

Newspaper Clips May 13-22, 2017

May 22

HRD ministry backs CBSE to conduct UGC-NET once a year

<http://www.livemint.com/Education/uUfGY2fW9B0SrVURdkpQEO/HRD-ministry-backs-CBSE-to-conduct-UGCNET-once-a-year.html>

Negating opposition from UGC, HRD ministry agrees to a proposal to conduct NET once a year instead of twice as prevalent for years

New Delhi: Negating opposition from the University Grants Commission (UGC), the human resource development (HRD) ministry has agreed to a proposal to conduct the National Eligibility Test (NET) once a year instead of twice as prevalent for years.

“We have a fixed number of people. UGC-NET exam is conducted for more than 80 subjects and preparation for each round of the exam needs nearly five months. Two rounds of NET takes almost 10 months of the calendar and effectively hampers our efforts in other areas especially the school regulation and observation which is our core function,” said a senior Central Board of Secondary Education (CBSE) official, requesting anonymity.

Qualification in UGC-NET is a must for recruitment of lecturers at colleges and universities.

CBSE chairman R.K. Chaturvedi had written to the HRD ministry seeking permission to conduct the UGC-NET exam once a year. “If you look at the number of students who apply and the number of students who sit for the exam, you will realise that the CBSE demand is not unfounded,” Chaturvedi said.

“While around 600,000 apply for the test each time, less than 40% write the exam. This defeats the purpose,” said the unnamed official cited above, adding that the HRD ministry has taken note of their proposal positively.

HRD minister Prakash Javadekar indicated as much. “The attendance in UGC-NET is very low. We will make a formal announcement (of making the exam an annual affair) soon,” the minister added.

For the first time in 33 years, UGC-NET was facing uncertainly after CBSE wrote to the HRD ministry earlier this year expressing its inability to conduct the exam. Last month CBSE agreed to conduct the exam after HRD ministry directed it to do so ending confusion for thousands of aspirants, *Mint* reported on 25 April.

But the question remains how, despite huge faculty shortage in the higher education sector, the exam is receiving relatedly cold response. An HRD ministry official, who also declined to be named, said permanent faculty appointments are relatively slow in government institutions and in the private sector, many a times institutions hire non-NET candidates as contract teachers to do the job and pay them below the UGC salary scale.

CBSE reasoned that when high-stake exams like NEET are happening once a year, why UGC-NET should not follow it.

Besides, CBSE and HRD recently decided to conduct the Central Teacher Eligibility Test (CTET) once a year instead of twice. CTET is an eligibility test for recruitment of school teachers. Both CBSE and UGC function under the Union HRD ministry.

May 21

IIT-B student has answer to CRPF's water woes

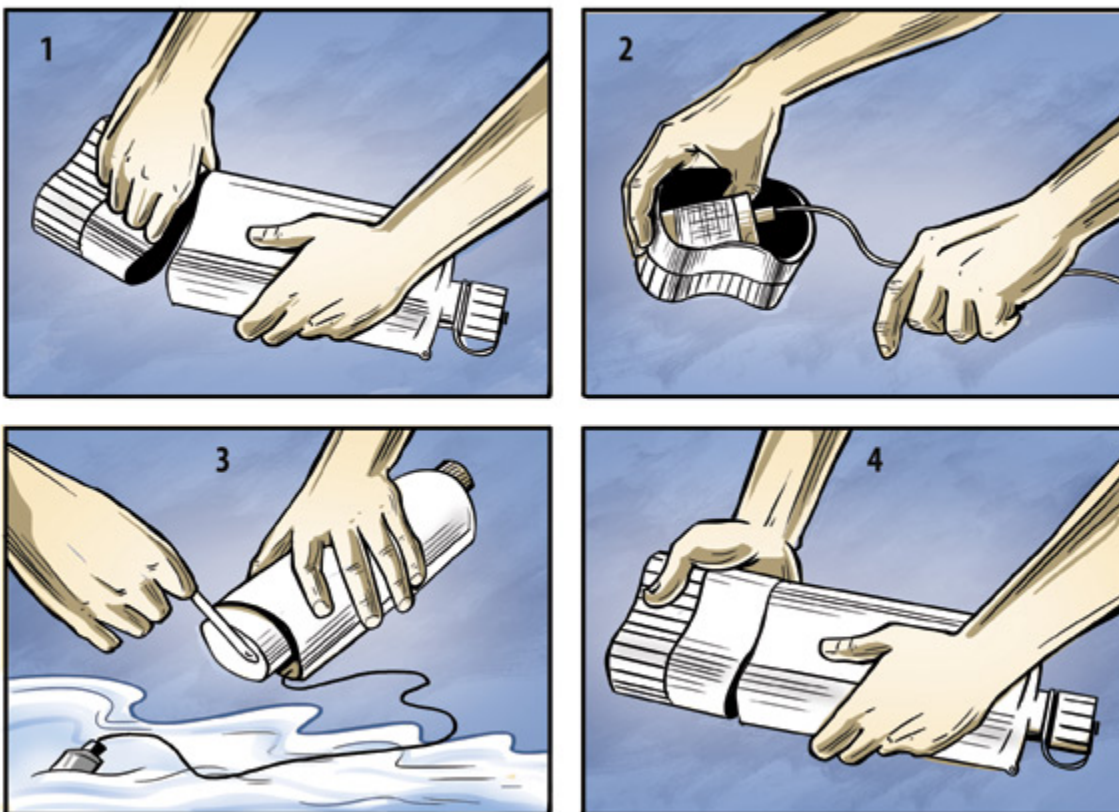
<http://www.dnaindia.com/india/report-iit-b-student-has-answer-to-crpf-s-water-woes-2445683>

When a few Central Reserve Police Force (CRPF) officials visited the Indian Institute of Technology- Bombay (IIT-B) last year, little did they know that a young student was going to change their lives. To be precise, their drinking water woes

During her interaction with CRPF officials, Devanshi Saksena (25), a second-year Master of Design (MDes) student from the Industrial Design Centre (IDC) at IIT-B, learnt that potable water was a problem for the jawans, especially when on the move.

