IITs to focus on joint initiatives to promote internationalization

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12 IITs, represented by deans and executives of IR offices, participated in the conclave.

The Indian Institutes of Technology (IITs) emphasised the need for joint initiatives to improve international outreach at a conclave of pan IIT dean of international relations (IR) held in Kharagpur this Friday and Saturday.

12 IITs, represented by deans and executives of IR offices, participated in the conclave. They include the IITs in Delhi, Bombay, Madras, Guwahati, Kanpur, Tirupathi, Mandi, Indore, Dhanbad, Roorkee, Palakkad and Kharagpur.

Over two days the IITs deliberated on common challenges and processes towards attracting and admitting more international students, funding mechanisms, degree provisions, international collaborations, among other issues.

“With about 1 lakh students and about 5000 faculty members, the 23 IITs are a sizeable bloc and can compete favourably with the largest university systems around the world,” said Baidurya Bhattacharya, dean IR, IIT Kharagpur. “We therefore need to join forces and pursue internationalization in a synergistic manner,” he said.

While JEE remains the only gateway available to anyone seeking admission into the IIT system’s flagship undergraduate programs, most IITs have created the mechanism for graduate admission for international students. There was a consensus on enhancing the outreach and information dissemination globally about Masters and Doctoral programs at IITs and promoting foreign admission opportunities, a press release from IIT Kharagpur stated.

“This will require tapping into the already existing network of academicians and alumni in select countries,” felt Rakhi Chaturvedi, associate dean, alumni and external relations, IIT Guwahati.

IIT (ISM) Dhanbad has also created an avenue for foreign undergraduate admission. “We have run a separate 5-year undergraduate programme exclusively for students in Afghanistan and African countries focused on mining and petroleum engineering,” said Somnath Chattopadhyay, associate dean, IIT (ISM) Dhanbad.
The IITs further explored ways to make the selection process through ICCR scholarship schemes more streamlined and in alignment with the IIT admission criteria and timelines. These collective recommendations have been planned to be presented to ICCR for further discussion and consideration.

To ease out information availability and admission, Swati Patankar, dean IR of IIT Bombay, informed the gathering that a common application portal for joint admission of international students is underway.

The challenge of increasing diversity through international student admission was also discussed from the aspect global ranking of the IITs.

The gathering also discussed the importance of an India-relevant definition of diversity. “We need diversity but we will have to evolve a definition consistent with our country’s ethos of language, culture and food,” said Mahesh Panchagnula, dean international & alumni relations, IIT Madras.

“Our definition of diversity should look to bring diverse thinking to our student populace, including through the presence of international faculty and students,” felt Panchagnula.

The conclave also focused on global regions which could be potential academic partners of the IITs for international students. Bhutan, Nepal, Bangladesh, several countries in the ASEAN and Middle Eastern region, the African continent and Taiwan could be some of these regions. To take benefit of the competitive edge of academic disciplines in which the IITs excel, specific discipline oriented MoUs and agreements were also encouraged.

Anandaroop Bhattacharya, associate dean, International Relations at IIT Kharagpur proposed setting up a PAN IIT consortia with similar consortia in countries like France, Germany, Japan etc.

A key aspect of internationalization is increasing the presence of international faculty. IIT Madras highlighted their approach of hiring fresh doctorate holding researchers on a 3-year contract as visiting international faculty staff to work at IIT Madras. This gives the Institute as well as the faculty the opportunity to mutually experience different lines of thinking and could lead to long-term engagement.

Sharing of best practices and networking between International Relations offices for coordination and outreach activities was also proposed. “Such initiatives would help third generation IITs and standardize some of the key operation procedures,” said KN Satyanarayana, director, IIT Tirupati.

‘Make road safety a national priority’: IIT-D students, alumni to Lok Sabha MPs
The alumni and students, under the banner of the IRSC (Solve), work with the aim of reducing the number of road accidents by half by 2030.

A view of Parliament House, in New Delhi, Tuesday, May 28, 2019.

Students and alumni of the Indian Institute of Technology - Delhi (IIT-D) have written to Lok Sabha MPs urging them to make road safety a national priority and pass the more stringent Motor Vehicles Bill in the Budget session.

The alumni and students, under the banner of the IRSC (Solve), work with the aim of reducing the number of road accidents by half by 2030. “In 2016, with around 68 amendments in 233 sections of the Motor Vehicle Act of 1988, the minister of road transport and highways Nitin Gadkari tabled the Bill. It was passed unanimously in the Lok Sabha but hit a road block in the Rajya Sabha. The Bill lapsed and was left out in most of the sessions and even in regular debates,” the letter read.

“So, we want to reach out to (our) MPs on a one-one basis and urge them to unify and support the Bill. Hence, we reached out to the newly elected MPs through e-mails, calls and sent letters to their office asking them to support road-safety initiatives. Through the MPs, we want to promote road safety in the respective constituencies and seek Bill’s passage in both Houses of Parliament,” the letter stated.

According to the World Health Organisation, about 821 deaths per day are reported in India due to road accidents, which work out roughly to around 34 deaths per hour. Road traffic injury has become the leading cause of death for children and youngsters.

“We want to put more emphasis on the Bill in the current Lok Sabha sessions so that it can be passed in the both the Houses,” the letter read.

IIT team to mount devices on 200 cluster buses to check air pollution

IIT-Delhi will put up pollution monitoring mechanisms atop 200 cluster buses to gauge the air quality across the city during different times of the day in the peak pollution period of September to February.

The sensor-based devices will be installed through a partnership with Delhi Integrated Multi-Modal Transit System (DIMTS). “Each bus makes 16 trips daily, covering different routes — each 30-40km long. This deployment will collect particulate matter (PM) data across different terrains, weather and times of the day,” said Rijurekha Sen, an assistant professor at computer science department.

