Highlights of the Week@IITD

Boeing appoints IIT Delhi alumnus Pratyush Kumar to head F-15 fighter jet programme

October 8, 2018 https://www.businesstoday.in/sectors/aviation/iitian-pratyush-kumar-to-lead-boeing-f-15-fighter-jet-aircraft/story/284299.html

US-based aircraft-maker Boeing has named its India president Pratyush Kumar to lead the iconic F-15 fighter jet program in the United States and the world.

US-based aircraft-maker Boeing has named its India president Pratyush Kumar to lead the iconic F-15 fighter jet program in the United States and the world. Kumar, an alumnus of Indian Institute of Technology (IIT) Delhi, completed his BTech in mechanical engineering in 1989 and later went on to study Materials Engineering at Massachusetts Institute of Technology (MIT).

In a statement, Boeing said Pratyush Kumar has been selected to lead the F-15 program in the United States and he will focus on furthering the F-15 business in the US and the rest of the world.

Boeing International President Marc Allen described Kumar as an exceptional leader who has demonstrated his ability to respond to global customers and to empower his team to collaborate and deliver results.

The aviation major is expected to announce Kumar's successor in India. Kumar is also a vice president in Boeing International.

Boeing said during his five-year tenure in India, Kumar advanced the company's business in commercial airplanes, defence, space, security, and global services.

Under Kumar's tenure, Boeing launched an engineering and technology centre in Bengaluru to drive innovation and scale up its aerospace supply chain. It also established a joint venture in Hyderabad with Tata to manufacture fuselages for the Apache attack helicopter, established Boeing Defense India to serve customers locally, finalized the sale of both Apache and Chinook helicopters to the Indian military and converted options for the P-8I maritime surveillance aircraft to firm orders.

Kumar said he was upbeat about his new US role to build business for the F-15 programme the world over. The company will, however, expand its local manufacturing, technology and innovations, products and people in the Indian sub-continent, he added.

Born in a remote village in Bihar with no electricity or road connectivity, he was homeschooled by his grandfather. "At that time my ambitions were limited and all I wanted was to be able to go to a regular school. The first time I discovered a city and even a television set for that matter, was when I moved to Delhi at the age of 11," Kumar had told India Today in 2016.

Kumar has worked at companies such as McKinsey & Company and General Electric in the US. Between 2001 and 2003 he co-founded two technology start-ups Coventor and Cytonome in Boston.

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संत स्वामी सानंद का सफर ऐशोआराम की जिंदगी छोड़ बन गए गंगा के सेवक :

https://www.livehindustan.com/national/story-swami-sanand-journey-leaving-his-influenced-life-behind-devoted-himself-for-the-ganges-2218296.html

उत्तर प्रदेश के छोटे से कस्बे कांधला में जन्मे जीडी अग्रवाल का आईआईटी प्रोफेसर से गंगा का सिपाही संत स्वामी सानंद बनने का सफर किसी परीकथा से कम नहीं। रुड़की इंजीनियरिंग कॉलेज से सिविल इंजीनियरिंग के स्नातक अग्रवाल ऐशोआराम की नौकरी छोड़कर गंगा के पुनर्जीवन के लिए पूरी तरह से समर्पित हो गए थे।

40 साल से अधिक समय से स्वामी सानंद के संपर्क में रहे पर्यावरण कार्यकर्ता रवि चोपड़ा बताते हैं कि रुड़की इंजीनिरिंग कालेज के सिविल इंजीनियर सानंद ने अपने करियर की शुरूआत 1950 में उत्तर प्रदेश सिंचाई विभाग से की। कुछ समय तक नौकरी करने के बाद वो उच्च शिक्षा के लिए आईआईटी कानपुर चले गए। विदेश से पीएचडी करने के बाद लौटने के बाद वो कानपुर आईआईटी में सेवाएं देने लगे।

IIT में एचओडी के पद से इस्तीफा

वर्ष 1977 में वरिष्ठ राजनीतिक जयप्रकाश नारायण को आईआईटी में बुलाने की वजह से हुए विवाद के बाद उन्होंने इस्तीफा दे दिया। उस वक्त वो कानपुर आईआईटी में डीन ऑफ फैकल्टी और इंवायरमेंट इंजीनियरिंग विभाग के एचओडी भी थे। इसके बाद उनके जीवन की राह बदल गई और वो कानपुर से वो दिल्ली चले गए।

प्रदूषण की जांच करने वाले उपकरण भी बनाए

1970-80 के दौरान में वो केंद्रीय प्रदूषण नियंत्रण बोर्ड में सदस्य सचिव के रूप में सेवा शुरू की। मगर, अचानक ही उनका मन पलटा और कुछ ही साल बाद वहां से इस्तीफा देकर अपने गांव आ गए। रवि चोपड़ा बताते हैं पर्यावरण से जुड़ी संस्थाओं के साथ मिलकर उन्होंने प्रदूषण की जांच करने वाले उपकरण भी बनाए। उन्होंने बताया कि कुछ समय चित्रकूट स्थित महात्मा गांधी ग्रामीण विश्वविद्यालय में सेवाएं देने के बाद जीडी अग्रवाल वर्ष 2008 में पूरी तरह से गंगा के पुनर्जीवनीकरण अभियान से जुड़ गए। गंगा संरक्षण के लिए अब तक उन्होंने पांच उपवास किए। यह उनका सबसे लंबी और अंतिम तपस्या थी।

'सरकार के मुताबिक विचार न बदलें वैज्ञानिकइंजीनियर-'

स्वामी सानंद के साथ बिताए क्षणों का उल्लेख करते हुए रवि चोपड़ा बताते हैं कि उन्हें वर्तमान दौर में वैज्ञानिक और इंजीनियरों का राजनीतिक दबाव में काम करना पसंद नहीं था। एक बार चर्चा के दौरान उन्होंने व्यथित मन से कहा था कि आज की इस मेधा में वो ईमानदारी नहीं है। अब ये लोग सरकार की इच्छाओं के अनुसार अपने दिमाग और विचार बदल लेते हैं। रवि बताते हैं कि एक बार उन्होंने कहा था कि आज विकास को भौतिकता और भोग के पैमाने से नापा जाता है। यह गलत है। विकास में भोगवाद की तलाश से पर्यावरण सुरक्षित नहीं रह सकता है।

October 11

For new IITs, govt sets some ground rules — no swimming pool, food court with public money

https://theprint.in/governance/for-new-iits-govt-sets-some-ground-rules-no-swimming-pool-food-court-with-public-money/132010/

HRD Minister Prakash Javadekar addresses a press conference in New Delhi

New rules say IITs and centrally-funded institutes like NITs must have "smart" classrooms, hostels should have LAN and Wi-Fi facilities.

The Indian Institutes of Technology and other centrally-funded institutes such as NITs may have to generate their own resources if they want to construct swimming pools or food courts on campus, say new building norms set by the human resource development ministry.

The changes are part of a letter that the ministry has sent to all IITs, specifying the guidelines for construction activities with government funds.

HRD ministry officials told ThePrint that these guidelines have been designed to ensure that the infrastructure, being developed in the new IITs, is strictly as per requirement and that no extra facility, which may not be immediately required, is created.

The matter was discussed at a meeting of the IIT Council, the highest decision-making body for the institutes, in August.

"The standards for construction have been issued by MHRD for developing of campuses and other infrastructure in IITs and all centrally-funded institutes," said a ministry official.

There are a number of new IIT campuses coming up in Dharwad, Palakkad, Tirupati, Bhilai, Goa and Jammu. The Central government has earmarked Rs 5,000 crore for their construction.

Call for smart classrooms

The letter says all classrooms in these institutions should be "smart" and all hostels, academic blocks and administrative buildings should have LAN and Wi-Fi facilities. The campuses must have 1 Gbps speed internet facility, with fibre optic cables connecting all buildings.

