

# National Institute of Technology Karnataka, Surathkal

Mangaluru - 575 025, Karnataka, India

[www.nitk.ac.in](http://www.nitk.ac.in)

## NITK NEWSLETTER

# WAVES

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## Message from the Director



It is a privilege to write a message to the first issue of the sixth volume of *Waves*, the biannual institute newsletter. The reporting period pertaining to this issue marks the second half of the Diamond Jubilee year of the Institute. The conferences, workshops, student and alumni activities that were part of the Diamond Jubilee celebrations, continued. Hon'ble Minister of Education, Shri Ramesh Pokhriyal 'Nishank' inaugurated the Central Research Facility (CRF) – a repository of state-of-the-art equipment for advanced research which was dedicated to the service of the nation. The distinguished presence of the Honourable Minister and his message inspired us to take determined steps forward in the path of scientific and technological innovation and achieve excellence.

This period, however, also marked a phase of difficult times and tough decisions. The onslaught of COVID-19 has devastating impacts on the general life world over. Often crisis necessitates the system to renew itself, sometimes in a disruptive way. Accordingly, students were sent home and the academic calendar resumed its scheduled activities online after a short pause. However, both the student and the staff community have shown great resilience in finding a new rhythm in adapting to an entirely novel schema of things: time-tables, virtual classes, online exams, schemes of evaluation, new gadgets, teaching-learning from home and so on. All these, amidst tuning their own personal lives to the unprecedented phenomenon called 'lockdown'! In fact, the students rating of the quality of our online classes has been a morale booster to the new teaching-learning process.

We received some very happy news too in the semester: we got a shot in the arm with the NIRF Ranking 2020. NITK Surathkal was ranked 13<sup>th</sup> among top engineering institutions in India. This was a rise of eight positions from the previous year. When considered in the 'overall' category, we were placed in 33<sup>rd</sup> position – a whopping climb of twenty places! At this moment, we need to acknowledge the continued support of the Ministry in all our academic endeavours which facilitated this feat. I place on record the cooperation rendered by all sections of our stakeholders – the members of Board of Governors, faculty, staff, and students. This accomplishment has been heartening to cheer ourselves up amidst the pandemic blues. I should say that the pages inside should provide the readers sufficient justification for the pat on the back that we have received in terms of NIRF ranking.

**K. Umamaheshwar Rao**

## Message from the Deputy Director



Dear colleagues,

Wish you all and your loved ones safe passage through this difficult period!

The world is facing unprecedented challenges in the face of a global pandemic, COVID-19. This health crisis impacts not only frontline staff and clinical leaders but all systems and communities. COVID-19 has also disrupted universities and academic institutions. NITK has positively taken these challenges and adapted to the changes, where the academic year is filled with turbulent opportunities. The turbulence is due to the pandemic and opportunities because of the challenges the pandemic has thrown. In these incredibly tough times, we have risen to the occasion and shown outstanding efforts in teaching and learning. All our teaching-learning process is transformed to flipped virtual class mode. Placement and industrial training activities also embraced the online mode through a software platform developed inhouse. All our administrative activities are also adapted to the changes so that Institute-related activities are executed as per the schedule. Inauguration of CRF facility to drive multidisciplinary research activity, elevation of our position in NIRF ranking, socially responsible activities like development of face masks, sanitizers, distribution of grocery kits for the needy ones, provisioning of hostels and guest-house facility for the district administration to join hands in combating the pandemic situation across the region are a few examples for taking things in a positive way and for adapting to the changes. This issue of *Waves* provides, among other things, details about how the Institute adapted to changes during the pandemic situation.

I urge everyone to please take care and stay positive. I am confident we will get through this situation together.

**Ananthanarayana V.S.**

## Prefatory Note



The current issue of *Waves* covers the Institute activities during January-June 2020. This period also overlapped with the second half of the Diamond Jubilee celebrations. As we were in a festive mood, occupied in Diamond Jubilee conferences, workshops and other such programmes, the sudden onset of the pandemic disturbed the rhythm of life on campus just as elsewhere. What followed was a stretch of uncertainty about a whole lot of things. However, we soon found the lost rhythm not only in resuming the readjusted academic calendar online, but also in hosting other activities planned in the Diamond Jubilee celebrations schedule, online.

Different sections of the Institute stake-holders came together to tackle the destabilisation caused by the pandemic and subsequently, the lockdown. We were able to reach out to the community around us in a variety of ways – academically or otherwise, during this tough time. Quick adaptation to the online teaching-learning process, our achievements in NIRF Ranking 2020, a good placement record even amidst the pandemic, testify to a continuous enhancement of the quality of education at NITK. The following pages catch the glimpses of such goings-on at the Institute. Meanwhile it should be noted that even as the effort is exerted to catch the main and important happenings and achievements for the reporting period, the issue cannot and does not claim to cover all events conducted and all achievements accomplished by the Institute during this time.

I am extremely thankful to all teaching and non-teaching staff, editorial team and administration for their continued cooperation in bringing out this issue.

**Shashikantha Koudur**  
Coordinator – *Waves*

# Editorial Team

**Shashikantha Koudur**

Coordinator

**Ananthanarayana V.S.**

Deputy Director

**A. Nityananda Shetty**

Dean (Academic)

**M.S. Bhat**

Dean (Faculty Welfare)

**Subhash C. Yaragal**

Dean (Planning & Development)

**Jagannath Nayak**

Dean (Students Welfare)

**Panduranga Vittal K.**

Dean (Alumni Affairs & Institutional Relation)

**U. Shripathi Acharya**

Dean (Research and Consultancy)

**Vijay H. Desai**

Chairman, Career Development Centre

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## Administrative Assignments



We congratulate **Prof. M. Shankaranarayana Bhat**, Department of Electronics and Communication Engg., on taking charge as Dean (FW) with effect from 16 March 2020.

We congratulate **Prof. K. Narayan Prabhu**, on taking charge as HOD, Department of Metallurgical & Materials Engg., with effect from 13 January 2020.



We congratulate **Dr. Ajith K.M.**, on taking charge as HOD, Department of Physics, with effect from 11 March 2020.

We thank **Prof. A.H. Sequeira**, School of Management, for having served as Dean (FW) during 2018-2020. His service is appreciated and placed on records.





<b>Other Administrative Positions</b>			
<b>Sl. No.</b>	<b>Name</b>	<b>Position Occupied</b>	<b>With effect from</b>
1	Prof. Shashikantha Koudur, School of Management	Coordinator - NITK Newsletter "WAVES"	13.01.2020
2	Prof. M.N. Satyanarayan, Dept. of Physics	Chairman - Library Advisory Committee (LAC)	30.01.2020
3	Dr. Prashanth M.H., Dept. of Civil Engg.	FIC (Guest House)	05.02.2020
		FIC (Estate & Works)	
4	Prof. Annappa, Dept. of Computer Science and Engg.	Nodal Officer of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) – Technology Innovation Hubs (TIH)	06.05.2020
5	Prof. S.M. Murigendrappa, Department of Mechanical Engg.	Professor In-charge (Analytics, Accreditation & Ranking System)	07.05.2020
6	Dr. Aparna P., Department of Electronics & Communication Engineering	Nodal Officer for implementation of Vigyan Jyoti Scheme for girl students of nearby Jawahar Navodaya Vidyalayas (JNVs)	27.05.2020
7	Dr. Darshak R. Trivedi, Dept. of Chemistry	Nodal Officer for "Ek Bharat Shreshtha Bharat (EBSB)" Cell at the Institute	03.06.2020
8	Dr. B. Venkatesa Perumal, Department of Electrical and Electronics Engg	Faculty In-charge for the implementation of "National Innovation and Start-up Policy (NISP)" for students and faculty at the Institute	04.06.2020

**We welcome the newly joined faculty under the 4-tier Flexible Faculty Structure  
(January to June 2020)**

<b>Sl. No.</b>	<b>Name of the Faculty</b>	<b>Designation</b>	<b>Department</b>	<b>Date of Joining</b>
1	Dr. (Mrs.) Shrutilipi Bhattacharjee	Assistant Professor Grade - II	Information Technology	22 June 2020 Forenoon

## Inaugural of the Central Research Facility (CRF)

The top-notch Central Research Facility (CRF) Annex was inaugurated by Union Minister of Education (then, Minister of Human Resources Development) Ramesh Pokhriyal 'Nishank' on Tuesday, 25 February 2020. The CRF will have 45 high-end research equipment. These machines will be procured at a cost of Rs 80 crore. The newly inaugurated Centre is already equipped with many equipment, and is open to researchers.



