Newspaper Clips
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IIT-Delhi alumna to drive change

Padmasree Warrior, high-profile Silicon Valley executive, is new CEO of a Chinese electric car start-up in the U.S.

http://www.thehindu.com/news/cities/Delhi/iitdelhi-alumna-padmasree-warrior-to-drive-change/article8005323.ece

Padmasree Warrior, one of Silicon Valley's high-profile women executives, has been appointed the U.S. chief executive officer of a Chinese firm which is building an electric car to compete with the American electric car manufacturer Tesla.

Ms. Warrior, 55, will be the chief development officer and CEO of the start-up NextEV. A technology industry veteran, Ms. Warrior was most recently Cisco's Chief Technology and Strategy Officer and had stepped down from the position in June.

Warrior's track record as a technology visionary is "undisputed" and her knowledge of the global markets and business acumen are "surpassed only by her ability to lead distributed teams of engineers and developers toward a common goal", NextEV's founder and chairman William Li said in a statement.

"Her passion for technology and the positive impact it can have on humanity, aligns well with the core values of NextEV as we build the first user-enterprise.

NextEV's global team is comprised of the best minds from the automotive, software and user experience domains," Mr. Li said. "We will leverage leading edge technologies to deliver world-class products to global consumers."

Ms. Warrior said she had always looked for opportunities to leverage technology to tackle big problems.

"Climate change and air quality are two of the most significant global challenges today. I believe that electric vehicles will play a major role in the overall solution."

Ms. Warrior has in the past been named by *Forbes* among the world's 100 most powerful women. She is an alumna of the Indian Institute of Technology, Delhi.

Amar Ujala ND 19/12/2015 P-7

आईआईटी दिल्ली के 850 छात्रों को मिली नौकरी

अमर उजाला ब्यूरो

नई दिल्ली। भारतीय प्रौद्योगिकी संस्थान (आईआईटी दिल्ली) में पहली दिसंबर से शुरू हुए प्लेसमेंट सेशन का पहला चरण शुक्रवार को समाप्त हो गया। इस बार के प्लेसमेंट सीजन में आने वाली कंपनियों की संख्या में 15 फीसदी तक का उछाल देखने को मिला। पहले चरण में विभिन्न क्षेत्रों की कंपनियों से 850 छात्रों को ऑफर मिले, जिनमें लगभग 60 फीसदी छात्रों ने इंजीनियरिंग व आईटी कंपनी के ऑफर चुने हैं। इसके साथ इस बार स्नातक और स्नातकोत्तर दोनों छात्रों को पर्याप्त जॉब ऑफर मिले हैं।

आईआईटी दिल्ली में ट्रेनिंग एंड प्लेसमेंट सेल प्रमुख प्रो. शशि माथुर के मुताबिक इस बार के प्लेसमेंट सेशन का ट्रेंड रहा कि छात्रों ने काफी अच्छे अंतरराष्ट्रीय सैलरी पैकेज को ठुकराया है। कुछ अंतरराष्ट्रीय ऑफर के साथ कंपनियां कैंपस पहुंची। हालांकि

- लगभग 60 फीसदी छात्रों ने चुने इंजीनियरिंग व आईटी ऑफर
- 10 फीसदी छात्रों ने पसंद किए वित्तीय कंपनियों के ऑफर
- जनवरी के पहले सप्ताह से शुरू होगा प्लेसमेंट का अगला चरण