An analysis of the data can provide remarkable insights into the different factors affecting PM, added Sen, the lead investigator. “These factors can be further ranked to suggest remedial actions and devise appropriate PM control policies.”

Aerogram, a low-cost device, will be used to measure and understand different factors contributing to the rise in particulate matters, she said. “We will start mounting the units in August. By mid-September, we are hoping to ready 150-200 buses.”

Sen is working on the project under the aegis of Centre of Excellence for Research on Clean Air, which provided the Rs 5-lakh seed money for the initial pilot. Science & Engineering Research Board (SERB) of the Union science and technology department has given Rs 1.3 crore for the project under the IMPRINT scheme.

“Our goal is to build a low-cost platform, which uses well-calibrated, low-cost sensors and harnesses the computation and communication power of IoT (internet of things). The platform should be robust for mounting on vehicles, so that data collection across large urban expanses becomes more scalable,” Sen said. Measuring other data like green cover, traffic and vehicle classification are crucial for data-driven policy debates, she said.

As a pilot project, aerogram units have been kept at different locations on the campus since December 2018. “Though reliability testing was the main goal, the data gives some interesting insights,” Sen said. Even within the campus — just 1.3 square km and mostly homogeneous with a lot of green cover — various locations have slightly different PM levels, she added.
Along with Sarita Ahlawat, a Biotechnology Industry Research Assistance Council researcher, Sen is building and deploying the sensors. Pravesh Biyani, an assistant professor in the electronics and communications engineering department who is handling the DIMTS collaboration, is also working on the deployment. Sayan Ranu, assistant professor at the computer science department, and Arnab Bhattacharya, associate professor of computer science and engineering at IIT-Kanpur, will work on the large dataset after the deployment and correlations of PM with different factors.

**IIT Delhi organises workshop on air pollution, Experts gather to discuss the worsening air quality in Delhi**


The Centre of Excellence for Research on Clean Air (CERCA), IIT Delhi in collaboration with the Embassy of the United States of America organized a workshop to highlight the problem of ever-increasing air pollution in Delhi. The workshop provided a platform for experts from various fields to gather and discuss the affects of the city’s poor air quality. The eminent panel of experts included - Dr. James Schauer, United States Science Envoy; Satyendra Kumar, Deputy Secretary of Ministry of Environment, Forest and Climate Change and other dignitaries from NGOs, corporate sector and academics.

The issues that were mainly highlighted during the discussion included such as crop stubble burning, dust pollution, vehicular pollution, etc. These issues are all pertinent to the city’s rising pollution levels. Dr. James stressed the importance of sharing knowledge on such critical issues. He said that there have been constant efforts to lower the PM2.5 levels in the US for over 25 years. He also shared that they have been successful on both scientific and management fronts which makes it interesting to share experiences. At the same time, he also highlighted the fact that the scenarios are different in India and the U.S and India, however, many things can be shared from a technology point-of-view.

Arun Duggal, Founder of CERCA discussed the effect of the hazardous air quality on health and how the role CERCA becomes prominent here. He explained the basic mission of CERCA which is to provide research and scientific knowledge to policymakers. He also mentioned that along with
formulating the policies, the policymakers were also provided with feedback on how well those measures are working, all the processes being based on scientific research.

CERCA is presently working on four research projects related to the quality of air in India. One of the projects is studying the implementation experiences with regards to curbing air pollution in countries like China and Japan. Two other projects are directed towards the use of machine learning and other technologies to improve air quality forecasting. Another project is focused on limiting the three critical sources of air pollution which are powerplants, stubble burning, and brick kilns.

**Fair deal: IIT-Delhi hopes to bridge gender gap**


It was Riya Agarwal’s first visit to the IIT-Delhi campus on Sunday. She had gone there with her parents to confirm if this is where she would be spending the next three years of her academic life. For many girls like Riya, the Open House at IIT-Delhi for girl students was an eye-opener and an opportunity.

Historically, IITs have witnessed fewer female students, a record that the institute is desperate to shed. With only 2,415 female students across all IITs, steps like Open House for girls have been taken to increase their numbers to make campuses “more gender-sensitive and equal.”

A student of Alhcon Public School, Mayur Vihar, Riya cleared her JEE (advance) with a rank of 15,000. She is one of the 5,356 girls who passed the 2019 test. This year also saw the maximum number of girl students (23) making it to the top 500 common rank list.

Faculty members were seen busy clearing doubts and informing students about the prospects of studying at IIT. Shelly Gupta, a student interested in computer science and electrical communication, said, “I got tips on selecting the best possible course at any IIT across India.” With a rank of 8,000, she expects to get a good spot.

Ahlaam Rafique, a Noida resident, said she wants to pursue mechanical engineering, a course that many girls don’t take up, “as she likes it and want to challenge herself”.

Sumeet Agarwal, nodal officer, JEE women’s helpdesk, said, “Faculty members informed the students about the different branches of study, the prospects of studying at IIT and the safety situation within the campus. Girls often don’t opt for engineering, and even if they do many don’t take up mechanical or civil engineering. There is a perception that these require physical strength. But these days everything is mechanised.”

The special sessions being conducted at IIT for the past three years is showing results. While in 2016, 70 girls were admitted, their number increased to 93 in 2017 and 143 in 2018. “IIT-Delhi has increased its seats for girl students to 190 this year because of the EWS criteria,” Agarwal said.
The event was organised by Initiative for Gender Equity and Sensitization, a unit of IIT-Delhi created in 2018. Ravinder Kaur, the convener, said, “We are expecting more girl students this year. The increase in seats is supernumerary in nature as mandated by all IITs. We conducted a survey and found that many girls don’t come to IIT despite qualifying JEE. We wanted to change that and have taken specific steps to bring in more girls.”

iSAFE Assist app by IIT Delhi students to provide 24X7 roadside assistance pan India


The iSAFE Assist will be backed by 6,200 authorised service providers in 28 states covering 1,795 cities for emergency services that include towing, fuel delivery, and flat tyre assistance.

