Researchers from across the country can use IIT Delhi’s Central Research Facilities in the main campus at New Delhi as well as the one in the Sonipat campus.

Indian Institute of Technology (IIT) Delhi on Tuesday announced it has developed a platform where anyone from across the country can book an instrument of its Central Research Facility (CRF) for research work.

Through this system, researchers from across the country can use IIT Delhi’s Central Research Facilities in the main campus at New Delhi as well as the one in the Sonipat campus.

“Rs 500 crore have been either spent or committed by IIT Delhi to establish various high-end facilities at the CRF. The main sources of funding include the IoE grant, special MoE grant, IIT Delhi grant through Industrial Research and Development, DST’s Sophisticated Analytical and Technical Help Institutes (SATHI) project, HEFA loan etc,” IIT Delhi Director V Ramgopal Rao said on Tuesday, while announcing the platform.

“Today, we have over 50 different facilities, owned and/or adopted by the CRF, which are already available to the users. This number is likely to get doubled in the next two years....” Prof Rao added.

IIT Delhi’s Central Research Facility was established in 2011 in an effort to boost the research ecosystem at the institute.

“Since 2017, the CRF facilities have been significantly augmented with several state-of-the-art high-end experimental facilities. These have so far been catering to the needs of researchers from various departments and disciplines across the Institute,” the institute said.

In 2017 a new CRF building was constructed at IIT Delhi’s extension campus in Sonipat. Another new building with a much larger area is also under construction in Sonipat, which will be completed by March 2022, the institute said.

“Some of the most modern equipment like Physical Property Measurement System, X-Ray Photoemission Spectrometer, High-Resolution Transmission Electron Microscope, Molecular Beam Epitaxy, Universal Testing Machine, Electron Paramagnetic Resonance etc. are now housed in Sonipat and many more have been planned for the upcoming second building,” said Prof Pankaj Srivastava, Head, Central Research Facility, IIT Delhi.
JNU Vice-Chancellor M Jagadesh Kumar in race for IIT Delhi director’s post


After his five-year term as JNU VC ended on January 26 this year, Jagadesh Kumar, who was a professor of electrical engineering at IIT Delhi before being made JNU VC, was allowed by the Education Ministry to continue till his successor is picked.

JNU Vice-Chancellor M Jagadesh Kumar is among the frontrunners for the post of the next IIT Delhi director, for which six names have been shortlisted by a search-cum-selection committee which met on Monday.

It is learnt that the other names include IIT Bombay’s Professor Rangan Banerjee and IIT Delhi’s Professor Santosh Kapuria.

A separate meeting to pick the directors of IIT Indore and IIT Mandi was also held during the day. Education Minister Dharmendra Pradhan was among those present in the meetings.

After his five-year term as JNU VC ended on January 26 this year, Jagadesh Kumar, who was a professor of electrical engineering at IIT Delhi before being made JNU VC, was allowed by the Education Ministry to continue till his successor is picked.

Jagadesh Kumar did not respond to requests for a comment on his name being shortlisted by the panel for the IIT Delhi post.

While he is widely regarded for his knowledge in electronic engineering and associated areas, Kumar’s tenure in JNU has been marked by constant campus unrest over issues ranging from the 2016 sedition controversy to the disappearance of Najeeb Ahmed, an MSc student.

The Ministry of Education had sought applications for the post of IIT Delhi director, which has a tenure of five years. Professor V Ramgopal Rao, who is currently Director of IIT Delhi, had taken charge in April 2016.

Apart from names received through applications, the search-cum-selection panel also considered names nominated by eminent persons.
IIT Bombay’s Banerjee holds a PhD in mechanical engineering from the same institute. He is a Forbes Marshall Chair Professor in the Department of Energy Science and Engineering. Kanuria is a Professor at the Department of Applied Mechanics at IIT Delhi. He was Director of CSIR-CLRI from April 2019 to November 2019.

In the case of IIT Indore and IIT Mandi, the Ministry, under former Education Minister Ramesh Pokhriyal, had carried out one round of selection before scrapping the process and starting afresh with a call for applications before December 31, 2020.

While Professor Neelesh Kumar Jain has been officiating as Director of IIT Indore since the term of its full-time director ended in December last year, IIT Roorkee Director Ajay Kumar Chaturvedi has been serving as the acting in-charge of IIT Mandi.