इस बार घरेलू कंपनियों से मिलने वाले ऑफर की संख्या में 10-20 फीसदी की बढ़ोतरी देखने को मिली है लेकिन सबसे अधिक 33 फीसदी ऑफर कोर टेक्निकल क्षेत्र से, 24 फीसदी ऑफर आईटी, 16 फीसदी कंसल्टिंग, 15 फीसदी एनालिटिक्स, 10 फीसदी फाइनेंस व दो फीसदी टीचिंग व रिसर्च के ऑफर छात्रों को प्राप्त हुए हैं। संस्थान इस बार औसतन पैकेज के विषय में खुलासा नहीं कर रहा है लेकिन कहा जा रहा है कि औसतन 10 से लेकर 50 लाख तक के पैकेज की पेशकश हुई है। सैलरी पैकेज बढ़ने की बात भी की जा रही है। कंपनियों को बेहतर प्रतिभा मिली है ऐसे में कई कंपनियों ने इस साल परिसर में उपलब्ध प्रतिभा की गुणवत्ता पर अपनी सकारात्मक प्रतिक्रिया भी दी है। डॉ. माथुर के मुताबिक प्लेसमेंट का अगला चरण अब जनवरी के पहले सप्ताह में शुरू होगा जो मई 2016 तक चलेगा। संस्थान इस चरण में भी नामी कंपनियों के आने की उम्मीद कर रहा है। मालूम हो कि इस बार के प्लेसमेंट सीजन में शुरुआती दिनों में छात्रों द्वारा विदेशी कंपनियों के बजाए देसी कंपनियों के ऑफर को वरीयता देने का ट्रेंड देखने को मिला। इसके चलते छात्रों द्वारा एक करोड़ से अधिक के अंतरराष्ट्रीय ऑफर को ठुकरा दिया गया।

Times of India ND 19/12/2015 P-5

850 get offers, but startups queer pitch

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New Delhi: The first phase of the placements at Indian Institute of Techhology, Delhi, ended with over 850 students holding offers. But despite the numbers, it wasn't all smooth. Alumni returning as recruiters for startups exaggerated the size of their pay "packages" to get better interview slots and later attempted to recruit students into profiles they hadn't registered for and at lower salaries.

Officials in the training and placement cell say there's been a "surge" in the number of startups coming to campus with coding profiles. "One disturbing trend that was noted was of some startups trying to hire for job profiles not advertised at substantially lower salaries after interviewing students for job profiles at higher salaries," says industrial liaison officer, Anishya Madan. "The campus felt the salary promised at the time of filling job profiles was just to get a better interview slot since many alumni are a part of these startups." Finally, 24% of the total offers were from the domain of information technology.

IIT PLACEMENT

As per the training and placement cell's records, the number of job profiles companies wanted to recruit for increased by 15%. There were over 750 "unique selections" across all departments and many students.even received multiple offers. 60% students have opted for "core engineering / IT jobs", say TNP officials, and 15% have gone into analytics, 16% into consulting, 33% into core technical, 10% into finance, and 2% into teaching and research.

The average increase in "packages" for domestic profiles offered in the first phase has been in the range of 10%-15%. However, public sector units were still missing-in-action despite the Madras high court permitting them to participate in campus recruitments in September. "My team tells me they were not able to get their processes done in time. They couldn't make it to December and will likely return only for the next batch," says Madan. Phase II of placements for this batch, however, begins in January, 2016.

Navodaya Times ND 19/12/2015 P-7

इंजीनियरिंग व आईटी छात्रों को ज्यादा मौका

चयनित छात्रों में कोर इंजीनियरिंग व आईटी के 60 प्रतिशत छात्र

- आईआईटी में प्लेसमेंट का आज आखिरी दिन
- जनवरी के पहले सप्ताह में फिर मिलेगा अवसर

नई दिल्ली, 18 दिसम्बर (ब्यूरो): आईआईटी (इंडियन इंस्टीटयूट ऑफ टैक्नॉलोजी दिल्ली) में इन दिनों प्लेसमेंट चल रही है और शनिवार को यह खत्म हो रहा है। आईआईटी में चल रहे प्लेसमेंट में इसबार जहां डोमेस्टिक पैकेज में दस से बीस प्रतिशत तक की बढ़ौतरी देखने को मिली है। वहीं सबसे ज्यादा छात्रों का चयन कोर इंजीनियरिंग और आईटी सैक्टर में हुआ है।