**Hon'ble Minister of Education Shri Ramesh Pokhriyal Nishank, inaugurating the Facility. Director, Prof. K. Umamaheshwar Rao, Prof. K. Balaveera Reddy, Chairperson of the BOG, and other dignitaries were present.**

The facility is a great help to more 700 research students who are in the campus. The CRF is funded by the Higher Education Funding Agency (HEFA). NITK Surathkal is the only one among 31 NITs chosen by HEFA. Inaugurating the facility, the Minister said that the proposed new education policy is designed to strengthen the nation and is based on India's ethics and value system. It aims at making life meaningful for every citizen, he said.

**Foundation Stone for New Facilities:** Shri Ramesh Pokhriyal also laid the foundation stone for a new building for Central Research Facility (CRF). Foundation stones were also laid for three other facilities on campus by the Hon'ble Minister: a new building for Centre of Excellence; a new girls' hostel, *Souparnika* (Block No. 6) and a boys' hostel (Block No. 11). The Minister inaugurated *Laya* and *Shruti* apartment for faculty. This apartment block is designed to have green building features which include energy-efficient design, use of fly ash-based

CC block for masonry with minimum 40 per cent fly ash content; use of industrial waste like GGBS as cement replacement; low VOC paints, LED-based energy efficient luminaries and 75 per cent of built-up area lit with natural daylight.



**Hon'ble Minister laying the foundation stone for new facilities.**



**Union Minister of Education Shri Ramesh Pokhriyal 'Nishank' being felicitated by Prof. Balaveera Reddy, Chairperson of BOG, NITK Surathkal**

## Institute NIRF Ranking Soars

NITK has bagged the 13<sup>th</sup> position in the engineering school rankings and 33<sup>rd</sup> place in the overall ranking in the Union Government's National Institute Ranking Framework (NIRF) rankings for 2020. The institute has improved its position by eight places in the engineering ranking (from 21<sup>st</sup> in 2019 to 13<sup>th</sup> in 2020) and by 20 places in the overall rankings (from 53<sup>rd</sup> to 33<sup>rd</sup>). The institute has been adjudged the Second-Best National Institute of Technology (NIT) among the 31 NITs in the country.

## Conferences/Workshops/GIAN Programmes/Expert Lectures Organized

### Department of Chemical Engineering:

- Dr. Pooja Nanda, Bioprocess Specialist, Pall India Pvt. Ltd., delivered an Expert Lecture on "Recent and Future Trends in Downstream Bioprocessing", on 7 February 2020.

### Department of Civil Engineering:

- A two-day National Conference in Civil Engineering with the theme "New and Effective Innovations, Technologies and Key Challenges 2020", (NCCE-NITK 2020) was organized at the Department of Civil Engineering, NITK, during 30-31 January 2020 by Dr. C.P. Devatha and Dr. C. Rajasekaran.
- A One-Week "1<sup>st</sup> Indo-Japan Webinar Series on Geotechnics for Disaster Mitigation" was held from 8 to 13 June, 2020, Organised by Dr. Babloo Chaudhary, Prof. A. Murali Krishna and Prof. Hemanta Hazarika in association with IGS Surathkal Chapter, IIT Guwahati and Kyushu University (Japan).

### Department of Electrical and Electronics Engineering:

- A Two-day Workshop on "Effective Digitization of Course Content for Blended Learning and Flipped Classroom" was organised on 9 and 10 March 2020. Dr. R. Dattakumar and Mr. Sirsendu Das of Excelsoft Technologies, Mysore, were the resource persons for the Workshop. The Workshop was Sponsored by TEQIP-III and coordinated by Dr. Krishnan C.M.C. (Dept. of EEE) and Dr. Sumanth G. (Dept. of MME).
- Dr. Ashoka K.S. Bhat, Professor, University of Victoria, Canada delivered an Expert Lecture on "Power Converters for Interfacing Alternate Energy Sources to Utility Line", on 18 February 2020. The activity was coordinated by Dr. Nagendrapa H.

- Prof. A.M. Kulkarni, Dept. of Electrical Engg., IIT Bombay, delivered an Expert Lecture on “Power System Oscillations: Visualization using Wide Area Frequency Measurement Systems”, on 11 March 2020. The activity was coordinated by Prof. K.N. Shubhanga.

### **Department of Electronics and Communication Engineering**

- A five-day short-term training programme (STTP) on “Speech, Audio and Music Processing” (SAMP 2020) as a part of NITK Diamond Jubilee Celebrations was held from 28 January 2020 to 01 February 2020. Prof. S R Mahadeva Prasanna (IIT, Dharwad), Dr. Sriram Ganapathy (IISc, Bangalore), Prof. Preeti Rao (IIT Bombay), Prof. Gangshetty (IIIT Hyderabad) and Dr. Ajay Srinivasmurthy (Amazon, Bangalore), were the resource persons of the event.



**Participants in a session**

- A one-day workshop on “Recent Trends in Wireless Optical Communications” was held on 06 March 2020. Prof. Arun Majumdar (USA) and Prof. T. Srinivas (IISc, Bangalore) were the resource persons of the event.
- As part of Industry Expert Lectures Series, a lecture on “Hands-on Xilinx PYNQ Board with FPGA” was held on 2 March 2020. Er. Prakash Ganesh, Lead Application Engineer, CoreEl Technologies, Bangalore, was the resource person of the event.

### **Department of Information Technology**

1. Department of IT and School of Management jointly organized 8th International Conference on Frontiers in Intelligent Computing: Theory and Applications (FICTA 2020) during 4-5 January 2020. Chief guests were Prof. Venkat Gudivada (East Carolina University, USA), Prof. Ganapati

Panda (IIT Bhubaneswar) and Dr. Lipo Wang (School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore).

2. Dr. Nagamma Patil and Dr. Jaidhar C.D. Conducted a five-day Short-term programme on “Applications of Data Mining and Deep Learning Techniques in Multidisciplinary Area” from 24 June 2020 to 28 June 2020.
3. Dr. Bhawana Rudra conducted five-day AICTE Sponsored Online Workshop on “Cyber Security” from 25 May 2020 to 29 May 2020. The resource persons for the workshop were Dr. Debasis Das from IIT Jodhpur, Dr. Damodar Reddy From NIT Goa, Dr. Chirag Modi from NIT Goa and Dr. Anand Kumar M. from NITK.

### Department of Metallurgical and Materials Engineering

- A five-day workshop on “Advanced XRD Theory, Practical and Training 2020” was organised during 20 – 24 January 2020. The workshop conveners were Prof. Udaya Bhat K., Dr. M. Rizwanur Rahman and Dr. B. Rajasekaran.
- A two-day workshop on “Effective Digitization of Course Content for Blended Learning and Flipped Classroom” was organised for Faculty during 9-10 March 2020. The workshop was sponsored by TEQIP-III and was coordinated by Dr. Sumanth G. (Dept. MME) and Dr. Krishnan C.M.C. (Dept EEE).

### Department of Mining Engineering

1. 1<sup>st</sup> SME-NITK Annual Convention was held during 6-7 March 2020 at NITK by the Society of Mining Engineers (SME). Sri. M.S. Nagar, Former C&MD, IREL (India), was Chief Guest and Prof. K. Umamaheshwar Rao, Director, NITK, Surathkal presided over the function.



L to R: Dr. K. Ram Chandar, Prof. K. Umamaheshwar Rao, Sri. M.S. Nagar, Prof. Harsha Vardhan seated on dais.

## Important Guests Visiting the Academic Departments

### ❖ Department of Civil Engineering

- Prof. Dhanda K. Mishra, Professor, Biju Patnaik University of Technology (BPUT), Odisha, India and Visiting Research Scholar, Hong Kong University of Science and Technology, Hong Kong, delivered a lecture on “Self-Sensing and Self-Healing ‘Smart’ Cement Based Materials - Bridging the Gap Between Research and Adoption” on 11 March 2020.