A past student of NID, Ahmedabad, she has created several innovations in the last few years, which include a menstrual education kit, and a medicine dispenser for dogs. This time, the innovator in her threw up a lightweight bottle with a purifier inside. Not just that, she also made it sound-proof. This was just what the jawans needed.

Ask Indranil Dutta, Deputy Commandant at the CRPF's Operations Branch, New Delhi.



1: The bottle is bean-shaped and can hold up to 1.5 litres of water; **2:** It has a filter attached to the base which can be removed and let into the water body; **3:** A pump then sucks in water, which goes through the purifier and onto the bottle; **4:** After filling, the tube can be wound around the filter and the base can be re-attached

—Gajanan Nirphale

"Our jawans often travel several miles at a stretch, and can, at the most, carry 4-5 litres of water. In most cases, they drink water available from the nearest water body, which might be contaminated. In naxal-affected areas, the fear of water contamination is extremely high. So, this bottle might help them get potable water at all times" he said.

Saksena was lucky in getting the help of her professors BK Chakravarthy and Hemendra Arya. "We invited a few CRPF jawans from the Western Sector in Navi Mumbai to get their feedback about the model that Devanshi had designed initially. Some of the suggestions were that the bottle should be lightweight, durable and sound-proof. We helped her improvise on her earlier design and they were satisfied with the final product," said BK Chakravarthy.

The bottle is bean-shaped and can hold up to 1.5 litres of water. It has a filter attached to the base, which can be removed and let into the water body. A pump sucks in the water, which goes through the purifier and onto the bottle. After filling the bottle, the tube can be wound around the filter and the bottom base can be re-attached to the bottle. The bottle weighs 600 gm and costs Rs 1,200 – much cheaper and durable compared to other market variants.

The bottles will now go for field-testing. Soon, for CRPF jawans, it's going to be thirsty days are here again!

In a First, IIT Kharagpur to Use 3D Planning to make Varanasi a 'Futuristic City'

<http://www.news18.com/news/india/in-a-first-iit-kharagpur-to-use-3d-planning-to-make-varanasi-a-futuristic-city-1407579.html>

Kolkata: Indian Institute of Technology, Kharagpur (IIT-K), along with British Geological Survey, has taken up the initiative to turn one of India's oldest cities and Prime Minister Narendra Modi's constituency Varanasi into a 'futuristic city' by using 3D urban planning measures.

The project, a first of its kind in India, is being funded by the central government and experts from IIT-Kharagpur have been chosen to be part of the initiative aimed at improving the holy city's infrastructure, transportation system, drainage and sanitation issues and addressing weavers' plight.

Speaking to News18, Professor Abhijit Mukherjee, project leader from IIT-Kharagpur's Department of Geology and Geophysics said, "Cities across the world are working with geoscientists to improve their understanding of the sub-surface in their urban planning. In India, there can be no place better than Varanasi, the oldest known city in India, to set the foundation of what a futuristic city should be like".

"A 3D model of Varanasi's geology will be prepared so that all issues are addressed and archaeological sites are preserved, with prime focus on sustainability of water supplies and figuring out flooding hazards," he said, adding that the approach of using urban geosciences and geology is being seen as a pilot project, which can be replicated in the Smart City Mission.

"It would be the first 3D surface urban study and planning in India, aimed at using suburban geology for planning and hazard risk management," said Dr Martin Smith, director science, British Geological Survey.

In 2014, Modi won the Varanasi Lok Sabha seat by defeating AAP's Arvind Kejriwal by a massive margin of 3.37 lakh votes and since then has voiced his 'dream to make Varanasi one of the best cities in the world'.

May 20

How a team of IIT Delhi scientists developed cheapest respiratory filter will blow your mind!

<http://indiatoday.intoday.in/education/story/iit-delhi-cheapest-respiratory-filter/1/958601.html>

By 2040, Asia will account for almost 90 per cent of the rise in premature deaths attributable to air pollution.



To counter the air pollution in Delhi -- which is 12.2 times above the WHO's safe level -- a research team at Indian Institute of Technology (IIT) Delhi have recently developed a respiratory filter.

As claimed by the researchers, this filter not only restricts entry of up to 95 per cent dust and air pollutants but is also the 'cheapest' naso filter available in the market.

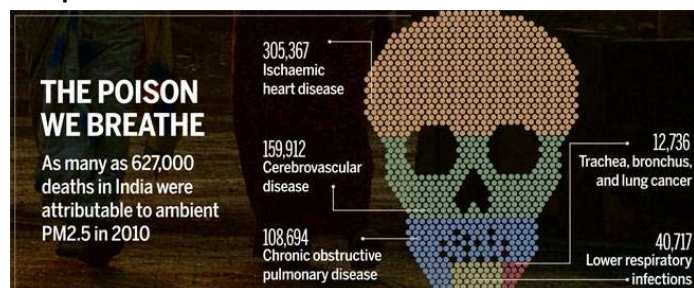
How much does this costs:

The device named Nasofilters, a nano-respiratory filter, cost Rs 10 only.

