Newspaper Clips
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April 6

Strategic plan helps IIT-M to win hatrick as best engineering college

http://www.business-standard.com/article/education/strategic-plan-helps-iit-m-to-win-hatrick-as-best-engineering-college-118040600135_1.html

The institute also retained its second position in the overall category as the second best institution in the country

The Indian Institute of Technology-Madras (IIT-M) may have to thank its own visionary Governing Board and the practice of religiously following its goals towards Strategic Plan 2020, patiently ticking every columns it needs to, as it has been ranked as the best engineering college in the country for the third consecutive year by the National Institutional Ranking Framework (NIRF) under the Ministry of Human Resource Development.

The institute also retained its second position in the overall category as the second best institution in the country, next only to Indian Institute of Science-Bangalore.

The ranking, out of the total 906 entries in the engineering category, is with a score of 88.95, while the Indian Institute of Technology-Bombay is in the second rank with a score of 84.82 and Indian Institute of Technology-Delhi in the third position with a score of 82.18.

"They (NIRF) are measuring the same parameters which we follow in our strategic plan, regarding teaching, learning, in terms of our faculty strength, graduation outcomes, placement, research publication citations, funded projects, consultancy projects etc. We are having our own Strategic Plan for 2020, every year our board monitors it. With the growth rate, we are maintaining our position. There is no magic to it, and in fact everybody is growing," said Bhaskar Ramamurthi, Director, IIT Madras.

Every year there is a target in hiring faculty, graduate outcomes, funded projects, placement performance among others, which are monitored. The institute makes sure that it is improving in these parameters and this makes its chances of maintaining the position in the ranking higher.

"Still, if somebody improves more than us, they will beat us," he said.

The current Strategic Plan of IIT-M, for the year 2014-20, was implemented from the year Dr Pawan Goenka, managing director of Mahindra & Mahindra, took over as the Chairman of the Board of Governors of the institution.

"The vision for IIT Madras laid out by Strategic Plan 2014–2020 is to be in the top 50 in all disciplines, by being a global leader in research and education, which will benefit society around us and the environment. The key pillars that will help IIT Madras achieve this vision are course programmes,

research, engagement with industry, internationalisation and entrepreneurial activity," said Goenka during the time.

It outlines steps to increase the quality and quantity of research output through an increase in research intensity, faculty strength, Ph.D. student enrollment, infrastructure, engagement with industry and international collaborations. It also seeks to make the IIT Madras Research Park, which is the first of its kind in the country, a force multiplier in the effort of doubling the sponsored research levels from that of 2014.

It envisages to establish publishing more papers in the top research publications, produce MS and Ph.D. graduates with high employer reputation, set up two to three research centres of excellence each year, offer more than 2,000 courses each year with 700 faculty members by 2020, to offer industry-oriented online courses leading to certification or M Tech degrees, to increase the value of total funded research from around Rs 2.5 billion to Rs 5 billion per year, increase the number of industry-driven projects by 100 per cent, commercialise 5-10 research innovations annually, to have 20 new companies incubated each year, have atleast 10 per cent of the companies becoming blockbuster companies, and to recruit around 30 top-class faculty members each year during 2014-15. It also envisages to have a corpus, including endowments of Rs 5 billion - with options to build it up to Rs 10 billion fund-raising.

Started in 2015, NIRF outlines a methodology to rank educational institutions across the country. The parameters used for ranking broadly cover 'Teaching, Learning and Resources', 'Research and Professional Practices', 'Graduation Outcome', 'Outreach and Inclusivity', and 'Perception'. Although the broad parameters remained the same this year, there were changes in some of the sub-parameters, said the institute. From 2017, besides being ranked under specific disciplines, large institutions were also given a common overall rank. This year, educational institutions across the Country were ranked in nine categories – Overall, Universities, Engineering, Colleges, Management, Pharmacy, Medical, Architecture and Law.

While the institution hopes to maintain the growth every year, as per the plan, it is striving to improve the non-metricised aspects which may not be part of the metrics for ranking. This includes gauging how the students are feeling about the campus, what they like the most and what they don't, among others as part of this plan. It is focusing on all the metrics as per the plan, including that of recruiting adequate faculty, improving placement - recently it has taken steps to improve the internship process considering that it eventually improves the placements - although there are external factors which could affect the plans.

Another area it is focusing on is that after it has increased the Ph.D. capacity rapidly from 2012-15, it needs to take care of their placement now. "The better the places they go to, the better long term impact it will have for us in terms of perception and visibility. We are concerned about the placement of our undergraduates and master students. We are also concerned about what funded projects we get, research we get from the industry, all these growth rates are important. There you will find that our growth is much more rapid than most of the institutions," said Ramamurthi.

This year, it has also started looking at doing large funded projects from other ministries. For instance, last month it has announced setting up of a centre for waterways and coastline, in tie up

with the Ministry of Shipping, which is a Rs 700 million project. In another project, a multi institution consortium working on 5G project for Department of Telecommunications, IIT Madras will have a major chunk of the activities and will get Rs 1 billion over a period of time. This will enable the institution from depending solely on the government funding and project from a single ministry now. Till a couple of years ago, the entire fund from the government was around Rs 1.7-2 billion. That has gone up to Rs 3 billion, but these kind of large projects were not there earlier. While such large scale projects may not be possible every year, it would make the institution more responsive.

"Our target is to have 15-20 per cent of the overall funds to come from projects to other ministries, but it may vary year-wise. On a compounded rate you may see 20 per cent per year. That is ahead of the GDP growth," said Ramamurthi.

These developments are despite the challenges in terms of shortage of faculty, infrastructure related constrains, procedural issues related to purchases and other activities, which tend to hold back the growth momentum. The average vacancy in the system is around 34 per cent for faculties, while it is around 30 per cent in IIT-M, which it manages with visiting and guest faculty. While it is constantly trying to recruit more, there are constrains in recruiting more than a certain level of faculty in limited time period, considering the institutions are not in a position to attract the best people from all over the world in terms of payment. These institutions can pay only half or one third of what the world pays and it has to look for people who are coming in for other reasons and are still good. At present, the net recruitment of faculty members is around 25.

"Our Research Park also play a major role in this. It is very important. Having a 1.5 million sq ft next door where companies can set up their own research facilities and co-work with us and where 150 start ups are being incubated, it is very important," he said. The industry-funded projects has also been growing at 15-20 per cent and in 2017-18 IIT-M did Rs 1.5 billion of funded projects as against Rs 1.2 billion during the previous year. The institute is developing a new campus in another part of the city, where the larger projects such as the centre for waterways and coastline would be set up.