In a bid to make Indian roads safer and allow speedy first response to emergency situations, students and alumni of the Indian Institute of Technology Delhi (IIT Delhi) have come up with a smartphone app for ease of access to users. The project called the iSAFE Assist was launched by officials from the Union Ministry of Road Transport and Highways, and other associations. The iSAFE Assist will be backed by 6,200 authorised service providers in 28 states covering 1,795 cities for emergency services that include towing, fuel delivery, and flat tyre assistance.

The brainchild of IIT Delhi alumni Amar Srivastava, the iSAFE Assist project started out as an awareness campaign. An accident of a fellow student got Amar to begin the campaign which later turned into an app and now a pan-India helpline (1800 419 7779).

The app is managed by a non-profit organisation led by students and alumni of IIT Delhi - Indian Road Safety Campaign (IRSC) in collaboration with the Transport Ministry. The organisation has been conducting awareness campaigns in over 1,500 colleges across the country.
"We realised that people suffer the most due to non-availability of emergency services. Many even lose their lives because of delayed medical attention," Deepanshu Gupta, member of the initiative and alumni, said.

We then felt the need to build a platform to provide this assistance. He added that iSAFE Assist is the outcome of that effort to assist users, irrespective of the time and the location.

**IITD organised ‘Yoga Sports’ competitions on Yoga Day**

_June 22, 2019_ [https://www.devdiscourse.com/article/education/569612-iitd-organised-yoga-sports-competitions-on-yoga-day](https://www.devdiscourse.com/article/education/569612-iitd-organised-yoga-sports-competitions-on-yoga-day)

The Wellness Club in Indian Institutes of Technology (IIT), Delhi organised Yoga sports competitions on the International Day of Yoga on June 21. IITD is hosting a 10 days' mega event on Yoga which will conclude on June 26.

In the competitions, the participants were tested for five Yoga positions or Asanas – Halasana, Naukasana, Natarajsana, Sarvang asana and Ardha Matsyendrasana. The contestants were graded on accuracy, punctuality and holding the position of the asanas in which four B. Tech. students of IITD were declared winners – Durva Gupta, Ratnesh Kumar, Prabudh Jangra and Aakash. The Wellness Club officials informed that Aaksah has an artificial foot but performed well in the Yoga competitions. Besides the Yoga competitions, the Run for Yoga, Morning Yoga Session, Yoga for Children, a panel discussion on scientific nature of Yoga and Bhakti Yoga were also organised in the campus.
IITD in association with Art of Living is organising 'Art of Living Yoga Workshop' on Saturday and an hour daily workshop on 'Heart fullness Meditation' from Monday to Wednesday in the evening.

The mega event of Yoga was started with 'Yog Nidra Workshop' on June 17 in which students learnt to have proper sleep by practising the Yoga which was followed by Isha Upyog Workshop convened by Isha Foundation. This was succeeded by two days of Vihangam Yoga.

**IIT-Delhi students, alumni come up with 24X7 emergency app**


Stuck with a flat tyre in the middle of nowhere or finding it difficult to navigate at night? IIT-Delhi has developed a solution for problems like these.

The students and alumni of IIT-Delhi have together launched a 24x7 pan-India app called 'iSAFE Assist' - India's first integrated service providing emergency care and roadside assistance. The project was launched in May Delhi by officials from the Union ministry of road transport and highways and other associations.

It was the accident of a fellow student that drove Amar Srivastava, an alumni, to start an awareness campaign on road safety, which later took the shape of an app that has now become a pan-India Helpline (1800 419 7779). iSAFE Assist provides emergency as well as the services for roadside assistance, especially for women, a member of the IIT-Delhi team explained.

Indian Road Safety Campaign (IRSC), a non-profit organisation led by students and alumni of IIT-Delhi, in collaboration with the Union transport ministry managed the app. It has been organising awareness campaigns in over 1,500 colleges across the country on measures to curb road traffic injuries.

Deepanshu Gupta, member of the initiative and an alumni, said, "We realised that people suffer the most due to non-availability of emergency services. Many even lose their lives because of delayed medical attention."
We then felt the need to build a platform to provide this assistance. He added that iSAFE Assist is the outcome of that effort to assist users, irrespective of the time and the location.

The iSAFE Assist team consists of over 6,200 authorised service providers, covering 28 states and 1,795 cities, which offers services including emergency towing, fuel delivery and flat tyre assistance.

**IIT-Delhi to organise open house for female students on June 23**


The total number of female-only seats across all IITs is 2,415; whereas the total number of women who have qualified in JEE (Advanced) 2019 is 5,356, said Sumeet Agarwal, nodal officer, JEE women helpdesk. He informed that parents do not send their daughters to far off campuses and restrict the choice of course based on gender.

JEE Advanced 2019: The Indian Institute of Technology (IIT), Delhi will organise by an open house for female candidates June 23 (Sunday) for female candidates who have qualified in JEE (Advanced) 2019. The open house is a platform for parents and students to raise queries or issues concerning admissions, exams etc and experts from IITs will answer the same.

During the counselling process, the female candidates will get an opportunity to discuss their choices of branch or institute with faculty, current students, and alumni, and find out more about how life is for women at IIT in general and IIT Delhi in particular. Representatives from IIT Mandi will also be joining the open house.

Meanwhile, IIT Gandhinagar (IITGN) is organising open house at three locations. The first being held at New Delhi on June 22, at the PHD Chamber of Commerce and Industry, Nipccd Campus, Hauz Khas. The second and third open house will be held on June 23 at Mumbai in the Walchand Hirachand Hall, Churchgate, and at the IIT Gandhinagar Campus.