आईआईटी दिल्ली में चल रहे प्लेसमेंट के पहले फेज पर शुरूआत से ही सभी की

नजरें लगी हुई हैं, शुरूआती दिनों में ही यहां के छात्रों ने विदेशों में नौकरी के मिले एक लाख डॉलर के भारी-भरकम पैकेज को ठुकराकर उनके स्थान पर कैम्पस में आने वाली भारतीय कम्पनियों को तवज्जो देते हुए उनके पैकेज एसेप्ट कर लिए थे। इसके साथ ही अभी तक देखने को मिला है, सबसे ज्यादा प्लेसमेंट कोर इंजीनियरिंग और इंफोरमेशन टैक्नोलॉजी के छात्रों का हुआ है। अगर प्रतिशत की बात करें तो अभी तक चुने गए छात्रों में कोर टैक्नोलॉजी के 33 प्रतिशत छात्रों का चयन हुआ है, जबकि 24 प्रतिशत छात्र इंफॉर्मेशन टैक्नोलॉजी के है। जबकि सबसे कम दो प्रतिशत छात्र टीचिंग एंड रिसर्च में गए है। जॉब फेयर के पहले फेज में अभी तक आईआईटी दिल्ली के सभी डिपार्टमेंट के छात्रों को 850 से ज्यादा जॉब ऑफर मिले, जिसमें से 750 को छात्रों ने स्वीकार भी कर लिया है। प्लेसमेंट सैल की अनिश्या ने बताया कि कैम्पस का अगला दौर जनवरी के पहले सप्ताह में शुरू होगा, जो मई तक चलेगा।

Navbharat Times ND 19/12/2015 P-10

IIT प्लेसमेंट : नए साल में आएंगी टॉप कंपनियां

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■ नई दिल्ली : आईआईटी दिल्ली में प्लेसमेंट का दूसरा राउंड जनवरी के पहले हफ्ते शुरू होगा और बड़ी तादाद में कंपनियां कैंपस पहुंचेंगी। इनमें बड़ी संख्या में टॉप कंपनियां भी होंगी। मई तक चलने वाली इस ड्राइव में कई इंटरनैशनल कंपनियां भी पहुंच रही हैं। जापान, अमेरिका से ज्यादा कंपनियों के पहुंचने की उम्मीद है। साथ ही, डॉमेस्टिक कंपनियां बढ़िया ऑफर के साथ स्टूडेंट्स को चुनेंगी। वहीं, फर्स्ट राउंड में स्टूडेंट्स को लगभग 900 ऑफर मिल चुके हैं। इस बार कई स्टूडेंट्स को एक से ज्यादा ऑफर मिले हैं। कैंपस में पहले फेज के दूसरे हफ्ते कोर कंपनियां (टेक्निकल) ज्यादा पहुंची हैं और एमटेक स्टूडेंट्स को ज्यादा ऑफर मिल रहे हैं। पहले राउंड में सामने आया है कि आईआईटी दिल्ली का प्लेसमेंट रिजल्ट पिछले साल की तुलना में करीब 15 पर्सेंट तक बढ़ा है और ऐवरेज पैकेज 15 से 20% ज्यादा हुआ है।

300 से ज्यादा कंपनियां

आईआईटी दिल्ली के ट्रेनिंग और प्लेसमेंट सेल के प्रोफेसर इनचार्ज प्रो. शशि माथुर कहते हैं, दिसंबर के राउंड का ट्रेंड देखें तो कंपनियां भी बढ़ी हैं और ऑफर्स भी बढ़े हैं। बहुत से स्टूडेंट्स ऐसे हैं जिन्हें एक से ज्यादा ऑफर मिले हैं। अब तक अलग-अलग फील्ड में 300 से ज्यादा कंपनियां आ चुकी हैं। शुरुआती चार दिनों में 40-40 कंपनियां थीं और उसके बाद 10 से 15 के बीच कंपनियां रोज पहुंच रही हैं।

पैकेज 15% तक बढ़े

कैंपस में दिसंबर में कोर कंपनियां ज्यादा आई हैं और वे एमटेक स्टूडेंट्स को ले रही हैं। आज पहले राउंड का आखिरी दिन है। स्टूडेंट्स बताते हैं, एमटेक स्टूडेंट्स की संख्या कम होती है, ऐसे में ऑफर भी इस महीने कम नजर आते हैं। हालांकि, स्टूडेंट्स की संख्या के हिसाब से ऑफर काफी मिले हैं। साथ ही, इस पूरे राउंड में पिछली बार के मुकाबले ऐवरेज पैकेज 15 पर्सेंट तक बढ़ा है। पिछली बार ऐवरेज पैकेज 9 लाख रुपये सालाना था।

