Newspaper Clips
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February 2

JEE Advanced 2018: IIT Kanpur Releases Mock Tests for Preparation

http://www.india.com/education/jee-advanced-2018-iit-kanpur-releases-mock-tests-for-preparation-candidates-can-check-them-on-jeeadv-ac-in-2874842/

New Delhi, Feb 2: The Indian Institute of Technology (IIT), Kanpur, has released three mock tests for candidates preparing for the Joint Entrance Examination (JEE) Advanced 2018 to be conducted later this year. The three mock tests are available on the JEE Advanced official website www.jeeadv.ac.in. Candidates can take the mocks tests by going on the site.

The exam dates of JEE Advanced 2018 were released last week. The JEE Advanced 2018 is scheduled to be held on May 20, 2018. Paper 1 will be conducted from 9 AM to 12 noon, while paper 2 will be held from 2 PM to 5 PM. The candidates need to appear fro both the papers.

The Joint Admission Board (JAB) had in October 2017 announced that the number of seats for eligible candidates for Joint Engineering Examination (JEE) Advanced 2018 has been increased by 4,000. Thus, the number of seats for JEE Advanced 2018 exam is now up from 2.20 lakh to 2.24 lakh.

Candidates will be able to access more mock tests in the coming days till May when the examination will take place.

TRANSFORMING INDIA, THE IIT WAY

https://mumbaimirror.indiatimes.com/mumbai/other/transforming-india-the-iit-way/articleshow/62748894.cms

Founding members Kartik Kilachand (left) and Joseph Fernandes

Alumni mobilise resources of IIT network to improve education, healthcare, skill development.

A group of over 25 prominent IIT alumni and their friends and associates gathered at a South Mumbai sports club on Wednesday evening for the soft launch of IIT-IIT (IITians for Influencing India's Transformation). The organisation has started with a core leadership group of 10 members – the list includes HCL group co-founder Arjun Malhotra, Mastek co-founder Ashank Desai, SELCO India co-founder Harish Hande, and Info Edge India CEO Hitesh Oberoi.

Illuminating their objective, cofounder Joseph 'Joe' Fernandes, founder of Mukti Lifestyle and an IIT Kharagpur alumnus, said, "Our primary goal is to provide a platform to harness intellectual capital, enable engagement across the ecosystem and create a vibrant social impact community." The organisation will focus on achieving improvements in the areas of healthcare, education and skill development.

Ganesh Natarajan, former head of Zensar Technologies and NASSCOM, and another co-founder of IIT-IIT, said, "We intend to support successful social sector entities to help them go from local to national. We are in the process of evaluating such programmes and are in discussions with the governments of various cities and states to help cross-pollinate ideas and create sustainable change."

Natarajan pointed out that transformation was only possible if the organisation was to work hand-in-hand with government agencies. He offered the example of Pune City Connect, a collaboration between corporates and the Pune Municipal Corporation (PMC), which, he said, has been immensely successful in promoting digital literacy. Also present was Ujwal Thakar, CEO, Pratham India, India's largest NGO in the education sector, who concurred with Natarajan. "The problem with NGOs is that they're not wired for scale. They're [run by] passion-driven people with a lot of heart, but if you're working with 300 kids, where the need is to reach out to 3,00,000, you're contributing all right, but you're not solving the problem. What's required is to create a tripartite partnership between the government, the NGOs and the corporates."

IIT-IIT is the brainchild of Kartik Kilachand, CEO and co-founder of the World BPO/ITO Forum. Kilachand also heads (and co-founded) Magnus Gyan, a US-based technology company that empowers underprivileged youth in growth economies. He told Mirror every member of the alumni at the event

is already independently engaged in social impact activities across diverse areas. The list of attendees included, to name a few, Subhadip Dutta Choudhury, CEO, Hawkins Cookers (an IIT Kharagpur alumnus), Jamal Mecklai, CEO, Mecklai Financial (IIT Bombay), Ranjit Bhavnani, CMD, Calibre Chemicals (IIT Bombay) and Ravi Kant, former MD of Tata Motors (IIT Kharagpur alumnus).

"There are thousands of NGOs in the country doing excellent work. For these organisations, the biggest challenge is scale. These social impact companies need a strong platform which will act as an advocate, open new markets, facilitate collaboration, work closely with the government and enable access to talent, technology and capital. We want IIT-IIT to be this entity," Kilachand said at the event. The organisation is currently in the process of enrolling more founding members from the IIT alumni community.

Coming up: 5G test bed at IIT-Madras

http://www.newindianexpress.com/states/tamil-nadu/2018/feb/02/coming-up-5g-test-bed-at-iit-madras-1767079.html

CHENNAI: In a move that would place Indian telecoms in good stride amidst cut-throat global competition, Finance Minister Arun Jaitley on Thursday has announced setting-up of 5G test bed, which will enable companies to conduct research experiments on the latest generation of mobile telephony domestically. The facility will come up at IIT Madras, which will also act as a torch-bearer for this ambitious project.

The Department of Telecommunications (DoT) has already drawn up an action plan and a high-level forum has been constituted to ensure the test bed is fully operational in three years.

The project is a multi-institutional initiative involving IIT Madras, IIT Bombay, IIT Kanpur, IIT Delhi, IIT Hyderabad, IISc Bangalore, CEWiT (Centre of Excellence in Wireless Technology at IIT Madras) and SAMEER in Chennai.

When contacted, IIT Madras director Bhaskar Ramamurthi, who is a key member in the high-level forum, said the proposal was to build an end-to-end test bed for 5G technology located at multiple locations among the consortium, interconnected by a high-speed fibre-optic network.

"It will incorporate several new technologies developed and will be compliant with the emerging global 5G standard to which India is making significant contributions. In particular, it will include Internet of Things (IoT), Millimeter Wave Communications, Massive MIMO, Software Defined Networking, Network Function Virtualisation, LiFi, and Network Security," he said and added that the project would cost around `240 crore.

He said it would enable developers across the country, particularly the start-ups to live-test products. "It is expected that several start-ups will emerge from this nationwide effort to build next-generation wireless technologies based on our own IP. IIT Madras is the lead institution for executing this project. We are also developing some 5G enabled chips."

Ramamurthi told Express that first round 5G standardisation will be completed by this year end and go for evaluation before International Telecommunication Union (ITU) in which India is also

participating. The ITU is likely to approve the 5G technology in 2020 and India should also be ready to adopt the change.

“Only Korea and Japan are likely to use the 5G technology before 2020 during the Olympics. Otherwise, the commercial rollout is expected only after 2020. This time India wants to be on a par with developed nations in development and is embracing the new technology. In the past when 3G and 4G have arrived, India was at least 5-6 years late. But this time, telecoms like Jio may switch over to 5G much earlier,” he said.

IIT Hyderabad director UB Desai said that this was the first-of-its-kind initiative in India. Such a test bed domestically will open up massive opportunities for manufacturing and start-up ventures. Nasscom chairman Raman Roy has also welcomed the decision of the Centre and said 5G is the future and the government was thinking in right direction. “The government has provided `10,000 crore for creation and augmentation of telecom infrastructure. We are very excited about the announcement,”

Just to understand the potential of 5G in India, the recently released Ericsson 5G Business Potential Report says 5G will enable a $27 billion revenue opportunity for Indian telecom operators by 2026. The largest opportunity will be seen in sectors like manufacturing, energy and utilities followed by public safety and health sectors. This will be over and above the revenue generated from traditional services which are expected to grow up to $63 billion by 2026.