IIT-Madras key metrics:
Total number of faculty members- 607
No: of women faculty members- 78
Sponsored Research Projects
2014-15 - Rs 1.08 bn
2015-16 - Rs 1.94 bn
2016-17 - Rs 1.95 bn
Consultancy Projects
2014 -15 - Rs 662.6 mn
2015-16 - Rs 631.52 mn
2016-17 - Rs 852.6 mn

National Ranking:

Institution	Teaching, Learning & Resources (100)	Research & Professional Practice (100)	Graduation Outcomes (100)	Outreach & Inclusivity (100)	Perception (100)
IIT-Madras	93.83	91.44	84.91	63.88	100
IIT-Bombay	89.61	96.04	76.53	44.71	93.48
IIT-Delhi	80.83	89.35	81.47	59.72	88.6
IIT-Kharagpur	73.73	84.26	85.65	53.99	78.51
IIT-Kanpur	78.51	77.15	78.99	41.46	85.89

JEE Advanced 2018: Check out the no. of seats at the Top IITs and how they rank in NIRF India Rankings 2018

http://www.timesnownews.com/education/article/jee-advanced-2018-check-out-the-no-of-seats-at-the-top-iits-and-how-they-rank-in-nirf-india-rankings-2018-jee-main-rank/214114

New Delhi: The boards are almost over and lakhs of students would be appearing in JEE Main 2018 in pursuit of their aspiration to get through the famous Indian Institutes of Technology. When it comes to choices of a career, engineering continues to be a favored choice among many. And when it is engineering, nothing beats the IITs. But getting there is not easy and one must clear the JEE Advanced2018. Also, with many news IITs introduced in the recent year, the decision of which IIT to choose becomes a task. Here is a list to help students aspiring for the IITs. The list of Top Indian Institutes of Technology, IITs of India and how they rank in the latest NIRF India Rankings 2018 released on April 3, 2018.

Incidentally, 8 out of Top 10 Engineering Colleges of India were given to IITs with the top IITs getting the top ranks. As expected, the older IITs continue to rank amongst the very top. IIT Madras ranked was the Top Engineering Institute of the country followed by IIT Bombay at second place and IIT Delhi at the third. The older IIT – IIT Kharagpur which also has the largest number of seats was at number 4. Among the newer IITs, IIT BHU got the 19 rank.

List of IITs	Rank amongst IITs	Overall Ranking as per NIRF India Ranking 2018	Seats Available
IIT Madras	1	1	838
IIT Bombay	2	2	880
IIT Delhi	3	3	851
IIT Kharagpur	4	4	1341
IIT Kanpur	5	5	827
IIT Roorkee	6	6	1065
IIT Guwahati	7	7	660
IIT Hyderabad	8	8	220
IIT (Indian School of Mines) Dhanbad	9	13	962
IIT Indore	10	14	120
IIT Bhubhaneshwar	11	18	180
IIT (BHU) Varanasi	12	19	1090
IIT Ropar	13	22	120
IIT Patna	14	24	200
IIT Gandhinagar	15	27	150
IIT Mandi	16	28	120
IIT Jodhpur	17	54	160

For more information about the top IITs like the course wise break up of seats, famous alumni, list of courses available and placement records check these links

Please note that these IITs have a different cut off for different courses. So while IIT Madras may be the top engineering college, the cut off for Computer Science for IIT Delhi and Bombay was higher than IIT Madras in 2016 and 2017. Similarly, the cut off for Electrical Engineering in Delhi may higher than in IIT Bombay and so on. The ranks provided here are overall and based on NIRF ranking. Criteria used for providing the rank is the overall performance along with various other parameters including placement and faculty performances.

April 5

Pt. Hariprasad Chaurasia mesmerised audience with his soulful renditions at IIT Delhi

https://timesofindia.indiatimes.com/city/delhi/pt-hariprasad-chaurasia-mesmerised-audience-with-his-soulful-renditions-at-iit-delhi/articleshow/63624360.cms

The auditorium reverberated with applause when Pt. Hariprasad Chaurasia performed at the second day of the Virasat Series 2018 organised by SPIC MACAY on Wednesday. The classical flautist was performing at IIT Delhi during the 18- day long Virasat Series and mesmerised the audience with his mellifluous renditions. The concert was purely based on audience's request as after every piece, the flautist asked audience what they wanted and responded to their requests promptly. Some of these raags include Bhupali, Marwa, Yaman, and Hamsadhwani.
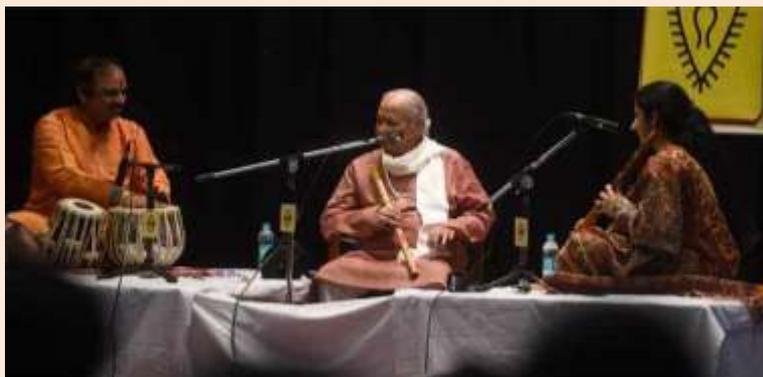
Pt. Arvind Kumar Azad, Pt. Hariprasad Chaurasia and Debopriya Ranadive

He was accompanied by Pt. Arvind Kumar Azad on Tabla and supported by his disciple Debopriya Ranadive on flute sangat.

IIT-KGP partners with maestro to preserve classical music Agencies

http://www.millenniumpost.in/kolkata/iit-kgp-partners-with-maestro-to-preserve-classical-music-292938

IIT-Kharagpur has partnered with Pt Ajoy Chakraborty to archive the teaching methodologies of Indian classical music.

Explaining the rationale behind the initiative, the lead researcher of the project, Pallab Dasgupta, said there is no "swaralipi" (notations) in classical music, unlike other genre of songs, as a result of which a particular style, adopted by a maestro, usually always dies with him.

Every artiste has his unique style, which he passes on to his students, Dasupta, who is also the dean of sponsored research and industrial consultancy at IIT-KGP, said. "One particular gayaki (style of singing) remains confined to just one ustad (expert) and his disciples. It never gets shared with

others." Panditji is helping us to create a wonderful multimedia content for our endeavour, Dasgupta asserted.

"We may also need to look at artificial intelligence techniques to understand different ways to learn the ragas," he said.

IIT-KGP Director Partha P Chakrabarti said he was excited about the collaboration with Pt Ajoy Chakraborty and hoped that the project gets to achieve its goal. "The institute has come up with this unique idea using internal resources, but we welcome external funding for this drive too. We wish to set up a Centre of Excellence on classical and folk arts in the institute to carry out similar outreach programmes," he said in the statement.