The first session of the open house will start in the morning at 10 am and the second one will start at 2 pm. The duration of each session will be for three hours.
This IIT Delhi startup’s Rs 399 device can convert your AC into an air purifier

June 20, 2019  https://timesofindia.indiatimes.com/gadgets-news/this-iit-delhi-startups-rs-399-device-can-convert-your-ac-into-an-air-purifier/articleshow/69875175.cms

To tackle the high price of air purifiers and offer a more economical solution to counter indoor air pollution, Nasofilters -- an IIT Delhi startup -- has introduced Nanoclean AC filters that enable all ACs (windows and split) to purify air as well. The company claims that its Nanoclean filters can be used with any AC model that is available in India and work with almost similar efficiency as any air purifiers available in the country.

The rise in air pollution across big cities in India have fuelled the demand for air purifiers for indoor usage. However, the price of air purifiers is a major deterrent for many buyers. Also, with limited household budgets, people are mostly inclined to buy ACs given the extremely hot summer that the majority of country experiences. This IIT Delhi startup is focusing on bridging this cost versus necessity gap.

Nasofilter Nanoclean AC filter cost, features and how it works
One pack of Nanoclean AC filter has two filters that need to be used for one AC. Priced at Rs 399, these filters are available on Amazon India’s website as well as the company’s own website. Presently, Amazon is selling a combo pack of three with 2 units each at a discounted price of Rs 899. The filter is also available in several brick and mortar stores as well pharmacy chains across the country.

The working mechanism is simple: Every AC comes with a plastic mesh air filter. The Nanoclean AC filter needs to be stuck on this plastic mesh by using a double-sided tape. The filters are claimed to cause no hindrance to the air circulation of the AC nor require extra power from the AC, which means no additional electricity bill.

As the AC circulates cool air in a closed room, the filter traps PM2.5 and other micro-particle pollutants. The company claims to purify 90% of the air inside the room within an hour. “When the efficiency of our Nanoclean filter is compared to that of an expensive air purifier the difference is marginal. If an air purifier takes 55 minutes to clean the air of the entire room in which a 1.5 ton AC is running, our filter will take 5 minutes more. The end result are the same but then using our filters on existing ACs will help save money, power bill and room space,” said Tushar Vyas, CRO, Nasofilters.

Note that the Nanoclean AC filters are not washable. The filters automatically turn black while filtering air and depending on the pollution level, the users will have to keep a check as to when to change the filter. Note here that filter of most air purifiers available in the market too need to be changed after every three months.

**Brand tie-ups and big export plans**

Nasofilters made headlines last year when they had introduced extremely affordable nasal filters. The company has plans to launch more affordable solutions to tackle air pollution at an individual level. “We are currently exporting our air filters to around 30 countries globally and are witnessing a good demand in the middle-eastern countries,” said Jatin Kewlani, COO, Nasofilters.
Interestingly, traditional AC brands in the Indian market have shown interest in partnering with this startup to include the Nanoclean AC filter in their new AC range. “We are already in talks with several big AC brands and some of them have shown interest in deploying our Nanoclean filters in their new AC lineup,” said Prateek Sharma, CEO, Nasofilters.

**QS ranks IIT Bombay as India’s No. 1 university for 2019-20; IIT Delhi, IISc among top 200**


The Indian Institute of Technology Bombay (IITB), IIT Delhi, Indian Institute of Science (IISc) Bangalore, all the three top institutions from India have retained their position among the top 200 Universities in the world, in recently released QS World University Rankings 2020. IIT Bombay has been once again ranked as the best institution from India, ranked at 152.

IISc has been ranked second in the world for Citations per Faculty, a big leap has been taken by IIT Kharagpur which has jumped 14 places compared to last year, it has been ranked 281. The top ranked IIT Bombay has an overall score of 49.4, and a major reason for its improvement of 10 ranks has been ‘Employer Reputation’, where it has scored 71.2.

As many as 23 institutions have been ranked from India with IITs dominating the list once again. The IIT Bombay has jumped 10 positions this year as it was ranked 162 in 2019. However, the other two top institutions from the country, IIT Delhi and IISc though have retained their position among the top 200 but, have slipped 10 and 14 ranks respectively from their previous year’s ranking. These three are also the only three public institutions accorded the status of Institutions of Eminence (IoE) by the Government of India last year.

There are six more institutions among the top 500 globally, which include five IITs. The IIT Madras has been ranked 271, IIT Kharagpur (281), IIT Kanpur (291), IIT Roorkee (383), University of Delhi (474) and IIT Guwahati (491).

R. Subrahmanyam, Secretary, Higher Education, Ministry of Human Resource Development congratulating the institutions over their achievement expressed his happiness over twitter. He wrote, “IISc is ranked 2nd in the world for Citations per Faculty in the QS global best universities 2020 ranking released today. Congratulations to the team at IISc! One of the fastest rising institutions in the world rankings is IIT Kharagpur which jumped up 14 places compared to last year. Congratulations!”

Globally, the Massachusetts Institute of Technology (MIT) has been ranked top for the eighth straight year. It is followed by Stanford University and Harvard University at second and third position. Our of the top 10 Universities in the world nine are from the United States (5) and United Kingdom (4).

According to QS, This year’s ranking of the world’s top 1,000 universities sees relatively little movement at the very top. Massachusetts Institute of Technology (MIT), Stanford University and
Harvard University are an unchanged top three, while the University of Oxford continues to be the best university in the UK.

Universities are ranked based on six different parameters, Academic Reputation (40%), Employer Reputation (10%), Faculty/Student Ratio (20%), Citations per faculty (20%), International faculty ratio and International student ratio (5% each).