Features of the filter:

- According to reports, the filter can stick to user's nasal orifice easily without any hassle
- Further, this filter would restrict entry of foreign particulate matter including PM2.5 particles, bacteria and pollen allergens
- Moreover, it gives protection against the finest particulate pollutants in the air for at least eight hours and hence reduces risk of respiratory diseases.

The poison we breathe:



Scientists behind this creation:

The team included IIT Delhi faculty members Manjeet Jassal and Ashwini K Agrawal besides institute alumni Sanjeev Jain, Prateek Sharma, Tushar Vyas and a student Jatin Kewlani.

Furthermore, the team of innovators was recently awarded with the National Startups Award by President Pranab Mukherjee.

Here's what IIT faculty member said:

"To protect the health of millions, the team has developed an incredible filter technology to save people from the harmful effect of air pollution especially keeping in mind PM2.5 concentration," IIT Delhi faculty member Ashwini K Agrawal said in recent *PTI* report.

Explaining on how they formulated this device:

One of the IIT-D professors explained that the project involved assembling millions of small-sized pores to create a thin flexible membrane, which could capture very small particles with high efficiency.

While explaining the features of the naso filter, the professor said:

"This allows filters to be used for long hours while maintaining good breathability and comfort. The filters aim to provide relief to common users from air pollution and to protect people, who are prone to allergies, and safeguard those, who are exposed to job related industrial particulate pollutants."

"This is also probably the cheapest naso filter in comparison to the face masks and other alternatives available in the market to fight critical levels of air pollution," he added.

- Air pollution is responsible for about one in every nine deaths annually, with almost two-thirds of those deaths in the Western Pacific and Southeast Asia, the WHO says in recent *Reuters* report
- Further by 2040, Asia will account for almost 90 per cent of the rise in premature deaths attributable to air pollution
- Air pollution also increases the risk of acute respiratory infections.

Meanwhile, the Nasofilters are ready for commercialisation.

IIT students invent cooling tank, an alternative to air conditioner

<http://www.oneindia.com/india/iit-students-invent-cooling-tank-an-alternative-air-conditi-2440346.html>

Now, install cooling tank, the latest innovation by IIT students, in your house and beat the heat during the summer.

Unlike this year, next summer you might junk your beloved air conditioner and install a cooling tank in your house to beat the heat. The latest innovation--cooling tank-- by two students of the premier Indian Institute of Technology, Kharagpur, might make ACs, coolers and fans almost redundant in the future. IIT Kharagpur students' cooling tank The cooling tank, a part of an alternative future, will help reduce carbon production and save electricity consumption, say the brains behind the latest innovation. The students' innovation is basically a water tank inserted into walls that could potentially substitute ACs and lead to a 50 per cent reduction in cooling cost.

The team Takniquee, comprising Sahashranshu Maurya and Somrup Chakraborty of Department of Geology and Geophysics, at the institute has proposed a cooling system called passive solar water wall which revolves around a

rectangular water tank fitted into a wall. "This ties with future city concept. The water tank is different from conventional tanks as it has a very high surface area so maximum air can interact with the tank walls and get cooled. It could be an alternative to air conditioners in the future," Maurya told IANS. Maurya said ACs contribute to about 35 per cent of total household electricity consumption and produces 1.5 tonnes of carbon every year. The water is heated and passively circulated keeping the inner wall relatively cool, reducing the air temperature and the need for air cooling systems, Maurya said in the pitch for the awards open to voting by audiences. "For a basic set up, an initial investment would be about a lakh of rupees. The design would evolve depending on the architecture," he said. "A large number of ACs contribute to the increase in local urban temperatures. The efficiency of the ACs depend upon the temperature difference they are trying to maintain. They are creating the very problem they are trying to solve. Also consider the scenario that the global average temperature is increasing. The number of Acs in the market is going to sore. Is that the real solution?" the team posed in their pitch.

IIT-H develops biodegradable nano-particles to treat cancer

<http://www.thehindu.com/news/cities/Hyderabad/iit-h-develops-biodegradable-nano-particles-to-treat-cancer/article18510900.ece>



Team working on finding alternative to chemotherapy

The Indian Institute of Technology-Hyderabad (IIT-H) has developed biodegradable non-particles that could be instrumental in treating cancer.

A team led by assistant professor Aravind Kumar Rengan has been working on finding alternative ways to chemotherapy and radiotherapy for cancer treatment to minimise side-effects caused by these therapies. He designed a novel nano system which kills the cancer cells by photothermal therapy.

The group is currently working on making more cost-effective nano particles for photothermal therapy, integrating these particles with cancer specific drugs to have an enhanced effect in killing cancer.

The team members involved in the research are Tejaswini Appidi, Syed Basseruddin, Deepak Bharadwaj, Anil Jogdand, Sushma, Anula — all Ph.D. scholars; junior research fellow Rama Singh, and postdoctoral fellow Surya Prakash Singh.

Photo thermal therapy is a treatment procedure where light (photo) energy is supplied by means of an external laser to nano particles which absorbs this energy and converts it to heat (thermal) energy.

