Newspaper Clips
April 23, 2015

400 innovative projects showcased by IIT Delhi students

Vijay Rao, a PhD student at the department of electrical engineering, IIT Delhi, with the e-health kit for rural paramedics. Photo: Sushil Kumar

http://www.hindustantimes.com/higherstudies/400--innovative-projects-showcased-by-iit-delhi-students/article1-1339764.aspx

An electronic travel aid for the visually challenged, an intervertebral disc tissue using silk biotechnology and an e-health kit for rural paramedics. As many as 400 innovative projects - the result of hard work and bright ideas - were showcased by IIT Delhi students at the annual IIT Delhi Open House last week.

Elaborating on his project that could work wonders for patients with back problems/injuries, Sumit Murab, a PhD scholar at the department of textile technology, says: "Millions of elderly persons around the world are suffering from lower back pain, due to intervertebral disc (IVD) degeneration. This results in problems such as disability and symptomatic pain. The current surgical treatments involve removal of disc and fusion of two vertebra or insertion of metallic implants, which hinder the patient's movement and pose a threat of post-operative trauma to the patients.

"We have developed an injectable hydrogel system of N-acetyl-glucosamine (GlcNAc) loaded silk hollow spheres embedded in silk hydrogel for therapeutic release and enhanced mechanical strength. Controlled release of GlcNAc holds potential for the treatment of degenerative disc diseases. To the best of our knowledge, this is the first system demonstrating the effect of controlled release of medically relevant dose of GlcNAc," says Murab.

Another innovative device, developed by students of the computer science and engineering department, is called SmartCane. "It is an electronic travel aid which fits on the top fold of a smart cane stock used by visually-challenged persons. It overcomes its limitations by detecting obstacles. For safe mobility, it is important that such obstacles are detected early. The cane has other uses. It doubles as a spatial awareness device and can detect presence/absence of objects in the surroundings. It can detect objects in the range of three metres. It vibrates at different intensities and informs the user about the presence of objects in its path. These vibrations convey the distance information and thus enable the user to negotiate the obstacles from a safe distance. With simple orientation and training, any visually-challenged person can benefit from this," says Kunal Kwatra, one of the students working on this project.

Another revolutionary project is an e-health kit which has been developed as a simple easy-to-use medical diagnostic backpack for paramedics-on-cycles to carry into villages and allow them to collect medical data, then use available communication networks (2G/3G/WiFi) to flow into a cloud database called WiSeKAr. This data can then be used for medical profiling.

"We integrate a pulse oximeter, electronic blood pressure monitor, air flow sensor for pulmonary capacity/chronic obstructive pulmonary disease (detection, blood sugar level monitor for diabetes screening, ECG, a portable ultrasound system and a smartphone-based urine analysis kit into one convenient solar-powered package with an intuitive user interface. The data collected in our database (WiSeKAr) is available for big data analysis. With the use of the e-health kit, medical profiling becomes possible. Trends such as diet-induced deficiencies and diseases can be picked up in communities and the spread of diseases can be detected," says Professor Subrat Kar of the department of electrical engineering, who is part of the project.

Kar says that the significance of this equipment is that it truly takes only a paramedic with this equipment in a backpack and travelling on a two-wheeler/bicycle to collect several vital medical parameters from the heart of India's villages. "Our other partners in this project are IIT Hyderabad and University College London, the DST in India and the EPSRC in UK," he adds.

Not only does the e-health kit allow registration of authentic medical data, it follows trends like spread of diseases, occurrence of diet-linked deficiencies professor subrat kar, department of electrical engineering, IIT delhi

Deccan Herald ND 23/04/2015 P-10

Diluting autonomy of IITs, a disaster in making

Sir, The editorial, 'The IITs don't warrant interference' (DH, Apr 22) should reflect the opinion of a vast majority of, at least, the scientists and educationists in the country. Everybody knows that though none of our universities or institutions comes within the first 200 in the world ranking, autonomous institutions like the IITs do maintain an international standards and competitive level. This, no doubt, is because of the autonomy these institutions enjoy, and any attempt to dilute it would prove to be too costly and detrimental to the country's scientific and technological growth.

It is in the larger interest of the country to leave academic and scientific matters to those who know them best. Let not the chaotic scenario that prevails in our political arena be made to penetrate the serenity of the scientific community.

K K CHERIAN
Bengaluru

Millennium Post ND 23/04/2015   P-7

IIT researchers turn farmers to change agriculture

KHENTIA (WB): A group of researchers at IIT Kharagpur have turned farmlands near the campus into a 'laboratory' to experiment with new agricultural technologies and help farmers whose land they have "adopted" to improve their yield.

