



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL  
MANGALORE - 575 025 INDIA

# Annual & Audit Report 2019-20





# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL

MANGALORE - 575 025 INDIA



## ANNUAL REPORT 2019-20

Website : [www.nitk.ac.in](http://www.nitk.ac.in)  
E-mail : [director@nitk.ac.in](mailto:director@nitk.ac.in)

Tel : 0824-2474000 (24 lines)  
Fax : 0824-2474033



# NITK SURATHKAL – AT A GLANCE

## GOVERNANCE

NITK is governed by the Board of Governors, which consists of representatives of the Government of India, Government of Karnataka, Industry, Alumni, and other Nominees. The Chairman of the Board is nominated by the Government of India. The Director is the administrative head of the Institute. NITK an “Institute of National Importance”, is governed by NIT Act 2007 and statutes laid down by Government of India. Reconstituted Board of Governors is in place since September 2011.

## TEAM NITK

14 Departments

249 highly qualified and dedicated faculty

158 committed supporting staff

5775 talented and motivated students

## LIST OF DEPARTMENTS

- Applied Mechanics & Hydraulics
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science & Engineering
- Electronics & Communication Engineering
- Electrical & Electronics Engineering
- Information Technology
- Mathematical & Computational Sciences
- Mechanical Engineering
- Metallurgical & Materials Engineering
- Mining Engineering
- Physics

## SCHOOLS

- School of Management

## Academic Programs

- B.Tech. – 9 disciplines
- M.Tech. – 25 Specializations
- M.Tech. (Research) – All Specializations MBA
- MCA
- M.Sc. (Chemistry) M.Sc. (Physics)
- Ph. D. – offered in all departments

All the Departments of the Institute are recognized QIP centres for admission of teachers of both Engineering colleges and Polytechnics for their post-graduate & doctoral studies.

## INTERDISCIPLINARY CENTERS OF EXCELLENCE

Disaster Risk Reduction Innovation

Material Research

Sustainable Technologies

System Design (Virtual Instrumentation)

Wireless Sensor Networks

## ASSOCIATED CENTRES

Centre for Continuing Education, R&D center for - clay, Roofing Tiles & Ceramic Products, Industry Institute Partnership Cell; NITK Science and Technology Entrepreneurs Park (NITK-STEP).

## CAMPUS

295 acres of lush green beach-side campus located at Srinivasnagar, Surathkal Mangalore. Departments & facilities on Eastern and Western sides of NH-66 with connectivity through a 2-lane vehicular underpass.

Well connected by rail and road to the rest of country. Flights available to major Indian cities and International destinations.

## FACILITIES & SUPPORTS

150 + Classrooms, 140+ laboratories

12 hostel blocks for boys, 5 hostel blocks for girls. Mega Hostel for boys with 1512 single-seater rooms. New Ladies Hostel with 347 single-seater room. Internet connectivity (1Gpbs, 155 Mbps, 6000 nodes) Central computer Center, Central Library, E-Library, On-line access to journals 1200-capacity Auditorium, 1800-capacity Open-air theatre, Co- Operatives stores, Post office, Banks, ATMs, Health Care Centre with many visiting specialist doctors, Yoga Centre, 3 Campus schools (Kannada & English Medium), Guest House, Food Court and Canteens, International standard Swimming – Pool, Sports Grounds for cricket, hockey, football floodlit Courts for Basketball, Volley ball and Tennis, NCC–2nd Karnataka Engineering Company, Surathkal Innovation Challenge (SIC), Student Internship Programme (SIP).

## BUDGET (2019-20)

Total Financial Outlay Rs. 174.06 Crores Internal Revenue Generated Rs. 61.68 Crores Consultancy & Testing Earnings Rs.1.8 Crores Corpus Fund of more than Rs. 231 Crores

## PUBLICATIONS (2019-20)

International Journals – 938 National Journals -12

International Conference – 486 National Conference – 34

## DOCTORAL OUTPUT

2016 -17 - 57 candidates

2017- 18 - 58 candidates

2018 -19 – 124 candidates

2019-20-116 candidates

candidates Doctoral students on rolls –859

## EXTRA AND CO-CURRICULAR ACTIVITIES

More than 30 clubs, societies and professional body chapters are active conducting regular activities through elected leaders and representatives. "INCIDENT" and "ENGINEEER" are popular cultural and technical annual festivals. NITK has won the overall championship of Inter NIT Sports consecutively for the last 3 years.

## SCHOLARSHIPS & MEDALS

Several well known and prestigious scholarship (27) awards and medals (66) are on offer for students at all levels. This is in addition to all regular scholarships of Govt. of India and Other State Governments.

## Career Development Centre (Formerly Training And Placement)

NITK is ranked among the top institutions for student placements. During 2019-20. UG placements 90% and 57% PG students got placement through the campus selection. The department also facilitates internships for students within India and overseas.

## MOUs between Foreign Countries:

- 20th August ,2019, 5 Years, Hewlett Packed Enterprise Globalsoft Pvt. LTD, Bangalore Initiating research collaboration activities with NITK Faculty on areas of Mutual Interest, Engaging NITK students in potential internship activities and in-semester projects, Conducting periodic workshop /seminars (with HPE experts and organised by NITK )on topics of mutual interest at NITK Surathkal .Faculty and students of NITK could be Participants, Organising webinars, conference , coding Competitions etc, Explore potential setup of lab facility at NITK, to explore research avenues in high performance computing and other research activities.
- 31st August, 2019, (Renewed MOU),3 Years, Robert Bosch Engineering and Business Solutions Limited (RBEI),Bangalore Mechanical/ Electronics/Collaborative research and student Internship.
- 15th December , 2019, 5 years, Indian Institute of Technology Jammu, To Promote defence research, National and International academic cooperation in education, research and consultancy:-

27th March ,2020, 31.03.2021(1 Year), Tecnimont Private Ltd, Mumbai Implementing Bio waste Recycling Pilot Plant Project and providing two Maire Tecnimont Research Scholarship for Sustainable Development.

Exchange of materials in education, research and consultancy, Publications, and academic information;

Exchange of faculty and research scholars;

Exchange of students

Joint research and meetings for education, research and consultancy ;

Technical assistance, training for defence personnel, faculty students and the local community.

Both the institute will share their resources for the benefit of students, faculty and research scholars of the institutes.

03rd January, 2020, 10 Years , Indian Space Research Organisation (ISRO) Bengaluru, Research Activities.

9th January,2020, 3 Years , L&T Technology Services Pvt. Ltd, Research Activities.

10th January, 2020,5 years , Tashkent Institute of Irrigation and Agricultural Mechanization Engineer (TIAME)Uzbekistan, International Academic Cooperations.

15th January, 2020, 3 years, Kompetenzzentrum Holz GmbH (Renewed MOU)Faculty exchange/ Collaborative research

24th January, 2020, 1 year, Sanjay Gandhi Institute of Trauma and Orthopaedics, Bangalore, To Foster cooperation in education and medical research.

10th Feb, 2020 (Renewed MOU), 5 Year, Michigan State University, U. S. A, .Faculty exchange / Student exchange Program.

Faculty of Engineering and Graduate School of Science and Technology, Kumamoto University, Japan

27th April , 2020, 5 years, SreeChitra Tirunal Institute for Medical Sciences 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 tumors of the Spinal Canal".

9th March ,2020(Renewed MOU), 5 years, Kagoshima University, Japan Academic exchange program for students.

## TEQIP – III

Project awarded to the institute has been successful in implementing diversified activities as laid under the three heads namely procurement, academic and operating cost. During the F.Y. 2019-20 funds utilized under various heads are Rs. 34.02 lacs for procurement, Rs. 121.11 lacs for academic activities, and 12.18 lacs for operating cost.

# ANNUAL REPORT 2019-2020

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## 1. THE INSTITUTE

### 1.1 HISTORICAL BACKGROUND

National Institute of Technology Karnataka (NITK) Surathkal, formerly known as Karnataka Regional Engineering College (KREC) Surathkal, was established in the year 1960 at Srinivasnagar, Mangalore, Karnataka State. Sri U. Srinivasa Mallya, a visionary and a philanthropist was instrumental in the establishment of this Institute and hence the campus is named after him as “Srinivasnagar”. KREC made a small yet significant beginning with 3 Departments offering BE programs in Civil, Mechanical and Electrical Engineering. Since then KREC grew from strength to strength and set unprecedented records in the field of technical education in the country. Initially the College was affiliated to the University of Mysore but in 1980 the affiliation was transferred to the Mangalore University. With every passing batch of students who went on to conquer unexplored domains in the service of humanity, the stature of KREC grew and the world recognized and applauded. So much so, ‘Surathkal’ is synonymous with high quality engineering education. In 2002, the Government of India decided to grant full autonomy and accordingly the College was elevated to the status of Deemed University and renamed as the National Institute of Technology Karnataka. Subsequently, the National Institute of Technology Act, 2007 was enacted by the Parliament of India to declare India’s National Institutes of Technology as Institutes of National Importance. The Act received the assent of the President of India on 5<sup>th</sup> June, 2007 and became effective from August 15, 2007. The Institute is governed by the rules and statutes of the NIT Act.

The Institute has established itself as a premier center engaged in imparting quality technological education and providing support to research and development activities. The Institute has a long tradition of research for several decades in both traditional and modern areas of engineering and sciences in all departments. The Institute has been actively involved in applied research while

Identifying and resolving problems faced by the society in several areas. NITK attracts students from all over the country and abroad. NITK graduates are sought after by top industries/companies and the Institute has been rated as one of the best Institutions in the country with regard to student placements. Many of its alumni occupy coveted positions both in India and abroad and are a source of pride and inspiration to the Institute. NITK is consistently rated among the top engineering and technological institutes in India. Today, the Institute offers nine B. Tech programmes, 31 Post Graduate programmes and Doctoral programmes in all its fourteen Departments and is making significant advances in R&D and outreach activities too.

### 1.2 LOCATION

The Institute is located at Srinivasnagar, Surathkal in the Dakshina Kannada District of Karnataka State, 21 km. North of Mangalore city on either side of NH.66 which cuts across the campus. The campus is well connected by rail, road, air and sea with the rest of the country. The airport is situated at Bajpe, 20 km from Surathkal. The nearest Railway station is Surathkal (3 km.) which is on the Mangalore-Mumbai Konkan Railway route and the nearest sea port is New Mangalore which is 8 km, south of Institute premise.

### 1.3 CAMPUS

The campus covers an area of 295 acres in picturesque surroundings with Western Ghats in the East and the West Arabian Sea in the West. The campus is well laid out with roads, electrical installation, water supply, underground drainage etc. The campus being on the seashore, is blessed with clean air lush green and a healthy climate. The National Highway NH 66 separates the campus into Western Side and Eastern Side campus. The Western Side of the campus houses the Departments of Electrical and Electronics Engg., Electronics & Communication Engg., Computer Science and Engg. and Information Technology, Guest House, STEP, Yoga centre and pristine beach.



## 2 GOVERNANCE & ADMINISTRATION

### 2.1 ADMINISTRATION

NITK is governed by the Board of Governors which consists of representatives of the Government of India, Government of Karnataka, Alumni, Industry and other nominees. The Chairman of the Board is nominated by the Government of India. The Director is the administrative head of the Institute. The functioning of NITK is governed by NITSER Act 2007 and rules laid down by Government of India.

### COUNCIL, BOG AND OTHER COMMITTEES

#### COUNCIL OF NITs

- 1 Hon'ble Minister, Ministry of Education (erstwhile MHRD), Government of India
- 2 Education Secretary, Ministry of Education (erstwhile MHRD), Government of India
- 3 The Chairperson of National Institute of Technology Karnataka, Surathkal
- 4 Director of National Institute of Technology Karnataka, Surathkal
- 5 Chairman, UGC
- 6 Chairman, All India Council for Technical Education
- 7 Director, General, Council for Scientific and Industrial Research
- 8 Secretary, Department of Bio-Technology, Government of India
- 9 Secretary, Department of Atomic Energy, Government of India
- 10 Secretary, Department of Information Technology, GOI
- 11 Secretary, Department of Space, Government of India
- 12 Not less than three but not more than five persons to be nominated Member by the Visitor, at least one of whom shall be a women, having special knowledge or practical experience in respect of education, industry, science or technology
- 13 Three members of Parliament, of whom two shall be chosen by the Member House of the people and one by the Council of States

- 14 Two Secretaries to the State Government, from amongst the ministries Member or departments of that Government dealing with technical education
- 15 Financial Adviser, Ministry Government of India
- 16 Joint Secretary (Technical)/Additional Secretary (Technical), Department of Higher Education, Ministry of HRD, GOI

### BOARD OF GOVERNORS

#### Chairperson

Dr. K. Balaveera Reddy  
Former Vice Chancellor - VTU-Belgaum  
Veerabhadra Nilayam, H.No.10  
4<sup>th</sup>A Cross, 2nd Block, HRBR Layout  
Kalyana Nagar, Bangalore – 560043.

#### MEMBERS

Prof. K. Umamaheshwar Rao  
Director  
N.I.T.K, Surathkal

Shri Madan Mohan  
Additional Director General (HE)  
Dept. of Higher Education  
Ministry of Education (erstwhile MHRD)  
Govt. of India, Room No.431, C- Wing  
Shastri Bhavan, New Delhi – 110 115.

Ms. Darshana M Dabral  
Joint Secretary and Financial Advisor  
Integrated Finance Bureau  
Ministry of Education (erstwhile MHRD)  
Govt. of India, 120-C  
Shastri Bhavan, New Delhi - 110 001.

Prof. A K Suresh  
Professor of Chemical Engineering and  
Dy. Director (Academic & Infrastructure  
Affairs)  
Indian Institute of Technology Bombay  
Powai, Mumbai – 400 076.  
[Nominee of the Director, IIT- Bombay]

Mr. G M Ravindra  
Managing Director  
RKS INFRATECH Pvt. Ltd.  
No.42/36, "Rajani Towers", 3rd Floor  
27<sup>th</sup> Cross, 7<sup>th</sup> 'B' Main Road  
4th Block, Jayanagar, Bengaluru –  
560011.

Dr. Shanth Averahally Thimmaiah  
Managing Director  
METAMORPHOSIS Group of Companies  
"PRAKRUTI BHAVAN", #200, 1st & 2nd  
Floor  
1<sup>st</sup> Cross, 40<sup>th</sup> Main, Behind Silk Board,  
BTM Layout, II Stage, Bengaluru –  
560068.

Muralidhar Kulkarni, Ph.D.  
Professor  
Dept. of Electronics & Communication  
Engg.  
N.I.T.K., SURATHKAL.

Prasanna B D, Ph.D.  
Associate Professor  
Department of Chemical Engg.  
N.I.T.K., SURATHKAL.

### **Secretary**

Shri K Ravindranath  
Registrar  
NITK, Surathkal.

### **FINANCE COMMITTEE**

Chairperson  
Dr. K. Balaveera Reddy  
Former Vice Chancellor - VTU-  
Belgaum  
Veerabhadra Nilayam, H.No.10  
4<sup>th</sup>A Cross, 2<sup>nd</sup> Block, HRBR  
Layout  
Kalyana Nagar, Bangalore –  
560043.

### **MEMBERS**

K. Umamaheshwar Rao, Ph.D.  
Director  
N.I.T.K., SURATHKAL.

Shri Madan Mohan  
Additional Director General (HE)  
Dept. of Higher Education

Ministry of Education (erstwhile  
MHRD), Govt. of India, Room  
No.431, C- Wing  
Shastri Bhavan, New Delhi – 110  
115.

Ms. Darshana M Dabral  
Joint Secretary and Financial  
Advisor  
Integrated Finance Bureau  
Ministry of Education (erstwhile  
MHRD), Govt. of India, 120-C,  
Shastri Bhavan  
New Delhi - 110 001.

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4th Block, Jayanagar, Bengaluru  
– 560011.

Muralidhar Kulkarni, Ph.D.  
Professor  
Dept. of Electronics &  
Communication Engg.  
N.I.T.K., SURATHKAL.

### **Member Secretary**

Shri K Ravindranath  
Registrar  
NITK, Surathkal.

### **BUILDING AND WORKS COMMITTEE**

#### **Chairman**

Prof.K Umamaheshwar Rao, Ph.D.  
Director  
NITK, Surathkal – 575 025

#### **Members**

Director – NITs, Ministry of Education  
(erstwhile MHRD), Govt. of India,  
Dept of Higher Education, Room No.  
223, C-wing, Shastri Bhavan, New  
Delhi – 110 001

Shri D K Singh  
Deputy Secretary – Finance  
Ministry of Education (erstwhile MHRD),  
Dept. of Higher Education, No. 406-C,  
Shasrti Bhavan, New Delhi -110 001

Subhas c Yaragal, Ph.D.  
Dean (P&D), NITK, Surathkal  
Mangalore – 575 025

Lakshman Nandagiri, Ph.D.  
Professor  
Dept. of Water Resources and Ocean  
Engineering  
NITK, Surathkal  
Mangaluru – 575 025

Shri. Suneet K Dadheech  
Superintending Engineer, Project  
Director, CPWD, NITKS Project Circle  
Office, NITK Campus, Mangalore – 575  
025

Shri Manjappa  
Superintending Engineer, MESCOM,  
O&M Circle, Attavar,  
Mangalore – 575 001

**Member – Secretary**

Ravindranath  
Registrar  
NITK, Surathkal,  
Post Srinivasnagar,  
Mangalore-575 025

**OTHER COMMITTEES**

**SENATE**

**Chairman**

K. Umamaheshwar Rao, Ph.D.,  
Chairman

Ananthanarayana V. S., Ph.D.,  
Member

K.V. Jayakumar, External  
Member

N. C. Shivaprakash, Ph.D.  
External Member

Ms. Anjula Gurtoo, External  
Member

**Members:-**

A. Nityananda Shetty, Ph.D.

M. S. Bhat, Ph.D.

Subhash C Yaragal, Ph.D.

U Shripathi Acharya, Ph.D.

K Panduranga Vittal, Ph.D.

Jagannath Nayak, Ph.D.

Vidya Shetty K, Ph.D.

Ashvini Chaturvedi, Ph.D.

Mrs. Amba Shetty, Ph.D.

Lakshman Nandagiri, Ph.D.

Subba Rao, Ph.D.

Dwarakish G S, Ph.D.

Kiran G. Shirlal, Ph.D.

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Paresh Chandra Deka, Ph.D.

B M Dodamani, Ph.D.

Prasanna B D, Ph.D.

Gopal Mugeraya, Ph.D.

M.B. Saidutta, Ph.D.

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Ph.D.

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K. Swaminathan, Ph.D.

K. N. Lokesh, Ph.D.

R. Shivashankar, Ph.D.

M. C. Narasimhan, Ph.D.

Katta Venkataramana, Ph.D.

A.U. Ravi Shankar, Ph.D.

Varghese George, Ph.D.

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Sitaram Nayak, Ph.D.

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Annappa, Ph.D.

P. Santhi Thilagam, Ph.D.

T. Laxminidhi, Ph.D.

Mrs. Sumam David S., Ph.D.

Muralidhar Kulkarni, Ph.D.

John D'Souza, Ph.D.

N S Vittal Shet, Ph.D.

Shubhanga K N, Ph.D.

Udayakumar R.Y.(on  
deputation to MNIT, Jaipur as  
Director), Ph.D.

Gururaj S Puneekar, Ph.D.

B Venkatesa Perumal, Ph.D.

Biju R Mohan, Ph.D.

G. Ram Mohana Reddy, Ph.D.

Shyam S. Kamath, Ph.D.	Development)	
A. Kandasamy, Ph.D.	Dean (Students' Welfare)	Member
Suresh M Hegde, Ph.D.	Dean (Research & Consultancy)	Member
Santhosh George, Ph.D.	Dean (Alumni Affairs & Institutional Affairs)	Member
B. R. Shankar, Ph.D.	H.O.D. of each	Members
Murulidhar N. N., Ph.D.	Department/his nominee	
Shrikantha S. Rao, Ph.D.	BOG member	Member
Ashok Babu T P, Ph.D.	representing the faculty	
G. C. Mohan Kumar, Ph.D.	Three Representatives	Member
Prasad Krishna, Ph.D.	from the premier	
Gangadharan K. V., Ph.D.	Academic Institutions	Member
S. M. Kulkarni, Ph.D.	such as IIT, NIT, IISc.,	
Vijay H. Desai, Ph.D.	IIM, others belonging to	Member
Narendranath S., Ph.D.	Southern region	
Ravikiran Kadoli, Ph.D.		
H. Suresh Hebbar, Ph.D.	Assistant Registrars	Member
S. M. Murigendrappa, Ph.D.	(Academic)	
K. Narayan Prabhu, Ph.D.	Registrar	Secretary
Anandhan Srinivasan, Ph.D.		
Udaya Bhat K., Ph.D.		
Karra Ram Chandar, Ph.D.		
V. R. Sastry, Ph.D. (on lien to Dr. BAT University, Lonere, Maharashtra as Vice		
Ch. S. N. Murthy, Ph.D.		
M. Govinda Raj, Ph.D.		
Harsha Vardhan, Ph.D.		
Ajith K M, Ph.D.		
N. K. Udayashankar, Ph.D.		
Mrs. H. D. Shashikala, Ph.D.		
M. N. Satyanarayan, Ph.D.		
S Pavan Kumar, Ph.D.		
Aloysius Henry Sequeira, Ph.D.		
K. B. Kiran, Ph.D.		
Shashikantha Koudur, Ph.D.		
Shri P. G. Mohanan, System Manager, CCC		
Dr. Mallikarjuna Angadi, Librarian		
Shri K. Ravindranath, Registrar		

#### **BOARD OF STUDIES (BOS - UG/PG/RESEARCH)**

##### **Constitution:**

Dean (AA)	Chairman
Dean (Faculty Welfare)	Member
Dean (Planning &	Member

#### **QUARTERS ALLOTMENT COMMITTEE**

K Umamaheshwar Rao, Ph.D.	President
M S Bhat, Ph.D.	Chairman
Muralidhar Kulkarni, BOG Member	Member
Sri. K Ravindranath, Registrar	Member
Sri. Rammohan Y, Joint Registrar	Member
K Narayan Prabhu, Ph.D.	Member
P Santhi Thilagam, Ph.D.	Member
Monappa Mera, Supdt. A/cs- II	Member
Sreejith A, Ph.D. Grievance Redressal officer (PwD)	Member
Prashanth M H, Ph.D., Asst. Prof. Faculty I/c (Estate & Works)	Member/Secretary
The President, NITK Non-Teaching Employees Association (R)	Member
The President, NITK, Employees Association ( R)	Member

#### **INSTITUTE GRIEVANCE REDRESSAL COMMITTEE**

Narendranath S, Ph.D.	Chairman
S M Murigendrappa, Ph.D.	Member
Ravishankar K S, Ph.D.	Member
Nagendrappa H, Ph.D.	Member
Rashmi Uchil, Ph.D.	Member
Shreekanth R Lamani, Ph.D.	Member

Pathipati Srihari, Ph.D.	Member	Prasanna B D, Ph.D., Dept.	Member
Kedamath Senapati, Ph.D.	Member	of Chemical Engg.	
Shri. P N Subraahmanya,	Member	B M Dodamani, Ph.D. Dept.	Member
Asst. (SG-II0, Est. & General		of Applied Mechanics &	
Section		Hydraulics	
Soumen Karmakar, Ph.D.	Convener	Mohammad Rizwanur	Member
		Rahman, Ph.D., Dept. of	
		Metallurgical & Materials	
		Engg,	
		P Sam Johnson, Ph.D.	Member
		Dept. of MACS	
		Kalpna G Bhat, Ph.D Dept.	Member
		of E&C Engg.	
		Ramesh M R, Ph.D., Dept. of	Member
		Mechanical Engg.	
		Raviraj H Mulangi, Ph.D,	Member
		Dept. of Civil Engg.	
		Alwyn Roshan Pais, Ph.D.	Member
		Dept. of Computer Science	
		and Engg.	
		Hem Prasad Nath , Ph.D.	Member
		SAS Officer	
		Manoj, Ph.D., SAS Officer	Member
		Iranna M Shettar, Asst.	Member
		Librarian	
		Students Council President	Member
		Vice President	Member
		Sports Secretary	Member
		R C Convener	
		All Captains	Member
		Physical Director i/c	Member/ Secretary

### SECURITY COMMITTEE

Dean (Faculty Welfare)	
Dean (P&D)	
Dean (SW)	
Registrar	
Chairman, CCC	
Prof. i/c Hostels	
Resident Engineer	
Joint Registrar	
Faculty i/c Estate & Works	
Faculty i/c Ele. Works	
Faculty i/c Security	
Security Officer	

### LIBRARY ADVISORY COMMITTEE

M.N. Satyanarayan, Ph.D.	Chairperson
Subrahmanya K., Ph.D.	Member
Gangamma S., Ph.D.	Member
Sib Sankar Mal, Ph.D.	Member
Arun Kumar Thalla, Ph.D.	Member
Manu Basavaraju, Ph.D.	Member
Nagendrappa H., Ph.D.	Member
P. Srihari, Ph.D.	Member
Anand Kumar M, Ph.D.	Member
V. Murugan, Ph.D.	Member
Anish S., Ph.D.	Member
Shashi Bhushan Arya,	Member
Ph.D.	
B. M. Kunar, Ph.D.	Member
Ajith K. M., Ph.D.	Member
Suprabha K. R., Ph.D.	Member
Iranna Shettar	Member
Mrs. Anasuya C.	Member
Mallikarjun Angadi, Ph.D.	Convener

### SPORTS ADVISORY COMMITTEE

Director	President
Dean (S. W.)	Chairman
Dean (F.W.)	Member
Registrar	Member
Joint Registrar	Member
Resident Engineer	Member
Professor-in-charge of Hostel	Member
Affairs	
A Nityananda Shetty, Ph.D.	Member
Dept. of Chemistry	

### INTERNAL COMPLAINTS COMMITTEE

Vidya Shetty, Ph.D.	Chairperson, ICC-SH
Harsha Vardhan, Ph.D.	Member, ICC-SH
Geetha V, Ph.D.	Member, ICC-SH
Suprabha K R, Ph.D.	Member, ICC-SH
P Shekhar, Supdt. SG-II	Member, ICC-SH
Octavia Zeena Dsouza,	Member, ICC-SH
Stenographer (S.G-II)	
Rameela Shekar,	NGO Member, ICC,
Psychological Counselor	SH

### HEALTH CARE COMMITTEE

Dean (Faculty Welfare)	Chairman
Warden, Girls Hostel	Member
Professor in-charge	
(Hostel Affairs)	Member
Liaison Officer, SC/ST Cell	Member
G Ram mohan Reddy, Ph.D.	Member
Pavan Kumar, Ph.D.	Member

Sri. Rukmayya Shetty	Member
C P Devatha, Ph.D.	Member
Ms. Gayathri Rao K	Member
Joint Registrar	Member
Supdt. Accounts III	Member
President Student's Council	Member
Girls Representatives	Member
Dr. M L Balabhaskara, Medical Officer	Member
Dr. (Mrs.) Shrimathi B, Medical Officer	Secretary

### 3. DEPARTMENTS AND SCHOOLS

Applied Mechanics & Hydraulics	(AM)
Chemical Engineering	(CH)
Chemistry	(CY)
Civil Engineering	(CV)
Computer Science & Engineering	(CO)
Electrical & Electronics Engineering	(E&E)
Electronics & Communication Engineering	(E&C)
Information Technology	(IT)
Mathematical & Computational Sciences	(MA)
Mechanical Engineering	(ME)
Metallurgical & Materials Engineering	(MT)
Mining Engineering	(MN)
Physics	(PH)
<b>SCHOOLS</b>	(SM)
School of Management	

## 4. ACADEMIC PROGRAMMES

### 4.1 PROGRAMMES OFFERED

#### I. B.TECH. (Undergraduate Programme) – Eight semesters

- 1 Chemical Engineering
- 2 Civil Engineering
- 3 Computer Science & Engineering
- 4 Electrical and Electronics Engineering
- 5 Electronics & Communication Engineering
- 6 Mechanical Engineering
- 7 Metallurgical & Materials Engineering
- 8 Mining Engineering
- 9 Information Technology

#### II .M.Tech. (Post Graduate Programme) – Four Semesters

- 1 Structural Engg.
- 2 Geotechnical Engg.
- 3 Environmental Engg.
- 4 Transportation Engg.
- 5 Construction Technology and Management
- 6 Marine Structures
- 7 Water Resources Engineering and Management
- 8 Remote Sensing and Geographic Information Systems
- 9 Manufacturing Engg
- 10 Mechatronics Engg
- 11 Thermal Engg
- 12 Mechanical Design
- 13 Power & Energy Systems
- 14 VLSI Design
- 15 Communication Engineering and Networks
- 16 Signal processing and Machine Design
- 17 Environmental Science and Technology
- 18 Chemical Engineering
- 19 Industrial Biotechnology
- 20 Materials Engg
- 21 Process Metallurgy
- 22 Nanotechnology
- 23 Computer Science & Engg
- 24 Computer Science & Engg- Information Security
- 25 Computational and Data Science
- 26 Information Technology

**III M.Tech. by Research** :In all the above M.Tech Programme and in the Department of Mining - M.Tech Research Programme in Rock Excavation Technology and Management

**IV. M.C.A. (Master of Computer Applications) - Six semesters**

**V.M.B.A. (Master of Business Administration) - Four semesters**

**VI.M.Sc. in Chemistry – (Four semesters)**

**VII. M.Sc. in Physics – (Four semesters)**

**VIII. Ph. D. Programme:-**

Ph.D. Programmes are offered in 14 Departments in various streams and interdisciplinary specializations.

### 4.2 ACADEMIC CALENDAR

Academic Year	Programmes	Admission Commenced on	Admission closed on
2019-20	B.Tech.	19.07.2019	23.07.2019
2019-20	M.Tech.	24.06.2019	27.06.2019
2019-20	M.Tech. by Research/ Spon.	08.07.2019	12.07.2019
2019-20	MCA	15.07.2019	31.07.2019
2019-20	M.B.A.	08.04.2019	15.04.2019
2019-20	M.Sc. (Physics & Chemistry)	16.07.2019	31.07.2019
2019-20	Ph.D (July Session)	08.07.2019	12.07.2019
2019-20	Ph.D (December Session)	19.12.2019	27.12.2019



## 5. ADMISSION POLICIES

### 5.1 ADMISSION PROCEDURE

#### B. Tech.:-

The Government of India, Department of Ministry of Education (erstwhile MHRD) issued a uniform admission procedure for all the NITs in the country. Candidates seeking admission to NIT are required to appear for the JEE (Main) conducted by CBSE New Delhi. Seats are filled up as per the merit list prepared on the basis of JEE (Main) Examination and qualifying examination scores. According to All India rank prepared on the basis of the performance in JEE (Main), seats will be allotted in the centralized on-line campus counseling through Central Seat Allocation Board (CSAB). The seat allocation done on the basis of 50% Home State Quota (HS) and 50% Other State Quota (OS). These seats are filled on All India ranking Merit Basis (JEE Main). Seats are reserved for candidates belonging to Scheduled Caste, Scheduled Tribes, and Persons with Disabilities (PWD) Other Backward Classes and Economic weaker Section (EWS) as per the guidelines issued by the Ministry of Education (erstwhile MHRD). Female supernumerary seats are also created by CSAB to accommodate 20% seats for female candidates. In addition to this, 15% over and above the intake is available under the Direct Admission of Students Abroad (DASA) Scheme, and a few seats are reserved for the candidates nominated by the Ministry of External Affairs.

#### M.Tech -GATE/Scholarship seats:-

On the basis of GATE Score, admissions for scholarship category (GATE) were made in the centralized on-line common Admission Process through Centralized Counseling for M.Tech. (CCMT) coordinated by NIT, Rourkela. After the admission through CCMT, the vacant and unfilled seats were filled through Spot admission on 9.8.2019 at NITK, Surathkal for the GATE qualified candidates and for some of the programmes the admission were made on the basis of academic performance in

qualifying examination and written aptitude test or / and interview etc as decided by the DPGC of the concerned department offering that programme.

#### M.Tech.(Sponsored Seats/Research):-

Selection of candidates for admission were made on the basis of GATE score or in some of the programmes, selection was based on GATE score and on academic performance in qualifying examination and written aptitude test or/ and interview etc as decided by the DPGC of the concerned Department offering that programme.

#### M.C.A.:-

Selection of candidates for admissions was done through a common entrance test NIMCET and on academic performance in qualifying examination. Admissions were made through a centralized counseling. (NIMCET)

#### M.B.A.:-

Selection was based on CAT/GMAT/CMAT score and performance in the qualifying examination and written aptitude test or/ and interview etc as decided by the DPGC of the School of Management.

#### M.Sc (Chemistry & Physics):-

Selection of candidates for admissions was made on the basis of JAM Score and performance in the qualifying exam. Admissions were made through a centralized counseling. (CCMN)

#### Ph.D. Programme:-

Selection of candidates for admission to Ph.D. Programme was based upon the academic performance in the qualifying examinations, written aptitude test and interviews conducted by the respective departments.

All the students are required to stay in the Institute Hostels, unless permitted

to reside outside under special circumstances. Students have to strictly adhere to the rules and regulations of the institute.

All the students are required to stay in the Institute Hostels, unless permitted to reside outside under special

## 6. ADMISSIONS FOR 2019-20

### 6.1 The number of candidates admitted are as follows:

SC	08
ST	03
PWD	02
<b>Total</b>	<b>50</b>

#### I. B.Tech.

1 Admission through JEE (Main) Rank	861
2 G.O.I. Nominee- through Ministry of External Affairs (Education & Welfare)	05
3 DASA Scheme	91
<b>Total</b>	<b>957</b>

#### IV M.B.A.:

Selection of candidates were made on the basis of CAT/GMAT/CMAT among candidates applied to NITK, Surathkal, Group Discussion and interview. A total 28 candidates were admitted as follows:-

OP	19
OBC	5
EWS	0
SC	3
ST	1
<b>Total</b>	<b>28</b>

#### II. M.Tech./M.Tech. (By Research)

##### i) M.Tech Programme

The number of candidates admitted to First Year M.Tech. Programmes are:

1 With GATE qualifications for scholarship seats	561
Non GATE candidates	16
2 Sponsored candidates	01
3 Admission under DASA Scheme	01
4 QIP candidates	02
5 L&T Sponsored Candidates	30
6 NAVY sponsored	01
7 ICCR Sponsored	06
<b>Total</b>	<b>618</b>

#### V. M.Sc (Chemistry & Physics)

Selection were made on the basis of score obtained JAM 2019. Admissions were made through CCMN conducted by NIT Rourkela. Following are the admission details:

##### i. M.Sc ( Chemistry)

OP	13
OBC	08
EWS	02
SC	01
ST	0
PWD	0
<b>Total</b>	<b>24</b>

##### II. M.Tech. (By Research)

1 GATE qualified with Scholarship	24
2 Non Scholarship	03
<b>Total</b>	<b>27</b>

##### ii M.Sc (Physics)

OP	11
OBC	06
EWS	02
SC	04
ST	01
<b>Total</b>	<b>24</b>

#### IV MCA.:

Selection of candidates for admission to MCA, were made on the basis of rank obtained in NIT MCA Common Entrance Test (NIMCET). Admissions were made through a Centralized counseling conducted by N.I.T. Surathkal. A Total 50 candidates admitted were as follows:-

OP	23
OBC	12
EWS	02

**VI. Ph.D. Programme:**

**Fellowship Holders**

OP	66
OBC	25
EWS	04
SC	12
ST	03
<b>Total</b>	<b>110</b>

External Registrants (Part Time)	41
Sponsored	7
Non Sponsored	8
QIP	10
ICCR	5
Ethiopian	1
Other Quota (CSIR – INSPIRE)	4
<b>Total</b>	<b>76</b>

A total number of 957 candidates have been admitted to the First Year B.Tech. Programmes according to the guidelines, instructions issued by the Ministry of Education (erstwhile MHRD). The PG & Ph.D. admissions have been made according to the Rules and Regulations issued by the Senate of the Institute.