Education Budget up by 6%, shrinks in relation to total outlay

http://www.business-standard.com/article/news-ians/education-budget-up-by-6-shrinks-in-relation-to-total-outlay-118020101917_1.html

Union Finance Minister Arun Jaitley increased the allocation for education during 2018-19 by 6.68 per cent from last year to Rs 85,000 crore but its share has shrunk in relation to the total outlay.

The total budget allocation for education -- higher and school education -- was an increase from last year's Rs 79,685 crore. However, the education sector was accorded 3.48 per cent of the total budgetary allocation for the fiscal, against last year's 3.71 per cent.

School education was allocated Rs 50,000 crore up from last year's Rs 46,356 crore.

This section comprises Centrally-sponsored Sarva Shiksha Abhiyan, Rashtriya Madhyamik Shiksha Abhiyan and Mid Day Meal.

For the higher education, the amount allocated was Rs 35,010 crore, increasing from last year's Rs 33,330 crore.

A major funding spike was witnessed in the fund set aside for the Higher Education Funding Agency (HEFA), which was accorded Rs 2,750 crore, up from Rs 250 crore previous year.

The government cut down slightly on the budget for the Indian Institutes of Technology to Rs 6,326 from Rs 7,856 crore of last year, while keeping it same for the Indian Institutes of Management (almost) at Rs 1,036 crore from Rs 1,030 crore in 2017-18.

The allocation for scholarships for college and university students was increased by Rs 20 crore to Rs 340 crore.

Not dissatisfied with the budget allocation overall, IIT Delhi Director V. Ramgopal Rao told IANS that so long as they can get funds leveraged through HEFA, they would be okay.

"Our major expenses are on the infrastructure support... if that money keeps coming through HEFA, things will eventually be better... We have raised Rs 200 crore loan through the scheme and we are required to repay it from our internal resources in 10 years... which is perfect for us," he said.

Jaitley also announced a "major" investment to fund research infrastructure in the country to the tune of 1 lakh crore over the next four years.

"To set up investment in research and related infrastructure of premier institutions, including health institutions, I propose to launch major initiative called the Revitalising of Infrastructure and System in Education 'RISE' by 2022 with a total investment of Rs 1 lakh crore over four years.

"Higher Education Funding Agency (HEFA) would be suitably structured for funding this initiative," he announced during the budget.

Samsung will give jobs to Indian youth

https://english.newstracklive.com/news/samsung-will-give-jobs-to-indian-youth-sub-economy-creur-39982-1.html

In order to recruit 2,500 engineers in India in its research and development center in the next three years, Samsung will recruit 1000 engineers from the top engineering colleges of India - IIT institutes, NIT institutions and IIIT institutions this year. For the development of new-age domains such as Artificial Intelligence (AI), Internet of Things (IOT), Machine Learning (ML), Biometrics, Natural Language Processing (NLP), Enhanced Reality (AR) and Networks (including 5G), Samsung The year will recruit 300 students from IIT institutions.

The company will recruit 35 students from IIT-Bombay, 32 students from IIT-Delhi, 22 students from IIT-Madras, 45 students from IIT-Guwahati and 29 students from IIT-Kharkappur with other

institutions. Samsung India has three research and development centers located in Bangalore, Noida and Delhi.

In a statement, Samsung R & D Institute India's Managing Director and Samsung's Senior Vice President of Samsung Dipesh Shah said, "Samsung is very optimistic about R & D in India. Emphasis on R & D will help Samsung stay on top in the Indian market. In India, the company's three R & D centers are working on many cutting-edge technologies.

Apart from the IITs and NIT institutions, Samsung will also recruit talent from many other major institutions, including Delhi College of Engineering, BITS Pilani, Manipal Institute of Technology, others including the IIT Institute.

February 1

IIT-IIT formed to take part in India's transformation

http://www.deccanherald.com/content/657035/iit-iit-formed-take-part.html

The mission of IIT-IIT.org is to make a catalytic impact on India's social landscape with special focus on education, livelihood skills and healthcare - and accelerate successful social impact projects that have a strong government participation.

In a new initiative, key members of the large IIT alumni group resident in India have come together to launch the IIT-IIT (IITans for Influencing India's Transformation).

The mission of IIT-IIT.org is to make a catalytic impact on India's social landscape with special focus on education, livelihood skills and healthcare - and accelerate successful social impact projects that have a strong government participation.

Kartik Kilachand, Founder & Global Convener of IIT-IIT said: "There are thousands of NGOs in the country doing excellent work, but for all these organizations, creating scale, which is critical to generating impact, is the biggest challenge. These social impact NGOs need a strong platform which will act as an advocate, help open new market places, facilitate co-operation between NGOs, work collaboratively with government and enable access to talent and capital. We will be this entity."

Dr Ganesh Natarajan, Chairman of 5F World and co-founder of IIT-IIT said: "Similar to the stellar work done by NASSCOM for IT and BPM firms in the country, we intend to take great success stories in the social sector which have had local impact and help scale them nationally."

"We are in the process of evaluating such programs and are in discussions with the governments of various cities and states to help cross-pollinate ideas and create sustainable change," he added.

"Our primary goal is to provide a platform to harness intellectual capital, enable engagement across the eco-system and accelerate nation-building," said co-founder Joseph Fernandes.

India's largest social impact entity in education (Pratham) has an annual outlay of $ 40 million while Bangladesh's and Kenya'slargest NGOs have budgets greater than $100 million. There is tremendous scaling possible and IIT-IIT will be a catalytic force for that scaling, he added.

Budget 2018: PM Research Fellowship of Rs 1,800 Crore for R&D at IITs

The fellowship, to be presented by Finance Minister Arun Jaitley in Budget 2018, will be given to 1000 students every year for three years. The selected scholars will be granted Rs 75, 000 per month for five years.

http://www.news18.com/news/india/prime-minister-research-fellowship-of-rs-1800-crore-for-rd-at-iits-and-iisc-1647495.html

New Delhi: The Prime Minister Research Fellowship (PMRF) scheme worth Rs 1,800 crore is all set to be announced by Finance Minister Arun Jaitley on Thursday.

PMRF is designed to correct the faculty deficit in the country's premier institutes of technology – Indian Institute of Technology – to promote research and encourage undergraduate students in taking up PhDs.

Around 1000 students will be selected every year for the fellowship for three years. The selected scholars will be granted Rs 75, 000 per month for five years.

The ministry of Human Resource Development will grant scholarship to 3,000 students in total. It will be applicable to the students of IIT, NIT, IISc and IIIT (students from the other institutes can apply for the fellowship but will have to pursue research in IITs only). The applicants should ideally score high in their programs or courses (above 8 CGPA), have a strong academic background and should be from the above mentioned institutes.

A source in the ministry said, "The process of selecting the students in a year will be rigorous. It is going to focus on encouraging the best brains to take up research. They will be deployed on areas of frontiers of science and technology – which is to have innovative and cutting edge research."
The IIT fraternity is perturbed by the fact that hardly 5% students take up research and those who take up jobs do so out of their core sectors.

The step comes after the students of IIT students stopped going abroad for pursuing higher education in large numbers as compared to trend of last few decades. They now stay back and around 10% to 15% go abroad and that too preferably for jobs rather than higher education. "So what will happen, we need to find faculty for them and research areas," said a source from IIT Delhi.