This heat generated by irradiation of laser would increase temperature within the tumour and result in the death of cancer cells.

No side-effects

The important aspects of the research is that the treatment procedure has no side-effects, since the nano particles would be accumulated in the tumour region, and also the irradiation is specific to particles, which means the heat is generated only within the tumour and not elsewhere in the body.

Also, the laser used to provide light energy would not harm the healthy cells around the tumour region as these healthy cells would not absorb this light energy as they remain transparent to this irradiation.

The nano particulate system is very unique in its own way. The particles, after generating the heat required to kill the cancer cells, will degrade inside the body and further breakdown into much smaller particles which will be excreted from the body.

“This procedure had very good results in experiments carried out in mice, and is expected to show the same in humans too. This treatment is now under clinical trials and once the trials are completed, this would be available as an alternative treatment procedure to cancer,” Dr. Rengan told *The Hindu*.

Dr. Rengan was recently awarded the prestigious INSA award in the young scientist category for his outstanding research in treatment of cancer by photothermal therapy using biodegradable particles.

May 16

India’s Premier Science Bodies Moot National Programme to Study Concoctions of Cow Excreta

<https://thewire.in/136259/panchgavya-svarop-iit-csir-cow-urine/>

One official believes that these pseudoscientific initiatives are only filling a void left behind by the “all-round incompetence” of the Indian scientific community.

New Delhi: Cow science, or “cowpathy”, as it has been termed by Hindutva ideologues, is in for a new national level makeover. Last month, what was generally regarded as pseudoscience – or at best ‘fringe science’ – was elevated to the status of a major agenda for national level scientific research cutting across many scientific departments and national laboratories.

On April 25, the Science for Equity, Empowerment and Development (SEED) division of the Department of Science and Technology (DST) issued an office memorandum (OM) to constitute a National Steering Committee (NSC) for ‘Scientific Validation and Research on *Panchgavya* (SVAROP)’. The tenure of this 19-member committee will be three years.

Panchagavya is the most important of all the various medical preparations made from cow’s excretions. It is a mixture of five (*pancha*) products of the cow (*gavya*) : milk, curd, ghee, dung and urine. Added to this mixture are four more components: jaggery, banana, tender coconut water and either water or sugarcane juice. The mix is blended in proportions according to a prescribed procedure.

According to the office memorandum, SVAROP is a national programme initiated by the DST, the Department of Biotechnology (DBT) and the Council of Scientific & Industrial Research (CSIR), in collaboration with IIT-Delhi. “This multi-disciplinary programme,” says the order, “will involve participation of other related Ministries/Departments of the Government of India, academic institutions, research laboratories, voluntary organisations and so on [*sic*] to carry out

research & development (R&D), and also build capacities, even at grassroots level.” It is set to scientifically validate (quoted verbatim):

- 1) Uniqueness of indigenous cows;
- 2) *Panchgavya* for medicine and health;
- 3) *Panchgavya* and its products for agriculture applications;
- 4) *Panchgavya* for food and nutrition; [and]
- 5) *Panchgavya* based utility products.

The NSC will serve as the apex body for “guiding” the SVAROP programme. The committee is being chaired by Harsh Vardhan, the Union minister for science, technology and earth sciences, and co-chaired by Vijay P. Bhatkar, who is the chancellor of Nalanda University, as well as the national president of Vijnana Bharati, an NGO linked to the Rashtriya Swayamsevak Sangh and seen as engaged in pushing the Hindutva agenda on the science and technology front.

Other members in the NSC include R.A. Mashelkar, the former director-general (DG) of the CSIR; the secretaries of DST, DBT and the ministry of new and renewable energy (MNRE); the DGs of CSIR, ICAR, ICMR and the Central Council for Research in Ayurvedic Sciences (CCRAS). Other key members are the IIT-Delhi director; the chairman of a national working group (NWG) on SVAROP formed by IIT-Delhi; the Vijnana Bharati secretary A. Jayakumar; and Sunil Mansighka of the Go-Vigyan Anusandhan Kendra (GVAK), Nagpur.

It is a matter of grave irony that this should happen even as the heads of the major scientific departments have recently submitted a document to Prime Minister Narendra Modi expressing concern over the all-round mediocrity in Indian science as a result of “decades of misguided [administrative] interventions”. The text also calls for a major revamp of the Indian S&T system through the creation of a new overarching and empowered authority called SPARK (Sustainable Progress through Application of Research and Knowledge).

The major driving force behind the push for ‘cowpathy’ has been IIT-Delhi. The institute has now for many years seen growing Hindutva activism within its premises. In 1992, *laddus* were distributed across the campus following the demolition of the Babri Masjid. Now, four members of this ‘elite’ institution are members of the NSC for coordinating research on *panchagavya*.

Key among them is V.K. Vijay, the head of the Centre for Rural Development and Technology (CRDT). According to IIT-Delhi insiders, he had lobbied hard with Smriti Irani during her tenure as the minister for human resource development for establishing a new research centre at the institute for cow science. It is also rumoured that one of the reasons for the former IIT-Delhi director R.K. Shevgaonkar’s resignation was his refusal to set up such a centre. But, clearly, and following Irani’s exit, Vijay’s influence with the powers that be has only increased, with this pseudoscience becoming a broad-based national level effort.