### ❖ Department of Information Technology

- 1) Prof. Venkat Gudivada, Chair, Dept of CSE, East Carolina University, USA
- 2) Dr. Diwakar Kamath, Director, Google Cloud India
- 3) Mr. Bharat Raizada, CEO, Wells Fargo India
- 4) Mr. Naresh Shah, President, India-R&D, HPE
- 5) Mr. Mahesha Nanjundaiah, Director of Engineering, HPE
- 6) Mr. Harish Kamath (Master Technologist), HPE

### ❖ Department of Metallurgical and Materials Engineering

1. Mr. Gopinath Pai, Vikram Sarabhai Space Centre, Trivandrum, visited the Department to deliver a talk on “Materials for space program” on 17 February, 2020.
2. Dr. D. Paul Joseph, Asst. Professor, Dept. of Physics, NIT Warangal, visited the Department to give a talk on “Proximity Effect in Hierarchically Structured Superconductor/Ferromagnet Multi-layers” on 19 February 2020.

### ❖ Department of Mining Engineering

1. Shri. M.S. Nagar, Former CMD, IREL(India), visited the Department on 20 January 2020
2. Shri Bhargava, former Controller, Indian Bureau of Mines (IBM), visited the Department on 20 January 2020
3. Prof. S. Gupta, IIT-BHU, Dr. P.S. Paul, Associate Professor, IIT, ISM, Dhanbad and Sri. Rajib Pal, Dy. Director of Mines Safety, visited the Department on 20 January 2020.

### ❖ **Department of Water Resources and Ocean Engineering**

1. Dr. Balaji Ramakrishnan, IIT Bombay, visited the department for Viva-voce exam and interacted with faculty and students on 05 February 2020.
2. Dr. Kasi Vishwanathan, IIT Roorkee, visited the department for Viva-voce exam and interacted with faculty and students on 07 February 2020.
3. Prof. S.K. Mishra, IIT Roorkee visited the department for Viva-voce exam and interacted with faculty and students on 14 February 2020.

## **Faculty Achievements**

### **Department of Chemical Engineering**

- ❖ Dr. Hari Prasad Dasari of Department of Chemical Engineering delivered the keynote lecture on “Nanocomposites and Nanomaterials and its Characterisation” in a training programme at Vimal Jyothi Engineering College, Kannur, Kerala held from 08 June, 2020 to 20 June 2020.

### **Department of Civil Engineering**

1. Dr. Palanisamy delivered a keynote address titled “Mechanism in Fiber reinforced concrete” at the International Virtual Conference on Sustainable Construction Materials and Technologies held during 18-19 June 2020 organized by Aarupadai Veedu Institute of Technology, Chennai.
2. Dr. C. Rajasekaran delivered two keynote lectures in different programmes during this period:  
a) One-week Technical Webinar Series 2020 organised by Sathyabama Institute of Science and Technology, Chennai and b) One-week Online Faculty Development Programme organised by Kongunadu Engineering College, Trichy, Tamilnadu.

### **Department of Computer Science and Engineering**

1. Dr. Alwyn Roshan Pais was offered \$10,000 in Google Cloud Platform credits under Google Cloud COVID-19 research credits program, on 25 June 2020.
2. Dr. Alwyn Roshan Pais, Dr. Apurva Kittur and Swapnil Kauthale were awarded Best Paper Appreciation/Prize Money at ISEA-ISAP 2020, on 05 March 2020.
3. Dr. Mohit P. Tahiliani and his team have implemented a new packet scheduler called FQ-PIE for the Linux kernel, and it has been listed among the best features of Linux 5.6.



### **Department of Electrical and Electronics Engineering**

Dr. Yashwant Kashyap received the Best paper award for “Brushless DC Hub Motor Drive Control for Electric Vehicle Applications”, in International Conference on Power, Control and Computing Technologies (ICPC2T), conducted at NIT Raipur, during 3-5 January 2020.

### **Department of Electronics and Communication Engineering**

Dr. Narasimhadhan, Assistant Professor and Dr. C.S. Asha (research scholar) received “Special Mention of the Jury” Award in the category of Electronics and communication by Board for IT Education Standards (BITES) for the year 2018 PhD scholar, in February 2020 for the research work carried out by Dr. C.S. Asha.

### **Department of Information Technology**

1. Prof. G. Ram Mohana Reddy was awarded the Best Research Paper Award at Springer 8th International Conference on FICTA 2020, at National Institute of Technology Karnataka Surathkal, Mangalore, India, during 4-5 January 2020.
2. Prof. G. Ram Mohana Reddy delivered a keynote talk on “Predictive Analytics: Case Studies, Research Challenges”, at a two-day conference on Data Mining and Predictive Analytics, at the Central University of Kerala, Kasargod, Kerala, held during 17-18 January 2020.
3. Prof. G. Ram Mohana Reddy delivered a Keynote Talk on “Current Research Scenarios in Biomedical & Healthcare Informatics”, in an FDP on Research Trends in Biomedical Engineering, held at SJEC, Mangalore, during 8-10 January 2020.
4. Dr. Sowmya Kamath S. received the Best paper award for the paper “Leveraging Deep Learning Approaches for Patient Case Similarity Evaluation”, at the 8<sup>th</sup> International Conference on FICTA 2020, held during 4-5 Jan 2020.
5. Dr. Anand Kumar M. delivered a keynote address on 21 January 2020 at the 3<sup>rd</sup> International Conference on Computational Intelligence in Data Science (ICCIDS 2020), SSN College of Engineering, Chennai.

### **Department of Mathematical and Computational Sciences**

- ❖ Prof. Santhosh George published a book titled *Mathematical Modeling for the Solution of Equations and Systems of Equations with Applications*, Volume-IV, Nova Publishers, US I. K. ARGYROS, S. GEORGE, ISBN: 978-1-53617-474-8.

### **Department of Water Resources and Ocean Engineering**

- ❖ Prof. Lakshman N. was appointed as Member (2020-2023), Expert Appraisal Committee (EAC), River Valley & Hydropower Projects, Ministry of Environment, Forest & Climate Change, Government of India.
- ❖ Prof. Lakshman N. was appointed as Technical Expert Witness to represent State of Karnataka in Supreme Court of India in Ordinary Suit filed by State of Tamil Nadu in matter pertaining to Cauvery River (2020).
- ❖ Prof. Paresh Chandra Deka authored a book titled *A Primer on Machine Learning Applications in Civil Engineering* published by CRC press.

### **Students Achievements**

#### **Department of Chemical Engineering**

- ❖ Mrs. Irfana Shajahan, a student of PhD (VIII Semester) of the Department of Chemical Engineering was awarded “Young Scholar Award” at the International Conference of Electrochemistry for Industry, Health and Environment, 2020, at BARC, Mumbai during 21-25 January 2020.

#### **Department of Electrical and Electronics Engineering**

- ❖ Anusha Mishra (B.Tech, VI Semester) earned an internship at Carnegie Mellon University, Pittsburgh during July 2020 to January 2021.

#### **Department of Electronics and Communication Engineering**

- ❖ Yogesh and Srikar Siddharth of B.Tech won the 2020 NFS CPS challenge conducted by Arizona State University (ASU). This was an International Robotics competition where UG, PG and Research students participated.

#### **Department of Information Technology**

1. OxyHeal, a startup co-founded by Manash Sharma, a B.Tech student of final year, was awarded a funding of Rs. 9.3 lakh under DST Nidhi Prayaas Scheme.
2. Prajna Hebbar and Yash Kumar Gupta, B.Tech students, were conferred with the MCN Millennium Fellowship 2020, an initiative by the United Nations Academic Impact Programme.

3. Saurabh Agarwala, Linu George, Shashank Jaiswal, Vaibhav G, and Rakshatha Vasudev won Rs. 1 lakh at Software Grand Finale of the Smart India Hackathon 2020 (Team Code Breakers, AR256).
4. Ankur Singh, a final year B.Tech student, was selected for ETCampusStars Class 2019-20, India's largest platform that aims to identify and reward the brightest engineering minds in the country is an initiative by The Economic Times.
5. Saurabh Agarwala, Shashank Jaiswal and Aakash S, B.Tech students of sixth semester, won Second prize at "HackVerse 2020" (cash prize of Rs. 60,000/-).
6. Apoorva M.K, a B.Tech student of sixth semester, won the third prize at "HackVerse 2020" (cash prize of Rs. 40,000/-).

### **Department of Mining Engineering**

1. Thumalapally Anusha of B.Tech (III Semester) received the Bronze medal (3<sup>rd</sup> prize) in women's Kabaddi during All India Inter-NIT 2020 Sports Meet.
2. Dwaipayan Munshi and Nikhil Sahu of B.Tech (III semester) represented NITK as Delegates in the World Sustainable Development Summit 2020, Youth Climate Conclave, organized by TERI.