The source in IIT Delhi added, "The idea was proposed some time back – apart from encouraging the undergraduate students in taking up research, the fellowship will also address the problem of faculty deficit. IITs are finding it difficult to have pool of good brains that will step up to the faculty in the future. Over a period of time, we will be able to build a pool of good caliber researchers and it will make a big difference on faculty recruitment."

Talking about the vacancies, a report prepared by the Parliamentary Standing Committee on Human Resource Development (HRD), headed by BJP MP Satyanarayan Jatiya asked the Department of Higher Education to look into the "acute shortage" in faculty of IITs and other Central Universities.

There are 23 IITs in India - The firsts of the IITs sprung up in Bombay, Madras, Kanpur, Kharagpur and

Delhi, followed by Guwahati in 1994. In 2001, an IIT was created in Roorkee and the next batch was established in 2008 and 2009, which included Bhubaneswar, Gandhinagar, Hyderabad, Jodhpur, Patna, Ropar, Indore and Mandi. Benaras Hindu University (BHU) IIT was formed in 2012. The latest batch of IITs was announced over the last two years: Palakkad, Tirupati, Bhilai, Goa, Jammu, Dharwad and the Indian School of Mines, Dhanbad.

In its report on faculty crunch, News 18.com had reported in 2017 that IITs are trying to attract global talent in academia. One of the first to be established, IIT Bombay is short of 389 teachers against the 1017 sanctioned by the ministry of human resource development. In the national capital, IIT Delhi's staff strength is short by at least 40% of what is required.

IIT Kozhikode ties up for indigenous scan

https://www.deccanchronicle.com/nation/in-other-news/010218/iit-kozhikode-ties-up-for-indigenous-scan.html

The Indian algorithm has a strong base but tapped little.

Officials of NIELIT and IIT Madras after signing the MoU in Chennai on Wednesday.

Kozhikode: The National Institute of Electronics and Information Technology (NIELIT) in Kozhikode has joined hands with IIT Madras to tap the potential of indigenous knowledge in biomedical engineering research. Rather than using foreign-made algorithms (a process or set of rules to be followed in calculations, especially by a computer) which is prevalent now, Indian algorithms would be provided by IIT and the hardware would be developed at NIELIT.

After inking an MoU to this effect in Chennai on Wednesday, NIELIT executive director Dr M.P. Pillai said that the collaboration aimed at research and capacity building in the areas of specialized electronic domains such as bio-medical hardware and medical ultrasound imaging. "This is one of the first initiatives among institutions of higher learning and research institutes across different ministries," he said.

Speaking to DC, NIELIT Senior Scientist, Jayaraj U. Kidav explained that the Ultrasound Research Platform, the unique research facility available at NIELIT and IIT Madras, would be used for high end

algorithm development for elastographic, tissue harmonic imaging etc. "The research aims at developing early cancer detection systems in the long run. Actually, the Indian algorithm has a strong base but tapped little. This should be changed and indigenous knowledge be used for the betterment of the lives of people," he elaborated.

The joint research aims at developing indigenous techniques for bio-medical instrumentation, high end medical ultrasound imaging among others and implementing them through indigenous designs. NEILIT is developing the prototype of ultrasound scanner under 'Make in India' project to make available the equipment cheap in rural India so as to curb infant mortality and maternal death.

MHRD RECRUITS IIT, NIT GRADUATES TO TEACH IN STATE'S ENGG COLLEGES

http://www.dailypioneer.com/state-editions/raipur/mhrd-recruits-iit-nit-graduates-to-teach-in-states-engg-colleges.html

Chhattisgarh is among 12 States, including Union Territories (UTs), where Ministry of Human Resource Development will be deploying highly qualified and motivated graduates recruited from IITs and NITs to teach in engineering colleges.

To fulfill the vision of Prime Minister Narendra Modi to provide thrust to good quality technical and higher education in the backward areas of the country, the Ministry of Human Resource Development has recruited more than 1200 highly qualified and motivated graduates, including from IITs and NITs to teach in engineering colleges in States/UTs like Andaman & Nicobar, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Odisha, Jharkhand, Chhattisgarh, Tripura, Rajasthan, Uttar Pradesh, Uttarakhand etc.

This is the first time that such a measure has been taken to improve the quality of education, a Ministry press release informed.

While addressing a press conference Union Minister for Human Resource Development Prakash Javadekar in New Delhi on Wednesday said that these bright minds will bring with them the openness to innovation, new methods of teaching and enthusiasm to serve and act as agents of change. He further said that this initiative will help meet the aspirations of youth in the backward areas and fulfil the vision of Prime Minister.

He hoped that these teachers would contribute to the entire educational eco-system of the backward areas, apart from promoting a start-up culture among students.

A public appeal was given to the MTech and PhD students from the premier institutions to express interest to work in these backward areas and serve the nation. There was an overwhelming response to the call, and more than 5000 highly qualified persons applied. The interviews were conducted in 20 NITs by constituting expert teams.

The entire process of giving a call and selection has been completed through a competitive and rigorous process of selection done through NITs in a record two-month period. Finally, 1225 candidates were selected and they have joined 53 colleges in these states. The new faculty will train the youngsters in host of technical institutions for the next three years.

Each of the new faculty will be paid Rs. 70,000 per month and the Government is planning to spend about Rs. 375 Cr in three-year period on this initiative. With this measure, more than one lakh engineering students in the most backward areas would be benefited with better quality education.

The reason for backwardness was essentially because of lack of quality teachers in these areas. In many of these institutions, there are vacancies for teaching faculty (some of them have 40% vacancies). The States have requested Ministry of HRD to help to find teaching support.

January 31

IIT-Delhi research team explores softer methods to rein in violent protests

http://www.newindianexpress.com/nation/2018/jan/31/iit-delhi-research-team-explores-softer-methods-to-rein-in-violent-protests-1765978.html

NEW DELHI: One of India's top engineering institutes — Indian Institute of Technology, Delhi — has tied up with the National Police Academy, Hyderabad, and Defence Research and Development Organisation to prepare effective models of "mob management".

The agreement has come up at the behest of the Union Ministry of Home Affairs, which feels that the existing methods of crowd control, in case of violent protests, are either too harsh or ineffective, sources said.

"A team of researchers at the institute has already started studying various methods that police and other forces have been using to control violent gatherings, be it the protests in Jammu and Kashmir, Jat agitation in Haryana in 2016 or protests by the supporters of Ram Rahim when he was arrested in 2017," a top official from IIT Delhi told The New India Express.

"We will analyse the pros and cons of all the methods used and suggest how it could have been better. The project also entails giving some specific models to manage mass agitation with maximum impact and minimum damage," he said.

"We understand that crowd control first requires a police officer to understand the mob psychology, and have the ability to handle a crowd tactfully but firmly, and disperse it with the minimum use of force. The research work will form the part of training module that is used to train Indian Police Service officers at the NPA," the official said.

Government sources said that a study carried out by the Bureau of Police Research and Development about a year ago had listed several alternatives in the category of "less lethal weapons" developed around the world in recent times to control riots or violent agitations, but it required further validation through scientific analysis.

"The IIT, Delhi has been tasked with the research project in the backdrop of the heavy criticism faced by security forces for their use of pellet guns in J&K and insufficient management of crowds in Haryana in recent times, which resulted in massive damage to public property and law and order," a government source said.