The government has been slow in appointing the heads of several universities and IITs. The posts of chairpersons of many IITs, including IIT Roorkee, which had a full-time chairperson three years ago, also continue to be vacant. On September 22, Delhi University got a full-time VC in Professor Yogesh Singh, nearly a year after the suspension of Yogesh Tyagi from the post by President Ram Nath Kovind on grounds of “dereliction of duty”.

**IIT-D launches centre on quantum technologies**


**Research across various domains will come under one umbrella**

The Indian Institute of Technology-Delhi on Sunday said it has established a Centre of Excellence (CoE) on quantum technologies to bring research activities occurring in various domains of Quantum Technologies at IIT-Delhi under a single umbrella.

The CoE will bring synergy and coherence in the activities being carried out at the institute and will support the Principal Investigators to pitch in for more significant projects from the DST and other funding agencies, the institute said. It added that the field of quantum technology holds immense promise for significant breakthroughs in the coming years and that the Centre has also announced a commitment worth ₹8,000 crores in the area of Quantum Technology.

Rajendra Singh, Head, School of Interdisciplinary Research (SiRe), IIT Delhi said in the past 100 years or so, Quantum Physics has impacted society in an unprecedented way and the second quantum revolution is now round the corner.

“The CoE on Quantum Technologies at IIT-D will focus on select thrust areas,” Mr. Singh said.

**Faculty play key role in nurturing innovation: IIT Delhi Dir**

V Ramgopal Rao delivered a masterclass at a virtual event jointly organised by MAHE, NITK and CII

Faculty members must play key role in driving entrepreneurship by involving students and professionals to help India find solutions to the problems, according to V Ramgopal Rao, Director of IIT Delhi.

Delivering a masterclass on ‘Commercialisation of research and technology entrepreneurship’, which was jointly organised by Manipal Academy of Higher Education (MAHE), National Institute of Technology Karnataka (NITK) and the Confederation of Indian Industry (CII) Mangaluru on a virtual platform, he said the Government is providing funding for the research works to find solutions to the problems. He said that 5Ts — IT (information technology), BT (biotechnology) NT (nanotechnology), CT (cognitive technology) and QT (quantum technology) — are impacting every aspect of people’s life.

**Diversify focus**

While the country is leading in the areas of IT and BT, there is a need to focus on NT, CT, and QT also. He said there is a need to focus on the translation of knowledge to wealth in the case of NT. Though India has quality in the area of CT, it does not have enough base. Referring to QT, he said the country needs to capitalise its strong foundation of basic research in this sector. Cryptography and quantum communication are the areas where QT is going to play a major role. He said future computational requirements are met by quantum computers.

Ramgopal Rao said the country needs to ramp up its activities in CT and QT and build scale. The technologies developed for various problems need to mature in the academic environment, he added. Lt Gen MD Venkatesh, Vice-Chancellor of MAHE, said the faculty-driven start-up culture is gaining importance in recent time due to National Innovation and Start-up Policy and government grants to start-ups. In this context, the masterclass would help the faculty members and research scholars from Manipal and other institutes to explore the possibilities of commercialising their research work.

K Umamaheshwar Rao, Director of NITK, said educators should not limit their research work to partial fulfilment of the degrees. They should transform research work into successful actions, he said. Jeevan Saldanha, Chairman of CII-Mangaluru, said that in the current age of rapid disruptions...
translational research is relevant to industries. He stressed the need for industries to constantly engage with academia.

**IIT Delhi researchers team develop modified fabric which adsorbs air pollutants**


A team of researchers in Indian Institute of Technology-Delhi (IIT-D) have made a new pollution-free cotton fabric that can absorb harmful pollutants present in the air. The discovery has been named as ZIF-8 and ZIF-67, it is claimed to be able to absorb harmful air pollutants like benzene, hydrogen chloride that can cause cancer and birth defects. One of these clothes is white in colour and the other one is violet.

Compared to ordinary cotton fabric, it has the capacity to absorb 400-600% more volatile organic compounds like carbon oxides, sulphur oxides, etc. These toxic air pollutants can cause asthma or eye, throat irritations if a person is exposed to it for longer period of time.

