यूनेस्को से प्राप्त संरक्षण से ही साबित होता है। क्षितिज सतत ही क्षेत्रों को एक अच्छा अनुभव प्रदान करने एवं ऐसी प्रतियोगिताएं, अतिथि व्याख्यान कराने में प्रयासरत है जहां से छात्र बहुत कुछ सीख कर जाएं।

इस उत्सव में संक्षेप में कहें तो प्रतियोगिताएं, अतिथि व्याख्यान, कार्यशालाएं और प्रदर्शनियां होती हैं। क्षितिज के पिछले संस्करणों पर नजर डालें तो यह पता पड़ता है कि इसकी

प्रतियोगिताएं प्रतिष्ठित संस्थानों द्वारा प्रमाणित होती हैं। नौ शैलियों में फैली 40 से भी ज्यादा प्रतियोगिताएं छात्रों को प्रौद्योगिकी के अलग-अलग क्षेत्रों को अनुभव करने का अवसर प्रदान करती हैं। साथ ही कई ऑनलाइन प्रतियोगिताएं भी होती हैं जो क्षितिज से काफी पहले ही शुरू हो जाती हैं। इनके साथ ही क्षितिज हर साल कई नामी हस्तियों को आमंत्रित करता है जो कि छात्रों के साथ अपनी उपलब्धियों और अनुभवों के बारे में बात करते हैं। पिछले सालों की ऐसी ही कुछ हस्तियां हैं श्री नवाजुद्दीन सिद्दीकी, श्री नसीरुद्दीन शाह, श्री अजय भट्ट, श्री जिमी वेल्स, श्री प्रभु चावला, श्री राकेश शर्मा आदि। इसके अलावा मुफ्त कार्यशालाएं भी होती हैं जो कि बड़ी-बड़ी कंपनियों द्वारा आयोजित कराई जाती हैं और प्रमाणित भी होती हैं। इन सबके साथ ही प्रदर्शनियां भी होती हैं जो छात्रों को दुनिया के नए खोजों और आविष्कारों से परिचित करती है।

END WAR AGAINST TEACHERS

India has been at war against its teachers, and it will be a great achievement for the new government if it can bring this war to a halt. Started in the early 1990s under the cover of fiscal reforms, this war acquired social approval with the passage of time. The state, meanwhile, found many partners who have helped fight the war on its behalf. Gradually, while the war itself has become largely invisible and routinised, the new system it helped establish—both in school-level and higher education—has gained wide-spread acceptance.

I remember meeting a young man and woman last year at Chakki Bank station in Himachal Pradesh. I was waiting for the Jammu Rajdhani and they were waiting for other trains to return, respectively, to Meerut and Varanasi. They were among more than a hundred candidates I had interviewed over the previous three days for two vacancies at the lecturer level at a new central university. The young man had a PhD and was teaching on a contractual basis for a monthly salary of Rs. 21,000. He told me that the 19-member faculty in education at Meerut University had shrunk to 2, and the remaining positions have been lying vacant for years. He had attended more than a dozen interviews since completing his PhD a decade ago. He got selected once, but a court case led to the cancellation of the entire process. All over Uttar Pradesh, there were hundreds of vacancies in colleges and universities in which ad hoc teachers were serving for years. The story of the young woman from Varanasi was similar. She too believed that there was a conspiracy to commercialise the entire system. I thought it might console them to know that even at Delhi University, over 4000 teachers are serving on an ad hoc basis.

By the time my train arrived, we had exchanged mutual notes of helplessness over the gloom that pervades higher education in India, wherein teaching has been turned into a vulnerable service industry, support staff have dwindled, and severe budget cuts have hit libraries and laboratories. These are the two essential resources on which the quality of teaching depends.

The story of school teachers is a bit more complex and it varies from state to state. By the mid-1990s, many states had adopted the 'para' teachers' model of cheap appointments to meet the challenge of universal primary education. Madhya Pradesh went the farthest — and paved the way for others — in damaging its schools by downgrading the salary and status of all teachers. It declared the old system of permanent teachers a 'dying cadre', and shifted recruitment to village Panchayats in the name of decentralisation. As years passed, this policy became firm and political change could not alter it. I recall meeting a senior official in Bhopal in the late 1990s who told me that teaching was no more a career option for young people in MP. He was worried that the new system of recruitment would not attract those with the potential to become dedicated teachers. The pursuit of the 'para' teacher policy — differently named and pursued with varying nuances in other