April 4

NIRF Ranking 2018 lists IISc, IIT-Madras, IIM-Ahmedabad, JNU as top institutes: Delhi's Miranda House is India's best college

https://www.firstpost.com/india/nirf-ranking-2018-lists-iisc-iit-madras-iim-ahmedabad-jnu-as-top-institutes-delhis-miranda-house-is-indias-best-college-4417719.html

The National Institution Ranking Framework (NIRF) 2018 rankings for higher education institutes was announced by the Union Human Resource Development Ministry on Tuesday. Bengaluru-based Indian Institute of Science topped the overall rankings and also secured the top position in the best university category. This is the second time in a row that the IISc has topped the list. The Indian Institute of Science was established in 1909 through a partnership between industrialist Jamsetji Nusserwanji Tata, the Maharaja of Mysore and the Government of India, according to its official website.

The Indian Institute of Technology (IIT) Madras, Bombay, Delhi and Kharagpur bagged the second, third, fourth and fifth positions, respectively. In fact, IITs ruled the NIRF rankings this year. IIT-Kanpur, Roorkee, Guwahati and Hyderabad have figured in the top 25 on the list. The rankings, according to the report was released under nine categories: Overall, universities, engineering, colleges, management, pharmacy, medical, architecture, and law. The NIRF also added several new criteria such as total budget and its utilisation, combined metric for quality of publications, university examinations and how many graduating students admitted into top institutions.

Under the law category, National Law University (NLU) Bangalore has been ranked top followed by NLU Delhi and NLUSAR. In the architecture category, IIT-Kharagpur is on the top while IIT-Roorkee and SPA Delhi have been ranked at number two and three. NIRF has added medical colleges as a new category this year and AIIMS Delhi has topped the list followed by PGIMER and Christian Medical College Vellore.

This year, NIRF list has nine categories — law, architecture and medical has been added to the existing list of universities, engineering colleges, pharmacy and best colleges. The NIRF also added several new criteria such as total budget and its utilisation, combined metric for quality of publications, university examinations and how many graduating students admitted into top institution.

Among top colleges Delhi's Miranda House was announced as India's best college, while the Indian Institute of Management, Ahmedabad, was ranked the top management institute. AIIMS, PGIMER Chandigarh and CMC Vellore were ranked as the top three medical colleges.

Here are the top 25 overall rankings:

NIRF Rankings	Name of Institute	City	State	Score
1	Indian Institute of Science	Bengaluru	Karnataka	82.16
2	Indian Institute of Technology, Madras	Chennai	Tamil Nadu	81.39
3	Indian Institute of Technology, Bombay	Mumbai	Maharashtra	79.2
4	Indian Institute of Technology, Delhi	New Delhi	Delhi	73.97
5	Indian Institute of Technology, Kharagpur	Kharagpur	West Bengal	71.39
6	Jawaharlal Nehru University	New Delhi	Delhi	67.57
7	Indian Institute of Technology, Kanpur	Kanpur	Uttar Pradesh	65.39
8	Indian Institute of Technology, Roorkee	Roorkee	Uttarakhand	64.93
9	Banaras Hindu University	Varanasi	Uttar Pradesh	63.52
10	Anna University	Chennai	Tamil Nadu	62.82
11	University of Hyderabad	Hyderabad	Telangana	60.54
12	Indian Institute of Technology, Guwahati	Guwahati	Assam	60.16
13	Jadavpur University	Kolkata	West Bengal	59.68
14	University of Delhi	Delhi	Delhi	58.69
15	Amrita Vishwa Vidyapeetham	Coimbatore	Tamil Nadu	58.46
16	Savitribai Phule Pune University	Pune	Maharashtra	58.24
17	Aligarh Muslim University	Aligarh	Uttar Pradesh	57.78
18	Manipal Academy of Higher Education	Manipal	Karnataka	57.37
19	Jamia Millia Islamia	New Delhi	Delhi	56.18
20	Bharathiar University	Coimbatore	Tamil Nadu	55.08

Top Five Universities

NIRF Rankings	Name of University	City	State	Score
1	Indian Institute of Science	Bengaluru	Karnataka	82.16
2	Jawaharlal Nehru University	New Delhi	Delhi	67.57
3	Banaras Hindu University	Varanasi	Uttar Pradesh	63.52
4	Anna University	Chennai	Tamil Nadu	62.82
5	University of Hyderabad	Hyderabad	Telangana	60.54

Top Five Engineering Colleges

NIRF Rankings	Name of Engineering Colleges	City	State	Score
1	Indian Institute of Technology Madras	Chennai	Tamil Nadu	88.95
2	Indian Institute of Technology Bombay	Mumbai	Maharashtra	84.82
3	Indian Institute of Technology Delhi	New Delhi	Delhi	82.18
4	Indian Institute of Technology Kharagpur	Kharagpur	West Bengal	77.78
5	Indian Institute of Technology Kanpur	Kanpur	Uttar Pradesh	75.24

Top Five Colleges

NIRF Rankings	Name of Colleges	City	State	Score
1	Miranda House	Delhi	Delhi	71
2	St Stephen's College	Delhi	Delhi	70.77
3	Bishop Heber College	Tiruchirappalli	Tamil Nadu	67.63

4	Hindu College	Delhi	Delhi	67.46
5	Presidency College	Chennai	Tamil Nadu	66.21

Top Five Management Institutes

| NIRF Rankings	Name of Institute	City	State	Score
1	Indian Institute of Management, Ahmedabad	Ahmedabad	Gujarat	79.18
2	Indian Institute of Management, Bangalore	Bengaluru	Karnataka	77.33
3	Indian Institute of Management, Calcutta	Kolkata	West Bengal	77.08
4	Indian Institute of Management, Lucknow	Lucknow	Uttar Pradesh	68.63
5	Indian Institute of Technology, Bombay	Mumbai	Maharashtra	66.8

Top Five Medical Colleges

NIRF Rankings	Name of Institute	City	State	Score
1	All India Institute of Medical Sciences, New Delhi	New Delhi	Delhi	90.71
2	Post Graduate Institute of Medical Education and Research	Chandigarh	Chandigarh	78.73
3	Christian Medical College	Vellore	Tamil Nadu	73.61
4	Kasturba Medical College	Manipal	Karnataka	62.03
5	King George's Medical University	Lucknow	Uttar Pradesh	61.73

Top Five Law Colleges

NIRF Rankings	Name of Institute	City	State	Score
1	National Law School of India University	Bengaluru	Karnataka	75.79
2	National Law University	New Delhi	Delhi	74.58
3	Nalsar University of Law	Hyderabad	Telangana	70.95
4	Indian Institute of Technology, Kharagpur	Kharagpur	West Bengal	67.07
5	National Law University, Jodhpur	Jodhpur	Rajasthan	63.5

IIT-D opens extension campus in Sonipat

http://www.thehindu.com/news/cities/Delhi/iit-d-opens-extension-campus-in-sonipat/article23428678.ece
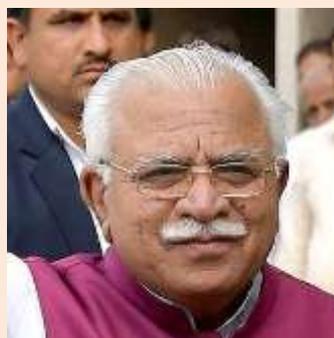
To focus on research, innovation

Haryana Chief Minister Manohar Lal Khattar on Tuesday inaugurated the extension campus of the Indian Institute of Technology (IIT)-Delhi, Technopark, at Sonipat.