He pointed out that the police mostly uses a less lethal weapon — a water cannon developed by DRDO, which was used for the first time in Ayodhya during the Babri Masjid demolition — but it does not serve the purpose many times.

IIT-Madras bags record Rs 55 crore in alumni funds in 2016-17

https://timesofindia.indiatimes.com/home/education/news/iit-m-bags-record-rs-55-crore-in-alumni-funds-in-2016-17/articleshow/62716130.cms

CHENNAI: IIT Madras has seen a significant increase in alumni funding over the past three years, with contributions from former students hitting a record high of Rs 55.3 crore in 2016-17.
The institute is seeing active participation of former students, not just through contributions but also mentorship and research efforts, and aims to boost funds raised from alumni to Rs 500 crore in 2020.

From Rs 31.8 crore in FY 2014-15, alumni contributions grew to Rs 45.4 crore in FY 2015-16 and Rs 55.3 crore in FY 2016-17.

The institute started systematic fundraising in 2009 by approaching alumni, corporates, foundations and industry. The response from alumni has been very strong from 2011, said R Nagarajan, dean (international & alumni relations), IIT Madras.

"IIT Madras alumni have always been willing to give back through the the '3Ts' -- time, talent and treasure. The main areas where we intend to use contributions include research centres, campus infrastructure, student amenities, innovation & entrepreneurship, internationalisation initiatives and social transformation," he said.

While there have been some big individual contributions like Rs 30 crore from Infosys cofounder Kris Gopalakrishnan to sponsor a Centre for Computational Brain Research, batches of a particular year often raise funds to make a joint contribution. For instance, when the 1981 batch celebrated its silver reunion, they contributed Rs 80 lakh for setting up the Centre for Innovation. "Over time, this has become the centrepiece of the campus for promoting innovation," said Nagarajan.

For some alumni, investing in their alma mater is a way to "ward off an attack of nostalgia" as Fairfax Holdings chairman Prem Watsa put it. Watsa said he was keen on investing back into IIT-Madras because he could still remember how the institute had welcomed and nourished him as a gangly 18-year-old.

Watsa, who is one of the 150 alumni to be designated as a "distinguished alumnus" by the institute, has helped renovate the institute's stadium for a 400-metre, 8-lane synthetic track in memory of his father Manohar C Watsa.

"I was a very keen sportsman during my student days. It really was a great source of pride for me

that IIT-Madras started winning the inter-IIT trophy during my tenure as sports secretary," said Watsa, a 1971-batch chemical engineering graduate from IIT-M.

'Monitoring is inadequate'

http://www.thehindu.com/news/cities/chennai/monitoring-is-inadequate/article22607457.ece

Citizen initiatives can help bridge the information gap, says entrepreneur

Delhi State, which has a population of approximately 19 million, has 14 continuous air monitors (CAMS) installed, whereas Tamil Nadu, with a population of 70 million, only has 3 CAMS, all of them in Chennai.

Drawing attention to the discrepancy between population, area, number of cities/towns and the distribution of air pollution monitoring systems, Ronak Sutaria, a Ph.D. holder from IIT-Bombay and founder-CEO of Urban Sciences that manufactures 'Atmos' air quality monitoring devices, told The Hindu that citizen monitoring of air pollution could help fill the current information gap.

Across India, the Central Pollution Control Board has installed 74 CAMS but these are inadequate for monitoring pollution across the country, he said.

With around 20 million people reportedly affected by air pollution in India according to WHO reports, the issue poses a public health emergency that requires serious attention.

Atmos is a device that measures particulate matter (PM) levels in air — both PM 10 AND PM 2.5. — through the use of laser-optical sensors.

It produces real-time air quality data and is attached to a map-based dashboard where the information gets updated.

Scientifically validated

"The data produced by the device has been scientifically validated for precision at various research institutes, including IIT-Kanpur," he said.

"When pollution data generated by the device was plotted on a graph against data generated by government pollution agencies, it turned out to be mostly consistent," he added.

He suggested that residents could come together to fund such monitors in their apartment complexes. Hospitals and schools could install such devices to get real-time data on air pollution and decide when to step out based on when levels are low.

"In places like Gurugram, such measures have already been initiated. School timings were shifted from 7 a.m. to 9.30 a.m. because pollution levels were higher earlier in the morning."

January 30

14 IIT students bag Young Engineer and Scientist's award, receive $ 3,000 each

http://indianexpress.com/article/education/14-iit-students-bag-young-engineer-and-scientists-award-receive-3000-each-5044981/

The selected students are from six IITs - Delhi, Bombay, Madras, Kharagpur, Kanpur and Hyderabad.

(L-R, Row 1) Mr. Hirotomo Hirano, Mr. Kazuyoshi Maruyama, Mr. Raman Kumar Sharma, Mr. Minoru Kato, Mr. Kenichi Takashima, Mr. Yoichiro Ueno and Mr. Praveen Paranjape along with the Y-E-S Awardees

IIT Young Engineer and Scientist's award: The Honda Motor India Pvt Ltd (HMI) has presented the 'Young Engineer and Scientist's award for 2017-18' to 14 IIT (Indian Institute of Technology) students. They will get USD 3,000 each and will be sent to Japan for higher studies. The honour recognises the academic performance of students, a release issued by HMI said. The selected students are from six IITs – Delhi, Bombay, Madras, Kharagpur, Kanpur and Hyderabad. On the basis of their Cumulative Grade Point Average (CGPA), essays and two rounds of personal interviews their selection was made.

Japanese ambassador in India Kenji Hiramatsu said India and Japan enjoy a fulfilling bilateral relationship.

List of awardees

Satyam Mohla: IIT Bombay

Pranjal Jhaveri: IIT Bombay

Ankesh Gupta: IIT Delhi

Mohit Goyal: IIT Delhi

Sukrut Sridhar Rao: IIT Hyderabad

Shivangi Ranjan: IIT Kanpur

Kumar Kshitij Patel: IIT Kanpur

Preetham Paul Sunkari: IIT Kanpur

Ayan Majumder: IIT Kharagpur

Bindu Sancheti: IIT Kharagpur

Piyush Nanda: IIT Kharagpur

Hari Ramachandran: IIT Madras

Anand Anjimeti Rajasekar: IIT Madras

Aniket Kamthe: IIT Madras

“I hope that through this opportunity, you will experience Japan’s advanced technological system and research, aimed at contributing to social causes,” Hiramatsu said.

Shivangi Ranjan, a student from IIT Kanpur and an Y-E-S Awardee said, “By promoting eco-technology, the Y-E-S Award programme is supporting the green cause in a big way and I’m honored to receive this award today. This award has given us invaluable motivation to work for the environment through our research and knowledge.” Y-E-S Award is bestowed every year, to bright students of the IITs after a rigorous evaluation.