The terms of reference for this steering committee include assigning projects that have been screened and selected by the institute’s NWG to the concerned ministries, departments and other institutions; recommending the budget structure and financing of the projects; and formulating and recommending delivery mechanisms for the widespread application of R&D outcomes of the SVAROP programme. It is interesting to note that projects will be selected by the NWG at IIT-Delhi – and not by the NSC that is being created. Obviously, objectivity in this mechanism will be questionable.

Clearly, it is a much larger exercise today as compared to when the NDA-1 had been in power. At the time, with Mashelkar as the DG, a few CSIR laboratories undertook some dubious research on cow urine (or *gomutra*) in collaboration with GVAK, and obtained patents as well.

Research on the therapeutic properties of cow urine and its extracts was initiated in early 2000 by the Central Institute of Medicinal and Aromatic Plants, Lucknow, and a few patents were filed. For example, one labeled US 6410059 and dated June 25, 2002, was obtained for its bio-enhancement of antibiotics and anticancer properties. Similarly, the National Environmental Engineering Research Institute, Nagpur, had obtained a US patent on a composition comprising “redistilled” cow’s urine distillate (US2004198769 (A1); October 7, 2004) for its usefulness in protecting and/or repairing DNA from oxidative damage.

However, according to highly placed sources in CSIR, none of these patents has ever been worked, and at no time was the product derived therefrom licensed or commercialised. Moreover, these areas of work are no longer active and this line of research was not pursued once the UPA-1 government came to power. Finally, there have been no peer-reviewed publications on the validation of these claims.

When asked how all of this could have come about when there’s been a general awareness that pseudoscience is involved, a member of the NSC, and incidentally also a signatory to the SPARK report, said on condition of anonymity, “With all-round incompetence [of the Indian scientific community], this is only to be expected. The [Hindutva] ideologues will do their job and they are doing it. But there is nothing that is of worth to counter such efforts. If you had 10-12 interesting and well-thought-out good national-level R&D programmes on the table, [the ‘cowpathy’] efforts will be seen to be marginal and on the fringe. But with nothing on the table, this gains prominence from the government, which will be pushing such an agenda.”

Run for a cause: IIT-D students run for preventing deaths in road accidents

<https://www.brainbuxa.com/education-news/run-for-a-cause-iit-d-students-run-for-preventing-deaths-in-road-accidents-6428>

About 300 students from the Indian Institute of Technology-Delhi (IIT-D) set their books aside and decided to run for a cause- preventing the deaths n road accidents and keeping the roads safe for the people. IIT-D and other local ran for the Indian Road Safety Campaign in order to make people aware of the deaths which are caused by the road accidents every year in the world.

The marathon was named as 'Run for a cause' and was organized by the IIT-D students in collaboration with the World Health Organization (WHO) and Delhi Traffic Police. The marathon was organized as part of the Fourth UN Global Road Safety Week.

“The purpose of the run was to promote the spirit of road safety among the people with the focus on speed. Speed contributes to around one-third of all fatal road traffic crashes in high-income countries, and up to half in low- and middle-income countries. Various nations, world-wide successfully reducing road traffic deaths have done so by prioritizing safety when managing speed. The Fourth UN Global Road Safety Week seeks to increase understanding of the dangers of speed and generate action on measures to address speed, thereby saving lives on the roads,” said Amar Srivastva, co-founder, Indian Road Safety Campaign.

School students, IIT-D students, IIT-D faculty, professional runners, college students and many others participated in the marathon.

IIT Hyderabad Professor Bags INSA Young Scientist Award 2017

<https://indiaeducationdiary.in/iit-hyderabad-professor-bags-insa-young-scientist-award-2017/>

Hyderabad: An Indian Institute of Technology – Hyderabad Professor has been awarded the prestigious Indian National Science Academy (INSA) medal in the Young Scientist category for 2017.

Prof. Aravind Kumar Rengan, Assistant Professor, Department of Biomedical Engineering at IIT Hyderabad is being recognized for having devised a novel way of nano delivery using liposomes and gold nanoparticles. This is useful for both imaging and therapeutics.

Since 1974, INSA annually presents the Young Scientist Award to distinguish young scientists who have made notable research contributions in science and technology. The INSA Young Scientist Medal award carries a bronze medal and a cash prize of Rs.25,000. There are some other incentives attached with this award as well. The INSA Young Scientists Award is considered to be the highest recognition of promise, creativity and excellence in a young scientist.

This research, through which he was able to engineer a biodegradable nano-system for photothermal therapy of cancer and proved its in-vivo biodegradability, has got immense translational potential and can be used to treat cancer in an affordable way with minimal side effects.

His research work was published in the journal of NANOSCALE (Impact factor 7.76) and ACS NANO LETTERS (Impact Factor: 13.78) both being prestigious journals in nanotechnology. Dr. Aravind's entire bio-engineering research work was carried out in India, bringing credits to our country in the International arena.

The award will be presented to Professor Aravind by the INSA President during the Anniversary General Meeting in December 2017. Courtesy with this award, Prof. Aravind Kumar Rengan will be eligible for being considered for a visit abroad with full support, for presenting research work at conferences, and/or participating in collaborative / training research projects, start-up research support, wherever possible.

Speaking about the INSA award, Prof. U.B Desai, Director, IIT Hyderabad said, "We are delighted that Dr. Rengan has made a mark in scientific work related to curing cancer and has brought pride to IIT Hyderabad. It is work like this by our young faculty that will bring international recognition to IIT Hyderabad."