Outreach campus

The IIT said that the Technopark with focus on research, innovation and product development where IIT-Delhi, industry and government agencies will collaborate to create advanced technological solutions. The extension campus will emerge as an outreach campus for quality development and will aid PhD students, IIT said.

Situated at the Rajiv Gandhi Education City (RGEC), the Technopark is a convention centre with an auditorium of seating capacity for nearly 500 persons, two lecture halls with a seating capacity of 100 persons and two conference rooms.

IIT in a statement said that there are space/facilities for start-ups' incubation (150 & 366 sq ft units), corporate R&D labs (1,000 sq ft units) and sponsored R&D projects (1,000 sqf t units). Other facilities include aesthetically furnished suites (10 in number) and double-sharing rooms (140 numbers) as comfortable options for residential accommodation of delegates and participants for short or long-term stay.

HARYANA SIGNS MOU WITH IIT DELHI
http://www.dailypioneer.com/state-editions/chandigarh/haryana-signs-mou-with-iit-delhi.html

Haryana Technical Education Department has signed a Memorandum of Understanding (MoU) with Indian Institute of Technology (IIT), Delhi for the setting up of IIT Delhi Technopark at Rajiv Gandhi Education City, Kundli in district Sonipat.

The MoU was signed in the presence of Chief Minister Manohar Lal and Union Minister of State for Human Resource Development Satya Pal Singh.

Haryana Government has provided 50 acres land parcels each at Rajiv Gandhi Education City, Kundli in district Sonipat and at Bhadsa in Jhajjar for setting up of extension campuses of IIT Delhi, said an official spokesman.

The objective of this MoU is to establish a close cooperative relationship between the parties with special reference to supporting Haryana based Small and Medium Enterprises (SMEs) and provide training opportunities to the faculty and students from technical institutions of the state.

As per the MoU, participants from technical institutions in Haryana will be offered upto ten seats in a quality improvement programme training course and upto five seats in a continuing education programme training courses conducted by IIT Delhi at the Sonipat campus, the spokesman said.

The participants will not have to pay any course fee; they, however, will have to bear their own boarding and lodging expenses. The Ph.D. students from technical institutions in Haryana can avail of the central research facility housing high end analytical instrumentation facilities at the Sonipat campus of IIT Delhi and they will be considered at par with IIT Delhi's academics in matter of concessional tariff charges for use of the instruments, he added.

The spokesman further said that the IIT Delhi will provide need based mentorship to technical institutions in the state for quality improvement, accreditation, placements, entrepreneurship and incubation programmes.

The IIT Delhi will assist the Haryana Technical Education Department in setting up of the centre of excellence in selected institutions as well as preparation of internal revenue generation programmes, consultancy services or e-content on actual cost basis. Tailor made training courses on payment basis as per requirement will also be oranised by IIT Delhi for the faculty and students of technical universities, engineering colleges and polytechnics functioning in the state.

With a view to enable the smooth cooperation, a separate advisory body will be constituted for operation of this MoU vis-a-vis the extension campuses of IIT Delhi at Sonipat and Jhajjar. A representative of Technical Education Department would be included as a member of the advisory body for both the campuses, he added.

April 3

IIT-DELHI, DU MAKE IT TO WORLD'S TOP 200 VARSITIES
http://www.dailypioneer.com/city/iit-delhi-du-make-it-to-worlds-top-200-varsities.html

The Indian Institute of Technology (IIT) Delhi and Delhi University (DU) figured in the world's top 200 universities according to a joint study by an Industry body. There are 49 from USA, 30 from United Kingdom, 11 from Germany and 8 from China and Australia among the top 200 list. A joint study by ASSOCHAM and Yes Institute said it becomes imperative for the country to learn from global best practices.

"The top talent goes to developed countries for studying, research and contributing intellectual capital as well as economic value to other countries. An estimated six lakh Indian students are studying abroad, spending over USD 20 billion annually," the study said. Only 16 per cent of the Indian firms carry out any in-firm training themselves, as against 80 per cent of Chinese firms.

The study indicates that only a small portion of Indian graduates are considered employable. The National Employability report 2013 pegged that employability was less than 25 per cent in almost all job functions across education streams- science, commerce, arts etc.

It said India's higher education sector faced many challenges such as low level employability, lack of research as well as limited scope for innovation and entrepreneurship.

"To overcome them it is critical to align the higher education system with emerging economic realities and industry requirements as well as introduce well-structured and futuristic education frameworks," said the study report.

IIT TECHNOPARK to be inaugurated today

IIT Delhi's Technopark is to be inaugurated at Sonipat on Tuesday. Situated at the Rajiv Gandhi Education City (RGEC) the Technopark is a state of the art convention centre with an auditorium of seating capacity for nearly 500 persons, two lecture halls with a seating capacity of 100 persons and

two conference rooms with the latest audio visual conferencing equipment and facility for high fidelity recording, video projection and videography.

Other facilities at the I-TEC include ten aesthetically furnished suites and 140 double sharing rooms as comfortable options for residential accommodation of delegates and participants for short or long term stay.

There are space or facilities for Start-ups' Incubation, Corporate R&D labs and Sponsored R& D projects.

IIT-Delhi students get big job offers

http://www.thehindu.com/news/cities/iit-delhi-students-get-big-job-offers/article23419286.ece

The Department of Management Studies at the Indian Institute of Technology (IIT) in Delhi announced on Monday that the average CTC package offered to students of its 2017-2018 batch was ₹16.54 lakh per annum. This year, the placement process had 56 recruiters that made 102 offers to 91 students.

"Even with a 100% increase in batch size, placements season proved to be one of the best in over a decade. The key highlights of the final placements are an increase in the leadership roles offered to students," the Registrar of IIT Delhi said.

He added that 25% of the batch was offered Pre-Placements Offers (PPOs)/Pre-Placements Interviews (PPIs) and that the number of first-time recruits has increased to 29.

'Alumni support'

Professor M.P. Gupta, head of the department, said, "Successful completion of the placement season is the outcome of the meticulously crafted curriculum, the grooming of the students by business leaders, industry-oriented teaching and last but not the least alumni support".

IIT-Delhi said that 30% of the offers to students were for sales and marketing roles, 29% were offered jobs in the IT and consulting domain, 20% were offered profiles in operations and 21% were offered positions in finance and general management. Of the total offers made, 27% were leadership roles.