It also stipulates that when the institutes construct a building, whether it is academic or administrative, they have to adhere to the benchmark of 30 sq m per student. For sports and common facilities, the benchmark has been set at 35 sq m per student.

Similarly, land development has to be done in modules of 50 acres. To ensure maintenance of quality and to avoid time and cost overruns, a project monitoring unit has also been constituted by the ministry, which will undertake regular visits to all construction projects and give its recommendations for remedial steps, wherever necessary.

Although these guidelines are meant for all centrally funded institutions, in the immediate context they are applicable to the new IITs and to the existing ones looking to upgrade their facilities.

The negative list

The ministry has also prepared a negative list of work that will not be sanctioned by HRD ministry grants. For instance, institutes cannot use Central government funds to construct swimming pools, shopping complexes, eatery/food courts, stadiums, convention halls with more than 500-seating capacity, ring road in the entire campus and guest house with more than 20 rooms.

A senior HRD ministry official, however, said that even though the guidelines have been prepared, if some IITs have some issues with them, a committee constituted by the ministry will look into them.

"In case any IIT requires anything above these guidelines, it can be considered with due justification," the official said.

"The guidelines apply only to the government- or higher education funding agencies (HEFA)-funded projects and would not apply to projects that are implemented by other grants or endowments or under PPP arrangements. These orders will also not apply to construction works for which work order has been awarded."

Annual convocation held at IIT-Roorkee
http://www.thehansindia.com/posts/index/Young-Hans/2018-10-11/Annual-convocation-held-at-IIT-Roorkee/422582

Annual convocation held at IIT-Roorkee

The Annual Convocation of the Indian Institute of Technology Roorkee (IIT-Roorkee) was held recently. The Chief Guest was Prof Subra Suresh, President of the Nanyang Technological University, Singapore.

Undergraduate students and Masters and PhD students received their degrees on this occasion . A total of 2,026 degrees were awarded out of which 1077 (797 Male and 280 Female) Masters and PhD students received their degrees today. A large number of parents attended the function.

In his welcome address, Prof A K Chaturvedi, Director, IIT-Roorkee, highlighted the improvement in the Institute's rank in all the major rankings. "In the Global Times Higher education rankings, IIT-Roorkee moved from the 500-600 bands to 400-500 bands. Our rank improved by 50 positions in the QS rankings.

Most significantly, IIT-Roorkee was ranked first among the IITs in terms of the number of citations per faculty." Another key initiative was the number of start-ups associated with TIDES reaching 22, of which 16 were offered incubation. To avail better access of the NCR ecosystem, TIDES started an extension centre in Greater Noida."

Addressing the students, the Chief Guest, RC Bhargava, Chairman, Maruti Suzuki India Ltd spoke about manufacturing in India and the role of innovation by technologists. He also highlighted the role of partnerships and developing technologies to enable this.

"Besides building trust with Government and the people, industrial leaders also have to develop technology that would enable Indian industry to have the competitive edge in the future. All of you who are passing out from this great Institute today have the opportunity to take part in this nation building activity. I would urge you to use your skills and knowledge and work in the manufacturing sector."

How Universities Are Embracing AI to Solve India's Socio-Economic Issues
https://www.analyticsindiamag.com/how-universities-are-embracing-ai-to-reform-indias-socio-economic-issues/

Last week, Indian Institute of Technology, Kharagpur launched a summit to work specifically on India specific problems and leveraging artificial intelligence for the same. The initiative is named up.AI which is pronounced "upay" (उपाय (meaning "solution" in Hindi. The new AI initiative up.AI is a joint work of The Department of Computer Science and Engineering, IIT Kharagpur and the Centre for Excellence in Artificial Intelligence, IIT Kharagpur.

The aim of the summit is to bring IIT Kharagpur alumni together to solve problems related to illiteracy, hunger and disease. The summit held in Bengaluru is an endeavour by the institute to focus and solve

basic problems that are neglected by the industry and government. This is also in line with the universities working with the state governments to address socio-economic problems.

Are Societal Problems Hidden Blessing For University AI Departments

Recently it was also announced that the Robert Bosch Centre for Data Science and Artificial Intelligence (RBC-DSAI) at IIT Madras was working with Tamil Nadu agencies to bring a more data driven governance in the southern state. Many government branches and departments are now closely working with the centres at IIT Madras to bring the state's administration to the 21st century. Again, the most focussed areas are healthcare, education and agriculture which shows heavy commitment to solve socio-economic problems and use AI and data enabled technologies for civic and societal problems.

Dr. Nandan Sudarsanam working with Department of Management Studies, IIT Madras said, "Societal impact through AI is a central objective of RBC-DSAI at IIT Madras. We believe that by teaming up with the TNeGA we can contribute towards multiple pillars of the government, covering areas such as education, health-care, and agriculture,"

Through such collaborations, universities get a chance to cut their teeth on public data and also overcome societal problems with AI and ML techniques. This als fosters greater collaborations between public sector and universities. It is well-known that Indian academia has contributed little to global machine learning research knowledge.

India : AI's Ultimate Test

Varun Aggarwal, CEO of Aspiring Minds has opined that working on Indian problems is a win win proposition. Both India and the state of AI technology will be helped with this collaboration. He says, " The AI revolution needs India. The country's diversity of languages, dialects, accents, scripts, dress, and culture presents a rich set of challenging problems for artificial intelligence."

Along with universities, many independent institutions are also working to create an impact on the grassroot level through AI. Wadhwani Institute for Artificial Intelligence (WIAI) aims to harness the power of AI to address challenges in healthcare, agriculture and skilling among others. Sunil Wadhwani, the founder said in an interview, "AI institute will be developing solutions, but not directly implementing it. And we will be working with partners such as government, and other civil society partners. At WISH foundation, we work on innovation, we work with innovators, and we also want to see how it actually works. "

Role of Industry Academia Collaboration Paves Way for Research

Intel, the US chipmaker announced that it has recently trained more than 99000 developers, students and professors in AI and when its target was only about 15000. Intel tied up with IIT Mumbai, IIT Kharagpur, IIT Madras and IIITs in Bengaluru and Hyderabad along with ISI Kolkata and IISc Bengaluru and CDAC.

In the past, cross-departmental collaboration and industry partnerships helped Indian Institute of Science Bangalore develop methods of testing glucose levels in blood. This method leverage data and predicts the onset of the disease better than existing tests. IIT Bombay also worked with large number

of universities internationally and with IBM to use AI for social good by boosting its own machine learning and AI capabilities. An IIT B statement noted that the institute partnered with IBM, in key areas to accelerate the development of AI technologies, such as deep learning, natural language processing, computer vision, and others, as well its application in societal challenges, ranging from aiding the understanding of disease, education and cybersecurity.

Indian universities will need to dig into the Indian society to look for deeply rooted problems and solve them via AI and other newer technologies to boost their research capabilities. This process is already underway.

October 10

The latest bright idea from an IIT lab — cars that run on water and aluminium

https://theprint.in/governance/the-latest-bright-idea-from-an-iit-lab-cars-that-run-on-water-and-aluminium/131708/

IIT-Roorkee engineers develop electric car prototype that needs 'refuelling' not recharging, say it won't cost any more than your petrol or diesel vehicle.

On a day when petrol is available for Rs 82.26 in Delhi and diesel for Rs 74.11 in Mumbai, imagine using a car that runs on water and a bit of aluminium. This environment-friendly (and possibly pocket-friendly) dream could soon come true if boffins from the Indian Institute of Technology-Roorkee have their way.

A start-up called Log9 Materials, launched by students of IIT-R, is developing an electric car that will need just water and a plate of aluminium for refuelling.