states — attracted both criticism and advocacy, but the latter dominated and ultimately prevailed. An atmosphere of disdain towards teachers already existed. The perception that they lead easygoing lives with undeserved emoluments was assiduously cultivated. A national neurosis set in, marked, on the one hand, by the demand for Indian values — which surely include respect for the teacher's dignity — but on the other, by contempt for the teacher. Low-fee private schools and privately-run medical and engineering colleges had demonstrated how teachers could be turned into wage labourers. Management experts, NGOs and shortsighted economic advisers joined the chorus of accountability, linking teachers' income with outcomes defined in terms of test scores. Motley surveys were marshalled to 'prove' that India's children were learning very little despite huge public investments. Despite this empirical approach, albeit with its own problems, the conclusion that teachers are to be blamed was reached with a surprising lack of evidence. That apex bastion of the welfare state,

the Planning Commission, smiled and blessed the activist experts who wanted teachers to be paid less and monitored by devices like biometric attendance and CCTVs.

What will it mean to bring the war against the teacher to a close? To begin with, it must entail an accurate valuation of teachers' labour. Unlike the West, both society and state in India today seem convinced that teaching is not a serious professional activity. Who can persuade civil servants and citizens to see a primary school teacher's daily life for what it is — a struggle against all possible odds? Engaging with young children is an exhausting activity, but this idea feels alien to the educated middle classes and education officers. In large cities, class-sizes have swollen since the promulgation of the Right to Education (RTE), leading to great pressure on the physical infrastructure of schools. The RTE Act has laid down a teacher-child ratio of 1:30. This ratio looks like a fantasy under today's circumstances. Official estimates point to a shortfall of more than a million teachers at the elementary level alone. Where are these teachers to come from and what sort of individuals will they be? Given the plight and capacity of training institutions, many state governments are flirting with the option of distance education, even though a commission appointed by the Supreme Court has stipulated that distance education should only be used for in-service and not initial training. The same commission has recommended that government investment in new training institutions should be urgently enhanced. If the new government at the centre agrees to implement this advice, it will send a positive signal across a sick, hopelessly dysfunctional sector.

In higher education, it will take a lot more effort and will to stop the war against teachers. The University Grants Commission (UGC) has itself to blame for bringing higher education to its present state. It has been fully aware of the radical deterioration of undergraduate education

across the country. The National Knowledge Commission (NKC) exacerbated the crisis by misguiding central policy into mixing higher with vocational education. Along with the Planning Commission, the NKC endorsed fancy ideas like the four-year undergraduate course that Delhi University (DU) launched last year. The UGC hailed it as a great innovation but ignored the strange fact that DU was wilfully depleting its permanent faculty strength even as it was launching an ambitious new degree programme. The UGC is also responsible for turning faculty recruitment into a mechanical calculation using the so-called Academic Performance Indicators (API). This scoring device has deepened the crisis that the UGC's earlier step of starting a shoddily designed National Eligibility Test (NET) had started. These two filtering devices ensure that the best available candidates feel discouraged and stay away from India's higher education system, often deciding to teach abroad instead. And common to higher education and schools, teacher recruitment has become an exercise of crude socio-political engineering. Huge armies of contract — ad hoc — teachers are being politically exploited, both by the administration and the leaders of rival groups of teachers themselves. It is a scene that is sordid and chaotic, but difficult to capture in the limited space the media has for education. Instead, only an insignificant indicator garners frequent attention, when we hear how poorly Indian institutions are ranked globally.

Teaching is the heart of education, and that is where the crisis of education has hit India hardest. The general cynicism towards teachers we see in our social ethos today has its roots in a paradox. As a professional workforce, teachers have low, powerless status. The younger the pupils you teach, the lower your status. On the contrary, ironic homilies reminding us that the nation's future depends on teachers are dutifully recited each Teacher's Day. In reality, teachers have no place in India's modern economy and urban landscape, with their modest incomes and lack of authority even within their own professional sphere. As for social prestige, even a lower-level civil servant enjoys more recognition and respect, so that we easily conclude that teaching is a last option in the hierarchy of careers. On the other hand, teachers carry the burden of a loud cultural mythology, according to which they are transmitters of values, shapers of young minds, and architects of a new India. This contradictory state of affairs in the public mind highlights how hard it is for the state to restore any dignity to India's teachers.

If the state stops the war it started more than two decades ago, the reconstruction of education can start, and we can look forward to saner planning for the long run. But recovery from the damage inflicted on the education system by the state's war on teachers is hardly easy. Indeed, the decision to bring the war to a close constitutes as major a challenge of political will as does the post-war planning.

TEACHING IS THE HEART OF EDUCATION, AND THAT IS WHERE THE CRISIS HAS HIT INDIA HARDEST. TEACHERS FIND NO PLACE IN INDIA'S MODERN ECONOMY AND URBAN LANDSCAPE.



