Dear Faculty, Staff and Students,

I take this opportunity to send a copy of the quarterly newsletter of IIT Delhi.

The newsletter highlights the major academic sessions, research work, collaborations and extra-curricular activities at the institute. It also brings into focus the news from our alumni desk.

I would welcome your comments and suggestions in making the next issue more interactive.

Warm regards,
Prof. V Ramgopal Rao
Director
News & Events

NIRF India Rankings 2019: IIT Delhi Jumps to No. 2 Position in Engineering

IIT Delhi has improved its rankings in the Engineering as well as Overall category. In Engineering, the institute has jumped to No. 2 position in 2019 with a score of 85.36. In 2018, it held No. 3 position. IIT Delhi has scored highest in Research and Professional Practice parameter (Engineering category), with a score of 96.18 among the top three institutions. In the Overall ranking, IIT Delhi is now ranked 3rd with a score of 78.69. In 2018, it was placed at No 4.

Speaking about the improvement in the rankings, Prof V. Ramgopal Rao, Director, IIT Delhi, said: “This is a reflection of the various measures we have taken at IIT Delhi to improve our outreach activities as well as the research ecosystem.”

IIT Delhi, Tata Trusts Join Hands to Scale Up Institute’s New School of Public Policy

IIT Delhi and the Tata Trusts announced a major partnership on January 16, 2019 through which the IITD School of Public Policy, the first of its kind in India, will become a world-class hub of public policy research and education on issues at the intersection of science and technology (S&T) and development. Under the partnership, Tata Trusts will give a grant of Rs 50 crore to the institution over a period of five years for the School of Public Policy. Prof Ambuj Sagar is the founding head of the School of Public Policy.

IIT Delhi and National Institute of Immunology Delhi Sign MoU

IIT Delhi and National Institute of Immunology Delhi have signed an MoU under which they have agreed to establish a programme for academic cooperation in areas of mutual interest like collaborative research activities, joint Ph.D. programs and exchange of students.

IIT Delhi-BIS sign MoU for Standardization & Conformity Assessment Collaboration

Bureau of Indian Standards (BIS), has signed a Memorandum of Understanding (MoU) with IIT Delhi, to collaborate in the field of standardization and conformity assessment. The MoU was signed by Prof. V. Ramgopal Rao, Director, IIT Delhi and Smt. Surina Rajan, Director General, BIS.

BIS and IIT Delhi have agreed for setting up a Centre of Excellence in the field of Standardization, Testing & Conformity Assessment with the BIS branding at IIT Delhi campus.

IIT Delhi Launches International PhD Fellowship Programme

IIT Delhi has decided to encourage best talent from across the world to join its PhD programme. As a concrete step towards this, the institute has launched International PhD Fellowship Programme (IPFP) on Feb 12 in the presence of Ambassadors of various countries in India, and their representatives.

Laid down after considerable deliberations, the attractive features of the International PhD Fellowship Programme are expected to bring about significant increase in the number of meritorious International students on the IITD Campus.

IIT Delhi Training and Placement: A round-up

The ongoing training and placement season at IIT Delhi is set to end on a vibrant note this year (AY 2018-19) with over 900 students getting job offers of their choice. With over 1000 offers logged in (including PPOs) the campus has witnessed hiring numbers this year that have crossed all previous benchmarks.

Over 350 UG and MDes students have also bagged internship offers for the coming summer. 43 students got selected for opportunities abroad from the European region, Japan, Singapore, South Korea, Taiwan, US etc. with 33 opting to explore these opportunities further. Further, the number of companies visiting campus this year has witnessed a 15% increase over last year as well.
News & Events

Foundation Day Celebrations

IIT Delhi celebrated its 60th Foundation Day on January 28, 2019. On this occasion, Prof. K. VijayRaghavan, Principal Scientific Adviser to the Government of India, delivered the Foundation Day Lecture on the topic “Science for the People and the People for Science” and presented Faculty Research Awards.

2019 HITLAB Innovators Summit: India

Empowering meaningful digital health innovation for over a billion lives throughout India was the theme of the 2019 HITLAB Innovators Summit: India. The one-day event held on February 16 at IIT Delhi, brought together leaders and practitioners in life sciences, technology, academia, public health, medicine, investment, and design to leverage digital solutions and bring meaningful change to populations.

Unnat Bharat Abhiyan: First Meeting of RCIs Held at IIT Delhi

The first meeting of Regional Coordinating Institutions (RCIs) was called by IIT Delhi, the National Coordinating Institute, on behalf of MHRD on 6th March, 2019. Representatives from all the 40 RCIs like IITs, NITs, NITTTRs, Central Universities and Agriculture Universities attended the meeting and signed MoUs with IIT Delhi in order to facilitate, guide and monitor the activities of the participating institutions (PIs).