500 litres of water enough for this bio-toilet to serve a family of five for 15 years

http://www.downtoearth.org.in/news/500-litres-of-water-enough-for-this-bio-toilet-to-serve-a-family-of-five-for-15-years-60085

Researchers from IIT-Kharagpur develop a bio-toilet that recycles water and turns waste to energy

A prototype of the bio-toilet constructed by the research team of IIT-Kharagpur.

With an aim to "provide a solution to the commoners", a research team from Indian Institute of Technology (IIT), Kharagpur has developed a bio-toilet that can not only serve its obvious purpose but also recycle waste water and generate energy from waste. One toilet will just require 500 litres of water once and it can function for the next 15 years when used by a family of five.

Researchers from IIT-Kharagpur receiving Swachh Bharat award from Union Science & Technology Minister Harsh Vardhan.

Recently, this innovation received Swachh Bharat award. "This bio-toilet will generate electricity and reduce water consumed in toilets. The power it generates can light up the washrooms in the night and in the day it can be used to power up small electronic appliances like a mobile or other batteries," said Dr Makarand M Ghangrekar, project leader and professor of civil engineering. "When it comes to water, it will reduce the usage substantially. Currently, 10-15 litres of fresh water gets wasted every time we use a toilet, but with this bio-toilet that can be cut to 1-2 litres of recycled water."

Benefits

The IIT-Kharagpur professor says that the toilets the central and state governments have built will not solve the environmental problem, but only the social problem. Despite the governments constructing crores of toilets for people living in rural areas, they are still unused either for the lack of water connection or solid and liquid waste management system. This is where bio-toilets offer a solution.

The electrogenic bacteria present in the septic tank use human waste to generate electricity.

"The microbial fuel cell (MFC) reactors used in the setup can completely recycle the water once flushed for more use and that means the toilets don't require any separate piped water supply. Also, the electrogenic bacteria present in the septic tank will use human waste to generate electricity," the professor tells Down To Earth. "This project is for places that are away from water and electricity sources," he adds.

Challenges

According to the researchers, the cost of each unit is something they need to work on. "The first unit we made after many trials and errors cost us Rs 250,000. The cost of the next one should come down to Rs 1,00,000 or less and if and when we start developing them in bulk the price will further come down," says Ghangrekar while adding that he and his team have been working on the project for the last 15 years.

Maintenance is another aspect they need to factor in when it comes to product cost since the cathodes in every unit will require attention every six months. They would also need to clean up fungus growth and any unwanted bacteria growth so that it doesn't stink. "The maintenance cost should be around Rs 2,000," says the professor of civil engineering .

Road ahead

The research team has partnered with the National Thermal Power Corporation (NTPC) for the project, which is funded by the Department of Science and Technology. The first stage of this partnership will be testing the bio-toilet. It will be installed by April-end at NTPC's campus in Greater Noida for two years.

April 2

65 projects at cost of nearly INR 140 Crores approved under Uchhatar Avishkar Yojana (phase-II)

https://www.devdiscourse.com/Article/2830-65-projects-at-cost-of-nearly-inr-140-crores-approved-under-uchhatar-avishkar-yojana-phase-ii?reg=South%20Asia

IMPRINT is meant for adopting engineering and technology as the vehicle to addressing the societal needs and achieving national prosperity.

The Government in association with All India Council for Technical Education (AICTE) promotes innovations and research & development in established and new technologies, generation, adoption and adaptation of new technologies, to meet developmental requirements of the country and for the overall improvement of educational process. Towards these ends, the Council operates three schemes, namely, Modernization and Removal of Obsolescence (MODROBS), Research Promotion Scheme (RPS) and Nationally Coordinated Projects (NCP).

In order to enhance the quality of technical education in the country, the Government is taking the following steps: -

(i) Higher Education Financing Agency (HEFA): This is a not-for-profit organization that will leverage funds from the market and supplement them with donations and CSR funds. These funds will be used to finance setting up and improvement in infrastructure and research facilities in our top institutions and will be serviced through internal accruals.

(ii) PM Research Fellowship: Under this scheme, the best students who have completed or are in the final year of B. Tech or Integrated M.Tech or M.Sc. in Science and Technology streams from IISc/IITs/NITs/IISERs/IIITs will be offered direct admission in PhD programme in the IITs/IISc. Such students, who fulfill the eligibility criteria, and shortlisted through a selection process, as laid down in the PMRF Guidelines, will be offered a fellowship of INR 70,000/- per month for the first two years, INR 75,000/- per month for the 3rd year, and INR 80,000/- per month in the 4th and 5th years. Apart from this, a research grant of INR 2.00 lakh will be provided to each of the Fellows for a period of five years to cover their foreign travel expenses for presenting research papers in international conferences and seminars. A maximum of 3,000 Fellows (1000 per year) would be selected during a three-year period.

(iii) Smart India Hackathon (SIH): SIH is being undertaken by MHRD on yearly basis to identify new and disruptive digital solutions for solving the challenges faced by our country.

(iv) Setting up of virtual classrooms and massive open online courses (MOOCs): Virtual classrooms under SWAYAM and MOOCs are newer forms of technology-enabled learning which help to broad-base quality education across all geographical regions. MOOCs have emerged as an inexpensive mechanism for offering quality education online, to a very large number of learners. The benefits of quality faculty, teaching excellent courses in top institutions, can be transmitted with the help of virtual classrooms and online courses to students & faculty across all institutions irrespective of their physical location thereby making education truly seamless and borderless.

(v) National Digital Library: Ministry of Human Resource Development under its National Mission on Education through Information and Communication Technology has initiated the National Digital Library (NDL) pilot project to develop a framework of virtual repository of learning resources with a single-window search facility. It is being developed to help students to prepare for entrance and competitive examination, to enable people to learn and prepare from best practices from all over the world and to facilitate researchers to perform inter-linked exploration from multiple sources.

(vi) Training and Research in Frontier Areas: It is proposed to establish centers of excellence for advanced training and research in the frontier areas including biotechnology, bioinformatics, nano-

materials, nano-technologies, mechatronics, higher performance computing engineering/industrial design, etc.

(vii) Setting up of Inter-Institutional Centres, Creation of Excellence Clusters and Networks, Establishing Alliances across Institutions: This includes provision for Setting up of Inter-Institutional Centers, Creation of Excellence Clusters and Network, Establishing Alliances Across Institutions.

(viii) Startup India Initiative in Higher Educational Institutions: The erstwhile scheme "National Initiative for Technology Transfer" has been revamped as Startup India Initiative in Higher Education. Under this initiative, special efforts would be made to strengthen international research linkages and involve a larger number of Indian institutions in forging such links with industry through a framework of research parks for collaborative and joint research programmes.

(ix) Implementation of the IMPRINT Research Initiative (Impacting Research Innovation and Technology): This scheme is meant for adopting engineering and technology as the vehicle to addressing the societal needs and achieving national prosperity.