Considering the pollution emission that keeps increasing with time, the team led by Professor Ashwini K. Agrawal, Professor Manjeet Jassal and Professor Saswata Bhattacharya of IIT Delhi, has developed such an incredible product that might come as a boon for our future generation.

These durable cotton fabric are modified with Zeolite Imidazolate Framework (ZIF), which is a metal-organic frameworks (MOFs). It is accounted to be able to withstand harsh washing conditions and is suitable for under the weather conditions in India.

Professor Agrawal mentioned in the press release, “In this study, we have shown the functionalisation of cotton fabric by ZIF MOFs (ZIF-8 and ZIF-67) using a rapid, facile, eco-friendly, and scalable approach. The ZIF functionalised textiles possess a huge potential for applications as protective garments and in controlling indoor air pollution.”

He further added to his statement that these cotton fabrics can be used in homes, offices, cars, theatres, at airplanes, and other transport vehicles for controlling the gaseous pollutants, which are difficult to filter out.

This invention will be beneficial in controlling indoor air pollution if textile industries shows potential in making protective garments out of it.

The team also said that the fabric can be reused without any decrease in their adsorption capacity for several cycles, and could be easily regenerated by heating the fabrics at 120 degrees Celsius.

**IIT Delhi Offers Free Online Lecture Videos on Basics of Optics and Photonics**

IIT Delhi has invited students from school, under graduation and post-graduation to take free online lecture videos related to optics and photonics.

IIT Delhi, through its newly formed Optics and Photonics Center (OPC) named “Optics Learning Centre”, has launched an outreach initiative as part of which school, under graduation and post-graduation students, may take free online lecture videos related to optics and photonics. A collection of online lecture videos from IITPAL, NPTEL and other relevant sites are being offered to students who wish to learn the basics of optics right from basics to the advanced level.

The website also mentions that other initiatives such as to showcasing the most recent publications and developments in optics from IIT Delhi and other research groups, a platform for all interested participants to interact with experts from optics and photonics field, and a place for startups and innovators to showcase their optics and photonics products and devices will also be launched soon.

**IIT Delhi Free Online Lecture Videos for School Students**

Some of the topics being offered to school students as part of the initiative are as follows:

- Light.
- Introduction to waves.
- Ray optics.
- Wave optics.

**IIT Delhi Free Online Lecture Videos for Undergraduate Students**

Some of the topics being offered to undergraduate students as part of the initiative are as follows:

- Optics and laser.
- Non-linear and fiber optics.
- Optical sensors.
- Integrated photonics and ultrafast lasers.
- Biophotonics and biomedical imaging.
- Experimental physics: Basic optics lab.
- Modern optics: Maxwell equation and EM wave propagation.
- Optical engineering: Optical design and simulations.
- Introduction to photonics.
- Introduction to laser.
- Fundamentals of optical and scanning electron microscopy.
Optical spectroscopy and microscopy.

Introduction to non-linear optics and its applications.

Fiber optics.

Physics of linear and nonlinear optical waveguides.

Fiber optic communication technology.

**IIT Delhi sets up chair in cyber security named after former education secretary**


IIT-D alumnus Suresh M Shivdasani has endowed the 'Shri G K Chandiramani Chair for Cyber Security' in honour of his uncle.

Indian Institute of Technology (IIT) Delhi alumnus Suresh M Shivdasani has endowed the ‘Shri G K Chandiramani Chair for Cyber Security’ in honour of his uncle which will “promote excellence and leadership in teaching and research & development in the field of cyber security”.

G K Chandiramani was a secretary in the ministry of education. “As joint secretary at the ministry in 1961, he led the team that established the collaboration between IIT Kanpur and several leading US universities, including MIT. He was also personally involved with the negotiations and signed the agreements for the collaboration of IIT Bombay with Russia, as well as IIT Madras with Germany. He was associated with the IIT Council for over three decades and was a founding member of the board of IIM Ahmedabad,” IIT-D said in a statement.

“After retirement from the ministry, he was one of the longest-serving chairman of the Council of the Indian Institute of Sciences, Bangalore from 1973-1986 and was succeeded by Dr Raja Ramanna, the well-known Indian physicist. He was also the chairman, board of governors, IIT Delhi from 1982 to 1985,” it said.
Shivdasani is the managing director and CEO of Sohar International Urea and Chemical Industries (SIUCI), which when constructed, was the largest private-sector greenfield fertiliser project in the world. He was also a member of the board of directors of the National Bank of Oman for nine years, and since 2012 is a member of the advisory board of the Tata Opportunities Fund, Singapore.