Institute Lecture by Nobel Laureate Prof Ben L. Feringa

Prof Ben L. Feringa, Nobel Laureate in Chemistry (2016) delivered an Institute Lecture on March 15, 2019 on the topic "The Art of Building Small". Feringa's research interest includes stereochemistry, organic synthesis, asymmetric catalysis, molecular switches and motors, self-assembly, molecular nanosystems and photopharmacology.

Methanol Demonstration facility: An IITD-Thermax Collaborative Research Project launched

IIT Delhi-Thermax Methanol Demonstration facility was launched by Dr. V.K. Saraswat, Member, NITI Aayog, in the presence of Prof. Ashutosh Sharma, DST Secretary, during the 2nd International Meeting on Clean Energy Materials Innovation Challenge that was organized by the Department of Science and Technology, Government of India, in IIT Delhi campus.

Energy Storage Platform on Batteries (ESPOB)

IIT Delhi has been awarded a centre named Energy Storage Platform on Batteries (ESPOB) by the Department of Science & Technology, New Delhi.

It is a consortium of 6 Institutes from India and one from USA and an Indian industry partner.

ESPOB would bring together different expertise for the development of redox flow battery, Li and Na ion-batteries, water splitting using earth abundant materials, and fuel cell technologies.
DotBook: Feature-packed, Ergonomic & Affordable Refreshable Braille Display

Aiming at creating Independent Access to Digital Content for the Visually Impaired, IIT Delhi, KritiKal Solutions Pvt Ltd., Pheonix Medical Systems Pvt. Ltd. and Saksham Trust New Delhi, supported by the Wellcome Trust have developed DotBook, a feature-packed, ergonomic & affordable refreshable Braille display in two variants:

a). DotBook 20P: 20-Cell Braille Variant with Perkins Keys  
b). DotBook 40Q: 40-Cell Braille Variant with QWERTY Keyboard

Project leader Prof M. Balakrishnan, IIT Delhi, says, “DotBook represents an excellent example of user oriented applied research. On one hand it is not only inter-disciplinary in nature as it brings together advanced techniques in mechanical, low power electronics, software and UI design together but is also a result of sustained efforts over four years of a multi-organizational team comprising academics, two industry partners and a user organization.”

India’s Crop Productivity & Labour Efficiency at Stake Due to Warming Climate: Study

In an attempt to quantify the impact of the global warming on the crop production and human resources, researchers at IIT Delhi report a drastic reduction in the length of pleasant comfortable days (thermal comfort) especially over the northeast and southern India (warm-humid) regions.

Study conducted by PhD Scholar Mrs Vinnarasi Rajendran and Prof Dhanya CT, Department of Civil Engineering, IIT Delhi, highlights the reason behind this to be the encroaching of summer season into winter season, in these regions.

Low-Power AI-based Electronic Hardware for Healthcare Diagnostic Support

Artificial Intelligence, Machine Learning, Neuromorphic Computing and Deep Learning research have enabled techniques leading to development of innovative solutions for a wide variety of applications. In a similar development, a team of IIT Delhi researchers led by Prof. Manan Suri, Department of Electrical Engineering designed and demonstrated AI-based low-power electronic hardware system that can help with detection of diseases such as Malaria, Tuberculosis, Intestinal Parasite, and Cervical Cancer from microscopy analysis in few milliseconds. The work is in-progress, of conceptual significance and needs partnerships with Healthcare experts for clinical trials and actual deployment.

Smartphone Based Biosensor for Detection of Live/Dead and Antibiotic Resistant Bacteria Using Silver Nanorods Array

Smartphones are increasingly finding their way into the health sector. Researchers at IIT Delhi have developed a mobile app based biosensor which together can be used for bacterial detection. One can put the sensor in front of mobile camera and images captured by camera are sent to the mobile app called “colorimetric detector” developed by the team, for analysis. As live bacterial presence causes the biosensor surface color from white to change into black, mobile app measures the relative change in surface color. Once it reaches a set point, the mobile phone vibrates and gives a red signal. This makes detection easy, portable and perhaps cost effective.