## **Projects/Consultancies Sanctioned**

### **Department of Chemistry**

Ministry of Mining has sanctioned an amount of Rs. 5 lakh as seed money for the research project titled 'Development of Novel Nanoporous Hollow Fiber Membrane-based Unit for the Effective Treatment of Mine Waste Water with Prof. Arun M. Isloor as Chief Investigator and Prof Ch.S.N. Murthy as Co-investigator from 17 March 2020.

### **Department of Computer Science and Engineering**

Mathematical Research Impact Centric Support (MATRICS), SERB, DST, has sanctioned an amount of Rs. 2.2 lakh for the research project titled 'Restricted Proper Edge Colorings of Graphs', with Dr. Manu Basavaraju as the Chief Investigator for the period of 2020-23.

### **Department of Information Technology**

Google Inc has sanctioned an amount of \$10,600 (Rs. 7,78,000/-) as Google Cloud COVID-19 Research Grant to Dr. Sowmya Kamath S. as Chief Investigator for the duration of June 2020-June 2021.

### **Department of Mining Engineering**

Science and Engineering Research Board (SERB), DST, Government of India, has sanctioned an amount of Rs. 18.85 lakh for the R&D project titled 'Predictive Assessment of Postural Risk and Biomechanical Analysis of Musculoskeletal Disorder (MSD) Related Problems of Dump Truck Operators in Indian Opencast Metal Mines' with Dr. B.M. Kunar as Chief Investigator and Dr. M. Aruna as Co-investigator for the period of March 2020-February 2023.

### **School of Management**

New Mangalore Port Trust (NMPT) has sanctioned an amount of Rs.8,14,200/- for a Consultancy Project titled 'Measuring Customer Satisfaction and Brand Perception of NMPT'. Dr. Bijuna C. Mohan is the Chief Investigator and Prof. K.V. Gangadharan (CSD) is the Co-investigator. The Consultancy is underway.

## **Centrally Organised Events**

### **NITK Karavali Marathon 2020**

The fifth edition of the NITK Karavali Marathon was held on 12 January 2020 and it was the biggest Marathon ever conducted at the institute. In addition to promoting #Fit India Movement, the 2020 edition of the Karavali Marathon had the theme of "Combat Climate Change" and called for action in the Karavali region. The NITK Karavali Marathon 2020 was a special edition as part of NITK Diamond Jubilee celebrations with International Athlete and Arjun awardee Arjun Devaiah as the marathon ambassador. The unique feature of the run was that a part of marathon trail passed through the scenic NITK beach, along the beachside temple and the lighthouse.

The run was scheduled in different categories – 42.2 KM, 21.1 KM, 10 KM, and 5 KM. More than 4000 runners participated in the marathon.



Runners in the NITK Karavali Marathon; Arjun Devaiah, addressing the gathering

### NITK Surathkal Observes *Swachhata Pakhawada*

NITK Surathkal Observed *Swachhata Pakhawada* during 16-31 January 2020 and conducted the following Activities in the campus. The faculty, staff and students actively participated in the drive. *Swachhta Pakhwada 2020* began with taking of the Swachhata Pledge administered at Pavilion by Deputy Director Prof. Ananthanarayana V.S., Deans, HoDs, teaching and non-teaching staff and students were present. Planting of the saplings in the campus was initiated by Deputy Director. Development and presentation of innovative technologies for waste recycling, energy conservation was conducted for students. Competitions such as elocutions on Swacchata, Poster making, Slogan writing were conducted. Students actively participated in these competitions.



*SwachhtaPakhwada2020*  
Competitions



A collage of student activities under *Swachhta Pakhwada*

Competition on Best out of waste – creating useful items out of waste materials in the surroundings was conducted on 27 January 2020 at CSD, NITK for students. Cleanliness drive was held as part of the Swachhta Pakhwada Programme. The hostel premises of the campus were cleaned. New dustbins were installed in the campus to ensure cleanliness of the campus.

### **TEDxNITKSurathkal 2020**

TEDxNITKSurathkal hosted its sixth edition on 17 January 2020 at the Silver Jubilee Auditorium. The theme of the event was 'Mirrors and Windows'. The Diamond Jubilee edition of TEDxNITKSurathkal saw several new initiatives such as "Find your X", which was an augmented reality treasure hunt in which students of NITK actively participated and won prizes by hunting and collecting virtual Xs around campus using their phones. For the first time, TEDxNITKSurathkal hosted a community speaker - Gaurav Hore of II B Tech, who was selected after auditioning a pool of applicants from NITK. Other speakers included Team Avishkar Hyperloop (SpaceX finalists), Padmavati Rao (Theatre Artist, Actress), Anupama Hoskere (Master Puppeteer), Alina Alam (Social Entrepreneur), Ananya Khaitan (Designer), Samyukta Hegde (Actress), Bandeeep Singh (Photographer), Rosie Paul (Green Architect), Gopi Shankar Madhurai (Equal Rights Activist), Sunil Rayana (Co-founder, Slumgods), Rajesh Babu (Co-founder, Swachha eco solutions).



**Performers and speakers at the event**

## All India Inter-NIT Sports: Diamond Jubilee Edition

The Institute organized All India Inter-NIT Sports in Basketball (Men & Women), Kabaddi (Men & Women) and Swimming (Men & Women). Over 800 students and officials from 26 NITs participated in this Sports meet. International player, Asian gold medallist and present coach of Kolkata team in Pro-Kabaddi, Mr. Jagadeesh Kumble inaugurated the tournament on 17 January 2020. NITK Women's team won Basketball and Men's team won swimming championship. NITK women's swimming team won second place and Kabaddi team won third place. Dean, Students' Welfare, Dr. Jagannath Nayak distributed prizes in the closing ceremony held on 19 January 2020.



Mr. Jagadeesh Kumble speaking to the sportspersons

## Pariksha Pe Charcha

The third edition of *Pariksha Pe Charcha* with the Prime Minister Shri Narendra Modi was live telecasted at the Institute on 20 January 2020. More than 150 students, faculty, HoDs and Deans participated in the event.



Students participating in the *Pariksha Pe Charcha* programme

## International Mother Language Day Celebration-2020

On the occasion of International Mother Language Day, on 21 February 2020, several programmes were organized by Hindi Evam Sanskrit Club, which included the following: 1. Article writing competition in mother tongue 2. Quiz competition 3. Presentations on different languages and prize distribution. Hundreds of students participated in these activities and won prizes.



Students participating in a competition on the occasion

## HackVerse

HackVerse, a 24-hour national level hackathon, was held during 25-26 January, 2020. It was an initiative by the institute to serve as a platform to encourage enthusiastic young minds to brainstorm on solutions to challenging issues affecting society. This hackathon provided a platform for innovations, where developers could test and showcase their potential to the best of their abilities. The hackathon received around 2500 registrations from prestigious institutes including several IITs and NITs and many reputed private universities all over India, making it one of the largest student-organized hackathons in India.



A section of participants



HackVerse offered cash prizes of over Rs. 1.8 lakhs to the top three teams and other exciting goodies, platform credits, coding platform access and prizes worth Rs. 1.07 crore for participants. The event received extensive sponsorship from a multitude of 30+ companies such as Wells Fargo, Fidelity, BSE IPF, Linode, DigitalOcean, JetBrains, Elastic, Devfolio, Monster, Matic and many more.

### ***Bharath Darshan***

On 26 January 2020 (Republic Day), the Dance, Drama and Fashion Club (DDFC) of the Institute organised the biggest cultural event in its portfolio of events, *Bharat Darshan*. The event is a celebration of the diversity of India, with each state putting up a display of about 15-20 minutes. The aim is to represent the traditions and cultures of different states through a variety of traditional dance forms. This edition witnessed maximum participation from students of each year. Both participants and the audience greatly enjoyed the event.