33% स्टूडेंट्स कोर फील्ड से

इंटरनैशनल कंपनियों में अब तक आईआईटी दिल्ली में यूएस और जापान से करीब 15 आईटी कंपनियां पहुंची हैं। ज्यादातर कंपनियां एनालिटिक्स, कंसल्टिंग, कोर, फाइनैंस, इन्फर्मेशन टेक्नॉलजी से जुड़ी हैं। इनमें से सबसे ज्यादा जॉब ऑफर 33% कोर कंपनियों से हैं। इसके बाद 24% आईटी से, 16% कंसल्टिंग, 15% एनालिटिक्स, 10% फाइनैंस और 2% टीचिंग और रिसर्च से स्टूडेंट्स चुने गए हैं। इस बार डॉमेस्टिक कंपनियों की ओर से भी सैलरी पैकेज भी बढ़ा है। कुछ कोर कंपनियां तो इंटरनैशनल ऑफर लेकर पहुंची हैं। 20 से 50 लाख पैकेज पाने वाले स्टूडेंट्स भी बढ़े हैं। इंटरनैशनल कंपनियों की ओर से 10 से ज्यादा स्टूडेंट्स को 100 हजार डॉलर सालाना तक के हाई पैकेज भी ऑफर हुए हैं।

दूसरे राउंड में कई टॉप कंपनियां

प्रो. शशि माथुर कहते हैं, जनवरी से मई के बीच बड़ी तादाद में कंपनियां पहुंचेंगी और इसके लिए कंपनियों ने रजिस्ट्रेशन करवाना भी शुरू कर दिया है। जनवरी पहले हफ्ते से दूसरा राउंड भी शुरू हो जाएगा। इसमें ग्रैजुएशन लेवल के कई स्टूडेंट्स को लिया जाएगा। फाइनैंस, बैंक, एनालिटिक्स, आईटी, कंप्यूटर साइंस, सिविल सभी ट्रेड की कई बड़ी इंटरनैशनल और डॉमेस्टिक कंपनियां पहुंचेंगी।

Times of India ND 19/12/2015 P-16

Pilot project to turn 10 buses electric-powered

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New Delhi: Amid the growing concern around air pollution in cities across India due to increased consumption of diesel for transportation, the central government has decided to roll out a pilot to convert 10 diesel or CNG buses run by state governments to electric ones. Maharashtra, Karnataka and Delhi are likely to get these buses in the next 3-4 months with an investment of about Rs 10-12 crore.

On Monday, two 16-seater mini-buses, converted to run on electricity, will be flagged off by Prime Minister Narendra Modi in presence of Lok Sabha Speaker Sumitra Mahajan and transport minister Nitin Gadkari.

Electric buses, which run on charged batteries, are not only pollution free but also the per km travel cost is almost half in comparison to diesel buses. Sources said the cost of electric retrofit in an existing bus would be around Rs 60 lakh. This is because these buses will have to use the imported lithium ion (Li-ion) batteries, which is expensive.

"Once we have the domestic design and supply of batteries, the cost will reduce drastically. But even when we use the imported batteries the cost of such buses is much less in comparison to the cost of an imported electric bus. This is because barring the battery we are using all indigenous technology in such buses," said a road transport ministry official.

Sources said using Li-ion batteries to run city buses is the best solution. On an average a city bus covers about 200 km and a standard bus uses about one unit of electricity for one kilometer, which is much cheaper than diesel. Indian Space Research Organisation (ISRO), IIT Kharagpur and IIT Madras are already in the process of developing such Li-ion batteries.

For the full report, log on to www.timesifindia.com

GREEN RIDE

- Importing normal electric or hybrid bus costs approx ₹1.75 cr
- Cost of electric retrofit in an existing bus to cost approx ₹60 lakh
- Buses running on charged lithium ion batteries can be used in urban areas or for inter-city transport (40-50km)
- 1km of travel costs about ₹7-8 in electric bus against ₹12-13 in diesel bus

- Cost reduction possible by halving number of batteries; enough to run 100km
- Charging facilities for batteries at depots

BENEFITS: Zero pollution, zero sound & better riding quality

Rank up

Will ranking of education institutes help them grow?