Around 10 kilometres away from the campus, the team adopted 14 acres of land from a group of farmers at Khentia village.

Most of the land, in small fragments, was lying barren for the last few years. With hope in their eyes, the farmers agreed to turn in their farmlands to the IIT team.

The work began last November with tilling, ploughing and levelling of the fragmented plot to make it a single unit.

"We are introducing new technologies like SRI to increase rice yield with less water. To promote crop diversification, cash crop like sweet corn, peanut and soybean have been introduced," project in-charge Prof P B S Bhadoria told a news agency.

To encourage organic farming, they have started creating vermicompost units.

The IIT team has dug up a tubewell and also made a pond for rainwater harvesting and pisciculture.

48-year-old Jagannath Das, who owns less than 20 decimal land, says he is now learning new things about growing crops.

"We allowed them to take charge of our land because of the trust we have on such a large institution like IIT. Now we are learning new things as if our farmland has become a classroom," Das said. AGENCIES

Rashtrya Sahara ND 23/04/2015 P-12

खेती के नए तरीके सिखा रहा आईआईटी

खंतिया (पश्चिम बंगाल) (भाषा)। आईआईटी खड़गपुर के अनुसंधानकर्ताओं के समूह ने अपने परिसर के पास की कृषि भूमि को प्रयोगशाला में बदल दिया है ताकि नई कृषि प्रौद्योगिकी का प्रयोग किया जा सके और किसानों को अपनी उपज बढ़ाने मदद मिले।

भारतीय प्रौद्योगिकी संस्थान (आईआईटी) खड़गपुर के परिसर से 10 किलोमीटर दूर खंतिया गांव में किसानों के एक समूह ने 14 एकड़ भूमि गोद ली है। छोटे-छोटे टुकड़ों में बंटी ज्यादातर भूमि पिछले कुछ साल से बंजर पड़ी थी। उनकी उम्मीद को देखकर किसान अपनी जमीन को आईआईटी के दल के लिए कृषि भूमि में तब्दील करने के लिए तैयार हो गए। पिछले साल नवम्बर में विभिन्न टुकड़ों बंटी जमीन की जुताई और समतल करने का

काम शुरू हुआ ताकि इसे एक बड़े टुकड़े में परिवर्तित किया जा सके। इस परियोजना के प्रमुख प्रोफेसर पीबीएस भदौरिया ने कहा, 'हमने एसआरआई जैसी नई प्रौद्योगिकी पेश की है ताकि कम पानी के साथ चावल की पैदावार बढ़ाई जा सके। फसल विविधता बढ़ाने के लिए

■ पश्चिम बंगाल के खंतिया में आईआईटी खड़गपुर के आसपास की जमीन पर चल रहे हैं प्रयोग

■ कई किसानों ने नए प्रयोगों के लिए अपनी जमीन स्वेच्छा से दी

मक्का, मूंगफली और सोयाबीन जैसी नकदी फसलें पेश की गईं।' जैविक खेती के प्रोत्साहन के लिए उन्होंने वर्मिकंपोस्ट इकाइयां शुरू की।

आईआईटी के दल ने ट्यूबवेल खोदा और वर्षा जल संचयन तथा मत्स्य पालन के लिए एक तालाब भी बनाया। बीस डेसिमल से भी कम जमीन के स्वामी, 48 वर्षीय जगन्नाथ दास ने कहा कि वह खेती के बारे में नई चीजें सीख रहे हैं। दास ने कहा, 'हमने उन्हें अपनी जमीन का जिम्मा सौंप दिया क्योंकि हमें आईआईटी जैसे बड़े संस्थान पर भरोसा है। अब हम नई चीजें सीख रहे हैं, जैसे हमारी खेती की जमीन पाठशाला बन गई हो।'

आईआईटी मद्रास से मेटालर्जी की पढ़ाई करने वाले युवा वैज्ञानिक अभिषेक सिंघानिया बहुराष्ट्रीय कंपनी प्राइसवाटर हाउस कूपर्स में काम करते थे लेकिन उन्होंने इस हरित क्रांति से जुड़ने के लिए पिछले महीने उन्होंने सऊदी अरब की नौकरी छोड़ दी।