The research team includes Prof J.P. Singh (PI), Shashank Gahlaut, Prof. Prashant Mishra, Neeti Kalyani from Delhi. The work has appeared in Biosensors and Bioelectronics 2019, 126, 478-484.
Simple, Sustainable and Inexpensive Method Developed for Converting Alcohols to Carboxylic Acids Using Table Salt

Carboxylic acids are precursors for manufacture of medicines, soaps and polymers. The group of Prof. Anil J. Elias, Chemistry department has developed a simple, sustainable and inexpensive method for converting alcohols to carboxylic acids using table salt as catalyst in water with a green oxidant. In this first report on sodium chloride as an oxidation catalyst, they showed that the reaction can be performed even in filtered sea water. The work has appeared in the journal ‘Green Chemistry’ [DOI: 10.1039/C9GC00497A].

Magnetically Separable Super-Hydrophobic and Super-Oleophilic Nanocomposite for Efficient Separation of Oils from Water-Oil Mixture

Researchers Prepare Scaffold of Silk Fibroin Films with Silver Nanoparticles for Bone Tissue Engineering

IIT Delhi researchers led by Prof Neetu Singh, CBME, have prepared a scaffold of silk fibroin films with silver nanoparticles (AgNPs) where the nanoparticles were synthesized by an easy, convenient and environment friendly method using silk fibroin protein. These films possess superior antimicrobial properties compared to conventional antibiotics and were also active against antibiotic resistant bacteria. Also, it was observed that the presence of AgNPs at lower concentrations did not have any detrimental effect on osteogenic differentiation potential of human mesenchymal stem cells. The researchers believe that these scaffolds may also be a promising material for bone tissue engineering.

Due to a rapid increase in use and transport of oils and other organic solvents, the oil spillage and leakage accidents are occurring frequently worldwide. The pollution by oil leaks contains many hazardous molecules including aromatic hydrocarbons and cyclo-paraffins, hence the removal of oil spilled over water and has become an important issue for protecting environment. To deal with the pollution with oil leaks, IIT Delhi researchers Prof. Neeraj Khare and Dr. Sandeep Munjal have come out with an invention that relates to a novel reusable and stable super-hydrophobic/ super-oleophilic carbon based nanocomposite for efficient separation of oils from oil-water mixture.
**IRD News**

**Sponsored Research Projects & Consultancy Jobs undertaken through IRD Unit during January 2019 - March 2019.**

- 70 Sponsored Projects with sanctioned value to the tune of Rs. 19.51 Crores.
- 73 Consultancy Jobs with a total sanctioned value of Rs. 6.97 Crores.

**High Value Sponsored Research Projects (with sanctioned value Rs. 75 Lacs and above) undertaken During January 2019 - March 2019.**

- “Development of Refreshable Braille Cells” **sponsored by DST** (Sanctioned Value: Rs. 126.56 Lacs).
- “Sub-5V Metal Based MEMS Switches for Radar Beam Steering Antenna under Harsh Environments” **sponsored by DST** (Sanctioned Value: Rs. 124.31 Lacs).
- “MAVI: Mobility Assistant for Visually Impaired” **sponsored by MHRD** (Sanctioned Value: Rs. 100.78 Lacs).
- “Study of absorption characteristics of upcoming pairs of HFOs/functional activated carbon composites for potential application in adsorption heat pumps” **sponsored by MHRD** (Sanctioned Value: Rs. 86.88 Lacs).
- “Technology for Large Scale Development of Textile Fibres for Wearable Electro-Optic Devices” **sponsored by MHRD** (Sanctioned Value: Rs. 80.60 Lacs).
- “Nano Respiratory Nasal Filter” **sponsored by MHRD** (Sanctioned Value: Rs. 80.60 Lacs).
- “Fluorescent Nanoprobes for squamous cell carcinoma: A step towards developing a rapid tool for margin clearance” **sponsored by DBT** (Sanctioned Value: Rs. 77.17 Lacs).
Faculty News

Prof. Bhim Singh, Dept. of Electrical Engg, has been awarded Lifetime Achievement: "Sulochana and Col A Krishnaswami VRC, VSM** Faculty Research Award".

Prof. Ranjan Malik, Dept. of Electrical Engg, has been awarded Basic Research: "Prof. P.C.P. Bhatt Faculty Research Award".

Prof. P. V. Madhusudan Rao, Dept. of Mechanical Engg, has been awarded Applied Research: "Prof. K. L. Chopra Faculty Research Award".

Prof. M. Suri, Dept. of Electrical Engg, and Prof. Neetu Singh, CBME, has been awarded jointly for Early Career: "Veena Arora Faculty Research Award".

Prof. Rajendra S. Dhaka, Dept. of Physics, has been awarded the "Young Achiever Award" from BRNS during DAE-SSPS 2018.

Prof. Neeraj Khare, Dept. of Physics, has been awarded the MRSI Medal by Materials Research Society of India, IISc Bangalore.