## 6.2 B.Tech. Students Strength for the year 2019-20

B.Tech I Year	SC			ST			OBC			DASA			ICCR			EWS			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
Civil Engg	14	2	16	8	2	10	22	3	25	4	2	6	0	0	0	6	2	8	37	8	45	91	19	110
Mechanical Engg.	22	3	25	12	2	14	39	8	47	21	0	21	1	0	1	7	1	8	63	14	77	165	28	193
Electrical & Electronics Engg.	15	2	17	7	2	9	24	4	28	8	4	12	4	2	4	4	1	5	38	8	46	98	21	119
Electronics & Communication Engg.	14	2	16	6	1	7	23	5	28	12	5	17	0	0	0	4	3	7	37	7	44	96	23	119
Chemical Engg.	5	2	7	3	1	4	12	3	15	4	2	6	1	1	2	1	2	3	17	5	22	43	16	59
Metallurgical & Materials Engg.	7	2	9	4	0	4	12	2	14	0	0	0	0	0	0	3	0	3	20	4	24	46	8	54
Mining Engg.	6	1	7	3	1	4	12	2	14	0	0	0	0	0	0	3	0	3	18	5	23	42	9	51
Computer Science & Engg.	16	2	18	5	2	7	24	6	30	11	5	16	0	0	0	4	2	6	41	8	49	101	25	126
Information Technology	14	2	16	6	0	6	25	4	29	8	4	12	0	0	0	5	2	7	37	9	46	95	21	116
<b>Total</b>	<b>113</b>	<b>18</b>	<b>131</b>	<b>54</b>	<b>11</b>	<b>65</b>	<b>193</b>	<b>37</b>	<b>230</b>	<b>68</b>	<b>22</b>	<b>90</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>37</b>	<b>13</b>	<b>50</b>	<b>308</b>	<b>68</b>	<b>376</b>	<b>777</b>	<b>170</b>	<b>947</b>

B.Tech II Year	SC			ST			OBC			DASA			SII			ICCR			GENERAL			TOTAL			
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	
	12	2	14	6	1	7	21	2	23	11	3	14	1	0	1	1	0	1	0	1	37	9	46	89	17
19	3	22	10	2	12	37	6	43	18	4	22	1	0	1	0	0	0	0	64	10	74	14	25	174	
12	3	15	6	1	7	23	4	27	8	4	12	0	0	0	1	0	1	40	7	47	90	19	109		
11	3	14	5	1	6	21	5	26	12	4	16	0	0	0	0	0	0	40	7	47	89	20	109		
5	1	6	3	1	4	11	2	13	4	3	7	0	0	0	1	0	1	16	5	21	40	12	52		
6	1	7	3	0	3	8	4	12	0	0	0	0	0	0	0	0	0	19	3	22	36	8	44		
5	1	6	2	2	4	7	2	9	0	0	0	0	0	0	0	0	0	15	2	17	29	7	36		
13	2	15	5	2	7	23	4	27	12	2	14	3	0	4	1	0	1	44	6	50	10	16	117		
12	1	13	6	0	6	22	5	27	8	3	11	0	0	0	0	0	0	35	11	46	83	20	103		
<b>Total</b>	<b>95</b>	<b>17</b>	<b>112</b>	<b>46</b>	<b>10</b>	<b>56</b>	<b>173</b>	<b>34</b>	<b>207</b>	<b>73</b>	<b>23</b>	<b>96</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>310</b>	<b>60</b>	<b>370</b>	<b>706</b>	<b>144</b>	<b>850</b>	

B.Tech III Year	SC			ST			OBC			DASA			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
	11	3	14	5	1	6	21	1	22	6	5	11	35	6	41	78	16	94
19	0	19	10	1	11	34	1	35	21	3	24	66	3	69	150	8	158	
14	0	14	5	1	6	24	2	26	7	3	10	38	9	47	88	15	103	
11	2	13	6	0	6	23	2	25	13	4	17	37	8	45	90	16	106	

B.Tech III Year	SC			ST			OBC			DASA			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
	4	2	6	2	1	3	10	2	12	6	2	8	16	5	21	38	12	50
7	0	7	2	0	2	12	0	12	0	0	0	16	3	19	37	3	40	
4	0	4	3	0	3	10	2	12	0	0	0	19	1	20	36	3	39	
12	1	13	7	0	7	23	3	26	12	5	17	44	2	46	98	11	109	
12	1	13	4	2	6	22	5	27	10	2	12	39	5	44	87	15	102	
<b>Total</b>	<b>94</b>	<b>9</b>	<b>103</b>	<b>6</b>	<b>50</b>	<b>179</b>	<b>18</b>	<b>197</b>	<b>75</b>	<b>24</b>	<b>99</b>	<b>310</b>	<b>42</b>	<b>352</b>	<b>702</b>	<b>99</b>	<b>801</b>	

B.Tech IV Year	SC			ST			OBC			DASA			MEA			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
	10	3	13	7	0	7	18	2	20	11	3	14	1	0	1	22	11	33	69	19	88
18	0	18	10	0	10	34	2	36	20	0	20	2	0	2	51	4	55	135	6	141	
10	4	14	3	0	3	15	1	25	11	3	14	4	0	4	30	17	47	73	34	107	
11	3	14	7	0	7	24	1	25	14	4	18	0	1	1	35	12	47	91	21	112	
5	1	6	3	1	4	9	1	10	7	2	9	0	0	0	7	8	15	31	13	44	
5	1	6	1	3	4	8	2	10	0	0	0	0	0	0	10	7	17	24	13	37	
6	0	6	3	1	4	7	0	7	0	0	0	0	0	0	13	1	14	29	2	31	

Computer Engg.	11	3	14	6	1	7	17	6	23	12	3	15	0	2	2	33	12	45	79	27	106
Information Technology	10	3	13	1	3	4	18	8	26	9	3	12	0	0	0	39	7	46	77	24	101
<b>Total</b>	<b>86</b>	<b>18</b>	<b>104</b>	<b>41</b>	<b>9</b>	<b>50</b>	<b>150</b>	<b>32</b>	<b>182</b>	<b>84</b>	<b>18</b>	<b>102</b>	<b>7</b>	<b>3</b>	<b>10</b>	<b>240</b>	<b>79</b>	<b>319</b>	<b>608</b>	<b>159</b>	<b>767</b>

**M.Tech. Students Strength for the year 2019-20**

M.Tech (I Year)	SC		ST		OBC		QIP		EWS		DASA		ICCR		Sponsor d /L&T		GENER AL		TOTAL									
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	To							
Structural Engg.	4	0	4	2	0	2	5	1	6	1	0	1	2	1	3	0	0	0	1	0	0	0	8	4	12	23	6	29
Geotechnical Engg.	1	1	2	1	0	1	1	3	4	0	0	1	0	0	0	0	0	0	4	2	10	12	6	8	6	14	28	
Environmental Engg.	1	3	4	1	0	1	1	7	8	0	0	2	1	3	0	0	0	0	2	10	12	7	21	5	29	29		
Transportation Systems Engg.	4	0	4	1	0	1	4	3	7	0	0	3	0	3	0	0	0	1	1	2	13	24	48	9	57	57		
Construction Technology & Mgt.	4	0	4	0	0	0	6	2	8	0	0	2	0	2	0	0	1	1	26	4	30	9	3	12	16	13	29	
Marine Structures	4	0	4	1	0	1	3	5	8	0	0	2	0	2	0	0	0	1	0	1	0	5	8	13	16	13	29	
Water Resources Engg. & Management	2	0	2	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5	9	3	12	
Remote Sensing & GIS	1	1	2	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	8	7	15	11	12	23	
Thermal Engg.	2	0	2	1	0	1	5	0	5	1	0	1	0	1	0	0	0	0	0	0	0	5	1	6	15	1	16	
Mechatronics Engg.	4	0	4	0	0	0	6	1	7	0	0	1	0	1	0	0	0	0	0	0	0	12	2	14	23	3	26	
Manufacturing Engg.	2	0	2	1	0	1	3	0	3	0	0	2	0	2	0	0	0	0	1	0	1	7	0	7	16	0	16	
Mechanical Design	2	0	2	1	0	1	3	1	4	0	0	2	0	2	0	0	0	0	0	0	0	6	1	7	14	2	16	
Power & Energy Systems	3	1	4	1	0	1	8	2	10	0	0	1	2	0	2	0	0	0	0	0	0	8	3	11	23	7	30	
VLSI Design	1	3	4	2	0	2	7	1	8	0	0	2	0	2	0	0	0	0	0	0	0	11	2	13	23	7	30	
Signal Processing & Machine Learning	1	2	3	2	0	2	5	3	8	0	0	1	2	0	0	0	0	0	0	0	0	10	2	12	19	8	27	



M.Tech (I Year)	SC		ST		OBC		QIP		EWS		DASA		ICCR		Sponsor d/L&T		GENER AL		TOTAL											
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	To									
	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To								
Communication Engg. & Networks	2	2	4	1	0	1	6	4	10	0	0	1	2	0	0	0	0	0	9	2	11	19	9	28						
Chemical Engg.:-	1	0	1	0	0	3	1	4	0	0	1	1	0	0	0	0	0	4	2	6	9	3	12							
Environmental Science & Technology	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	9	4	6	10							
Industrial Biotechnology	1	3	4	0	1	1	5	6	0	0	1	1	0	0	0	0	0	3	13	16	6	22	28							
Process Metallurgy	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	9	0	9	11	0	11							
Materials Engg.	1	1	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	19	2	21	21	3	24							
Nanotechnology	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	2	1	3	4	1	5							
Computer Science & Engg	1	1	2	1	1	2	5	1	6	0	0	1	2	0	0	1	0	11	1	12	19	6	25							
Computer Science & Engg. - Information Security	1	4	5	1	0	1	8	1	9	0	0	3	0	0	0	0	0	13	0	13	26	5	31							
Computational & Data Science	0	2	2	0	1	1	4	3	7	0	0	1	0	0	0	0	0	12	1	13	17	7	24							
Information Technology	3	0	3	1	0	1	7	3	10	0	0	1	2	0	0	0	0	8	3	11	20	7	27							
<b>TOTAL</b>	<b>46</b>	<b>25</b>	<b>71</b>	<b>19</b>	<b>3</b>	<b>22</b>	<b>102</b>	<b>51</b>	<b>153</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>31</b>	<b>7</b>	<b>38</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>28</b>	<b>4</b>	<b>32</b>	<b>202</b>	<b>80</b>	<b>282</b>	<b>435</b>	<b>172</b>	<b>607</b>

M.Tech (II Year)	SC		ST		OBC		QIP		DASA		ICCR		Sponsored		GENERAL		TOTAL						
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	To				
	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To	To			
Structural Engg.	4	0	4	1	1	2	3	6	0	0	2	0	2	1	0	1	8	3	11	19	7	26	
Geotechnical Engg.	0	2	2	1	0	1	3	1	4	0	0	0	0	0	0	3	4	7	7	7	7	14	
Environmental Engg.	3	1	4	1	0	1	1	5	6	0	0	0	0	0	0	2	9	11	7	15	22		
Transportation Engg.	1	1	2	1	0	1	5	2	7	0	0	0	0	0	0	7	5	12	14	8	22		
Construction Technology & Mgt.	1	3	4	1	0	1	3	3	6	0	0	1	0	1	27	2	29	9	3	12	42	11	53
Marine Structures	3	0	3	1	0	1	5	2	7	0	0	0	0	1	0	1	9	3	12	19	5	24	

M.Tech (II Year)	SC		ST		OBC		QIP		DASA		ICCR		Sponsored		GENERAL		TOTAL												
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F											
Water Resources Engg. & Management	1	0	1	0	2	5	7	0	0	0	0	0	0	0	2	1	3	6	12										
Remote Sensing & GIS	2	0	0	0	4	3	7	0	0	0	0	0	0	0	5	6	11	9	20										
Thermal Engg.	2	0	2	0	4	4	4	0	0	0	1	2	1	0	7	0	7	16	17										
Mechatronics Engg.	4	0	4	0	5	1	6	0	0	0	0	0	0	0	7	3	10	17	21										
Manufacturing Engg.	0	1	1	0	3	0	3	0	0	0	1	0	1	0	7	1	8	12	14										
Design and Precision Engg.	2	0	2	0	5	0	5	2	0	0	0	0	0	0	6	0	6	16	16										
Power & Energy Systems	2	2	4	1	7	0	7	0	0	0	0	0	1	0	9	3	12	20	26										
VLSI Design	3	1	4	0	6	1	7	2	1	3	0	0	0	0	10	3	13	22	28										
Communication Engg.	1	0	1	0	5	1	6	0	0	0	0	0	0	0	6	5	11	13	19										
Chemical Plant Design	1	0	1	0	2	0	2	0	0	0	0	0	0	0	4	1	5	8	9										
Industrial Pollution Control	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	5	9	5	10										
Industrial Biotechnology	1	0	1	0	3	3	6	0	0	0	0	0	0	0	2	9	11	6	13										
Process Metallurgy	1	0	1	0	2	0	2	0	0	0	0	0	0	0	6	1	7	9	10										
Materials Engg.	2	0	2	0	5	0	5	0	0	0	0	0	0	0	9	0	9	16	16										
Nanotechnology	0	0	0	0	1	0	1	0	0	0	0	0	0	0	5	0	5	6	6										
Computer Science & Engg.	4	0	4	0	5	1	6	0	0	1	0	1	0	0	13	3	16	25	29										
Computer Science & Engg. - Information Security	4	0	4	0	6	1	7	0	0	0	0	0	0	0	11	1	12	23	25										
Computational Mathematics	1	0	1	0	7	0	7	0	0	0	0	0	0	0	11	1	12	19	21										
Information Technology	5	0	5	0	2	4	6	0	0	0	0	0	0	0	8	3	11	16	23										
<b>TOTAL</b>	<b>49</b>	<b>11</b>	<b>60</b>	<b>19</b>	<b>4</b>	<b>23</b>	<b>94</b>	<b>36</b>	<b>130</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>6</b>	<b>1</b>	<b>7</b>	<b>31</b>	<b>2</b>	<b>33</b>	<b>170</b>	<b>73</b>	<b>243</b>	<b>374</b>	<b>128</b>	<b>502</b>

M.Tech Research	SC			ST			OBC			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
Marine Structure	0	0	0	0	0	0	0	1	1	1	1	2	1	2	3
Remote Sensing & GIS	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
Water Resources Engg. & Management	0	0	0	0	0	0	1	0	1	1	1	2	2	1	3
Structural Engg.	0	0	0	0	0	0	0	1	1	3	1	4	3	2	5
Geotechnical Engg.	1	0	1	0	0	0	0	0	0	1	0	1	2	0	2
Environmental Engg.	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
Thermal Engg.	0	0	0	0	0	0	3	1	4	5	0	5	8	1	9
Mechatronics Engg.	1	0	1	0	0	0	2	0	2	2	0	2	5	0	5
Manufacturing Engg.	0	0	0	0	0	0	1	0	1	3	0	3	4	0	4
Mechanical Design	0	0	0	0	0	0	1	0	1	1	0	1	2	0	2
Mechatronics and Automation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design and Precision Engg.	0	0	0	0	0	0	0	0	0	4	1	5	4	1	5
Power & Energy Systems	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
VLSI Design	0	1	1	0	0	0	2	0	2	2	1	3	4	2	6
Communication Engg	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
Communication Engg. and Network	0	0	0	0	0	0	0	0	0	1	1	2	1	1	2
Materials Engg.	0	0	0	0	0	0	2	0	2	1	0	1	3	0	3
Nanotechnology	0	0	0	0	0	0	0	0	0	0	2	2	0	2	2
Industrial Pollution Control	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1
Chemical Plant Design	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
Industrial Biotechnology	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
Computer Science & Engg	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
Computer Science & Engg. - Information Security	0	0	0	0	0	0	0	0	0	1	3	4	1	3	4
Rock Excavation Technology & Mgt	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
Information Technology	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
<b>TOTAL</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>3</b>	<b>15</b>	<b>37</b>	<b>15</b>	<b>52</b>	<b>49</b>	<b>19</b>	<b>68</b>

**MCA Students Strength for the year 2019-20**

Year	SC			ST			OBC			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
<b>I Year</b>	7	1	8	3	0	3	8	5	13	19	7	26	37	13	50
<b>II Year</b>	11	2	13	6	1	7	21	5	26	32	13	45	70	21	91
<b>III Year</b>	11	3	14	6	1	7	15	5	20	31	14	45	63	23	86
<b>Total</b>	<b>29</b>	<b>6</b>	<b>35</b>	<b>15</b>	<b>2</b>	<b>17</b>	<b>44</b>	<b>15</b>	<b>59</b>	<b>82</b>	<b>34</b>	<b>116</b>	<b>170</b>	<b>57</b>	<b>227</b>

**MBA Students Strength for the year 2019-20**

Year	SC			ST			OBC			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
<b>I Year</b>	0	2	2	1	0	1	0	2	2	15	8	23	16	12	28
<b>II Year</b>	0	0	0	0	0	0	4	2	6	9	8	17	13	10	23
<b>Total</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>24</b>	<b>16</b>	<b>40</b>	<b>29</b>	<b>22</b>	<b>51</b>

**M.Sc (Chemistry) Students Strength for the year 2019-20**

Year	SC			ST			OBC			EWS			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
<b>I Year</b>	1	0	1	0	0	0	3	5	8	0	2	2	6	7	13	10	14	24
<b>II Year</b>	0	3	3	1	1	2	4	3	7	0	0	0	4	9	13	9	16	25
<b>Total</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>8</b>	<b>15</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>10</b>	<b>16</b>	<b>26</b>	<b>19</b>	<b>30</b>	<b>49</b>

**M.Sc (Physics) Students Strength for the year 2019-20**

IYEAR	SC			ST			OBC			EWS			GENERAL			TOTAL		
	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To	M	F	To
<b>I Year</b>	3	1	4	1	0	1	3	3	6	1	1	2	9	2	11	17	7	24
<b>II Year</b>	0	3	3	1	1	2	6	3	9	0	0	0	6	3	9	13	10	23
<b>Total</b>	<b>3</b>	<b>4</b>	<b>7</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>9</b>	<b>6</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>15</b>	<b>5</b>	<b>20</b>	<b>30</b>	<b>17</b>	<b>47</b>

## Ph.D. Students Strength for the year 2019-20

Branch	SC			ST			OBC			EWS			QIP			ICCR			Ethiopia			VTU Scheme			Sponsor			GENERAL			TOTAL				
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T					
Civil	6	3	9	2	1	3	8	12	20	0	0	2	2	4	1	0	1	2	0	2	0	0	0	0	0	1	1	2	38	24	62	60	43	103	
App. Mechanics	6	1	7	2	1	3	11	3	14	0	1	1	1	2	3	0	3	2	0	2	0	0	0	0	2	3	5	27	16	43	54	26	80		
Mechanical	20	0	20	10	0	10	31	0	31	0	0	0	10	0	0	0	0	3	0	3	0	0	0	0	2	0	2	80	5	85	156	5	161		
E&E	6	1	7	2	0	2	13	5	18	2	0	2	3	2	5	0	0	0	0	0	0	0	0	0	0	0	0	33	6	39	59	14	73		
E&C	2	0	2	2	0	2	7	0	7	0	0	0	3	3	6	0	0	0	0	4	1	5	2	1	3	33	9	42	53	14	67				
Chemical	1	1	2	1	2	3	3	7	10	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	16	24	14	26	40		
Metallurgy	4	0	4	2	0	2	10	2	12	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	21	2	23	40	4	44			
Mining	4	0	4	0	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	1	17	27	1	28			
Computer	4	3	7	1	0	1	6	1	7	0	0	4	0	4	0	0	0	0	0	7	1	8	0	1	1	17	10	27	39	16	55				
Information Technology	2	1	3	1	0	1	4	2	6	0	0	0	0	0	0	0	0	0	0	2	4	1	1	1	1	2	9	5	14	19	11	30			
Physics	2	1	3	2	0	2	8	1	9	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	15	15	30	28	17	45			
Chemistry	3	2	5	0	0	0	4	9	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	12	26	21	23	44			
MACS	1	1	2	1	0	1	3	5	8	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	1	15	13	28	22	19	41			
School of Mgt.	4	4	8	1	0	1	7	3	10	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	9	17	26	24	24	48				
<b>Total</b>	<b>65</b>	<b>18</b>	<b>83</b>	<b>27</b>	<b>4</b>	<b>31</b>	<b>122</b>	<b>50</b>	<b>172</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>25</b>	<b>8</b>	<b>33</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>14</b>	<b>4</b>	<b>18</b>	<b>13</b>	<b>7</b>	<b>20</b>	<b>335</b>	<b>151</b>	<b>486</b>	<b>616</b>	<b>243</b>	<b>859</b>

## 6.3 ADMISSION STATISTICS Undergraduate Programmes – B. Tech.

Particulars of sanctioned intake and admissions made during 2019-20

Sl. No.	Courses offered	Sanctioned intake				Admissions made to Undergraduate Programmes									
		Normal Intake	ICCR + MEA	DASA	Total	Normal Intake							ICCR	DASA	Total Admission
						OC	EWS	OBC	SC	ST	PWD	Total			
1	Civil Engineering	106	3	16	125	45	8	23	16	10	1 OC, 2 OBC= 3	105	0	6	111
2	Mechanical Engineering	172	3	24	199	74	7	45	24	15	4 OC, 1 EWS, 1 OBC, 1 SC, =7	172	1	22	195
3	Electrical & Electronics Engineering	107	4	14	125	44	5	27	16	8	3 OC, 1 OBC, 1 SC, 1 ST = 6	106	2	12	120
4	Electronics & Communication Engineering	104	3	17	124	44	7	26	16	7	1 OC, 2 OBC =3	103	0	17	120
5	Chemical Engineering	54	2	9	65	24	4	14	7	4	1 OBC	54	2	6	62
6	Metallurgical & Materials Engineering	54	0	2	56	24	3	15	8	4	0	54	0	0	54
7	Mining Engineering	53	0	1	54	22	3	15	7	4	0	51	0	0	51
8	Computer Engineering	112	2	16	130	46	6	30	17	6	4 OC, 1 OBC, 1 SC, 1 ST = 7	112	0	16	128
9	Information Technology	104	0	12	116	44	7	27	15	6	2OC, 2 OBC, 1SC= 5	104	0	12	116
<b>Total</b>		<b>866</b>	<b>17</b>	<b>111</b>	<b>994</b>	<b>367</b>	<b>50</b>	<b>222</b>	<b>126</b>	<b>64</b>	<b>32</b>	<b>861</b>	<b>5</b>	<b>91</b>	<b>957</b>

**ADMISSION STATISTICS – B.TECH. 2019-20****Details of Male & Female admissions – course wise and category wise**

Sl. No.	Programme	OC		EWS		OBC		SC		ST		ICCR		DASA		Total Admission		
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	Total
1	Civil Engg	37+1PH	8	6	2	21+1PH	2+1PH	14	2	8	2	0	0	4	2	92	19	111
2	Mechanical Engg	61 +3PH	13+1PH	6+1PH	1	37 + 1PH	8	21+1PH	3	13	2	1	0	22	0	167	28	195
3	Electrical & Electronics Engg	36+3PH	8	4	1	23+1PH	4	14+1PH	2	7	1+	2	0	8	4	99	21	120
4	Electronics & Communications	38	6+1PH	4	3	22+1PH	4+1PH	14	2	6	1	0	0	12	5	97	23	120
5	Chemical Engg	19	5	2	2	12	2+1PH	5	2	3	1	1	1	4	2	46	16	62
6	Metallurgical & Materials Engg	20	4	3	0	13	2	7	1	4	0	0	0	0	0	47	7	54
7	Mining Engg	18	4	3	0	13	2	6	1	3	1	0	0	0	0	43	8	51
8	Computer Engg	38+4PH	8	4	2	24+1PH	6	15+1PH	2	4+	2	0	0	11	5	103	25	128
9	Information Technology	35+2PH	9	5	2	23+2PH	4	13+1PH	2	6	0	0	0	8	4	95	21	116
	<b>Total</b>	<b>302+13PH</b>	<b>65+2PH</b>	<b>37+1PH</b>	<b>13</b>	<b>188+7PH</b>	<b>34+3PH</b>	<b>109+4PH</b>	<b>17</b>	<b>54+1PH</b>	<b>10+</b>	<b>4</b>	<b>1</b>	<b>69</b>	<b>22</b>	<b>789</b>	<b>168</b>	<b>957</b>

PH= Persons with Disabilities

**M. Tech. Programme - Particulars of Intake and Admissions during 2019-20**

Sl. No.	Name of the Programmes	Intake	Admitted										Out of the total admissions-No. of candidates admitted under category													
			GATE (Scholarship seats)	Other	Total			SC			ST			OBC			EWS			OC			PWD			
					M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	
1	Structural Engg.	30+1*	29	1 QIP Poly 1 ICCR	25	6	31	4	0	4	2	0	0	2	5	1	6	2	1	3	10+ 1QIP Poly+ 1ICCR	4	16	0	0	0
2	Geotechnical Engg.	16+1*+ 1**	14	--	8	6	14	1	1	2	1	0	1	1	1	3	4	1	0	1	4	2	6	0	0	0
3	Environmental Engg.	30+1*	28	--	7	21	28	1	3	4	1	0	1	1	1	6	7	2	1	3	2	11	13	0	0	0
4	Transportation Engg.	30+1*	29	1 ICCR	25	5	30	4	0	4	1	0	1	5	3	8	8	3	0	3	10+ 1 ICCR	2	13	1	0	1
5	Construction Technology & Management	30+1* 30 (L&T)	27	30 L&T 1 ICCR	49	9	58	4	0	4	0	0	0	6	2	8	8	2	0	2	10+ 1ICCR+ 26 L&T	3+4 L&T	44	0	0	0
6	Marine Structures	30+1*+ 1**	28	1 Spon.	16	13	29	4	0	4	1	0	1	3	5	8	8	2	0	2	5+ 1Spon.	8	14	0	0	0
7	Water Resources Engineering & Management	16+1*	12	--	9	3	12	2	0	2	0	0	0	5	0	5	0	0	0	0	2	3	5	0	0	0
8	Remote Sensing & Geographic Information Systems	30+1*+ 1**	17	6 Non Gate	11	12	23	1	1	2	0	0	0	2	3+ 1Non Gate	6	6	0	0	0	5+ 3 Non Gate	5+ 2 Non Gate	15	0	0	0
9	Mechanical Design	17+1*	16	--	14	2	16	2	0	2	1	0	1	3	1	4	4	2	0	2	6	1	7	0	0	0
10	Manufacturing Engg.	16+1*	15	1 Navy Spon.	16	0	16	2	0	2	1	0	1	3	0	3	3	2	0	2	7+ 1Navy Spon.	0	8	0	0	0
11	Mechatronics Engg.	29+1*	24	2 Non Gate	23	3	26	4	0	4	0	0	0	5	1 Non Gate	6	6	1	0	1	13	1+ 1Non Gate	15	0	0	0



Sl. No.	Name of the Programmes	Intake	Admitted			Out of the total admissions-No. of candidates admitted under category																			
			GATE (Scholarship seats)	Other	Total			SC			ST			OBC			EWS			OC			PWD		
					M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO
12	Thermal Engineering	16+1+1**	15	1	16	2	0	2	1	0	1	5	0	5	1	0	1	0	1	5+1QIP Poly	1	7	0	0	0
13	Power & Energy Systems	30+1*	24	7	31	3	1	4	2	0	7	2	2	9	1	1	2	2	8+2 ICCR	3	13	1	0	1	
14	VLSI Design	30+1+1**	23	7	30	1	3	4	2	0	7	1	1	8	2	0	2	2	11	2+1 DASA	14	0	0	0	
15	Communication Engineering and Networks	30+1+1**	19	9	28	2	2	4	1	0	5	4	4	9	1	1	2	8	2	10	2	2	0	2	
16	Signal Processing and machine learning	30+1**	19	8	27	1	2	3	2	0	5	3	3	8	1	1	2	10	2	12	2	0	0	0	
17	Chemical Engineering	16+1*	9	3	12	1	0	1	0	0	3	1	1	4	1	0	1	4	2	6	2	0	0	0	
18	Environmental Science and Technology	30+1*	4	6	10	0	1	1	0	0	0	0	0	0	0	0	0	4	4	4+1 Non Gate	9	0	0	0	
19	Industrial Biotechnology	30+1*	6	22	28	1	3	4	0	1 Non Gate	1	3+2 Non Gate	0	6	1	0	1	3	13	16	0	0	0	0	
20	Materials Engg.	30+1*	21	3	24	1	1	2	0	0	1	0	0	1	0	0	0	16+3 Non gate	2	21	0	0	0	0	
21	Process Metallurgy	16+1+1**	13	0	13	2	0	2	0	0	2	0	0	2	0	0	0	9	0	9	0	0	0	0	
22	Nanotechnology	16+1*	4	2	6	0	1	1	1	0	1	0	0	1	0	0	0	2	1 Non Gate	3	0	0	0	0	
23	Computer Science & Engg.	30+1+1**	21	6	27	1	1	2	1	1	4	1	1	5	1	1	2	13	1+1 ICCR	15	1	0	1	1	

Sl. No.	Name of the Programmes	Intake	Admitted												Out of the total admissions-No. of candidates admitted under category											
			GATE (Scholarship seats)	Other	Total			SC			ST			OBC			EWS			OC			PWD			
					M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	M	F	TO	
24	Computer Science & Engg. - Information Security	30+1*	31	--	26	5	31	1	4	5	1	0	1	8	1	9	3	0	3	12	0	12	1	0	1	
25	Information Technology	30+1*	27	--	20	7	27	3	0	3	1	0	1	7	3	10	1	1	2	8	3	11	0	0	0	
26	Computational and Data Science	30+1*	25	--	18	7	25	1	2	3	0	1	1	4	3	7	1	0	1	12	1	13	0	0	0	
	<b>Total</b>	<b>668</b>	<b>561</b>	<b>16 Non Gate</b>	<b>445</b>	<b>173</b>	<b>618</b>	<b>49</b>	<b>26</b>	<b>75</b>	<b>20</b>	<b>2</b>	<b>23</b>	<b>99</b>	<b>46</b>	<b>149</b>	<b>31</b>	<b>7</b>	<b>38</b>	<b>199</b>	<b>76</b>	<b>327</b>	<b>6</b>	<b>0</b>	<b>6</b>	
		(642 CCMT + 26 Sponsored)		1 Spon								1 Non Gate			4 Non Gate					6 Non Gate	5 Non Gate					
		25-ICCR		6 ICCR																2 QIP Poly	1 ICCR					
		9DASA		1NAVY																5 ICCR	1 DASA					
		30L&T Spon.		1DASA																1 Spon.	4 L&T Spon.					
				2 QIP Poly																1 Navy Spon						
				30L&T Spon.																26 L&T Spon.						
<b>Total Admission - 618</b>																										

\*Additional seats reserved for the international students under I.C.C.R. Scheme

\*\* Sanctioned seats for DASA candidates, The above intake of M.Tech excluding the intake of QIP allotted by AICTE and two seats of Indian Navy Sponsored (One seat each in Mechanical Engg. & E&C Dept.), L&T - Additional seats reserved for L&T Sponsored candidates.

**M.TECH. PROGRAMME (BY RESEARCH) 2019-20**

OC	OC PwD	EWS	EWS PwD	OBC	OBC PwD	SC	SC PwD	ST	ST PwD	Total
24	1	3	0	14	1	8	1	3	0	55

Sl. No.	Name of the Programme	No. of candidates admitted		Total number of candidates admitted		
		Gate Scholarship Seat	Non-Scholarship Seat	M	F	Total Admission
<b>DEPARTMENT OF CIVIL ENGINEERING</b>						
1	Structural Engg.	03 (OC) 01 (OBC)	--	02	02	04
2	Transportation Engg.	--	--	--	--	--
3	Construction Technology and Management	--	--	--	--	--
	Geotechnical Engineering	01 (OC) 01 (SC)	--	02	--	02
4	Environmental Engg.	--	--	--	--	--
<b>DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING</b>						
1	Nanotechnology	--	01 (OC) ER Spon	--	01	01
2	Process Metallurgy	--	--	--	--	--
3	Materials Engg.	--	--	--	--	--
<b>DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</b>						
1	VLSI Design	02(OC), 01 (SC)	--	02	01	03
2	Communication Engineering	02 (OC)	--	01	01	02
3	Signal Processing and machine learning	--	--	--	--	--
<b>DEPARTMENT OF MECHANICAL ENGINEERING</b>						
1	Mechanical Design	01(OC), 1(OBC)	--	02	--	02
2	Mechatronics Engineering	01(OC), 1(OBC)	--	02	--	02
3	Manufacturing Engineering	01(OC)	--	01	--	01
4	Thermal Engg.	1 (OBC)	01 (OC) ER Spon, 1 (OC) IR- NITK	02	01	03
<b>DEPARTMENT OF MINING ENGINEERING</b>						
1	Rock Excavation Technology and Management	--	--	--	--	--
<b>DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS</b>						
1	Remote Sensing & Geographic's Information Systems	--	--	--	--	--
2	Marine Structures	--	--	--	--	--
3	Water Resources Engineering & Mgt.	01 (OC)	--	01	--	01
<b>DEPARTMENT OF CHEMICAL ENGINEERING</b>						
1	Chemical Engineering	--	--	--	--	--
2	Environmental Science and Technology	--	--	--	--	--
3	Industrial Biotechnology	--	--	--	--	--

<b>DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING</b>						
1	Power and Energy Systems	01 (OC)	--	01	--	01
<b>COMPUTER SCIENCE &amp; ENGINEERING</b>						
1	Computer Science and Engineering	01(OC)	--	01	--	01
2	Computer Science and Engineering - Information Security	02 (OC)	--	01	01	02
<b>INFORMATION TECHNOLOGY</b>						
1	Information Technology	01 (OC)	--	01	--	01
<b>DEPARTMENT OF MACS</b>						
1	Computational and Data Science	01(OC)	--	01	--	01
	<b>Total</b>	<b>18 (OC), 4 OBC, 2 SC = 24</b>	<b>2 (OC) ER Spon, 1 (OC) IR -NITK = 3</b>	<b>20</b>	<b>07</b>	<b>27</b>

**M.C.A., M.B.A. AND M.Sc. PROGRAMMES****Particulars of Admissions during 2019-20**

Sl. No.	Programme	Intake	Total Admission			SC		ST		OBC		OC		EWS		PwD		Sponsored	
			M	F	Total	M	F	M	F	M	F	M	F	M	F	M	F		
1	Master of Computer Applications (MCA)	51+ 1**	37	13	<b>50</b>	7	1	3	0	7	5	16	7	2	0	2 (1OC, 1OB)	0	0	0
2	Master of Business Administration (MBA)	70+5*+ 1**	16	12	<b>28</b>	0	3	1	0	2	3	13	6	0	0	0	0	0	0
3	M.Sc. (Chemistry)	29+ 1**	10	14	<b>24</b>	1	0	0	0	3	5	6	7	0	2	0	0	0	0
4	M.Sc. (Physics)	29+ 1**	17	7	<b>24</b>	3	1	1	0	3	3	9	2	1	1	0	0	0	0
	<b>Total</b>	<b>179+ 5*+ 4** =188</b>	<b>80</b>	<b>46</b>	<b>126</b>	<b>11</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>15</b>	<b>16</b>	<b>44</b>	<b>22</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* Seats reserved for DASA candidates

\*\* Additional seats for the international students under ICCR Scheme

PwD – Persons with Disabilities

**Ph.D. PROGRAMME****Particulars of Intake & Admissions made during 2019-20  
Intake for the year 2019-20**

OC	OC PWD	EWS	EWS PWD	OBC	OBC PWD	SC	SC PWD	ST	ST PWD	Total
72	4	13	1	39	2	21	1	11	1	165

**Details of Admissions made during 2019-20**

Sl No.	Name of the Department	Admitted Full time Programme				Admitted Under External Registrants (Part Time)		Out of the total Full time scholars, Number of Candidates belonging to the category of											
		Fellowship Holder		Other category-Non Fellowship+ QIP+ Sponsored + Ethiopian		M	F	OC		EWS		OBC		SC		ST			
		M	F	M	F			M	F	M	F	M	F	M	F	M	F		
1	Civil Engg	6 + 3*	4 + 3*	1 (OC) SPON, 1 ICCR, 1 QIP	1 QIP	1 + 1* ER, 1 IR	---	5+1*	3+1*	--	--	2*	1*	1	1+	1*	--	--	
2	Applied Mech. & Hydraulics	1 + 3*	2 + 2*	2* (OC) NSPON, 4 ICCR	1 QIP	1 ER 2+1* IR	1* IR	1+1*	2+1*	--	1*	1*	--	--	--	--	1*	--	--
3	Mechanical Engg	14 + 5*	-	1* (OC) NSPON 1 (OC) SPON 1 Ethio. 4 QIP	1* (OC) NSPON	3 + 3*ER	1 IR	9+1*	--	--	--	2+2*	--	2+2*	--	--	1	--	--
4	Electrical & Electronics Engg	6 + 7*	1*	1* (OC) SPON	-	1 ER	3 ER	4+1*	-	2*	-	1+4*	1*	1	-	-	-	-	-

Sl No.	Name of the Department	Admitted Fellowship Holder				Full time Programme				Admitted Under External Registrants (Part Time)		Out of the total Full time scholars, Number of Candidates belonging to the category of											
		Fellowship Holder		Other category-Non Fellowship+ QIP+ Sponsored + Ethiopian		Fellowship Holder		Other category-Non Fellowship+ QIP+ Sponsored + Ethiopian		M	F	M	F	OC		EWS		OBC		SC		ST	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
5	Electronics & Communication Engg	2 + 2*	--	--	1 QIP	--	1 QIP	1ER	--	2+2*	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Chemical Engg	1*	1 + 1*	1 QIP	-	1 QIP	1+1* *IR	1ER	--	--	1	--	1*	1*	--	--	--	--	--	--	--	--	--
7	Metallurgical & Materials Engg	5 + 2*	--	---	-	---	1ER 1+1* IR	1ER 1+1* IR	--	3 + 1*	-	1*	1	1	--	--	--	--	--	--	1	--	--
8	Mining Engg	2*	--	--	-	1*(OC) NSPON	4*ER	1*ER	--	1*	--	--	1*	1*	--	--	--	--	--	--	--	--	--
9	Computer Science & Engg	1 + 2*	2	1 QIP	1 QIP	1 QIP	1+1* IR	1ER IR	--	1+2* (1*P wD)	2	--	--	--	--	--	--	--	--	--	--	--	--
10	Information Technology	2*	2 + 1*	1 + 1* (OC) SPON	1* (OC) SPON	1 + 1* (OC) SPON	1*ER	1*ER	--	1*	1	--	1*	1	--	--	--	--	1*	--	--	--	--
11	Physics	2 + 2*	3 + 1*	2 (ST) CSIR	-	2 (ST) CSIR	--	---	---	1+1*	3+1*	--	---	--	1+1*	--	--	--	--	1+1*	--	--	--
12	Chemistry	4	2 + 1*	1 (OC) SPON	2* (OC) NSPON 1 (OBC) CSIR, 1 (OC) INSPIRE	1 (OC) SPON	1*ER	1*IR	--	2	1	--	1	1	1	1	1	1	1	1	1	1	1
13	Mathematical & Computational Sciences	3 + 1*	1				1ER	1*IR	--	3+1*	1	--	---	---	---	---	---	---	---	---	---	---	---

Sl No.	Name of the Department	Admitted Fellowship Holder		Full time Programme		Admitted Under External Registrants (Part Time)		Out of the total Full time scholars, Number of Candidates belonging to the category of							
		Other category-Non Fellowship+ QIP+ Sponsored + Ethiopian		Admitted Under External Registrants (Part Time)		OC		EWS		OBC		SC		ST	
		M	F	M	F	M	F	M	F	M	F	M	F		
14	School of Management	2 + 1*	3 + 1*	1* (OC) NSPON	1*ER	---	1	3+1*	--	1+1*	---	---	---	---	---
	<b>Total</b>	<b>46 + 33*</b>	<b>20 + 11*</b>	<b>4* (OC) NSPON 4 + 2* (OC) SPON</b>	<b>9+10* ER 8 + 3* IR</b>	<b>4+1 *ER 2+4 *IR</b>	<b>32+ 13* (1* PwD)</b>	<b>17+ 4*</b>	<b>3* 1*</b>	<b>6+ 13*</b>	<b>2+ 4*</b>	<b>6+ 3*</b>	<b>1+ 2*</b>	<b>2+ 1*</b>	<b>0</b>
<b>Total Admission - 186</b>															

\* Admissions made during December session 2019 Spon= Sponsored. QIP = Admitted Under AICTE QIP Scheme, PwD – Persons with Disabilities

**Total Student's Strength**

**Programme**

**Strength**

1. Undergraduate	3365
2. Post Graduate (Including MCA /M.Tech./M.Tech (Research)/MBA/M.Sc.)	1551
3. Ph.D. Programme	<u>859</u>
<b>Total</b>	<b><u>5775</u></b>



## 7. EVALUATION AND EXAMINATION

### 7.1 EDUCATION SYSTEM

The normal duration of programmes leading to B.Tech degree in Engineering is eight semesters. For full time M.Tech. Programmes, the duration of study is a minimum of four semesters and a maximum of four years. For Internal/external registrants, the duration shall be a minimum of five semesters and maximum of five years. For M.Tech. of study shall be a minimum of four by Research program for full-time students, the duration semesters and a maximum of four years. For Internal/External Registrants, the duration will be a minimum of five semesters and a maximum of five years. For Master of Science, programme the duration of study shall be a minimum of four semesters and a maximum of four years. For Master of Computer Application (MCA) the duration of study shall be a minimum of six semesters and a maximum of six years. For Master of Business Administration (MBA), the duration of study is a minimum of four semesters and a maximum of four years. For Doctoral Programmes (Ph.D.) the duration of study is a minimum of two years and maximum of seven years for all categories of research scholars.

Each academic year is divided into two semesters. A semester that is typically from August to Mid- December is called the ODD SEMESTER, and the one that is from January to Mid-May is called EVEN SEMESTER.

The medium of instruction, examination and project work is English only.

### 7.2 EXAMINATION & EVALUATION PROCEDURE

The examination and evaluation work of all the B.Tech./M.Tech./MCA/MSc/MBA students and Ph.D./M.Tech by Research candidates were carried out by the respective Faculty Members in their concerned Departments itself as per the regulations approved by the Senate of the Institute. The Grades obtained by each student with details of attendance in each course are submitted to the Examination/Evaluation Section for processing their Grade Cards as per the regulations of the Institute. The results are declared and published on the website of the Institute in time and Grade Cards were issued to all eligible students.