Technology and biz incentives can tackle pollution from crop-residue burning: Economic Survey

http://citizenmatters.in/delhi-air-pollution-crop-residue-burning-economic-survey-iit-kanpur-5662

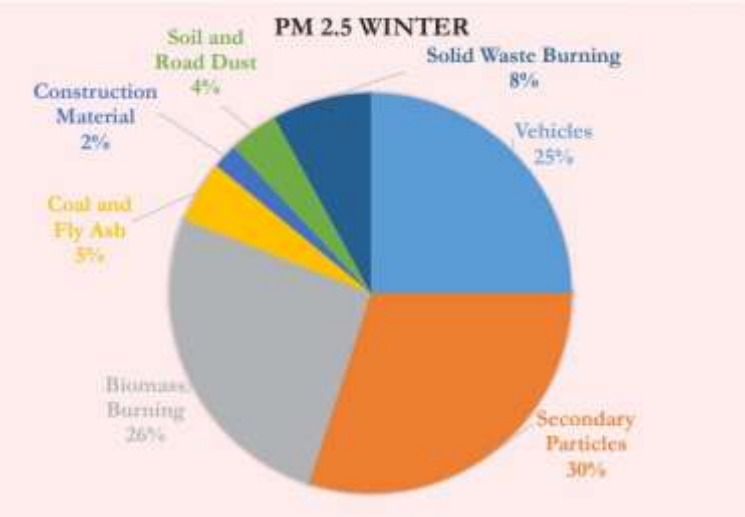
Burning of rice residues in SE Punjab.

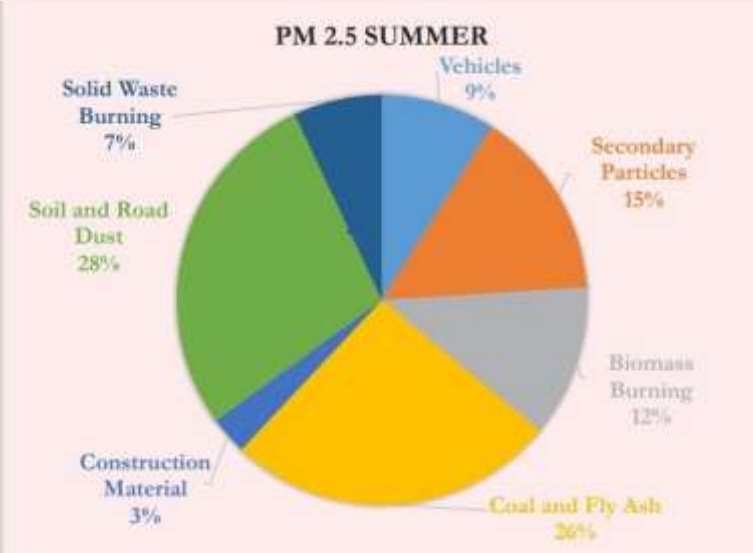
The alarming air quality in the National Capital region (NCR), comprised of Delhi and adjoining areas, has found fresh mention in the Economic Survey 2017-18 tabled in Parliament on January 29th.

It is well known by now that the average annual levels of PM2.5 – one of the most critical contaminants in the air we breathe – remain at above three times the prescribed level in this region.

The Survey reiterates the four main reasons for Delhi's worsening air quality – crop residue and biomass burning; vehicular emissions and re-destributed road dust; construction, industries, and power plants; winter temperature inversion, humidity and absence of wind – and suggests that each of these source problems must be addressed systematically, through coordination between agencies and Central and State Governments and sustained civic engagement.

Citing a two-season study (summer and winter of 2015) by IIT Kanpur, the Survey pegs the approximate attributions to each of these sources as follows:





Source: IIT Kanpur, 2015

Action recommended

Keeping in mind the proportion of and causes behind each of these pollutants, a combination of emergency plans and medium-to-long-term actions have been recommended.

Short-Term Emergency Plans are to be implemented when the PM2.5 exceeds 300-400 mg/m3 over a 24-hour period. Measures include

Strict enforcement through heavy penalties on agricultural waste burning, aided by use of satellite based tools to detect fires and mobile based applications

Incentive payments to farmers, coordinated across states and NCR.

Medium and Long-Range Actions suggested include

Congestion pricing for vehicles

Expansion and improvement of the public transport system that will reduce private vehicle use and expansion of modernized bus fleets in particular

Phasing-out of old vehicles

Acceleration of BS-VI standards (already notified and to be commenced from 2020).

Use of technology

The Economic Survey also emphasizes technological means, implemented through agricultural cooperatives, local bodies etc, to tackle pollution arising out of the burning of agricultural waste.

One such potential solution identified is the Happy Seeder machine that sows seeds without the need to remove paddy straw, and works well when the straw is spread evenly on the field through the straw management system.

It encourages development and implementation of business models with private sector and communities and incentives to shift to non-paddy crops.

IIT Madras hosts first Deshpande-Gopalakrishnan Symposium on Innovation and Entrepreneurship

https://indiaeducationdiary.in/iit-madras-hosts-first-deshpande-gopalakrishnan-symposium-innovation-entrepreneurship/

Chennai: In an endeavour towards linking academia to market place and create a process so that more and more faculty and students are willing to go through the entrepreneurship route, the first Deshpande-Gopalakrishnan Symposium on Innovation and Entrepreneurship was held at Indian Institute of Technology Madras (IIT Madras) between 28th and 30th January 2018.

This symposium was organized by the Gopalakrishnan Deshpande Centre (GDC) for Innovation and Entrepreneurship at IIT Madras, with the support of IIT Bombay and the Deshpande Foundation.

Addressing the inaugural function held on Sunday, Dr. Gururaj "Desh" Deshpande, Chairman of the Deshpande Foundation, co-sponsor of GDC and an IIT Madras Alumnus, said, "As a country, India spends over Rs. One Trillion per year on Research and Development. It is critical for the innovation ecosystem in India to be able to translate a good part of this R&D spend into scalable products and services that positively impact society. One of the principal objectives of GDC would be to develop and implement initiatives working with leading technology institutions nationwide that transforms and scales research from the academic labs into successful businesses that positively impact society."

Established in 2017, the core objective of GDC is to foster innovation in academic campuses and bring about a transformation by which scientific and technological ideas can move from an institute's laboratories to the marketplace by way of sustainable business ventures.

The Symposium attracted like-minded practitioners, administrators, and academicians focused on promoting innovation and entrepreneurship across the academic environment besides early stage entrepreneurs and students looking to start their own ventures.

Speaking on the occasion, Mr. "Kris" Gopalakrishnan, Co-sponsor of GDC and former CEO of Infosys who is also an IIT Madras Alumnus, said "GDC will also support special projects that can potentially create a transformative and positive impact on society. Such projects can be at the ideation stage or they could be running ventures that need some business reconfiguration to grow to full potential."

The three-day symposium featured four keynote talks and five topical Panel discussions in an interactive forum, which were participated by eminent personalities from the academic and the industry including Mr. Gopichand Katragadda, Group CTO, TATA Sons Ltd, Mr. K. Subramanian, Executive Director – R&D, Powergear Ltd, Mr. S. Krishnan, IAS, Principal Secretary to Government, Housing and Urban Development Department, Government of Tamil Nadu, among others.

The topics for the panel discussion were:

1. Building an entrepreneurial ecosystem – Challenges and solutions

2. Entrepreneurial Curriculum models

3. PPP to drive innovation and entrepreneurship

4. Funding Innovation across the spectrum – what do funders expect?

5. Innovation in Research methods – How to cultivate I&E thinking and Creativity in research scholars and Faculty?

Speaking about the GDC, Prof. Bhaskar Ramamurthi, Director, IIT Madras, said, “GDC is designed to fill in specific gaps in the innovation system of IIT Madras, in the specific areas of pre-incubation and nurturing initiatives that have a very high positive impact on society.” Prof. R. Nagarajan, Dean (Alumni and International Relations), IIT Madras, said, “The innovation and entrepreneurship at IIT Madras is one of the best in the country, and it is being significantly strengthened by the support of alumni, willing to give freely of their time, talent & treasure.”