**QS World University Rankings 2020**

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<td>184</td>
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<td>271</td>
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**IIT alumni launch roadside helpline**


The ‘iSAFE’ initiative taken by the IRSC to ease the anxiety that comes with the breakdown of a car in the middle of nowhere.
Students and the alumni of IIT Delhi have come up with India’s first helpline to provide roadside assistance and emergency care services across the country.

Students and the alumni of IIT Delhi have come up with India’s first helpline to provide roadside assistance and emergency care services across the country. Called ‘iSAFE Assist,’ the helpline was recently launched by the Indian Road Safety Campaign (IRSC) at the International Conference on Safer Mobility 2019 in IIT Delhi.

The IRSC is an organisation led by students and alumni of IIT Delhi to eradicate road traffic injuries and it is currently working with people from the UN, WHO, ministry of road transport and highways, various state governments, zonal policies, the Supreme Court, AIIMS, IITs, TRIPP, and other research centres across the world in its endeavour towards Vision Zero.

The ‘iSAFE Assist’ aims at making life simpler and more efficient for road travellers. This is an incredible initiative taken by the IRSC to ease the anxiety that comes with the breakdown of a car in the middle of nowhere.

While working on ways to help people on the road, IRSC realised that many of the major issues faced were due to the non-availability of services and the lack of a universal number to trigger emergency care and roadside assistance. Also, many people lose their lives in road accidents because they do not get the required medical attention on time. Thus, the need for a platform that can provide roadside assistance was felt.

The iSAFE Assist, initiated by the organisation, is dedicated to helping users with such issues, irrespective of time and location.

Launched by the officials from the ministry of road transport and highways and other associations, the helpline team consists of over 6,200 authorised service providers covering 28 states and 1,795 cities.

The service will be provided across all major cities and will be available 24x7 on all 365 days of a year. The services include emergency towing, breakdown services, fuel delivery, and flat tire assistance. The emergency cab and accommodation assistance will be provided if a vehicle breaks down and cannot be repaired on the spot.
The Punjab Pollution Control Board (PPCB) has signed a Memorandum of Understanding (MoU) with the Indian Institute of Technology (IIT), Delhi, to check air pollution in the state.

Under the MoU signed on World Environment Day on June 5, the IIT-Delhi will complete the source apportionment (SA) and emission inventory (EI) studies within six months to identify the sources of air pollution in seven cities of Jalandhar, Dera Baba Nanak, Khanna, Dera Bassi, Mandi Gobindgarh, Patiala and Naya Nangal and suggest means to control such emissions.

PPCB environmental engineer Ashok Kumar Sharma said Amritsar, Jalandhar, Dera Baba Nanak, Ludhiana, Khanna, Dera Bassi, Mandi Gobindgarh, Patiala and Naya Nangal had been declared as the non-attainment cities for not meeting the national ambient air annual standards fixed for dust particles. There are city-specific reasons and sources which are contributing to the air quality of that particular city.

Such studies have already been taken up by the Punjab State Council for Science and Technology at Ludhiana, he added.

Prof SS Marwaha, PPCB chairman, said this scientific study would provide information to take necessary action based on the sources of pollution so as to improve the air quality of these cities, which in turn help the state to take out these places from the list of non-attainment cities.
Prof SS Marwaha, PPCB chairman, said this scientific study would provide information to take necessary action based on the sources of pollution so as to improve the air quality of these cities, which in turn help the state to take out these places from the list of non-attainment cities.

**Asun Trackers and IIT Delhi design a solar tracker for Indian market**


Pitched as a solution between dual-axis and single-axis trackers, the 2-axis solar tracker offers a yield increase comparable with dual-axis trackers at a significantly lower cost.

New Delhi based Asun Trackers, with the help of The Indian Institute of Technology Delhi (IIT Delhi), has developed a two-axis solar tracker that offers yield increase of more than two times over single-axis trackers, which compares well with that of a dual-axis design but at a significantly lower capital cost.

The two-axis tracker showed an exponential yield of 20% over the fixed-tilt, against an incremental yield of just 5% with single-axis tracker, in an analysis of the real-time data collected for the crucial periods (winter solstice and equinox period) from a single location.

Notably, dual-axis trackers have failed to find a foothold in the Indian market because of their heavy structure and high capital cost. The developers want a solar tracker that can give them the performance of a dual-axis tracker at the cost of a single-axis tracker.

The live yield data collected by Asun Trackers team from a location close to Roorkee in northern India showed the negative yield of single-axis tracker over fixed-tilt during winter solstice and equinox periods.
Varun Sachar, managing director, Asun Trackers told pv magazine: “This is a dangerous situation for any developer when the yield is negative or at par in majority months of the year.”

“Ideally, the yield from the tracker should be positive during all seasons of the year. It should not give negative or less yield during winter solstice period or during vernal and autumnal equinoxes in any location on the globe. The tracker should help the developer to improve their internal rate of return (IRR). Higher terrain adaptability, self-lubricating bearings to minimize the maintenance cost, modular design for easy installation, decentralized arrays and compliance to wind safety norms are some other desired characteristics,” he added.

The two-axis tracker developed by Asun Trackers addresses the shortcomings of the single-axis tracker design by providing continuous seasonal movement along the north-south axis, in addition to daily east-west movement, thus tracking the sun optimally at all times.

Further, its modular and de-centralized design optimizes the structure weight, leading to a direct reduction in capital cost while offering a higher availability than single- or dual-axis designs.

With 20 + degrees adaptability, Asun two-axis tracker in principle can be deployed in undulating terrain as well. Use of self-lubricating polymer bearings eliminates the need for lubrication while extending the life of moving parts.

The Asun Trackers team intends to pitch the solution to those developers who are already considering either a single-axis tracker or a fixed-tilt installation with seasonal tilt. “In both these scenarios, we are prepared to present project economics from an IRR perspective backed with site-specific simulated yield analysis,” said Varun Sachar.