## 8. EXAMINATION RESULTS FOR 2019

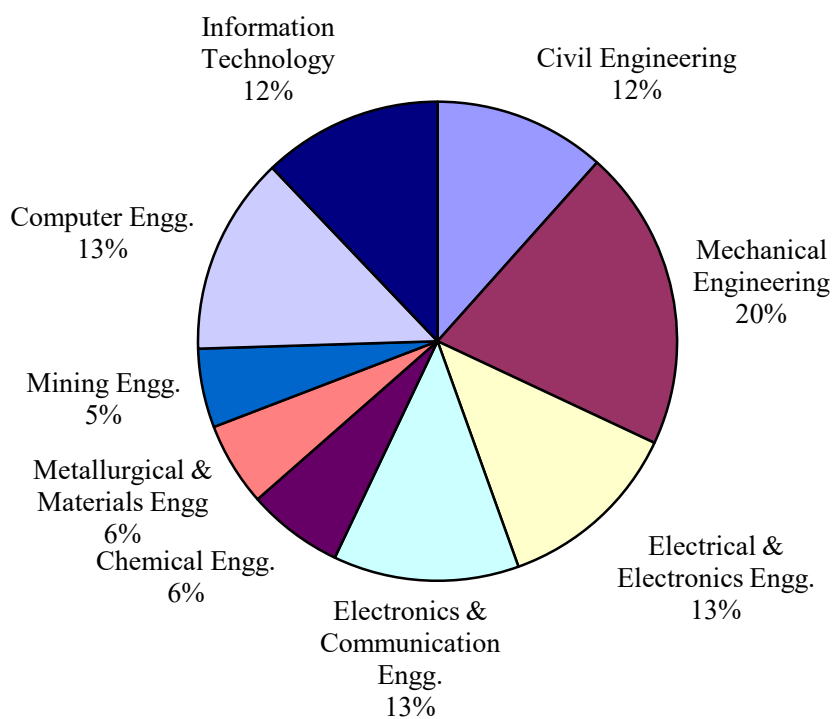
### UNDER GRADUATE

Sl.No.	Branch	Total No. Appeared	No. of students passed in				Total Pass	Percentage of passes	No. of SC/ST candidates passed
			CGPA above 7 & below 10	CGPA above 6 & below 7	CGPA above 5 & below 6	CGPA below 5			
1.	Civil Engineering	96+1*	76	16	4+1*	0	96+1*	100.00	20
2.	Mechanical Engineering	159+4*	111	32	11+2*	3+2*	157+4*	98.77	28+1*
3.	Electrical And Electronics Engineering	104	73	23	4	2	102	98.08	18
4.	Electronics And Communication Engineering	104	79	20	2	2	103	99.04	18
5.	Chemical Engineering	49	27	13	8	0	48	97.96	8
6.	Metallurgical And Materials Engineering	37+1*	30	7	1*	0	37+1*	100.00	9+1*
7.	Mining Engineering	37	34	2	0	0	36	97.30	9
8.	Computer Science and Engineering	107	83	20	4	0	107	100.00	20
9.	Information Technology	103+2*	74	20+1*	6	1+1*	101+2*	98.10	19+1*
	*- Repeaters								

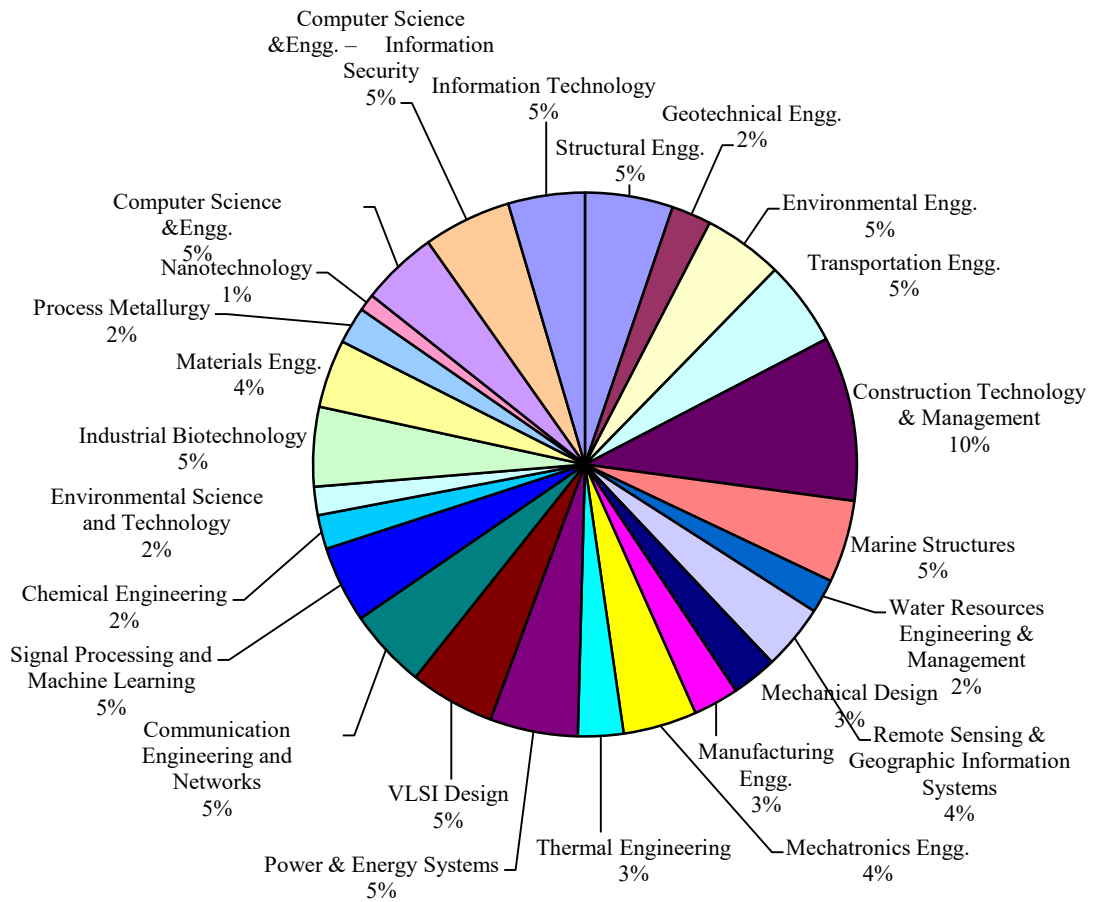
**POST GRADUATE**

Sl.No.	Branch	Total No. Appeared	No. of students passed in			Total Pass	Percentage of passes	No. of SC/ST candidates passed
			CGPA above 7 & below 10	CGPA above 6 & below 7	CGPA above 5.50 & below 6			
1.	Construction Technology & Management	53	47	3	0	50	94.34	3
2.	Structural Engineering	27	23	2	2	27	100.00	6
3.	Geotechnical Engineering	13	13	0	0	13	100.00	2
4.	Environmental Engineering	21	21	0	0	21	100.00	3
5.	Transportation Engineering	25	18	7	0	25	100.00	5
6.	Marine Structures	22	21	1	0	22	100.00	4
7.	Remote Sensing & Geographic Information System	21	21	0	0	21	100.00	2
8.	Water Resources Engineering & Management	11	11	0	0	11	100.00	2
9.	Design and Precision Engineering	11	9	1	0	10	90.91	3
10.	Manufacturing Engineering	11	9	1	0	10	90.91	2
11.	Mechatronics Engineering	19	17	2	0	19	100.00	4
12.	Thermal Engineering	14	10	4	0	14	100.00	4
13.	Power & Energy Systems	16	12	2	1	15	93.75	2
14.	VLSI Design	21	16	4	1	21	100.00	3
15.	Communication Engineering	20	14	5	0	19	95.00	3
16.	Chemical Plant Design	5	5	0	0	5	100.00	0
17.	Industrial Biotechnology	15	9	6	0	15	100.00	1

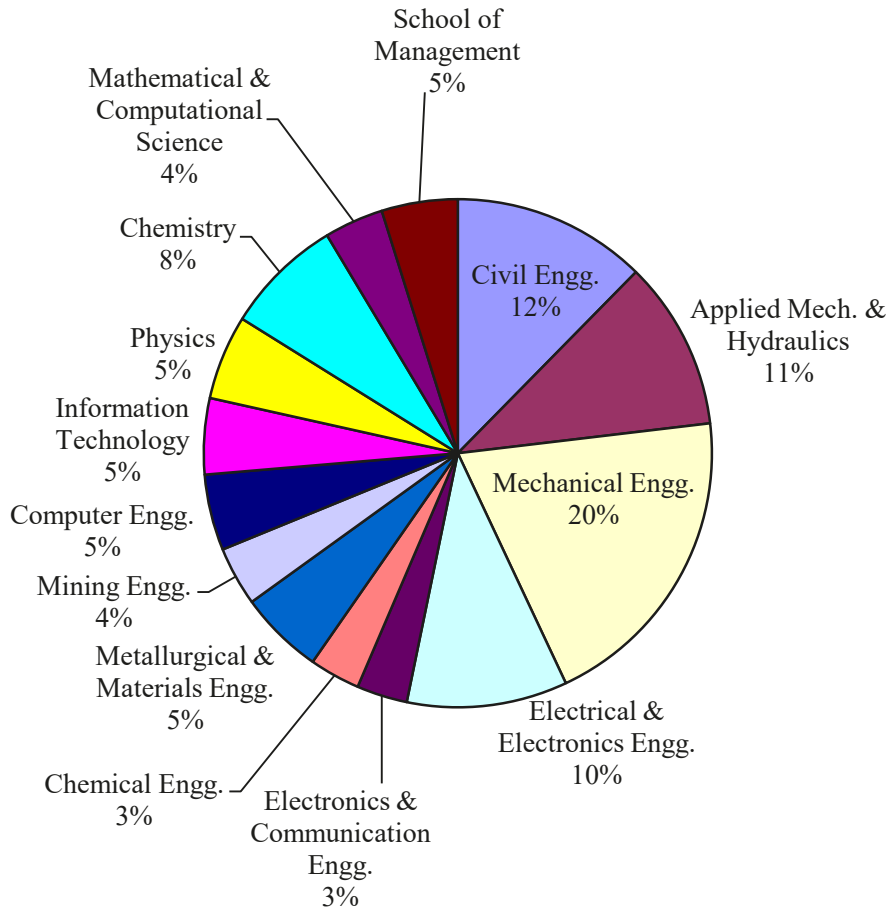
18.	Industrial Pollution Control	5	3	2	0	5	100.00	0
19.	Process Metallurgy	4	4	0	0	4	100.00	0
20.	Materials Engineering	25	21	3	1	25	100.00	5
21.	Nanotechnology	6	6	0	0	6	100.00	2
22.	Computational Mathematics	13	10	3	0	13	100.00	1
23.	Computer Science and Engineering	23	20	2	1	23	100.00	5
24.	Computer Science and Engineering - Information Security	22	17	4	1	22	100.00	5
25.	Information Technology	20	13	5	2	20	100.00	4
26.	Master of Computer Applications	90	68	18	4	90	100.00	20
27.	Master of Business Administration	32	26	6	0	32	100.00	2
28.	Master of Science (Chemistry)	26	21	3	1	25	96.15	4
29.	Master of Science (Physics)	26	21+2*	2	1	24+2*	100.00	4
		617				609		
	*- Repeaters							



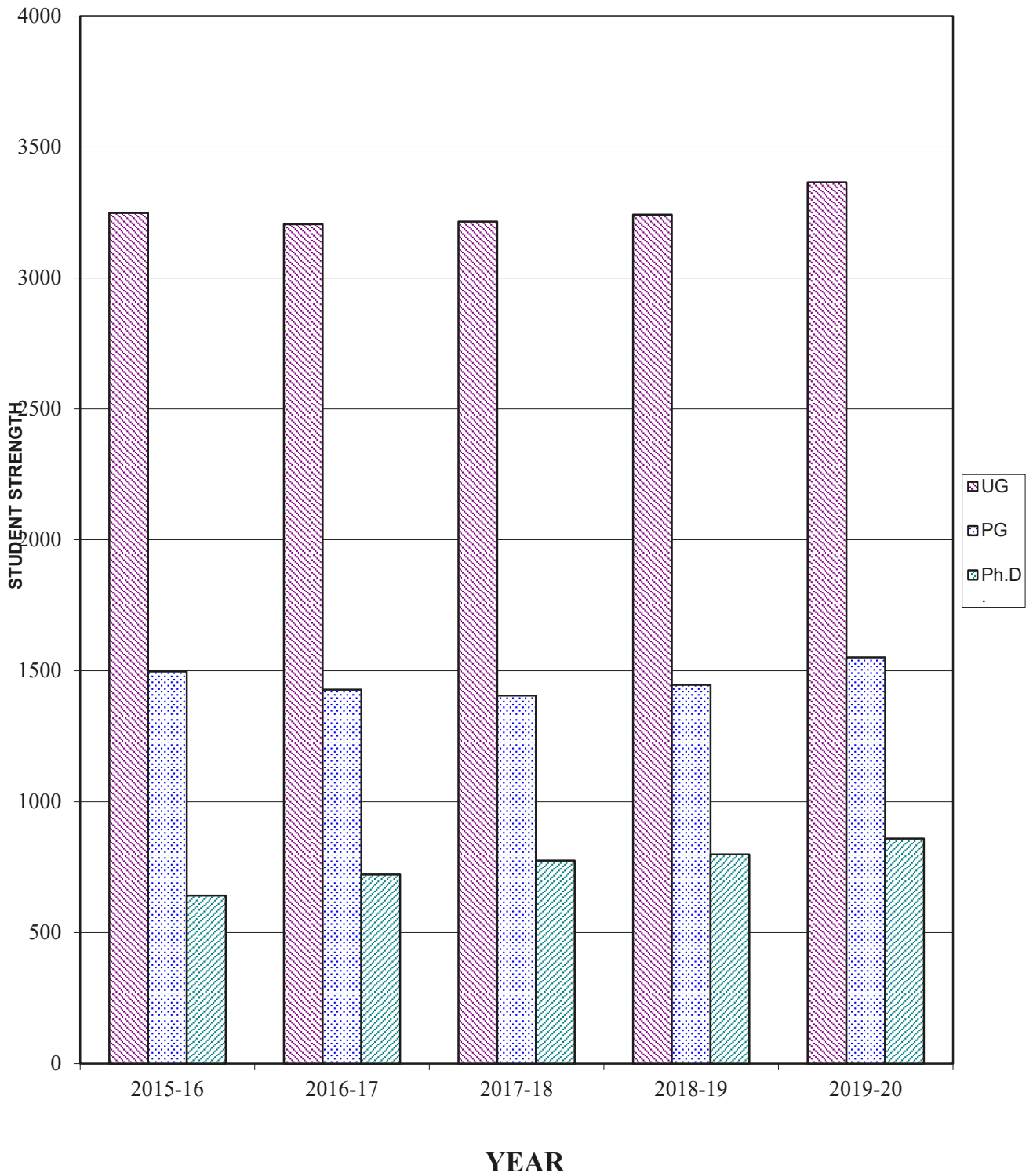
**Pie chart showing discipline wise B.Tech. admissions 2019-20**



**Pie chart showing discipline wise M.Tech. admissions 2019-20**

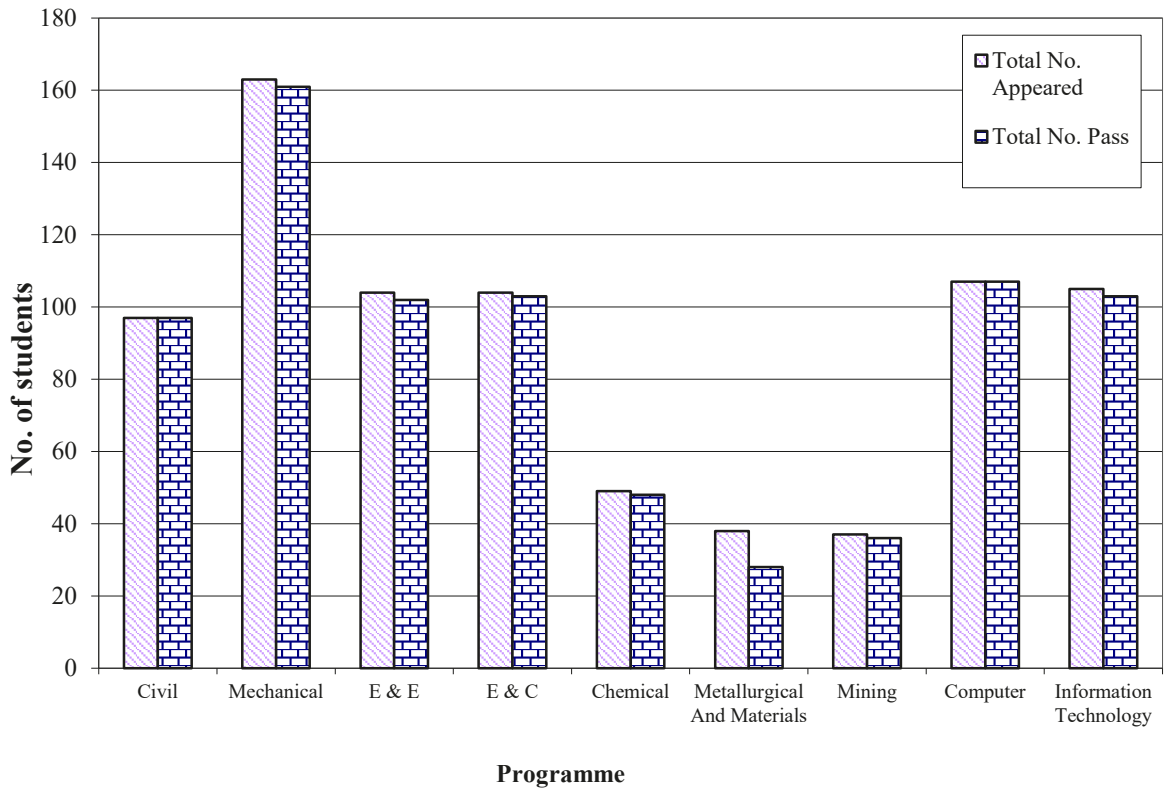


**Pie chart showing discipline with Ph.D. admissions 2019-20**

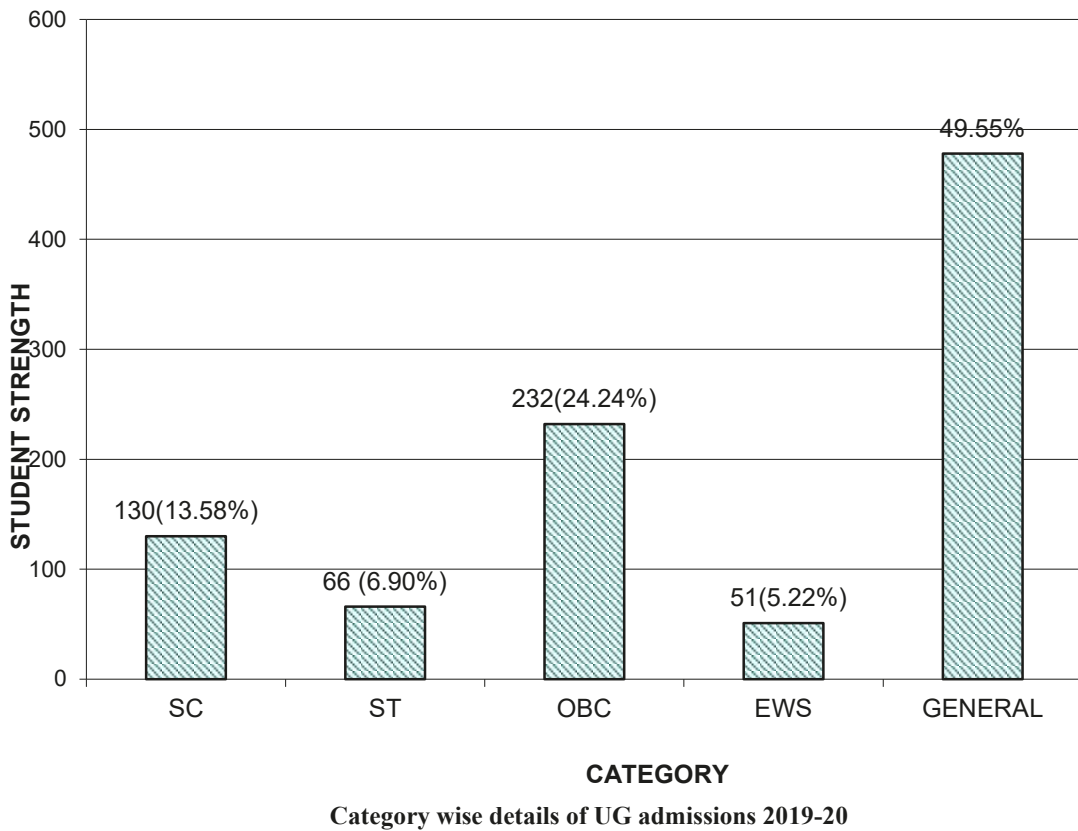
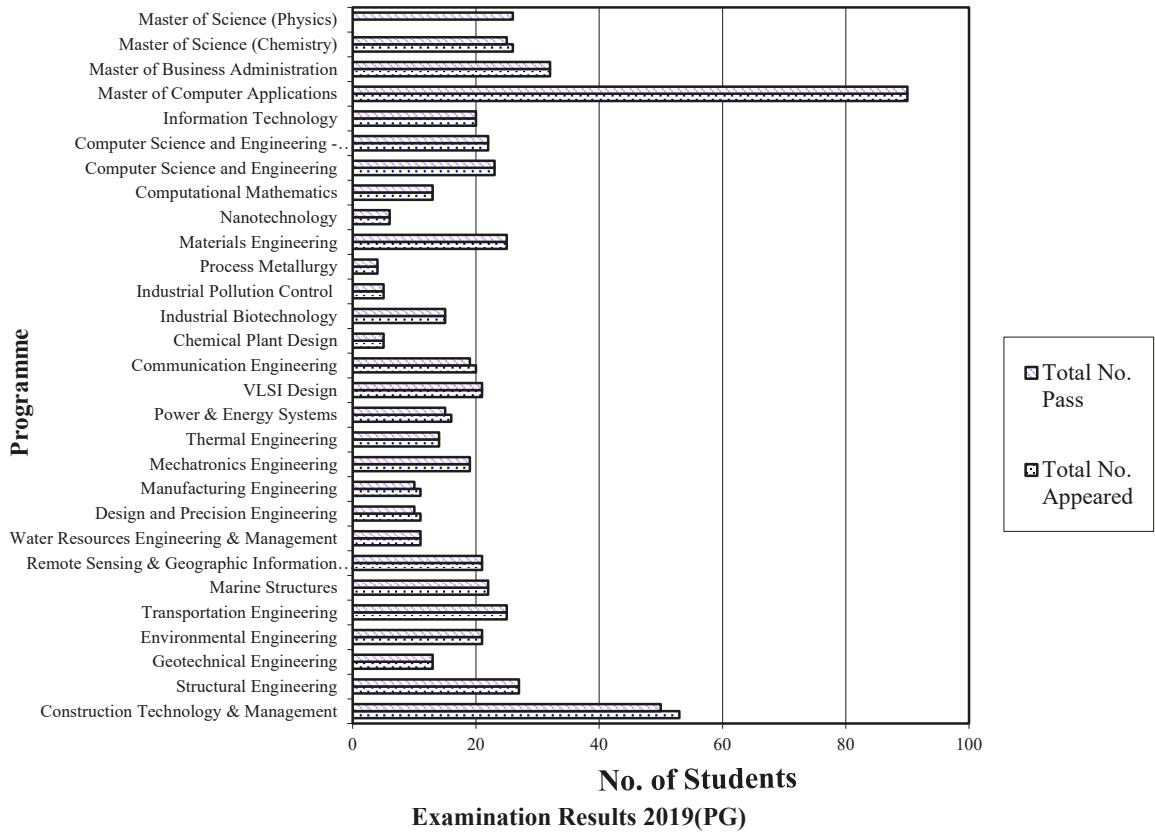


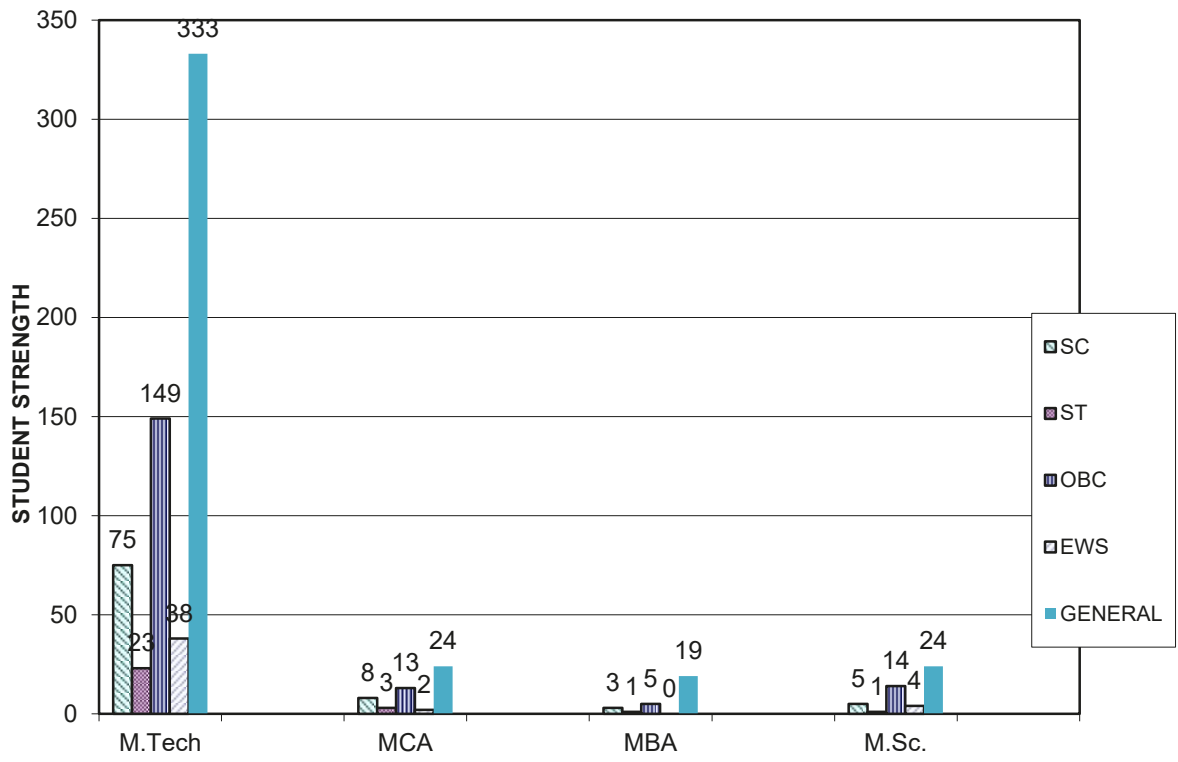
**Growth enrolment UG/PG/Ph.D. students during last 5 years 2015-2019**





**Examination Results 2019(UG)**





Category wise details of PG admissions 2019-20

**Ranks secured by the B.Tech./M.Tech./MCA/MBA/M.Sc. (Physics & Chemistry) Examination held in April/May, 2019**

**B.Tech.**

Sl. No.	Branch	Reg. No.	Name of the Student
1	CHEMICAL ENGINEERING	15653415CH30	<u>PRABHJOT KAUR LUTHRA</u> 1) Institute Medal 2) Mohan V Hosur Gold Medal 3) 1986 Batch Gold Medal
2	CIVIL ENGINEERING	15670815CV142	<u>LEKHHA SHARMA</u> 1) Institute Medal 2) Prof. M. N. Shivshankar Gold Medal 3) Dr. R.K. Yaji Gold Medal 4) 1986 Batch Gold Medal
3	COMPUTER SCIENCE AND ENGINEERING	15624015CO213	DERIK CLIVE R 1) Institute Medal
4	ELECTRONICS & COMMUNICATION ENGINEERING	15622515EC121	HITESH S 1) Institute Medal 2) 1986 Batch Gold Medal
		15629715EC256	CHANDRATREYA VISHAL PANKAJ 1) Institute Medal 2) 1986 Batch Gold Medal
5	ELECTRICAL & ELECTRONICS ENGINEERING	15664015EE107	BURYE ROHAN SANDEEP 1) Institute Medal 2) Prof. M.R. Shenoy Memorial Prize 3) Prof. K. M. Hebbar Gold Medal 4) 1986 Batch Gold Medal
6	INFORMATION TECHNOLOGY	15610415IT217	M M VIKRAM 1) Institute Medal
7	MECHANICAL ENGINEERING	15708815ME162	PRANAY PRAVEEN NAGRANI 1) Institute Medal 2) 1986 Batch Gold Medal 3) Prof. Shuichi Torii Gold Medal
8	METALLURGICAL & MATERIALS ENGINEERING	15652115MT43	VISHESH GOEL 1) Institute Medal 2) Karthik Alloys Gold Medal 3) Prof. H. V. Sudhaker Nayak Gold Medal 4) SMIORE Gold Medal 5) 1986 Batch Gold Medal
9	MINING ENGINEERING	15670715MN04	APOORV HARSH 1) Institute Medal 2) Hutti Gold Mines Medal

**POST GRADUATES**

Sl. No.	Branch	Reg. No.	Name of the Student
1	Marine Structures	172541MS019	SAYYAD ZAID MUBARAK 1) Institute Medal
2	Remote Sensing & Geographic Information System	172410RS014	<u>NIKITHA ITTYCHERIA</u> 1) Institute Medal
3	Water Resources Engineering & Management	172384WR012	<u>SRUTHI S KUMAR</u> 1) Institute Medal
4	Chemical Plant Design	172069PD001	NITHISH T 1) Institute Medal
5	Industrial Biotechnology	172194IB005	<u>FENTA HEPHZIBAH D</u> 1) Institute Medal
6	Industrial Pollution Control	172427PC004	P GOVARDHAN 1) Institute Medal
7	Construction Technology & Management	172344CM007	ANUJ SHARMA 1) Institute Medal
8	Environmental Engineering	172192EN015	NAMAN JAIN 1) Institute Medal
9	Geotechnical Engineering	172482GT008	MANNE BALAJI 1) Institute Medal
10	Structural Engineering	172243ST019	<u>RISHANA KAPAT</u> 1) Institute Medal
11	Transportation Engineering	172177TS009	<u>GAYATRI VENKITESH</u> 1) Institute Medal
12	Computer Science & Engineering	172080CS014	<u>KAJOL JAIN</u> 1) Institute Medal
13	Computer Science & Engineering – Information Security	172393IS016	<u>PARMAR NEHAL KIRANBHAI</u> 1) Institute Medal
14	Power & Energy Systems	172021PS021	SIDDHARTH NAVSE 1) Institute Medal
15	Communication Engineering	172205CE021	<u>SHIVANGI JAIN</u> 1) Institute Medal
16	VLSI Design	172012VL001	ADITYA JAIN 1) Institute Medal
17	Information Technology	172042IT005	<u>KOKKILIGADDA KINNERA</u> 1) Institute Medal
18	Computational Mathematics	172022MA013	SATWIK RAJ 1) Institute Medal
19	Design and Precision Engineering	172274DP011	SAURABH RANJAN 1) Institute Medal
20	Manufacturing Engineering	172152MF001	BEESETTY PAVAN KUMAR 1) Institute Medal 2) Prof. K. L. Bhat & Prof. P. Prasad Rao Gold Medal

21	Mechatronics Engineering	172242MC007	<u>GEETHANJALI T</u> 1) Institute Medal
		172329MC020	<u>SHAIJAL KORMATH</u> 1) Institute Medal
22	Thermal Engineering	172162TH005	<u>BUDRUK AJINKYA RAJENDRA</u> 1) Institute Medal 2) Dr. B. S. Samaga Award
23	Materials Engineering	172433ML010	<u>DINGARI SREERAM</u> 1) Institute Medal 2) Prof. K R Hebbar Gold Medal
24	Nanotechnology	172508NT004	<u>JAYAPIRIYA U S</u> 1) Institute Medal
25	Process Metallurgy	172211PM004	<u>SUMIT SHRIVASTAVA</u> 1) Institute Medal 2) Smt. Sarojini Pillay Gold Medal

**Master of Computer Applications - 2019**

Sl. No.	Branch	Reg. No.	Name of the Student
26	Master of Computer Applications	16204816CA41	<u>MAYANK TRIPATHI</u> 1) Institute Medal 2) Dr. Saroja R Hebbar Gold Medal

**Master of Business Administration - 2019**

Sl. No.	Branch	Reg. No.	Name of the Student
27	Master of Business Administration	175009SM021	<u>PRATHIJNA RAO K</u> 1) Institute Medal

**Master of Science - 2019**

Sl. No.	Branch	Reg. No.	Name of the Student
28	Chemistry	176031CY016	<u>PALLAVI</u> 1) Institute Medal 2) Prof. G. H. Kulkarni Gold Medal
29	Physics	176022PH020	<u>SUJAN K K</u> 1) Institute Medal 2) K. Subbarayappa Gold Medal

## 9. Ph.D.PROGRAMMES & DOCTORATES AWARDED

### PH.D. PROGRAMMES – EXISTING & PROPOSED

#### DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS

##### EXISTING SPECIALIZATION

- (i) Coastal Engineering
- (ii) Water Resources Engineering
- (iii) Remote Sensing and GIS Applications

#### DEPARTMENT OF CIVIL ENGINEERING

##### EXISTING SPECIALIZATION:

Construction Tech. and Management, Environmental Engg. Geotechnical Engg., Structural Engg., Transportation Engg. Earth sciences.

#### DEPARTMENT OF CHEMICAL ENGINEERING

##### EXISTING SPECIALIZATION:

Chemical Engineering-Process Dynamics and Control, Process Modelling and Simulation, System Identification, Subspace Identification, Process Systems Engineering, Process Optimization, Renewable Energy.

##### PROPOSED SPECILIZATION:-

Nano Technology, Bioenergy, Computational Fluid Dynamics (CFD), Multi Phase Flow, Process Dynamics and Control.

#### DEPARTMENT OF CHEMISTRY

Green Chemistry, Biomass conversion, Reaction methodology. Corrosion, Membrane technology, Materials chemistry, Nanochemistry, Polymers, Catalysis, Nanofluids, Supercapacitors, Photocatalysis, Supercapacitors,

Thermoelectrics, Materials for energy and environmental applications etc

#### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING:

##### EXISTING SPECILIZATION:-

Computer Networks, Software Engineering, Distributed Computing, Data Management, Information Security, High Performance Computing, Computer Vision, Cloud Computing, Image Processing, Speech Processing, Mobile computing

##### PROPOSED SPECIALIZATION:

Graph Theory, Graph Algorithms, Big Data Analytics, Internet of Things (IoT).

#### DEPARTMENT OF CHEMISTRY

##### EXISTING SPECIALIZATION:

Green Chemistry, Biomass conversion, Reaction methodology. Corrosion, Membrane technology, Materials chemistry, Nanochemistry, Polymers, Catalysis, Nanofluids, Supercapacitors, Photocatalysis, Supercapacitors, Thermoelectrics, Materials for energy and environmental applications etc

#### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

##### EXISTING SPECIALIZATION

Digital VLSI Design, Analog and Mixed Signal Design, Digital Signal Processing, Speech, Audio, Image and Video Processing, Digital Communication, Error Control Coding, Free Space Optics, RF MEMS, Microwave and RF Circuits, Wireless Sensor Networks, High Frequency Electronics, Semiconductor Devices, Embedded Systems, Reconfigurable Computing.

## **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

### **EXISTINGSPECIALIZATION**

Power Systems, Distributed Generation, Energy Systems, Power Electronics & Drives, Renewable Energy, High Voltage Engineering, Flexible AC Transmission System (FACTS), Control Systems, Power System Protection, Smart Grid & Sensor Networks

## **DEPARTMENT OF INFORMATION TECHNOLOGY**

### **EXISTINGSPECIALIZATION**

Affective Computing, Big Data Analytics, Blockchain Technologies, Cloud/Edge/Fog Computing, Cloud Security, Computer Networks, Cyber Security, Databases, Data Mining, Deep Learning Applications, Distributed Computing, Future Internet Architecture, Healthcare Informatics, High Performance Computing, Information Retrieval, Information Security, Internet of Things, Mobile Software Engineering, Natural Language Processing, Network Security, Semantic Web Technology, Social Multimedia/Social Network Analysis, , Software Engineering , Web Services, Wireless Sensor Networks.

## **DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES**

### **EXISTING SPECIALIZATION**

Computational Systems, Nonlinear Analysis, Functional Analysis, Real Analysis, Number Theory & Cryptography, Numerical Analysis, Graph Theory, Optimization, Fluid Dynamics, Computer applications, Image processing, Wireless Networks, Spectral Analysis, *Wavelets and Signal Processing, Complex*

*Dynamics, Reliability Engineering, Stochastic Processes,*

### **PROPOSED SPECIALISATION:-**

Linear Algebra, Linear Algebra, Generalized Inverses, Cybersecurity, Real-world Crypto Protocols, Quantum-safe Cryptography, IoT security

## **DEPARTMENT OF MECHANICAL ENGINEERING**

### **EXISTING SPECIALIZATION**

Thermal Engineering  
Manufacturing Engineering  
Design and Precision Engineering  
Mechatronics Engineering

## **DEPARTMENT OF MINING ENGINEERING**

### **EXISTING SPECIALIZATION**

Rock Mechanics and Ground Control, Drilling and Blasting, Mine Planning, Environmental Management, Waste Management, Reliability and Safety Engineering.

## **DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING**

### **EXISTING SPECIALIZATION**

Process Metallurgy, Physical Metallurgy, Mechanical Metallurgy, Materials Engineering, Nanotechnology

## **DEPARTMENT OF PHYSICS**

### **EXISTING SPECIALIZATION**

Solid State Physics, Materials Science, Theoretical Physics, Electromagnetics, Photonics, Compound Semiconductor thin films



## PROPOSED SPECIALIZATION

Theoretical investigation of strongly correlated systems and solar cells, Cosmology and Early Universe

## SCHOOL OF MANAGEMENT

### EXISTING SPECIALIZATION

Strategic Management, International Business, Technology Management, Organizational Behaviour, Human Resource Management, Marketing, Corporate Finance, Capital Markets, Behavioural Finance, Development Economics, International Economics, Agricultural Economics, Rural Development, Applied Econometrics, Operations Management, Information Systems, E-Governance, English and Comparative Literature, and Other related areas.

### DOCTORATES AWARDED

#### DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS

**Upto 31<sup>st</sup> March 2020 : 91**  
**During period 1<sup>st</sup> April 2019 to 31<sup>st</sup> March 2020 : 12**

1. Sreedhara. B.M., Prediction of Local Scour Around Bridge pier using Soft Computing Techniques, Dr. Manu & Dr. S. Mandal
2. Satish Bhaurao More, Estimation of Saturated Hydraulic Conductivity in Spatially variable fields using various soft computing techniques, Dr. Paresh Chandra Deka.
3. Anoop.I. Shirkol, Hydro elastic Analysis of very large floating structure (VLFS) using Boundary Element Approach, Dr. T. Nasar.
4. Harish Kumar S, Modelling of River Aquifer Interactions: A Top-Down Approach, Dr. M.K. Nagaraj.
5. Rishikeshan C A., Feature Extraction Strategies Based on Mathematical

Morphology for the Analysis of Remotely Sensed Imagery, Dr. H. Ramesh.

6. Sujay Ragavendra N., Assessment of Spatio-Temporal Variability of Streambed Hydraulic conductivity: A Case Study in Pavanje River , India, Dr. Paresh Chandra Deka.
7. Dayananda Shetty K., Optimization of Vessel Turnaround Time at a Seaport with Special reference to New Mangalore Port Trust, Dr. G. S. Dwarakish.
8. Suman Kundapura, Soft computing techniques in prediction of performance of Semi-circular Breakwaters, Dr. Subba Rao & Dr. A. Vittal Hegde.
9. Muralidhar. N. ,Mechanical Characterization of Arecanut Husk fiber composite panels under Static & Dynamic Loading conditions, Dr. Vadivuchezhian K.
10. Praveen K.M. ,Hydro elastic analysis of floating and submerged flexible structures, Dr. Debabrata Karmakar.
11. Abhishek A Pathak, Characterization of Historical and Future Hydro meteorological Droughts in an India Tropical River Basin, Dr. B.M. Dodamani.
12. Vinay D.C., Asymmetric Relationship of Nino Indices with rainfall extremes over Western Ghats and Coastal region of Karnataka, Dr. Amba Shetty

#### DEPARTMENT OF CHEMICAL ENGINEERING

1. Ms. Buruga Kezia “Ultrasound assisted synthesis, Characterization, and Applications of Halloysite -Polymer Nanocomposites” 2019, Dr. T.K. Jagannathan.
2. Ms. Sushma Ishwar Havanur - “Synthesis, characterization and application of functionalized Graphene quantum dots incorporated micro/nano poly(N, N-Diethylacrylamide) hydrogel as drug delivery system” 2019 , Dr. P.E. Jagadeesh Babu.
3. Ms. Rashmi B.S. “Aqueous two phase extraction of lectin from *Pisum sativum* seeds” 2019, Dr. I. Regupathi.

4. Ms. Priyanka U. "Biosynthesis of Zinc Sulphide (ZnS) nanoparticles from endophytic fungi *Aspergillus flavus* for degradation of organic pollutants" 2019, Dr. Raj Mohan B.
  5. Mr. Vishnu M.- "Studies on removal of heavy metals from aqueous solution using melanin coated matrix." 2019, Dr. Keyur Raval & Dr. Raj Mohan B.
  6. Mr. Huchappa Kadlimatti "Microwave Assisted Pyrolysis of Food waste to Biochar and Biofuels." 2019, Dr. Raj Mohan B. & Dr. Saidutta M.B.
  7. Ms. Smruthi G Prabhu, "Studies on the potential of *Pteris vittata* L. as a biosorbent for heavy metal removal", 2020- Dr. Srinikethan G.
  8. Mr. Suman Das "Development of Novel Photocatalytic Reactor for Dye Wastewater Treatment", 2020- Dr. Hari Mahalingam.
  9. Ms. Gayathri G. "Studies on Bacterial Cellulose production using industrial wastewater", 2020, Dr. G. Srinikethan.
  10. Ms. Swapnali S Pawar "Reverse Micellar Extraction of Lactoferrin from Whey", 2020- Dr. I. Regupathi & Dr. Prasanna B.D.
- (Supervisors: Dr. Raviraj H. Mulangi., and Prof. Varghese George)
  4. Archana J, "Torsional Response of Asymmetric Buildings under Earthquake Loads", 2019, B R Jayalekshmi and Katta Venkataramana.
  5. Shreyasvi C "Probabilistic seismic hazard assessment and site characterization of southwest India", 2019 (Supervisor: Katta Venkataramana)
  6. Mahesh G.B. "Sequential Anaerobic-Aerobic Treatment of Herbicides in Water", 2019 (Supervisor: Dr. Basavaraju Manu)
  7. Bhaskar S," Fenton's Oxidation of Selective Herbicides in Water Using Lateritic Iron Extracted By Acidithiobacillus Ferrooxidans BMSNITK17", 2019 (Supervisor: Dr. Basavaraju Manu)

### DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

#### DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> March 2020:- No. Awarded: 06

1. Anitakumari S, (Reg.No : 121174CS12F01) "Adaptive Resource Management in SLA Aware Elastic Clouds" 2019, Prof. K.Chandrasekaran
2. Saumya A Hegde (Reg.No: 090694CO09P02) " Control and Data Planes in Software Defined Data Center Networks: A Scable and Resilient Approach" 2019, Dr. Shashidhar G Koolagudi & Prof. Swapan Bhattacharya
3. Y V Srinivasmurthy (Reg.No: 135067CS13F05) "Content-based Music Information Retrieval (CB-MIR) and its application towards Music Recommender System ", 2019, Dr. Shashidhar G Koolagudi
4. Apurva Kittur (Reg.No: 155009CS15FV03) " Batch Verification of Digital Signatures in IOT" 2019, Dr. Alwyn Roshan Pais

### DEPARTMENT OF CIVIL ENGINEERING

#### DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> March 2020:- No. Awarded (including those for which viva has been successfully completed):- 07

##### (FOR PERIOD OF REPORT ONLY)

1. Jayakesh K., "Experimental Studies on Interface Bond Strength of Ultra-Thin Whitetopping Pavements under Static and Dynamic Loading Conditions", 2019, (Supervisor:Dr. Suresha S.N)
2. Uma S "Solid-state Anaerobic Co-digestion of Organic Substrates for Biogas Production" (Supervisors: Dr. Arun Kumar Thalla & Dr. Devatha C.P.)
3. Anila Cyril, "Application of Electronic Ticket Machine Data for Analysis and Forecasting of Bus Transport Demand"

5. Alok Kumar (Reg.No: 155087CS15F01) "False Data Detection in Wireless Sensor Networks" 2019, Dr. Alwyn Roshan Pais
6. Keerti Shetty (Reg.No: 135024CS13F03) "Computational Methods for Modeling Multistep Reactions and Parameter Inference in Transcriptional Processes" 2019, Dr. Annappa B.
4. Prashant K Kharat "Modified QUIC Protocol with Congestion Control for Improved Network Performance" 1<sup>st</sup> October 2019, Dr. Muralidhar Kulkarni.
5. K Vasudeva Reddy "Low Power Balun LNAs for Narrow-Band and UWB Applications", 18<sup>th</sup> September 2019, Dr. Prashantha Kumar H.
6. Princy Maria Paul "Compact Multiband Antennas with Polarization Diversity and Wideband Characteristics using Artificial Electromagnetic Structures", 19<sup>th</sup> July 2019, Dr. Krishnamoorthy K.
7. Chetan L Srinidhi "Pattern Recognition and Machine Learning Framework for Automated Analysis of Retinal Images", 7<sup>th</sup> June 2019, Dr. Aparna P. and Dr. Jeny Rajan (CSE Dept.).
8. Chandra Shaker B "Algorithms for Super-Resolution and Restoration of Noiseless and Noisy Depth Images", 29<sup>th</sup> April 2019, Dr. Ramesh Kini M.