The Karnataka Team presenting Yakhagana and other art forms

### ***Incident 2020***

Incident 2020 was inaugurated on the evening of 27 February by Prof. K. Balaveera Reddy with Mr. Digant Manchale as Chief Guests and Smt. Vidhathri U. and Shri. Anantha Padmanabha K. as Guests of Honour. Director, Prof. K. Umamaheshwar Rao presided over the function. This was followed by a performance by Ranaditya Sengupta, a mentalist. Talented kids of Incident's I-care beach schooling initiative performed a dance/skit on the conservation of tigers. NITK Dance

Crew and Akal Bhangra entertained the crowd with their amazing dance performances. After the Inauguration and cultural performances, we had Day 0 Proshow i.e Comedy Night with Aakash Gupta. Gupta is the winner of Comicstaan 2.0 and specializes in sketch comedy genre of Stand-up Comedy.

An assortment of events such as performing arts, sports events, B-plan competition, literary and general events, Exhibition and Fine Arts, Photography, Gaming events, Kite festival and Beach informals were hosted.



**An exhibition of paintings in Kalakriti**

Apart from the above events, *Inci specials* saw some tremendous additions this year in terms of events and audience. Adventure Zone, iB Cricket, World Fest, Auto Expo, Stunt Show, Street play, Zumba workshop were some events in this category. *World fest* is the flagship Inci Specials event of Incident which host street artists performing special stunts, Juggling and visual effects. This year we had Sylvain Pomme from France and The Twins' Trip from Argentina.



**A Bike-stunt event**

This year, NITK saw its biggest line-up ever with Thaikuddam Bridge, The Raghu Dixit Project and Salim Sulaiman. Average footfall each day was around 3500. This year also saw the introduction of the entry band system to replace the traditional ID system which was a huge success as it saw huge crowds during the day for pass collection and the crowd control of students was much smoother during *proshows*.



An event in the Proshow category

To celebrate the Diamond Jubilee year of NITK and the 40<sup>th</sup> anniversary of Incident, the theme of the festival was titled 'A Tryst with Time'.

### 6<sup>th</sup> International Day of Yoga

The 6<sup>th</sup> International Day of Yoga was observed on 21 June 2020 around the theme Yoga @ home and Yoga with Family from 7:00 to 7:45 AM. Director of NITK, Faculty, Students, Staff and their family members, participated in the programme.



Yoga performers from the campus on Yoga Day

## Technical Education Quality Improvement Programme (TEQIP) III

During the period of January-June 2020, even though the project activities were affected by the COVID-19 pandemic, the TEQIP-III office sponsored the initiatives by coordinators of different programmes. Under the sub-head activity, 'Faculty/ Staff Development and Motivation', the project could utilise Rs.20,34,823/-, thus funding our faculty to attend conferences and conduct seminars and workshops. Accordingly, 26 faculty members attended conferences/workshops and organised 7 workshops/seminars and 1 international conference during the above period. UG students were benefited with support in terms of GATE 2020 exam material, face to face training as well as their registration fees. The funding was to the tune of Rs.14,47,100/-. 84 students have utilized TEQIP-III funds to support their summer internship in industry and R&D organizations, the expenditure towards which was Rs. 6,00,886/-.



**NITK faculty with Government Engineering College, Jhalawar faculty of Mechanical Engineering during the Twining activity (10-16 February 2020)**

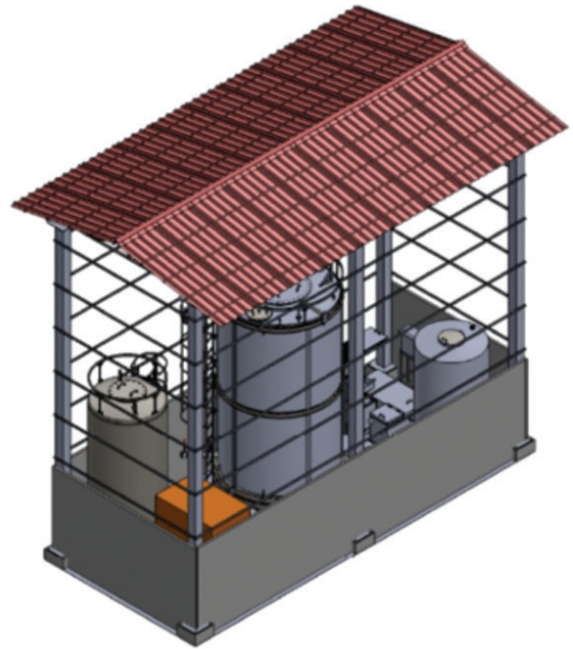
NITK Surathkal has been mentoring Government Engineering College (GEC,) Jhalawar, Rajasthan under TEQIP III. As many as 20 faculty members visited GEC, Jhalawar for mentoring activities. Accordingly, an amount of Rs. 4,74,133/- has been utilised for organizing academic activities for the benefit of faculty and UG students of this mentee institute. The project has benefited as many as 6 faculty members in publication of their research articles in peer reviewed journals. The Project has also supported 23 students of UG, PG and PhD courses to present research papers at reputed conferences in the country.

### MoUs Signed during January-June 2020

Date of Signing	Duration	Organization/Institute	Domain
03 January 2020	10 Years	Indian Space Research Organisation (ISRO) Bengaluru	Research
09 January 2020	3 Years	L&T Technology Services Pvt. Ltd	Research Activities
10 January 2020	5 years	Tashkent Institute of Irrigation and Agricultural Mechanization Engineer (TIAME) Uzbekistan	International Academic Cooperation
15 January 2020 (Renewed)	3 Years	Kompetenzzentrum Holz GmbH	Faculty exchange/ Collaborative research
24 January 2020	1 year	Sanjay Gandhi Institute of Trauma and Orthopaedics, Bangalore	To foster cooperation in education and medical research
10 February 2020 (Renewed)	5 Years	Michigan State University, U.S.A.	Faculty exchange /Student exchange programme
25 February 2020 (Renewed)	3 years	hepia-University of Applied Sciences Western Switzerland (technology, architecture and landscape)	Student exchange programme/ Exchange programme for teaching staff
27 February 2020 (Renewed)	5 years	Faculty of Engineering and Graduate School of Science and Technology, Kumamoto University, Japan	Student exchange programme
09 March 2020 (Renewed)	5 Years	Kagoshima University, Japan	Academic exchange programme for students
27 March 2020	31 March 2021 (1 year)	Tecnimont Private Ltd, Mumbai	Implementing Bio waste Recycling Pilot Plant Project and providing two Maire Tecnimont Research Scholarship for Sustainable Development
27 April 2020	5 years	Sree Chitra Tirunal Institute for Medical Science and Technology	Collaborate in Academic, Scientific and Technical research in specific areas of Common Interest in the broad area of Artificial Intelligence in medical image analysis, under a project Titled "Volumetric estimation of paraspinal muscle atrophy following minimally invasive tubular retractor assisted excision of extramedullary tumours of the Spinal Canal".

## **Campus Waste to Energy Project (CWEP) - M/s Tecnimont Private Limited**

Tecnimont Private Ltd., Tecnimont House, Chincholi Bunder, 504, Link Rd, Malad (West), Mumbai-400064, Maharashtra, has donated Rs 39,60,800/- for installing, commissioning, operating and maintaining Bio-waste recycling pilot plant of 500 kg capacity (per day) to produce biogas through anaerobic digestion and Rs 4,32,000/- for providing two Marie Tecnimont Research Scholarships in Sustainable Development to the students of the Institute. In order to foresee the support activities of the pilot plant implementation, carry out research work and also to carry out activities related to sustainability at the Institute Campus, scholarships are instituted for two meritorious MTech/PhD (BTech-Mech/Chem in case of MTech by Research) students for a period of one year by the above company. This funding was facilitated by 1981 Alumnus Mr. Milind Baride and Mr. R.K. Murthy as part of 'Contribute to Almamater Project' (CAMP) initiative of 1981 batch.



**Proposed Bio-waste recycling pilot plant**

## **Scholarships and Outreach Activities - M/s Boeing**

Under the Boeing CSR grant, our institute received a grant of US\$ 13600. Out of this grant, provision is made to give four cash awards of US\$ 900.00 each to students from III B.Tech & I M.Tech from Mechanical/Electrical/Electronic branches.

## **Placement and Internship Statistics during the Year 2019-20**

The Institute is ranked amongst the top-performing institutions in the country for campus placements. During 2019-20, a total of 278 reputed companies visited the campus providing placements for students in different disciplines. More than 91% of our undergraduate students and 55% of postgraduate students have been placed in prominent organizations through campus placements. The Institute can proudly claim that the pandemic has had ZERO impact on its placement figures. In a display of innovation and flexibility, during the summer of 2020, students and the industry came together to conduct the industry internships through online platforms.