**IIT-Delhi to conduct GATE 2020, website goes live**


GATE 2020: Apart from IITs, IISc and PSUs, many foreign institutes including National University of Singapore (NUS), Nanyang Technical University (NTU), RWTH Aachen and TU Munich accept GATE exam score for admissions in postgraduate programmes.
GATE 2020: Applications to begin at gate.iitd.ac.in. (Screen grab from official website)

GATE 2020: The website of the Graduate Aptitude Test in Engineering (GATE) 2020 is live now. As reported by the indianexpress.com first, the GATE 2020 will be conducted by the Indian Institute of Technology (IIT), Delhi. The institute has conducted GATE 1992, 1998, 2004 and 2012 earlier. The institute is going to use the same website it had used earlier, gate.iitd.ac.in. For the upcoming exam, the GATE 2020 website has been activated and will begin accepting applications from September onwards.

The exam will be conducted in the first two weekends of February, as per the schedule. The GATE will be conducted in a computer-based format for 24 subjects. Based on scores attained in GATE, students can apply for admission to master’s level courses at Indian Institutes of Technology (IITs) and Indian Institute of Science (IISc). The exam is also accepted for recruitment at several government-run companies or public sector undertakings (PSUs).

Many foreign institutes including National University of Singapore (NUS), Nanyang Technical University (NTU), RWTH Aachen and TU Munich accepts GATE examination score for admissions in postgraduate programmes. The GATE score will be valid for three years — implying that students can seek admission or employment until three years of result declaration.

Candidates will have to answer 65 questions for a total of 100 marks within three-hours’ time. The exam is divided into two sections. GATE assesses candidates in general aptitude and mathematics apart from their core engineering discipline.

GATE 2019 was conducted by the IIT-Madras. IIT-Roorkee was handling GATE 2017 exam in 23 different disciplines. In 2017, the exam was held in Bangladesh, Ethiopia, Nepal, Singapore, Sri Lanka and the United Arab Emirates.

IIT Delhi startup’s innovation to turn your AC into an air purifier
A startup floated by IIT Delhi alumni in collaboration with professors of the institute on Monday launched a fix for indoor air pollution. Called Nanoclean AC filters, the innovators claimed these would “turn an AC into an air purifier”.

“We spend most of our time indoors. With our technology, ACs can act like air purifiers without affecting power consumption or performance. Nanoclean AC filters can purify a room up to 90% in just 1 hour of its functioning in an AC without putting additional load on it. This is a ‘do it yourself’ product and can easily be placed in a split as well as window AC. This can be purchased from the company’s website nasofilters.com, Amazon and Apollo Pharmacy stores,” said Prateek Sharma, a co-founder.

According to the other co-founders, Tushar Vyas and Jatin Kewlani, it is a specially designed non-woven structure that can retain pollutants (PM2.5) because of its high dust holding capacity.

“AC filters are much smaller than those used in room air purifiers. Also, unlike cartridges used in air purifiers which have many components, Nanoclean AC filters are made of pure polypropylene that can be recycled into other products. These can be melted and reconverted to other products. So, this is an environmentally friendly technology compared to other marketed products,” Vyas said.

“Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of home. High temperature and humidity levels can also increase concentrations of some pollutants,” Kewlani said, adding that by breathing clean healthier air inside, one can reduce the daily average exposure level.

**IIT-Delhi In Search of Foreign Scientists for EV Research Centre CART**

IIT-Delhi is on the lookout for international experts in the field of electric vehicles to boost its Centre for Automotive Research and Tribology (CART).

V Ramgopal Rao, IIT-Delhi director, said they are eyeing to recruit professionals from countries like the US in the newly-formed department along with industry experts. According to him, a team will be sent to the US this month to identify these experts and recruit them to teach here.

CART center at the IIT-Delhi Campus has emerged from ITMMEC, a center established in the 70’s that focused on Industrial Tribology and was nationally and internationally an acclaimed research center in its focus area.

“This center will be looking at the changes required in the future. India will be a major player in the e-vehicle space in the coming years. Not only is it crucial for Delhi, but the entire world. We have one-third core faculty, the next one-third will be adjunct faculty with industry affiliation who can come and share real-world problems and solutions, while the remaining will be from allied departments. We will need 10 new faculty members in the next 10 years,” Rao said.

Prof BK Panigrahi from the department of electrical engineering, who has been appointed as the center’s first head, said sufficient charging infrastructure is one of the top requirements for e-vehicles. “At the center, we will explore if solar charging can be a possibility. We have 3-4 IIT-incubated startups already working on battery tech and charging areas,” he added.

**CART’s focused research areas will include:**

Design, development and analysis of Electric Vehicle Motors and Drives.
Optimal sizing and design of battery packs, power train and chargers for onboard Electric Vehicles.

Automotive health monitoring and development of Battery Management System (BMS).

Design, development, analysis and testing of suitable power converter topology (AC-DC, DC-AC and DC-DC) and controller for various applications like V2G, G2V capability, operation of Electronic Loads and others.

Ancillary services and Demand Side Management (DSM) with electric vehicles.

Development of smart and secure infrastructure for charging station, battery health monitoring etc.

Development of Tribo-material, Tribo-dynamics, studies of Bulk Material Handling, NVH and Condition monitoring, Reliability and Maintenance, Design and performance of tribological elements.

Other departments and centers of IIT Delhi, which will be playing a key role in the interdisciplinary research along with CART include Electrical Engineering, Center for Energy Studies, Mechanical Engineering, Chemical Engineering and Computer Science & Engineering.

IIT-Delhi alumni set up library in Pahari village

Members of the association said the aim is to expand rural children’s horizons of thinking and improve their knowledge base.

The library will remain open twenty-four hours a day and is equipped with five computers, free internet connection and books to help students prepare for competitive exams.