On his purpose for establishing the Chair, he said, “Our society today is more reliant on technology and connectivity than ever before and consequently the risks of data breaches and cyber-attacks are increasing exponentially. However, there is a severe shortage of cyber security technologists in India and globally. Hence the focus of the Chair on cyber security.”

IIT Delhi established a Centre of Excellence in Cyber Systems and Information Assurance (CoE-CSIA) in 2014. The centre aims to train professionals in India and the region through degree, non-degree, and public education programs, and to collaborate with industry, government, and academia on both the theory and practice of information assurance and cyber security.

Prof Naveen Garg, dean, alumni affairs, IIT Delhi, welcomed the Chair and said, “We are excited that Mr Shivdasani has endowed this Chair in cyber security at IIT Delhi. The Centre of Excellence in Cyber Systems and Information Assurance at IIT Delhi has started an MTech programme in cyber security this year. The Chair will further propel research in this key area and benefit the institute and the country.”

**IIT-D sets up lab to measure electrical performance of devices and circuits**


₹17 crore invested in project to improve infrastructure

The Indian Institute of Technology (IIT) Delhi on Monday said it had set up a laboratory that will enable the measurement of electrical performance of devices and circuits that are used in equipment like mobile phones, space satellites, and quantum computers.

The lab it said will help researchers of IIT Delhi as well as researchers from other institutions who are conducting research in the area of integrated electronic circuits and devices.

The Advanced Electrical Characterization Laboratory was set up with an investment cost of ₹17 crore.

IIT Delhi Director V. Ramgopal Rao said the institution has significantly enhanced its research infrastructure in the last few years in the areas of Nanofabrication, materials characterisation, testing and prototype manufacturing.

He added that this electrical characterisation facility is a welcome addition to the existing facilities.

The laboratory in-charge, Abhisek Dixit, from the Electrical Engineering Department, IIT Delhi said the institute is now equipped to perform various types of electrical measurements on a wide variety of packaged and on-wafer devices in a broad range of temperatures from 4.2K to +300 deg. C with the highest levels of precision possible anywhere in the world.
IIT-Delhi researchers develop device to generate electricity from raindrops, ocean waves


The device has been developed using “Triboelectric Effect” and “Electrostatic Induction”. It is called “Liquid-solid Interface Triboelectric Nanogenerator”.

The IIT Delhi research team also explored the underlying mechanism of the electricity generated when the water drop comes in contact with the solid surface and it is shown that saline water drops generate more electricity. (File Photo)

Indian Institute of Technology (IIT)-Delhi researchers have designed a device that can generate electricity from water drops, raindrops, water streams, and ocean waves which can be stored in batteries for further use.

The device has been developed using “Triboelectric Effect” and “Electrostatic Induction”. It is called “Liquid-solid Interface Triboelectric Nanogenerator”.

“The device has a very simple structure consisting of specially designed nanocomposite polymers and contact electrodes and can generate a few Milliwatt (mW) power, which is sufficient to power small electronic devices like watches, digital thermometers, radio frequency transmitters, healthcare sensors, pedometers. When compared to conventional methods, such as the use of the piezoelectric effect, the present device can generate significantly more electricity,” IIT-D said in a statement.

Professor Neeraj Khare from the Department of Physics and his group at the Nanoscale Research Facility (NRF) have been working on “harvesting electrical energy from to be wasted mechanical vibrations using the triboelectric effect” and have filed an Indian patent on “the various aspects of the use of ferroelectric polymer for harvesting mechanical energy including the present device”.

“Triboelectric effect is a known phenomenon for a long time, and in this effect, charges are generated when two surfaces are in friction. The best example we see are sparkling lights when we move the blankets/jackets. It is only lately that it has been extensively investigated as a practical alternative for energy harvesting,” said Khare.
Khare and Dr Huidrom Hemojit Singh have demonstrated that water drop rolling over the surface of the device generates electricity in a research paper published in “Advanced Materials Interfaces” (Vol.8, Issue No.12, 2170068 (2021)).