Prof. Ashiwini Kumar Agrawal, Dept. of Textile Technology, has been awarded the "Abdul Kalam Technology Innovation National Fellowship" by Indian National Academy of Engineering (INAE).
IIT Delhi-TCS Research Day

The IIT Delhi-TCS Research Day was held on Jan 21, 2019 at IIT Delhi. The objective of the event was to understand the research synergies under the five themes and to identify areas for collaboration.

The event was attended by over 40 CXOs, Scientists and Research Heads of TCS, IIT Delhi Faculty and student community.

Mr K. Ananth Krishnan, Chief Technology Officer, TCS; Prof V. Ramgopal Rao, Director, IIT Delhi; Prof M. Balakrishnan, Deputy Director (Strategy & Planning), IIT Delhi; Mr Raju Goteti, Vice President-COIN, TCS; Prof Anurag S. Rathore, Associate Dean, Corporate Relations, IIT Delhi addressed the event.

Five research areas were included in the event and speakers (both, TCS and IIT Delhi) from respective areas addressed the session.

1. Life Sciences Research - Mr Sanjeev Sachdeva & Ms Sharmila Mande (TCS), Prof. Ram Ramswamy, Prof. Anurag S. Rathore (IITD)
2. Energy and Utilities Research - Mr Sumitkumar Ray & Mr Pankaj Malhotra (TCS), Prof. B.K. Panigrahi (IITD)
3. Manufacturing Research - Mr. Niravkumar Shah & Mr Maheesh Mynam (TCS), Prof. Sunil Jha (IITD)
4. A session on 5G Technology - Mr Debasish Mitra & Mr Rajeev Shorey (TCS), Prof. Brejesh Lal (IITD)
5. Deep dive on AI and Machine Learning - Mr Lovkesh Vig (TCS), Prof. Parag Singla (IITD)

Contributions Towards CSR Activities

In the last quarter of 2018-19, contributions were made towards CSR activities by Ansys Software Pvt. Ltd. for INR 10 Lacs; Tower Research Capital Markets India Private Limited for INR 40 Lacs and from Hi-Tech for INR 18.09 Lacs.

Joint R&D Project with Srijan Technologies

In collaboration with Srijan Technologies Pvt. Ltd., Dr Kavya Dashora of Centre for Rural Development and Technology, IIT Delhi, is working on a Joint Research and Development project to develop meat-textured, high protein products from plant-based sources. The outcomes of the project will pursue to introduce flavours of the non-vegetarian food to a vegetarian’s plate!

Joint Research Proposal by Jubilant Life Science & IITD Faculty

Jubilant Life Science & IITD (Prof. Anushee Malik) submitted joint research proposal on "Algal-fungal consortium mediated closed loop process for simultaneous treatment and sustainable bio-crude production from high strength distillery spent" under imprint IIC scheme and has been qualified for the first round.

IITD Students Awarded ‘Inspire the Future Scholarship’

On March 8, 2019 IIT D students Ms. Kushi Jain and Mr. Garvit Gupta were awarded with the "Inspire the future scholarship" under Ramboll Subvention Program.
Giving Week 2019

Giving Week 2019 organised by IIT Delhi began on 8th March and continued for the entire month. The initiative was a success with Rs. 25 lakhs being received during the month-long campaign from donors across different continents. The amount is expected to rise further in days to come. The fund will be utilised as per the advice of Alumni Advisory Committee of the institute.

Golden Jubilee Reunion (Batch 1969)

The Golden Jubilee Reunion of the 1969 batch was celebrated on 8th March 2019. Close to 80 Alumni along with their spouses attended the Reunion. To mark the occasion, the Batch of 1969 signed an MoU with their alma mater to establish an annual award named “Batch of 1969 Innovation Fellow Award”.

To set up a special fund for this award, the Batch has collectively contributed over Rs 1 Cr with an aim to promote a spirit of innovation and entrepreneurship among the graduating students at IIT Delhi. On behalf of the Batch, IITD alumnus Mr Rajat M. Nag signed the MoU.