Log9, which was incubated at IIT-R two years ago, has developed batteries that work on aluminium and water, and unlike electric vehicles of today, need 'refuelling' and not recharging. Companies abroad are already working on this technology, but Log9 is the only one so far in India.

The group expects cars using these batteries to run for up to 1,000 km in one go — needing just about one litre of water every 300 km. At the 1,000 km mark, an aluminium plate will need to be replaced in the battery — which the engineers say will take no more than 15 minutes of your time.

Each plate will cost about Rs 5,000, about the same as what it would take to run a petrol or diesel car for 1,000 km. The makers say the cost may reduce further in future.

There is just one question that they don't want to answer — how the aluminium plates are going to be made available to consumers.

At present, the company is conducting tests before launching its car commercially.

"The car prototype is ready and we are already in talks with some automobile companies," Akshay Singhal, founder-CEO of Log9 Materials, told ThePrint.

How it works

The technology used in these batteries is like fuel cell technology, which generates electricity by an electro-chemical reaction. It uses the metal plate along with a graphine (a form of carbon) rod to generate electricity, with water as the base for the chemical reaction.

The electricity generated by this reaction is then sent to an electric motor which drives the car.

"We are confident that cars using these batteries will be able to have a good run," Singhal said.

Experts laud idea, but is it affordable?

Automotive experts have lauded the idea, but also cautioned about the affordability of these cars.

Tutu Dhawan, automotive expert and journalist who is also on the board of advisers to the Delhi government, said this technology could be the future of motoring.

"Fuel cell technology is the future for electric vehicles, if it is perfected. A lot of manufacturers are seriously going into this technology and have already started testing it," Dhawan said.

Automotive engineer Vikram Mishra, however, sounded a note of caution.

"It is a great innovation, and IITs are doing good work in terms of innovation. But I have my doubts on how much this vehicle will be successful," he said. "Even if they make it viable, they have to be able to make it affordable."

The Bloomberg New Energy Finance (BNEF) report released recently expects electric vehicles to comprise about 7 per cent of sales in India by the year 2030.

Electric cars need an alternative

Asked what prompted him to start this venture, Singhal pointed out the challenges of today's electric vehicles.

"The problem in using electric cars in India is at two levels. One is on the consumer side —the range is limited, charging takes time and charging infrastructure is not available," he said.

Then there are problems of manufacturing and disposal. "Materials required to make lithium-ion batteries are not available easily, and there are no reservoirs of lithium and cobalt. So after these batteries are used, there is no way to recycle them," Singhal said.

In a city like Bengaluru, a fully-charged electric car won't get you from the city centre to the airport (about a 40-km ride) — and it takes at least eight hours to fully charge it.

Then there's the question of cost. If a particular petrol car costs Rs 3 lakh, the electric equivalent would cost about Rs 7 lakh — all because of the battery.

"In an interview, Maruti Suzuki chairman R.C. Bhargava pointed out the challenges involved in the adoption of electric cars in India. He said that with electric adoption, one problem is affordability and another problem is where will you charge the car and how can you construct a charging infrastructure? These are the challenges that we are trying to overcome," Singhal said.

IIT-M to help State with e-governance

https://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/iit-m-to-help-state-with-e-governance/article25173911.ece

The Indian Institute of Technology, Madras, has signed an agreement with the Tamil Nadu e-Governance Agency to develop and maintain services.

The institute's Robert Bosch Centre for Data Science and AI will collaborate with the agency and provide solutions for information and communication technology related challenges in aspects such as education, healthcare and agriculture.

TN e-Governance Agency's chief executive officer Santhosh K. Misra and IIT-M's dean of Industrial Consultancy and Sponsored Research Ravindra Gettu signed the agreement on Tuesday.

The collaboration will include research relating data science for government and e-governance.

IIT Mandi launched six new postgraduate programs in last one year

https://www.jagranjosh.com/news/iit-mandi-launched-six-new-postgraduate-programs-in-last-one-year-147201

Prestigious Indian Institute of Technology Mandi or IIT-Mandi has launched six new courses in the past one year i.e. between August 2017 and August 2018. The programs launched during the period are - M.Sc. in Physics, M.Tech. in Very-Large-Scale Integration (VLSI), M.Tech. in Structural Engineering, M.Tech. in Power Electronics and Drives (PED), M.Tech. in Communications and Signal Processing (CSP) and M.A. in Development Studies. With these courses, the institute has inched closer to its target of having 60 per cent of its total student strength in postgraduate.

"These new post-graduate programs in core and applied disciplines are designed considering the academic and career prospects of the students and with the introduction of these new programs, IIT

Mandi aims to attract bright students from all over India for post-graduate studies," Dr. Pradeep C. Parameswaran, Dean (Academics), IIT Mandi, was quoted as saying by a report in NDTV.

There are seats for 30 students for M.Sc and M.Tech programmes in PED, VLSI and CSP and 18 seats for MA Development Studies and M.Tech. Structural Engineering now accommodates 18 students each. Meanwhile, IIT Mandi researchers developed a material that can harvest water from fog. "There are several plants in arid and semi-arid regions of the world whose leaves can harvest water from dew and fog. If they can do it, so can we," said Venkata Krishnan, an associate professor at Indian Institute of Technology (IIT) Mandi, Himachal Pradesh.

How the Carbon Zero Challenge at IIT Madras is creating job makers to solve the planet's environment problems

https://www.indiatoday.in/education-today/featurephilia/story/iit-madras-carbon-zero-challenge-2018-winning-projects-html-1359430-2018-10-10

The Carbon Zero Challenge at IIT Madras has trains students to turn their own ideas to solve environmental problems into full-fledged start-ups to change the world.

The Carbon Zero Challenge (CZeroZ) encourages students to apply their academic knowledge to develop innovative solutions to some of our energy and environmental problems that in turn could grow into a profitable venture in future.

Even though academic research projects are steeped in scientific techniques, sometimes they don't notice if the work has any relevance in real world settings. The Carbon Zero Challenge (CZeroC) by IIT Madras aims to bridge this gap by allowing students to solve our energy and environmental problems using their innovations.

"The CZeroC encourages students to apply their academic knowledge to develop innovative solutions to some of our energy and environmental problems that in turn could grow into a profitable venture in future," says **Dr Indumathi M Nambi, Professor of Civil Engineering, and Principal Coordinator of the Carbon Zero Challenge**, in conversation with India Today Education.

Why is the CZeroC project such an important part of the IIT Madras curriculum?

In almost all engineering institutions in India, the final year in BTech expects a preparatory course for a project in the odd semester, and requires an actual project model to be built (or carry out research) in the even semester.

"At IIT Madras, students interested in carrying out an industry or society relevant project find that the Carbon Zero Challenge provides an ideal platform for a great project," says the professor.

IIT Madras Carbon Zero Challenge Demo Day

The most important part of this project is that students are able to hone their organizational, communication, research skills and often work within their community while their idea transforms into a real-life product with a significant market potential.

"In this way, CZeroC helps graduate, post-graduate and doctorate students explore alternative career options and become job creators instead of being job seekers," says Nambi.

The project supports student teams in every possible way, with funding assistance, mentorship support from the large IIT Madras ecosystem, assistance in liaising with the industry and much more, the professor adds.

Why we need more environment and clean energy start-ups

"**India needs more than 10 million jobs every year and global data shows that it is the start-ups and not the large enterprises that create net new jobs in any country.** Start-ups also act as innovation hubs and they bring in technological enhancement to a country," says professor Nambi.

Realizing these key facts, the Government of India has been taking several initiatives to promote the start-up boom in India.

While there has been a significant growth in the number of tech and IT start-ups, **there has not been such a rapid pace growth in the clean-tech or environment sector start-ups**. However, it is predicted that companies and investments in green technology will play an important role in the upcoming Climate Change battle, adds the professor.