(x) National Institutional Ranking Framework: This framework outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations and broad understanding arrived at by a Core Committee set up by MHRD, to identify the broad parameters for ranking various universities and institutions. The parameters broadly cover Teaching, Learning and Resources; Research and Professional Practices; Graduation Outcomes; Outreach and Inclusivity and Perception.

(xi) Technical Education Quality Improvement Programme (TEQIP): This is a World Bank funded project to enhance quality and equity in selected engineering education institutes and improve the efficiency of the engineering education system in focus States/ Union Territories.

(xii) Research Parks: In order to provide impetus to research in the country, the Government has approved setting up of 9 Research Parks one each at IIT Madras, IIT Kharagpur, IIT Bombay, IIT Gandhinagar, IIT Delhi, IIT Guwahati, IIT Kanpur, IIT Hyderabad, and IISc Bangalore. IIT Madras Research Park has become fully functional with 43 R&D clients, 4 Incubators, 55 Start-ups, and 5 Centres of Excellence. IIT Gandhinagar Research Park has been approved with full funding from the Department of Science & Technology.

(xiii) Quality Initiatives by AICTE: AICTE has approved an action plan focusing on Planning, Selection, Induction Training, Curriculum Revision, Mandatory Internships, Industry Readiness, Promotion of Innovation & Start-ups, Exam Reform, Teachers' Training and Mandatory Accreditation.

With a view to promoting innovation of a higher order that directly impacts the needs of the Industry and thereby improves the competitive edge of the Indian manufacturing, a scheme called "Uchhatar Avishkar Yojana (UAY)" was approved by the Government. The project envisages collaboration between academia and industry –within or outside India. Under UAY Phase- I, 87 projects at a cost of INR 265.59 Crore with joint funding by MHRD, participating Ministries, and Industry in the ratio of 50:25:25 have been approved. Under UAY Phase-II, the Apex Committee of UAY in its meeting held on 20.11.2017 has approved 65 projects at a cost of INR 139.48 Crore for a period of 3 years.

April 1

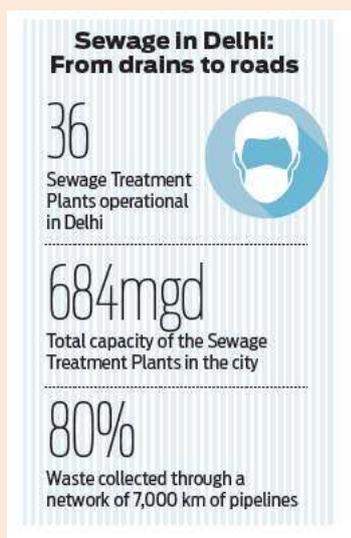## 'Sprinkling water to tackle Delhi air pollution poses bigger problem'

http://www.newindianexpress.com/thesundaystandard/2018/apr/01/sprinkling-water-to-tackle-delhi-air-pollution-poses-bigger-problem-1795331.html

The NGT had ordered the state government in last November to sprinkle water in highly polluted spots to control dust

NEW DELHI: As the national capital grapples with severe pollution, Delhi's civic agencies might soon find themselves in a situation where they will have to choose the lesser evil, either sprinkle water treated at Sewage Treatment Plants (STPs), which a study claims contains harmful bacteria or not address the issue at all.

According to Kalpana Arora, a PhD holder in Waste Management from IIT Delhi, samples of treated water collected from the STP set up at two different points on the Kushak Nallah in New Delhi area (NDMC) contained E.Coli microbes.

Sewage in Delhi: From drains to roads

36
Sewage Treatment Plants operational in Delhi

684mgd
Total capacity of the Sewage Treatment Plants in the city

80%
Waste collected through a network of 7,000 km of pipelines

The presence of E.coli in water indicates the water has been contaminated with fecal material that may contain disease causing microorganisms, such as certain bacteria, viruses, or parasites.

Arora detected the presence of the harmful bacteria strains while working on a private study which will soon be submitted to the Central Pollution Control Board.

"Though the reports were of last year September the situation remains unchanged. The presence of bacteria could be due to many reasons like lack of maintenance of the plant by a skilled labour," says Arora, who works as an water treatment advisor for many agencies. "Also, the acid or the cleaning material which is generally available in the market if used in the STP destroys the healthy microbe which in turn helps the bad bacteria to thrive in the treated water, which is later on used for purpose of beautification and spraying over trees on the road side to remove dust," she adds. Arora has been working working on the research since last year.

Delhi has around 36 STPs at different locations with a total capacity to generate 684 million gallons of water per day. The city generates around 680mgd of sewage, which is 80 per cent of the total sewage collected through a network of 7,000 km of pipelines laid down.

After the National Green Tribunal (NGT) order in last November to define highly polluted spots and start sprinkling water to control the dust, the Municipal Corporation of Delhi (MCD) and the Delhi government has from time to time sprinkled water at ITO area and Anand Vihar ISBT, identified as one of the highly polluted areas in Delhi.

"The water that we use for spraying on plants is raw water. The raw water is not fit for drinking but it is used for spraying purpose. There could be a few issues with the water but we have not come across any such study yet," said an official who looks after East and North MCD Horticulture Department.

Present CUK campus can be made better: Soil expert from IIT New Delhi

http://www.greaterkashmir.com/news/kashmir/present-cuk-campus-can-be-made-better-soil-expert-from-iit-new-delhi/280503.html

Prof Rao visited the designated campus here and held threadbare discussion with the senior functionaries regarding the project work.

Senior soil expert and member Project Monitoring Unit (PMU), Prof S K Rao of Indian Institute of Technology (IIT) New Delhi, on Saturday said that possibilities can be explored to make the present site for Central University Kashmir, Ganderbal campus, "better for use" by taking certain measures.

Prof Rao visited the designated campus here and held threadbare discussion with the senior functionaries regarding the project work.

Registrar, Prof. M Afzal Zargar, dean School of Education and University Building Committee member, Prof. N A Nadeem, executive engineer, Riyaz Ahmad Jeelani, general manager, NBCC zone, representatives of executing agencies and other functionaries of the university accompanied the expert.

Official sources said the executive engineer gave a detailed joint presentation about the construction of the phase-I buildings of pre-engineered buildings (PEBs), cluster of single storey buildings, and other related activities.

Talking to Greater Kashmir Prof Rao said that he visited the campus construction site. "Though the land from one side is slightly marshy, however we can explore the possibilities to make it better for use."

He added: "As of now I can say that there is no need to go for any other site as the possibilities can be explored to make the available land better for use by taking certain measures which I have suggested."

"In a week or so I will prepare a report and will submit it to the central committee of ministry of human resource development (MHRD) which will later visit the campus site and take further decision," Prof Rao told Greater Kashmir.