Speaking about achieving the prestigious INSA Award, Dr. Aravind Kumar Rengan, Assistant Professor, Department of Biomedical Engineering at IIT Hyderabad said "When I switched my career trajectory from clinical medicine to Nanomedicine (research), little did I know that its going to be highly rewarding. This Award is an encouragement for the good scientific work that we do in India, which is comparable to international standards. I would be very happy if many more young medicos take up research as their mainstream career, which will benefit our country in the long run. I dedicate this prestigious award to my teachers, my UG & PG institutes and my supportive family (which includes IIT Hyderabad)"

The award is made annually to those distinguished for these attributes as evidenced by their research work carried out in India. Many of them have established a rewarding scientific career and continue to make outstanding contributions

winning further honour both in this country and abroad. A large number of INSA Young Scientist Medal Awardees have been bestowed with honours like SS Bhatnagar Prize, Birla Award and the INSA Fellowship.

May 15

IIT Delhi's 'School of Design' is going to be a centre to nurture young, creative minds

<http://www.businessinsider.in/IIT-Delhis-School-of-Design-is-going-to-be-a-centre-to-nurture-young-creative-minds/articleshow/58680377.cms>

IIT will soon be setting up a full fledged department on design called 'The School of Design' to nurture creativity.

The proposal has already been approved by the IIT Senate and is likely to be placed before the Board of Governors later this month. The plan is to bring both technical aspects as well as those related to aesthetics and ergonomics closer.

At the moment, the institute offers Master of Design but only has four faculty members for the course with a limited intake. Meanwhile, Courses offered at the proposed School of Design will include Bachelor of Design (BDes) which is a four-year-long course, and Master of Design (MDes) which is of two-year duration.

In an interview to media, IIT Delhi Director V Ramgopal Rao recently said - "Be it machines or gadgets, what is inside is what engineers design. But for instance, a phone, how should the case be, how should it look like, where and how the buttons should be, this is not something a technocrat can work better upon and there is a need for someone who specialises in product design."

"For the BDes there is a separate entrance test in the country and we will be a part of it. Of course, for creative designs you cannot test one on concepts of Physics, Chemistry and Maths but on the ability of creative thinking which is not an engineer's domain," he added.

"Once we have a full-fledged school of design, we will recruit more faculty for the Masters course and then start offering the Bachelor's degree," Rao said.

"For the practical aspects, design students will work with engineers and design products which we will patent and commercialise in the longer run as we do for the technical projects," he further added.

Presently, IIT Guwahati has a Department for Design while some others run few programmes.

IIIT-H robotics research to be presented at ICRA

<http://www.thehansindia.com/posts/index/Young-Hans/2017-05-18/IIIT-H-robotics-research-to-be-presented-at-ICRA-/300918>



Prof Madhava Krishna with his students at the Robotics Research Centre, IIIT

Hyderabad: International Institute of Technology- Hyderabad (IIIT-H), Robotics Research Centre, has come up with a breakthrough in robotics with a modular stair-climbing robots that can disassemble and reassemble for effective surveillance, visual servoing using convolutional neural networks and reconstructing vehicles from a single (RGB) image for autonomous driving.

The research papers and prototypes will be presented at the International Conference on Robotics and Automation (ICRA) in Singapore from May 29 to June 3, 2017. Research paper submissions from premier institutes worldwide at ICRA go through a rigorous process of selection by at least three reviewers. Given the highly topical nature of its submissions, and with IIIT-Hyderabad being leaders in visual reconstruction, their research and prototypes made the cut. Under the guidance of associate professor K Madhava Krishna, students at IIIT-Hyderabad are encouraged to explore robotics through various aspects – be it deep learning, computer vision or even artificial intelligence – and apply robotic vision to mobile robots and drones.

In keeping with the conference’s theme of “Innovation, Entrepreneurship, and Real-world Solutions”, IIIT-Hyderabad’s Robotics Research Centre will be presenting these papers: Detachable Modular Robot capable of Cooperative Climbing and Multi Agent Exploration by Sri Harsha Turlapati, Ankur Srivastava, K. Madhava Krishna and Suril V Shah. “Imagine a disaster diminution situation, or a search and rescue mission where you need to be able to enter various arenas (most possibly dangerous ones) in the most agile way possible and without being detected.

Fulfilling these specifications, students at the Robotics Research have built a Detachable Compliant Modular Robot (DCMR) prototype that performs concurrent scene exploration by detaching into numerous parts and reattach itself to climb stairs of almost any type in urban settings. The DCMR has been built using both the Uneven Terrain Navigation and Multi Agent Systems (MAS) specifications. The robot comprises a spring that can climb all sorts of stairs, and an extra set of actuators per module to enable the detachment and re-attachment of the modules.

These DCMRs can also move through crammed spaces by detaching itself from one another. Robots normally need to have an active perception of their surroundings in order to move, but these are optimized to handle various terrains at the same time” says Sri Harsha Turlapati. Exploring Convolutional Networks for End-to-End Visual Servoing by Asem Saxena, Harit Pandya, Gourav Kumar and K Madhava Krishna. “An end-to-end learning based approach for visual servoing in diverse scenes where the knowledge of camera parameters and scene geometry is not available previously.