Mint ND 23/04/2015 P-6

Education needs quality control: panel

New Delhi: A government panel has suggested the creation of a regulatory body for education to ensure quality, human resource minister Smriti Irani told Parliament on Wednesday. The proposed agency would have three independent boards, the minister said. One of them will be in charge of academics, research and regulatory functions. The second will evolve norms and parameters for allocations and grants to colleges and universities. The third would coordinate activities of different higher education councils, said Irani said in a written reply. A four member committee headed by a former University Grants Commission (UGC) chairman Hari Gautam had submitted the report in March. **PRASHANT K. NANDA**

IIT, IISc professors come out in support of net neutrality

http://www.hindustantimes.com/india-news/iit-iisc-professors-come-out-in-support-of-net-neutrality/article1-1340048.aspx

While the Parliament debated the issue of net neutrality and internet users organised online campaigns for the cause, around 50 professors from the country's premier technological institutions issued a joint statement on Wednesday in support of the cause.

The professors, from Indian Institute of Technology (including Bombay, Delhi, Madras, Patna, Kharagpur and Kanpur), Indian Institute of Science (IISc) and IIM Calcutta, have, in a joint statement, requested the Telecom Regulatory Authority of India (TRAI) to maintain net neutrality in the country.

The professors countered arguments made in the TRAI's March 27 consultation paper based on technical aspects of digital networks. The consultation paper is called 'Regulatory Framework for Over-the-top (OTT) services'. TRAI has asked the stakeholders to send their comments and feedback by April 24.

The professors' joint statement said, "There are no sound technical or economic reasons to violate net neutrality. In fact, such violation threatens the essential idea of the internet itself. We urge the TRAI to maintain net neutrality in its strongest possible form, as this is crucial for a digitally empowered India."

Bhaskar Raman, professor, department of computer science engineering, IIT-Bombay, said, "The consultation paper includes several arguments for why network neutrality must be compromised or weakened. We request the authorities that it is necessary that the provisions should be made within the ambit of net neutrality and operators should not take different benefits from it. "

Raman added, "For example, recently some network operators charged differently for Skype calls, which is against net neutrality and it should be stopped."

What is net neutrality?

Network neutrality (or net-neutrality) is an operational principle of the internet, where Internet Service Providers (ISPs) or telecom operators should be neutral to the origin and destination of any traffic and the content of the traffic.

ISPs should enable access to all content and applications regardless of source and without favouring or blocking particular product or websites.

Counter points to the TRAI consultation paper

1. Congestion
According to the professors, the consultation paper argues that net neutrality must be violated to solve congestion in the network and claims that 10% of mobile users actually consume 90% of operators' bandwidth.

- Professors while opposing it suggested that the congestion can be addressed by looking only at the quantity of data instead of who is using it, while preserving net neutrality.

Professors cited an example:

"If a road network is facing congestion, it would be absurd to charge road tax based on the identity of who is using the road, or based on whether the commuter is going to a bank or to a grocery store next to the bank."

2. Service differentiation
According to the joint statement, the TRAI consultation paper aregues that net neutrality must be violated to provide service differentiation, which is necessary for example in telemedicine applications or for specific business customers.

- However, professors said that net neutrality does not mean there is no service differentiation. However, it should be left to the customer- wherein the choice for better service is made by the end customer, not by the network.

3. Professors claim fundamental idea behind the internet is under threat
When telecom network operators seek more control of how much traffic is used to which website or application, the fundamental idea behind the internet is under threat as small developers or business will find it difficult to develop a website or a smart-phone application.

Deccan Herald ND 23/04/2015   P-8

B schools back Net neutrality

NEW DELHI: Joining the countrywide debate on Internet Neutrality, nearly 50 faculty members of top institutions across the country, including Indian Institutes of Technology (IITs), Indian Institutes of Management (IIMs) and Indian Institute of Science (IISc), Bangalore came out in its support on Wednesday.

They demanded that Telecom Regulatory Authority of India (TRAI) should maintain Net Neutrality in its "strongest possible form" for a digitally empowered India.

"There are no sound technical or economic reasons to violate Net Neutrality. In fact, such violation threatens the essence of Internet," the faculty said in a joint statement on Wednesday. The faculty who came together in favour of Net Neutrality included Bhaskaran Raman, Professor at IIT-Bombay Department of CSE, Murali Krishna Ramanathan, Assistant Professor at IISc Bangalore's Department of CSA, Niloy Ganguly, Professor at Department of Computer Science, IIT Kharagpur and S K Gupta, Professor at IIT Delhi's Department of Computer Science.