The Carbon Zero Challenge trains the students to make useful contributions for our environment and society.

The professor tells us how universities are now talking about "**translational research" where there is greater collaboration between the academia and industry**. With the CZeroC project, the young minds are a part of this journey and they are challenged to create a global impact in an environment where they can use their full potential.

While there has been a significant growth in the number of tech and IT start-ups, there has not been such a rapid pace growth in the clean-tech or environment sector start-ups.

Why does the customer discovery phase' exist for CZeroC participants?

The teams participating in the Carbon Zero Challenge have to go through a customer discovery phase' in the preliminary stages. There is a good reason behind this.

"It is estimated that **90 per cent of start-ups in India fails within five years from their start. The most common reason for this is rooted from the fact that not enough market research is done** before the launch of the start-up," says Nambi.

"The CZeroC initiative strongly believes that the first building block of a start-up is the idea' that will transform into a product/service for which a customer is willing to pay," she adds.

Thus, in order to make sure that the innovative solutions proposed by the student or start-up teams have the potential to solve the problem of the prospective customer and also achieve market scalability, the CZeroC contest has this unique preliminary step called customer discovery phase.

In the customer discovery phase, students are required to identify and talk to at least 20 prospective customers for their proposed zero carbon solution and get their solution validated.

"We will be assisting the shortlisted teams with all necessary resources and mentorship to navigate through the customer discovery phase. Further, the shortlisted teams will be provided an opportunity to attend a reputed online entrepreneurship training program along with certification," says the professor.

How was the Carbon Zero Challenge carried out?

- Over 2500 students/530 teams had submitted a proof-of-concept solution in the form of a video or presentation along with 2-page abstract

- **531 applications** were submitted in the following areas:

- Agriculture: 57

- Industries: 149

- Transportation: 73

- Urban areas/cities: 125

- Water and waste management: 126

- An **expert panel or screening committee from the renewable energy and clean technology fields evaluated the applications** and the top 54 teams were shortlisted for an interview

- The shortlisted teams pitched their project ideas to an expert panel on July 18, 2017, of whom, a total of 2**5 teams went to the next phase**

- Phase 2 of CZeroC was launched on July 19, 2017

- **Shortlisted teams received 5 lakhs to build their prototype**

- The **teams were paired with 20+ technical and business mentors** including 1 IIT Madras professors and 4 US mentors to guide the students in building the project prototypes for a 6-month period

- The **Final Demo Day on February 7, 2018** saw industry and academic experts in attendance and the best solutions received awards, recognition and business incubation opportunities by top-notch incubation cells and investors

What were the CZeroC 2018 winners supposed to get?

The teams shortlisted for the challenge would get the following perks:

1. Start-up support fund for the winning team

2. Funding support of up to Rs. 5 Lakhs per team' for selected teams to build prototypes

3. Internship/liaising with industry for problem identification'

4. Mentorship from subject experts

5. Entrepreneurship training and certification' for selected teams

CZeroC 2018 winners:

Of the top five honours in the Carbon Zero Challenge, two teams from IIT Madras bagged awards for finding innovative solutions to the unique energy problems of India. Dr Indumathi M Nambi told us about the winning projects and how far the teams have come with their idea since their win early in the year.

The projects that won the Innovation Excellence Awards with Funding for Incubation Support are:

First place: Team Enviro

This IIT Madras student team developed a decentralized community level plastic waste to energy conversion technology.

Their **solar-powered mobile unit converts non-recyclable plastic waste into fuel oil which is cheaper than diesel** and can be used as a substitute in generators, industrial boilers, furnaces, diesel-powered engines and agricultural pumps.

"Beating plastic pollution has always been one of the greatest environmental challenges. **Our decentralized plastic waste management system aims to take the waste to the technology.** Carbon Zero Challenge was a great platform for us to take our idea to the masses. CZeroC helped in identifying the right resources for the project be it mentor or funds or reach," quoted the winning team.

Team Enviro has made plans to improve the prototype based on customer feedback. The team also attended an intense 7-week workshop at the Gopalakrishnan Deshpande Centre (GDC) of Innovation in IIT Madras with a view to understanding customer needs better.The team **interacted with around 80 prospective customers in this space.**

They also showcased its project on the occasion of the World Environment Day, hosted by the United Nations (UN) in New Delhi which was attended by the Prime Minister.

The theme of this year's World Environment Day was "Beat Plastic Pollution". The team received more than 15 calls from interested clients who want to fund a pilot scale model of their project idea.

Second place: Team Innovative Buildings & Cooling systems

This IIT Madras student team's project focuses on developing low energy buildings. **The building sector consumes one-fifth of the total global energy consumption** and the HVAC sector is expected to share about 40-50 per cent of the total building energy consumption.

The team proposed an **energy efficient cooling system in an eco-friendly building using a Thermally Activated Building System (TABS) wherein chilled water is circulated through the pipes embedded in building structures** (floor, roof, and walls), and GFRG blocks are used to construct it which removes heat from building fabrics and thus, from the indoor space as well.

Buildings do not consume but people do. Building energy is the most growing sector in global energy consumption. The fact is true for India too. So, it is essential to meet this energy demand using an energy efficient and environmentally friendly system," the team quoted.

Now, **Team Innovative Buildings & Cooling systems** has filed a patent and obtained an additional grant of funds from DST- Lockheed Martin- Tata Trusts India Innovation Growth programme. The team has also planned to build an industrial scale prototype to validate their existing results to attract more customers.

Here's a peek into how Thermally Activated Building Systems work:

Third place: Team TurboT

This student team from Dayanand Sagar College of Engineering, Bengaluru, developed a unique concept of **auto-adjusting and positioning of light to maximize day-lighting in buildings.**

The project that could be mainly applied for industrial/commercial buildings **could reduce power consumption significantly and optimize natural lighting** throughout the day.

Team TurboT is presently evaluating the business aspects and revenue models of their project. The team is also in talks with BESCOM (Bangalore Electricity supply board) officials for a prototype demo and is seeking clearances from the board.

Two more teams also bagged awards in the CZeroC but without funding support:

- Blue Wave Startup from Bengaluru

- Ozone Student team from Kongu Engineering College, Erode

The next edition of the challenge -- CZeroC 2019 -- has already started and the last day to submit entries was August 15, 2018.

October 9

IIT develops technique to harvest water from fog

https://www.thestatesman.com/cities/iit-develops-technique-to-harvest-water-from-fog-1502694383.html

The researchers have designed water harvesting surfaces based on the surface structure of the leaves of an ornamental plant called the Dragon's lily head (Gladiolus dalenii).

Dr Venkata Krishnan, Associate Professor (Chemistry), School of Basic Sciences, IIT Mandi.

Taking a cue from mother nature to meet the demand for water, scientists at Indian Institute of Technology Mandi (IIT) have come-up with nature-inspired material that can harvest water from fog.

The researchers have designed water harvesting surfaces based on the surface structure of the leaves of an ornamental plant called the Dragon's lily head (Gladiolus dalenii).

A research team lead Dr Venkata Krishnan, Associate Professor of Chemistry at the School of Basic Sciences, IIT Mandi, studied the intricate structures on the body of plants that capture water from air and mimics them to build materials that can harvest water.

Krishan said he decided to take a leaf out of nature's book to develop sustainable water harvesting technologies as there are several plants in arid and semi-arid regions of the world whose leaves can harvest water from dew and fog.

Many animals and plants reap water from the air in interesting ways as darkling beetles of the Namib Desert of Africa Namib Bushman grass, Bermuda grass and various species of cacti are makes use of fog to convert it into fresh water.