DEPARTMENT	ELIGIBLE STUDENTS	PLACED	% PLACED
<b>B.Tech</b>			
CIVIL	71	53	75
CHEMICAL	33	28	85
COMPUTER SCIENCE	97	97	100
ELECTRONICS & COMMUNICATION	96	93	97
ELECTRICAL & ELECTRONICS	95	86	91
INFORMATION TECHNOLOGY	97	97	100
MECHANICAL	118	105	89
METALLURGYCAL & MATERIALS	36	31	86
MINING	29	19	66
Total B.Tech	672	609	91
<b>M.Tech</b>			
<b>CIVIL</b>			
STRUCTURAL ENGG.	22	14	64
GEO TECH ENGG	14	7	50
ENVIRONMENTAL ENGG	22	9	41
TRANSPORTATION SYSTEMS ENGG	21	4	19
CONSTRUCTION TECH & MGMT	23	3	13
<b>APPLIED MECHANICS &amp; HYDRAULICS</b>			
MARINE STRUCTURES	25	13	52
WATER RESOURCE ENGG & MGMT	13	2	15
REMOTE SENSING & GIS	20	0	0
<b>CHEMICAL</b>			
INDUSTRIAL POLLUTION CONTROL	9	5	56
CHEMICAL PLANT DESIGN	7	2	29
INDUSTRIAL BIOTECHNOLOGY	19	3	16

<b>COMPUTER SCIENCE</b>			
COMPUTER SCIENCE & ENGG	29	28	97
INFORMATION SECURITY	26	25	96
<b>ELECTRONICS &amp; COMMUNICATION</b>			
VLSI	28	17	61
COMMUNICATION ENGG	21	16	76
<b>ELECTRICAL &amp; ELECTRONICS</b>			
POWER & ENERGY SYSTEM	23	8	35
<b>INFORMATION TECHNOLOGY</b>			
INFORMATION TECHNOLOGY	22	22	100
<b>MECHANICAL</b>			
THERMAL ENGG	18	14	78
MANUFACTURING ENGG	15	4	27
MECHATRONICS	21	9	43
DESIGN & PRECISION	17	7	41
<b>METALLURGICAL &amp; MATERIALS</b>			
PROCESS MET.	10	3	30
MATERIALS ENGG.	14	3	21
NANOSCIENCE AND NANOTECH	6	0	0
<b>MATHEMATICAL &amp; COMPUTATIONAL SCIENCE</b>			
COMPUTATIONAL MATHEMATICS	20	12	60
<b>Total M.Tech</b>	<b>465</b>	<b>230</b>	<b>49</b>
MCA	82	75	91
MBA	18	17	94
MSc (Chemistry)	25	8	32
MSc (Physics)	22	8	36
<b>TOTAL</b>	<b>ELIGIBLE STUDENTS</b>	<b>PLACED</b>	<b>TOTAL % PLACED</b>
	<b>1284</b>	<b>947</b>	<b>74</b>
<b>Total Companies Visited: 278</b>	<b>Maximum salary Rs. 49.75 LPA</b>		
<b>Average Salary UG: Rs.11.97 LPA</b>		<b>UG: 91 %</b>	<b>PG: 55 %</b>



### Training Slots for the Academic Year 2019-20

Sl. No.	Branch	No. of Slots
01	Chemical Engineering	27
02	Civil Engineering	35
03	Computer Engineering	91
04	Electronics & Communication Engineering	34
05	Electrical & Electronics Engineering	51
06	Information Technology	86
07	Mechanical Engineering	92
08	Metallurgical & Material Engineering	31
09	Mining Engineering	38
Number of Companies: 14		Number of Training Slots: 485

### Patents, Testing and Consultancy

During the reporting period, four patents were filed. There were 24 major (1 lakh and above) Testing & Consultancy (T&C) projects. Total revenue generated from this activity during the period was 68.70 lakh.

### Activities undertaken at the Centre for System Design (CSD)

#### Virtual Labs

NITK Surathkal, associated with the mission of ICT aided experiential learning as one among the twelve distinguished Participating Institutes (PI) across the country, is engaged in the development, maintenance and outreach of the online resources under the Virtual Labs project of Ministry of Education. The Centre for System Design (CSD), a transdisciplinary research and consultancy centre in the Institute, undertakes several projects of government, PSUs and other industrial establishments delivering solutions to engineering as well as managerial challenges. The Centre coordinates activities pertaining to Virtual Labs and has so far developed over 125+ experiments in 15+ lab courses on the platform being used as a learning tool by students from far and wide and

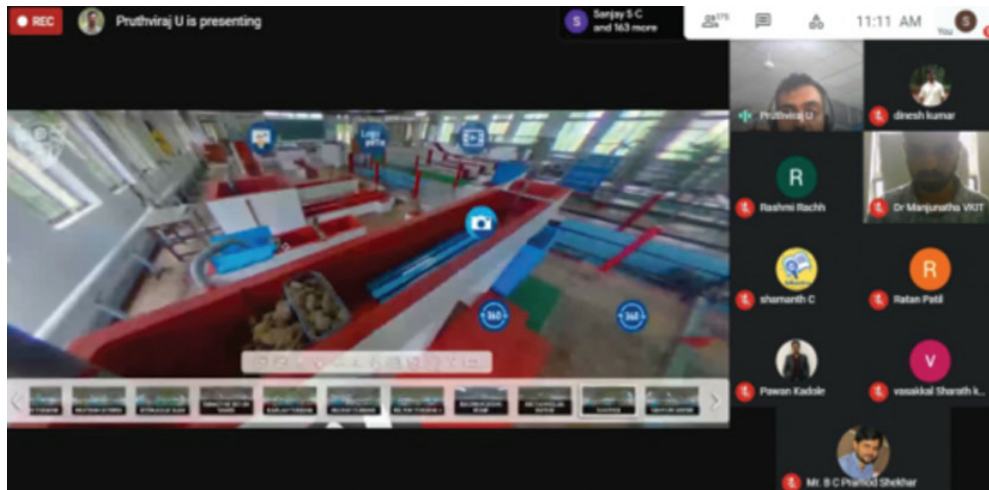
conducted 150+ workshops on Virtual Labs at various institutes across the country. The Institute also mentors nearly 270+ institutions across the country. The institute also houses a unique “Remote Triggered” Lab, where students worldwide can not only remotely trigger an experiment in an actual lab but also get the result of the experiment through the computer interface. Below are the Summary of activities that Virtual Labs team of NITK Surathkal has conducted during the period January - June 2020:

- Number of Physical Workshops undertaken covering the colleges in Karnataka, Kerala and Goa: 21



**Prof. K.V. Gangadharan, Coordinator of the Centre, demonstrating Virtual Labs at VTU, Belagavi**

- Number of Online Webinar Sessions Conducted till date: 134  
Details: 86 sessions in the colleges of Karnataka, 24 sessions in the colleges of Kerala, 19 sessions in the colleges of Tamil Nadu, 9 sessions in the colleges of Maharashtra and the other sessions covering the colleges in the states of Goa, Andhra Pradesh, Uttar Pradesh, Jharkhand, Telangana, Punjab, Sikkim, Arunachal Pradesh, Assam, Haryana and Union territory Puducherry.
- Number of students being trained: 5602
- Number of faculty members being trained: 15234
- Number of NITs as Nodal Centres of NITK Surathkal Virtual Labs: 9
- Number of Universities as Nodal Centres of NITK Surathkal Virtual Labs: 9



**Dr. Pruthviraj Umesh demonstrating Virtual Tour in an Online Webinar on Virtual Labs**

## Alumni Activities

NITK Surathkal Alumni Association (NITKSAA) has been active in a variety of ways and the following were only a few glimpses of their activities for the reporting period:

### Trishul Jal Sanchayan

Trishul Jal Sanchayan is an exclusive project of groundwater recharge for Trishul (8<sup>th</sup> Block) hostel surroundings. The recharge system will be surrounded by lush green foliage and a seating arrangement led by a path of pebbles. This ambience will instil a sense of peace and calmness in the area. All the design, planning and execution aspects will follow the guidelines provided by the Central Ground Water Board involving georesistivity study, hydrological urban model study, etc. The water from all the three rooftops and surface runoffs are diverted to recharge structure location by passing through a bar screen which ensures the removal of all kinds of solid matters. The location of recharge-cum-storage structure is selected on the basis of preliminary survey of catchment and hydrological modelling results.