At the beginning of the Symposium, an MOU was signed between IIT Madras and the University of New Brunswick (UNB), Canada. The MoU between UNB and IIT Madras covers exchange of students of faculty for research collaboration & education purposes. Post-doctoral Fellows are also included in the scope, and will be prioritized.

Throwing some light on the future course of action for GDC, Prof Krishnan Balasubramanian, Dean (ICSR), IIT Madras and Professor-in-Charge, GDC, said “Our first set of programmes will be launched in March 2018. This will be a pilot programme of about 5-6 teams, each comprising of a faculty member, entrepreneur and a mentor, who will interact with about 100 customers each to validate their customer value propositions and business models.” This exercise will aid in reducing the startup failure rate.

January 28

New studies study to find out month-wise pollutants and their sources in Delhi-NCR

https://www.hindustantimes.com/delhi-news/new-studies-study-to-find-out-month-wise-pollutants-and-their-sources-in-delhi-ncr/story-hGpRtumBPz7kbjszwjd96L.html

These studies would be the first of their kind as the results would reveal the dominant pollutants in Delhi’s air and their sources for every month and every season.

The studies would also take into consideration air pollution in the entire National Capital Region, for the first time, instead of focusing on Delhi alone unlike previous studies.

In the wake of emerging facts about new sources of pollution such as dust storms from west Asia and salt particles from salt pans of Afghanistan, the Centre has taken up at least two new studies to find out the pollutants and their sources that have been troubling Delhi and its satellite towns.

These studies would be the first of their kind as the results would reveal the dominant pollutants in Delhi's air and their sources for every month and every season. They would also take into consideration air pollution in the entire National Capital Region, for the first time, instead of focusing on Delhi alone unlike previous studies.

This would help fine tune the national capital's fight against pollution and allow the governments to remain better prepared.

"The studies will focus on apportioning various pollutants and their sources according to seasons and months. This time we are doing it for NCR. It would be different from the earlier apportionment study done by IIT Kanpur for Delhi in 2015. One of the studies is almost complete and the findings are expected within the next three to four months," said CK Mishra union environment secretary.

One of the studies, which is at its fag end, is being done by Delhi-based The Energy and Research Institute (TERI) and Pune-based Automotive Research Association of India. The other would be carried out by the Central Pollution Control Board starting next month.

"It would be a year-long study to find out the month-wise and season-wise sources of particulate matter in Delhi and its neighbouring NCR satellite towns. We will concentrate mostly on PM2.5 as it is one of the primary and most harmful pollutants," said D Saha, head of the air quality laboratory of CPCB, India's apex pollution monitoring and controlling agency.

A senior CPCB scientist said the study was planned after suggestions poured in from the Delhi government that a month-wise source apportionment should be carried out so that the government could be better prepared.

Chief minister Arvind Kejriwal and health minister Satyendar Jain had attended the meeting held by the union environment secretary.

The previous studies had mentioned the broad categories such as dust pollution and pollution from biomass burning. The present study would try to fine-tune the categorization further and find out how much dust was coming from west Asia or the alluvial plains of the Indo-Gangetic plains and what proportion of pollution comes from stubble burning among others. Pollution from Diwali crackers would also be monitored.

"The CPCB study will characterise the pollutants, identify their sources, concentration, reactivity and even health impacts," said Saha.

A recent study conducted by the CPCB and scientists from IIT Delhi had recently found that minute air-borne salt particles originating from large salt pans in Afghanistan are pushing up pollution levels in Delhi, mostly during the winter months when westerly and northwesterly winds flow.

Trans-boundary pollutants have earlier also been found to be pushing up pollution levels in Delhi.

In November, when pollution in Delhi breached emergency levels, scientists had blamed it on dust storms in west Asia. Strong high-altitude winds were bringing in pollutants from Iraq, Kuwait and Saudi Arabia where a dust storm had played havoc.

IIIT-Delhi working on driverless e-rickshaw to provide last-mile connectivity

https://energy.economictimes.indiatimes.com/news/power/iiit-delhi-working-on-driverless-e-rickshaw-to-provide-last-mile-connectivity/62683487

The vehicle, an electric rickshaw, would run on predefined routes. It would first shuttle between points in the university campus and in the future, provide hassle-free connectivity to modes of public transport such as Metro services.

New Delhi: The Indraprastha Institute of Information Technology (IIIT) here is working on a driverless autonomous shuttle vehicle to provide last-mile connectivity to urban Indians.

The vehicle, an electric rickshaw, would run on predefined routes. It would first shuttle between points in the university campus and in the future, provide hassle-free connectivity to modes of public transport such as Metro services.

"It will do automatic static obstacle avoidance, lane following, read basic traffic signals, follow speed limits, and navigate through a 3D map," Sanjit Kaul, one of the team members of the project, said.

The project began in April 2016 when the artificial intelligence research centre of the institute was founded.

"Our current choice of vehicle platform is an electric rickshaw, and currently, we are working on providing shuttle service within the IIIT-Delhi campus," Kaul said.

Others in the team include Dr Saket Anand, Dr P B Sujit along with Ph.d students of the institute.

To keep the cost per shuttle low, the team also plans to leverage state-of-the-art computational techniques that enables reducing the cost of sensing hardware needed for each of these vehicles.

"We are also hoping to replicate it on Mahindra's electric car which we received from the company as part of the Mahindra Rise Driverless Car Challenge," Kaul said.

January 27

Four IITs to get Rs. 456 crore from HRD ministry

https://www.newsbytesapp.com/timeline/India/15401/77689/hrd-ministry-sanctions-rs-456-crore-for-iits

The Ministry of Human Resource Development (HRD) has earmarked Rs. 456.10 crore for four IITs for development projects.

IIT-Kharagpur, IIT-Delhi, IIT-Madras, and IIT-Bombay will receive Rs. 151.19 crore, Rs. 105 crore, Rs. 103.41 crore and Rs. 96.5 crore respectively.

The funding was approved on the basis of proposals submitted by these IITs for augmentation of infrastructure and facilities.

The grants have already been sanctioned.

IITs open online courses, research internships to students from outside

http://www.business-standard.com/article/current-affairs/iits-open-online-courses-research-internships-to-students-from-outside-118012700991_1.html

IIT Madras is offering a two-month summer fellowship programme for students from outside the IITs

Do not fret if you do not secure admission into an Indian Institute of Technology (IIT). The massive open online course (MOOC) system offered a glimpse into their curriculum and the IITs are gradually opening doors to outside students for high-quality research on their campus.The IITs at Madras, Gandhinagar and Kharagpur have been taking steps to draw students from other institutes and universities into their summer internship programmes for a couple of months and work with their top faculty members.Among these, IIT Madras and IIT Gandhinagar run structured programmes where applications are invited from candidates outside campus.IIT Madras is offering a two-month summer fellowship programme for students from outside the IITs. To begin from May 16, the programme will entail an Rs 6,000 monthly stipend to candidates. The institute has set February 28 as the deadline for submission of applications for the programme. “This is an opportunity for students to work with leading researchers on problems that are at the forefront of technology,” said V Jagadeesh Kumar, dean (academic courses), IIT Madras.IIT Gandhinagar runs a similar programme where candidates are are paid stipends of Rs 4,000-5,000 per month.The IITs see the move as an effort to share academic and research best practices with students of other institutes while creating a pool of potential doctoral and postdoctoral researchers.“Our faculty members get to work with some of the best talent in the country. We showcase cutting edge technology and research work being done on campus.