## DEPARTMENT OF CHEMISTRY

**DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020:- No. Awarded (including those for which viva has been successfully completed):-**

1. M.C.S Nayak, Synthesis characterization of polyethersulfone based membranes for waste water treatment.
2. Praveen Mishra, CY 15 F05, Even-D carbon nanostructures for sensing and energy applications

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

**UPTO 31<sup>ST</sup> MARCH 2019:- No. Awarded (including those for which viva has been successfully completed):-31**

**DURING PERIOD 1<sup>ST</sup> APRIL 2018 TO 31<sup>ST</sup> MARCH 2019:-No. Awarded (including those for which viva has been successfully completed):-08**

**(FOR PERIOD OF REPORT ONLY)**

1. Raghavendra M.A.N.S "Synthesis and Performance evaluation of Codes with Good Rank-Distance properties for Wireless Communications and Information Storage Systems", 9<sup>th</sup> March 2020, Dr. U. Shripathi Acharya.
2. Patil Ashish Anandrao "Organized Approaches to Improve the Performance of Vehicular Networks", 15<sup>th</sup> November 2019, Dr. N S V Shet.
3. Shahjahan E S "RF MEMS Capacitive Switches for Tunable Microsystems" 12<sup>th</sup> October 2019, Dr. M. S. Bhat.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

**DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020:- No. Awarded: 09**

1. Harimurugan D "Applications of Charge Simulation Method Based Electric Field Analysis in Power System: Standard-Capacitor EHV-Substation and HV-Double-Circuit-Line" 2<sup>nd</sup> May 2019, Dr G S Puneekar.
2. Vanjari Venkataramana "Enhanced Control of Photovoltaic Power Converters Under Mismatching Conditions" 4<sup>th</sup> July 2019, Dr B. Venkatesa Perumal.
3. Prabhakaran K K "Investigations on Sensor/Sensorless Control of PMSM Drive for Grid Connected and Standalone Applications" 10<sup>th</sup> July 2019, Dr A.Karthikeyan.
4. Vivekanandan S "Design and Analysis of Switched Capacitor Converter Topologies for Lower Power Applications" 19<sup>th</sup> September 2019, Dr Debashisha Jena & Dr P Parthiban.
5. Remya V K "Design and Control of Low Voltage Restorers Employing Semi-Z-

Source Inverters”14<sup>th</sup> October 2019, Dr P Parthiban.

6. J Saikrishna Goud “Effective Utilization and Management of Power Supply System for Standalone BTS Load” 23<sup>rd</sup> October 2019, Dr Kalpana R.
7. Ramu Srikakulapu “Optimized Design of Collector System for Offshore Wind farms and Development of a Hybrid Controller for Single VSC HVDC and Multi Terminal VSC HVDC System” 28<sup>th</sup> January 2020, Dr Vinatha U.
8. Chethan Raj D “Operation and Control of a Microgrid with Distributed Generation Systems” 28<sup>th</sup> February 2020, Dr Dattatraya N Gaonkar.
9. Omkar S Powar “Application of Surface Electromyography Based Pattern Recognition for Efficient Control of Upper Limb Prostheses” 7<sup>th</sup> March 2020, Dr Krishnan CMC.

#### **DEPARTMENT OF INFORMATION TECHNOLOGY**

**UP TO 31<sup>ST</sup> MARCH 2019: 19**  
**DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020: 3**

1. Shridhar Sanshi, "Mobility Management Protocols for Low Power and Lossy Networks " May 2019, Dr. Jaidhar C D.
2. Shiva Darshan S L, " Windows Malware Detection Techniques using Static and Behaviour-based Features" November 2019, Dr. Jaidhar C D.
3. Manjunath K Vanahalli, " Efficient Mining of Frequent Colossal Itemsets from High Dimensional Data" March 2020, Dr. Nagamma Patil.

#### **DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES**

Upto 31st March 2019:- 26  
During Period 1st April 2019 To 31st March 2020;- 09

#### **Details (For the period of report only):**

1. Savitha G, “Restoration, Enhancement and Analysis of Lung Nodular Images for Prompt Detection of Abnormalities”, 2020, Dr. Jidesh P, Prof. B R Shankar.
2. B Roopashri Tantri “Novel Estimators of Software Reliability for Finite Failures Category Models”,2020, Prof. Murulidhar N.N.
3. Prasanna Lakshmi M, “Algorithms for combinatorial optimization problems in WSN using Graph Theoretic Modelling” 2020, Dr. Pushparaj Shetty D.
4. Sreedeeep. C. D, “Iterative Regularization Theory For Nonlinear Ill-Posed Problems”, 2019, Prof. Santhosh George.
5. Manjunath Vishweshwar Hegde, “Cryptanalysis and Improvement of Dynamic ID Based Remote User Authentication Schemes Using Smart Card”, 2019, Dr. R. Madhusudhan.
6. Shashidhara, “Design of Robust Authentication Protocols for Roaming Service in Glomonet and Mitigation of XSS Attacks in Web Application”, 2019, Dr. R. Madhusudhan.
7. Balakrishna Gudla, “Some Results on L(2,1)-coloring and its Related Problems”, 2019, Dr. Srinivasa Rao Kola.
8. Prashanthi. K. S., “Radial Basis Functions Based Schemes For Fractional Differential Equations”, 2019, Dr. Chandhini. G.
9. Pavan Kumar S., “Squeeze Flow of Viscoplastic Fluids: A Matched Asymptotic Expansions Approach”, 2019, Dr. Vishwanath Kadaba Puttanna.

#### **DEPARTMENT OF MECHANICAL ENGINEERING**

##### **DETAILS OF PH.DS AWARDED:-**

1. Achuthan C Pankaj, “Numerical and Experimental Investigations on Damage Detection in Joints based on Statistical Energy Analysis like Approach”, 2019, Dr. S. M. Murigendrappa.

2. Durga prasad C, "Investigation On Elevated Temperature Adhesive Wear Behavior Of Microwave Fused Thermal Spray Triboloy Composite Coatings", 2019, Dr. Sharnappa J & Dr. Ramesh M R.
3. Avdooth Ashok Walnuj, "Investigation of Pool Boiling Heat Transfer from Rough Surface and Microchannel Geometry Under Variable Heat Supply", 2019, Dr. Sathyabhama A.
4. Anil Kumar K. S, "Experimental Investigations On Frictional Stir Welded Joint Of Dissimilar Aluminium Alloys", 2019, Prof. S.M. Murigendrappa and Dr. Hemantha Kumar.
5. Rakesh K. Rajan, "Effect Of Laser Processing On Surface Characteristics Of Magnesium Based Rare Earth Element Alloys", 2019, Dr. Srikanth Bontha And Dr. Ramesh M. R.
6. Mahesh. B Davanageri, "Experimental And Numerical Studies On Mechanical And Wear Behavior Of Aged Duplex Stainless Steel", 2019, Prof.Narendranath s And Prof. Ravikiran Kadoli.
7. Ravindra I Badiger, "An Experimental Investigation And Optimization Of Microwave Hybrid Heating For Joining Of Inconel-625 Alloy", 2019, Prof.Narendranath S.
8. Sachin B, "Experimental Investigation On Cryogenic Diamond Burnishing Of 17-4ph Stainless Steel Under Sustainable Cooling Environments.", 2019, Prof.Narendranath S and Dr.Chakradhar D.
9. Sachin Kumar, "Studies On Friction Stir Welding Characteristics Of Aa6061/Sic/Fly Ash Hybrid Metal Matrix Composites", 2020, Prof.Narendranath S and Dr.Chakradhar D.
10. Santosh, "Experimental And Numerical Studies On The Performance Of Polyethylene -Graphene Based Composite Phase Change Materials For Thermal Energy Storage", 2019, Dr.Veershetty G and Dr.Arumuga Perumal D.
11. Sreejith B.K, "Effect Of Boundary Layer Trip and Tubercles On Aerodynamic Performance Of e216 Airfoil", 2019, Dr. Sathyabhama A and Dr. Srinivas Pai P.
12. Rashmi , "Ann Modeling And Optimization Of Power Output From Horizontal Axis Wind Turbine", 2019, Dr. Sathyabhama A and Dr. Srinivas Pai P.
13. Vasu M, "Investigation On Machinability Characteristics Of En47 Spring Steel Using Optimization Techniques", 2019, Dr. H Shivananda Nayaka.
14. Gangadhara Rao, "Performance And Emission Characteristics Of Vateria Indica Oil As Alternative Fuel For Petrodiesel In Ci Engine", 2019, Dr Kumar G N and Dr Marvin A Herbert.
15. Kadam Anil Ramkishan Rao, "Heat Transfer Distribution Of Impinging Methane-Air Premixed Flame Jets", 2019, Dr Kumar G N.
16. Felix J, "Heat Transfer Studies On Gas Turbine Combustor Liner Cooling", 2019, Dr Kumar G N and Dr Rajendran R.
17. Banjara Kotresha, "Computational Modelling Of Fluid Flow And Heat Transfer Through Metal Foam And Wire Mesh", 2019, Dr. N. Gnanasekaran.
18. Mr Hiremath Chandrashekarayya Rachayya, "Studies On Dehumidification Potential Of Clay With Additives And Impregnated With Cacl2 Composite Desiccants", 2019, Prof.Ravikiran Kadoli.
19. Nitinchand R.Patil, "Characterisation Of Fibre Reinforced Epoxy Matrix Composites Reinforced With Sinterd Bronze And Graphite Fillers", 2019, Prof.Prasad Krishna.
20. Ramesh Kumar, "Virtual Prototyping Platform For Product Development", 2019, Prof.Prasad Krishna.
21. Pradeep V Badiger, "Investigations On Characteristics And Performance Of Hard Thin Films Developed By Cathodic Arc Evaporation", 2019, Ramesh M R.
22. Vinay Vergees, "Studies On End Milling Of Maraging Steel Using Cryogenic Treated And Pvd Coated Cemented

- Carbide Tool Under Dry, Wet And Cryogenic Environments”, 2019, Ramesh M R.
23. Ramesh babu N, “Development And Characterization Of Al-Si Based Functionally Graded Material Through Directional Solidification”, 2020, Ramesh M R.

### DEPARTMENT OF MINING ENGINEERING

1. Kumar Dorthi, “Wireless Sensor Networks Based Monitoring of Slope Stability Over Old Underground Coal Workings”, May-2019, Dr. K. Ram Chandar.
2. Abhishek Kumar Tripathi, “Investigation of environmental parameters influencing the performance of solar panel and to optimize its performance in dusty environment”, July, 2019, Prof. Ch.S.N.Murthy and Dr. M. Aruna

### DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

**Up to 31<sup>st</sup> March 2019:- 51**  
**During period 1<sup>st</sup> April 2019 to 31<sup>st</sup> March 2020:- 06**  
**(FOR PERIOD OF REPORT ONLY)**

1. Manjunath G. K., “Microstructure and Mechanical Properties of Cast Aluminium-Zinc- Magnesium Alloys Processed by Equal Channel Angular Pressing”, 2019, Guide: Dr. Preethma Kumar G. V. & Prof. Udaya Bhat K.
2. Palaksha P. A., “Influence of Austempering and Quenching and Partitioning (Q&P) Heat Treatment on the Mechanical Properties and Wear Behavior of AISI 9255 Steel”, 2019, Guide : Dr. Ravishankar K. S.
3. Pavan Pujar, “Solution-based and solution combustion-based processing techniques for metallic and metal oxide thin films for optoelectronic applications”, 2019, Guide : Dr. Saumen Mandal & Dr. Dipti Gupta

4. Mohammed Khalifa, “Electrospinning of Nanocomposites from Poly(vinylidene fluoride) and Functional Nanofillers for Various Applications”, 2019, Guide: Dr. S. Anandhan.
5. Pranesh Rao K. M., “Assessment of cooling performance of high temperature quenchants for industrial heat treatment”, 2019, Guide: K. Narayan Prabhu.
6. Sangamesh, “Development of Sandwich Composites from Natural Materials for Bullet Proofing”, 2019 Guide : Dr. Ravishankar K. S.
7. Suarshana Shetty (Dept. of Chemistry), “Corrosion Inhibition Studies of GA9 Magnesium Alloy in Chloride and Sulphate Media”, 2019, Guide: Prof. A. Nityananda Shetty and Prof. Jagannatha Nayak.

### SCHOOL OF MANAGEMENT

**UPTO 31<sup>ST</sup> MARCH 2019:- No. Awarded (including those for which viva has been successfully completed):- 38**

**DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020:- No. Awarded (including those for which viva has been successfully completed):- 8 (FOR PERIOD OF REPORT ONLY)**

1. Ms. Manju Mahipalan, “Impact of Workplace Spirituality on Work Outcomes: The Mediating Role of Employee Engagement”, 29.07.2019, Dr. Sheena.
2. Mr. Rajesh M. Kalli, “Assessing the Impact of Climate Change on Agriculture: Empirical Evidence from A South Indian State”, 29.07.2019, Dr. Pradyot Ranjan Jena.
3. Ms. Deepali Mallya M, “Deciphering the Female Psyche: Fragmentation and the Allied Phenomena in Select Literature”, 25.10.2019, Dr. Dhishna P.
4. Mr. Sudheer Muhammed K., “Destination Branding in Indian Medical Tourism – An Empirical Study”, 19.11.2019, Prof. K. B. Kiran.

5. Mr. Rajesh R. Pai, "A Select Study of Mobile Health Applications in Indian Context", 19.05.2020, Dr. Sreejith A.
6. Ms. Tanupriya, "Mimesis of Sexuality: A Select Literary Study of Autobiographies by Transgender Individuals, 21.05.2020, Dr.Dhishna P.
7. Ms. Haritha P. H, "Assessment of Impact of Investors' Sentiments on Stock Market Volatility and Investment Decision Making of Individual Investors", 27.05.2020, Dr. Rashmi Uchil.
8. Ms. Remya S,"A study on Entrepreneurial Intension Among Nascent Entrepreneurs of Coir Industry in Kerala", 03.06.2020, Prof. K. B. Kiran.
5. Mr. Bharath S P, Zinc oxide based thin films for sensor application, 2020, Prof. Kasturi V Bangera.
6. Mr. Biswajit Barman, Preparation and properties of mixed metal sulfide thin films for photosensor applications, 2020, Prof. Kasturi V Bangera.
7. Ms. Pranitha Sankar, Multidiagnostic characterization of ultrashort and short pulse laser produced plasma aluminium and tungsten targets, 2019, Prof. H D Shashikala & Prof. Refi Philip.
8. Ms. Bindu K, Synthesis characterization and applications of ferrite nanomaterials and composites, 2019, Dr. H S Nagaraja and Dr. Ajith K. M.

## DEPARTMENT OF MINING ENGINEERING

### DEPARTMENT OF PHYSICS

**UPTO 31<sup>ST</sup> MARCH 2019:- No. Awarded (including those for which viva has been successfully completed):- 38**

**DURING PERIOD 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> March 2020:- No. Awarded (including those for which viva has been successfully completed):- 8**

1. Brian Jeevan Fernandes, Electrical switching characteristics and thermal properties of Tellurium based chalcogenide glassy alloys, 2019, Prof. Udayashankar N K
2. Mrs. Suchitra S M, Synthesis and characterization of graphitic carbon nitride(GCN)( $g-C_3N_4$ ) nanostructures using alumina ( $Al_2O_3$ )templates, 2019, Prof. Udayashankar N K.
3. Mr. Mahendra K, Synthesis and characterization of semiorganic potassium hydrogen oxalate oxalic acid dihydrate single crystals, 2020, Prof. Udayashankar N K
4. Vallem Sowjanya, Preparation of indium telluride thin films for device applications, 2019, Prof. Kasturi V Bangera.
1. Kumar Dorthi, "Wireless Sensor Networks Based Monitoring of Slope Stability Over Old Underground Coal Workings", May-2019, Dr. K. Ram Chandar
2. Abhishek Kumar Tripathi, "Investigation of environmental parameters influencing the performance of solar panel and to optimize its performance in dusty environment", July, 2019, Prof. Ch.S.N.Murthy and Dr. M. Aruna

### Details of PH.D.s awarded

## 10.0 HUMAN RESOURCES

### 10.1 STAFF POSITION

#### Teaching Staff Number

Professors	78
Associate Professors	71
Assistant Professors (REGULAR)	87
Other staff, A.P.D. & System Manager	02
Contract Faculty	
Asst. Professor Grade – II	44
	<u>282</u>

#### Non-Teaching Staff

Administrative Officers	24
Technical supporting staff	57
Non-technical supporting staff	58
	<u>139</u>

#### THE STAFF

##### (A) Administrative Staff

##### Director: (Head of the Institution)

K Uma Maheshwar Rao, Ph.D.

##### Dy. Director

Ananthanarayana V S, Ph.D.

##### Dean (Academic)

M B Saidutta, Ph.D. till 30.09.2019  
Nityananda Shetty from 01.10.2019

##### Dean (Planning and Development)

G S Dwarakish, Ph.D. till 31.7.2018  
Subhash C Yaragal, Ph.D. from 1.8.2018

##### Dean (Faculty Welfare)

A H Sequeira, Ph.D. till 15.3.2020  
M S Bhat, Ph.D. from 16.3.2020

##### Dean (Alumni Affairs & Institutional Relations)

K Panduranga Vittal, Ph.D. from  
1.9.2018

##### Associate Deans (PG&R)

Vidya Shetty, Ph.D. from 29.10.2018

##### Associate Deans (PG&R)

Ashvini Chaturvedi, Ph.D.  
from 26.10.2018.

##### Dean (Student's Welfare)

Jagannatha Nayak, from 15.10.2018

##### Dean (Research & Consultancy)

U. Shripathi Acharya, Ph.D.

### ACADEMIC STAFF (TEACHING)

#### Department of Applied Mechanics and Hydraulics

##### Professors:

A. Vittal Hegde, Ph.D. (Mangalore University)  
N. Lakshman, Ph.D., (I.I.Sc., Bangalore)  
M.K. Nagaraj, Ph.D.  
Subba Rao, Ph.D. (Mangalore University),  
G.S. Dwarakish, Ph.D. Anna University  
Mahesh A, Ph.D. (IIT Bombay)  
Kiran G. Shirlal, Ph.D. (NITK),  
Amba Shetty, Ph.D. (NITK)  
from 12.03.2019  
P.C. Deka, Ph.D. (I.I.T. Guwahati)  
B.M. Doddamani, Ph.D. (NITK)

##### Associate Professors

K Varija, Ph.D. (IISc. Bangalore)  
H.Ramesh, Ph.D. (NITK)  
Manu, (Ph.D. NITK)  
Nasar T, Ph.D. (IIT, Madras)

##### Assistant Professors:

K. Subrahmanya, Ph.D. NITK  
Pruthviraj U., Ph.D. (NITK)  
K. Vadivuchezhian, Ph.D. (IIT Madras)



Debabrata Karmakar, Ph.D., (IIT Kharagpur) 5.5.2015  
Mrs. Shwetha Hassan Rangaswamy, Ph.D. (IISc, Bangalore)

### **Department of Chemical Engineering**

#### **Professors:**

G. Srinikethan, Ph.D. (I.I.T. Madras)  
Gopal Mugeraya, Ph.D. (I.I.Sc. Bangalore) on deputation to NIT Goa as Director from 15.07.2017  
M.B. Saidutta, Ph.D. (I.I.T. Bombay)  
B. Raj Mohan., Ph.D. (I.I.T., Kharagpur)  
K. Vidya Shetty, Ph.D. (NITK)

#### **Associate Professors:**

Hari Mahalingam, Ph.D. Singapore HOD  
Prasanna B.D., M.E. (Ph.D. NITK)  
I Regupathi, Ph.D., (Anna University, Chennai)  
P.E. Jagadeeshbabu, Ph.D. (Anna Univ. Chennai)  
S. Gangamma, Ph.D. IIT, Bombay  
Keyur Raval, Ph.D. (Aachen Den University)  
Hari Prasad Dasari, Ph.D. (Korea Institute of Science and Technology, Korea)

#### **Assistant Professors:**

Jitendra Pal S., Pursuing Ph.D. at IIT Delhi  
D.Ruben Sudhakar, Ph.D. (IIT Madras)  
B. Ashraf Ali, Ph.D. (IIT Madras)  
Jagannathan T K, Ph.D. (IIT Madras)  
Chinta Sarkar Rao, Ph.D. (IIT, Madras)

#### **Contractual**

Mahesh Kumar Poddar, Ph.D., IIT Guwahati (Contractual)  
Vaishakh Nair, Ph.D. (IIT, Madras)

### **Department of Civil Engineering**

#### **Professors:**

R. Shivashankar, Ph.D. (A.I.T. Bangkok)  
K.N. Lokesh, Ph.D. (Geology) (Gulbarga University)  
M.C. Narasimhan, Ph.D. (IIT Madras)

Katta Venkataramana, Dr.Eng. (Kyoto University, Japan)  
A.U. Ravi Shankar, Ph.D (Univ. of Roorkee)  
K. Swaminathan. Ph.D. (I.I.T. Bombay)  
Varghese George, Ph.D. (I.I.T. Bombay) HOD.  
S. Shrihari, Ph.D. (Univ. of Roorkee)  
Sitaram Nayak, Ph.D. (I.I.Sc. Bangalore)  
Subhas C. Yaragal, Ph.D. (IISc. Bangalore)  
K.S. Babunarayan, Ph.D. (NITK)  
B.R. Jayalekshmi, Ph.D. (NITK)

#### **Associate Professors:**

Sunil B.Malegole, Ph.D. (NITK)  
Basavaraj Manu, Ph.D. (IIT, Bombay)  
Suresha S N, Ph.D. (NITK)  
Arun Kumar Thalla (IIT Rourkee), Ph.D.  
Bibuti Bhushan Das, Ph.D., (IIT Bombay)  
Gangadhar Mahesh, Ph.D. (Hongkong)  
A. S Balu, Ph.D. (IIT Madras)  
C.P. Devatha, Ph.D. (IIT Roorkee)

#### **Assistant Professors:**

Prashanth M.H., Ph.D. at IISc  
Raviraj H. Mulangi, M.E., Ph.D., IISc  
C Rajasekaran, (IIT Madras)  
Adani Azhoni, Ph.D. (IIT, Delhi)  
T Palanisamy, Ph.D.  
Sreevalsa kolathayar, Ph.D., IISc, Bangalore

#### **Contractual**

Babloo Chaudhary, Ph.D., (Kyoto, Japan)  
Anupama Surejan, Ph.D., (IIT, Madras)  
J Vijaya Vengadesh kumar, Ph.D.(IIT, Madras)  
Sreekumar M, Ph.D. (IIT, Bombay)  
Vinoth S, Ph.D. (Anna University, Chennai)  
Mithun Mohan, Ph.D.(IIT Roorkee)  
Pavan G S, Ph.D. (IISc, Bangalore)  
Sridhar G, Ph.D. (IIT, Madras, &NUS. Singapore (Joint Degree)

## Department of Computer Science Engineering

### Professors:

K. Chandrasekaran, Ph.D. (J.N.T.U.)  
Shanthi Thilagam, Ph.D. (NITK)  
Annappa, Ph.D. (NITK, Surathkal)

### Associate Professors

Vani M., M.Tech. (NITK, Surathkal)  
Alwyn Roshan Pais, Ph.D. (NITK)  
Shashidhar G Koolagudi, Ph.D. (IIT Kharagpur)  
Manu Basavaraju, Ph.D. (IISC, Bangalore)

### Assistant Professors:

Saumya A. Hegde, Ph.D. (NITK)  
B.R. Chandavarkar, Ph.D. (NITK)  
Mahendra Patap Singh, pursuing Ph.D.  
Jeny Rajan, Ph.D. (University of Antwerpen, Belgium)  
Mohit P. Tahiliani, Ph.D. (NITK)  
Basavaraj Talawar, Ph.D. (IISC Bangalore)  
M Venkatesan, Ph.D. (VIT University, Vellore)

### Contractual

Biswajit Bhowmik, Ph.D. (IIT Guwahati)  
Sourav Kumar Pandey, Ph.D. (NIT, Rourkela)

## Department of Chemistry

### Professors:

A. Nityananda Shetty, Ph.D. (Mangalore Univ.)  
A. Vasudeva Adhikari, Ph.D. (Karnatak Univ.)  
A. Chitharanjan Hegde, Ph.D. (Mangalore Univ.)  
B. Ramachandra Bhat, Ph.D. (Mangalore Univ.)  
Krishna Bhat, Ph.D. (Mangalore Univ.)  
Arun Mohan Isloor, Ph.D. (Mangalore University)

### Associate Professors:

Udaya Kumar D., Ph.D. (NITK, Surathkal)

Darshak R. Bhai Trivedi, Ph.D. (Bhavnagar University)

### Assistant Professors:

Sib Sankar Mal, Ph.D. (JUB Germany)  
Beneesh P. B., Ph.D. (University of Kerala)  
Debashree Chakraborty, Ph.D. (IIT Kanpur)  
Saikat Dutta, Ph.D. (University of Iowa, USA)  
Vijayendra S Shetti, Ph.D. (IIT, Bombay)  
Lakshmi Vellanki, Ph.D. (IIT, Bombay)

## Department of Electronics And Communication Engineering

### Professors:

S. Sumam David, Ph.D. (I.I.T. Madras)  
Muralidhar Kulkarni, Ph.D. (JMI – New Delhi)  
M. Shankarnarayan Bhat, Ph.D. (I.I.Sc., Bangalore)  
John D'Souza, Ph.D. (I.I.T. Kharagpur)  
U. Sripathi Acharya, Ph.D., (I.I.Sc., Bangalore) HOD till 16.04.2018  
Laxminidhi T., Ph.D. (IIT, Madras) HOD from 17.04.2018  
Ashvini Chaturvedi, Ph.D. (MUM Malaysia)  
Neelavar Shekar Shet, Ph.D. (NITK)

### Associate Professors:

M. Ramesh Kini, Ph.D. NITK  
Deepu Vijayasanen, Ph.D. (EPFL, Swizerland)

### Assistant Professors:

Rekha S., Ph.D.  
Kalpana G. Bhat, M.Tech. Karnataka University  
Aparna P., Ph.D. (NITK)  
B. Nagavel, M.Tech.  
Krishna Moorthy K., Ph.D. at IIT, Bombay  
Prashantha Kumar H, Ph.D. (NITK)  
Raghavendra B S, Ph.D. (IISC, Bangalore)  
A V Narasimhadhan, Ph.D. (IISc), Bangalore

Pathipati Srihari, Ph.D. (Andhra University)  
Shyam Lal, Ph.D. (BIT Ranchi)  
Ratnamala Rao, Ph.D. (IIT Madras)  
Prabhu K, Ph.D.

### **Contractual**

Sushil kumar Pandey, Ph.D. (IIT, Indore)  
Sandeep Kumar, Ph.D. (Indian School of Mines Institute, Dhanbad)  
Mandeep Singh, Ph.D. (IIT, Roorkee)  
Nikhil K S, Ph.D. (IIT, Madras)

### **Department of Electrical And Electronics Engineering Professors:**

Udayakumar R.Y., Ph.D. (IIT Bombay) on deputation to MNIT, Jaipur as Director from 08.10.2016  
K. Panduranga Vittal, Ph.D. (Mangalore Univ.)  
Shubhanga K.N., Ph.D. (IIT, Bombay), HOD  
Gururaj S. Punekar, Ph.D. (IIT, Kharagpur)  
Venkatesa Perumal, Ph.D. (IIT Delhi)

### **Associate Professors:**

Jora M. Gonda, Ph.D. (NITK)  
K. Rajagopal, M.Tech. (I.I.T. Kharagpur)  
Vinatha U., Ph.D. (NITK, Surathkal)  
K. Manjunatha Sharma, Ph.D. (NITK)  
Dattatraya N. Goankar, Ph.D. (IIT, Roorkee)  
Debashisha Jena, Ph.D. (NIT Rourkela)  
Parthiban, Ph.D. (IIT, Roorkee)

### **Assistant Professor :**

Iddy Raghavendra Rao M.Tech. (Mangalore Univ.)  
Nagendrappa H., Ph.D. (Canada)  
Tukaram Moger, Ph.D. at IISC, Bangalore  
Girisha Navada, M.Tech. (University of Calicut)  
Karthikeyan, Ph.D. (NIT, Thiruchirapalli)  
R Kalpana S, Ph.D. (IIT, New Delhi)

Y Suresh, Ph.D. (NIT Rourkela)  
Krishnan C M C, Ph.D. (Ghent University, Ghent, Belgium)  
Shashidhara Mecha Kotian, Ph.D. (NITK, Surathkal)

### **Contractual**

Yashawanth Kashyap, Ph.D. (IIT, Mandi)  
B Dastagiri Reddy, Ph.D. (NIT, Tiruchirapalli)  
Arun Dominic D, Ph.D. (IIT Roorkee)  
Padmavathi L, Ph.D. (IIT Madras)  
Vignesh Kumar V, Ph.D. (NIT, Tiruchirapalli)  
Ravi Raushan, Ph.D. (IIT (ISM), Dhanbad)  
Dharavath Kishan, Ph.D. ((NIT, Tiruchirapalli)  
Md Waseem Ahmad, Ph.D. (IIT, Kanpur)  
Prajof P, Ph.D. (IIT, Bambaay)

### **School of Management**

#### **Professors**

A.H. Sequeira, Ph.D., (Mysore University)  
K.B.Kiran, Ph.D. (Mangalore Univ.)  
Shashikantha K., Ph.D. (University of Hyderabad)

#### **Associate Professors:**

S. Pavan Kumar, Ph.D., (IIT Kharagpur)  
HOD from 02.09.2018.  
Sheena, Ph.D., (University of Calicut)  
Ritanjali Majhi, Ph.D.  
Rajesh Acharya H, Ph.D., (University of Hyderabad)  
Dhishna P, Ph.D., (University of Pandichery)  
Pradyot Ranjan Jena, Ph.D. (IIT Kanpur)

#### **Assistant Professors:**

Bijuna C. Mohan, Ph.D. (NITK, Surathkal)  
Rashmi Uchil, Ph.D. (NITK, Surathkal)  
Suprabha K. R, Ph.D., (VTU)  
Gopalakrishna B V, Ph.D., (University of Mysore)  
Sreejith A, Ph.D. (IIT, New Delhi)  
Savita Bhat, Ph.D. (IIT, Bombay)

### **otracrContractual**

Rofin T M, Ph.D. (IIT, Kharagpur)

### **Department of Information Technology**

#### **Professors:**

Ananthanarayana V.S., Ph.D. (I.I.Sc. Bangalore)  
G. Ram Mohan Reddy, Ph.D. (Edinburgh, U.K.) HOD .

#### **Associate Professors:**

JaidharC D, Ph.D. (NIT, Tiruchirapalli)

#### **Assistant Professors:**

Dinesh Naik, M.Tech. (VTU, Belgaum)  
Geetha V., Ph.D. (NITK)  
Biju R. Mohan, Ph.D. NITK  
Sowmya Kamath S., Ph.D. (NITK)  
Nagamma Patil, Ph.D. (IIT, Roorkee)  
Anand Kumar M, Ph.D.  
Contractual  
Kiran M, Ph.D. (NITK, Surathkal)  
Bhawana Rudra, Ph.D. (IIT Allahabad)

### **Department of Mathematical & Computational Sciences**

#### **Professors:**

A. Kandasamy, Ph.D. (I.I.T. Bombay)  
Suresh M. Hegde, Ph.D. (Delhi Univ.)  
Santhosh George, Ph.D. (Goa University)  
Murulidhar N.N., Ph.D. (I.I.T. Bombay)  
Shyam Srinivas Kamath, Ph.D. (Karnataka Univ.)  
B.R. Shankar, Ph.D. (I.I.Sc., Bangalore)  
HOD.

#### **Associate Professors:**

Sujatha D. Achar, M.Sc. (Karnatak Univ.)  
R. Madhusudhan., Ph.D. (IIT, Roorkee)  
P. Sam Johnson, Ph.D. (Alagappa University)  
D. Pushparaj Shetty, Ph.D. (IIT Delhi)  
V. Murugan, Ph.D. (IIT, Madras)  
Chandhini G, Ph.D. (IIT, Madras)

### **Assistant Professors:**

Vivek Sinha, Ph.D (IIT, Bombay)  
Jidesh P., Ph.D. (NITK)  
Satyanarayana Engu, Ph.D., (IIT Madras)  
Vishwanath Kadaba Puttanna, Ph.D., (NITK)  
Kedarnath Senapati, Ph.D. (Contractual)  
Srinivasa Rao Kola, Ph.D. (IIT, Kharagpur)  
A Senthil Thilak, Ph.D. (NIT, Tiruchirappalli)  
Jothi Ramalingam, Ph.D. (Queensland University of Technology, Brisbane, Australia)  
**Contractual**  
Falguni Roy, Ph.D. (IIT, Kharagpur)

### **Department of Mechanical Engineering Professors:**

T.P. Ashok Babu, Ph.D. (I.I.T. Delhi)  
G.C. Mohan Kumar, Ph.D. (IIT, Chennai)  
H. Suresh Hebbar, Ph.D. (I.I.T. Delhi)  
Prasad Krishna, Ph.D., (Univ. of Michigan, Ann Arbor, USA)  
Satyabodh M Kulkarni, Ph.D. (I.I.Sc., Bangalore)  
Gangadharan K.V., Ph.D. (I.I.T., Madras)  
Ravi Kiran Kadoli, Ph.D. (IIT, Madras)  
Vijay Desai, M.E. (Ph.D. NITK)  
Narendranath S., Ph.D. (IIT, Kharagpur)  
Shrikantha S Rao, Ph.D. (NITK), HOD  
S.M. Murigendrappa, Ph.D. (I.I.T., Bombay)

#### **Associate professors**

Mervin A. Herbert, Ph.D. (I.I.T., Kharagpur)  
Kumar G.N., Ph.D. (IIT, Delhi)  
Subhaschandra Kattimani, Ph.D. (IIT, Kharagpur)  
Jeyaraj P, Ph.D., (IIT Madras)  
Hemantha Kumar, Ph.D., (IIT, Madras)  
Ramesh M.R, Ph.D., (IIT, Roorkee)  
Sathyabhama A., Ph.D., (NITK)  
Srikamath Bontha, Ph.D. (Wright State)  
Arun M, Ph.D. (University of Greenwich, London, UK)

Guruprasad K.R., Ph.D. (I.I.Sc., Bangalore)  
Shivananda Nayak H., Ph.D. (IIT Roorkee)  
Veersetty Gumtapure, Ph.D. (IIT, Madras)  
Navin Karanth P., Ph.D. (NITK)  
Anish S, Ph.D. (IIT, Madras)  
Sharnappa Joladarashi, Ph.D.

### Assistant Professors

Vasudeva M., Ph.D. (I.I.T. Bombay)  
Sudhakar Jambagi, M.Tech. (Persuing Ph.D. at IIT Kharagpur)  
Ajay Kumar Yadav, Ph.D. (I.I.T. Kharagpur)  
Mrityunjay R. Doddamani, Ph.D. (NITK, Surathkal)  
N. Gnanasekaran, Ph.D. (IIT, Madras)  
Arumuga Perumal D, Ph.D. (IIT Guwahati)  
Somasekhara Rao Todeti, Ph.D., (IISc Bangalore)  
Ranjith M., Ph.D.  
Poornesh Kumar Koorata, Ph.D.

### Contractual

Saurabh Chandraker, Ph.D. (NIT, Rourkela)  
Parthasarathy P, Ph.E. (Karlsruhe Institute of Technology, Germany)  
Arun Kumar Shettigar, Ph.D. (NITK)  
Mruthyunjaya Swamy K B, Ph.D.(IIT, Kharagpur)  
Pramod K, Ph.D. (IIT, Bombay)  
Ranjeet Kumar Sahu, Ph.D. (IIT, Madras)  
A S S Balan, Ph.D. (IIT, Madras)  
P S Suvin, Ph.D. (IISc., Bangalore)  
Kyati Verma, Ph.D. (IIT, Delhi)

### Department of Mining Engineering

#### Professors:

V. Rama Sastry, Ph.D. (B.H.U. Varanasi)  
C.H. Suryanarayana Murthy, Ph.D. (IIT Kharagpur)  
M. Govinda Raj, Ph.D. (Mangalore University)  
Harsha Vardhan, Ph.D. (Indian School of Mines Dhanbad)

#### Associate Professor:

M. Aruna, Ph.D. (University of Dhanbad)  
K. Ramachander, Ph.D. (NITK) HOD,

#### Assistant Professor:

Anup Kumar Tripathi, Ph.D.  
Bijay Mihir Kunar, Ph.D. (IIT, Kharagpur)  
Sandi Kumar Reddy, Ph.D. (NITK)

### Department Of Metallurgical & Materials Engineering

#### Professors:

K. Narayana Prabhu, Ph.D. (Mangalore Univ.)  
Jagannatha Nayak, Ph.D. (NITK)  
Udaya Bhat, Ph.D. (I.I.Sc., Bangalore)  
Anandan Srinivasan, Ph.D. (I.I.T., Kharagpur) HOD

#### Associate Professor:

Kumkum Banerjee, Ph.D. (IIT Kharagpur)  
Ravishankar K.S., Ph.D. (NITK)  
Mohammad Rizwanur Rahman, Ph.D., (Keio University, Japan)  
Subray R. Hegde, Ph.D. (University of Canada)  
Preetham Kumar G V, Ph.D. (IIT, Madras)

#### Assistant Professor:

Shashi Bhushan Arya, Ph.D. (IIT, Bombay)  
Saumen Mandal, Ph.D. (IIT, Kanpur)  
Rajasekaran B, Ph.D.

### Contractual

Selvakumar Govindarajan, Ph.D. (IISc, Bangalore)  
Sumanth Govindarajan, Ph.D. IISc, Bangalore

### Department of Physics

#### Professors:

Kasturi V Bangera, Ph.D. (Mangalore Univ.)  
H.D. Shashikala Ph.D (Osmania Univ.)

Udayashankar N.K., Ph.D. (I.I.Sc. Bangalore)  
M.N. Satyanarayan, Ph.D. (I.I.Sc., Bangalore) HOD till 10.08.2018.

**Associate Professor:**

Nagaraj H.S., Ph.D. (Mangalore University), HOD, from 11.08.2018  
Ajith K. Madam, Ph.D. (University of Hyderabad)

**Assistant Professors:**

Partha Pratim Das, Ph.D. (University of Cineinnati Elec Engg.)  
Deepak Vaid, Ph.D. (USA)  
T. K. Shajahan, Ph.D. (IISC, Bangalore)  
Kartick Tarafder, Ph.D. (Jadavpur University)

**Contratual**

Sreenath V, Ph.D. (IIT, Madras)

**ADMINISTRATIVE AND OTHER STAFF**

**Registrar:**

Ravindranath K., M.A. (Mangalore University)

**Joint Registrar:**

Ram Mohan Y, M.Com. (Mysore), LL.B. (Mangalore University)

**Assistant Registrars**

Kamlabh Kumar Singh, (M.Sc., M.S., MBA)  
Soumen Karmakar, (MBA)  
Bansod Pritam Ramesh, (M.Com, MBA)  
Gaurav Chowdhury, (MBA)  
Priyanka Dattanand Amadalli, (M.Sc.)

**Resident Engineer i/c:**

Mohammad Firoz Khaza .

**Resident Medical Officers:**

Dr. B. Srimathi, M.B.B.S. (Mysore Univ.)

**Medical Officer:**

Dr. M.L. Balabhaskara

**Professor Incharge Hostel Affairs:**

A C Hegde, Ph.D.

**NITK ENGG. COY N.C.C.**

**Officer Commanding:**

Col. MG HS Rajan

**Associated NCC Officer Incharge (ANO):**

P Sam Johnson, Ph.D.  
Shivananda Nayak, Ph.D.

**Professor Incharge (Security)**

Rajesh Acharya, Ph.D. From 15.06.2018

**Security Officer:**

Ramprasad Bhat

**Chief Vigilance Officer:**

A. Kandasamy, Ph.D.

**Central Public Information Officer (CPIO):**

Soumen Karmakar, Asst.Registrar (Admin)

**OTHER SECTIONS**

**Career Development Centre Professor:**

Vijay Desai, Ph.D.