FOR an institute to be worthy of a rank, it must first strive to be an institute. This would be the real challenge for most of the 700 universities and 60,000 colleges. The University Grants Commission (UGC) will rank by April 2016 based on the national institutional ranking framework. Anxious murmurs are audible as institutes worry data may not be accurately captured. It is perfectly likely that ranks do not reflect true merit of the institute, or gloss over it and will definitely not capture vital academic nuances. The good, the bad and the ugly may all get jumbled. This distort the public image of an institute and misguide choices among students and job seekers. Institutes are at different levels .The new ones may not perform well in nearly all or research or collaborative performance, outreach inclusiveness, perception partnerships or international exposure, publications and patents. They may miss out on even under adequate infrastructure that determines performance under basic indicators of teaching, training and learning resources. Ranking is comparative and relative to others' performance. Thus, it misses the most critical indicators of endeavor towards excellence - the processes, governance systems and the incremental progress an institute makes against its own baselines. So, the gain in rank by one does not really raise one's position, it only lowers others'.

Parallel regulators like the All-India Council of Technical Education and the Medical Council of India are irked as this trespasses on their powers. They have their own assessment matrices. Even within UGC, there is a separate body, the national assessment and accreditation council (NAAC). What happens if NAAC rates an institute negatively and the UGC does not and who will decide and explain the difference in methodology and parameters? What if the difference of assessment is on the same parameters? Which will prevail and who will arbiter that? There is already a bitter taste of conflicting judgments. The choppy waters of deemed universities were partly the consequence of conflicting judgments by different educational committees/regulators.

Ranking is a worrying mater because money is tied to it. Money invested and funds raised determine nearly all indicators. How then will all institutes be comparable? It is absurd even to assume so. At the same time, ranking influences grants. There are fundamental issues in India where higher education needs to enroll more students and enhance their self-worth, creativity and competence. This requires that institutes innovate, chart new paths and nurture an environment where students graduate as confident citizens, not just machines programmed to perform and compete in predictable ways. If the ranking system becomes deterministic, can they so evolve? But as the queen of hearts in Alice in Wonderland said, "sentence first, judgment afterwards."

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Vehicular emissions may rise 19 times by 2020

Study By IIT-Roorkee, Universities Of Surrey & Minnesota Has Startling Data

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Agra: An eight-year study from 2008-2015, conducted by IIT-Roorkee, University of Minnesota, US, and University of Surrey, UK, has shown that emissions from vehicles in Delhi have increased up to three times between 1991 and 2011; these could rise by up to 19 times by 2020.

Researchers said the study has now been accepted for publication by the international science journal "Atmospheric Environment".

Private vehicles' (two-wheelers and cars) emissions—carbon dioxide, hydro carbons, PM10 (particulate matter), carbon monoxide, nitrogen oxide and toxic substances like butadiene, acetaldehyde, benzene, formaldehyde, total aldehyde, and total poly aromatic hydrocarbons have increased by 2-13 times in 2011 and 2-16 times in 2015 over 1991 levels, the researchers have found.

Two-wheelers were found, at present, to be the dominant source of emissions of what are termed Mobile Source Air Toxics (MSATs)—formaldehyde (37%), hydrocarbons (35%) and acetaldehyde (64%). Private cars were found to be responsible for the majority of the carbon monoxide (34%), benzene (48%), and total aldehyde (40%) emission. Heavy-duty commercial vehicles (HCVs) were found to have emitted nearly 46% of all particulate pollutants in 2015. Diesel cars were responsible for 10% of such pollution in Delhi.

The study attempted to record variations in various vehicular pollutants over 20 years, and offered projections for the future.

It was conducted by Ajay Nagpure, post doctorate associate at the Centre for Science, Technology and Environmental Policy, University of Minnesota, B R Gurjar and Vivek Kumar from IIT-Roorkee and Prashant Kumar from University of Surrey.