The alumni association of the Indian Institute of Technology, Delhi (IIT-D), set up a modern library at the Government High School in Pahari village on Sunday.

Members of the association said the aim is to expand rural children’s horizons of thinking and improve their knowledge base.
The library will remain open twenty-four hours a day and is equipped with five computers, free internet connection and books to help students prepare for competitive exams. “We have included books generally used in the preparation for competitive exams of IITs, IIMs and civil services,” Vinod Yadav, member of the association.

The library was inaugurated by the director of IIT-D, Professor V Ramgopal Rao. The library can be accessed by students of classes six and above. “Children in rural areas are not able to think beyond joining the police force or becoming a teacher. Through our effort, we want to bring a change in the mindset,” said Yadav.

The library is equipped with 16 CCTV cameras and will be manned by a police constable, to ensure the safety and security of kids.

**IIT-D sets up centre for research on e-vehicles**


Centre to focus on design, development and analysis of the vehicle's motors

Setting its eyes on being a global pioneer in the field of research and services in electric vehicles and energy storage and tribology, the Indian Institute of Technology, Delhi on Friday inaugurated a Centre for Automotive Research and Tribology (CART).

IIT-D director V. Ramgopal Rao said the centre will play an important role as electric vehicles are going to become a mainstream mode of transport not just in India but worldwide in the next five-seven years.

“IIT-Delhi is in the process of building a world-class centre in this important area, which will not only help the country’s transition to more environmentally-friendly transport options but also will play a role at the global level by contributing to these technologies,” Mr. Rao said.

The institute said CART envisages strong networking and collaboration among various industries, research labs and universities in India and abroad to carry out research in the area of automotive research and tribology along with offering postgraduate programmes.

“A unique mandate given to CART at the time of its establishment is that one third of its faculty would be adjunct faculty with current industry affiliation. This is likely to give a different flavour to the PG programmes that would be offered by the centre,” the institute said.

CART’s research areas include design, development and analysis of electric vehicle motors and drives, optimal sizing and design of battery packs, power train and chargers for on-board electric vehicles and development of smart and secure infrastructure for charging station and battery health monitoring among other fields.

**New IIT-Delhi centre to focus on electric energy usage**

June 1, 2019  [https://indianexpress.com/article/education/new-iit-delhi-centre-to-focus-on-electric-energy-usage-5759523/](https://indianexpress.com/article/education/new-iit-delhi-centre-to-focus-on-electric-energy-usage-5759523/)
“IIT-D is building a world class centre in a crucial area which will help the country transition to more environment-friendly transport options and play a global role by contributing to such technologies,” said IIT-D director V Ramgopal Rao.

The Indian Institute of Technology, Delhi, Friday inaugurated the Centre for Automotive Research and Tribology.

The Indian Institute of Technology, Delhi, Friday inaugurated the Centre for Automotive Research and Tribology (CART), which will focus on “teaching, research, and technological service in the area of electric vehicles, energy storage & monitoring, automotive health monitoring, calibration & diagnostics and tribology”.

“IIT-D is building a world class centre in a crucial area which will help the country transition to more environment-friendly transport options and play a global role by contributing to such technologies,” said IIT-D director V Ramgopal Rao.

**IIT Delhi inaugurates electric vehicle research centre**

**May 31, 2019**  [https://yourstory.com/2019/05/iit-delhi-electric-vehicle-research-centre](https://yourstory.com/2019/05/iit-delhi-electric-vehicle-research-centre)

*The Centre for Automotive Research and Tribology (CART) will carry out cutting edge research, along with postgraduate programmes.*

IIT Delhi, on Friday, inaugurated the Centre for Automotive Research and Tribology (CART), with a vision to become an internationally recognised centre in **teaching, research, and technological service** in the areas of Electric Vehicles, Energy Storage and Monitoring, Automotive Health Monitoring, Calibration and Diagnostics, and Tribology.

*CART envisages strong networking and collaboration among various industries, research labs, and universities in India and abroad to carry out cutting edge work in automotive research and tribology, along with offering postgraduate programmes.*
CART has emerged from ITMMEC, a centre established in the 70’s that focussed on industrial tribology, and was an nationally and internationally acclaimed research centre in its focus area.

A unique mandate given to CART at the time of its establishment was that one-third of its faculty would be adjunct with current industry affiliation. This is likely to give a very different flavour to the post-graduate programmes that would be offered by the centre.

CART’s focussed research areas will include design, development, and analysis of electric vehicle motors and drives, optimal sizing and design of battery packs, powertrain and chargers for electric vehicles, automotive health monitoring, and development of Battery Management System (BMS).

Prof. V. Ramgopal Rao, Director of IIT Delhi, said,

“Electric vehicles are going to become a mainstream mode of transport, not just in India, but worldwide, in the next five to seven years. IIT Delhi is in the process of building a world class centre in this very important area, which will not only help the country transition to more environmentally friendly transport options, but will also play a role at the global level by contributing to these technologies.”

Prof. B.K. Panigrahi from the Department of Electrical Engineering, who has been appointed as the first Head of CART, said,

“The prime focus of CART is to carry out interdisciplinary research in EVs and associated areas. We will strive hard to have collaborative research among academia and industry for the benefit of the present and future societal needs.”

Other departments and centres of IIT Delhi, which will be playing a key role in the interdisciplinary research along with CART include Electrical Engineering, Centre for Energy Studies, Mechanical Engineering, Chemical Engineering, and Computer Science and Engineering.
IIT-Delhi studying impact of summer heat on stress levels

‘Project to help formulate efficient heat management plan’

To study the impact that summer heat has on the body in inducing stress, The Centre for Atmospheric Sciences (CAS) at IIT-Delhi is conducting a study to develop India-specific heat stress tolerance thresholds, the institute said on Wednesday.