Alumni Contribution

The IITD alumni have come forward to contribute generously towards the various causes of the institute. Some major contributions received during January to March 2019 period are given below:

1. Anshul Kumar Professorial Chair - Rs. 10.35 L
2. CSE Research Acceleration Fund - Rs. 56 K
3. Stay Con - Rs. 18 K
4. 1994 Silver Jubilee Endowment Fund - Total Corpus Rs. 1.92 Cr *
5. 1969 Golden Jubilee Endowment Fund - Rs. 1.05 Cr
6. 1983 Pearl Reunion Endowment Fund - Total Corpus Rs. 75.91 L *
7. 1984 Pearl Reunion Endowment Fund - Total Corpus Rs. 47.37 L *
8. 1997 Batch Endowment Fund - Total Corpus Rs. 23 L *
9. Himalayan Scholarship for Girl Student - Rs. 4 L
10. Pushpa Sankhla Scholarship - Rs. 20 L
11. Surbhi Goel Scholarship - Rs. 4 L
12. Giving Week 2019 - Rs. 25 L
13. Yes Bank Chair - Rs. 5 L
14. Mittal Sports Complex - Rs. 7.95 Cr
15. CSR Tower Research Capital Market Pvt Ltd - Rs. 40 L
16. TBO Group Fellowship for Women - Rs. 8 L
17. Hi -Tech Distinguished Chair - Rs. 5.54 L
18. Miscellaneous - Rs. 69 K

*Cumulative Fund
**International Delegations**

**16th Jan, 2019**
A 3-member delegation led by Mr. Tony Campion, Transformation Engineer from UK’s Manufacturing Technology Centre (British High Commission) visited IIT Delhi to explore the opportunities of working together.

**22nd Jan, 2019**
A delegation led by Prof. H.E. Khalid Samadi, Secretary of State for Higher Education and Scientific Research, Ministry of National Education, Vocational Training, Government of the Kingdom of Morocco visited the institute in connection with bilateral cooperation with IIT Delhi.

**30th Jan, 2019**
A 10-member team headed by H.E. Hussain Bin Ibrahim Al Hammadi, UAE Minister, accompanied by staff from UAE Embassy visited the institute.

**4th Jan, 2019**
A 3-member delegation from Korean Embassy visited the institute.

**8th Jan, 2019**
A delegation from University of Notre Dame visited the institute.

**28th Jan, 2019**
A delegation led by Mr. Kim Kum-pyung, Director/Counsellor, Korean Cultural Centre, The Embassy of the Republic of Korea with 44 students from Kumoh National Institute of Technology of the Republic of Korea visited the institute.

**1st Feb, 2019**
A 6-member delegation from Simon Fraser University (SFU), Canada visited the institute.

**7th Feb, 2019**
A 3-member delegation led by Ms. Cheryle Matherly from Leigh University visited the institute.
A 5-member delegation from University of Victoria, Canada visited the institute.

A 10-member delegation led by Mr. Amit Khandelwal from University College, London visited the institute.

A 2-member delegation from University of Notre Dame visited IITD to continue discussions on possible opportunities for student and faculty engagement between IIT Delhi and University of Notre Dame.

A 3-member delegation from Embassy of the Republic of Korea visited the institute to discuss ways of cooperation between Republic of Korea and IIT Delhi in the field of Science and Technology.

A 10-member delegation led by Mr. Philip Benning, Vice-President & Dean of Graduate Studies from Technical University Denmark (DTU) visited the institute and signed an MoU with IIT Delhi.

A 2-member delegation from Delegation from Boston University School of Public Health (USA) visited the institute.

MoUs signed with reputed Foreign Universities/ Institutes

2. IIT Delhi and Simon Fraser University (SFU) British Columbia - 1st February 2019.
3. IIT Delhi and Moscow Aviation Institute (National Research University) - 26th February 2019.
4. IIT Delhi and Samarkand State University Uzbekistan - 1st February 2019.
5. IIT Delhi and National Taipei University of Technology Taiwan - 20th March 2019.
7. IIT Delhi and Ghent University Global Campus - 27th March 2019.
BHM Night 2019 celebrated

Board for Hostel Management (BHM) Night 2019 was celebrated on 10 March with all the 13 hostels coming together to receive trophies for their yearlong performances and competitions. Over 3000 IIT Delhi students, staff and faculty participated in these celebrations.

Andaaz-e-Bayan

Andaaz-e-Bayan programme, organised by the Hindi Samiti of IIT Delhi, was held on Jan 23, 2019 where the students proved that they not only excel in studies but also pen down amazing collections in Urdu and Hindi.

New BRCA Library inaugurated

A new BRCA (Board for Recreational and Creative Activities) library was inaugurated on March 20, 2019 in order to nurture and nourish reading culture on the campus. The new BRCA library boasts of books across all genres and has potential to be an informal and recreational arena for all students.

Felicitation of Sports Contingent

IIT Delhi’s sports contingent had won the coveted Overall Championship, General Championship Trophy for Men and March Past Trophy at the 53rd Inter IIT Sports Meet held in Guwahati. A grand celebration of this feat was held in the IIT Delhi campus on March 31, 2019 where the entire contingent was felicitated by the Director.

In pics: 70th Republic Day Celebrations at IIT Delhi