Mumbai’s skyscrapers could be affecting rainfall, forecast model is inaccurate, says IIT-B study

<http://www.hindustantimes.com/mumbai-news/mumbai-s-skyscrapers-could-be-affecting-rainfall-forecast-model-is-inaccurate-says-iit-b-study/story-J1A5Coz0XtN6LQizxbvwOJ.html>

A six-member team from IIT-Bombay carried out extensive statistical modelling using data from automatic weather stations

The city’s rising skyline could be affecting rainfall patterns, making the current monsoon prediction model less effective, says a study by the Indian Institute of Technology - Bombay (IIT-B). The study, a first-of-its-kind analysis on rainfall patterns based on data from Automatic Weather Stations (AWS), said there was a need to create a new model.

At present, the India Meteorological Department (IMD) – the official forecaster – uses the Ensemble Statistical Forecasting System, which uses 100-year old rainfall data and an average of six meteorological values such as sea surface temperatures in the Pacific and North Atlantic sea-level pressure to forecast the monsoon.

The study by a six-member team from IIT-B carried out extensive statistical modelling on data from AWS, which was set up by the municipal corporation after the July 2005 deluge, when the city received almost 944 mm rain on a single day – almost 40% of its annual rain. Results showed that non-uniformity in daily rainfall was gradually increasing. Also, rainfall at night was lesser in terms of volume and intensity compared to daytime rainfall. This rainfall variation over Mumbai, said researchers, is so high that no statistical model will be able to capture. The study assumes significance because a more accurate forecast system will help policy makers mitigate and be better prepared to handle extreme rainfall events.

“Mumbai is a very heterogeneous urban region. Heterogeneous building layers create heterogeneity in atmospheric instability as a result of which there is no systematic rainfall pattern,” said professor Subimal Ghosh, department of civil engineering, IIT-B. “Therefore, despite having a 15-minute prediction system in Mumbai, statistical forecasting model is not working for lack of a systematic rainfall pattern.”

Researchers said Mumbai needs a mechanistic model – such as Weather Research and Forecasting (WRF) model – which is a physics-based model, to understand the city’s precipitation pattern.

“Rainfall in Mumbai is very complicated, its meteorologically very difficult to understand. In addition to urbanisation, the city’s monsoon is influenced by the coast. Situated on the windward side of the Western Ghats also brings in heavy rainfall over Mumbai,” said professor Subhankar Karmakar, Centre for Environmental Science and Engineering, IIT-B, and co-author of the study. “Therefore, understanding rainfall only through statistical modelling is not enough; it doesn’t work for Mumbai.”

Before performing a statistical analysis, researchers expected good results because of the availability of rainfall data via 60 automatic weather stations across the city. These stations were set up post July 2005 deluge because meteorologists had then said they can’t forecast rainfall accurately for Mumbai as there was no proper rainfall data. AWS captures meteorological parameters such as humidity, precipitation and wind speed.

“But our results did not conclude anything meaningful because there is no spatio-temporal pattern of rainfall in Mumbai,” said Karmakar. “We can’t say rainfall was high or low in a particular month; if there is any spatial correlation in rainfall between two close-by stations, and even wind speed is not much of an influencing factor. Therefore, Mumbai rainfall has a very heterogeneous pattern.”

Even though the team analysed AWS data from 2006 to 2015, sub-hourly data from 26 AWS between 2013 and 2014 used for further analysis due to their consistency and continuity. The study has called for continuous validation of AWS data by the civic body through partnerships with institutions that can be run on the physics-based mechanistic model along with different meteorological data and an updated land-use-land-change map.

May 13

Rs 10cr gift for IIT sports complex

https://www.telegraphindia.com/1170513/jsp/nation/story_151383.jsp

IIT Delhi will use a donation of Rs 10 crore by an alumnus to build a new indoor sports complex.

Saurabh Mittal, who received his B.Tech degree in electrical engineering from IIT Delhi in 1995, contributed the sum today and signed an MoU with the institute.

"The Mittal Sports Complex will be built in 18 months' time on the IIT Delhi campus and will be the main venue for the 2018 Inter-IIT Sports Meet to be held at IIT Delhi," institute director Ramgopal Rao posted on Facebook.

Mittal did his MBA from Harvard Business School in 1999 and is the founder and chairman of the investment firm Mission Holdings.

Professor Sanjeev Sanghi, the dean of alumni affairs and international programmes at IIT Delhi, told **The Telegraph** the sports complex would have a built-up area of 3,510sqm and house four badminton courts, two squash courts, a table tennis area and a gymnasium.

"We have small badminton and squash courts. The student strength has increased. There is a need to expand facilities," Sanghi said.

The expansion will involve an expenditure of Rs 25 crore. The institute will spend the remaining Rs 15 crore.

An IIT Kharagpur faculty member said alumni contributed funds regularly to the tech schools.

‘Suicides at IITs not due to academic stress alone’

<http://www.sundayguardianlive.com/news/9403-suicides-iits-not-due-academic-stress-alone>

Students, researchers and counsellors say that indifferent administrations, lack of parental support, and failed love affairs are also responsible for the unsettling trend.

In the first semester of 2017 alone, three students committed suicide at the Indian Institute of Technology (IIT), Kharagpur. According to the reply to an RTI filed by *The Sunday Guardian*, the total number of suicides in the past five years (2013-2017) stands at eight in this institution till April this year. In another case, an IIT BHU (Varanasi) student committed suicide by setting himself on fire before jumping off the third floor of his hostel in April. The figures of student suicides in the past five years at other IITs are: six at IIT Bombay, two at IIT Delhi and one at IIT Roorkee.