KRISHNA KUMAR is professor of education at Delhi University and a former director of NCERT

Times of India, ND 30/09/2014 p-21

MOM sends dust storm pictures

Bangalore: India's Mars orbiter has sent a picture of regional dust storm activities over the northern hemisphere of the Red Planet, Isro said on Monday.

"Regional dust storm activities over northern hemisphere of Mars — captured by Mars Colour Camera on-board Mars Orbiter Mission (MOM)," Bangalore-headquartered Isro said on its official Facebook page with a picture. It said the image was taken from an altitude of 74,500km from the surface of Mars.

MOM spacecraft had sent its first images of the planet on Thursday, a day after creating history by becoming the only such endeavour

so far to have met with success on the maiden attempt.

MOM aims to study the Martian surface and mineral composition and scan its atmosphere for methane, an indicator of life. It has five instruments, including a sensor to track methane, a colour camera and a thermal-imaging spectrometer to map the surface the planet.

The ₹450-crore MOM is the cheapest inter-planetary mission. India is the first country to reach Mars in the very first attempt. European, American and Russian probes have managed to orbit or land on the planet, but after several attempts. PTI



The latest picture taken by Isro's Mars orbiter shows a dust storm (encircled) on the Red Planet

SC fee rider on colleges without MCI clearance.

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Corbis

New Delhi: Private medical colleges which claimed to have the required infrastructure in place but were not eligible to admit students as they did not have the mandatory Medical Council of India clearance had got a bonanza on September 18 when the Supreme Court permitted admissions for the 2014-15 academic year.

However, just a week later, the court issued an important clarification, saying these institutes could collect admission fees only on a par with that charged by government medical colleges.

Not only that, a bench of Justices A R Dave, Vikramjit Sen and U U Lalit said students admitted this academic year would pay fees at that rate till they pass out from the private medical college.

"Fees chargeable from students admitted pursuant to our September 18 order shall be at the same rate as applicable to students in government medical colleges in respective states and such fees shall be at the same levels as that of the government medical colleges till the students so admitted pass out," the bench said.



The SC has clarified that private colleges without an MCI nod could collect fees only on a par with that charged by government medical colleges

It also clarified that for the current academic year, students would be admitted only from the state quota list. "There shall not be any management quota list to be sent to the private colleges or institutions taking the benefit under our September 18 order. The management quota shall also be filled through the state list and the fees chargeable for the management quota shall also be charged at the same levels and rates as applicable to state quota list," the bench said.

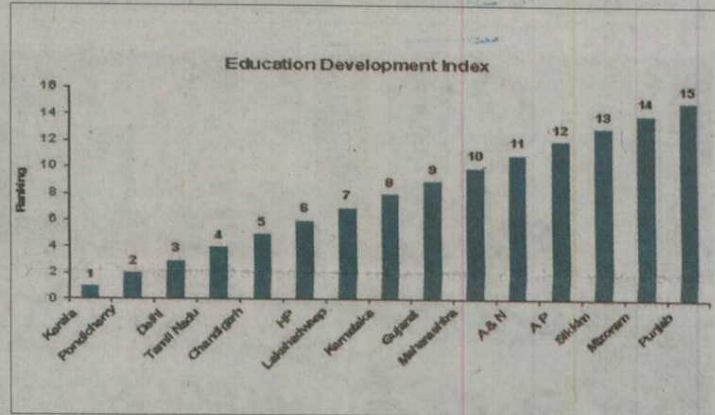
Higher education in Gujarat: Some problems and remedies

Dr. S. CHINNAM REDDY

GUJARAT is a state known for its entrepreneurial skills and development of small and medium scale industries. Today, it has become the hub of higher education through the various initiatives and reforms taken up by the government. It is true that education has a multiplier effect on other social sectors like women development, child development and labour. Quality education does ample value addition in the process of economic growth and development. Higher education is increasing at a very high rate in Gujarat. It will not only improve the quality of lives of people but will also offer prospects for progress. Education has played a vital role in the development of Gujarat. The literacy rate has increased from 69.14% in 2001 to 79.31% in 2011. The literacy rate has gone up by 12.93% in the last decade. According to National University of Educational Administration (NUEA), of Gujarat ranks 9th on the Education Development Index (EDI).

According to the Socio-Economic Review, 2012-13-Gujarat State: At the end of academic year 2011-12, total intake capacity for MBA and MCA courses were 13,352 and 5,716, respectively, which have increased during the academic year 2012-13(P), to 13,365 seats and 7,330 seats respectively.