This prepares candidates for future research programmes and in placements,” said Shanmuganathan Raman, assistant professor of electrical engineering and computer science and engineering, IIT

Gandhinagar.Citing one such instance, Raman said a candidate made it to the Georgia Institute of Technology after completing the internship programme at IIT Gandhinagar.According to an IIT Kharagpur spokesperson, while a structured programme is not available on campus, faculty members hire interns from outside for research during summer. Further, as part of their research spending, the IITs have been setting aside funds to pay for stipends. While applications run into several thousands, a few hundred candidates are hired. “We have not capped the number of interns under each faculty member. Usually, we receive over 8,000-9,000 applications from across the country and 150-200 are selected. The faculty select the candidates based on their academic and previous research record, among other criteria,” Raman added. IIT Madras encourages “candidates with an outstanding academic background” to apply. “The internship is designed to enhance awareness and interest in high-quality academic research among young engineering, management, sciences and humanities students through a goal-oriented summer mini-project undertaken at IIT Madras,” the institute stated.The programme at IIT Madras allows candidates in the third year of the BE/BTech/BSc/Integrated ME/MTech programmes as well as those in the first year of the ME/MTech/MSc/MA programmes to apply.Applicants are encouraged to highlight academic performance and achievement, including papers presented at seminars, projects executed, design contests participated in, score or rank in the Mathematics Olympiad and any other award or distinction obtained.

IIT Kanpur team finds possible cause of neurodevelopmental disorders

http://www.thehindu.com/sci-tech/science/iit-kanpur-team-finds-possible-cause-of-neurodevelopmental-disorders/article22536461.ece

Signalling doesn’t control migration of neurons that form the lower neuronal layers, says Jonaki Sen.

BMP signalling plays an important role in cerebral cortex development

Bone morphogenetic proteins (BMP) are secreted signalling molecules which are already known to regulate the production of neurons from neural stem cells. Now, using mice models, a team of researchers led by Prof. Jonaki Sen from the Indian Institute of Technology (IIT) Kanpur has found that

BMP signalling is active in the cerebral cortex during embryonic development as well as during later stages of development after birth, too.

They found that BMP signalling regulates three processes — the migration of newborn neurons from stem cell niche to their destined place in the cortex, polarity (the axon forming the base and the dendrites forming the apical or top side) of neuronal cells, and branching of dendrites in the upper layer neurons of the cerebral cortex.

The cerebral cortex has six neuronal layers formed in an inside-out manner. The early-born neurons form the inner cortical layers while the late-born neurons form the outermost layers. So any perturbation or delay in the migration of newborn neurons results in disturbed layer formation and lack of proper connectivity between neurons.

Similarly, when polarity (alignment) or branching of dendrites is affected, the neurons will not be able to form proper electrical connections. Though there are other factors that determine migration and polarity, the role of BMP signalling in these two processes was not known till now.

BMP signalling

“BMP signalling was previously known to play an important role in the early development of the brain. Our study is the first to show that BMP signalling plays an important role in cortex development by regulating the migration of newborn cortical neurons and the establishment of polarity in the upper layer of cerebral cortex,” says Dr. Monika Saxena from the Department of Biological Sciences and Bioengineering at IIT Kanpur and first author of the paper published in the journal *Development.*

“There are many neurodevelopmental disorders linked to aberrant migration of neurons such as lissencephaly, autism, epilepsy and schizophrenia,” says Prof. Sen who is with the Department of Biological Sciences and Bioengineering. “We now know that inhibition of BMP signalling leads to delayed migration and this may be one of the causes for such disorders. Thus, it might be possible to prevent or treat these diseases if further research is carried out.”

Two pathways

BMP signalling can be through two pathways — phospho-SMAD or LIM kinases. When BMP signalling was totally inhibited, both the pathways were affected. As a result, all the three processes — migration, polarity and neurons not making enough branches — were affected.

To understand the role of each pathway in affecting any of the three stages of neuronal development, the researchers selectively blocked one pathway at a time.

“Both pathways have a role in the migration of neurons. When only one of the pathways was blocked, migration was affected but to a lesser extent than when both pathways were inhibited," Prof. Sen says.

In the case of polarity, inhibiting the LIM kinase pathway seemed to be less effective than inhibiting the phospho-SMAD pathway. “Using mice models we determined that the phospho-SMAD pathway was more important than LIM kinase pathway for polarity establishment,” Prof. Sen says.

But the reverse was true in the case of the branching of dendrites. Inhibiting the LIM kinase pathway had a greater effect on dendrites branching than inhibiting the phospho-SMAD pathway.

The researchers found that BMP signalling seems to selectively regulate migration of upper-layer neurons. The migration of neurons to form the lower layers, which are the first to be formed, is not affected even when BMP signalling is blocked.

Even when both the pathways of BMP signalling were blocked, migration was only delayed and not completely stopped. But the delay in migration causes problems. “When neurons finally reach the upper layers (layer II/III), they don’t have proper polarity,” Prof. Sen says.

Evidence in mice

The gestation period in the case of mice is 20 days. The migration delay was seen two days after BMP signalling was blocked on gestation day 15.5 and continued till at least the day of birth. Disturbed polarity was manifested on the sixth day after birth. Defects in dendrite branching was first seen 15 days after birth and fully manifested 21 days after birth.

“BMP signalling is involved in regulating multiple phenomena at different stages of cortex development,” says Prof. Sen.

Honey to heal wounds in diabetics

http://www.thehindu.com/sci-tech/science/honey-to-heal-wounds-in-diabetics/article22536370.ece

Chronic foot ulcers can lead to disease-associated amputations

Honey, a traditional medicine used for thousands of years, has now been proved to heal wounds as well. Researchers from IIT Kharagpur have reported that honey can be used for healing wounds in diabetics.

Treatment of diabetic chronic foot ulcers is an unmet clinical challenge and often leads to disease-associated amputations. In diabetic patients, the micro- and macro-vascular alterations cause nerve damage and tissue hypoxia. The abnormalities in the inflammatory pathways lead to development of infectious non-healing foot wounds. Diabetes also affects the synthesis and alignment of collagen fibres which are the main requirements for wound healing. The research published in *Wound Medicine* reported that honey improves collagen synthesis thus helping wounds to heal.

Healing honey

"We first characterised the physical and chemical properties of honey. Honey contains amino acids like proline, arginine and glutamic acid. The ascorbic acid in the honey stimulates the quick maturation of collagen fibres needed for wound healing. It can also prevent scarring and minimises hypoxic assaults on cells," says Dr Jyotirmoy Chatterjee, Associate Professor at the School of Medical Science and Technology, IIT Kharagpur.

Animal studies have shown that an acidic pH (3.3-3.9) reduces protease activity and increases release of oxygen to promote tissue regeneration and growth of fibroblasts. Topical application of honey caused this acidification and this might be responsible for promoting wound healing. Antioxidant content and radical scavenging activities of honey possibly play a crucial role in controlling over production of reactive oxygen species in diabetic wounds and helps in angiogenesis. Imaging studies showed that honey-treated wound bed achieved organised collagen distribution like normal skin.