“The researchers successfully incorporated nanostructures into a polymer matrix, which enhanced the film’s surface roughness, polarizability, and hydrophobicity, among other characteristics, as a result. Due to the enhancement in the above property, the flexible film is used to fabricate the device where raindrops have just to slide down and can generate electricity. The artificially created rough surface allows to generate more charge and superhydrophobic properties of the solid surface help to roll the water drop without getting stick to the surface,” IIT-D said in a statement.

“The IIT Delhi research team also explored the underlying mechanism of the electricity generated when the water drop comes in contact with the solid surface and it is shown that saline water drops generate more electricity. The researchers also showed that the device can even work with ocean waves, where the water is saline, and through the ocean waves contacting the surface of nanocomposite polymer film, electricity is generated,” it said.

**IIT-Delhi to offer BDesign from 2022-23 session, admission through UCEED**


Students for the B.Design programme will be admitted based on the Undergraduate Common Entrance Examination for Design ranks. The registration for the UCEED examination has begun (www.uceed.iitb.ac.in/2022/).

The IIT-Delhi will offer ‘Bachelor of Design (B.Des)’ from the 2022-23 session. The programme will be offered by the Institute’s Department of Design, which came into existence in 2017. The four-year programme will have 20 seats to start with and will be open to students of all specialisations (science, arts, commerce etc).
Students for the B Design programme will be admitted based on the Undergraduate Common Entrance Examination for Design ranks. The registration for the UCEED examination has begun (www.uceed.iitb.ac.in/2022/).

Prof V Ramgopal Rao, Director, IIT Delhi said, “We are delighted about starting of this new Bachelor’s programme in design as this is the first time IIT Delhi would be admitting undergraduate students (B.Des) from other than Physics, Chemistry and Mathematics. We expect that the students who graduate with a B Design degree from IIT Delhi would take up leadership positions in industry, academia, government, consulting, and entrepreneurship over a period of time.”

Prof Rao added, “Bachelor of Design (B.Des.) programme and other programmes in design, which are in pipeline at IIT Delhi will bridge the huge demand-supply gap of quality design professionals, which our country needs to excel as a creative economy.”

**NIRF Rankings 2021 Engineering: IIT Madras retains top spot for 6th year in a row - complete list here**


NIRF Rankings 2021 Engineering List of top colleges shows a small shift at the top. While IIT Delhi and IIT Bombay are the top colleges in international rankings, IIT Madras has retained top spot in domestic.

**KEY HIGHLIGHTS**

- NIRF Ranking 2021 Engineering has been released today by Education Minister Dharmendra Pradhan.
- Since the inception of NIRF India Rankings, IIT Madras has retained the top spot in Engineering category, while others have gained and lost ranking.
- Check out the Top 10 Engineering Colleges of India as per NIRF Rankings.
NIRF Ranking 2021 Engineering has been released today by Education Minister Dharmendra Pradhan.

Since the inception of NIRF India Rankings, IIT Madras has retained the top spot in Engineering category, while others have gained and lost ranking.

NIRF Rankings 2021 for Top Engineering Colleges of India has been released today – September 9, 2021. Education Minister Dharmendra Pradhan would be releasing the sixth edition of NIRF India Rankings. As the leading institutes of the country, all eyes are on Indian Institutes of Technology or IITs – especially within the NIRF Rankings 2021 Engineering Category. With IIT Madras as a clear leader over past 5 years in a row, all eyes are now on IIT Delhi and Bombay.

NIRF Rankings were launched by Ministry of Education in 2015. Since the first lists released in 2016, IIT Madras has been the undisputed top institute in the Engineering Category. The second and the third spots have shifted between IIT Bombay and IIT Delhi but the institutes have not been able to breach the top spot. Would this be the year or would IIT Madras maintain the slot? NIRF India

### Rankings 2021: Engineering (Over the years)

<table>
<thead>
<tr>
<th>Institute</th>
<th>NIRF 2021</th>
<th>Rank</th>
<th>NIRF 2019</th>
<th>Rank</th>
<th>NIRF 2018</th>
<th>Rank</th>
<th>NIRF 2017</th>
<th>Rank</th>
<th>NIRF 2016</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIT Madras</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IIT Delhi</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIT Bombay</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIT Kanpur</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIT Kharagpur</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIT Roorkee</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Interestingly, IIT Delhi has made strides in the domestic ranking and surpassed IIT Bombay after the initial low rank of 5. IIT Hyderabad too made a place in the Top 10 last year while NIT Trichy or Tiruchirappalli is the only NIT in the Top 10 ranks from 2020.