Nagpure told **TOI** that pollution levels in Delhi had already reached dangerous levels. If action was not taken immediately, it would become render irreversible damage, he warned.

Anindya Chattopadhyay

HER FIGHT AGAINST POLLUTION HAS SANTA'S THUMBS UP

Researchers developed their own model, the Vehicular Air Pollution Inventory (VAPI), for measuring time-series emission analysis (1991-2011) of on-road vehicles. The research included pollution caused by non-exhaust sources like worn-out brake, poor roads or tyres and road dust. PM10 (particulate matter) emissions from tailpipe and non-exhaust sources contribute 16% of the total pollution; road dust is the big chunk of PM10 emissions, at 77% and brake wear (6%) in 2015. The study anticipates that the share of road dust in PM10 pollution would be 79% in 2020.

Nagpure said according to United Nations Environment Programme (UNEP) and World Health Organization, Delhi is the second-most populous city in the world after Tokyo, and the most polluted in the world. Air-pollution deaths have gone up two-fold between 1991 and 2010 in Delhi.

MSATs can cause a wide range of serious health effects from birth defects, cancer, damage to kidneys, lungs and nervous system. Estimates from the US Environmental Protection Agency show that on-road vehicles are responsible for about half of all cancers attributed to outdoor air pollution.

Nagpure said that although action is being taken by governments to reduce pollution, much of this is focused on exhaust emissions. But no action is taken to reduce non-exhaust emissions like brake wear, road wear, tire wear and road dust.

The study projected greater pollution from buses. Cars (30-34%) were found to be producing the highest CO2 emissions during 2011 to 2015; there is likelihood that buses could dominate in the years after 2015, the researchers said.

Mono-nitrogen oxide emission has also grown significantly with an annual rate of growth of 14%.

Two-wheelers played a dominant role in hydrocarbon emissions from 2011; buses are expected to be the biggest source of this pollutant from 2018 onwards.

NITs should not be compared with IITs: NITK Director

http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/nits-should-not-be-compared-with-iits-nitk-director/article8007300.ece

Criticising the Centre for taking Indian Institute of Technologies as a benchmark for framing the policy of National Institutes of Technology, Director of National Institute of Technology Karnataka Swapan Bhattacharya said each NIT should be evaluated individually.

Speaking at the 10th global alumni convention here on Friday, Mr. Bhattaracharya said time had come for dismantling the IIT system. The Centre should also stop framing policy in the name of IITs. Each NIT was no less than an IIT and it should be evaluated individually.

“We want the Centre to compare our NIT with IIT Mumbai,” he said and added that the faculty and students in the NITs were no less than those in the IITs. The projects and programmes at the NITs are acclaimed world over.

Pointing to the dichotomy, Mr. Bhattacharya said fees for pursuing undergraduate course at the NIT is 1.25 lakh per annum while it is Rs. 2 lakh at the IIT. “Obviously an impression is being given that the quality at NITs was less than at the IIT.

Mr. Bhattacharya, who is leaving the Institute by the end of this month, said only IITs cannot shape the country’s fortune. There was need of 100 more institutes like NITs.

In his key note address, Managing Director of Titan Industries, Bhaskar Bhat said India was on a growth ladder as there was a positive change in the economy. This was because of confluence of large population, rise in personal income and rise of people’s aspiration, which was unique to India. Mr. Bhat said India was in the best position to tackle volatility, uncertainty, complexity and ambiguity, which the World was now talking about.

There was discourse by spiritual leader Jaggi Vasudev, who is the founder of Isha Foundation. The alumni association felicitated retired professors and staff of NITK and also some alumni, who have made a mark in their professions.

Markandey Katju slams IIT students while addressing them; calls them 'unpatriotic, selfish'!

It takes Rs 3.4 lakh per year for an IITian to get educated in the elite institute but the students only have to pay Rs 90,000 per year, rest of Rs 2.5 lakh amount per student per year is being paid from the tax payers money

http://www.india.com/news/india/markandey-katju-slams-iit-students-while-addressing-them-calls-them-unpatriotic-selfish-798668/

Mumbai, December 19: Former Supreme Court judge Markendey Katju on Friday while addressing students of Indian Institute of Technology Bombay said that they do not have genuine love for country and they are utterly selfish with no patriotism or idealism left among them. Katju visited the elite engineering institution on Friday and the comment was unexpected as he was invited as a guest speaker there to speak on various issue.