Registrar CUK Prof M Afzal said: "We inspected the site and interacted with the soil expert from IIT Delhi and every positive development came out of it."

"The expert recommended certain measures that will help explore the possibilities of going for permanent construction on the identified land without any issues," he said.

He said that the soil expert will give his views and submit the report to the PMU.

March 31

Risk of lung cancer higher for people living close to main roads in Delhi, reveals IIT Study

http://www.financialexpress.com/india-news/risk-of-lung-cancer-higher-for-people-living-close-to-main-roads-in-delhi-reveals-iit-study/1116817/

A new study has found that people living near to main roads in the national capital may have more chances of 'lung cancer mortality'.

The risk of lung cancer is higher among the people who live close to main roads in New Delhi.

The risk of lung cancer is higher among the people who live close to main roads in New Delhi. A new study has found that people living near to main roads in the national capital may have more chances of 'lung cancer mortality'. This is due to the inhalation of particulate matter that contains trace elements such as nickel and chromium. The study was conducted by the scientists of IIT Delhi and IIT Kanpur, according to which the excess cancer risk, also known as ECR, was found 13-16 times higher than the 'safe limit' for children, whereas, it has hit the 'tolerable limit' for adults.

The study was published in the journal Environmental Science and Pollution Research of March 2018 edition. It was titled as 'Chemical characterisation and quantitative assessment of source-specific health risk of trace elements in PM 1 at a road site of Delhi, India'. The report is a conclusion of the IIT scientists effort who studied the concentration of submicron aerosols or PM 1 collected between November 2009 and March 2010. It looked at the concentration of PM 1 at two sites – one on the road and another at an elevated site – near the IIT Delhi campus.

Here is what the study said:

• The study analysed the contents of PM 1 particles and calculated the ECR through inhalation.
• It found that in winters 83 percent of PM 2.5 was composed of PM 1.
• It also said that this indicated the dominance of combustion activity-generated particles.
• It was found that the particulate matter is sufficient to cause death and the fine dust that can even clog lungs.
• Researchers found that the ECR for nickel and chromium was in the tolerable limit (10-4) for adults.
• While it is 13-16 times higher than the safe limit (10-6) for children.
• ECR of lead was found to be 16 percent higher at the elevated site than to road site for both adults and children.
• The ECR of nickel was found 14 times higher at the road site compared to the elevated site.
• The average daily dose (ADD) was also calculated. Among all, the ADD for nickel was found to be highest for children and adults
• ADD for nickel was 11 times higher on the road, than at the elevated site.
• It was also found that the potential health risk due to long-term exposure to vehicle exhaust emissions and re-suspended road dust and emissions from wear and tear of vehicle parts is a threat to pedestrians.
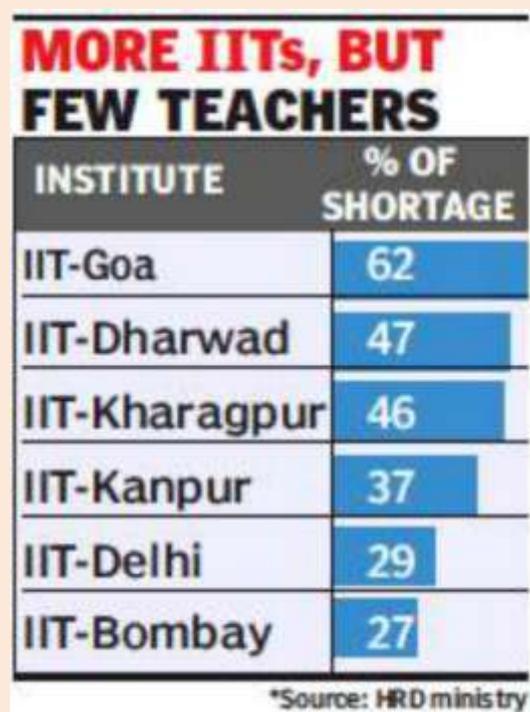
• People working in commercial establishments near roads, and residents living nearby are also under major threat to health risks.

34% faculty shortage hits IITs across India

https://timesofindia.indiatimes.com/city/bengaluru/34-faculty-shortage-hits-iits-across-india/articleshow/63552686.cms

BENGALURU: India's 23 Indian Institutes of Technology (IITs) collectively have a faculty shortage of 34% as of March 2018, with only one — IIT-Mandi in Himachal Pradesh — having more than the sanctioned strength.

The problem is not restricted to newer IITs like those in Palakkad, Tirupati and Goa, which don't have the sanctioned faculty, but also in older ones like those in Mumbai, Kharagpur and Kanpur where the shortage is between 25% and 45%.

MORE IITs, BUT FEW TEACHERS

INSTITUTE	% OF SHORTAGE
IIT-Goa	62
IIT-Dharwad	47
IIT-Kharagpur	46
IIT-Kanpur	37
IIT-Delhi	29
IIT-Bombay	27

*Source: HRD ministry

Last month, the Union Human Resource Development (HRD) ministry said it would try and make it easier for IITs to acquire visas for foreign faculty, hoping to narrow the gap between sanctioned and existing strength of teachers.

'Half of IIT graduates go abroad to find work'

Education expert AS Seetharamu said: "Earlier, about 15% of IIT graduates would come back as faculty, but this percentage is dropping. Now, up to 50% of graduates go abroad to find work, while most of the remaining enter software and information technology companies in India."

With the increase in number of IITs and NITs, the teaching staff needed is increasing. "However, there has been no subsequent rise in the number of people eligible and available for these positions," Seetharamu said, adding this gap can be plugged by increasing competitiveness of salaries and encouraging graduates to take up doctoral studies as PhDs are required of prospective faculty.

While IIT-Mandi is in the best position with four faculty members more than the sanctioned strength, IIT-Bhilai, in Chhattisgarh is in the worst spot with 58% vacancies. Among the top five ranked IITs, Kharagpur has 46% vacancies, followed by 36% in Kanpur, 29% in Delhi, 28% in Chennai and 27% in Mumbai.

Experts pointed out that in newer IITs like the one in Dharwad, which has a 47% shortage, the challenges are of attracting teachers to stay and teach in smaller towns. "Just putting up an educational institute isn't enough. Faculty members have families and they weigh options like availability of schools for their children, access to healthcare and other factors," an expert explained.

Among other challenges facing the Union ministry for human resources development (HRD) are the attractive private sector, better research opportunities in multinational companies (MNCs) and the lack of quality candidates.