Krishnan and his team have found that three dimensional hierarchical structures on the plant body help in water harvesting, much like the ridges and bumps on the body of the beetles.

The team at IIT Mandi has studied the mechanism by which Bermuda grass harvests water from fog.

The researchers have discovered two interesting structural traits – well-arranged conical spines with sharp edges, in which the deposition of fog droplets occurs and hierarchically organized seed heads that have flattened surfaces with gradient grooves, which transport the coalesced water droplets in a particular direction.

"The gradient of the Laplace pressure and fibre-like hanging phenomenon of the droplet allow the grass to efficiently collect fog. Understanding the structural characteristics of the grass offers ideas for designing material for water harvesting," he said.

The research team has designed water harvesting surfaces based on the surface structure of the leaves of an ornamental plant called the Dragon's lily head (Gladiolus dalenii).

The surface patterns on the leaf in micrometre (10^{-6} m) and nanometre (10^{-9} m) scales were evaluated in relation to the water harvesting properties and the patterns were replicated using soft lithographic technique as before, onto a polymer material.

The team found a 23 per cent enhancement on the fog harvesting performance of the patterned samples, compared to an unpatterned control sample.

"Collaborative efforts between scientists, industry and policy makers can enable furthering of this technology to provide drinking water to some or all of the 12 per cent of the underprivileged in the country," he added.

It is worthwhile to mention here that a recent study by WaterAid, a water and sanitation non-profit organisation in London, reports that 163 million people of the 1.35 billion population of India do not have access to clean drinking water.

Solutions to provide drinking water to India's growing population must not only span policy and behavioural changes but also incorporate scientific and technological innovations inspired by nature.

IIT-B to groom 30 women entrepreneurs for start-ups

https://indianexpress.com/article/education/iit-b-to-groom-30-women-entrepreneurs-for-start-ups-5392896/

The Society for Innovation & Entrepreneurship (SINE) at IIT-B has joined hands with WEE to launch a 'Women Entrepreneurship and Empowerment Mentorship Program', with support from Department of Science and Technology and NITI Aayog.

At IIT-B alone, only 10 per cent of the students who have founded start-ups are women.

A COHORT of 30 women entrepreneurs will be groomed by the Indian Institute of Technology, Bombay, as well as Women Entrepreneurship and Empowerment under a new programme launched on Monday.
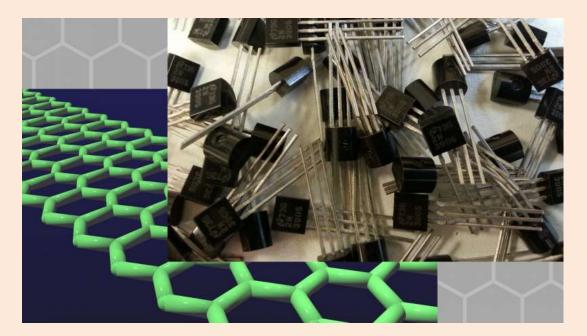
The Society for Innovation & Entrepreneurship (SINE) at IIT-B has joined hands with WEE to launch a 'Women Entrepreneurship and Empowerment Mentorship Program', with support from Department of Science and Technology and NITI Aayog. With this programme, the institute aims to improve the visibility of women in the start-up ecosystem, where numbers are skewed in favour of men. At IIT-B alone, only 10 per cent of the students who have founded start-ups are women.

Poyni Bhatt, CEO of SINE, said: "It is a well-documented fact that the proportion of women entrepreneurs is really low, although there is no specific database to prove that. To address this, we have started the programmes, through which we will groom women who have ideas for start-ups."

"In August, we gave a nationwide call for applications. We have women from technology sectors, media as well as the social sector," said Bhatt. They will be trained between October 7 and December 30. At the end, the best business ideas will be chosen by a jury and given a prize money of Rs 25 lakh.

Graphene for Faster and Compact Electronics

https://researchmatters.in/news/graphene-faster-and-compact-electronics

As electronic gadgets dominate many aspects of our lives, smaller devices that pack more functionality and consume lower power are increasingly becoming popular. Transistors—one of the basic building blocks of these devices—dictate their size, speed, efficiency and battery life. In a recent study, Ms Poonam Jangid, Mr Dawuth Pathan and Prof.Anil Kottantharayil from the Indian Institute of Technology Bombay (IIT Bombay) have developed a technique to fabricate graphene transistors as small as 20 nanometers wide (5000 times smaller than the thickness of a sheet of paper). These graphene transistors consume less power in the standby state and can facilitate faster circuit operations.

Silicon and similar semiconductor materials have been traditionally used to build transistors. However, there are significant challenges to making smaller but faster silicon transistors. An alternative is graphene, which is a crystalline form of carbon that is made up of a single layer of carbon atoms. In its pure form, graphene is a conductor. But, by altering its structure, it can be turned into a semiconductor, making it an ideal candidate for next-generation transistors and other electronic devices.

Graphene nanoribbons are strips of graphene made by creating parallel channels on its surface by removing some carbon atoms. Previous studies have shown that the conductivity of graphene can be controlled by changing the width and structure of the edge of the channel; the narrower the width of the ribbon, lesser is the conductivity. "Compared to silicon transistors, graphene transistors can be 100 times faster," says Prof. Kottantharayil.

So far, graphene nanoribbons are synthesised either through chemical processes or by etching on graphene films using nanocrystals of metals like nickel, copper or iron. However, neither chemical synthesis nor any known method of etching yields graphene nanoribbons with a smooth and desirable edge structure. In this study, published in the journal Carbon, the researchers have fabricated graphene nanoribbons by etching graphene films using platinum nanocrystals. Since platinum is a nearly-inert material and is a useful chemical catalyst, it yielded good quality graphene nanoribbons, with a width of 10-20 nm and smooth edges. The process was carried out at a temperature of about 1000oC in the presence of a mixture of hydrogen and argon gas.

Transistors act as switches that allow current to flow when they are turned on and stop it when they are switched off. However, in practice, a small, negligible current, called leakage current (IOFF), flows even when the transistor is off. It is because of this leakage current that electronic devices consume battery power even in the standby mode. Ideally, an efficient transistor would aim at having the lowest possible value for the leakage current. A higher value of the current passing through a transistor when it's on (ION) indicates that the device has a higher conductivity, and can be turned on and off faster.

"ION/IOFF is a figure of merit for the switching efficacy of transistors. High IONresults in faster circuits and low IOFF is desirable for low standby power," explains Prof Kottantharayil.

The new graphene transistor designed by the researchers showed a high ION/IOFF ratio of 600 at room temperature and a high conductivity compared to not only traditional transistors but also to graphene nanoribbon transistors made by other methods. Although graphene nanoribbon transistors fabricated using nickel nanocrystal-based etching have a higher ION/IOFF ratio of 5000 at room temperature, they have very low conductivity, which may tend to heat the device, reducing its efficiency.

Although the findings of the study are exciting, graphene nanoribbon transistors are still far away from reality. "To be used in nanoscale circuits, it is essential to fabricate graphene nanoribbons on a large scale with lesser defects. Graphene nanoribbons are at least ten years, if not farther, from widespread applications," says Prof Kottantharayil.

A major drawback of synthesising graphene nanoribbons by etching is that they contain many defects. Hence, to produce nanoribbons on a large scale, non-etching based techniques need to be developed.

"Some possible research direction include directed movement of catalyst nanoparticles that are deposited or grown at specific locations of interest. Some of the techniques used in our research along with etching based techniques could be interesting to study," Prof. Kottantharayil signs off.