After visiting IIT Bombay Justice Katju posted on Saturday posted on his Facebook where he said, "Most of you IIT students have no genuine love for the country. You are utterly selfish, with no patriotism or idealism".

Katju said everyone in IIT want to migrate to United States and most of the students manage to do that. According to Katju most of the IITians pursue M.Tech degree from US for which they get scholarship and they settle down there, enjoying a comfortable life and to hell with India. **Read Also: (Blind student Srikant Bolla, rejected by IIT, gets admission to MIT & now he started a small venture in India for training computers to blind students)**

He said, that the education of IIT is largely subsidised by the Indian taxpayers money. "But after we Indians pay for your education, you are taken away by America (or Europe) who benefit from your technical knowledge, which was imparted by us," Katju added.

Katju further explains in his Facebook post in a most blatant manner, that the higher education is very expensive in the West and due to which the westerners take our best brain by educating IITians at a small fraction of cost in their own country.

He further criticised the students saying that, after the IITians settle down in America, they become NRIs, who know everything and do not understand about what is good for the people of country and what is not.

It takes Rs 3.4 lakh per year for an IITian to get educated in the elite institute but the students only have to pay Rs 90,000 per year, rest of Rs 2.5 lakh amount per student per year is being paid from the tax payers money. According to the budget estimates for 2015-2016, Rs 1703.85 crore is been allocated by the government from the taxpayers money.

IIT-M develops carbon 'nanotube' that helps kill cancer cells

http://timesofindia.indiatimes.com/city/chennai/IIT-M-develops-carbon-nanotube-that-helps-kill-cancer-cells/articleshow/50242592.cms?

Chennai: Researchers at Indian Institute of Technology Madras have developed a carbon `nanotube' that helps kill cancer cells without affecting neighbour cells and tissues.

The team has found that carbon nanotubes measuring less than one micron in length made by rolling graphene sheets can be used in targeted photodynamic therapy where cancer cells are killed by inducing heat without any toxic effect to the body . The therapy involves targeting cancer cells embedded with the nanotubes which alone get heated during the process. IIT-M has been doing the research in collaboration with National University of Singapore.

Graphene, an atomic layer of graphite in the form of sheet, is rolled to make carbon nanotubes. The inner diameter of these tubes measure about 20 to 30 nanometre (1 nanometre is one-billionth of a meter) and the outer diameter 50 to 60 nanometres. Their length could be up to 1,000 nanometre. Professor and head of alternative energy and nanotechnology laboratory at IIT-M, Sundara Ramaprabhu said these carbon nanotubes have excellent thermal conductivity and have a large surface area to support and carry a drug.

In photodynamic therapy , the professor said, these carbon nanotubes are coated with vitamins like folic acid and injected into the patient. The folate receptors, a protein in the body, then take both the vitamin and the carbon nanotubes to the nucleus of the cell including the cancerous cells. Therapists pass infrared radiation in pulses at a wavelength of about 800 nanometre. "A good amount of energy in pulses will be stronger," the professor said.

With the carbon nanotubes possessing good thermal conductivity , the heat from the radiation passes through the nanomaterial present in the cells. Once the temperature rises to 42°C, it kills the cancerous cells. The surrounding cells, which have not absorbed the nanotubes, will remain unaffected.

"Much research is being conducted world over with various nanomaterials like iron oxide, gold nanoparticles and metal nanoparticles for photodynamic therapy . We found that carbon nanotubes made by rolling grapheme sheets are more effective in cancer therapy," Ramaprabhu said. Studies were also conducted to check the toxicity of the nanomaterial by evaluating few parameters like the tubes' length, solubility , concentration and purity .They found that the carbon nanotubes were less toxic in a range of concentrations that are normally used, but also are `ultrapure', which means it guarantees safe application.The scientists say that more research is needed before applying the process on different types of cancers.