Explaining the study, the institute said that heat stress is the stress felt by the body when exposed to heat in the summer and the project will help in formulating a better and efficient heat management plan across the country as heat stress is expected to rise due to global warming.

The study is part of a project, Heat Stress Index for India: projection for near future, undertaken by IIT-Delhi in partnership with five other institutes in the country.

The study will include a population-based survey through which the Centre will collect data about the people’s perception of heat exposure along with direct measurement of stress condition and thermal imaging of human physiology under heat stress.

“The survey is seeking people’s response to questions about the time of the day they felt maximum discomfort, nature of the day, whether it was dry and hot or humid, what kind of activity they undertook on a particular day,” the institute also said.

Elaborating on the study, Sagnik Dey from CAS, IIT-Delhi, the project’s principal investigator, said that heat stress condition arises when the body starts feeling stressed in balancing the body temperature and under searing heat, the human body struggles and can suffer heat stroke.

IIT-D collaborates with leading Taiwan University

Both institutions seek to work together and carry out joint research & academic activities
Indian Institute of Technology Delhi (IIT-D) and National Chiao Tung University (NCTU), Taiwan have signed a Memorandum of Understanding (MoU) to establish and offer a Joint Doctoral Degree Programme (JDP).

The MoU has been jointly signed by Prof V. Ramgopal Rao, Director, IIT Delhi and Prof. Mau-Chung Frank Chang, President, National Chiao Tung University, Taiwan.

Under the MoU, an academic and student exchange will be developed through the JDP whereby students who successfully completes all the requirements of the programme will be awarded a joint degree for the thesis by both institutions.

Both institutions also seek to work together and carry out joint research & academic activities in a mutually beneficial way and to look for synergies across the doctoral programs of each other.

**IIT-D student dedicated towards raising menstrual hygiene awareness**

**May 28, 2019**  

For each pledge, Agarwal and his team are donating Rs 10 to the NGOs for cleaning of toilet seats to prevent spread of UTIs.
IIT-Delhi student Archit Agarwal has already developed a period pain relief roll, Sanfe Stand and Pee Product in March of this year.

IIT-Delhi student Archit Agarwal seems to be influenced by Bollywood movie Padman. On the Menstrual Hygiene Day, which falls on Tuesday, Agarwal will reach out to more women through an online campaign that ‘take a stand not to sit on dirty public toilet seats.’

Women can log on to ‘www.standupforyourself.in’ and take a pledge and share their pledge on social media to avoid the spread of Urinary Tract Infections (UTIs) and be safe from public washrooms. At least 10,000 boxes of the stand and related products have been sold so far, the student claimed.

In March, Agarwal developed a period pain relief roll, Sanfe Stand and Pee Product, which gives women — suffering from period cramp — the freedom to urinate without coming in contact of dirty public toilet seats.

The innovator thinks despite availability of such products, there is a lack of awareness among women. “I felt the responsibility to create awareness as well. My campaign tells women that if you ever had to hold up urine in the fear of going to dirty public rest room, spread awareness by signing the pledge and sharing it on social media,” Agarwal, who is in his fourth year of IIT-Delhi’s textile technology department, told The Morning Standard.

For each pledge, Agarwal and his team are donating Rs 10 to the NGOs for cleaning of toilet seats to prevent spread of UTIs. “Fifty per cent women in India get UTIs while 71 per cent public washrooms are not cleaned on a regular basis. I want them to stand up against the infection they contract at dirty public toilets. I am going to work and invent products for women empowerment all my life.”

**More in the pipeline**

The 21–year-old student from Delhi is also working on more products, essentially for helping women during menstruation, which will be launched in the coming months.
After DoT intervention, Ericsson's IIT Delhi lab to soon begin work on new 5G use cases

IIT-Delhi had previously sought clarity from Ericsson on the comprehensive use of the test bed, along with technology upgradation timeline and the vendor’s claimed capabilities.

Swedish telecom gear maker Ericsson’s 5G innovation lab in New Delhi is set to shortly begin work on developing new 5G use cases following the telecom department’s intervention to iron out differences between the vendor and the IIT-Delhi.

Launched with much fanfare by telecom minister Manoj Sinha and Ericsson president and CEO Börje Ekholm last year, Ericsson’s 5G innovation lab recently stopped its 5G-related work around technology testing and use cases after its radiating spectrum license expired.

“DoT has taken increased interest over the last few days that has helped us fast-track the activities of the centre of excellence,” Brejesh Lall, coordinator Ericsson 5G CoE IIT Delhi told ET.

IIT-Delhi had previously sought clarity from Ericsson on the comprehensive use of the test bed, along with technology upgradation timeline and the vendor’s claimed capabilities.

“DoT has been in constant touch with both Ericsson and IIT-D to expand the scope of the 5G testbed and to discuss the way forward. The department wants more industry partners to be a part of this testbed to give a push to the testing of technology and the use cases,” a government official told ET.

In a joint statement to ET, IIT Delhi and Ericsson said they are collaborating to fulfil the objectives of the 5G Centre of Excellence.

“We are awaiting the availability of the radiating spectrum to develop 5G use cases. During the
interim, we are crystallizing some select use cases together,” the statement said.

Developing 5G use cases relevant to India is at the heart of a successful adoption of the next generation technology in the South Asian nation. However, 5G trials, which will see various stakeholders develop and test relevant use cases, has been a non-starter so far, with trial airwaves still to be allotted.

The telecom industry, including operators and equipment makers, want such spectrum for at least a year, as against current DoT rules which stipulate that such bandwidth be allocated only for three months.

The 5G panel though on drawing up the parameters for such trials has recently submitted a report, suggesting that airwaves be allotted for a minimum of a year, extendable for another year.

The Digital Communications Commission, the highest decision making body of the telecom department, is set to shortly meet and consider the proposals.