A step closer towards understanding turbulence in polymer solutions
https://researchmatters.in/news/step-closer-towards-understanding-turbulence-polymer-solutions

We have all been in an aircraft when all of a sudden the captain asks you to fasten your seatbelts because of 'turbulence'. Although you might experience a few bumps because of this turbulence, which is a technical term for unsteady and chaotic airflow, you may think nothing of it. But, guess what? Turbulent flows are ubiquitous -- from stars and supernovae to mixing of air and fuel in an automobile engine to the flow of water in domestic pipelines.

Turbulence enormously increases mixing rates be it in industrial reactors, or in the atmosphere and oceans, although, all of this comes at the expense of an increased energy consumption. A fundamental understanding of turbulence has, however, remained one of the last major challenges in classical physics. Such an understanding would, for instance, allow one to design better aeroplane wings and not only save you a bumpy ride but save enormous amounts of fuel too.

In a recent study, published in the journal Physical Review Letters, a team of researchers , led jointly by Prof. V. Shankar from the Indian Institute of Technology (IIT) Kanpur and Prof. Ganesh Subramanian from the Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru, have been able to theoretically explain experimental results showing unexpected turbulence in polymer solutions. They have discovered a hitherto unexplored mechanism by which turbulence can arise in such solutions—a feat that could have far-reaching implications in stimulating future studies on turbulence.

The flow of fluids, like water or air, is described by their stickiness or viscosity. An understanding of this stickiness goes back to Isaac Newton who first characterized it in terms of the resistance to the sliding of adjacent fluid layers in a laminar flow. Water and air are thus examples of 'Newtonian fluids'. Adding polymers to such fluids imparts a certain `springiness' in addition to the stickiness already present. Such fluids which exhibit both viscous and elastic effects are one of the prominent examples of 'non-Newtonian fluids', and are appropriately referred to as 'viscoelastic fluids'.

In the said study, the researchers have the examined the onset of turbulence in polymer solutions, an important class of viscoelastic fluids. It turns out that such fluids are not only of fundamental interest but also have critical industrial applications. "Addition of polymers to crude oil is well-known to reduce pumping costs in the turbulent regime drastically, and this is exploited in the trans-Alaskan oil pipeline," explains Prof. V. Shankar from IIT Kanpur.

The flow of Newtonian fluids turns turbulent only at very high flow speeds. Experiments in the past have shown that the flow of viscoelastic fluids, on the other hand, turns turbulent at much lower flow speeds. However, the reasons for this so-called `early turbulence' had never been understood until now.

Many studies carried out over the last century have shown that Newtonian pipe flow stays laminar or smooth when it is subjected to disturbances that are sufficiently small. These flows are said to be 'linearly stable' for minor disturbances. The current belief in the fluid dynamics community is based on the extrapolation of this Newtonian scenario to viscoelastic pipe flows as well. "The belief was so ingrained that not even a single attempt was made in the literature to analyse the stability of viscoelastic pipe flow. When we realised this lacuna, Prof. Subramanian and I felt that it is worth exploring this further", says Prof. Shankar, explaining the motivation behind the study.

The researchers of this study were able to theoretically calculate the motion of the viscoelastic fluid and confirm, for the first time, that the addition of polymers strongly destabilised the laminar flow rendering it susceptible to the tiniest of disturbances.

"To our surprise, we found a linear instability for viscoelastic flows in both circular pipes and channels, and the icing on the cake was the qualitative agreement with experimental observations of transition in viscoelastic flows. We would be able to make reasonable predictions of the flow speeds at which turbulence begins in polymer solutions", exclaims Prof. Shankar.

The results of the study have significant ramifications for our understanding of the behaviour of these non-Newtonian fluids and their broader applications. They will also serve as a 'template' for future theoretical calculations under less idealised conditions and may well end up as a critical ingredient in any future model of turbulent flows of polymeric liquids.

October 8

IIT Kharagpur and REDOC SPI tie up in doctoral education to strengthen institutional collaboration

https://www.jagranjosh.com/news/iit-kharagpur-and-redoc-spi-tie-up-in-doctoral-education-to-strengthen-institutional-collaboration-147160

The Indian Institute of Technology Kharagpur and REDOC SPI have come together to strengthen institutional collaboration in doctoral education and research. REDOC SPI is a French network of doctoral schools.

The main motive behind this initiative is to promote the interaction and collaboration between the IIT KGP and the REDOC SPI through visits and exchange programmes, joint academic and research doctoral programmes and joint supervision of doctoral students on a reciprocal basis, an IIT KGP statement said here on Saturday.

Under this initiative, the IIT KGP and REDOC SPI will launch dedicated sections on their websites to share and promote information and opportunities related to doctoral studies in electrical and mechanical engineering.

Funding opportunities could be sought from Indo-French 'Raman Charpak Fellowship' programme of IFCPAR/CEFIPRA, apart from other funding programmes available in both countries. The MoU to this effect was signed on October 3, 2018, in Kolkata during the 'Choose France Tour' event.

"This is an exciting partnership enabling engagement of our Institute with 27 doctoral schools throughout France," said Prof Anandaroop Bhattacharya, Coordinator of the collaborative initiative of IIT KGP.

He said, IITKGP and REDOC SPI might formulate joint academic and research activities such as short courses, seminars, workshops or conferences based on their mutual interests and available expertise.

"They may also share and carry out joint research in technology for distance and computer-based learning," he said. Prof Hubert Romat, Director International Relations, will be the coordinator of REDOC SPI. REDOC SPI is the only Network of French Doctoral Schools in the fields of mechanical and electrical engineering among others.

"We are really happy to have this association with IIT Kharagpur and we look forward to a long and productive partnership with the talented faculty members of this iconic Institute of India," Romat was quoted to have said in the statement.

"The relationship also aims at enhancing the technological, social and cultural relations of both countries/states/regions. It includes some specifically identified areas of cooperation, which may be updated from time to time" Bhattacharya said in the statement.

COER students shine during national competition at IIT Mumbai
https://www.dailypioneer.com/2018/state-editions/coer-students-shine-during-national-competition-at-iit-mumbai.html

Two students from the College of Engineering Roorkee (COER) figured among the top 50 at the national competition held at IIT, Mumbai in which 1200 institutions from across the country participated. The competition was meant to evaluate the theoretical knowledge of the students from the practical aspect as well as to provide them with a platform for research and experiments, the organisers said.

These aspiring entrepreneurs have showed their acumen towards starting their own ventures, they added.

Divyansh Dwivedi and Ankit Joshi from computer science department of COER figured in top 50 list of the students. In another event, Aditya Singh, Nishant and Shiv Tyagi of the same college were listed in the top 10. They showed their talent at Association for Computing Machinery– International Collegiate Programming Contest in which there were 800 contestants.

Speaking to The Pioneer, Major General O P Soni, director general COER, said, "For overall personality grooming of the students, various entrepreneuring programmes have been launched where ITC, JBM, IBM, spoken tutorial, e-journey to IIT and the Robotic Lab have been involved. This is to enhance the academic standards of the students as well as to make them more employable and competent to start their own ventures."

A special cell has been constituted in the college which works on building the spirit of entrepreneurship among the students.

A training is given to help them blooming into successful entrepreneurs in future, he said and added that any student from Uttrakhand can avail this training free of cost.

Utkarsh Rawat, a third year student of mechanical engineering, has started his company Robotics Trade India, a division of COER, while another student opened The Next Move, a home automation company, Soni informed.

Chairman of the college, professor J C Jain said that keeping in mind the need of technology and research in the field of agriculture, an agriculture department would be set up in the coming session 2019-2020. A special laboratory to test the quality of the soil is also being established in the campus where any farmer from the region can come for getting the soil tested free of cost, he added.

It is, further, learnt that under the aegis of COER Center of Excellence, the college has purchased Timble R8 SDGP, the best quality international level technical equipment, to make the students of Civil Engineering aware of the 'Learning and Earning' concept.