In previous years, Anna University and Institute of Chemical Technology, Mumbai were the only other university to have made it in the Top 10 categories, which have been dominated by the IITs. Also, IIT Roorkee, much like IIT Madras has maintained its rank (albeit at 6) over the past 5 years. NIRF 2021 Rankings would be released at 12 noon today.

### IIT-Delhi to launch outreach programme for high school students from September 11


IIT-Delhi has launched an academic outreach initiative, ‘Sci-Tech Spins’, for high school students.

Can you do mathematics without formulae? How big is the smallest entity of the universe? These and many more questions that arise in young minds will now be addressed by senior professors, scientist and researchers from Indian Institute of Technology-Delhi.

IIT-Delhi has launched an academic outreach initiative, ‘Sci-Tech Spins’, for high school students. Professors will be engaged in cutting edge research in science and technology and will deliver lectures and conduct laboratory demonstrations every month from September in a virtual mode.

The first lecture titled ‘Design Thinking - A Powerful Tool for Problem Solving’, accompanied by lab demo, will be delivered by Professor PV Madhusudan Rao, HoD of Design, on Saturday. Professor Pritha Chandra, Associate Dean of Academic Outreach & New Initiatives, said, “We regularly receive multiple requests from schools for campus tours, workshops and mentorship programmes. IIT- Delhi wanted to take a more proactive stance on academic outreach for schools which is the idea behind the initiative.”

Launching the initiative, Professor V. Ramgopal Rao, Director, IIT-Delhi, said, “We want to provide education to students who come to IIT-Delhi and also want to connect with thousand others who are outside the IIT system to inspire and help them in all possible ways.”

The goal of the initiative is to connect with every school across the country. The PhD students will also participate in the weekend lectures and share their experience with the schoolchildren. Students of class IX and above can be nominated for the initiative by their respective schools.
IIT Delhi, RDSO Researchers Develop Easy To Use Train Simulation Software ‘Runtrain#’ To Help in Train Timetabling Methods


Researchers from IIT Delhi and Research Designs and Standards Organisation (RDSO), a unit of Ministry of Railways, have collaborated and developed a train simulation software named ‘Runtrain#’ that outputs results, which can be incorporated into timetabling methods. Runtrain# simulation software is an update of ‘Runtrain’ software being used by the Indian Railways since 1990s.

The simulation software Runtrain# has been developed under the guidance of Prof Subir Kumar Saha, Principal Investigator, and Prof Satinder Paul Singh, Mechanical Engineering Department, IIT Delhi. The other team members include Bhanu Vardhan Chennoju, Shashwat Jain, Vishnu Sukumar, and Rajeevlochana G Chittawadigi.

Runtrain# was developed to analyze a wide range of train running parameters (TRP) such as running time, fuel consumption, coupler force, and so on. These parameters help the railway personnel in deciding how many of locomotives, stock, etc. are to be used and scheduling. The software’s ease of use and visual graphics representation of output make it useful for analyzing frequently occurring planning issues such as the impact of temporary changes in speed restrictions, halts, train configuration, and so on.

The software architecture was designed to systematically segregate pre-processor, processor, and post-processor using new programming techniques such as Object-oriented programming. The software employs a variety of data representation modes, such as data-grid and graphical visualization to improve the insights of post-processed data. Characteristics of any train configuration can be studied using a combination of locomotives (Diesel-Electric/Electric) and rolling stock (Passenger/Freight) with ease in almost no time.

Speaking of the Runtrain# simulation software, Prof SK Saha, Mechanical Engineering Dept., IIT Delhi said, “There is a paradigm shift in railway operations. Over recent years, demand for passenger and freight transport has increased significantly. As a result, Indian Railways is consistently working to increase operating speeds of trains as well as advanced traffic management to meet societal demands. In this time, a simulation tool like Runtrain# will be a valuable tool to efficiently plan and schedule trains. Indigenous software for railway applications will also provide complete customization and flexibility to users. The collaboration has provided valuable insight to our students as well as engineers at RDSO.”