**Progress as of 30 June 2020**

Trishul Jal Sanchayan is expected to cost around Rs. 20 lakh and has been sponsored by the 1994 batch. Dr. Pruthviraj Umesh, Assistant Professor, Department of Water Resources and Ocean Engineering is leading the project and has done commendable work in taking it to an advanced stage during the peak of the pandemic lockdown.

### **Continued Support to KREC Higher Primary School**



**Alumni Association members handing over their donation to the school**

The KREC Higher Primary School is government aided and over 125 years old with around 100 students. Education here, is free for students and the school caters to the poorest in and around the campus like children of mess workers, labourers, etc. The government support does not meet all the staff expenses at the school as they have only 2 government-appointed teachers as against the requirement of 7. The following are the contributions to the school by alumni in the 1<sup>st</sup> half of the year 2020:

- 1971 batch - Rs. 1,35,000/-
- 1994 batch - A new computer

### **Career-development Alumni Mentorship Program (CAMP)**

This flagship program of NITKSAA continued during the pandemic and lockdown. The online format was adopted for conducting the sessions and providing mentoring. A group of students focused on the preparation for Civil Services and they were mentored by Mr. Varnit Negi (NITK 2014 batch), who is All India 13<sup>th</sup> rank in Civil Services Exam. SP of Bagalkot, Mr. Lokesh Jagalasar (NITK 2012 batch) conducted an online session with the focus group on 21 June 2020.

### Covid19 Pandemic Relief - Grocery Kits

During Covid-19 pandemic NITKSAA has come forward and contributed towards the distribution of kits containing essential food items to daily wage workers and poor families through NITK Consumers co-operative society. The total contributions were Rs. 3,87,089/- with the following breakup:

● 1981 Batch	Rs 1,28,521
● Mumbai Chapter	Rs 1,20,000
● Delhi Chapter	Rs 50,550
● 1994 Batch	Rs 30,000
● 2005 Batch	Rs 20,006
● Others	Rs 38,012
<b>Total:</b>	<b>Rs.3,87,089/-</b>

### NITK Entrepreneurs Conclave III



#### Alumni entrepreneurs at the Conclave

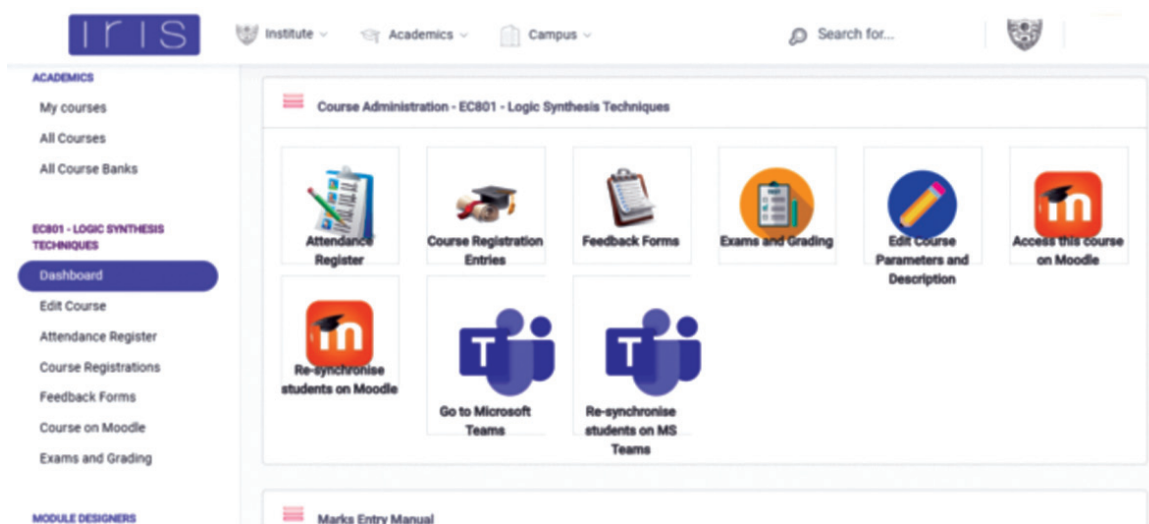
NITK Entrepreneurs Conclave III with the theme, “Connect, Collaborate and Grow” was organized on 25 January 2020 at RG Hotels and Resorts, Malur, Bengaluru. The focus was Data Science, Learning and Development and Fintech. This was a one-day residential programme and the organisers received a tremendous response with more than 80+ NITK alumni entrepreneurs. The programme director Rajashekhar S. of 1998 batch did an excellent job of organizing this conclave.

## Onslaught of COVID-19

The sudden and unexpected onset of COVID-19 was a shocker to the whole world. With the entire world suspending its activity, the Institute followed suit. However, several activities of the institute were channelized towards fighting the pandemic in its own unique way and capacity, beginning with the way the classes were resumed. The following is a brief report of the activities during COVID-19 lockdown and post-lockdown during the reporting period.

### Integrated Resources and Information Sharing System (IRIS) for Learning at NITK Surathkal

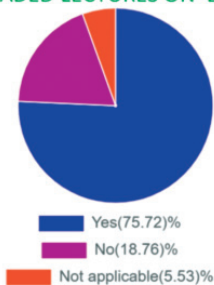
The Institute has a robust and a unique online lecture delivery MIS platform called Integrated Resources and Information Sharing System (IRIS) developed indigenously by the students and faculty of the institute. This platform is used by the administration for student online admission, fee payment, course registration, course delivery, examination and grading, student feedback, career development and placement activities, hostel room allocation, convocation and distribution of degree certificates, guesthouse booking and faculty appraisals. This is the only Learning Management System (LMS) currently available in any university in India providing diverse yet robust teaching, learning and student administration environment.



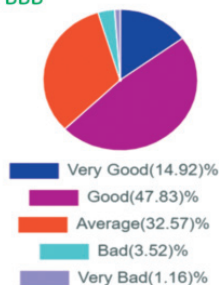
IRIS Dashboard of a Course

**Flipped Virtual Class:** IRIS (<https://iris.nitk.ac.in/>) LMS has integrated Moodle, BigBlueButton (BBB) and Microsoft Teams to handle all academic activities such as online course delivery and real-time student interaction. All classes since the onset of COVID-19 pandemic are handled through IRIS platform which is catering to more than 6,000 students across India and abroad. Students and faculty can access and update all the course material, conduct exams and announce grades entirely in an online mode through a secure interface from anywhere in the world. The entire theory and laboratory courses are handled in flipped-virtual class mode in a combination of live online capsule lectures (also referred to as doubt-clearing sessions) supported by more elaborate uploaded lectures. Students have appreciated the efforts made by faculty in offering hassle-free learning experience. The following is the result of a students’ survey conducted to assess the effectiveness of our online classes.

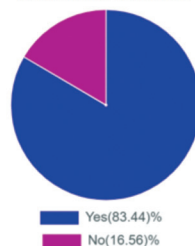
• **EASINESS OF UNDERSTANDING UPLOADED LECTURES ON BBB**



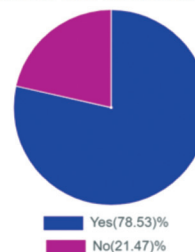
• **QUALITY OF UPLOADED LECTURES ON BBB**



• **EFFECTIVENESS OF DOUBT CLEARING SESSION ON MST**

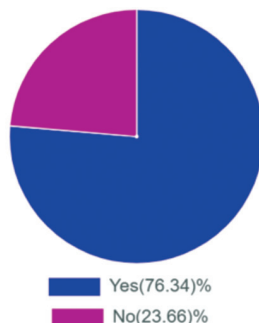


• **REGULARITY OF STUDENTS IN DOUBT CLEARING SESSION ON MST**



• **EVALUATION PLAN**

- 76% students are happy with new evaluation plan.
- Among others, 8% students say only MCQ should be asked; 5% students say weight-age for Semester exam should be minimum; 5% students say weight-age for Semester exam should be maximum; 6% students say Open book questions should be asked



## Centre for System Design (CSD) and Fight against COVID-19

Face shields and masks play a major role in the prevention of COVID-19. But the alarming information is that there are very few manufacturers of these equipment. Centre for System Design (CSD) took up the manufacturing of face shields which are in huge demand from the frontline workers. OMPL Officer's Association has generously contributed Rs. 1,00,000/- to aid NITK-CSD's fight against this global pandemic. With this financial support, NITK-CSD designed, manufactured the face shields.