Further the market is expected to grow as the number of students enrolled in classes IX-XII, which indicates that potential demand for higher education will increase at a CAGR of 5.7%. Despite the increase in demand there are several problems faced by the higher education in Gujarat. The management institutes face the problem of brain drain to other states of India due to inappropriate education policy. To stop this, proper measures are required such as stable policy regarding academic commencement of the semester in



management courses.

Problems faced by higher education sector:

Time lag between result declaration and admission process: Due to a big time lag between the result declaration and admission process, Gujarat displaces many students. The educational institutes face a major problem holding the students for admissions as students leave for other states of the country in pursuit of higher education.

Gap between the demand and supply of seats available for higher education: Due to the growth of self-financed institutes in Gujarat the number of seats for higher education such as management programmes and engineering programmes have increased. But the seats do not get filled up due to less number of students appearing for the competitive examinations such as CMAT and JEE. GUJCET and GCET were more popular among the students as these examinations had regional orientation. It is observed that after the introduction of CMAT, less number of students have appeared the examination in 2014.

Lack of interaction with industry and differing expectations of education programmes: There is a very big gap between curricula and expectation of industry from the new graduates and postgraduates in the country. As a

whole, B-schools in India face the problem of intake of students which varies in quality, and students having no work experience. Apparently, parents want their children to finish the post-graduate education before opting to work. Thus, students lack industry experience which is essential for management education.

Remedies for efficient higher education in the region:

Timely beginning of academics: For the odd semester in management, the academics should begin in the first week of July of every year and the odd semester examination should commence in the first week of December every year. Similarly for even semesters the academics should begin in the first week of January and the semester examination should commence in the first week of April. This will prevent the late declaration of the results and improve the number of enrollment within the state.

Continuation of GCET and GUJCET: In general, AICTE conducts National Level Common Management Admission Test (CMAT) twice a year for facilitating institutions to select suitable students for admission in management programmes approved by AICTE. This aids in filtering the students for MBA or MCA programmes. JEE-Joint Entrance Programme has replaced the GUJCET-Gujarat Common entrance test for students aspiring to take up engineering. Introduction of GCET and GUJCET will aid the students as well the educational institutes for increasing the number of enrollment of students. The vacant seat will get filled up and students will have easier entry higher educational courses.

Reserving the seats of students from other states of India as well as foreign countries: To improve the overall competitive environment of the region, the government must declare well in advance the seats reserved for outstation students i.e. for students from other states of India as well as from foreign countries.

There are many economic benefits for improving the enrolment scenario in the higher education. If there are higher number of students opting for post-graduation programmes, their employability skills will improve. This will fetch many economic benefits such as increase in employment, reduction in poverty and also contribute to the GDP of the state.

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Times of India, ND 30/09/2014 p-21

Coming, fabric to make soft robots

Material Can Move, Contract And Is Embedded With Sensors

Washington: Researchers are developing a robotic fabric that moves and contracts and is embedded with sensors, an approach that may lead to “active clothing” and a new class of “soft” robots.

Such an elastic technology could make possible robots that have sensory skin, stretchable robotic garments that people might wear for added strength and endurance, “g-suits” for pilots or astronauts to counteract the effects of acceleration, and lightweight, versatile robots to roam alien landscapes during space missions, researchers said.

The robotic fabric is a cotton material containing sensors made of a flexible polymer and threadlike strands of a shape-memory alloy that return to a coiled shape when heated, causing the fabric to move.

“We have integrated both actuation and sensing, whereas most robotic fabrics currently in development feature only sensing or other electronic components that utilize conductive thread,” said Rebecca Kramer, an assistant professor of mechanical engineering at Purdue University. “We also use standard sewing techniques to introduce the thread-like actuators and sensors into the fabric, so they could conceivably be integrated into the existing textile manufacturing infrastructure,” she said.

The robotic fabric can be wrapped around a block of foam or an inflated balloon. Orienting the fabric

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BEND IT AT WILL

in one direction causes the robot to bend, producing locomotion like an inchworm's. Orienting the fabric in a different direction causes it to compress—producing a peristaltic—or slithering locomotion. Kramer's work is related to research she is leading through a Nasa Early Career Faculty award, announced in July, focusing on “active elastic skins for soft robotics.”

The skin will contain a shape-memory alloy for muscle-like movement as well as numerous sensors to provide feedback and environmental information. The goal is to make possible a class of soft robots where all the functional elements are embedded in a stretchable skin. This skin will include flexible electronics that are less sensitive to vibration than conventional hardware, making them rugged enough for space missions. PTI

Soon, you may travel to space in a balloon

Beijing: A Chinese entrepreneur plans to set up a commercial space project to fly travellers in a manned capsule above the earth surface where they can see the curve of the planet and experience weightlessness.