**Industry Institute Partnership Cell Professor I/c.:**

Prasanna B.D., Ph.D. till 10.11.2019  
Subray R Hegde, Ph.D. from 11.11.2019

**SC/ST Cell**

Veershetty Gumpature, from 15.06.2018

**OBC Cell**

Annappa, Ph.D.

**Assistant Physical Director (Sr. Scale):**

A. Shivaram, M.P.Ed. (Mangalore Univ.) (I/c. Physical Director)

**NON-ACADEMIC STAFF  
(NON-TEACHING) as on 31.3.2020**

**SAS Officer:**

Hem Prasad Nath, Ph.D. (Nagpur University)  
Manoj Kumar, Ph.D. (Techno Global University)

**Librarian:**

Mallikarjuna Agadi, Ph.D. (Gulbarga University).

**Asst. Librarian**

Anasuya Chakari, M.A. M.Lib.Sc. (Karnataka University) Librarian Incharge

Iranna M Shettar (M.Lisc. M. Phil)

**Central Computer Centre**

**Chairman / System Manager:**

S S Kamath, Ph.D.

**System Manager**

P G Mohanan, M.Tech. (Cochin University)

**Senior Scientific Officer:**

Vijayakumar Ghode, M.Tech.

**NITK - Science & Technology  
Entrepreneurs' Park**

**OSD :-**

Venkatesa Perumal, Ph.D. from 30.8.2019

**R&D Centre on Roofing Tiles**

Faculty incharge – Dean (R&C)

**Centre for Continuing Education  
Chairman**

Arun Kumar Isloor, Ph.D.

**Dakshina Kannada Nirmithi Kendra  
Cordinator:**

K.S Babu Narayan, Ph.D.

**Project Manager:**

Kalbavi Rajendra Rao, B.E. (Mangalore Univ.)

Sl. No	Name of the Posts	In Position
1	Registrar	1
2	Librarian	1
3	Joint Registrar	1
4	Asst. Registrar (Admin)	1
5	Asst.Registrar (Accounts)	1
6	Asst.Registrar (Academic)	2
7	Asst.Registrar (Purchase)	1
8	Assistant Librarian	2
9	Technical Officer	8
10	SAS Officer	2
11	Senior Scientific Officer	1
12	Medical Officer	2
13	Executive Engineer	1
14	Senior Superintendent	2
15	Superintendent (SG-1)	1
16	Private Secretary	1
17	Assistant (SG -1)	13
18	Assistant (SG -II)	16
19	Senior Assistant	6
20	Stenographer (SG-1)	4
21	Assistant Engineer (SG-II)	5
22	Senior Technical Assistant	3
23	Technical Assistant	1
24	Technical Asst. (SG-1)	1
25	Assistant Engineer (SG-1)	14
26	Technical Assistant (SG-II)	4
27	Technician (SG-I)	8
28	Technician (SG-II)	4
29	Technician	1
30	Office Attendant (SG-I)	4
31	Lab attendant (SG-I)	6
32	Office Attendant (SG-II)	10
33	Lab Attendant (SG-II)	6
34	Senior Office Attendant	1
35	Lab Attendant	2
36	Office Attendant	2
	<b>Total</b>	<b>139</b>

## 11.0 FACILITIES/AMENITIES

### 11.1 Hostels

The Institute reopened on 17-07-2019 as per Academic Calendar for the year 2019-2020.

There are 11 messes operating in various hostel blocks to cater the needs of inmates. Out of which one vegetarian and one non-vegetarian messes are running in girl's hostel and 5 vegetarian messes and four non-vegetarian messes are running in boy's hostel. All the messes are provided with necessary infrastructure to cater to the different food habits of the students drawn from various parts of the country.

#### Total number of messes

All messes are managed by Hostel Administrative, with active participation of the Student mess managers for preparation of the menu and other issues. Monthly mess bill accounts were audited by verifying the mess cards, stock sheets, purchase registers, mess membership issue register, mess bill calculation registers, petty cash book with vouchers and other records connected with monthly mess bill. Rationalization method is adopted to avoid the rate difference problem of various messes.

Total mess membership varies in every month. Out of the 11 messes Vindhya (III Hostel), Satpura (IV Hostel) mess, Nilgiri (V Hostel) mess, Thrishul (VIII Hostel) mess, Pushpagiri (PG Hostel) mess, Mega Hostel Mess (Chaitanya) and Girls hostel messes are managed by the contractors.

SL.No.	Name of the Mess	Strength
1	Karavali (I Block-Veg)	201
2	Aravali (II Block- Non-Veg)	364
3	Vindhya (III Block- Non Veg-Outsource)	457
4	Satpura (IV Block -Non Veg-Outsource)	441
5	Nilgiri (V Block -Non Veg-Outsource)	436
6	Pushpagiri (PG Block – Veg -Outsource)	455
7	Sahyadri (VII Block-Veg )	291
8	Thrishul (VIII Block Mess –Veg-Outsource)	441
9	Mega Block Mess (Veg-Outsource)	608
10	GH I block Mess ,Ground Floor (Outsource)	557
11	GH II block Mess , First Floor (Outsource)	432

#### **Crescendo Committee**

Crescendo Committee is managed by a separate elected student's committee. The Crescendo has organized AURORA, COLISEUM 2020 during October 2019 and March 6<sup>th</sup> to 15<sup>th</sup>, 2020.

**Phoenix committee;** - The Phoenix Committee formed by election, looks after the sports activities of the residents of the hostels and provides indoor game facilities. The recreation committee organized Fresher's Cup, flood lights Tournament, during October 2019 and February 2020.

Overall Crescendo and Phoenix committee have done their job in a commendable manner. The Cable TV facility existing in the campus has been extended to all the hostels. All the



Hostel Rooms (Boys and Girls) have connected with Internet facilities.

### Task Force

Task Force is a platform for students who are interested in administrative work at NITK Surathkal. It has been instituted in NITK Hostel Administration to serve the well-being of all students.

### Mess Concession

Mess Concession is offered to students (Hostellers), who need financial assistance to continue their studies in the Institute during Odd and Even semester. The fund raised by contribution from the hostellers i.e. ₹10/- per semester along with hostel mess fees. The concessions are granted based on the information furnished by the individual applicants in the prescribed applications. The mess concession grantee must be regular in attendance and show good performance in academics. The amount granted above will be credited to the mess bill account of the respective student, and is not be paid cash.

Several festivals like Holi, Diwali and Ganesh Chaturthi celebrated by hostellers, through the fund is raised by contribution i.e. ₹40/- from the hostellers.

During the year under report, Medical Relief to the tune of ₹ **3,03,373/-** has been sanctioned to students of the hostel blocks as per the recommendation of the Block Warden and Institute Resident Medical Officers, for their hospitalization in nearby Surathkal/Mangalore hospitals for treatment. This amount is met out of the fund created under “Self Sustaining

Medicare Scheme” which is created by collecting ₹35/- per student per semester.

Students advisory Committee is formed in each block for effective- interaction between the Wardens and students. To improve the accounting process, computerization of accounts in the hostel has already been initiated. To receive feedbacks related to messes and maintenance issues, online complaint registration system is initiated. All the accounts of the hostels are duly audited by a Chartered Accountant.

Laundry Facility established in NITK Surathkal Hostels, Mega Tower II (Himalaya) for benefit of the students. Total Grant ₹24 Lakh for the Project entitled “Laundry Facility in the Hostels of NITK Surathkal”, granted by Karnataka State Minerals Corporation Limited, Bengaluru.

Prof. A. Chitharanjan Hegde is working as a Professor in-charge Hostel Affairs NITK Hostels.

**Table 1 MESS BILL DETAILS FROM APRIL 2019 TO MARCH 2020**

<b>Month</b>									
<b>Sl. No.</b>	<b>Mess</b>	<b>April 2019</b>		<b>July-August 2019</b>		<b>September 2019</b>		<b>October 2019</b>	
		<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>
1	Karavali (I BLOCK)	2966.00	98.87	4679.00	116.98	3500.00	116.67	3583.00	115.58
2	Aravali (II BLOCK )	2966.00	98.87	4679.00	116.98	3500.00	116.67	3583.00	115.58
3	Vindhya (III BLOCK ) (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
4	Satpura (IV BLOCK - N.V.)(OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
5	Nilgiri (V BLOCK -N V) (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
6	Sahyadri (VII BLOCK )	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
7	Thrishul (VIII BLOCK) (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
8	Pushpagiri( P.G BLOCK) (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
9	MEGA BLOCK (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
10	G.H BLOCK MESS I (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
11	G.H BLOCK MESS II (OS)	3263.00	98.88	5498.00	116.98	3500.00	116.67	3583.00	115.58
<b>Month</b>									
<b>Sl. No.</b>	<b>Mess</b>	<b>Nov to Dec. 2019</b>		<b>January 2020</b>		<b>February 2020</b>		<b>March 2020 (18days)</b>	
		<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>	<b>Per month</b>	<b>Per day</b>
1	Karavali (I BLOCK)	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17
2	Aravali (II BLOCK )	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17
3	Vindhya (III BLOCK ) (OS)	3511.00	117.03	4403.00	119.00	3398.00	117.17	2037.00	113.17
4	Satpura (IV BLOCK - N.V.)(OS)	3511.00	117.03	4403.00	119.00	3398.00	117.17	2037.00	113.17
5	Nilgiri (V BLOCK -N V) (OS)	3511.00	117.03	4403.00	119.00	3398.00	117.17	2037.00	113.17
6	Sahyadri (VII BLOCK )	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17
7	Thrishul (VIII BLOCK) (OS)	3511.00	117.03	4403.00	119.00	3398.00	117.17	2037.00	113.17
8	Pushpagiri( P.G BLOCK) (OS)	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17
9	MEGA BLOCK (OS)	3511.00	117.03	4403.00	119.00	3398.00	117.17	2037.00	113.17
10	G.H BLOCK MESS I (OS)	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17
11	G.H BLOCK MESS II (OS)	4799.00	117.05	4403.00	119.00	3398.00	117.17	2037.00	113.17

Presently, the following faculty members are rendering their services as wardens in different Hostel Blocks as mentioned against their names:

A Chitharanjan Hegde, Ph.D.	Professor in-charge Hostel Affairs	Shyam Lal, Ph.D.	Warden, Kailash (Mega Tower III)
Harsha Vardhan, Ph.D.	Warden (Finance)	(Mrs.) Suprabha K R., Ph.D.	Warden, Ganga & Netravathi (GHI & V)
S Pavan Kumar, Ph.D.	Warden, Karavali (I Hostel)	(Mrs.) Savita Bhat, Ph.D.	Warden, Yamuna (GH III Hostel)
Gopalakrishna B. V, Ph.D.	Warden, Aravali (II Hostel)	(Ms) Debashree Chakraborty, Ph.D.	Warden, Yamuna (GH III Hostel)
P. Jeyaraj, Ph.D.	Warden, Vindhya (III Hostel)	(Ms) Chandhini G, Ph.D.	Warden, haravathi ( GH- IV)
Ramesh M. R, Ph.D.	Warden, Satpur (IV Hostel)	Pareesh Chandra Deka, Ph.D.	Warden, Mess Quality Control
Sharanappa Joladarashi, Ph.D.	Warden, Nilgiri (V Hostel)	Debashisha Jena, Ph.D.	Warden, Outreach & Extra Curricular Activities
Debabrata Karmakar, Ph.D.	Warden, Pushpagiri( PG Hostel)	Dr. Manoj	Students' Welfare
Saumen Mondal, Ph.D.	Warden, Sahyadri(VII Hostel)		
A. V Narasimhadhan, Ph.D.	Warden, Trishul (VIII Hostel)		
Kiran M, Ph.D.	Warden, Trishul (VIII Hostel)		
N. Gnanasekaran, Ph.D.	Warden, Everest (Mega Tower I)		
Ajay Kumar Yadav Ph.D.	Warden, Everest (Mega Tower I)		
Pushparaj Shetty D, Ph.D.	Warden, Everest (Mega Tower I)		
Shashi Bhushan Arya, Ph.D.	Warden, Himalaya (Mega Tower II)		
Mohammad Rizwanur Rahman, Ph.D.	Warden, Himalaya (Mega Tower II)		
Darshak R Trivedi, Ph.D.	Warden, Kailash (Mega Tower III)		

All students including foreign students are accommodated in hostels as per the following details:

Total number of boy's hostel = 12

Total number of girl's hostel = 04

Total number of Rooms for boys = 893

Total number of rooms for girls = 750

<b>Sl. No.</b>	<b>Block</b>	<b>No. of Students</b>	<b>No. of Rooms usable</b>	<b>Total Capacity</b>
1	Karavali (I Hostel)	229	76	84
2	Aravali (II Hostel)	236	79	84
3	Vindhya (III Hostel)	262	131	132
4	Satpura (IV Hostel)	264	132	132
5	Nilgiri (V Hostel)	250	250	256
6	Pushpagiri (PG Hostel)	464	150	150
8	PG New Hostel	221	250	250
7	Sahyadri (VII Hostel)	410	157	162
8	Trishul (VIII Hostel)	299	160	162
9	Everest (Mega Tower- I)	483	503	504
10	Himalaya (Mega Tower- II)	496	502	504
11	Kailash (Mega Tower- III)	498	503	504
12	Ganga (GH 1 <sup>st</sup> Hostel )	61	33	34
13	Yamuna (GH 3 <sup>rd</sup> Hostel )	408	136	153
14	Sharavathi (GH 4 <sup>th</sup> Hostel)	302	330	333
15	Netravathi (GH 5 <sup>th</sup> Hostel)	250	251	258
	<b>Total</b>	<b>5133 (B- 4112, G- 1021)</b>		

## 11.2 CENTRAL COMPUTER CENTER

CCC has contributed in designing, building and maintaining an IT infrastructure for the Institute adequate to the academic needs, by providing quality IT services to support teaching, learning, research and innovations. CCC maintains the campus network backbone connectivity and internet connections on 24x7 basis. The CCC occupies the building opposite to the Silver Jubilee Auditorium. CCC was established in 1995 as a service providing/supporting facility that augments to the computing facilities in the teaching departments.

CCC is currently headed by Dr Ramesh Kini (Dept. of ECE). CCC has the following permanent staff associated to it. One Systems Manager, One Senior Scientific Officer, Two Technical Officers, Two Assistant Engineers (SG1), One Technician (SGII) and One Junior Assistant. CCC also has an Office Clerk, 2 Helpers, One Sweeper and One House Keeper working on contract basis.

Chairman, CCC seeks the guidance of the CCA Committee in important decisions.

NITK has a Campus wide LAN reaching academic buildings, residences and hostel rooms through wired and wireless networks. The campus backbone services are provided with about 20 kms of 12 core OFC using 1 Gbps and 10 Gbps backbone to the different buildings and broad band to the residences. Departments, Residences (through the broadband), Directorate (and administrative net), Guest houses and Hostels are individually connected to the core switch. The hostel networks are integrated into the academic network of NITK sharing the Internet bandwidth of the Institute.

The first stage of the campus network was done in 1999 and the second

stage of expansion was done in 2006 with the TEQIP funds. The Third Stage including Core Network Expansion and the Campus WiFi is completed in 2016 at a total cost of about Rs 6.78 crores. The expanded network including the Core Switches, Firewall, Backbone switches and the Campus Wi-Fi equipments are under warranty and maintenance of BSNL for 5 years.

The Wi-Fi network is provided as an extension of the wired networks in the different buildings. The WiFi expansion Phase 1 was carried out with 744 Ruckus R500 Indoor access points, 40 Ruckus T300 Outdoor access points, 5 Ruckus H500 wall switches, 89 Netgear 24 port 10/100/1000Mbps PoE switch with 4 SFP ports and other active and passive network components. Subsequent WiFi expansion (Phase 2) to the new CSE building and LHC-C were carried out with 97 Ruckus R510 Indoor Access Points, 4 Ruckus T300 Outdoor Access Points and 11 PoE switches.

NITK has 5Gbps Internet bandwidth - 2Gbps from National Knowledge Network and 4 Gbps from BSNL. The total cost (recurring) for the 4Gbps bandwidth and broadband facility to the campus is Rs.82,46,000/-

The NITK Data centre housed in the CCC Ground Floor acts as an integration hub of OFC/backbone. It houses Internet connections to BSNL & NKN, associated networking equipments and sufficient hardware to handle the critical backbone network services.

Main servers are connected to the data centre network. Critical services are accessible from inside and outside the network. CCC Uses Virtualisation with Blade Servers with VMWare, Dell Servers with Proxmox virtualisation environment / Ubuntu System containerisation environment.

NITK Website updates are entrusted with the CCC apart from the webserver maintenance. The domains of NITK

(*nitk.ac.in* and *nitk.edu.in*) are also controlled by CCC.

CCC has coordinated the upgrade of Matlab license based on Total Academic Head Count. National Institute of Technology Karnataka Surathkal now offers a campus-wide license to MATLAB, Simulink, and companion products. All faculty, researchers, and students are eligible to download and install these products on their university computers as well as their personally-owned computers.

Apart from these, the Ground Floor of CCC houses (i) The HPC cluster being installed and commissioned and (ii) The 150 Node Skill Development Centre established by the NITK Alumni. The first floor hall of CCC with about 90 Desktop computers is available for general purpose computing & browsing. The computers of CCC are used to support First year Computational Practice Labs, General Purpose Learning & Internet access, On-Line tests (Training & Placement) & various co-curricular and other student activities.

The CCC Ground floor will house the new Data Centre where the server space will be provided for the entire Institute. The Skill Development Centre is moved to the second floor of CCC.

The network infrastructure facility management of NITK is outsourced. Comprehensive onsite AMC is available for the Network switches. There is a helpdesk number 0824 2473085. There is also a rate contract with the firm to facilitate any immediate need of network alterations within a limit. The process of identifying the new Facility Manager is underway.

The facility has a 200KVA Diesel generator that was established in 1994 and two 20KVA, one 15 KVA online UPS systems and one 10 KVA UPS, procured later for providing backup power during the changeover. One 15 KVA UPS systems provide the power

backup to the CCC LAN and one 5 KVA Online UPS. This is being reassessed to accommodate the needs of the HPC Cluster, Skill Developed Centre and the New devices of the Data Centre.

### Infrastructure Development

- Expansion to the Network and Campus WiFi Phase 1 is completed in 2016 at a total cost of about Rs 6.78 crores. The Phase 2 is completed at a total cost of Rs 1.1 crores.
- The Wi-Fi network is provided as an extension of the wired networks in the different buildings. The WiFi expansion is carried out with 744 Ruckus R500 Indoor access points, 40 Ruckus T300 Outdoor access points, 5 Ruckus H500 wall switches, 89 Netgear 24 port 10/100/1000Mbps PoE switch with 4 SFP ports and other active and passive network components.
- For General purpose Internet access, to meet the demands of the users, an additional bandwidth of 1 Gbps is procured from BSNL at an annual cost of Rs 82.46 lakhs.
- Data Centre is upgraded with the following equipments
  - a) Virtual Cluster Switch : This consists of two Brocade VDX 8770-8 (each with 48x 10G SFP+, 48 x 10G copper and 12x 40G QSFP) and one Brocade VDX 6740T-56-1G-F server farm switch
  - b) 23 Nos. of Brocade ICX7250-48-2X10G and 8 Nos. of Brocade ICX7250-24-2X10G as building backbones with 10G uplinks to the core switch
  - c) Two Nos. of Sophos XG750 firewalls in HA mode with VPN Facility.
  - d) Campus Wi-Fi Controller Ruckus SmartZone 100The expanded network including the Core Switches, Firewall, Backbone switches and the Campus Wi-Fi equipments are under warranty and maintenance of BSNL for 5 years.

An HPC cluster is installed in the CCC Premises. This is connected to the core network and available to the entire Campus Network.

### Notable Achievements during the year

Webserver Procurement and launching the New Website Upgrading the servers

### Additions to the Building Infrastructure

- i. Relocation of First Year Lan (Skill development) to the second floor.
- ii. Freeing up of ground floor for the Data Centre

### List of Laboratories in the Department

1. CCC LAN with 90 Desktops
2. Skill Development Centre with 150 thin clients supported by a Server for Virtual Desktop
3. HPC Cluster made available to all
4. General Purpose Servers in the Data Centre and Virtual Servers on demand.
5. Matlab TAH based Licensing for the Campus.

### Extra and Co-curricular Events held in CCC

1. Regular use of the lab for placement tests
2. Students club activities
3. Nutanix Training
4. Deep Root Linux delivered expert lecture on Foss & Liberated Software IEEE CONECCT 2020 paper: Authors: H. L. Praveen Raj, Mohit P. Tahiliani, P. G. Mohanan and Shyam S.Kamath  
Title : Enhancing QoS in a University Network by using Containerized Generic Cache

## 11.3 LIBRARY

The Institute has a modern Central Library and continues to offer automated library services to its clientele. This Library functions as an important and vital component of the Institute information systems. Located centrally in the main building area of the Campus and it can accommodate more than 500 students/users at a time. The collection of books is 135289

including Book-Bank books, 8193 online e-Books subscribes 249 print journals for all the disciplines and access to 12104 online Journals and 23 databases (Full text and bibliographic).The total area is 2758.56sq.meters including the extended floors as an additional space for reading hall. The Central Library has received “Highest User Award for IEL online (IEE Explore)” in 2015 amongst INDEST-AICTE Consortium Level 2 member’s category Library space and ambience, timings and usage, availability of a qualified librarian and other staff, library automation, online access, networking, etc

Carpet area of library (in m2)	2758.56sqm.
Reading space (in m2)	1800 sqm.
Number of seats in reading space	500
Number of users (issue/return/renewal book ) per day	500
Number of users (reading space) per day	700
Timings: During working day, weekend, and vacation	Monday to Saturday 8.00 a.m. to 12.00 midnight Sunday: 8.00 a.m.to 4.00 p.m. Vacation: 09:00 a.m. to 6:00 p.m. General Holidays: 9.00 a.m. to 12.00 noon
Number of library staff	12(PermanentStaff) 15(TemporaryStaff) 5 (Trainees)
Number of library staff with degree in Library	10
Management Computerization for search, indexing, issue/return records Bar coding used	YES

## 1. Genesis and Growth:

NITK Central Library established in the year 1960 is provided with modern facilities and offers automated library services to its clientele comprising of about 6000 users namely undergraduate and postgraduate students, research scholars, faculty members and supporting staff of various departments of the institute. NITK library also gives the facility of institution membership to educational institutes and industries located in and around Mangalore. This Library is located in an independent building with a carpet area of 2759 sq meters in the centre of the Campus and it can accommodate more than 500 students/users at a time. At present, the library has a collection of around 1,35,289 books besides subscribing to around 249 National and International Print Journals and 12104 eJournals (Including Full-text Databases)

## 2. Infrastructure:

The Central Library has Wi-Fi connectivity with more 25 personal computers in Digital Reading Room Section. The Library day-to-day operations are automated and issue and return of all the books are done through computers. The computer terminals provided at the counter near entrance and can be used to gain information regarding status of any document and other particulars of any book/collection. The Library activities have been computerized using the Koha software. A bar coded system of issue and returning books is currently in use.

### Library Automation Programme:

The Library Automation Programme is completed. The details of books available in this Library are stored in the computer. The information about the document can be retrieved in the Library. User can search the book by Author, Title, and Call Nos. or by part of the title and subject. Circulation of books is computerized and circulation

is done by BARCODE System. At present 12 terminals are on use for Students and Staff. To access the information, we are using Koha Software Version . Up-to-date information about Books, Periodicals, and Back Volumes of periodicals are available on OPAC in the computer. All computers are under LAN System.

### On-line Services:

Library is a member of “eShodhSindhu: Library Consortium for Higher Education Institutes” (MHRD). It provides full text resources like IEL online, Science Direct, Springer Link, Indian Standards of all branches of Engineering, Engineering index etc.

Library is a member of NIT – Consortium. It facilitate subscription to the full text resources like Springer, Taylor & Francis, etc.

### Digital Library:

A separate “Digital Library” (Digital Reading Room) unit has been established under funding from TEQIP Phase-I with resources being shared with other NIT’s, IIT’s and industries. The Digital Reading Room is exclusively used for the online access of eJournals and other eResources Subscribed by the institute and provided through consortiums.

### Some of the services available in the Digital Library are:

- ❖ Collection and Development of Library materials in Digital Form.
- ❖ Books search facility using Web Online Public Access Catalogue (WebOPAC).
- ❖ Online eJournal Access through various consortiums.
- ❖ Technical reports of Bureau of Indian Standard (BIS) in Digital Form.
- ❖ Patent Database Search facility.
- ❖ Resource sharing with other premier Institute Libraries (IITs NITs DELNET, etc.).



- ❖ Suitable infrastructures to use the digital information.
- ❖ INTRANET and INTERNET Based Service.
- ❖ eBooks/ eJournal Facility
- ❖ Library Website / Facebook page updates.

### **Book-Bank:**

General Book-Bank for all students consists of multiple copies of textbooks. The books are lent to all students for home reading for 15 days. Every year multiple copies are added to the Book-Bank. In addition to this, there is a separate Book-Bank facility for SC/ST students also. There are 30,049 books available in all branches in Book-Banks of this Library. Automation of Book-Bank book is completed and the circulation of books is being done by using BARCODE System.

Special collection for SC/ST students - Students can borrow up to 5 books from Book-Bank for a period of one semester. The Library issues a circular in the beginning of every semester and the eligible students may apply to avail as per the schedule announced by the Library.

### **The following facilities have already been introduced in the Library:**

Automated Check-In and Check-Out Facility  
 CD-ROM and Online Service  
 Reprographic Units  
 Digital Library  
 Book-Bank  
 Networking of Library Services  
 Link other libraries (NIT, IIT Libraries)  
 Member of eShodhSindhu Consortium  
 Internet based Library Services.

### **Borrowing Privileges and Renewal:**

User Types	Items	Period of loan
Teaching Faculty	15 books	1 semester
Research Scholars	5 books	1 semester

UG/PG students	6 books	30 days
Supporting Staff	4 books	30 days
Industries	5 books	30 days

Books may be renewed for further period provided no other reader has reserved for the book. The renewal request should come, before the expiry of due date. No more than three consecutive renewals shall be allowed. Librarian in the interest of the library service can demand the return of any library materials from any user before expiring the due date. Students have to return the books on or before the due date. A fine of Rs.1.00 per book per day will be levied, if the books are not returned within the expiry date.

### **Services provided by the Library:**

- Open Access System
- New Arrivals updates through eMail.
- Newspaper Display
- Selective Dissemination of Information and Current Awareness Service (SDI and CAS)
- Online and eMail based SDI & Alert Service
- Book-Bank facility
- Digital Library
- Inter Library Loan Service
- Reprographic services
- Web Online Public Access Catalogues
- CD-ROM data base access
- Request based Bibliography/ Literature Search Service
- Practical and Apprenticeship training for diploma and degree student of Library and Information Science
- eJournals access through Consortiums.

### **9. Other Activities:**

For fresher of U.G. and P.G. courses, Library conducting Orientation Classes in the beginning of the academic year.

Library conducts hands-on training and User Awareness Programs regularly.

The Library is compiles list of “New Arrivals” Monthly, shared with users through eMail and Website.

The Library provides training programme to the LIS Graduates& Diploma Students of the Government Polytechnics for Women, Mangalore and Apprentice Training programme is also conducting.

Library is also providing the SDI Service (Selective Dissemination of Information) on the various on-going Research Projects sponsored by the NITK, D.S.T., C.S.I.R. and other Research Organization etc. Under-Graduates, Post-Graduates and Research Scholars are also making use of these services for their project works. Seminars and Information Retrieval Services by using Computer.

Services to Industries, Educational Institutions, Government Establishments, the neighboring Govt. Departments, Educational Institutions and Industries are using this Library services quite often.

Membership fee of Rs.10.000/- (5 cards) introduced to the industries and several industries are members to this Library.

The Library has an Inter Library Loan facility with leading Institutions and G.O.I. Establishment.

### **International Conference DigiTTAL-2019 organised by Central Library:**

Central Library, National Institute of Technology Karnataka, Surathkal has organised an International Conference on “Digital Technologies and Transformation in Academic Libraries (DigiTTAL-2019) ” during December 26-28, 2019 as part of Diamond Jubilee Celebration Year of the institute (1960-2020). The conference has attracted more than 250 delegates across India and abroad. It has received more than 130 papers, which underwent a rigorous blind-review process and finally 91 papers have been selected for oral presentation.

Prof. Dr. M Shantaram Shetty, Pro-Chancellor, NITTE University was the Chief Guest who inaugurated the conference. Dr. Bhanu Neupane, Programme Manager, UNESCO, Paris was the Guest of Honor. Prof. K. Balaveera Reddy, Chairman, BoG, NITK Surathkal, presided over the inaugural ceremony in the presence of Prof. K. Umamaheshwar Rao, Director, NITK Surathkal. Prof. Lakshman Nandagiri, Department of Applied Mechanics and Hydraulics served as the Conference Chair and Dr. Mallikarjun Angadi, Librarian, Central Library was the Organising Secretary. Dr. Noraziah Sharuddin, Universiti Teknologi Malaysia, Malaysia delivered the keynote address.

On the second day evening a vibrant cultural programme was organised imbibing the rich tradition and culture of Dakshina Kannada in the form of folk dances and Yakshagana by cultural team of Govind Dasa College, Surathkal.

### **Research Publications**

#### **1. Dr. Mallikarjun Angadi**

Document Type	Total
Book Chapter	6
Books Edited	1

### **International Conference Organised: ( DigiTTAL-2019)**

Organising Secretary for the International Conference on “Digital Technologies and Transformation of Academic [DigiTTAL-2019]” organised by Central Library, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019

### **Book Chapters:**

Iranna M. Shettar and **Mallikarjun Angadi**. "Researchers' Perceptions of Academic Social Networking Sites: A Study." in Trends, Challenges and Opportunities for LIS Education and Practice, Shree Publishers, 2019, pp 249-258, ISBN: 9788194194019.

Nijwm Basumatary, Puttaraj Choukimath and Mallikarjun Angadi. "Research Data Management Policies, Plans and Solutions: The Imperatives for the Higher Education Institutions", In: Proceedings of International Conference on Digital Technologies and Transformation of Academic Libraries, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019. Shree Publishers & Distributors, New Delhi, 2019, p. 248-264, ISBN: 978-81-941940-0-2

Divyanshu Jain, Appasaheb Naikal and Mallikarjun Angadi. "Use of Social Networks in Libraries", In: Proceedings of International Conference on Digital Technologies and Transformation of Academic Libraries, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019. Shree Publishers & Distributors, New Delhi, 2019, p. 318-323, ISBN: 978-81-941940-0-2

Basavaraj Chavan, Mallikarjun Angadi and Gundappa Nayak. "Publication Productivity and Research Impact of Top Five NITs: A Scientometric Analysis", In: Proceedings of International Conference on Digital Technologies and Transformation of Academic Libraries, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019. Shree Publishers & Distributors, New Delhi, p. 379-390, ISBN: 978-81-941940-0-2

Rashmi Rekha Gohain and Mallikarjun Angadi. "Usage Pattern of Institutional Repositories for Scholarly Communication by Academician in Maharashtra", In: Proceedings of International Conference on Digital Technologies and Transformation of Academic Libraries, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019. Shree Publishers & Distributors, New Delhi, p. 732-746, ISBN: 978-81-941940-0-2

Dayanandappa Kori and Mallikarjun Angadi. Internet Literacy Skills and Perception on Internet among

Commerce Students in Mangalore University, Karnataka. In: Proceedings of International Conference on Digital Technologies and Transformation of Academic Libraries, National Institute of Technology Karnataka, Surathkal, India, 26-28 December, 2019. Shree Publishers & Distributors, New Delhi, p. 764-771, ISBN: 978-81-941940-0-2

### Books Edited (Conference Proceedings)

Angadi, Mallikarjun; Hadagali, Gururaj S.; Shettar, Iranna; Kattimani, P. S.; Balutagi, Suresh and Agadi, Kotrayya B. "Digital Technologies and Transformation in Academic Libraries (Proceedings of DigiTTAL-2019, Vol-1 & 2", New Delhi, Shree Publishers & Distributors, 2019, ISBN: 978-81-941940-0-2

### 2. Mr. Iranna M. Shettar:

Document Type	Total
International Journal	2
National Journal	1
Book Chapter	1
Books Edited	1

### International Journal

Shettar, Iranna M., and Hadagali, Gururaj S. "Scientometric Analysis of Research Publications of National Institutes of Technology." SRELS Journal of Information Management, DOI:10.17821/srels/2020/v57i2/1469 23, Vol. 57, no.2, pp 84-100, Apr 2020.

Hadagali, Gururaj S.; Shettar, Iranna M; Mulimani, Renuka and Kadakol, Mrutyunjay. "Global pharmacy and pharmacology research: A scientometric study (1988-2017)." International Journal of Pharmaceutical Research, DOI: 10.31838/ijpr/2020.12.02.0061, Vol. 12, no.2, pp 536-543, Apr-Jun 2020.

### National Journal

Shettar, Iranna M., and Hadagali, Gururaj S. "Coronavirus: A Scientometrics Study of World Research Publications." International Journal of Information Dissemination and Technology, DOI: 10.5958/2249-5576.2020.00002.3, Vol.10, no.1, pp 8-16, March 2020.

### Book Chapters:

Shettar, Iranna M., and Angadi, Mallikarjun. "Researchers' Perceptions of Academic Social Networking Sites: A Study." in Trends, Challenges and Opportunities for LIS Education and Practice, Shree Publishers, 2019, pp 249-258, ISBN: 9788194194019.

Books Edited (Conference Proceedings)

Angadi, Mallikarjun; Hadagali, Gururaj S.; Shettar, Iranna; Kattimani, P. S.; Balutagi, Suresh and Agadi, Kotrayya B."Digital Technologies and Transformation in Academic Libraries (Proceedings of DigiTTAL-2019, Vol-1 & 2", New Delhi, Shree Publishers & Distributors, 2019.

## 11.4 LABORATORIES

### DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS:-

#### Hydraulics Laboratory:

Flow Measuring Units  
Pumps , Water meters  
Calibration Devices  
Turbines  
Hydraulic Machines  
Pressure Gauges  
Valves  
Tilting flume  
Pipe bursting unit  
Ultrasound flow meter

#### Strength of Materials Laboratory:

Universal Testing Machine U.T.M 5 T, 40 T, 100 T, 200 T (Electronic)  
Hardness Testing M/c  
Torsion Testing M/c  
Hardness Testing M/c  
Fatigue Testing M/c  
Impact Testing M/c

#### Marine – Geotechnical Laboratory:

Consolidation Apparatus  
Direct Shear Apparatus  
Photo Elastic Bench  
Corrosion Measurement Voltage system  
Optical Microscope

#### Wave Mechanics Laboratory:

Regular Wave Flume [50 X 0.71 X 1.1 m] – 2 No.s  
Digital Storage Oscilloscope with software

Wave probe with software

#### Hydraulic Measurement Laboratory:

Ultrasonic Testing Kit  
Electronic Balance  
Granular Matrix Soil Moisture Sensors  
Digital Soil Moisture and Temperature Recorder  
Tipping bucket rain gauge  
Basic Hydrology Unit

#### Remote Sensing & GIS Laboratory:

Computer systems : 20 No.s  
Printer, scanner  
Stereoscopes  
Ground truth Radiometer  
Digital Planimeters  
Aerial & Satellite Imagery  
ARCPAD GPS, Garmen GPS  
DGPS  
Total station  
Softwares : ERDAS- Imagine, ARCGIS, ENVI 5.4  
Open Source GIS  
R software

#### Computer Laboratory:

Computer systems: 10 Nos  
Ground water Modelling Software (GMS),  
Water Management Software (WMS);  
Aqua Chem software  
SWAT CUP MATLAB  
Scanner, Laser printer

#### New Labs Developed

#### Computational Hydrodynamics Lab

Computer systems: 10 Nos Open Source REEF 3D  
MATLAB  
MIKE 21 software  
SACS software

### Advanced Structural Mechanics Lab

Fretting Wear Testing Machine

### Structural Dynamics Lab

Shake Table

Building models

Accelerometers

LVDT

Ship/sloshing tanks

Load cells

### Experimental Stress Analysis Lab

Strain Rosette

Stress gauge

Measurement of Shear number

Temperature Compensation

Rectangular delta

### Marine Structure Monitoring Laboratory

Underwater Remotely Operated Vehicle

Marine Surface Vehicle for inspection

Thermal and RGB Inspection Unit

Open Source Fluid Structure

Interaction Setup

### Unmanned Aerial Vehicle Laboratory

3D Modelling with Aerial Imaging

Octocopter with multispectral Imaging

Open source Simulation for Design

Wind Tunnel (shared with SOM Lab)

Smoke Tunnel for flow simulation

### Virtual labs developed partnering with CSD, NITK Surathkal

1. Strength of Materials : <http://sm-nitk.vlabs.ac.in/>
2. Fluid Mechanics: <http://fm-nitk.vlabs.ac.in/>
3. Fluid Machinery : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/fluid-machinery-lab/index.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/fluid-machinery-lab/index.html)
4. Marine Structures : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/Marine\\_Structures\\_Lab/experimentlist.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Marine_Structures_Lab/experimentlist.html)
5. Transportation Engineering : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/Transportation\\_Engineering\\_Lab/experimentlist.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Transportation_Engineering_Lab/experimentlist.html)
6. Environmental Engineering-1 : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/Environmental\\_Engineering\\_1/experimentlist.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Environmental_Engineering_1/experimentlist.html)

7. Environmental Engineering-2 : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/Environmental\\_Engineering\\_2/experimentlist.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Environmental_Engineering_2/experimentlist.html)
8. Mining Geology : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/geology-lab/experimentlist.html](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/geology-lab/experimentlist.html)
9. Physical Metallurgy : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/physical-metallurgy/labs/index.php](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/physical-metallurgy/labs/index.php)
10. Mining Environmental Engineering : [http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk\\_labs/mining-environment/labs/index.php](http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/mining-environment/labs/index.php)

### DEPARTMENT OF CHEMICAL ENGINEERING:-

**Testing & Quality Control Lab** :Flame Photometer, Tinto meter, Turbidity meter, C.O.D. Digester, Brook Field Viscometer, Flue Gas Analyser, Trinocular microscope, Bomb calorimeter, Conductivity meter, Spectro photometer, B.O.D. incubator, Noise Level Meter, Water Purification system.

**Project Lab I & IA:**Ultrasonic water Bath, Muffle furnace, Peristaltic pump, Ultrasonic Sonicator, UV Ozone Cleaner, Continuous homogeniser.

**Project Lab II:**Horizontal laminar flow work station, Gel document, spectro photo meter, Eppendorf centrifuge.

**COMPUTER SIMULATION LAB:**Ansys CFD, Aspenplus, MATLAB, Design Expert.

**Project Lab III:**Deep Freezer, Centrifuge, UV solid sampler, centrifuge, Microscope.

**HEAT TRANSFER LAB:**Jacketed vessels, Shell and tube heat exchanger, double pipe heat exchanger, Thermal conductivity of solids apparatus, High volume sampler, Portable gas sampler, Plate heat exchanger, Stack monitoring kit, Fluidized Bed Combustor (IIT Madras), Deep Freezer.

**PROJECT LAB IV :** Ultra Sonic water bath, Autoclave, Stirred Cell Membrane Unit, U V Irradiated membrane filtration Unit.

**PROJECT LAB V:** Flash point apparatus, Viscometer - (Redwood & Saybolt), Eddy current drive with motor & accessories, Ozone Generator, Jacketed vessels, Generator - 10 KVA, Ozone Monitor/TLA

**BIOTECHNOLOGY LAB:** Laboratory Centrifuge, Digital Refractometer, Orbital shaker, Hi-Anaerobic system, Autoclave (vertical), Compound Microscope, Microwave Oven, Lyophilizer, Gel Electrophoresis, Continuous Homogenizer, Lab Bioreactor with variable Volume Fixtures, Brook Field Viscometer, Tangential Flow Filtration with ultrafiltration Module, Temp Controlled Digital Density Meter, Spectrophotometer, Incubator - shaker, Horizontal laminar flow work station, ultrasonic processor,

**PROJECT LAB V:** Elgi Centrifuge, Electric oven, Muffle Furnace, Surface tension meter, Membrane testing System, Peristaltic pump, Incubator - shaker , Vortex Mixer, rotating disc contactor, Continuous membrane filtration unit, Ice Flaker.

**FERMENTATION LAB:** Colony Counter, CO<sub>2</sub> Incubator, Microwave Digestion System, Muffle furnace, Incubator - shaker, High speed cooling centrifuge, Freeze dryer, C.O.D Analyser, Pestle & Mortar, Pellet Press, Slow Speed Cutting Machine, Vacuum Cleaner, ionic conductivity source meter.

**ADVANCED INSTRUMENTS LAB:** Electrochemical Workstation, cell ,C-Electrode, Gel Electrophoresis, Bio Sensor, Mini Protean Tetra cell, Trinocular microscope tific, Spectrophotometer, Total organic carbon analyser, Graphite furnace and hydride generator, Ultrapure water generator, AAS, Electrophoresis, High

Performance liquid Chromatograph, Gas chromatography-Mass spectrophotometer, Ion Chromatography, High speed refrigerated cooling centrifuge

**Immunology Lab:** Micro Centrifuge, Power Pack for southern & Northern blots, Automated microplate reader, Western Bolt unit, Photometer for PCR Work, Polymerase Chain Reaction Machine.