Vikhyath Chauhan., Aman Poddar , Sarthak Mathur and Vikashdeep are among those who have successfully entered their second year of entrepreneurship from electronics and telecommunications department of the institute.

Notably, COER is the only institution in the state to own this kind of exclusive technology. This technique is useful in remote sensing in the field of road mapping, land cover mapping and other surveys, the COER sources said.

October 6

Minister exhorts researchers to become owners of innovation
https://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/minister-exhorts-researchers-to-become-owners-of-innovation/article25139944.ece

Describing the Rs. 190-crore Siemens Centre of Excellence (CoE) in Manufacturing at National Institute of Technology-Tiruchi (NIT-T) as the country's first-of-its-kind facility for experiential learning, Union Human Resource Development Minister Prakash Javodekar on Friday urged researchers in premier institutions to become owners of innovation rather than contributors.

India lagged behind in innovation. Only through innovation could the country derive maximum benefit accruing from value addition and take the path of sustainable progress, he said inaugurating the centre at the NIT-T. Initiatives such as the Hackathon India through which 100 software and hardware solutions could be found this year for problems listed by the Central and State government departments, public-funded research of 200 projects per year under IMPRINT (IMPacting Research Innovation and Technology) India Initiative, research parks modelled on the one at IIT-Madras, and the Prime Minister's Fellowship Scheme entitling Ph.D. students in premier institutions to monthly scholarship of up to Rs. 1 lakh were meant to put India in a position of technology leadership, he said.

The Central government had scaled up spending on education to Rs. 1.1 lakh crore per year, reflecting a 70% point rise over 2013-14, with a view to increasing funding for institutions.

The utility of the Siemens facility must be extended to other institutions also, he said pointing out that the Centre for Nano Science and Engineering established at IISc, Bengaluru, at a cost of Rs. 500 crore, was serving the requirements of researchers in 65 universities.

The Minister also released the strategic plan of NIT-T for the next five years, and launched a hardware hackathon of Pragyan, the technology festival of NIT-T.

NIT-T Director Mini Shaji Thomas said the institution had established a strong eco-system for innovation and entrepreneurship.

The NIT-T was moving ahead to break into the top 500 in global rankings by 2024 and the top 250 by 2029, she said.

Through establishment of such CoEs in various States, Siemens Industry Software, had found placements for 75,000 students, undertaken several industrial projects, and secured 12 patents so far, Mathew Thomas, Country Sales Leader, Siemens PLM (Product Lifecycle Management) Software, said.

Envisaging imparting of skill excellence for students, practicing professionals and manufacturing industries, the Siemens CoE features design and validation, advanced manufacturing, test and optimisation, rapid proto typing, robotics, CNC controller, CNC machines, automation, process instrumentation, mechatronics, electrical and energy savings, and Internet of Things laboratories spread over 20,000 sq ft of built up space.

The primary focus of the Centre is to create a robust eco-system of technical education through its experience in industrial products development and services. The various learning tracks designed by Siemens for engineering, polytechnic and ITI students for knowledge enrichment and enhanced opportunity for placement will be jointly certified by NIT-T.

The CoE will also offer consultancy and Research and Development services to industries. The first consultancy contract of the CoE, valued at Rs. 1.2 crore, was offered on the occasion to BHEL for its diversified project to manufacture electric buses.

PhD students not getting top fellowship stipend for months

https://timesofindia.indiatimes.com/city/mumbai/phd-students-not-getting-top-fellowship-stipend-for-months/articleshow/66093341.cms

For almost three months, some of the best PhD students in the country are awaiting their stipend promised under the newly-introduced Prime Minister Research Fellowship (PMRF) scheme.

The cream of students hand-picked for direct PhD admission from elite research institutes such as the Indian Institutes of Technology (IITs), National Institutes of Technology (NITs), Indian Institute of Science (IISc) and Indian Institutes of Science Education and Research were to get Rs 70,000-80,000 per month as stipend for four to five years from July this year. These researchers are also eligible to get Rs 2 lakh as research grant every year for the tenure of the fellowship. Normally, PhD students from such institutes get a stipend of only Rs 25,000.

"Most of us have been waiting for the stipend. Because we were selected under this scheme, we are not even eligible to get the regular stipend of Rs 25,000. It is difficult to survive without the stipend for so long. It is difficult for us to borrow from our parents at this age," said a student from IIT-Bombay. There are around 20 beneficiaries from the Powai campus itself. Many are desperate and are now planning to seek information under the RTI Act.

HRD secretary (higher education) R Subrahmanyam said the ministry has released Rs 7.8 crore this week for the research fellowships (PMRF). He added that there was a delay in releasing the funds as the scheme was in its first year. "All the students will get their stipend in a week's time," said the secretary.

Another student said the scheme was promoted through faculties within the institutes. "It was basically aimed at encouraging more students to carry out research in the country. Most good students end up going to universities abroad after their BTech and MTech to pursue research. We are now worried about the funding," said the student. Some of the conditions laid down are stringent too, added the student. "If we discontinue research midway for any reason, we are expected to return the stipend money. It is not the same for other PhD students," he said.

From all over the country, 135 students were selected for the first batch of the scheme. A few students from IIT-Kanpur confirmed that they got the stipend for the last two months. One of them said they probably got the grants from the institute's coffers. Most students, including the ones from IIT-Bombay, however, are yet to get their stipend. Since fewer students had applied the first time, the

Union human resources development ministry has extended the benefits of the scheme to all BTech and MTech students from other universities for the May 2019 selection process.

India-Russia: Atal Innovation Mission inks MoU with SIRIUS Educational Foundation

https://www.devdiscourse.com/Article/education/208488-india-russia-atal-innovation-mission-inks-mou-with-sirius-educational-foundation

To promote a spirit of collaborative innovation, young innovators of Atal Tinkering Labs and SIRIUS Educational Foundation came together at a four-day Indo-Russian ATL innovation boot-camp from October 1st to October 4th

The MoU was exchanged in the presence of the Prime Minister of India Shri. Narendra Modi and the President of Russia H.E. Vladimir Putin, in New Delhi on 5th October 2018.

To promote innovative cooperation between students of India and Russia, a Memorandum of Understanding was exchanged between India's Atal Innovation Mission (AIM) and the Russian Federation's SIRIUS Educational Foundation in the presence of the Prime Minister of India Shri. Narendra Modi and the President of Russia H.E. Vladimir Putin, in New Delhi on 5th October 2018.

The AIM and SIRUS Education Foundation were represented by Mission Director Shri. R Ramanan and Ms Elena Shmeleva respectively.

The MoU hopes to remove cultural and language barriers between students of Russia and India, share the best practices in the promotion of educational, scientific, innovative achievements, promote innovative cooperation, and search and develop talented youth of both countries fostering a knowledge-driven innovation ecosystem in both the countries.

"The Atal Innovation Mission continues to grow steadily in its effort to spread the joy of innovation throughout the country. This MoU with SIRIUS Educational Foundation is a step in the right direction. International collaboration will broaden our students' minds, deepen curiosities, and sharpen their intellect", said Mr Ramanan.

AIM-SIRIUS Innovation Festival 2018

To promote a spirit of collaborative innovation, young innovators of Atal Tinkering Labs and SIRIUS Educational Foundation came together at a four-day Indo-Russian ATL innovation boot-camp from October 1st to October 4th. The boot-camp was organized by Atal Tinkering Labs, Atal Innovation Mission, with support from Department of Design, IIT Delhi.

The innovations developed across space technology, healthcare, smart mobility, clean energy and agricultural technology were showcased to Prime Minister of India and President of Russia on October 5th.