Jiang Fang, president of a Beijing-based company "Space Vision," plans to build a manned capsule carried by a high-tech balloon filled with helium gas to carry sightseers about 40km above the earth's surface.

In addition to the flight system, the company spent nine months researching feasible communications, radar and other ground-based monitoring operations, Jiang told state-run Xinhua news agency.

The company is working with government-funded research institutions on technological matters and the

trip is expected to cost around \$81,400. "Some experts helped us to improve issues on the gravity-free period and when and how the parachute should open," Jiang said, adding that a more detailed and complete plan will be unveiled by the end of next month.

Jiang said that China's flight systems technology for manned capsules and spacesuits

were mature enough for such commercial projects.

The project is a "relatively reliable, safe and economical solution for space travel," Ouyang Ziyuan, a senior scientist in China's moon mission, was quoted by the Beijing Times.

The project will enter the equipment manufacturing stage after the release of the detailed plan next month. Test flights are expected for mid-2015. PT

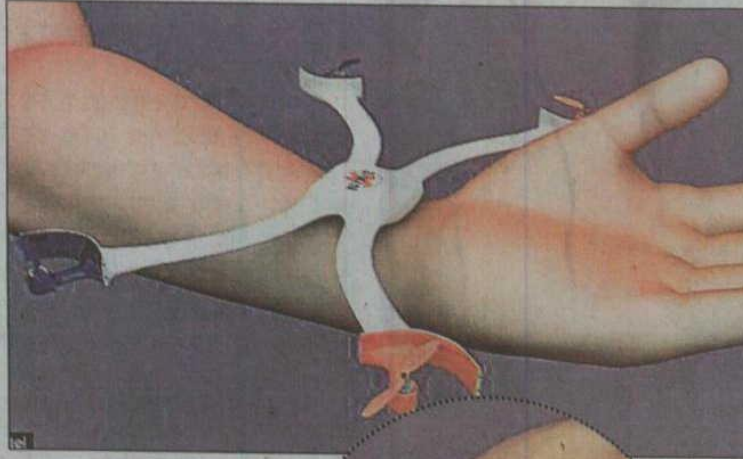
VERTICAL LIMIT

लो आ गया सेल्फी लेने वाला ड्रोन

वाशिंगटन | एजेंसियां

सेल्फी के दीवानों के लिए अमेरिकी शोधकर्ताओं ने शानदार तोहफा पेश किया है। स्टैनफोर्ड यूनिवर्सिटी के शोधकर्ताओं ने सेल्फी लेने वाला ड्रोन बनाया है, जो यूजर की हर हरकत और गतिविधि की तस्वीर खींचने सक्षम है। द निक्सी नाम के इस ड्रोन को कलाई पर घड़ी की तरह पहना जा सकता है।

इसे बनाने वाले शोधकर्ता डॉ क्रिस्टोफर कोस्टॉल का दावा है कि यह दुनिया का पहला ड्रोन है, जिससे किसी गैजेट की तरह पहना जा सकता है। इंटेल की ओर से आयोजित सालाना प्रतियोगिता 'मेक इट विथरेबल' में इस ड्रोन की डिजाइन को पेश किया गया। इसे प्रतियोगिता के अंतिम दौर में जगह मिली है। तीन नवंबर को विजेता की घोषणा होगी।



तकनीक

- सेल्फी ड्रोन निक्सी को पहना जा सकता है कलाई पर
- अमेरिका की स्टैनफोर्ड यूनिवर्सिटी ने किया विकसित

मॉडल तैयार

- 01** प्रोटोटाइप यानी प्रारंभिक मॉडल हो चुका है तैयार
- 30** लाख रुपये का मिला फंड इसे विकसित करने के लिए

आसान तस्वीर

1. कलाई पर घड़ी की तरह बंधा सेल्फी लेने वाला ड्रोन निक्सी।
2. तस्वीर लेने के बाद कलाई पर कुछ इस तरह से बैठेगा ड्रोन।



यूं करता है काम

बटन दबाते ही कलाई पर बंधा यह उपकरण फैलकर ड्रोन में बदल जाता है। यूजर के सिर के ऊपर उड़ते हुए सेंसर और कैमरे की मदद से उसकी तस्वीरें खींचता है और उसकी हर गतिविधि को रिकॉर्ड करता है। तस्वीर खींचने के बाद यह ड्रोन वापस आकर कलाई पर बैठ जाता है।