Prof Saha expressed hopes that such developments will help the country become “Atmanirbhar” in true sense.

Mr. BPS Bhadoria, Joint Director, Motive Power Directorate, RDSO in his letter addressed to the IIT Delhi researchers shared that the project to develop the simulation software Runtrain# has been conferred with Best Research Project Shield in RDSO for the year 2020-21 and he congratulated the IIT Delhi’s team for the successful execution of this project.
IIT Delhi Dean Appointed as President at NIIT University

Prof Khanna earned his BTech, MTech, and PhD in Chemical Engineering from IIT Kanpur. He has been appointed as President of NIIT University.

NIIT University (NU), has appointed Prof Rajesh Khanna as its new President. Prof Khanna is a former faculty member and Dean of students at the Indian Institute of Technology (IIT) Delhi.

He has held several faculty and administrative positions at IIT Delhi over the course of his 23-year career, including Head of Department of Chemical Engineering, Dean of Students, Faculty-in-Charge of Sports, Faculty Advisor for Students Society, and a mentor to countless students. He has also held the position of Vice-Chairman of the Joint Entrance Examination (JEE). With over 2000 citations, his research has been well received by the scientific community, says NIIT University.

Welcoming Prof Khanna on board, Rajendra S Pawar, Founder, NIIT University said, “With Professor Khanna at the helm, NU will further deepen its emphasis on industry-linked, technology-based, research-driven, and seamless education. In the last 18 months, the pandemic has compelled us to re-evaluate our education system and our assessment models. I am confident that under the guidance of Professor Khanna the University will continue to offer futuristic education to create industry-ready graduates.”

Prof Khanna earned his BTech, MTech, and PhD in Chemical Engineering from IIT Kanpur. He did post-doctoral research at Institut de Chimie des Surfaces et Interfaces – CNRS Mulhouse, France, and was an Honorary Visiting Research Fellow, University of New South Wales, Sydney.

IIT Delhi professors endow awards and scholarships for students, employees

Teacher’s Day 2021: IIT Delhi faculty have endowed awards, scholarships, and fellowships for undergraduate students to promote research and excellence.
Indian Institute of Technology Delhi professors have endowed scholarships and awards for undergraduate students and employees to promote research and excellence and recognise contributions toward the institute, respectively.

“In the last two months alone, many of our retired faculty colleagues have come back to endow scholarships and awards for the students of IIT Delhi,” a statement from IIT Delhi said.

Scholarships endowed by donors help defray tuition expenses of Undergraduate students at IIT Delhi while awards encourage students to excel in academics, research, and co-curricular activities, IIT Delhi statement further said.

Here are the awards, scholarships, and endowments set up by professors of IIT Delhi

**Awards, scholarships by professors**

Kushal Sen, department of textile and fibre engineering, and his wife Mira Kushal, an alumnus of IIT Delhi established five awards to recognise and promote research, excellence, and leadership among UG students of IIT Delhi and one award for recognising contributions of employees in making the institute better.

S N Singh, department of applied mechanics, has endowed two merit-cum-means scholarships for UG students in memory of his wife and mother. Earlier, he and his wife had introduced eight awards and scholarships.

Anurag Sharma, department of physics, and his wife, Enakshi K Sharma, an IIT Delhi alumnus and former faculty member, have instituted an award for the best PhD thesis in the field of optics and photonics, in the memory of his father. Also, D Subbarao, department of chemical engineering has established an award for the best PhD thesis in chemical engineering.

**Fund-raising for endowments**

V S Bisaria, department of biochemical engineering and biotechnology, has raised funds for the “Professor T K Ghose endowment” while D K Pandya, department of physics, was one of the main lead of the “Professor K L Chopra Endowment”.

S N Maheshwari, department of computer science and engineering played a role in setting up the Chaturvedi Distinguished Fellowship by the Vipula and Mahesh Chaturvedi foundation. On the other hand, Mahesh Chaturvedi, who retired from IIT Delhi in 1986, had established a chair in policy studies at IIT Delhi in the year 2007.

V Ramgopal Rao, director of IIT Delhi thanked all these professors for their gesture and said: “The selflessness and devotion of our faculty members is our greatest strength. Many of these colleagues would prefer remaining anonymous, but we hope that by celebrating such contributions we can build a strong culture of giving amongst our alumni.”