The faculty said the first and foremost argument put forth by TRAI's consultation paper was that Net Neutrality must be violated to resolve network congestion. "The argument that 10% of mobile users actually consume 90% of operators' bandwidth is fundamentally flawed technically for congestion can effectively be addressed by looking only at the quantity of data, while preserving Net Neutrality," they said, rejecting TRAI's stand.

"For instance, it would be well within the principles of Net Neutrality to serve the first GB of a user's data fast, and the second GB of data slower. The second GB can also be priced higher. Such mechanisms are all too common in the physical world of mails," they added.

They also termed as "technically flawed" the argument that NN must be violated to provide service differentiation as it was necessary, for example, in telemedicine applications or for specific business customers.

"Network Neutrality does not mean there is no service differentiation. It means that the choice for better service is made by the end customer, not by the network. For instance, if a remote clinic wants a certain network capacity to access a city hospital's telemedicine portal, it chooses to buy that extra capacity by paying the network operator," the faculty contended.

"On the other hand, if Net Neutrality was violated, and the network operator made the choice, the clinic could end up with the same network capacity, not to the required hospital website, but to an e-commerce website of no use to the intended telemedicine," they added.

They described TRAI's consultation paper as "misleading and confusing in title and terminology".

DH News Service

Hindustan Times ND 23/04/2015   P-8

'Give higher education authority power to de-recognise institutes'

HT Correspondent
■ letters@hindustantimes.com

NEW DELHI: Human resource development minister Smriti Irani told Lok Sabha on Wednesday that the power to de-recognise institutes lacking quality should be vested with the National Higher Education Authority — as recommended by the Hari Gautam Committee to review the University Grants Commission's performance.

Irani said the new statutory agency should have three boards to independently look after various functions of the authority in coordination with each other. "The committee has recommended that instead of undertaking amendments in the UGC Act, 1956, the National Higher Education Authority Act be set up to repeal the Existing UGC Act," she said.

■ **Smriti Irani**

However, till the time the new act is enacted, it has suggested remodelling the UGC into a changed organisation through executive order, Irani said.

Irani said in her reply: "The committee has recommended that the authority be invested with powers to reward and punish the quality or its absence in higher educational institutions, including the power to de-recognise and or debar the erring institutions…"

GERMAN TO BE TAUGHT AS OPTIONAL SUBJECT

NEW DELHI: The government informed Lok Sabha on Wednesday that teaching of German as an optional subject in Kendriya Vidalayas will be formalised through a Memorandum of Understanding (MoU) to be signed between India and Germany. "Our Mission in Berlin had shared the draft of the proposed MoU with the German side on April 13," Irani said in a written reply. The MoU reiterates the government's stand that German will be taught as an optional subject instead of a third language in KVs. Irani said the MoU aims at imparting communicative German language training to students of KVs and to "work out mechanism for promotion of Indian languages in German educational institutions".

JEE Main 2015 exams: Error in answer key

http://indiatoday.intoday.in/education/story/jee-main-2015-answer-key-discrepancy/1/431494.html

The Joint Entrance Examination Main 2015 (JEE Main 2015) via the offline/pen and paper-based mode took place on April 4 and April 10 and via the online/computer-based mode on April 11. This examination was conducted by CBSE. The exam is conducted for admission in prestigious engineering institutes all over the country. The top 1.5 lakh who qualify the JEE Main exam also qualify to give the JEE Advanced exam which allows them to acquire seats in IITs and Indian School of Mines (ISM) Dhanbad.

The answer key, OMR sheet and recorded response were all released on April 18. Several inconsistencies were found in the answer key. In consequence of the in-consistence in the answer key, the parents and teachers of the candidates have their concerns. Since there is negative marking in JEE, the candidates may lose marks not only for specific questions but also as a penalty. Several test-takers, in the fear of losing marks, did not attempt questions that had more than just one right answer.

Four questions in Set C were found to have discrepancies. CBSE stated that question 22 was correct but it was found to be incorrect, question 51, on the other hand, was found to be correct when CBSE said otherwise. Question 53 had two correct options provided for it and in Question 57 there was only one correct option indicated by the CBSE, but there were two correct options. Four marks will be given to all candidates for the questions that were stated incorrect by the CBSE.

Academicians say that a single answer cannot be given for a probability question in the Mathematics section but the answer key has stated that there is only one. A Physics question in the paper had two right answers but the answer key again says there is only one.
The candidates who would like to challenge the answer key should visit the website for details.
The JEE Main 2015 scores are set to release on April 27.