While many students at the various IITs blame it on the extensive academic pressure that triggers stress and depression, compounded by a "non-cooperative administration" and "strict professors", other students and experts are of the view that academic stress is "highly misunderstood", which more often than not, gives a "distorted narrative" and diverts attention from other pressing issues like drug addiction, lack of parental understanding, and failed love affairs which are also among the various reasons leading to suicides. While it's difficult to ascertain the real reason for suicides in cases where suicide notes are absent, *The Sunday Guardian* tried to understand the plausible reasons behind the unsettling trend by talking to students, researchers and counsellors of the IITs.

INSENSITIVE ADMINISTRATION

A “non-caring” and “ineffective administration” at IIT BHU, according to a 2016 pass-out who admitted to attempting suicide himself in 2013, not only conveniently dismisses students’ concerns, but aggravates their academia-induced stress by failing them in exams. Talking on the condition of anonymity, the alumnus recounted how one of the teachers, who “favoured some students over others”, failed a student who raised a voice against him, causing the student to reappear for the paper multiple times.

“This is how stress builds up and spirals out of control. There is always a pressure on an IITian to perform well and get good grades, but by failing students on purpose, the administration only makes things worse for us. We can’t even complain against the teachers as nobody takes their case,” he said.

However, on the recent suicide case at IIT BHU that happened in April, he said that the student was involved in “malpractices like drug abuse”, which thrive at IIT BHU.

Linking an incident of 2015, where a violent clash between the law students of BHU and the students of IIT following a dispute over sharing a cricket playground, led to 10 students of IIT being severely injured, he said: “There is a lot of pressure on students here because of a hostile relationship between students of law and engineering. Also, because the administration doesn’t help or cooperate to resolve the issues, the students are left to fend for themselves. This builds a lot of pressure and students resort to alcohol and drugs. The administration brushes everything under the carpet.”

A student pursuing PhD from IIT Madras reiterated the sentiment, saying that a “strict and indifferent administration” often instils a sense of under confidence in the students by not providing adequate help with assignments and exams, which eventually amounts to stress and depression.

Calling failure to excel at academics a probable reason, and the administration’s practice to fail students or give them poor grades a major trigger for suicides, a student from IIT Roorkee, on the condition of anonymity, said, “In 2015, 73 students from IIT Roorkee were expelled because of poor grades, and about 90% of expelled students were from lower castes. They were readmitted because of court order, but the pressure didn’t cease to exist with that. The other reason is that most of the jobs are still centered towards IT, and people from core branches face double stress of managing their own courses along with the coding bit. I know many friends from Uttar Pradesh and Bihar who are brilliant in their respective fields, but face serious issues while working on digital platforms. This creates a lot of burden at the time of placements because people with good communication and IT skills are highly preferred, and students who do not have these skills face problems that lead to depression, and sometimes suicides.”

Another student of IIT Guhawati, requesting anonymity, called life at IIT “exceedingly hectic”, and blamed the failure to manage multiple courses, and mid and end semester exams as catalysts for triggering suicidal tendencies among students.

“The administration and the media talk of packages worth crores, but they don’t realise that there are students who get jobs between Rs 4-5 lakh with bonds for two or three years. The society has high expectations of an IITian, who sees this as a failure.”

In order to curb the disturbing trend, directors of IITs in a council meet in April were asked to organise a compulsory induction programme and encourage students to participate in more extra-curricular activities to deal with stress.

Recently, IIT Delhi has decided to redo its curriculum to shift focus from theory-based subjects to practical learning. However, a few experts and students say that the move will not make any major difference.

Pointing to the futility of the move, Professor Dheeraj Sanghi, former Dean of Academic Affairs, IIT Kanpur, said: “The point they are trying to convey is that students are only interested in getting a hands-on experience, which is certainly not the case. Chucking out theory is not advisable from the quality point of view also. The administration’s assumption is that every single suicide is related to poor academic performance. However, between 2006 and 2008, out of the seven suicide cases at IIT Kanpur, only two were of students who were academically weak. Whether they committed suicide due to academic pressure or not is still not known. The common perception is that if a student commits suicide, what else could be the reason than academic failure? Nobody really acknowledges that it may have happened because of parental pressure or a failed love affair or drug addiction.”

Dr Shikha Jain, counsellor at IIT Roorkee, is of the view that students find it difficult managing their newly-found independence with the expectations that come with being an IITian.

“Students start showing withdrawal tendencies when they see they are not living up to what the society expects of them. Zero extra-curricular activity outside of academics is another reason why students start getting depressed. Otherwise, if you look at the academic curriculum at IITs, it is pretty much the same as that in every other college. The course doesn’t burden students with too many subjects or exams.”

PROFESSIONAL COUNSELLING NEEDED

According to Dr Jain, proper counselling services at IIT Roorkee started in 2014 when she was hired on a permanent basis, but are still not adequately accessible considering the growing cases of depression among students who more often than not hesitate to share fearing privacy issues.

Professor Dheeraj Sanghi said that at IIT Kanpur, counselling services were ramped up to stem suicides and every undergraduate student was assigned a student guide to help him adjust to the new environment. Apart from that, every student goes through a psychometric test and students facing psychological issues are asked to meet the counsellor to discuss their problems.

At IIT Madras, counselling committees like Mitr and Saathi have students and professors as their members who help students deal with their problems through online and offline counselling. However, experts who have done research on the matter, say that student counselling groups are grossly inadequate because they don’t have professional training, and also because people in depression do not confide in students when it comes to their personal matters.