**Mass Transfer Lab:** Liquid Extraction in Packed Bed, Vertical Tube Evaporator, Packed Distillation Column, Absorption in Packed Tower, Spray Tower, Fluidized Bed Dryer (With air circulation) Model No.MT - 18, Wetted Wall Column (with air circulation), Batch Crystallizer, Forced Draft Tray Dryer, Diffusivity Measurement, Counter current leaching, Cross current leaching, Steam Distillation, Vapor liquid equilibrium, Surface evaporation, Liquid Extraction in Packed Bed.

#### **PROCESS CONTROL & REACTION ENGG:**

Batch reactor, RTD in tubes plug flow reactor, RTD in packed bed, RTD in CSTR, Reactor combination of PFR and CSTR, Magnet pump , Multi range conductivity meter , Digital online, Process control loop trainers, Non-interacting tank, Time constant of Pressure Vessel & mercury meter, Constant temperature bath.

**HEAT TRANSFER LAB:** Shell and Tube Heat Exchanger, Electrically Heated Boiler, Parallel flow / counter flow/Double pipe heat exchanger, Pool Boiling Heat Transfer Apparatus Forced Convection Heat Transfer , Natural Convention Heat Transfer Model, Stefan Boltzmann apparatus, Thermal conductivity of insulating Powders, Thermal conductivity of liquids, Horizontal Condenser & Vertical Condenser Steam, Heat Transfer through coils, Natural and forced convection in air, Heat Transfer through packed bed apparatus, Transient heat conduction-constant

heat flux, Transient heat conduction-constant temperature, Heat Transfer through vertical barre and finned tube heat exchanger, Plate heat exchanger, Spiral plate heat exchanger, Heat losses by combined convention and radiation (for cylinder & sphere).

**FLUID MECHANICS LAB:** Flow through pipes and fittings, Flow through orifice meter, Flow through rotameter, Flow through fluidized bed, Flow through Packed bed, Flow through venturi meter, Flow through Notches, Flow through coils, Characteristics of a centrifugal pump, Pitot tube, Open orifice, Annulus.

#### **PARTICULATE TECHNOLOGY LABORATORY:**

Ball mill, Sieve Shaking Machine, Screen effectiveness, Air permeability, Jaw crusher, Air elutriation, Batch sedimentation, Leaf filter, Drop weight crusher, Attrition mill, Jaw Crusher, Vibrator

#### **Environmental Immunology laboratory:**

Kinetic plate reader, universal plate reader, deep freezer, cooling centrifuge, CO<sub>2</sub> incubator, hot air oven, Gel electrophoresis units, minivol samplers, microbial samplers.

**Systems and Control Laboratory:** Heating and Cooling Circulator, Crystallizer, Lab scale Wastewater Treatment Set up.

**Energy & Catalysis Materials Laboratory:** -Dilatometer, Ionic conductivity meter, Fume hood, Hot air Oven, Tubular and horizontal Muffle furnaces, High temperature Muffle furnace, Pellet presser, Low speed cutting machine, CO Gas analyzer. Electric Agate mortar and pestle.

### **DEPARTMENT OF CIVIL ENGINEERING**

**Transportation Engineering Laboratory:** Marshall stability machine, Centrifuge extractor for bitumen, Servo

controlled fatigue testing machine, Gyrotratory compactor.

**Transportation Design Studio:** Video cameras, Radar Guns, Computing facility.

**Earthquake Engineering Laboratory:** Small shake Table and computing facility

**Concrete Materials Laboratory:** 2000 kN Compression Testing Machine, Accelerated Curing Tank, Pelletizer, Rebound Hammer, PUNDIT UPV-Tester, Setting Time of Concrete Apparatus, Equipment for testing rheological characteristics of SCC, Carbonation Chamber

**Structural Engineering Laboratory:** 100kN OHT (Manual), 200 kN Testing Frame, 50 kN Testing Frame, Column Testing M/c,

**Environmental Engineering Laboratory:** Atomic Absorption Spectrophotometer

### **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING:-**

#### **UG lab-1**

- HP 80Compaq P-IV computers with TFT Monitors - 67
- Lenovo think center M93P - 1
- HP LaserJet 1010 -1
- LAN - 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **UG lab -2**

- Dell OptiPlex 9010 - 60
- Dell OptiPlex 5070 - 8
- Dell precision T1650 - 2
- Canon LBP2900 -1
- LAN - 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **UG lab-3**

- Dell OptiPlex 5070 - 52
- Dell OptiPlex 5070 MT - 06
- Lenovo Think center M92T computer system - 03
- Dell OptiPlex 9020 MT with accessories - 08

- HP laser jet 1020 plus – 01
- HP Photo Flat Bed Scanner – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **UG lab – 4**

- Dell precision T1650 – 06
- Dell OptiPlex 9010 – 09
- HP laser jet 1020 plus – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **I M.Tech Lab**

- HP DeskJet Core i5 with accessories – 38
- Lenovo Think Centre M910T Tower Desk – 10
- Dell 9010 i7 - 13
- Dell OptiPlex 9020 MT- 02
- HP LaserJet P1007- 01
- HP LaserJet M1005 – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **PG Project Lab**

- Dell OptiPlex core I7 computer with accessories – 05
- Lenovo Think centre M910T-Tower Desktop – 29
- Lenovo Think centre M92T-Tower pc computer system – 07
- Canon LBP2900 - 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **Research lab - 1**

- Dell OptiPlex 9020 MT with accessories – 07
- Dell OptiPlex 9020 MT with accessories – 05
- Lenovo Think Centre M910T-Tower Desktop – 03
- Dell OptiPlex 9010 – 03
- HP HPLJM1319-F – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **Research lab – 2**

- Dell OptiPlex 9020 MT with accessories – 03
- Dell OptiPlex 9020 MT with accessories – 04
- Dell OptiPlex 9010 – 03

- Lenovo Think center M910T-Tower Desktop – 02
- HP LaserJet 1010 – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **Image processing lab**

- Lenovo workstation (D3043) with accessories – 20
- Dell workstation T1910- 02
- Dell Workstation (7820 Tower Model ) – 01
- HP LaserJet 1010 – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **ISEA lab**

- Dell High End Workstation (DT Precision 5820) - 02
- Dell Precision 5820 Workstation - 02
- Lenovo workstation(P700) – 07
- Lenovo think station S30 workstation with 24” LCD monitor - 01
- Lenovo Think Centre S-20 & D 20 workstation (2703) - 02
- Dell OptiPlex 9020MT Desktop – 04
- Dell OptiPlex 9010 – 02
- Canon LBP2900 – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **DIGITAL Electronics Lab:**

- Digital IC Trainer Kit
- Digital IC Tester and other accessories,
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **DATA CENTRE LAB- Server Class**

- IBM E Server with accessories – 01
- Dell High End Server T610 – 01
- Dell power Edge Server R420 - 02
- Dell power Edge Server R720 – 01
- Dell power edge server T630 – 03
- Dell Server PE 730XD – 01
- Dell Server (R740) – 01
- C-Boston Sys- 5038K-j-KNL Development Workstation – 01
- Dell R7 power edge R7404 rack server – 03
- Dell EMC Switch 54112T – 01



- KVM Switch 8 port VGA – 01
- C-NVIDIA DGX P2787 – 01
- LAN – 100/1000 Mbps , Seamless Wi-Fi connectivity with WAPs

#### **DEPARTMENT OF CHEMISTRY:-**

**Chemistry of Renewables and Catalysis Laboratory:-**Hot plate cum magnetic stirrer, Rotary evaporator, Hot-air oven, Muffle furnace, Autoclave, Glass pressure vessel, Double-stage high vacuum pump, UV Chamber.

**Synthetic Organic Chemistry and Catalysis Lab:-**Rotavapor, Oven, Vacuum Pumps, Electronic Balance, Fume Hood etc. – Group Leader: Beneesh P B

#### **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING:-**

**High Voltage Testing Laboratory:-**100 kV impulse generator, HV standard capacitor, 5 kV Insulation tester, Oil test kit.

**Electric Machines and Drives Laboratory-** DSP based drive control units V/F controls, Machine design software (speed, motorpro), Filed analysis software (MAXWELL 3DFS Rexroth INDRAMAT drive unit with AC servo motors

**Power Electronics Laboratory -** DSPACE – rapid prototyping unit, Converter / Inverter modules, power Device (SCR, IGBT, GTO) modules

**Virtual Instrumentation Laboratory-**NIDAQ systems, PXI1010 units with High Voltage measurement unit, NI-ELVIS stations, LABVIEW softwares, dSPACE 32xx rapid prototyping platform

**Embedded Systems Laboratory** OSEK RTOS, KEIL RTOS, KEIL IDE for 805x, ARM, CODEWARRIOR IDE for 68HCXX, TI DSC Code composer Studio for 28XX MOTOROLA, INTEL,ARM,PIC DSC/MC units.

**Industrial Automation Laboratory -** Distributed Control Systems [YOKOGAWA CS1000], PLC ROCKWELL RSLOGIX%), ABB RTU232.

**Digital System Design Lab -**BASYS2 and BASYS3 kits supporting XILINX SPARTAN 2/3e FPGA, Analog Discovery 2 Kits supporting MSO Functionalities

**Micro Grid Laboratory-**10 kW wind solar hybrid system (2 wind turbines of 3.2 kW each and 3.6 photovoltaic system) capable of operating in grid connected and islanding mode of operation with charge controllers and Inverter. 1.2 kW fuel cell bases experimental system.

**Analog Electronics Laboratory**Comprises of trainer kit based systems to understand linear and nonlinear configuration of operational amplifier (IC 741) and Timer (IC 555) based circuits

**Digital Electronics Laboratory -** Comprises of trainer kit based systems to understand functioning of basic and universal logic gates, Combinational circuits and sequential circuits.

**Signals & Systems Laboratory -** MathWorks based computational platform to model and characterize the continuous and discrete time signal and system characteristics in time and frequency domain.

**DSP Laboratory-** On using MathWorks based computational platform to write the code and uses of Simulink to understand the application of signal transformation in linear and nonlinear mixing, in typical communication systems such as AM, FM process. Understanding of Phase lock loop (PLL) functioning, Approximation of Ideal filter responses using FIR and IIR filters.

**Dept. Computer Lab. -** 60 desktop computers in the Dept. Computer Lab.

**Power Systems Laboratory** -Scale-down model of 4-machine power systems, NI-based ADC and DAC cards for real-time data acquisition, Industry grade packages: EMTDC/PSCAD, MATLAB, LabVIEW software's and in-house developed power system stability analysis package, MatSim.

**Electric Power Quality Laboratory** - Experiments based on MathWorks computational platform and uses SIMULINK to understand the nature of real time power quality events. Also, experiments based on hardware realization of loads that cause power quality problems and demonstration of operation of custom power device, Equipment: Power Quality analyzer

**Control Systems Laboratory**-Experiments related to DC motor speed control are carried out using trainer kits. Even simulation exercises are done to verify the experimental results.

### **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**Analog Electronics Lab**:-Digital Storage Oscilloscope, Function Generator, DC Regulated Power Supply Analog/Digital IC Tester.

**Digital Electronics Lab**:-Digital Trainer, Analog/Digital IC Tester.

**Research Lab for Ph. D. Students**:- Workstations, PCB Prototype Machine (LPKF), Chemical Free Through Hole Plating System, Access to all design tools available in the department.

**Communication Lab**:- Digital Storage Oscilloscope, Function Generator, DC Regulated Power Supply, Microwave X band benches, Antenna Trainer , Outdoor FSO Link Setup (Lightpoint), Wireless Comm Trainer Kits (2 set ups), Workstations, LD Driver, LD Module, PD Module, Power Meter, Fibre Optic Power Source, Optical Fibre Trainer, LD Modulator

(Transmitter), FORX-200m (Receiver), Fiber Optics Kits, Wireless Sensor Network Professional Kit with Tools, Qualnet Network Simulator, Qualnet Network Simulator Tools, Wireless digital communication training system, (Wi-Communication-T), Outdoor free space optic (FSO) link.RF Equipments, 3GHz Spectrum Analyzer, RF Training Kit, RF Signal Generator, Vector Network analyzer 40GHz & Accessories, 3GHz Network Analyzer, 100MHz Mixed Signal Oscilloscope, 80MHz Function/Arbitrary Waveform Generator, Digital Multimeter 6.5 digit Triple Output DC Regulator Power Supply, Electronic Instrumentation Training Kit, Digital Source meter with Safety universal Test Lead kit, Microwave experiment kits.

**Software**: ADS 10 User Licence, Optsim 5 User Licence.

**VLSI Lab**:- Workstations, Cadence Design suite,, Synopsys EDA Tools, Mentor Graphics Tools, Xilinx Tools, TCAD Tools, FPGA Boards.

**DSP Lab**:-Dell OptiPlex 9020 x64-based PC(s), MATLAB 2019a (9.6.0) with various Toolboxes, ModelSim, XILINX Vivado Design Suite, SDSoC, Virtex VI Embedded Kits, Xilinx Virtex VI FPGA DSP Development Kit with High Speed Analog, Avnet Spartan – 6/O MAP Co-processing development kit, Avnet Digilent Zed Boards, Zynq-7000 EPP ZC702 Evaluation Kit, Digilent Nexys 4 Kits, Digilent Nexys Video Kit & accessories, Digilent Zybo Zynq™-7000 Development Boards, STM32F407 Discovery Kits, DE10 Standard Boards, DE1-SoC Altera Cyclone V SoC Development Kits.

**Microprocessor & Embedded Systems Lab**:- Workstations, Cadance ORCAD PSPICE A/D, PCB design tools, Matlab, Simulink, ARM based code development tools, Microcontroller Kits, NETSIM SW.

**Network Management Lab**:- Foundry N/w's FastIron Edge X424.

**R&D Lab (Research Lab for Ph. D. Students):** Workstations, Access to all design tools available in the department.

**Centre for Excellence for Wireless Sensor Networks:** - Work stations, WSN Design kits, Sensors, Exata Software: Network Simulator/Emulator, E9000B – Special Product Configuration Total ADS Standard University License Bundles, W1450M Systemvue Media Systems Vue University License Bundles.

**Stochastic Modeling Imaging and Learning (SMILE) Lab:**-Workstations, Access to all design tools available in the department

## **DEPARTMENT OF INFORMATION TECHNOLOGY**

**Digital Design Lab-I:-**DIGITAL IC TRAINER Model -UDT 4004-20, DIGITAL IC TESTER MME-DIT 2040-1

**Digital Design Lab – II:-**DIGITAL IC TRAINER Model – ML 555T-20, DIGITAL IC TESTER MME-DIT 2040-1

**Research Laboratory:-** Desktops: HP Compaq 8300 Elite MT PC -2, Dell Optiplex 9020 MT core i7- 3, Lenovo Workstation E-1225V5-1, Dell Optiplex 5050 -2, HP Prodesk 600G5 MT-6, Cameras: Hikvision 2 MP-2

**Internet Technology Laboratory:-** Desktops:HP Compaq 8300 Elite MT PC - 1, Dell Optiplex 9020 MT core i7-3, HP Prodesk 600G5 MT-5, C-Net gear RN626X Ready NAS, Cameras: Hikvision 2 MP-2

**Virtualization Lab:-**N Computing L300 Clients -18

**Post Graduate Lab-I:-** Desktops: HP Compaq 8200 Elite MT PC-8,HP Elite Desk 800 G1 TWR -5, Dell Optiplex 9020 MT core i7- 7, Dell Optiplex 5050 -10, HP Prodesk 600G5 MT-2,

Cameras: HIKVISION make 4 MP Dome IP Camera -2

**Post Graduate Lab – II:-** Desktops: HP Compaq 8300 Elite MT PC -3, HP Elite Desk 800 G1 TWR -3, Dell Optiplex 9020 MT core i7-1, Dell Optiplex 5050-4, Dell 9010 DT-26761536 Optiplex M-1, HP Prodesk 600G5 MT-18, N Computing L300 Clients -2, Cameras: HIKVISION make 4 MP Dome IP Camera -2

**Project Laboratory:-**Desktops: Dell Optiplex 5050- 39, Dell Optiplex 9020 MT core i7-1, Cameras:Dlink DCS4602 VE (Vigilance Full HD Outdoor Vandal Proof POE) Dome Camera-2

**Undergraduate Lab-I:** - Desktops: Dell Optiplex 5050 – 16, Lenovo Think M90(5498-PR1)-32, HP Compaq 8200 Elite MT PC-2, HP Prodesk 600G5 MT-22, Cameras: HIKVISION make 4 MP Dome IP Camera -3, Dlink DCS4602 EV Full HD-1, MIC Systems: KQ-SRS-1112 Infrared Sound Field Reinforcement System-1

**Undergraduate Lab -II:-** Desktop: HP Compaq 8200 Elite MT PC-12, HP Compaq 8300 Elite MT PC-14, HP Compaq 8100 Elite MT PC-5, HP Elite Desk 800 G1 TWR -5, DELL Optiplex 9020-3, Dell Optiplex 5050-1, HP Prodesk 600G5 MT-8, Workstations: Dell Precision T1700-3, Cameras:Dlink DCS4602 VE (Vigilance Full HD Outdoor Vandal Proof POE) Dome Camera-2

**Network Switch Room:-**HP Compaq 8300 Elite MT PC-1, Dell Optiplex 5050-2, Servers : Dell Power Edge R420 (Batch - 3L22HY1, 4K22HY1)-2, HP SR 638181-371 ML-350 E5645-1, IBM P Series P270 8202 4EC SERVER-1, NVIDIA DGS Station -1, TYRONE CAMARERO DS 400TG-1, Dell Power Edge R730XD 2U Rack server -2, Dell Power Edge R540-1, NETGEAR READY NAS RN316/6BAY 4TB Surveillance HDD, Hikvison 16 CH 2 SATA NVR-1

**NITK RDL IoT & Data Analytics Lab:-** RDL & IoT Kit Memsic Classroom Kit-

1, Memsic WSN Professional Kit-1, PCI DIOT I/O Interface Kits-20

**High Performance Computing Lab:-**

**DEPARTMENT OF MECHANICAL ENGINEERING**

1. **Advanced Dynamics Lab:** Experimental Modal Analysis, Forced Vibration Analysis, Tuned Impulse Hammer, Minishaker with controller, Modal Analysis Software
2. **Wind tunnel laboratory:** subsonic wind tunnel, force balance
3. **Advanced Manufacturing Laboratory:** 3-D Printing, Fused Deposition Modeling based 3-D Printer, Material Extrusion, Single Screw Extruder
4. **Smart structures laboratory:** Free and forced vibration setup with controller, Impact hammer, Tri-axial accelerometer, Electrodynamic shaker, Analyzer, closed loop controller, force sensor, impedance head
5. **Refrigeration and Air-conditioning Research Laboratory:** Micro heat pipe test rig, Vapour pressure determination test rig, Thermoelectric refrigeration test rig, Condenser pressure variation VCR test rig, Vortex tube refrigeration test rig, Air engine test rig, Weather simulation chamber & Window air conditioner test rig, two Stage VCR test rig with intercooler.
6. **Turbomachinery Laboratory:** Low speed compressor cascade test facility, Low speed turbine cascade test facility, Centrifugal blower test rig.
7. **Polymer composites lab:** vartm facility
8. **Advanced fluid mechanics Lab:** Desiccant analysis test rig.
9. **Tribology Laboratory:** Metallurgical Sample Saw, High Temperature Tubular furnace, Ball mill, Disc

Polishing Machine, Microscope, Pin on Disc Tribometer. Nano indenter with AFM attachment, Microwave heat treatment setup. Tumbler Ball milling setup.

**10. List of Software in CAD/CAM Laboratory:**

- |   |          |
|---|----------|
| Pro Engineer CREO                           | 50 Users |
| Autocad                                     | 50 Users |
| Ansys15.0                                   | 25 Users |
| AnsysV10.0                                  | 10 Users |
| MSCAdams                                    | 50 Users |
| MSCatran                                    | 50 Users |
| MSCastran                                   | 50 Users |
| MSCMarc                                     | 50 Users |
| MSCytran                                    | 50 Users |
| CatiaP3                                     | 10 Users |
| CATIANovia                                  | 05 Users |
| CATIADelmi                                  | 05 Users |
| CATIAPLMExpress                             | 05 Users |
| LMS AMESim (Multi-domain system Simulation) | 05 users |
| Unigraphics with Advanced Machining Module  | 05 Users |
| Deform (Design Environment for FORMing)     | 01 User  |
| AutodeskMoldflow                            | 25 Users |
| SimPACK(MBDS software)                      | 25 Users |
| MasterCAM                                   | 02 Users |
| 20. HyperWorks                              | 05 Users |
| 21. RobotKit                                | 02 Nos.  |
| 22. ANSYS research license (1 No)           |          |
- **Materials Characterization Laboratory:** Vacuum Arc Melting Furnace, Image Analyzer, Universal Testing Machine, Wire Electro Discharge Machine, Vickers Hardness Tester, Double headed Rolling Machine.
  - **Vibration and Condition Monitoring Laboratory:** Electromagnetic shaker (100kgf, 50kgf, 25kgf), Horizontal slip table, VTS electro-dynamic shaker (25lbs), Gauss meter, Electro magnets (1.5 Tesla), Impact hammer, Single and tri-axial accelerometers, Data acquisition system(NI, HBM ), Microphone and SLM, MicroEpsilon Laser displacement pickups, ADAMS,

NASTRAN, PATRON, MARC, DITRON, ANSYS, Devitron, Labview.

- **Robotics Laboratory:** Lego Robotic Kit, Firebird, Basic Electronic Components, DC Motors, Connecting Pins, Wires, LEDs Berg Strip, and Bread Board, Quadcopter kit, Wall Following Robot.

- **Metrology Laboratory:**

- **A. Linear Measurements**

1. Vernier Caliper
2. Vernier Depth Gauge
3. Vernier Height Gauge

- **B. Micrometer**

4. External Micrometer
5. Internal Micrometer
  - a. Jaw Type Inside Micrometer
  - b. Caliper Type Inside Micrometer
6. Depth Micrometer
7. Bench Micrometer
8. Digital Micrometer
9. Telescopic Gauge

- **C. Measurement Using Slip Gauge**

10. Calibration of Micrometer, Vernier Caliper,
11. Calibration of Height Gauge, Snapgauge, Ring Gauge and Plug Gauge.
12. Measurement of Mean Distance between Surface and Spacing between Holes.
13. Measurement of Dovetail Angle and Checking the Taper Angle of Taper Plug Gauge.
14. Checking An Angle Plate.
15. Study On Limit And Position Gauges

- **D. Linear and Angle Measurement**

16. Combination Set.

- **E. Angle Measurement**

17. Universal Bevel Protractor
18. Sine Bar

- **F. Flatness And Straightness Measurement**

19. Clinometer

- **G. Screw Thread Measurement**

20. Screw Pitch Gauge
21. Screw Thread Micrometer
22. Effective Diameter Measurement Using Two Wire And Three Wire Method.

- **H. Gear Tooth Measurement**

23. Vernier Gear Tooth Caliper
24. Tooth Span Micrometer

- **I. Study On Opto-Mechanical Instruments**

25. Tool Makers Microscope
26. Measurement Using Comparator

- **J. Surface Roughness Measurement**

27. Surface Roughness Meter (SJ 301)

- **Microsystems Laboratory:** MEMS Sensors Scanning Tunneling Microscope, Self Build Kit, Atomic Force Microscope, Comsol and Intellisuite (Courtesy : NMDC), Sugar Toolbox and MATLAB (Institute Network)

- **Heat Transfer Laboratory:** Free convection heat transfer, Heat transfer through composite walls, Water cooling tower, Shell and tube heat exchanger, Measurement of thermal conductivity of metal rod, Measurement of thermal conductivity of solids, Computerized vapour, compression refrigeration test rig, Peristaltic pump model, Air conditioning test rig, Vapor compression refrigeration test rig, Heat pipe demonstrator, Heat transfer through extended surfaces, Measurement of emissivity of metal surfaces, Heat transfer through lagged pipe, Heat transfer through Forced convection, Computerized Air conditioning test rig,. Boiling heat transfer apparatus, Film and Drop wise condensation, Ice plant tutor,. Parallel flow heat exchanger,. Plate Heat exchanger,. Heat pump setup, Fluidized Bed system, Refrigerator, Natural convection, Critical Heat flux apparatus, Humidifier-Dehumidifier

- **Machine Dynamics and Vibration Laboratory:** Kinematics of Epicyclic Gear, Kinematics of Cam Mechanism, Kinematics of Gear Train, Kinematics of Slider Crank Mechanism, Spring Mass System, Transmissibility Apparatus, Free Vibration of beam, Experimental Modal Analysis.

- **CNC, Pneumatic and Electro Pneumatic Laboratory:** Trainer Lathe, Trainer Milling Machine, Electro Pneumatic Trainer Kit with Cylinders and Control valves

- **IC Engine Research Laboratory:** MMM Vertical 4- Stroke Diesel Engine,
- Textool 2- Stroke Vertical Diesel Engine, Textool 4- Stroke Vertical Diesel Engine, Valve and Port Timing Diagrams, (a) Compression Ratio of given IC Engines, (b) Morse Test, Computerized multi-cylinder MPFI Gasoline engine, Computerized Single cylinder DI Diesel Engine, Exhaust Gas Analyzer, Hydrogen fuelled SI Engine test rig, CRDI Diesel Engine test rig, Kirloskar Diesel Engine test rig.
- **Fuels Laboratory:** Boys gas Calorimeter set(Calorimeter+ gas flow meter (0-1000ml), Redwood viscometer No.1, Saybolt Viscometer, TAR Viscometer(Redwood viscometer No.2, Instech Calorimeter,Flash point tester(Close-up), Barometer with room temperature no.597,. Digital weighing machine (0-10grams), Saybolt Viscometer(old),. Bomb Calorimeter, Cleveland Flash & fire point apparatus, Weighing machine (0-2 kg), Flash and Fire point Tester
- **Theory of Machines Laboratory:** Spring mass system, Whirling shaft apparatus, Motorised gyroscope apparatus, Digital weighing machine (0-50kgs), Physical balance, Dead weight tester(0-35kg), Digital dead weight tester(0-60kg), Digital dead weight tester(0-250kg), Planimeter set, Thermo-Hygrograph H-10/100%, Computerised Emission test set up, Single stage spur gear, Single stage spur gear with intermediate, Two stage spur gear, Three stage spur gear, Three speed and reverse gear, Worm gear, Bevel gear, Rack and quadrant gear drive, Reversing gear, Epicyclic gear (sun & planet), Cycloidal motion, Internal rolling gear drive, Internal gear and pinion drive spur gear.
- **Automotive Electronics Laboratory:** IRIS CAR (Lab Car), with Breakout box, ECU, Injector Box, Wire harness, Communication Module, DC Power Supply, Function Generator, Oscilloscope, Cut Section Models.
- **Stress Analysis Laboratory**

Poloriscope, Strain measurement setup, Strain Indicator and Recorder.

- **Fracture and Fatigue Laboratory Fatigue setup**
- **Applied Solid Mechanics:**Workstation with GPU
- **Solidification simulation laboratory:** Quick Cast casting simulation software
- **Solar Energy Laboratory:** Solar Air Heater, Pyranometer And Pyrheliometer
- **Vehicle Dynamics Laboratory:** Damper Testing Machine, Quarter Car Suspension Test Rig

### DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES

1. Data Structures Lab
2. Digital Electronics Lab
3. Software Engineering Lab
4. Networking Lab
5. Database Management System Lab
6. Internet Technology Lab

### DEPARTMENT OF MINING ENGINEERING:-

**Rock Mechanics Laboratory:**Rock cutting machine, Compression testing machine, Schmidt hammer, Slake durability index apparatus, point load strength index apparatus, P-wave velocity apparatus, Losangele's machine, Other rock testing facilities.

**Drilling Laboratory:**Jack hammer drilling set-up, Air compressor, Modified lathe machine for rock cutting, horizontal and vertical coring machines.

**Blasting Laboratory:** Minimates, Minimate plus, High speed video camera, VOD monitor, Laser profile, WIPFRAG software.

**Mine Environmental Engineering Laboratory:**Water pollution monitoring kit, Respirable dust sampler, Manometer, Crossing point temperature, Digital Methanometer, CO detector, Psychomotor, Sound

level meter, Gas testing set up, Exhaust gas analyzer, Multi gas detector

**Mineral Processing Laboratory :** Jaw Crusher, Roller Crusher, Rod Mill, Ball Mill, Bond' Work Index Setup, Electro Magnetic Sieve Shaker, Riffle Sampler, Jigging Machine, Wilfly's Table, Automatic Mineral Separator, Spiral Classifier, Density Separator Hydro Cyclone, Davis Tube Tester, Electro Magnetic Drum Separator-Wet, Electro Magnetic Drum Separator- Dry, Froth Floatation Cell, Sampling / Crushing / Grinding - Integrated Unit, Turbo Mixer, Micro Mill, Vacuum Filtration Unit, Disc Mill, Pot Mill, Double Deck Vibratory Screen Model, Infrared Drier, Spiral Concentrate, Sieve Shaker

**Mine Surveying Laboratory:** Prismatic Compass, Surveyor Compass, Vernier Theodolite, Micro-Optic Theodolite, Dumpy level, Auto level, Digital level, Total station, Handheld GPS, DGPS.

**Mine Planning and Design Laboratory:** Surpac, Minex, Sirovision, Jk Sim blast softwares, rocscience softwares

**Mine Pollution Laboratory:** Water quality analyzer, High volume air sampler, Respirable dust sampler, Sound level meter, Opacity meter, Point sampler, Beta attenuation meter, Weather monitoring station

## **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

**Extractive Metallurgy Lab:** Crushers, Ball mill, Floatation cells, C&S analyzer, Sieve analyzer

**Testing of Materials Lab:** UTM, Instron, Wear testing machine, Hardness testers, NDT, Fatigue testing machine

**Physical Metallurgy Lab:** Metallography, Microhardness, Image Analyser, Dilatometer  
4. Ceramics & Polymer Lab: Ceramics & Polymer Lab

**Heat treatment Lab:** Heat treatment furnaces, Thermal cycle furnaces

**Metal Finishing Lab:** Plating facilities

**Foundry lab:** Induction furnace, Permeability meter

**Scanning Electron Microscope Lab:** Scanning Electron Microscope with EDAX

**Casting Research Lab:** Data logger, Hot stage microscope, Contact Angle Analyser, Image analyzer, Instron tensile tester, Quenchometer, Stereo microscope, 2D Surface Profiler, Solid Cast Software, Ultrasonicator, Ultrasound velocity meter, Thermal property analyser , DAGE bond tester

**Powder Metallurgy & Nano technology Lab:** Thermolyne High Temperature Furnace, Density Measurement Kit, Incubators - Ecogain veries, Hot Air Oven.

**Transmission Electron Microscope Lab:** Transmission electron microscope, GATAN ion milling unit.

**Metal Processing Lab:** Rolling mill, Precision cutting machines, 250 ton Hydraulic press

**Corrosion Lab:** Potentiostat and Impedance analyser

**Coating lab:** PVD facility, electron beam deposition set up. DC sputtering setup

**FTIR Lab:** FTIR Spectrometer, Four probe resistivity measurement system, USB Oscilloscope

**XRD Lab:** X-ray Diffractometer

**Ceramic & Thin Film Lab:** UV Ozone Cleaner, Ultrasonic Atomizer, Scratch Tester, Spi Coater, Probe Sonicator, Vacuum Oven, Screen Printer, Stretching Machine with Compressor, Four Probe & Two Probe, Glass Cutter, Fume Hood.

## DEPARTMENT OF PHYSICS

**UG Laboratory:** Experimental Kits (7 expt.s of 5 sets each)

**PG Laboratory:** Experimental Kits (8 expt.s of 2 sets each)

- **PG Laboratory II:** Experimental Kits (8 expt.s) Vacuum Coating Unit (2 no.s) Research Laboratories:

### Thin Film Laboratory:

- XRD
- Keithley Source Meter
- Keithley Multimeter
- Sputtering Unit
- Physical Deposition Unit
- Spray Pyrolysis Unit
- LCR Meter Vacuum coating system

### Optoelectronics Laboratory:-

- Optics Inc SD2000 spectrometer (UV vis spectra)
- Lux meter (Lutron)
- UVC Ozone Cleaning Unit
- Thermal evaporator
- Clean air flow bench
- OLED measurement system
- Keithley Sourcemeter (model 2400).
- Jobin Yvon spectrometer with a CCD based detector or a silicon photodiode (SM1PD2A Mounted UV Enhanced Silicon Photodiode, 200-1100 nm Cathode Grounded)
- Optical power meter (Ophir Optronics, model NOVA II with PD300-UVdetector)
- Keithley 6485 Picoammeter
- Tektronix DMM 4040 6-1/2 Digit Precision Multimeter
- Agilent 34972A LXI Data Acquisition/ Switch unit
- Multioutput DC power supply model LQ6324
- Agilent E4980A Precision LCR meter 20 Hz to 2 MHz
- Tektronix TDS 2002B Two channel Digital Storage Oscilloscope 60 MHz 1GS/s
- DH-3 UV-Vis-NIR Calibrated Light Source (Ocean Optics)
- RF Probe Station

- ISO BRUKER Precision Cutting Machine Q-switched Nd-YAG laser; Model GCR -170 from Spectra - Physics, USA.

### Crystal Growth Laboratory & Nano materials Laboratory:

- Solution growth system for crystal growth
- High temperature furnace
- Magnetron sputtering system
- Thin film coating unit
- Fume Head Vacuum deposition system-Thermal, DC, RF coating system.

### Material Processing Laboratory:

- CLEMEX Microhardness Tester
- Physical vapour deposition
- Polishing Machine
- Muffle furnace (Max Temp 1000°C)
- Low speed Diamond saw cutting Blade
- Abbe refractometer
- Analytical balance and Density kit
- High temperature furnace
- P H Meter
- U V Visible spectrometer
- Incubator
- Ultra sonicator
- Computer Interfaced Microhardness Tester Density kit

### Materials Research Laboratory:

- Electrochemical Workstation (Bio-Logic SP150) (2 Nos)
- Mbraun Glove Box
- Neware battery analyzer
- Kiethly 2 probe and 4 probe measurement systems
- Ocean Optics UV-Vis spectrometer
- DC Spectrum Analyzer
- Muffle Furnace
- Weighing Balance
- Battery Crimper set up
- Sputtering Unit
- Spin Coater
- Spray Pyrolysis unit
- Vacuum Oven
- Hot air oven
- Photoluminescence Spectrometer
- XRD



**Computational Physics Laboratory:**

- Dell server (power edge),  
Software: VASP, Mathematica, Gaussian and Maple  
Nonlinear dynamics and Biophysics:-  
Dell server power edge  
Functional Nanostructured Materials

**Research Laboratory (FNMRL):**

- Hot air oven
- Bench-Top Centrifuge
- Weighing Balance (0.1mg precision)
- Photocatalytic reaction chamber  
Ultrasonicator

**Low Dimensional Physics Lab:**

Sputtering, Impedance analyser, SMU, dc probe station, etc.

**SCHOOL OF MANAGEMENT**

**Computer laboratory:** SPSS, Palisade Decision Tools Suite, CMIE Prowess Database, CRISIL Research Reports.

**Itell Language Laboratory:** Software from Logitech Solutions Itell catering 500+1 user.

**New Computer Lab:** One Server with 30 Desktop Computers

**11.5 WORKSHOPS/MAJOR EQUIPMENTS IN THE DEPARTMENTS**

**DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS:-**

Lathe, Shearing machine, Drilling machine Grinding machine

**DEPARTMENT OF CIVIL ENGINEERING**

Departmental Mini Workshop:- A Lathe, A Shearing Machine, drilling machine, grinding machine

**DEPARTMENT OF MECHANICAL ENGINEERING**

**Machine Shop - I:** Center Lathe, Heavy duty Center Lathe Geared

head Center Lathe, Shaping machine, Universal Milling Machine, Heavy duty pillar type drilling machine, Light duty pillar type drilling machine, Pedestal grinding machine, Capstan Lathe.

**Machine Shop - II:** Surface Grinding Machine, Cylindrical Grinding Machine, Capstan Lathe, Horizontal Milling Machine with Vertical attachment, Broaching Machine, Light Duty Shaper, Heavy Duty Shaper, Slotting Machine, Planner, Cutter Grinding Machine, Heavy Cylindrical Grinding Machine, CNC Milling Centre, CNC Turning Centre, Heavy Duty Shearing Machine, Hydraulic Press, Heavy Duty Radial Drilling Machine, Hydraulic Radial Drilling Machine, Universal Milling Machine, Centre Lathe, Hydraulic Compressor. High speed drilling machine, Shearing Machine.