बेहतर सड़क के लिए IIT भुवनेश्वर में बनेगा रिसर्च और ट्रेनिंग सेंटर

http://www.bhaskar.com/news/EDUC-EDNE-iit-b-will-founded-research-and-training-center-for-good-roads-4971723-NOR.html

एजुकेशन डेस्क। राज्य के ग्रामीण इलाकों में बेहतर सड़क और सड़क निर्माण के काम में लगे इंजीनियरों की क्षमता बढ़ाने के लिए आईआईटी, भुवनेश्वर मिलकर काम करेंगे। आईआईटी में इसके लिए एक सेंटर फॉर मैनेजमेंट, ट्रेनिंग एंड रिसर्च ऑन रूरल रोड्स का गठन किया जाएगा।

यह संस्थान के अरूगल में बन रहे नए और स्थायी कैंपस में स्थित होगा। इसमें सड़क निर्माण में इस्तेमाल होने वाले मटीरियल के परीक्षण के साथ इंजीनियरों और अन्य स्टाफ के ट्रेनिंग की भी व्यवस्था होगी।

IIT-Guwahati gears up for robotics contest

http://timesofindia.indiatimes.com/city/guwahati/IIT-Guwahati-gears-up-for-robotics-contest/articleshow/47021470.cms

GUWAHATI: The IIT-Guwahati (IIT-G) is gearing up for Escalade — an all-India robotics competition — to be organized as part of its annual techno-management festival, Techniche, 2015.

After Escalade witnessed encouraging participation from college students in its last two editions, this year's event is set to be even bigger, said the organizers.

Escalade primarily acts as a platform to promote talent in robotics. The event will be held in two stages — prelims and mains.

The prelims will be conducted in July, 2015, in all major cities across the nation. Students can participate in teams comprising a maximum of four members, said Rajat Lohia, an organizer.

He added that the top six teams from each center will be selected and will be invited to IIT-G to participate in the mains event of the competition to be held during Techniche'15 scheduled in September.

Registration for participating in the prelims round of Escalade and other robotics events has begun on the Techniche website.

During the mains, participants will compete with the finest robotics enthusiasts from across the nation and the winner will be declared 'national robotics champion'.

In view of the advancements in the field of robotics, the students of IIT-G recognize the dire need to promote the culture of robotics among students by organizing several robotics competitions, said an organizer.

Apart from Escalade, various other robotics championships will also be held during Techniche.

"In this age of science and technology, we can see robots being employed in major working areas. With the advent of robotics, there is a lot of high-end research being carried out in this field. It's a matter of no surprise that robotics has become a major study area in countries like USA and Germany," the organizer said.

This atomic clock will be accurate for 15 billion years

Paris: Physicists said on Tuesday they have fine-tuned an atomic clock to the point where it won't lose or gain a second in 15 billion years — longer than the universe has existed.

The "optical lattice" clock, which uses strontium atoms, is now three times more accurate than a year ago when it set the previous world record, its developers reported in the journal Nature Communications. The advance brings science a step closer to replacing the current gold standard in timekeeping: the caesium fountain clock used to set Coordinated Universal Time (UTC), the official world time. "Precise and accurate optical atomic clocks have the potential to transform global timekeeping," the study authors wrote.

Accurate timekeeping is crucial for satellite navigation systems, mobile telephones and digital TV, among other applications, and may open new frontiers in research fields like quantum science. The world's official unit of time, the second, has since 1967 been determined by the vibration-frequency of an atom of the metallic element Caesium 133 — a method of measurement similar to monitoring the pendulum swings of a grandfather clock.

The instrument used to set international time is the caesium fountain clock, which has improved significantly over the decades and can keep time to within one second over 100 million years. But new, experimental optical clocks that work with strontium atoms at optical frequencies much higher than the microwave frequencies used in caesium clocks, have been shown in recent years to be even more accurate. AFP

NASA'S FIRST 3-D PRINTED ENGINE PART

Washington: Nasa engineers have developed the first full-scale, 3-D printed copper rocket engine part — a combustion chamber liner that operates at extreme temperatures and pressures. "Building the first full-scale, copper rocket part with additive manufacturing is a milestone for aerospace 3-D printing," said Steve Jurczyk, associate administrator for the Space Technology Mission Directorate at Nasa Headquarters. "Additive manufacturing is one of many technologies we are embracing to help us continue our journey to Mars and even sustain explorers living on the Red Planet," said Jurczyk. Numerous complex parts made of many different materials are assembled to make engines that provide the thrust that powers rockets. Additive manufacturing has the potential to reduce the time and cost of making rocket parts. — PTI