"Further tests have been carried out using cell culture, *in vitro* gene expression and *in vivo* studies on human subjects," says Dr Chatterjee. The researchers have developed a honey-based film/membrane, which can be used as a wound-healing patch. The patch has been patented.

According to Amrita Chaudhary, one of the authors of the paper, work is one to characterise the bioactive constituents of different Indian honey samples such as polyphenolics and sugar and developing honey-incorporated silk fibroin patch. The patch has nano-patterned and micro-pillar substrates with improved cellular compatibility.

"Honey embedded silk fibroin patch with micro-pillar matrix acts differentially on normal and fibrosis associated fibroblasts," says Monika Rajput from the lab.

However, the molecular pathway through which the honey endorses collagen regeneration is yet to be investigated.

IIT Madras testing prototype of swappable electric battery

https://www.thestatesman.com/india/iit-madras-testing-prototype-swappable-electric-battery-1502573973.html

IIT Madras Research Park is working on a model of electric vehicle which will have swappable battery. Centre for Battery Engineering and Electric Vehicles (CBEEV) at IIT Madras Research Park has developed the prototype of a battery that can be externally charged and attached to a vehicle. It is expected that this will be in the market by the end of this year.

The indigenous Lithium-Ion battery can be externally charged and installed in a vehicle is not yet available in the market. Prototypes of the battery is being tested at IIT Madras Research Park.

A start-up of IIT Madras Research Park had developed an electric scooter a few years ago which is now in the market. Ather Energy had built the smart electric scooter. That seemed to be the beginning only. Now CBEEV is taking the story further.

The cost of the battery will be affordable as compared to a Tesla battery that makes a car run for 600 km non-stop. A Tesla car costs a whopping Rs. 20 lakh apart from the cost of importing it.

Almost all the automobile companies, including Goenka, Lohia, Kinetic, Mahindra and Hero, are interested in launching swappable battery vehicles. These automobile companies are working with the IIT Madras Research Park to make these batteries commercially viable.

These batteries are being tested on all types of vehicles, including e-rickshaws and e-scooters. Even buses can be run on these batteries. But, at present, they are at an experimental stage.

“If these batteries are used widely, there will be no need to import batteries. Importing batteries for electric vehicles will impact the economy hugely as six percent of GDP depends on automobiles,” said Faculty InCharge of IIT Madras, Prof Ashok Jhunjhunwala.

Prof Ashok Jhunjhunwala who was chairman of Technology Advisory Group for Electric Mobility, said that one can cover any distance using the battery-swappable vehicles. But one would need a sound battery swapping infrastructure.

To make it safer and secure, it can be charged only at authorized centres and can be mounted in vehicles that have been authenticated for it. Therefore these encrypted Lithium-Ion batteries are called Locked Smart Batteries.

Prof Ashok Jhunjhunwala says that swapping points can be set up at Indian Oil and Bharat Petroleum outlets. Once the battery gets discharged, one can get a charged batteries from these authorized centres. “As a result, one need not depend on charging facility at home. And one can go to any distance. After a battery gets discharged after 100 km one can swap it for a charged battery at a swapping point,” said Jhunjhunwala.

Prof Bhaskar Ramamurthi, Chairman of IIT Madras Research Park, said that a certain number of vehicles need to adopt these type of batteries to allow this model to work and there has to be some kind of policy. “These are standardised batteries and there is no chance of any company having a monopoly over these,” said Prof Ramamurthi.

January 26

IIT-Roorkee professor develops new technology for aerial survey

https://www.hindustantimes.com/education/iit-roorkee-professor-develops-new-technology-for-aerial-survey/story-NU9raVl4Mru8ryfXL3gRKJ.html

A professor with the IIT-Roorkee has developed a new technology for carrying out aerial survey, which is more cost-effective and precise than the LiDAR system used at present

A professor with the Indian Institute of Technology, Roorkee, has developed a new technology for carrying out aerial survey, which is more cost-effective and precise than the LiDAR system used at present.

Professor Kamal Jain at the civil engineering department of the IIT used a drone for taking videos with an interactive web map to demonstrate the technology that records data, including the place and time on a computer screen.

The LiDAR (light detection and ranging) is used in aircraft to map aerial images of an area and is a costly and cumbersome technology. It requires a camera-mounted aircraft mapping images from the air, for which an aircraft needs to fly at a specific height and requires permission from civil aviation authorities, Jain said.

“Taking the aspects into consideration I have developed an unmanned aerial vehicle mounted video geotagging system,” he said.

“We use a drone over a particular area to take video images which are tagged with a web map that enables the user to know the accurate geospatial information like latitude or longitude of each point.”

He further said that with the help of Google map, the system is quite useful for infrastructure and defence sectors.

Elaborating on the use of the system for Uttarakhand, where landslides, flood and armed forces troop movement takes place, Jain said he has conducted successful tests.

“As one takes a video it’s displayed simultaneously on the satellite map taken from a vertical distance of 100m which is permissible under aviation parameters and the resolution images of the video are sharper and more effective,” he said.

Citing the high cost of aerial monitoring of infrastructure projects through the LiDAR-based technology, Jain said one km of aerial video monitoring costs more than Rs 30,000, while the newly developed system will cost less than Rs5,000.

Apart from being cost-effective, the technology is also more accurate, he said.

Jain has also carried out a survey and mapping of a railway infrastructure with the new system.

New UGC rules permit third-party agencies to accredit higher education institutes

http://indianexpress.com/article/education/higher-education-new-ugc-rules-permit-third-party-agencies-to-accredit-institutes-5039632/

Earlier, NAAC and NBA were the only agencies evaluating institutions

Agencies other than the National Assessment and Accreditation Council (NAAC) and the National Board of Accreditation (NBA) will soon be able to evaluate higher education institutions as the University Grants Commission (UGC) has passed a new regulation permitting their entry.

The new rules, which were approved by the Commission in a meeting held this month, enables UGC to grant licences to third-party agencies for accreditation of educational institutes. The regulation now awaits HRD Ministry’s nod.

Among the new accreditation bodies will be one spearheaded by the Indian Institutes of Technology (IITs), sources told The Indian Express. The premier engineering schools, in a meeting of IIT directors held in Chennai last month, have agreed to set up a Section 8 company, which will apply for a licence under the new UGC regulation.

The decision was taken at the behest of the Union government, which feels that the involvement of IITs will lend prestige to the accreditation process. The idea behind the UGC regulation permitting entry of more accreditation agencies is to take some of the burden off NAAC and NBA and, also, provide universities and institutes with more options.

The new regulations spell out the eligibility criteria for private players and agencies keen on being empanelled by the UGC as accreditation agencies. According to sources, the applicants should be a Section 8 company or a society and should have been in existence for at least three years. That apart, this agency should also have "assessment and accreditation" as one its main objectives under either its articles of association or memorandum of association.
The accreditation agencies to be empanelled by the UGC will be selected on the advice of the Accreditation Advisory Council (AAC). The AAC will be a 10-member body comprising distinguished academics and experts with proven track record in accreditation. It will be constituted by a high-powered committee headed by the Cabinet Secretary.

This AAC will vet all applications. One-third of its members will retire every two years, said sources.
The UGC regulation also spells out the five broad parameters on which all higher education institutes will be evaluated – curriculum design and development, teaching and learning outcomes, research and innovation, physical infrastructure and learning resources, student support, alumni contribution, leadership and management and institution's values, among others.