Electronic surveillance may see a marked change in future

http://www.thehindu.com/news/cities/Hyderabad/electronic-surveillance-may-see-a-marked-change-in-future/article23403529.ece

As efficient as it gets

- IIT-H researchers publish their paper in the journal Pattern Recognition Letters
- The model being developed by them generates action vector
- It attempts to see patterns in the movements of people

captured in the video and helps pinpoint a theft

- The system has shown efficiency greater than the existing state-of-the-art models

- The next step is to scale it up to see if it can detect thefts in real-time, live footage
- The institute began working on such futuristic systems after it entered into an agreement with Hyderabad police

In the present day, archived footage has to be scanned by a cop in a control room to look for something specific. An automated system would save both time and human effort."
- DEBADITYA ROY, STUDY'S CORRESPONDING AUTHOR

IIT-H developing a model that can detect snatch thefts in video footage

Electronic surveillance in the city is likely to undergo a marked transition in the coming years, from being reliant on humans to being driven by machines, courtesy research that is under way at Indian Institute of Technology, Hyderabad (IIT-H).

In a paper published in the journal Pattern Recognition Letters, IIT-H researchers Debaditya Roy and his guide Krishna Mohan Chalavadi have described a model for a system which they claim can detect snatch thefts, like chain or purse snatching, in video footage.

"The dependence on video surveillance is on the rise. In the present day, archived footage has to be scanned by a cop in a control room to look for something specific. An automated system would save both time and human effort. That apart, such a system can be scaled up to detect events real-time," said Debaditya Roy, the study's corresponding author.

Roy, who is pursuing Ph.D at the institute, explains crime in a surveillance video constitute a very small part, with a bulk of it being non-significant recording. This makes it tedious for a human to search. By generating what is called an action vector, Roy's system attempts to see patterns in the movements of people captured in a video, which in turn helps pinpoint a theft.

"Our model has been trained with dataset from Hyderabad police. It has also been trained with data comprising actions or patterns that resemble snatch theft," he added.

For two years now, the researchers at IIT-H have been working to develop systems that can identify thefts, accidents, and also identify wanted persons in video surveillance footage. Research on such futuristic systems began after the Hyderabad police signed an agreement with IIT-H in 2016.

Roy says his model has shown efficiency greater than the existing state-of-art models. The next step is to scale it up to see if it can detect thefts in real-time, live footage.

If the systems being modelled at IIT, Hyderabad, show real-time efficiency, they could soon find their way into police control rooms and greatly reduce the response time after a crime has taken place.

March 29

IIT KGP Alumni in US announce internship scholarships for 14

http://www.business-standard.com/article/pti-stories/iit-kgp-alumni-in-us-announce-internship-scholarships-for-14-118032900433_1.html

The IIT Kharagpur Alumni body in the US has announced internship scholarships for 14 students from the institute who received internship offers for the summer of 2018 at top global universities.

The 14 students from various disciplines and at various levels of study at IIT Kharagpur have been awarded scholarships by the Alumni body - IIT Kharagpur Foundation (IITKGPF) of USA - to pursue research or internships at renowned academic institutions abroad, an IIT KGP statement said today.

The grants were made available as part of the IIT KGP Foundations 'Award Programme for International Internships', which was launched in early March this year.

Under the scheme, IITKGPF, a non-profit organization headquartered at Nebraska, would offer upto USD 3000 per student.

The scholarship is disbursed through direct payments for expenses like airfare, stay and so on.

Welcoming the initiative, Kaustav Brahma, B.Tech student at the Department of Electronics and Electrical Communications Engineering, who has received the scholarship for his internship at MIT this year, said, "Internships are expensive and stipends given by foreign laboratories or universities

are often not enough to cover living and travel costs."

Distinguished alumnus and President, IIT KGP Foundation of USA, Ron (Ranbir) Singh Gupta, said the Foundation has been aware of the students need for financial support in order to pursue research in renowned institutions that many are invited to each year for internships.

"The enthusiasm of the students for availing these internships, along with the high quality of the projects they are offered every year, made us decide to institute the IIT KGP Foundation Award Programme for International Internships," he said.

Eggshell-derived nanoparticles can be used for drug delivery

https://www.thehindubusinessline.com/news/science/eggshell-derived-nanoparticles-can-be-used-for-drug-delivery/article23374075.ece

Research team at IIT, Madras

Eggshells are among the most commonly discarded kitchen waste. Now scientists are putting eggshells to some novel use – drug delivery – by deriving nanoparticles out of them.

A team of scientists at the Indian Institute of Technology (IIT) Madras have developed a method to use eggshells for synthesizing nanoparticles. These nanoparticles could be potential candidates for local drug delivery as well as a material for bone grafts.

Nanoparticles are extremely tiny particles which can be customized for various biomedical applications like diagnostics, drug delivery etc. Researchers feel eggshell-derived nanoparticles may be suitable for use in humans as they have tested biocompatibility of calcium phosphate cement made from eggshells as dental implants in preliminary studies in humans. However, eggshell-derived nanoparticles are yet to be tested in humans.

Using microwaves, scientists synthesized carbonated calcium deficient hydroxyapatite (ECCDHA) nanoparticles from egg waste. These nanoparticles are similar to human bone in mineral composition.

In order to check drug delivery efficacy of these nanoparticles, researchers compared them with synthetic hydroxyapatite nanoparticles and found them to be more efficient. They are better in loading and releasing drugs in a sustained manner compared to the synthetic nanoparticles. A higher drug-loading capacity means lesser quantity of nanoparticle material is needed for drug delivery.

The efficacy of these particles was analyzed using an antibiotic as a test drug. "Apart from their ability to deliver the antibiotic, eggshell derived apatite nanoparticles also showed higher amount of bovine serum albumin (BSA) protein delivery, which means they may be employed for delivering growth factors for bone regeneration", Prof Sampath Kumar, who led the team, told India Science Wire.

In addition to drug delivery, the presence of ions like strontium, magnesium, fluoride and sodium in small amounts in these nanoparticles makes them potentially useful as graft materials for bone regeneration. "Since these eggshell derived particles are very similar to human bone with respect to their mineral composition, we propose that these may be potential candidates for bone substitutes and may be used for treatment of infections associated with bone loss," said Kumar.

Hydroxyapatite is a major mineral base of human bone and is one of the most studied biomaterials for more than half a century. However, synthetic hydroxyapatite drastically varies from biological apatite found in human bone. It lacks the trace elements, which are highly essential for bone growth and remodeling. "Hydroxyapatite with chemical composition similar to biological apatite would be beneficial for bone applications", pointed out Dr M Ramalingam, co-author of the study.

The research team has tested eggshell derived calcium phosphate cements in humans. "Preliminary clinical studies with six patients have indicated clinical efficacy of eggshell derived cements in treating bone (dental) defects, demonstrating complete resorption with new bone formation", Kumar said. These studies suggest that the eggshell nanoparticles have better physical and biological properties than synthetically derived ones.

The team included R. Jayasree, K. Madhumathi, Rakesh P. Nankar, Mukesh Doble, and T. S. Sampath Kumar at IIT Madras; Deepti Rana and Murugan Ramalingam from CMC Vellore. The study has been published in Journal of Nanoscience and Nanotechnology and was funded by the Department of Biotechnology (DBT).