**Carpentry Shop:** Wood turning lathe, Circular saw, Carpentry bench vise and table

**Fitting Shop:** Bench vise with table, Surface plate, Anvil Power Tool, 5. Drilling set and accessories, Saber saw, Jig saw, Hot air gun, Tappers, Nibbler, Shearing machine, Grinding machine, Circular saw, Impact wrench, Battery operated drill, Blower, Eccentric sander, Router machine, Wood planner, Jig saw, Hammer drilling, Core cutter drilling machine

**Sheet Metal Shop:** Soldering table, Bench vise, Shearing machine

- **Welding laboratory:** Metal inert gas welding, Resistance spot welding, Tungsten inert gas welding
- **Foundry laboratory:** Sand sieving machine, Aluminium melting furnace

## MAJOR EQUIPMENTS IN THE DEPARTMENTS

### MECHANICAL ENGINEERING:

- Vacuum Arc Melting Furnace, Image Analyzer, Universal Testing Machine, Wire Electro Discharge Machine, Vickers Hardness Tester, Double headed Rolling Machine
- Electromagnetic shaker (100kgf, 50kgf, 25kgf), Horizontal slip table, VTS electro-dynamic shaker (25lbs), Gauss meter, Electro magnets (1.5 Tesla), Impact hammer, Single and tri-axial accelerometers, Data acquisition system(NI, HBM ), Microphone and SLM, MicroEpsilon Laser displacement pickups, ADAMS, NASTRAN, PATRON, MARC, DITRON, ANSYS, Devitron, Labview
- Lego Robotic Kit, Firebird, Basic Electronic Components, DC Motors, Connecting Pins, Wires, LEDs Berg Strip, and Bread Board, Quadcopter kit, Wall Following Robot
- **A.Linear Measurements:** Vernier Caliper, Vernier Depth Gauge, Vernier Height Gauge
- **B.Micrometer:** External Micrometer, Internal Micrometer, Jaw Type Inside Micrometer, Caliper Type Inside Micrometer, Depth Micrometer, Bench Micrometer, Digital Micrometer, Telescopic Gauge
- **C.Measurement Using Slip Gauge:** Calibration of Micrometer, Vernier Caliper, Calibration of Height Gauge, Snapgauge, Ring Gauge and Plug Gauge, Measurement of Mean Distance between Surface and Spacing between Holes, Measurement of Dovetail Angle and Checking the Taper Angle of Taper Plug Gauge, Checking An Angle Plate, Study On Limit And Position Gauges
- **D.Linear and Angle Measurement:** Combination Set.
- **E.Angle Measurement:** Universal Bevel Protractor, Sine Bar
- **F. Flatness And Straightness Measurement:** Clinometer
- **G. Screw Thread Measurement:** Screw Pitch Gauge, Screw Thread Micrometer, Effective Diameter Measurement Using Two Wire And Three Wire Method.
- **H. Gear Tooth Measurement:** Vernier Gear Tooth Caliper, Tooth Span Micrometer
- **I. Study On Opto-Mechanical Instruments:** Tool Makers Microscope, Measurement Using Comparator
- **J.Surface Roughness Measurement:** Surface Roughness Meter (SJ 301)
- Micro heat pipe test rig, Vapour pressure determination test rig, Weather simulation chamber & Window air conditioner test rig, Thermoelectric refrigeration test rig, 2 Stage VCR test rig with intercooler, Condenser pressure variation VCR test rig, Vortex tube refrigeration test rig, Air engine test rig
- MEMS Sensors, Scanning Tunneling Microscope, Self Build Kit, Atomic Force Microscope, Comsol and Intellisuite (Courtesy : NMDC), Sugar Toolbox and MATLAB (Institute Network)
- Free convection heat transfer, Heat transfer through composite walls, Water cooling tower, Shell and tube heat exchanger, Measurement of thermal conductivity of metal rod, Measurement of thermal conductivity of solids, Computerized vapour compression refrigeration test rig, Peristaltic pump model, Air conditioning test rig, Vapor compression refrigeration test rig, Heat pipe demonstrator, Heat transfer through extended surfaces, Measurement of emissivity of metal surfaces, Heat transfer through lagged pipe, Heat transfer through Forced convection, Computerized Air conditioning test rig, Boiling heat transfer apparatus, Film and Drop wise condensation, Ice plant tutor, Parallel flow heat exchanger, Plate Heat exchanger, Heat pump setup, Fluidized Bed system, Refrigerator, Natural convection, Critical Heat flux apparatus
- Kinematics of Epicyclic Gear, Kinematics of Cam Mechanism, Kinematics of Gear Train, Kinematics of Slider Crank

- Mechanism, Spring Mass System, Transmissibility Apparatus, Free Vibration of beam, Experimental Modal Analysis
- Trainer Lathe, Trainer Milling Machine, Electro Pneumatic Trainer Kit with Cylinders and Control valves
  - MMM Vertical 4- Stroke Diesel Engine, Textool 2- Stroke Vertical Diesel Engine, Textool 4- Stroke Vertical Diesel Engine, Valve and Port Timing Diagrams, Compression Ratio of given IC Engines (b) Morse Test, Computerized multi-cylinder MPFI Gasoline engine, Computerized Single cylinder DI Diesel Engine, Exhaust Gas Analyzer, Hydrogen fuelled SI Engine test rig, CRDI Diesel Engine test rig, Kirloskar Diesel Engine test rig
  - Boys gas Calorimeter set (Calorimeter + gas flow meter (0-1000ml), Saybolt Viscometer, Redwood viscometer, TAR Viscometer (Redwood viscometer), Instech Calorimeter, Flash point tester (Close-up), Barometer with room, temperature no.597, Digital weighing machine (0-10grams), Saybolt Viscometer (old), Bomb Calorimeter, Cleveland Flash & fire point apparatus, Weighing machine (0-2 kg)
  - Spring mass system, Whirling shaft apparatus, Motorised gyroscope apparatus, Digital weighing machine (0-50kgs), Physical balance, Dead weight tester (0-35kg), Digital dead weight tester (0-60kg), Digital dead weight tester (0-250kg), Planimeter set, Thermo-Hygrograph H-10/100%, Computerised Emission test set up, Single stage spur gear, Single stage spur gear with intermediate, Two stage spur gear, Three stage spur gear, Three speed and reverse gear, Worm gear, Bevel gear, Rack and quadrant gear drive, Reversing gear, picyclic gear (sun & planet), Cycloidal motion, Internal rolling gear drive, Internal gear and pinion drive spur gear
  - IRIS CAR (Lab Car), with Breakout box, ECU, Injector Box, Wire harness, Communication Module, DC Power Supply, Function Generator, Oscilloscope, Cut Section Models
  - Center Lathe, Heavy duty Center Lathe, Geared head Center Lathe, Shaping machine, Universal Milling Machine, Heavy duty pillar type drilling machine, Light duty pillar type drilling machine, Pedestal grinding machine, Capstan Lathe
  - Surface Grinding Machine, Cylindrical Grinding Machine, Capstan Lathe, Horizontal Milling Machine with Vertical attachment, Broaching Machine, Light Duty Shaper, Heavy Duty Shaper, Slotting Machine, Planner, Cutter, Grinding Machine, Heavy Cylindrical Grinding Machine, CNC Milling Centre, CNC Turning Centre, Heavy Duty Shearing Machine, Hydraulic Press, Heavy Duty Radial Drilling Machine, Hydraulic Radial Drilling Machine, Universal Milling Machine, Centre Lathe, Hydraulic Compressor
  - Wood turning lathe, Circular saw, Carpentry bench vise and table
  - Bench vise with table, Surface plate, Anvil, Power Tool, Drilling set and accessories, Saber saw, Jig saw, Hot air gun, Tappers, Nibbler, Shearing machine, Grinding machine, Circular saw, Impact wrench, Battery operated drill, Blower, Eccentric sander, Router machine, Wood planner, Jig saw, Hammer drilling, Core cutter drilling machine
  - Soldering table, Bench vise, Shearing machine
  - Subsonic wind tunnel
  - Experimental Modal Analysis, Tuned Impulse Hammer, Modal Analysis Software, Forced Vibration Analysis, Minishaker with controller
  - Moulding facility
  - Pin on Disc Tribometer, Metallurgical Sample Saw, High Temperature Tubular furnace, Ball mill, Disc Polishing Machine, Microscope, sigma Z blade mixer
  - Free and forced vibration setup with controller, Impact hammer, Tri-axial accelerometer, Electrodynamic

shaker, Analyzer, closed loop controller, force sensor, impedance head

- Low speed compressor cascade test facility, Low speed turbine cascade test facility, Centrifugal blower test rig
- Desiccant analysis test rig
- 3-D Printing, Material Extrusion, Fused Deposition Modeling based 3-D Printer, Single Screw Extruder

### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

#### **MAJOR EQUIPMENT IN THE DEPARTMENT**

- HP Desktop Computer Systems - Core I7, 8GB RAM, 500GB Hard disk
- HP Prodesk 600 G3MT Desktop Computers – Intel Core i5, 8GB RAM, 1TB Hard disk
- IBM E Server with accessories
- Dell High End Server T610
- Dell power Edge Server R420
- Dell power Edge Server R720
- Dell power edge server T630
- Dell Server PE 730XD
- Dell Server (R740)
- C-Boston Sys- 5038K-j-KNL Development Workstation
- Dell R7 power edge R7404 rack server
- Dell High End Workstation (DT Precision 5820)
- Dell Precision 5820 Workstation
- Lenovo workstation(P700)
- Lenovo think station S30 workstation with 24" LCD monitor  
Lenovo Think center S-20 & D 20 workstation.

### **DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**

#### **MAJOR EQUIPMENTS:-**

1. Experimental Kits for Control System Laboratory DC motor speed control trainer kit Make: JTech Instruments, J-Tech Instruments CHENNAI, DOP:

16.5.2019, Rs. 3, 25,550.00, IRG Capital Fund, Issued to Dr. Debashisha Jena.

2. Frequency Response Analyzer, Scientific Mes-Technik Pvt. Ltd., DOP: 27.5.2019, Rs. 8, 55,750.00, IRG Capital Fund, Issued to Dr. Debashisha Jena.
3. Programmable DC Power Supply, Make: CROMH, SI.No: 62050EC00234, M/S MEL Systems & Services Ltd., DOP: 23.9.2019, Rs. 7, 24,500.00, Tequip-III, Issued to Dr.B. VenkatesaPerumal.
4. Power Analyzer with Accessories & Desk top Computer, Yokogawa India Ltd., DOP: 26.9.2019, Rs. 26, 77,500.00, Tequip-III, Issued to Dr.B. VenkatesaPerumal.
5. Four Channel DSO TPS2024B Digital Storage Oscilloscope, M/S Convergent Technologies India Ltd, DOP: 14.10.2019, Rs. 3, 43,245.00, IRG Capital Fund, Issued to Dr P Parthiban.
6. Programmable DC Power Supply, M/S MEL Systems & Services Ltd., DOP: 24.12.2019, Rs. 6, 30,000.00, IRG Capital Fund, Issued to Dr. A Karthikeyan.
7. Furniture set up for the labs.

### **DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES**

<b>Sl. No</b>	<b>Name of the Article Equipment</b>	<b>Qty</b>
1	Aficio 3035 Machine	01
2	HP 1020 Laser Printer	02
3	HP P1007 LaserJet Printer	02
4	HP Color LaserJet CP 1515NSNCNAJ85z01X	01
5	Lexmark T 364dn	01
6	EB – 1880 LCD projector	04
7	Digital trainer kit	37
8	1.5 Ton Llyod Make 5 Star Split Type Air Conditioner (Lab & Dept.)	08
9	Wi –fi Access point	03
10	Digital Camera Nikon D520024 1MP Digital SLR Camera (Black)	01

11	Epson L220 Inkjet All in one Printer	01
12	CCTV unit and accessories (Camera)(Lab & Dept.)	06
13	LED TV with Display Board Compatibility Type – EQP (dept.)	02
14	VESTAR 1.5 TON 5* VASYB185A BGT V-GUARD STABILIZER	08
15	Laptop Latitude 3490 BTX CDell-N001L, Dell Sl.No 9G0H2L2 & H9DH2L2	02
16	Hp color laser jet CM1312MFP	01
17	D-Link (Lab and Department)	09
18	HP PRO land DL580GS Server	02
19	HP PRO land DL570GH Server	02

20	Server, 859040-375ML 350G9	01
21	I Omega 1*4 – 200D NAS Server 4TB	01
22	VY707AV Pro 3090 3GB/500 GB PC	65
23	Desktop Computers HPQV994AV ELITE 8300 MT	179
24	Dell Precision T1700 Workstation	06
25	Dell Optiplex 9010 DT with 18.5" Monitor	04
26	Desktop Computer HPC8N27AV Elite Desk	01
27	C-Dell 5810 XCTO-Dell Precision Tower 5810×CTO Base.	04
28	INTEX AC (dept. & Lab)	11
29	Dell 7920 Precision Tower XCTO Workstation	02

## Equipments under project

Sl. No.	Name of the Equipment/facility	Qty	Remarks
1	HP Pavilion, 15-AU008TXLaptop, Intel Core i-7-6500U/16GBRAM/1TB HDD/4GB Graphics	1	Project Title:Project title: <i>Generalized framework for restoring medical and satellite images corrupted by data correlated noise</i> Investigator: Jidesh P.
2	HP Z238T Desktop, Core i7-6700/8GB DDRAM/1TB HDD	1	
3	HP Pavilion, Power-15 , Intel Core-i7-7700HQ/16GBRAM/1TB HDD/4GB Graphics	1	

## DEPARTMENT OF CHEMICAL ENGINEERING

### MAJOR EQUIPMENTS IN THE DEPARTMENT

1. Gas Chromatograph
2. Refrigerated Centrifuge
3. Quartz Immersion well Reactor
4. Electro Spinning equipment
5. Bench Top Fermentor
6. Particle Size Analyser
7. Freeze Dryer
8. Gel Documentation
9. Thermogravimetric Analyser
10. HPLC
11. LC –MS
12. ICP –OES
13. FPLC
14. Fermenter
15. Real time Polymerize chain reaction machine
16. biosafety cabinet level II

## DEPARTMENT OF MINING ENGINEERING

### Major Equipments:-

1. Differential Global Positioning System (DGPS)
2. Total Station
3. Triaxial accelerometer SV 38 V along with a data logger SV106 (Manufacture: Svantech)
4. Permanent License for Virtual Nanolab with Quantum wish Toolkit for Nanotechnology Simulation (Software) (Manufacture: M/s. Integrated Microsystems)
5. Compression testing machine
6. Ground vibration monitors

## DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

### Name of the Equipment

Dynamic Control Angle Analyzer  
Form Talysurf Intra with Ultra Software with accessories  
Digital Image Analysis System Camera Adopter  
Heating Stage Temperature upto 1500°C (Furnace)  
Jeol Model SEM  
Tensile Testing Machine fully

Computerized  
Melt Flow Indexer  
Dage 4000 Plus Bond Tester & Image Capture System  
Joel High Resolution Transmission Electron Microscope (TEM)  
EDS System for Jeol TEM  
Bottom Mount Camera (TEM)  
Jasco FTIR Spectrometer  
Portable Quenchant Test System with Quench Probe & Thermocouple Heating Furnace  
Universal Testing Machine of 30 KN Capacity with Accessories  
Salt Spray Bath  
Shimadzu Micro Vickers Hardness Tester  
Magnetic Sputtering PVD Unit  
Scratch Hardness Tester Linear Tester  
Low Temperature Ion Milling System with Accessories for TEM  
Tensile Tester with Accessories  
SP-150 Potentiostat Galvanostat  
Chassis along with accessories  
Trinocular Reflected Light Microscope with Digital Camera  
Differential Scanning Calorimeter

### 11.6 HOSPITAL, POST OFFICE, SHOPPING CENTRE

**Hospital:** One Health Care Center with the services of regular doctors and visiting expert doctors is available. Medical Shop is also available in the Health Care Center.

**Post Office:** Post Office is available within the Campus.

**Banks:** Two banks (SBI and Canara Bank) are functioning within the Campus. Four ATMs (2 of SBI and 2 of Canara bank) are available at different locations within the campus.

**Shopping Centers:** Two Shopping Complexes are available within the campus accommodating about 15 shopping rooms which includes Saloon, Beauty Parlors, Printing and Xerox, Vegetable outlet, Bakery, Tailoring, Cloth Shop, Milk parlors, food outlets etc.

**Physical education & Facilities:** Full-fledged Gymnasium facility, sports grounds for out-door games, Sports complex for in-door games are available within the campus.

### **11.7 PHYSICAL EDUCATION FACILITIES FACILITIES/AMENITIES:**

Physical Education: Department of Physical Education and Sports of this Institute has got excellent Sports infrastructures and facilities provided here is considered as one of the best among all NITs as well as among other Institutions and Universities of this State. Standard, well maintained play fields for all major games like one 400Mts. Track for Athletics, One 75 Yards Boundary Cricket field with 3 playing pitches, One 70 yards boundary Cricket field with a matting wicket, 2 standard size Football fields, 2 Hockey fields with 2 pairs of goalposts with boards, 2 concrete Basketball courts with FG boards and Flood Light facilities, 1 Basketball concrete court at Girls Hostel with flood lights, 2 Volleyball courts with flood light facility, 4 Tennis courts, 2 Ball Badminton, 2 Throwball, 2 Kho-Kho, 2 Kabaddi, 2 Tennikoit courts are available for use. Provision is also there to put Two Handball court with goal posts and one Baseball field with all bases and other required amenities. An indoor hall of cement flooring with 3 Badminton courts and 4 TT tables with proper Lighting system, kept open for 16 hours a day, all 365 days for students use. Weight training hall with Multi Gym, Mini Gym, Individual stations for all sorts of exercises, Weight Lifting and Power Lifting Barbell sets, Fitness equipments like Jogger Treadmills, steppers, Rowing Machines, Bicycle Ergometers, Peck Decks and Abdominal shapers are open for use of everyone even during early mornings and late evenings. Above all these, like a jewel on the Crown an international standard Swimming Pool of 50 x 21 Mts., 8 lane with anti wave lane markers, Olympic

type take off boards and diving facilities with 3 Platforms of 1, 3 and 5 meters height are ready for use in this Institute. New Sports complex is having a multipurpose hall with wooden flooring accommodating 3 Badminton courts or one Volleyball court, one multipurpose hall with synthetic flooring can accommodate one Badminton court or one Volleyball court or 2 Kabaddi Courts, one indoor games hall used as Table tennis hall with 8 TT Tables, one indoor games hall to be used for Chess, Carom, Bridge like games, another hall is with 3 squash courts(Construction of playing fiber glass walls pending), another hall meant for Weight training hall is under the process of furnishing with sophisticated fitness equipments. 75% of equipments are ready and remaining 25% may be received shortly for use. Sports Complex also houses space for playing kabaddi on already procured synthetic mat, 2 Indoor Cricket pitches with bowling machine, separate dressing rooms for different sports, Store rooms, Office rooms, Snooker and Billiards room with Tables, 2 stages of 10mts x 2mts size facing 2 large grounds for functions of any kind and capacity to accommodate thousands of crowd, and enough number of wash rooms.

### **GAMES & SPORTS FACILITIES:**

All students, staffs and residents in and around the campus are freely permitted to utilize all Play ground and Gym facilities available in the Institute. Admission to Swimming Pool is free to all students of this Institute. Staffs, residents of the Campus, family members of the staff and staff + students of the campus schools are charged with nominal fee to use the Pool. High quality and standard Sports/Games equipments/articles are provided to students and staffs of this Institute who use these play field facilities, except some personal articles like Tennis, Shuttle Badminton and TT Rackets. Opportunity to all students, staffs and other residents of the campus have been provided to

participate in different level of competitive Sports and Games, by organizing Inter-Class, Inter-Branch, Inter Year and Campus open tournaments(Competitions) in all most all games for both sections. Girls Block Hostel has been provided with a Basketball, Volleyball, Tennikoit, Kho-Kho and Badminton courts, 2 TT Tables, 4 Carom Boards and Gym with some fitness equipments including a Mini Gym. Arrangements have been made to provide TT Tables, Carrom Boards and a set of Cricket stumps and Bats to each Blocks of Boys Hostels. Volleyball, Throw ball and Badminton courts have been laid near Staff Recreation Club for the use of staff members. TT, carom and Chess like indoor games with required sports articles were also provided for staff club.

All those who get selected to represent the Institution and participate in any of the tournament will be provided with Institute Uniforms (Colors) and all expenditures during participation of that team will be met by the Institute. In addition, Football and Hockey team members will be provided with Stockings and Shin Guards, Cricket team members will be provided with white Pants, Shirts and Caps. All students and Officials who participate in Inter NIT or University tournaments will be provided with Institute Track Suits. All students who represent this Institution in Sports and Games will be provided with Shoe subsidy of Rs.800-00 per year.

### **11.8 STAFF QUARTERS**

245 numbers of Faculty Quarters (which includes 48 dwelling units in Type V and Type VI Apartments) and 176 numbers of Non –faculty staff quarters (which includes 56 dwelling units in Type – III and Type – VI apartments) are available in the campus.



## 12. STUDENT ACTIVITIES

### STUDENTS UNION

Election to the Students' Union of the Institute was held on 4.4.2019 and the following office bearers were elected:

Nihal Shetty – President  
Madhurya M S B - Vice President  
Nikhil Raj Nune – General Secretary

### GAMES AND SPORTS

#### STUDENTS ACTIVITIES:

All students, staffs and community in and around the campus are free to use the playing, training and coaching facilities available in the DPES of this Institute. Staff of the DPES are ready to provide instruction, teaching, coaching and training facilities to all interested peoples in and around the campus. This year students teams in the following games were selected by conducting selection tournament/trials and these selected teams have been trained, coached and well prepared to participate in different level tournaments. 1) Athletics, 2) Aquatics, 3) Badminton, 4) Basketball, 5) Carom, 6) Chess, 7) Cricket, 8) Football, 9) Handball, 10) Hockey, 11) Kabaddi, 12) Kho-Kho, 13) Table Tennis 14) Tennis, 15) Volleyball and 16) Weight Lifting, Power Lifting and Body building, in Boys section, 1) Athletics, 2) Aquatics, 3) Badminton, 4) Basketball 5) Handball, 6) Kabaddi, 7) Kho-Kho, 8) Tennis, 9) Table Tennis, 10) Throwball, and 11) Volleyball, in girls section.

Special coaching camps are being held by engaging qualified coaches in Athletics, Aquatics, Basketball, Football, Handball, Hockey, Kabaddi, Kho-Kho and Volleyball. For the students of our campus and neighboring schools, teaching, training and coaching classes were conducted in Athletics, Tennis, TT, Shuttle Badminton, Football, Hockey, Kho-

Kho, Handball and Volleyball. To impart knowledge of swimming and water survival skills among each and every one “Learn to Swim” coaching camps of 21 days duration were conducted by PED in the Institute Swimming Pool. Staff and Students of our Institution, Campus Schools and neighboring Schools and Colleges are making good use of these facilities. Since it is mandatory for students to participate in Sports and Games, arrangement is made to accommodate as many students as possible in different play fields. Instruction and proper guidance has been provided for all to enhance participation in different sports, games and Physical Fitness activities systematically and effectively. All students are insisted to participate in any of the fitness activities of their choice regularly to maintain their Physical Fitness level. Every student is encouraged to spend at least half an hour a day in the field playing any games of their choice as recreation or other activities to improve their fitness level. All students of this Institute are insisted to become member of the Swimming pool and gain the knowledge of water survival skill or swimming. “Learn to swim” as well as “advanced swimming” coaching camps are conducted to cater the needs of all students and campus people. Competitions are being conducted from the lowest level starting from, their own class/Section, interclass, inter Branch, inter year and inter collegiate level. Intra-Mural competitions in individual sports like Athletics and Aquatics were conducted by DPES and Medals, Certificates and prize money were being awarded to the winners of these competitions as a motivation. Students were allowed to participate in Taluk, District, state and National level open as well as inter collegiate competitions organized by other colleges, District Associations and other Government organizations. Students are permitted to participate in State and national level sports

competitions organized by AIU and other neighboring institutions. All of our Institute teams are permitted to participate in All India Inter NIT Sports organized at other NITs also. Institute is regularly organizing All India Inter NIT Sports every year in some or other games. This year All India Inter NIT Sports in Basketball(Men & Women), Kabaddi (Men & Women) and Swimming (Men & Women) were being organized at our Institute during 17<sup>th</sup> to 19<sup>th</sup> January, 2020. More than 800 students from other NITs (24 Men and 18 Women Basketball teams, 22 Men and 16 Women Kabaddi teams, & 8 Swimming Men and Women teams) participated in this Inter NIT sports. Participants were being provided with free Boarding and Lodging facilities. Diamond Jubilee NITK Cup Inter collegiate Badminton TT and Chess tournament is conducted during 04<sup>th</sup> to 06<sup>th</sup> October, 2019 and 14 colleges from Dakshina Kannada and Udupi district participated in this tournament.

During "INCIDENT" National level cultural Festival, DPES organized "Slam Dunk" South Zone Inter Collegiate Basketball, Spike Fest Inter Collegiate Volleyball and "Spin Shot" Inter Collegiate Throwball (Women) Tournament inviting teams from all over India.

Recreation committee (Phoenix) is conducting inter branch, inter year and inter class competitions in many games utilizing all facilities available in the DPES. Collesium is an intra mural sports competitions conducted in the even semester this year also. Intra-Mural selection Competitions in Aquatics is conducted during the month of September, 2019 and Athletics in January, 2020 attracted large number of student participants. Prize money, Medals and Certificates were distributed to 3 place winners of each event. Institute Aquatics and Athletics teams were selected on the basis of these results.

An Inter year competitions for students has been conducted in the even

semester and by enthusiastic huge participation, students responded overwhelmingly and spontaneously.

PG premier League Cricket and PG Sports in some games will be organized exclusively for PG students and Staff. All MTech, MCA, MBA, and MSc students participate in this sports. Faculty and staff members are made part of the participating teams. Certificates, Medals, and Trophies are awarded to winners.

Researcher's Premier League Cricket tournament and sports (Team and individual competitions in many sports) will be organized since 4 years in which all most every research scholars of our Institute participate either in sports or organization of this sports events. This is the type of sporting events conducted to research scholars, only at this Institute among all NITs. Faculty and departmental staff also participate in these competitions. Certificates, Medals and Trophies are awarded to winners.

## 13. RESEARCH, DEVELOPMENT & CONSULTANCY PROJECTS

### 13.1 R & D PROJECTS (ONGOING & SANCTIONED)

#### DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS

1. Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (FIST) Program – 2014 (Strengthening PG teaching and research – Spectro radiometer and Random wave generator with accessories), Sponsored by : DST, Govt. of India, Investigator(s): Subba Rao , G.S.Dwarakish, A. Mahesha, Amba Shetty , H.Ramesh, Manu & Pruthviraj U., Rs. 209.0 Lakhs, 2015-20
2. EUSOP (Evaluation of Uncertainties affecting estimations of Soil Properties by VNIR/SWIR remote sensing data) sponsored by French National Centre for Scientific Research (CNRS) PI : Cecile Gomez , Scientist IRD, France CoPIs : Dharumarajan scientist NBSSLUP, Surendra Kumar Singh , NBSSLUP and Amba Shetty NITK Amount 12 200 Euros 2019-2020
3. Coupled dynamic analysis associated with the response and design loads of offshore floating wind turbine, Sponsored by : SERB, DST, Govt. of India, Investigator: Debabrata Karmakar, 25.0 Lakhs, 2016-19
4. Hydrodynamic performance characteristics of Caisson type breakwater, Sponsored by : Ministry of Earth Sciences, Investigator(s) :Manu (PI), Subba Rao (Co-PI) & A.Vittal Hegde(Co-PI), 78.84 Lakhs, 2016-21
5. Optimal Damping of porous screen in Tuned Liquid Damper-Structure interaction, Sponsored by : SERB, DST, Govt. of India, Investigator :T. Nasar, 32.67 Lakhs, 2016-19
6. Climate change - Impact on West coast river basins, Sponsored by : Ministry of Water Resources Investigator(s) : A.Mahesha, Amba Shetty, Varija & H. Ramesh, 65.40 Lakhs, 2016-19
7. Performance of combined wave and wind energy platform, (Principal Investigator), India-Portugal Bilateral Technological Cooperation, Department of Science and Technology (DST), New Delhi, India, PI: Dr. Debabrata Karmakar , 13.5 Lakhs, 2017-2020.
8. Conjunctive use of surface water and groundwater management: A new framework for strategic decision making, Sponsored by : DST, EMR, Investigator : H.Ramesh, 45.0 Lakhs, 2017-20
9. Effect of Frictional Heat on Coefficient of Friction during Full Slip of Al6061 T6 Hertzian Contacts, Sponsored by : Science & Engineering Research Board (SERB), DST, Investigator : Vadivuchezhian K, 27.0 Lakhs, 2018-20
10. Impounding of river flood water along Dakshina Kannada Coast : A sustainable strategy for water resource development, SERB-DST (IMPRINT), Ramesh H. (PI), T.Nasar (CoPI), 2019-22, 111.85 Lakhs
11. Submarine groundwater discharge (SGD) along Karnataka coast, NCESS/ Ministry of Earth Sciences. Govt. of India, Ramesh H. (PI), A. Mahesha (CoPI), 2019-20, 15.00 Lakhs
12. Open source GIS for remote health monitoring, NITK-KREC Endowment Fund, Pruthviraj U., 2019-21, 3.29 Lakhs
13. Design and development of all terrain vehicle with trailer for the conveyance of unmanned marine surface vehicle, NITK-KREC Endowment Fund, Pruthviraj U., 2019-21, 9.01 Lakhs
14. Design and development of brain computer interface for the control of prosthetic arm for persons with disability, NITK-KREC Endowment Fund, Pruthviraj U., 2019-21, 12.10 Lakhs
15. Environmental innocuous pile head breakwater for the Mitigation of coastal erosion Indian, SPARC, GoI, Pruthviraj U (PI), Kiran G. Shirlal (CoPI), Hans Bihs , NTNU Norway (IPI), Øivind

- Asgeir Arntsen, NTNU Norway (ICoPI), 2019-21, 48.29 Lakhs
16. Design and Development of Lightweight Portable Oil Skimmer, MRPL, Mangaluru, Pruthviraj U. (PI), K C Gangadharan, Mechanical Dept. (CoPI), 2019-21, 44.15 Lakhs
  17. Design analysis and development of combined wave and wind energy multi-use platform, SERB, DST, New Delhi, PI: Dr. Debabrata Karmakar, 43.30 Lakh, 2019-21
  18. Renewable energies from Ocean: Adoptable and Sustainable technologies for Indian condition, SPARC, GoI, Balaji Ramakrishnan (PI)- IIT Bombay, Prof. Prasad K Bhaskaran (Co-PI)- IIT Kharagpur, Prof. Basavaraj Veeranna Mudgal (Co-PI) - Anna University, Dr. Nasar Thuvanismail (Co-PI) - National Institute of Technology Surathkal, Prof. Vengatesan Venugopal (IPI) -University of Edinburgh, Prof. David Mark Ingram (ICo-PI) - University of Edinburgh, Dr. Jonathan Shek (ICo-PI)- University of Edinburgh, Dr. Harry van der Weijde (ICo-PI) - University of Edinburgh, 2019-21, Amount : 78.08 Lakhs
- Lakhs.(Period 07/03/2019 to 31/03/2022)
4. Project...Impact of maternal diabetes on pre implantation embryo development- Non invasive approach to assess embryo quality using oxygen consumption, SERB – Dr. Keyur Raval, amount 50.4 lacs, 01-04-2018 to 31-03-2021
  5. In Vitro mass culture of Steinernema Jeffeyense, biocontrol agent of key insect pests sponsored by International Bilateral cooperation Division, DST, Govt. of India. Principal Investigator: Dr.Prasanna D. Belur, at the cost of 28.16 lakhs (7/12/2016 to 6.11.2019)
  6. Development of sustainable technology to produce oxalate depleted starch from Taro corms sponsored by ASTDF Secretariat, SERB, Govt. of India. Principal Investigator: Dr. Prasanna D. Belur, at the cost of 28.16 lakhs (1/2/2018 to 31.1.2021)
  7. Selective Extraction and purification of Commercially Valuable Pigment melanin from Cephalopod ink and its industrial effluent' Sponsored by SERB, Govt. of India. Principal investigator: Dr. I. Regupathi & Dr. Prasanna B.D., Chemical Engg.at the cost of Rs. 49,78,800. (Period 26/03/2019 to 25/03/2022).

### **DEPARTMENT CHEMICAL ENGINEERING**

1. ASEAN-India collaborative research project (AISTDF Sanction Order No: IMRC/AISTDF/R&D/P-7/2017) titled "Synthesis of  $\beta$ -cyclodextrin nickel ferrite nanoparticles for the removal of pharmaceutical compounds from aqueous systems". (35.7 Lakhs) – Dr. Raj Mohan Balakrishnan(2018-2020)
2. Development of Novel SOFC Electrolyte Materials with enhanced Ionic Conductivity-Sponsored by DST SERB India Principal investigator: Dr. Hari Prasad Dasari ; Chemical Engg.at the cost of Rs. 51.13 Lakhs. (Period 30/03 /2017 to 31/03/2020)
3. Development and Demonstration of solid oxide electrolysis cell technology for co electrolysis of CO<sub>2</sub> and H<sub>2</sub>O for the production of syngas sponsored by SERB - IMPRINT II India. Principal investigator: Dr. Hari Prasad Dasari: Chemical Engg at the cost of 95.45

### **DEPARTMENT OF CIVIL ENGINEERING**

1. FIST (2014-2019) Fund for Improvement of S&T Infrastructure. Coordinator: Dr.Suresha S.N. INR 110.8 crores. (2014 - 2019)
2. Small Scale and Sustainable Household Wastewater Recycling S3HWR, IMPRINT (2017-2019)- Multi-Institute project, Co-Investigator: Dr. Arun Kumar Thalla (2017-19)
3. Socio-Economic and Institutional Barriers of Climate Change Adaptation Sponsored by ICSSR under IMPRESS. Principal Investigator: Dr. Adani Azhoni (2019 - 2021)
4. Socio-Economic and Environmental Trade-offs in Managing the Land River

Interface Sponsored by Department of Biotechnology, Govt. of India under TaSE. Principal Investigator: Dr. Adani Azhoni (2019 - 2021)

5. Development of Effluent Treatment Techniques for Cashew Nut Shell Liquid Effluent, Phenalkamine Condensate and Development of Method for Stabilising Colour of Cashewnut Shell Liquid, Private Industry, Principal Investigator: Dr. Basavaraju Manu (2019-2020)

### **DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

1. Information Security Education and awareness Phase-II-sponsored by DIT MCIT, PI: Dr. Alwyn Roshan Pais Co-PI: Dr. P. Santhi Thilagam, at the cost of 2.7 crore(Approx), 2015-2020
2. An automatic system for identification of phonological processes in children of age two and half to six and half years - sponsored by DST, PI: Dr. Shashidhar G. Koolagudi, Co-PI: Prof. Venkat Raja at the cost of 30.00 Lakhs, 2016-2019
3. Development of Tool for Detecting of Application Layer Distributed Denial of Service Attacks on Web Applications--sponsored by MEITY Government of India, PI: Dr. P. Santhi Thilagam at the cost of 29.78 Lakhs, 2017-2020
4. Characterization and identification of dialects in Kannada Language--sponsored by DST-Science & Engineering Research Board(SERB) PI: Dr. Shashidhar G. Koolagudi at the cost of 35 Lakhs, 2017-2020
5. CP-ABE Scheme with Decryption Keys of Constant Size using ECC with Expensive Threshold Access – sponsored by DST. PI: Alwyn Roshan Pais, Co-PI(s): Dr. P. Santhi Thilagam & Mr. Mahendra Pratap Singh at the cost of 31.12 Lakhs , 2018-2021
6. Automatic detection and quantification of focal cortical dysplasia regions from magnetic resonance brain images using machine Learning techniques sponsored by DST (CSRI). PI: Dr. Jeny Rajan at the cost of 33.09 Lakhs, 2018-2021
7. Quantitative Understanding of Energy in NFV Frameworks (QUEEN)

sponsored by Intel Technology India Pvt. Ltd. PI: Dr. Mohit P Tahiliani , Co-PI(s): Dr. Basavaraj Talawar at the cost of 48 Lakhs, 2018-2020

8. Multi Graph based Anomaly Detection Model for Social Network Analysis using Machine Learning sponsored by DST , PI: Dr. M.Venkatesan, at the cost 19.72 Lakhs, 2019-2022
9. CAMP 81, Prototype of a reliable ICN Router using Non-Volatile Memory sponsored by NITK Alumni' 81 batch, PI: Dr. Mohit P Tahiliani, CO-PI: Dr. Basavaraj Talawar at the cost of 1 Lakh, 2019-2021
10. Design and Implementation of Multi-Attribute Void-Aware Routing Algorithm for Software-Defined Underwater Acoustic Modems sponsored by SERB, PI: Dr. Beerappa Rama Chandavarkar at the cost of 44 Lakhs, 2019- 2022
11. Speaker Recognition System for Kannada Language in Emotional Environment Sponsored by DST, PI:Dr Shashidhar G Koolagudi at the cost of 4 Lakhs, 2019-2022
12. Restricted Proper Edge Colorings of Graphs sponsored by Mathematical Research Impact Centric Support (MATRICS), SERB, DST PI: Dr. Manu Basavaraju, at the cost of 2.2 Lakhs, 2020-2023

### **DEPARTMENT OF CHEMISTRY**

1. Chemo-catalytic conversion of cellulosic biomass into renewable fuels and specialty chemicals via 5-(trifluoroacetoxymethyl)furfural sponsored by Council of Scientific and Industrial Research (CSIR). Principal investigator: Dr. Saikat Dutta: Rs. 11.5 Lakhs (April, 2017 – October, 2020)
2. DST-INSPIRE Faculty Award Chemical Fixation of Carbon Dioxide via Transition Metal Catalyzed Carboxylation Reactions – Principal Investigator: Dr Beneesh P B., at the cost of 35 Lakhs (Thirty five Lakhs) - 24/10/2013 to 23/10/2019.
3. Design and development of new lubricity improvers for ultra low sulfur diesel. MRPL, India. PI: Dr. Udaya

- Kumar D, Dept. of Chemistry. 12.89 lakhs. 2019-2021. (ongoing).
4. CSIR Research project titled 'Development of Novel Thermoelectric Materials', Grant amount: 10.50 lakhs. (2017-2020) Ref. No. (01) 2905/17/EMR - II dtd. 03-05-2017. Principal Investigator: Dr. D. Krishna Bhat.
  5. Towards development of Low cost hollow fiber membranes for haemodialysis applications, Funded by VGST, Govt. of Karnataka, Rs 60.00 Lakhs. 30-05-2015 to 30-05-2021. PI Dr Arun M. Isloor
  6. Development of low cost mobile hollow fiber membrane based purifier for treatment of mine waste water, Rs 5.0 Lakhs, Ministry of Mines, Govt of India. 15-03-2020 to 15-09-2020. PI : Dr Arun M. Isloor

#### **DEPARTMENT ELECTRONICS AND COMMUNICATION ENGINEERING**

1. Intel Embedded Initiative sponsored by Intel Corporation. Principal Investigator: Prof. Sumam David S; E&C Engg. at the cost of Rs. 5.3 Lakhs. (2011 to continuing).
2. IMPRINT-2 project: Development of cost effective Radiofrequency ablation system and magnetic hyperthermia equipment for thermal therapies of cancerous tumours sponsored by MHRD. Co-investigator(s): Dr. U. Shripathi Acharya and Dr. T. Laxminidhi, E&C Engg. at the cost of 48.94 Lakhs. (2019-2022).
3. Design and Development of Automated Kidney Cancer Detection System from H&E Stained Kidney Histopathological Images sponsored by SERB-DST, Govt. of India. Principal Investigator: Dr. Shyam Lal; E&C Engg. at the cost of Rs. 27.96 lakhs. (2019-2022).
4. Development of Automatic Land Cover Change Detection and Analysis System from High-Resolution Remote Sensing Images sponsored by ISRO RESPOND Scheme. Principal Investigator: Dr. Shyam Lal; E&C Engg. at the cost of Rs. 19.44 lakhs. (January, 2020 to January, 2022).
5. SPARC Project: Exploring Applications of Radiomics in Brain Tumor Assessment and Treatment sponsored by MHRD. Principal Investigator: Prof. Sumam David; E&C Engg. (Indian Co-PI - Dr Deepu Vijayaseenan, Dr Girish Menon (KMC Manipal); International PI - Dr Mandava Pitchaiah, Dr Paul Litvak) jointly with Baylor College of Medicine, Houston, Texas at the cost of Rs 38.63 lakhs. (13<sup>th</sup> May 2019 to 13<sup>th</sup> May 2021).
6. Research Grant under Young Faculty Research Fellowship under Visvesvarayya PhD Scheme for Electronics & IT, Digital India Corporation, Ministry of Communications & Information Technology and Govt. of India. Principal Investigator: Dr. Shyam Lal; E&C Engg. at the cost of 14.80 lakhs. (2019-2021).
7. Performance Analysis and Enhancement of Radio over Free Space Optical Communication System for 5G Applications for Smart Cities sponsored by SERB-DST, Govt. of India. Principal Investigator: Dr. Prabu K.; E&C Engg. at the cost of Rs. 28.06 lakhs. (2019-2021).
8. Development of cost effective Radiofrequency ablation system and magnetic hyperthermia equipment for thermal therapies of cancerous tumors sponsored by SERB. Co-investigator(s): Prof. U Shripathi Acharya & Prof. Laxminidhi T; E&C Engg, at the cost of Rs. 45.94 lakhs. (2019 to 2021).
9. Advanced Research Lab in RF Communications and Networks sponsored by DST, Govt. of India. Principal Investigator: Prof. Muralidhar Kulkarni and Prof. U. Shripathi Acharya; E&C Engg. at the cost of Rs. 116 Lakhs. (2016 to 2020).
10. Special Manpower Development Project on VLSI (SMDP-VLSI) phase-III - Chips-to-Systems sponsored by (DIT) MCIT, Govt. of India. Principal Investigator: Prof. Ramesh Kini M. and Prof. T. Laxminidhi; E&C Engg. at the cost of Rs. 1.6 Crores. (December 2014 to December 2020).

11. Technical Education Quality Improvement Program (TEQIP-Phase III), (2017 to 2020).
12. Development and real-time implementation of fully automated liver cancer detection system from H&E stained liver histo-pathological images sponsored by SERB-DST, Govt. of India. Principal Investigator: Dr. Shyam Lal; E&C Engg. at the cost of Rs. 9.94 lakhs. (2017 to 2020).
13. Compact multi-band antenna with independently controlled resonant frequency and polarization for mobile wireless applications sponsored by SERB-DST, Govt. of India. Principal Investigator: Dr. Krishnamoorthy K.; E&C Engg. at the cost of Rs. 44.22 lakhs. (2017 to 2020).
14. Design and Development of Wideband Circularly Polarized Antenna using 2D Metamaterial Structures sponsored by ISRO RESPOND Scheme. Principal Investigator: Dr. Krishnamoorthy K; E&C Engg. at the cost of 25.71 lakhs. (2018-2020)
15. Sigma Delta Space Time Adaptive Processing Techniques for GMTI for ASEA Radar sponsored by DRDO, Principal Investigator: Dr. Aparna P.E&C Engg., and Dr. P Srihari; E&C Engg; Rs. 9.63 lakhs. (August 2018 to August 2020).
16. Automatic Multilingual Speaker Profiling & Forensics sponsored by SERB-DST, Govt. of India. Principal Investigator: Dr. Deepu Vijayasanan; E&C Engg. at the cost of Rs. 13.5 lakhs. (October 2017 to October 2020).
17. Designing a System to measure moisture content of Cashew seeds both raw and processed sponsored by Kalbavi Cashews, Mangalore. Principal Investigator: Prof. U. Shripathi Acharya and Prof. T. Laxminidhi; E&C Engg. at the cost of Rs. One lakh. (2015 to 2020).
18. Automatic Bias Estimation Technique for 2D/3D Surveillance radar using Networked Radar Data sponsored by BEL, Bangalore. Principal Investigator: Dr. Pathipati Srihari; E&C Engg. at the cost of Rs. 10.00 lakhs. (2019 to 2020).