- (i) 3,500 face shields were manufactured and supplied to Covid warriors of the district.
- (ii) 2,500 face shields were given away to District Commissioner, Udupi and the District commissioner of Dakshina Kannada that were in turn distributed to all frontline Covid warriors of these districts.
- (iii) 3,000 face shields were given to District Commissioner of Kodagu.
- (iv) The Police Commissionerate of Mangalore, ONGC-Delhi and Kudremukh Wildlife Division were given 500 face shields each.



**Distributing face-shields to end users**



## ***Lagu PaTa – Short and Apt Video Tutorials***

Engineering is basically an application oriented professional course. Thousands of students enrol in the course with great aspirations and laboratory sessions are an essential part of the course. To bridge the gap between offline and online learning, CSD at NITK Surathkal, has developed a Virtual Reality tour of two crucial laboratories – Strength of Materials (SOM) and Fluid Mechanics (FM) labs.

The students who have taken up these two lab courses will be able to get a full 360-degree view of the entire lab. They will get the feel of being in the laboratory and seeing the experimental setup. Through this Virtual Reality, they can perform experiments and obtain results. The students will be able to estimate the size of the set up even though they are not physically present. The user interface of the Virtual Reality Lab is very user friendly with a list of all available experiments at their disposal. Each experiment contains thumbnails of *Lagu PaTa* for Simulator as well as the actual set up. With Virtual Reality Headgear made of relatively inexpensive cardboard material, students will be able to access this facility even better and have an immersive experience.

*Lagu PaTa* is a very short and apt video tutorial guide to the virtual lab experiments as well as actual experiments that can be performed. *Lagu PaTa* is a very befitting tool for students who tend to procrastinate academic activities. Since it is a very small and easy to grasp video tutorial explaining the gist of the experiment, the user tends to get engaged and proceed to perform the experimentation. This allows the student to continue the learning process from any place of his choice. Just as the instructors provide assistance during the actual laboratory class, *Lagu PaTa* guides students through the experiment with ease.



The image shows a promotional banner for 'Lagu paTa'. On the left, the logo features the word 'लघुपाठ' in blue Devanagari script above 'Lagu paTa' in a bold, teal sans-serif font. Below the logo, it reads 'Short & Apt Video Tutorials - An Initiative by CSD, NITK Surathkal'. To the right, a laptop displays a 3D wireframe model of a laboratory setup. Below the laptop, a teal banner contains the text: 'Lagu paTa is a short and easy to grasp video tutorials to handhold and guide students encouraging them to use Virtual Labs to continue their learning activities during this lockdown.' At the bottom right of the banner, there is a QR code with a 'SCAN HERE' label, and several institutional logos including NITK Surathkal and Virtual Labs.

YouTube link: [https://youtu.be/PG1\\_fTavqRU](https://youtu.be/PG1_fTavqRU)

## Production of Hand Sanitizer and COVID-fighting Devices

Prof. Arun M. Isloor (Head, Department of Chemistry) led his team in preparing high quality hand sanitizer (as per the WHO guidelines) after obtaining license from the Drug Controller of India. As many as 6,000 bottles (of 100 ml capacity) were freely distributed among security personnel, Police personnel, bank employees, NITK employees and campus residents, fishermen at Surathkal, petrol bunk staff along highway, Post office employees and neighbourhood residents.



**Prof. Arun Isloor distributing hand sanitizer to the Police staff on NH 66 during April 2020 lockdown**

Prof. Isloor's team was also actively involved in preparing low cost, reusable and transparent face shield. These shields were freely distributed among security personnel of NITK, police department, post offices, banks and other needy people. Dr. Lakshmi Vellanki, Mr. Syed Ibrahim G.P., Mr. Praveen (Mechanical engineering) and Mr. Sarthak Shetty (CCE office) actively participated in this. Both the above activities were funded by Faculty Development Fund of the institute.

On 14 April 2020, Prof. Isloor came out with a Disinfectant Chamber, ZERO-COV, based on UV-C radiations. He gave demonstrations on this to the representatives of small-scale industry and to the general public. Some of these activities were even covered by the national media.

## **Deep Learning Models for COVID-19 by the Department of Computer Science & Engineering (CSE)**

The Institute started a research study to predict the growth of the Covid-19 cases in India using Machine Learning. Recurrent Neural Networks was used to build a Deep Learning Model and answer many questions that could help the administration make important decisions that could save lives. A group of volunteers consisting of alumni, faculty and students of the Institute worked continuously on this project under the supervision of Dr. Alwyn Roshan Pais, Head, Department of CSE, at the Institute. This research work was funded by Google Cloud. The results of this prediction could be used for saving lives, by taking appropriate measures. Technical details of this open-source project are available at <https://indiacovid.seva.ml/>

## **Donation to CM's Relief Fund by Chairman (BOG), NITK**

Prof. K. Balaveera Reddy, Chairperson of Board of Governors, NITK Surathkal, presented a cheque of Rs. 50,000/-, equivalent to a month's pension amount, to Honourable Chief Minister of Karnataka State, Shri. B.S. Yeddyurappa, towards CM's Relief Fund in the context of COVID-19.



**Prof. K. Balaveera Reddy handing over the cheque to Shri B.S. Yeddyurappa**

## NITK Hostels

The Institute handed over five top-class hostel blocks and two guest houses to the district administration to tackle the emergency of COVID-19. This amounted to the tune of 2500 single room accommodation. These facilities were used to quarantine both COVID-19 positive and suspect cases. Large number of people returning from the Gulf countries and neighbouring states were accommodated in these hostels and guest houses with excellent facilities. Doctors were provided in these facilities by the district administration. A separate thoroughfare was created by the Institute to approach these facilities so as to avoid the regular paths and thereby, risks of contact. The Institute had earlier made a timely decision to send the students back to their hometowns from these campus facilities. Therefore, the hostel rooms had to be cleared of their belongings on a war footing before the handover.

## Grocery Kits to the Needy in and around the Campus

The employees, students and alumni of NITK Surathkal, in collaboration with the NITK Consumers' Cooperative Society, organized a massive food-kit distribution drive for the daily wage workers and other poor people affected by the COVID-19 lockdown, near the Institute campus. The first phase of grocery kit distribution to the needy and poor families was kicked off by the Director, Prof. K. Umamaheshwara Rao, in the presence of Deans, Registrar, Joint Registrar, and Secretary of NITK Consumers' Cooperative Society. In subsequent phases, a total of 1,500 kits have been distributed to the families living in the surroundings of the Institute. The kit contained essential grocery items like rice, toor dal, jaggery, chilli powder, turmeric, atta, sooji and garlic. The cost of one kit was Rs. 600/-. The total donations received from various sources for this purpose amounted to Rs. 9,00,000/-



Grocery kit distribution in the Institute neighbourhood

**We are thankful to the dedicated service of the following Non-Teaching Staff on their Retirement**



**Sri. Mohandas M.**  
Assistant (SG-I)



**Sri Rukmayya Shetty**  
Assistant (SG-I)



**Sri Balakrishna K.**  
Technician (SG-I)



**Sri Narayana Naik**  
Lab Attendant (SG-I)



**Sri Karunakar Shetty**  
Technician (SG-I)



**Sri Shekhar P.**  
Superintendent (SG-I)



**Sri Suresh Devadiga**  
Technician (SG-I)

**A tearful adieu to the following Non-teaching Staff leaving us due to their untimely demise**



**Sri Manjunatha Naik P.**  
Senior Technical Assistant



**Sri K. Prakash**  
Office Attendant (SG-I)

## Avian Friends on our Green Campus



**Ashy Woodswallow**



**Blue-tailed Bee-eaters**



**Chestnut-tailed Starlings**



**Oriental Honey Buzzard**



**Peafowl**



**Rose-ringed Parakeets**



**White Wagtail**



**White-bellied Sea eagle**





**[www.nitk.ac.in](http://www.nitk.ac.in)**

National Institute of Technology Karnataka, Surathkal, Mangaluru, Karnataka, India - 575 025

Phone: + 91-824-2474000/26

Fax: +91-824-2474033

e-mail: [director@nitk.ac.in](mailto:director@nitk.ac.in)