Atal Innovation Mission

Atal Innovation Mission (AIM) is NITI Aayog's flagship initiative to promote a culture of innovation and entrepreneurship in India. AIM has been established to create and promote an ecosystem of innovation and entrepreneurship in a holistic manner through various initiatives at the school, university and industry levels. AIM also serves as a platform for the promotion of world-class Innovation Hubs, Grand Challenges, Start-up businesses and other self-employment activities in India, leveraging state of the art, advanced and affordable emerging technologies.

The Atal Innovation Mission has thus two core functions:

Innovation promotion: to provide a platform where innovative ideas are generated.

Entrepreneurship promotion: Wherein innovators would be supported and mentored to become successful entrepreneurs at Incubation Centres.

SIRIUS Educational Foundation

Fund "Talent and success" is a unitary, non-profit, non-standard educational organization. The activities of the Foundation are aimed to identify and support children and young people who have shown outstanding abilities. Providing assistance in obtaining general and additional education for such personalities, including education in the fields of arts, natural sciences, physical culture and sports.

IIT Kharagpur collaborates with top French doctoral network to promote research

https://www.jagranjosh.com/news/iit-kharagpur-collaborates-with-top-french-doctoral-network-to-promote-research-147140

A French network of doctoral schools and IIT Kharagpur have come together to strengthen institutional collaboration in doctoral education and research, the premier Indian institute said in a statement on Thursday.

The statement further adds that the initiative will promote interaction and collaboration between IIT KGP and the doctoral schools (or equivalent structures) of REDOC SPI through visits and exchange programmes. The MoU was signed in Kolkata on Wednesday.

It is also believed that the initiative will also encourage joint academic and research doctoral programmes and joint supervision of doctoral students on a reciprocal basis.

IIT KGP and REDOC SPI will launch dedicated sections on their websites to share and promote information and opportunities related to doctoral studies in Electrical and Mechanical Engineering, the statement said.

Under the collaboration, the outgoing mobility of Ph.D. students will be encouraged on a reciprocal basis. Funding opportunities could be sought from Indo-French "Raman Charpak Fellowship" programme, apart from other funding programmes available in both countries.

"This is a really exciting partnership enabling engagement of our Institute with 27 Doctoral Schools throughout France," said Anandaroop Bhattacharya, Associate Dean, International Relations and coordinator of the collaborative initiative at IIT KGP.

"They may also share and carry out joint research in technology for distance and computer-based learning," said Bhattacharya. Prof. Hubert Romat, Director, International Relations, will be the Coordinator from REDOC SPI. REDOC SPI is the only Network of French Doctoral Schools in the field of Physical, Mechanical and Electrical Engineering.

‘Fossil free India can be achieved if entrepreneurs, startups get involved’

https://www.thehindubusinessline.com/news/fossil-free-india-can-be-achieved-if-entrepreneurs-startups-get-involved/article25143652.ece

Entrepreneurs are looking for problems and India is the best place to solve them

Can there be a fossil free India? Can it be achieved in the next 20 years even as India is totally dependent on coal for its energy needs?

It may look impossible but entrepreneurship is all about taking up impossible problems and solving them. Fossil free India is going to be a major challenge but can be achieved if tens and thousands of youngsters, entrepreneurs and startups get involved and solve bits and pieces of the problems and some of the teachers like us keep guiding them?

"I am sure, we in India can do," said Ashok Jhunjhunwala, Professor at IIT Madras, after receiving this year's TiE Chennai Lifetime Achievement Award at TiECON 2018 on Friday for his role in setting up the IIT Madras Research Park and mentoring new generations of startups for over three decades. Gopal Srinivasan, Chairman and Managing Director of TVS Capital, presented the award to him.

"I would like to dedicate whatever life is left on fossil free future," Jhunjhunwala said.

India has so many problems that are complex and enormous and that does not exist anywhere else in the world. Entrepreneurs are looking for problems and India is the best place to solve them. "We need

to look more and more on solving India's problems in various sectors, including energy and water. Even the smallest bits that you (entrepreneurs and start ups) do, will help," he said.

Catastrophe was there in many places, and climate change has begun to impact globally and will create disasters if not checked. "Is this not a problem that we can solve ? With such a huge population, anything that India does will have a huge impact globally. India alone cannot solve the problems but can take the lead and the world will follow,'' he said.

Entrepreneurship and startups are today's buzzwords. There is a glamour associated with it, and yet there are issues like seed capital but the key is mentorship. "Over the years, we were able to get more mentors, and that's how IIT Research Park and IIT Incubation Cell were started and mentorship became the key," Jhunjhunwala said.

Other than seed funding, the research park and the incubation cell provide entrepreneurs legal help; assist in setting up a company, manage accounts and even train them to pay salary and manage cash flow. Training has become very important.

"I feel, we are not doing good a job in India as we need to do on training. TiE and others should get together in creating high quality training programme. Many youngsters will falter on one thing or the other if adequate training is not provided," he said.

Today, youngsters are prepared to fail and yet go on and on till they succeed. "We need to consolidate, expand and go further. We are still in the first five years of Silicon Valley. What is happening today is mind blowing, yet we are at an early stage, he said.

Other winners are:

Pickyourtrail - Startup of the Year

CreditMantri - Growth Story of the Year

Aspire Systems - Sustaining Enterprise of the Year

Suxus Menswear - Hidden Gem

The Banyan - Best Social Enterprise

Saravanan Sundaramoorthy, Founder and CEO, Edxis BrainLab - Associate Member of the Year.

Assam: IIT Guwahati hosts 34th inter IIT aquatic meet
https://nenow.in/north-east-news/assam/assam-iit-guwahati-hosts-34th-inter-iit-aquatic-meet.html

IIT Madras swimmers shine in the aquatic meet

34th Inter IIT Aquatic Meet being held at IIT Guwahati

The 34th Inter IIT Aquatic Meet is underway in IIT Guwahati campus. The swimmers from IIT Madras showed their prowess on the third day of the meet hosted by IIT Guwahati.

These are the results of Saturday – (Heats women's 50m F/S) 1st-Narayani Kelkar (IIT Bombay), 2nd-LR Kamla Devi (IIT Madras), 3rd-Kalyani Ingle (IIT Kharagpur); (4x50m women's F/S relay) 1st-IIT Madras, 2nd-IIT Kharagpur, 3rd-IIT Bombay; (200m men's individual medley) 1st-Ruchir Kaul (IIT Madras), 2nd-Kushal Dhinoja (IIT Bombay), 3rd-Arpan Dey (IIT Kharagpur); (50m men's backstroke) 1st-Pushpak Roy (IIT Kharagpur), 2nd-S Poonkundran (IIT Kanpur), 3rd-Arpan Dey (IIT Kharagpur); (50m men's F/S) 1st-Dhritiraj Das (IIT Delhi), 2nd-Suraaj K S (IIT Roorkee), 3rd-Raghav Saxena (IIT Kanpur). (Water polo) IIT Kanpur bt ISM Dhanbad 18-2, IIT Delhi bt IIT Bombay 5-2, reports The Assam Tribune.

Friday's evening session's final results: (200m men's F/S) 1st-Ruchir Kaul (IIT Madras), 2nd-Parth Bharadwaj (IIT Delhi), 3rd-Arijit Pramanik (IIT Bombay). (100m men's breaststroke) 1st-Anuj Sindgi (IIT Madras), 2nd-Indresh (IIT Kharagpur), 3rd-Manik Munjal (IIT Roorkee). (50m men's butterfly) 1st-Suraaj KS (IIT Roorkee), 2nd-Ruchir Kaul (IIT Madras), 3rd-Dhritiraj Das (IIT Delhi). (50m women's butterfly) 1st-Rachita Bhattacharya (IIT Kanpur), 2nd-Mansi Khedekar (IIT Bombay), 3rd-Oindrila Saha (IIT Kharagpur).