## **DEPARTMENT ELECTRICAL AND ELECTRONICS ENGINEERING**

1. Bio Signal Processing System for the development of human-machine interaction sponsored by Ministry of Electronics & Information Technology, Meity, Government of India, PI: Dr Krishnan CMC, Rs 25 Lakhs, 2019-2024.
2. Grid Interfacing of Solar Power Generation: Design, Development, and Investigation on High-frequency Transformer Isolated DC-DC Soft-switching Resonant Power Converters, Scope: Power Electronics in Renewable Energy Generation Sponsored by SERB, DST, PI: Dr. Nagendrappa H., Rs. 48.94 Lakhs, 2017-2020.
3. Adaptive MPPT of Grid-tied Photovoltaic System using Magnetically Coupled Impedance Source Inverters, Sponsored by DST-SERB under EMR Scheme, PI: Dr. D. Jena Co-PI: Dr. Nagendrappa H., Rs. 24.36 Lakhs, 2017-2020.
4. Android based home automation Sponsored by Alumni NITK 1988 batch EEE, PI: Dr. B. Venkatesa Perumal, Rs 1.15 lakhs, 2018-2020.
5. Development of an Electric Systems for Automatic Control of Street Lights, Sponsored by Alumni NITK Mr. Ramachandra & Mr. Sukumar Hegde, PI: Dr. B. Venkatesaperumal, Rs 0.25 Lakhs, 2019-2021.
6. A Novel Bidirectional Converter for Electric Vehicle to Grid Applications Sponsored by Alumni NITK Ms. Maitree.S, Ms. S.M Naik and Ms Nischita Kaza, PI: Dr. B. Venkatesaperumal, Rs 0.4 Lakhs, 2019-2021.
7. Establishing center of excellence (CoE) In "Renewable Energy Source integrated Smart Grid Technologies (RENEST)" Frontier Areas of Science and Technology (FAST), MHRD, GOI. PI: Prof. Panduranga Vittal K., Rs. 400 Lakhs (Sanctioned Rs. 250 Lakhs under Phase 1), 2014-2019.
8. Design and implementation of optimal controller for wide speed operation of SRM for EV application Sponsored by Department of Science and Technology, Government of Karnataka

- under VGST Scheme, PI: Dr P Parthiban, Rs 5 Lakhs, 2019-2021.
9. High Gain Single Stage Micro Inverter Sponsored by Raptor Design Technology Pvt. Ltd. (Company), PI: Dr. B. Venkatesaperumal, Rs 2 Lakhs, 2019-2021.
  10. Theoretical Study and Design of High Efficiency wide band class D Power Amplifier for acoustic transducers Sponsored by Naval Research Board , DRDO, Govt. of India, PI: Dr. P Parthiban CO-PI: Dr. Kalpana R, Rs 33.69 Lakhs, 2019-2021.
  11. Experimental Verification of Three Phase Asymmetrical Cascade Multilevel Inverter with Single DC-Link by Employing Toroidal Transformer Sponsored by Department of Science and Technology, Government of Karnataka, PI: Dr. Y Suresh, Rs 5 Lakhs, 2018-2020.
  12. Back-to-Back Converter Development for Solar Water Pumps Application Sponsored by Infineon Technology India Pvt. Ltd, PI: Dr. B. Venkatesaperumal, Rs 10 Lakhs, 2018-2020.
  13. DC-Home Solar based off Grid Converter design and Development of 48 V System Sponsored by NITK, PI: Dr. Y Suresh, Rs 1.1 Lakhs, 2018-2020.
  14. Two Research scholarships to investigate in the areas of i. Sensing Techniques, ii. Super-efficient Motor Control, under "Visvesvaraya PhD Scheme, Sponsored by GOI, MCIT, DEITY., Prof. Panduranga Vittal K. Rs.40 Lakhs, 2015 – 2020
  15. Development of Cost Effective Magneto-Rheological (MR) Fluid Damper in Two wheelers and Four Wheelers Automobile to Improve Ride Comfort and Stability, Sponsored by Ministry of Road, Transport and Highways, PI: Hemantha Kumar, Dept of ME, NITK, Co-PI: 1) Sujatha C., IITM, Chennai, 2) Gangadharan K. V., Dept of ME, NITK, 3) Sharnappa Joladarashi, Dept of ME, NITK, 4) Sandesh S., Ashok Leyland Ltd., 5) Sheron Figarado, Dept of EEE, NITK, 6) Mohammad Rizwanur Rahman, Dept of MME, NITK, 7) Raja Sekaran.S. Rambal Ltd, Rs. 355

Lakhs, 2017-2020.

16. Performance Analysis and design of soft computing technique –based MPPT algorithm for PMSG-based WECS Sponsored by National Project Implementation Unit (A unit of MHRD), CO-PI Mr. Shailendra Gupta GEC Jhalawar, Mr. Ajay Sharma GEC Jhalawar, Mr. Ashish Khandelwal GEC Jhalawar, Mr. Harish Sharma RTU Kota, Mr. A. Karthikeyan, NITK Surathkal, Rs 20.40 Lakhs, 2019-2020

### **DEPARTMENT OF INFORMATION TECHNOLOGY**

1. Edge and Fog Computing Framework for Smart City, Principal Investigator: Prof. G. R. M. Reddy, Mr. Natesha B V, Rs. 25 Lakhs, July 2016-July 2021
2. Visvesvaraya PhD Scheme for Electronics & IT, Media Lab Asia under Ministry of Electronics and IT, GoI. Principal Investigator: Prof. Ananthanarayana V.S (Nodal Officer) at the cost of Rs. 1009.2516 Lakhs, 2014 - 2020
3. Effective Online Framework Solution for Protein Sequence Alignment and to Predict Protein Structure & its subcellular localization using Amino Acid Molecules (Vision Group on Science and Technology, Dept. of Science and Technology, Govt. of Karnataka). Principal Investigator: Dr. Nagamma Patil, Rs 5 Lakhs, August 2018- August 2020
4. Young Faculty Research Fellowship Award (YFRF) Project under the Visvesvaraya PhD Scheme of Ministry of Electronics & Information Technology, Government of India, being Implemented by Digital India Corporation (Formerly Media Lab Asia) Principal Investigator: Dr. Geetha V at the cost of Rs. 10 Lakhs, Jan 2019 to Jan 2021.
5. A Framework for Deep Learning based Analytics for Intelligent Healthcare Applications. DST-SERB (Early Career Research Grant), Principal Investigator: Dr. Sowmya Kamath S, Rs. 35 Lakhs, Jun 2017 - Jun 2020.



**DEPARTMENT MATHEMATICAL AND COMPUTATIONAL SCIENCES**

1. Dr. Jidesh P, Generalized framework for restoring medical and satellite images corrupted by data correlated noise, DST, Budget : 17,43,070/-, 2017-2020.
2. Prof. Santhosh George and Dr. Jidesh P., Efficient Regularization methods for ill-posed Operator Equations and their Applications, DST, Budget: 18,46,020/-, 2018-2021.
3. Dr. V. Murugan, Applications of Kneading Theorey in Iterative Root Problems Sponsored by SERB, DST, India(4.18 Lacs)

**DEPARTMENT MECHANICAL ENGINEERING**

1. Development Of a Solar Based Humidifier/Dehumidifier Linked With Ground Water, Dr. Ajay Kumar Yadav & Dr. Anish S., DST, 29.02Lakhs, 18/3/2017-17/06/2020.
2. Development Of Cost Effective Radiofrequency Ablation System And Magnetic Hyperthermia Equipment For Thermal Therapies Of Cancerous Tumors, Dr. Ajay Kumar Yadav, Prof. Laxminidhi T, Prof. Sripathi U Acharya, Prof. B. S Rao (MAHE), Prof. P. U Saxena (KMC), SERB, 48.94Lakhs, 8/03/ 2019-07/03/2022.
3. Experimental Characterization And Numerical Modelling Of Delamination Growth In Fiber Reinforced Polymer Laminated Composites Under Cyclic Loading, Dr. S Kattimani & Prof. S.M. Murigendrappa, SERB, 26.28Lakhs, 24/03/2017 -24/03/2020.
4. An Experimental And Theoretical Investigation On Narrow Thermal Hysteresis Of Cu-Al-Be Based Sma Actuator For Vibration Isolation, Prof. S.M. Murigendrappa & Dr. S Kattimani, SERB, 16Lakhs, .
5. Active Vibration Control Of Laminated Composite Sandwich Plates In Hygrothermal Environment Using 1-3 Piezoelectric Composites, Dr. S

- Kattimani, SERB, 40.9Lakhs, 26/03/2018 - 26/03/2021.
6. Investigation On Radiolucent Composite Sandwich Materials For Biomedical Imaging Systems Under Hygrothermal Environment, Dr. S Kattimani, DST- ASEAN -India Collaboration, 41Lakhs, 2020-2022 (Approved).
7. Experimental Investigation On Pulsating Synthetic Jet Micromixers To Determine The Injection Dynamics Of Insulin In Hydrogels For Subcutaneous Drug Delivery, Dr. Arumuga Perumal D, SERB, 32.6Lakhs, 01 August 2017-31 July 2020.
8. An Investigation In To The Effects Of Induced Helicity In The Carotid Bifurcated Arteries On Patient Specific Models, Dr. Anish S and Dr. Mrityunjay Doddamani, SERB, 16.15Lakhs, 26/2/2020 to 25/2/2023.
9. Improvement In The Properties Of Thermally Sprayed Hydroxyapatite Bio-Ceramic Coating Reinforced With Nanostructured Materials, Dr Sudhakar C Jambagi, SERB, 38.4Lakhs, 18/3/2019 to 17/3/2022.
10. Experimental And Numerical Investigation Of Effect Of Leading Edge Protuberances On The Performance Of Wind Turbine Blade, Dr. Sathyabhama A, SERB, 66Lakhs, May 2016 to March 2020.
11. Ultrafine Grain Refinement Through Low Plasticity Burnishing On Waam Of Mgalloy For Aerospace And Automotive Applications, Dr.A.S.S.BALAN, SYST-SEED, 16.09Lakhs, Jan 2020 to Jan 2023.
12. Experimental Technique To Induce Surface Grain Refinement Through Laser Shock Peening On Ecap Processed Mg. Alloy, Dr. H Shivananda Nayaka, SERB, 41.02Lakhs, May 2019 to May 2022.
13. Design Of Magneto Rheological Damper For Vehicular Applications, Indian PI: Prof. C.Sujatha, IIT Madras ; Indian Co-PI: Dr. Hemantha Kumar, NITK Surathkal International PI: Prof. Muthukumaran Packirisamy ; International Co-PI: Prof. Ramin Sedaghati, Concordia University,

- Canada, MHRD, 60.35Lakhs, 2019-2021.
14. Development Of Cost Effective Magneto-Rheological (Mr) Fluid Damper In Two Wheelers And Four Wheelers Automobile To Improve Ride Comfort And Stability, PI: Dr. Hemantha Kumar, Co- PI: Prof. C.Sujatha, Dept. of Mechanical Engineering, IIT Madras, Prof. K.V.Gangadharan, Dept. of Mechanical Engineering, NITK, Dr. Sharnappa J., Dept. of Mechanical Engineering, NITK, Dr. Mohd.Rizwan Rahman, Dept. of Material and Metallurgy Engg. NITK, Dr. Sheron F. Dept. of Electrical and Electronics Engg. NITK, Dr. Sandesh S. Senior Manager, Ashok Leyland Ltd. Chennai, Mr. Rajasekharan, Scientific Advisor, Rambal Ltd. Chennai., MHRD & Ministry of Road Transport and Highways, 355Lakhs, 2017-2020.
  15. Experimental Investigation Of Passive, Semi-Active And Active Vibration Control Of Composite Sandwich Structure, PI: Dr. Sharnappa Joladarashi Co-PI: Dr. Hemantha Kumar, DST, 51.5Lakhs, 2017-2020.
  16. Investigations On The Dynamic Behaviour Of Bacterial Helical Flagellar Filaments Under Axial Flow, Dr. Ranjith M, DST-SERB, 21.46Lakhs, 2017-2020.
  17. Design, Analysis And Demonstration Of The Porous Injector Concept For Throttling Of Liquid Rocket Engine., Dr. Parthasarathy P, ISRO, , 2019-2021.
  18. Design And Testing Of Robust, High Efficient, Low Polluting Lpg Porous Burners For Household Applications., Dr. Parthasarathy P and Dr. Arun M, DST-SYST, , 2020-2023.
  19. Development Of Composite Filament For Light Weight 3D Printed Components, PI - Dr. Mrityunjay Doddamani, Co-PI's - Dr. Srikanth Bontha, Dr. Vamsi Krishna Balla, DST-TSDP, TDT, GoI, 33.03Lakhs, 2017-2020.
  20. Pre-Operative Damage Assessment In Orthopedic Surgery Using 3D Printing To Minimize Healing Time, Dr. Mrityunjay Doddamani, VGST, GoK, 5Lakhs, 2017-18.
  21. Cost-Effective Enhanced Insulating Foams For Cold Storage Application, Dr. Mrityunjay Doddamani, ISHRAE, 30.62Lakhs, 2020-2023.
  22. Additive Manufacturing Of Novel Structural Foam Composites For Durability And Damage Tolerance, PI: Dr. Mrityunjay Doddamani (NITK), Dr. Pavana Prabhakar (UW-Madison, USA); Co-PI's Dr. Suhasini Gururaja (IISc), Prof. Gustavo Parra-Montesinos (UW-Madison, USA), SPARC, MHRD, GoI, 86.49Lakhs, 2019-2021.
  23. Development Of Brushless Dc (Blde) Motors For An Automotive Power Window Application, Dr. K V Gnagadharan (PI) + Mr. Srinivas (Co PI) . Ms/ Aditya Auto , Dept. of Heavy Industries , 375Lakhs, 2020-2022.
  24. Design Of Oil Skimming Application With Super Hydrophobic Sponge, Dr. Pruthviraj U (PI) App Mech , Dr. K V Gangadharan (CO.PI), MRPL , 44Lakhs, 2019-2021.
  25. Tpem - Fame India Scheme - "Switched Reluctance Motor & Controller For 2W & 3W", 2018-2021Dr. K V Gnagadharan (PI) , Co Pis Dr. Jeyaraj , Dr. Navin Karanth,Dr. Venkitesh Perumal (EE), Dr. Suresh Y, (EE) , Dr. Krishnan C (EE) + Mr. Srinivas . Ms/ Aditya Auto , Dept. of Heavy Industries , 1700Lakhs, 2018-2021.
  26. Virtual Lab Phase Iii, Dr. K V Gangadharan(PI) , Dr. Pruthviraj(AppMech), Dr. Mohit T (CS), NMEICT(MHRD), 100Lakhs, 2017-2021.
  27. Origins Of Yielding In Polymer Electrolyte Membranes, KK Poornesh, DST-SERB, 50Lakhs, 2019-2022.
  28. Interface Characteristics Of Membrane Electrode Assemblies, KK Poornesh, DST, 35Lakhs, 2018-2022.
  29. Analytical And Numerical Investigations Of Mixed Convection Through Wire Mesh Porous Structure Filled In a Channel, Dr. N. Gnanasekaran, DST-SERB, 21Lakhs, 2019-2022.

## **DEPARTMENT OF MINING ENGINEERING**

1. Predictive Assessment of Postural Risk and Biomechanical Analysis of Musculoskeletal Disorder (MSD) Related Problems of Dump Truck Operators in Indian Opencast Metal Mines”, Sponsored by Science and Engineering Research Board, DST, Govt. of India, 2019-2022. (Sanction order no. CRG/2019/001940 dated 02-03-2020: Rs. 18,85,945/-)
  2. Investigations into the reduction of phosphorous in iron ore using microwave technology for its suitability to the iron ore and steel industries; Order No. RPC/NITK/2017-18/170 dated 08th August, 2017; Sponsored by ERM Group, Bangalore; (₹10.06 Lakhs).
  3. Development of a new type of aerocyclone for the dry separation of minerals; Order No. 97/RO/2018 dated 20th June, 2018; Sponsored by The Hutti Gold Mines Co. Ltd.; ₹1.96 Lakhs.
  4. Development of a comminution process for improving the ball mill efficiency and selective size output through hydro-squeezing; Order No. 115/Min/46/2018 dated 19th November, 2018 from HGML and dated 31st December, 2018 from KSMCL; ₹9.7 Lakhs.
  5. Development and Characterizations of Advanced Solar Cell (INR 30 Lakhs)- Sponsored by VGST, Govt. of Karnataka, Department of Information Technology, Biotechnology and Science & Technology, 2017-2020 (Letter No. KSePS/CISEE/2016-17/GRD-536/2017-18/153)
  6. Application of Nano Membrane Technologies to purify Mine Waste Water (INR 5 Lakhs)- Sponsored by Ministry of Mines, Govt. of India, 2019
- Principal Investigator: Dr. S. B. Arya, Dept. of Met & Matls. Engg. at the cost of Rs.18.81 lakhs (Period: 2015-17).
2. “All solution processed transparent low temperature synthesized Indium Zinc Tin Oxide based high performance thin film transistors for active matrix displays”, sponsored by DST-SERB, Principal Investigator: Dr. Saumen Mandel, Dept. of Met & Matls. Engg. at the cost of Rs.21 lakhs (Period: 2016-18).
  3. “Development of Cost Effective Magnetorheological (MR) Fluid Damper in Two wheelers and Four Wheelers Automobile to Improve Ride Comfort and Stability”, sponsored by IMPRINT, Dr. Hemanth Kumar (PI) – Mech. Dept. and Dr. M. Rizwanur Rahman (Co-PI)
  4. “Augment the Research Facilities in the Department (i) X-Ray Diffractometer with Accessories, (ii) Field Emission Scanning Electron Microscope”, sponsored by DST - FIST, Principal Investigator: Prof. Udaya Bhat K. & Dr. M. R. Rahman, Dept. of Met & Matls. Engg. at the cost of Rs.297 lakhs (Period: 2018).
  5. “Development of structural polymer composites from natural fiber/particulate reinforced materials”, sponsored by VGST, Govt. of Karnataka, Principal Investigator: Dr. Ravishankar K. S., Dept. of Met & Matls. Engg. at the cost of Rs.20 lakhs (Period: 2018-2020)
  6. “Synthesis of Silver Nanoparticles at laboratory scale and further scaling up to pilot scale at HZL”, sponsored by Hindustan Zinc Limited Principal Investigator: Dr. M. Rizwanur Rahman, Dept. of Met & Matls. Engg. at the cost of Rs. 9.96 lakhs (2018).
  7. “Development of Metallic nanoparticles-enhanced phase change Materials for thermal energy storage”, sponsored by VGST, Principal Investigator: Dr. M. Rizwanur Rahman, Dept. of Met & Matls. Engg. at the cost of Rs.5 lakhs (2019).
  8. “Development of Antimicrobial Active Surfaces for Health Care Applications”, sponsored by VGST, Govt. of Karnataka, Principal Investigator: Prof. Udaya Bhat K.,

## **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

1. “Corrosion and Impedance study of Ti-Nb alloy forms developed by PM techniques”, sponsored by DST-SERB,

- Dept. of Met & Matls. Engg. at the cost of Rs.60 lakhs (2018-2021)
9. "Mitigating Dendrite Growth Using Engineered Electrolyte Layers for the Development of High Energy Density, Long Cycle Life Lithium Batteries", sponsored by DST, Principal Investigator: Prof. S. Anandhan, Dept. of Met & Matls. Engg., at the cost of Rs.64.43 lakhs (Period: 2019-22).
  10. Academia-industry outreach program on conventional and advanced ceramic manufacturing for the next generation of ceramics and glass engineers sponsored by The Ceramic and Glass Industry Foundation, The American Ceramic Society, Co-Principal Investigator: Dr. Saumen Mandal, at the cost of 11000USD (Period: November, 2018 – November, 2019).

### **SCHOOL OF MANAGEMENT**

1. Exploring Efficient Solutions for Management of Household Waste A Multi - Stakeholder Approach, Principal investigator: Dr. Ritanjali Majhi, 8<sup>th</sup> July 2019,IMPRESS, ICSSSR, 12.60 lakhs
2. Adaptation of Climate Smart Agriculture Practices: Challenges and Opportunity for Indian Smallholder Farmers, Principal investigator: Dr. Ritanjali Majhi, SPARC, GOI, 48.18 LAKHS.
3. Assessing the Impact of Climate Change on Agriculture and Exploring the Role of Technology in Adaptation' Principal investigator: Dr. Rajesh Acharya H, funded under ICSSR Minor Research Project Scheme with a funding of Rs. 4,05,000. (Period : 2019 to 2021)
4. Assessing the Impact of Pradhan Mantri Fasal Bima Yojana (PMFBY) on Smallholder Farmers' Principal investigator: Dr. Rajesh Acharya H, funded under ICSSR IMPRESS with a funding of Rs. 4,00,000. (Period : 2019 to 2021).
5. Adaptation of Climate Smart Agriculture Practices: Challenges and Opportunity for Indian Smallholder Farmers. Sponsored by SPARC project-

- Ministry of Human Resource Development, Government of India. Principal investigator: Dr. Pradyot Ranjan Jena; School of Management Sanctioned amount – Rs 48.18 Lakh. (Starting Period 01/05/2019).
6. Moving towards Climate Resilient Agriculture: Understanding the Factors Influencing Adoption in India and Japan. Sponsored by ICSSR-JSPS, a Indo-Japan joint research project. Principal investigator: Dr. Pradyot Ranjan Jena. Sanctioned amount - Rs. 11.85 Lakh (Starting Period 01/04/2019).
  7. A Study of Adaptation to Technological Innovation in Agriculture to Mitigate Climate Change Effects and its Impact on Rural farmers. Sponsored by ICSSR. Principal investigator - Dr. Pradyot Ranjan Jena. Sanctioned amount - Rs. 8.6 Lakh (Starting Period 01/04/2018, still continuing).
  8. Governing Extreme and Exploitation Social Media Environment for PWD Rehabilitation, IMPRESS-ICSSR. Dr.Sreejith A, School of Management, Rs. 9030510/- (Period : 1April 2019 to 31 March 2021)

### **13.2 PROPOSED PLAN FOR RESEARCH**

#### **DEPARTMENT OF CHEMICAL ENGINEERING**

##### **New Labs/Equipment:-**

- Energy & Catalysis Materials Laboratory/Solid oxide fuel cell button cell test station
- Planning to establish "Polymer Science and Engineering Lab" for UG/PG and Ph.D. research scholar.

##### **Target for sponsored R&D projects:-**

- Proposal titled "Development of Electrospun ceria-based nanofibers for diesel soot oxidation activity" is submitted to SERB Core Research Grant and is under evaluation. Budget: Rs 34.50 Lakhs ,PI: Dr Hari Prasad Dasari

- Proposal titled “Development of doped-ceria based nanomaterials as anode for lithium ion batteries” is submitted to DST under Nano-Mission (Nano for energy and environment) and is under processing Budget: Rs 56.28 Lakhs, PI: Dr Hari Prasad Dasari &Co-PI: Prof. M. B. Saidutta
- Proposal titled “Development and Demonstration of nano-fiber Oxygen Electrodes of Solid Oxide Electrolysis Cells for CO<sub>2</sub> and H<sub>2</sub>O co-electrolysis” is submitted to VGST (), Govt. of Karnataka under the scheme (CESEM). Budget: Rs 50 Lakhs PI: Dr Hari Prasad Dasari &Co-PI: Prof. M. B. Saidutta
- Proposal titled “Integrated photocatalytic and membrane bioreactor process for effective removal of emerging contaminants and disinfection” submitted under Water Technology Initiative (WTI) to DST by Prof. Vidya Shetty K, Department of Chemical Engg., NITK Surathkal as Co-PI in collaboration with faculty from CESE, IIT Bombay.
- Proposal titled “Synthesis and characterization of nanoparticles for the development of resilient brinjal and groundnut genotypes for higher CO<sub>2</sub> and drought tolerance” submitted to Department of Biotechnology, GoI by Prof Vidya Shetty K, Department of Chemical Engg., NITK Surathkal as Co-PI, in collaboration with faculty from Department of Plant Sciences, School of Life Sciences, MAHE, Manipal and Department of Biotechnology, University of Agricultural Sciences, Dharwad, Karnataka.
- Proposal titled Influence of titanium dioxide nanoparticles on growth, control of fungal disease and host defense enhancement in rice and brinjal plants submitted for possible funding by Nano Mission, DST, New Delhi by Prof Vidya Shetty K, Department of Chemical Engg., NITK Surathkal as Co-PI, in collaboration with faculty from Department of Plant Sciences, School of Life Sciences, MAHE, Manipal

#### **New areas of Research:-**

- Development of advanced computational techniques to design a pharmaceutical batch crystallizer communicated to CSIR-HRDG.
- Development of advanced computational techniques for spray drying of whey protein concentrate communicated to SERB-Core Research Grant. Area of research is Multiphase fluid flow. (Area of research: Multiphase fluid flow)
- Biodegradable polymer, Chemical mechanical polishing
- Application of Nanotechnology in Agriculture; Integrated photocatalytic and membrane bioreactor process.

#### **Institutions/organizations for future collaborations:-**

- Indian Institute of Technology Hyderabad/ collaboration with Dr Vinod Jhanardhanan in the area of Solid oxide fuel cells.
- MAHE, Institute of Excellence
- Future collaborations planned by Prof Vidya Shetty K with IIT Bombay ,MAHE Manipal and University of Agricultural Sciences, Dharwad, Karnataka.

#### **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

#### **New Labs/Equipment:-**

PG Labs for VLSI Design, Communication Engineering & Networks, and Signal Processing & Machine Learning Lab.  
IoT Lab, AI and ML Lab.

**Target for Sponsored R&D projects:-**  
Projects from ISRO, DRDO and LRDE.

#### **New Areas of Research:-**

Bio-Mechanics

#### **Institutions/organizations for future collaborations:-**

Any institution/organization for working towards Make in India.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

1. Smart Electric Vehicle Supply Equipment with improve Reconfigurability, Economic, Availability and Performance (REAP) Sponsored by SERB, PI: Dr. B Dastagiri Reddy, Rs 89 Lakhs, 2020-2022.
2. Development of Dual Input DC/DC Converter with Smart Energy Management Controller for Enhancing the Reliability of Hybrid Standalone Photovoltaic Systems Sponsored by Vision Group on Science and Technology, Government of Karnataka, PI: Dr. V. Vignesh Kumar, Rs 3.18 Lakhs, 2020-2022.
3. Renewable Energy Sources Supported Charging System Development for Electric Vehicles at Residential and Commercial Establishment Sponsored by Science and Engineering Research Board, PI: Dr. V. Vignesh Kumar, Rs 30.81 Lakhs, 2020-2022.
4. Fault Tolerance Control of High Power Multiphase Induction Motor Drives during Sensor faults for Electric Vehicle Application Sponsored by SERB- Start up Research Grand (Under Review), PI: Dr. Arun Dominic. D, Rs 32 Lakhs, 2020-2023.
5. Fault Detection and Isolation of Doubly Fed Induction Machine during Sensor Faults for Wind Energy Applications Sponsored by VGST-RGS/F Scheme, PI: Dr. Arun Dominic. D, Rs 5 Lakhs, 2020-2022.
6. Design and Development of a Novel On-Board Charger with Advanced Features for Electric Vehicles Sponsored by DST (SERB), PI: Dr. Prajof P, Rs 30 Lakhs, 2020-2022.
7. An Affordable Therapeutic Solution for Rehabilitation of Cerebral Palsy Children with Crouch Gait & Development of active Knee Ankle Foot Orthosis for Rehabilitation of Children Sponsored by SERB-DST, PI: Dr. Krishnan CMC, Rs 59 Lakhs, 2020.

## DEPARTMENT OF INFORMATION TECHNOLOGY

### Dr. Sowmya Kamath:

Target for Sponsored R&D projects:

- FIST 2020 proposal submitted by the department.
- Five Faculty members are involved in the proposal submitted for the setting up of Technology Innovation Hub, under the National Mission on Interdisciplinary Cyberphysical Systems (NM-ICPS).
- Faculty members are involved in the Regional Academic Center for Space (RAC-S) set up at NITK Surathkal.

### Dr. Anand Kumar M:

Target for Sponsored R&D projects:

- Submitted Indo-Hungarian Joint International Project
- Submitted STRIDE with University of Hyderabad
- Submitted STRIDE with Amrita Vishwa Vidyapeetham
- Submitted SRG-DST
- Submitted IMPRESS
- Submitted ISRO

New Areas of Research: Multimodel Analysis Institutions / organizations for future collaborations: IIT-Bhubaneswar, NIT-C, NTE-Singapore

## DEPARTMENT OF CHEMISTRY

Further research work in the field of Thermoelectrics, Photocatalysis, Supercapacitors, Materials for energy and environmental applications, Gas separation, supercapacitors, Biomedical research etc

## DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES

1. Investigation of Cost efficient tasks scheduling in Cloud Environment using various metaheuristics approaches.
2. To work on problems related to certain additive functions called charges.
3. Study of regularity conditions and eigenvalue sets for parametric interval matrices.

4. Data Science for Cyber Security.
5. To study the Hyers-Ulam stability of Iterative Functional Equations.
6. To find the order of an iterative root.
7. To study broadcast labeling of graphs and Grundy coloring of Graphs.
8. To study the effects of surface roughness/MHD effects on squeeze flows of viscoplastic fluids.

#### **New Labs/Equipment:**

1. Propose to set GPU Computing Lab for High performance computing.
2. Parallel Computing Lab

#### **Target for sponsored R&D Projects:**

1. Proposal on Crypto framework for IoT security to DST-SERB.
2. "Development of radial basis function based 'local' schemes for non-local convection-diffusion models".
3. "Spectral methods for conservation laws".
4. Applied for project funding in the area of IoT for smart agriculture.
5. It is planned to write a project in the topic of Hyers-Ulam stability to NBHM/CSIR/DST.

#### **Institutions/organizations for future Collaborations:**

1. Different Generalized inverses and their verified computations for rank deficient matrices, future collaborations with University of Nis, Niš, Serbia.
2. On Magic labelings of graphs, Jadavpur University and ITB Indonesia.
3. ABB India & Robert Bosch, IN.
4. Iterative methods for nonlinear equations, Cameron university, US.
5. Prof. Bengt Fornberg, Dept of Applied Mathematics, University of Colorado Boulder, USA.
6. Prof. Rama Govindarajan, ICTS, Bangalore along with my colleague Dr. Vishwanath.

7. Dean's flow of Viscoplastic Fluids, Future collaborations with University of West Indies, Mona Campus, Jamaica.
8. Interested in research on social network analysis research and High performance graphs. Interested in Collaboration with IIT Delhi.
9. Grundy coloring of graphs with IIT Delhi.
10. Broadcast labeling of graphs with IIT Khargpur.

#### **DEPARTMENT OF MECHANICAL ENGINEERING**

Neuro Signals Analysis for Healing, Batteries and Fuel Cells, Renewable energy utilization, develop anticorrosion and antifouling coatings, Nanofluidics, Biofluidics, High efficient, low polluting porous burners, Cryogenic rocket engines, Thermal Spray Coatings, Tribocorrosion, Fatigue Analysis, Biodegradable Composites, composite structures, Inverse Bio-heat transfer, Virtual Prototyping Platform for Product Development, Additive Manufacturing, Magnetorheological damper, Novel stent design for human carotid artery.

#### **New Labs/Equipment:-**

- Advanced Dynamics Lab (M404)
- Computational Mechanics Lab
- Applied Solid Mechanics Lab
- Welding and Foundry Lab
- Surface Engineering Lab
- Solidification simulation lab
- Microfluids and Nanofluids Lab
- Automation Laboratory 1 (FMS System and Robotics)
- Automation Laboratory 2 (Sensorics and Hydraulics and Pneumatics Control systems)
- Aerospace Lab.
- Solar Energy Lab
- Bioheat Transfer Lab
- Mechanisms Design Lab
- Vehicle Dynamics Lab
- Smart Structures Lab
- Optimization Lab
- Electrochemical Corrosion Analyzer
- Scanivalve pressure sensor

- Four Stroke CI engine test rig
- Environmental Chamber
- Workstation with GPU
- Tungsten inert gas welding, Gas metal arc welding, Resistance spot welding,
- Quick cast solidification simulation software, sand sieving machine, Aluminium melting furnace
- Flash and Fire Point Tester
- High Performance Workstation
- Dual purpose flat plate collector for air and water heating, Parabolic trough collector
- Humidifier-Dehumidifier, Solar Air Heater, Pyranometer, Pyrheliometer, Workstation
- mechanisms kit
- Damper Testing Machine, Quarter Car Test Rig
- Forced and free vibration setup
- Refrigerator, Advanced Heat Transfer Lab (Imprint project).
- Airconditioner 2 Ton, Advanced Heat Transfer Lab (Imprint project).
- workstation, Advanced Heat Transfer Lab (Imprint project).
- Hitek kit, mechanism design lab.
- RFA system RITA-model, Advanced Heat Transfer Lab (Imprint project).
- Universal Testing Machine (1kN), Polymer Composites Lab.
- workstation, Optimization Laboratory.
- Peeling m/c, Electrochemical System Design Lab (DST).
- Rheometer, Applied Solid Mechanics Lab (SERB).
- Five Gas Analyser, IC engines Laboratory.
- Ball milling, Inverted biological microscope, Surface Engineering Lab.
- Tool Makers Microscope, Metrology.
- Peristaltic pump, Microfluids and Nanofluids Lab (SERB Project).
- Optical Microscope, Microfluids and Nanofluids Lab (SERB Project).
- Combined Vibration Test System, Computational Mechanics Lab-B.

## **DEPARTMENT OF MINING ENGINEERING**

1. Dr. B.M. Kunar and Prof. Ch SN Murthy submitted SPARC proposal (Scheme for promotion and Academic Collaboration) for Collaborative Research work with Mining and Mineral Engineering, Curtin University Australia.
2. Dr. K. Ram Chandar & Dr. S.Kumar Reddy, submitted a research project proposal on 'Effect of old underground workings on stability of dumps' DST-Govt of India.

## **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

### **New Labs/Equipment:**

1. Surface Engineering Laboratory
2. Facility for assessment of health of quenchant
3. High performance workstation
4. Intel Fortran compilers

### **Target for Sponsored R&D projects:**

1. To get at least one sponsored R&D project per year
2. DST Start up grant
3. BARC Young scientist start-up grant

### **New Areas of Research:**

1. Surface Engg.
4. Smart Materials
5. Data base on liquid Quenchant
6. Wetting/ dewetting of liquids
7. Hydrodynamic stability
8. Shape Memory Alloys

### **Institutions/organizations for future collaborations**

1. Indira Gandhi Centre for atomic Research, Kalpakkam
2. Indian Institute of Science, Bangalore
3. National Aeronautics Ltd., Bangalore
4. Hindustan Aeronautics Ltd., Bangalore
5. Jindal South West, Vijayanagar
6. International Federation of Heat Treatment and Surface Engineering (IFHTSE), UK
7. Kennametal Ltd., Bangalore
8. Thermet Solutions (P) Ltd., Bangalore



9. Tata Institute of Fundamental Research, Hyderabad
10. IIT Hyderabad

### **SCHOOL OF MANAGEMENT**

**New Labs/Equipment:-**Data Analytics Lab

**Target for sponsored R&D projects:-**Aiming at Start up Grants from prestigious Institutions.

**New areas of Research:-**Multi-disciplinary research to meet the special requirements of Industry 4.0

#### **Institutions/organizations for future collaborations:-**

Looking for collaboration with *Data Analytics and Computational laboratory (DACL)*, a center of excellence of Indian Institute of Management Bangalore (IIMB) for conducting joint academic activities.

### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

1. Internet of Things sponsored by DST Areas of Research is Internet of things systems Architecture, future collaborations is foreign universities and/or IITs/IISc.
2. Cyber-Physical Systems sponsored by DST NRB Areas of Research is Resource Management future collaborations is foreign universities and/or IITs/IISc.
3. Cyber Security sponsored by MEITY Areas of Research is Multi-model visual Security future collaborations is foreign universities and/or IITs/IISc.
4. Big Data Analytics sponsored by DST Areas of Research is Big Data future collaborations is foreign universities and/or IITs/IISc
5. IBM Shared University Grant of 15 Lakhs and equipment donation boost the OpenPower research infrastructure here at SPARK Lab. Further, faculty

- award from IBM will help in improving collaborations and the research profile.
6. Spatial Data Science Research group is formed. The Research Scholars and M.Tech Students are assigned Research Project Related to Spatial Temporal Data. Planning to set up center of excellence in Data Science for Disaster Management and. Remote Sensing Applications The new project proposal are submitted to SERB, Meity and Ministry of Earth Sciences for funding.

**TECHNICAL PAPERS PUBLISHED IN REFEREED JOURNALS****Table: List of publications during the period under report**

<b>Sl. No.</b>	<b>Department</b>	<b>International Journal</b>	<b>National Journal</b>	<b>International Conference</b>	<b>National Conference</b>	<b>Total</b>
1	Civil Engineering	41	06	34	04	85
2	Applied Mechanics & Hydraulics	47	02	61	09	119
3	Mechanical Engg.	318	--	106	07	431
4	Electrical & Electronics Engineering	44	--	38	--	82
5	Electronics & Communication Engineering	65	--	--	01	66
6	Chemical Engineering	57	--	26	06	89
7	Metallurgical & Materials Engg.	56	--	12	--	68
8	Mining Engineering	24	--	20	01	45
9	Computer Engineering	55	--	63	--	118
10	Information Technology	29	--	46	--	75
11	Physics	52	--	06	--	58
12	Chemistry	45	--	34	04	83
13	Mathematical & Computational Sciences	64	--	14	--	78
14	School of Management	41	04	26	02	73
	<b>Total</b>	<b>938</b>	<b>12</b>	<b>486</b>	<b>34</b>	<b>1470</b>

**INTERNATIONAL JOURNAL :-**

**DEPARTMENT OF APPLIED  
MECHANICS AND HYDRAULICS**

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6. H B Jagadeesh and Subba Rao Benefits of Random Wave Testing in Shallow Basin Physical Models for Harbor Wave Tranquility Studies *International Journal of Ecology and Development (IJED)*, CESER Publications, vol.34 (1), pp 118-126, (ISSN 0972-9984 (Print); ISSN 0973-7308 (Online)), 2019.
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10. Sujay Raghavendra Naganna , Paresh Chandra Deka , Mohammad Ali Ghorbani , Seyed Mostafa Biazar , Nadhir Al-Ansari and Zaher Mundher Yaseen, 2019, *Dew Point Temperature Estimation: Application of Artificial Intelligence Model Integrated with Nature-Inspired Optimization Algorithms*, *Water* 2019, 11, 742; doi:10.3390/
11. H. J. Surendra, Paresh Chandra Deka, 2020, *Fuzzy and improved fuzzy-wavelet approach in modeling municipal residential water consumption estimation using climatic variables*, *Soft Computing* [https://doi.org/10.1007/s00500-020-05053-w\(0123456789\).,-volV\(0123456789\).,-volV](https://doi.org/10.1007/s00500-020-05053-w(0123456789).,-volV(0123456789).,-volV)
12. KSS Parthasarathi, Subbarayan Sarvanan, Paresh Chandra Deka, Abhijith Devanantham, 2020, *Assesment of potential vulnerable zones using geospatial approach along the coast of Cuddalore district, East coast of India*, *ISH JOURNAL OF HYDRAULIC ENGINEERING* ,

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**DEPARTMENT OF COMPUTER SCIENCE ENGINEERING**

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  12. Harish kumar. N. S., R. P. Choudhary and Ch. S. N. Murthy., Evolution of the probability density function of shovel-dumper combination in surface coal mine using ANN and RWB, n International Conference on Emerging Trends in Engineering (ICETE), Osmania University, from 22<sup>th</sup> to 23<sup>th</sup> March, 2019.. Springer, Cham.
  13. Sarathbabu Goriparti N.V., Ch S N Murthy Aruna, M. Prediction of energy efficiency of main transportation system used in underground coal mines- A statistical approach, International Conference on Emerging Trends in Engineering (ICETE), Osmania University, from 22<sup>th</sup> to 23<sup>th</sup> March, 2019.. Springer, Cham.
  14. Vijaya Ragavan and Murthy. Assesment and prediction of specific energy using rock brittleness in rock cutting, International Conference on Emerging Trends in Engineering (ICETE), Osmania University, from 22<sup>th</sup> to 23<sup>th</sup> March, 2019. Springer, Cham.
  15. Balaraju, J. Govinda Raj, M. Ch. S. N. Murthy. Prediction and Assessment of LHD Machine Breakdowns Using Failure Mode Effect Analysis (FMEA), International Conference on Reliability, Safety and Hazard, ICRESH 2019; Chennai; India; 11 January 2019 through 13 January 2019.
  16. Kumar, Ch.V., Ch. S. N. Murthy Harsha Vardhan. Prediction of Specific Energy Using Dominant

- Frequency of Acoustics Produced During Diamond Core Drilling Operations, Second International Conference on Emerging Research in Civil, Aeronautical and Mechanical Engineering ERCAM – 2019.
17. Lakshminarayana, C.R., Tripathi, A.K., Pal, S.K., 2020, “MWD Technique to Estimate the Uniaxial Compressive Strength of Rocks”, AIP Conference Proceedings, Vol. 2204, Issue 1, January 2020, pp. 35 – 40, D.O.I.: 10.1063/1.5141584.
  18. Gayana, B.C., Shashanka, M., Avinash Rao., and Ram Chandar, K., 2019. An Experiment Investigation on Physical and Mechanical Properties of High Strength Concrete with Suitable Admixture”. ICBMC-2019: 4<sup>th</sup> International Conference on Building Materials and Construction, National University of Singapore, February 25-28, 2019.
  19. Gayana, B.C., Shashanka, M., Avinash, N, Rao., and Ram Chandar, K., 2019. Physico-Mechanical Properties of Concrete with Industrial Waste - A Case Study”. ICSECT-2019: 4<sup>th</sup> International Conference on Structural Engineering and Concrete Technology, Italy, Rome. April 7<sup>th</sup> – 9<sup>th</sup>, 2019.
  20. Gayana. B.C., Ram Chandar, K., and Krishna, R, Reddy., 2019. Influence of laterite and sandstone on the mechanical properties of concrete. EGRWSE-2019: Second International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering, UIC, Chicago, June 16-20, 2019.
3. 1. S. Janakiraman, A. Surendran, R. Biswal, S. Ghosh, S. Anandhan, A. Venimadhav, ‘Preparation of nanofibrous electroactive polyvinylidene fluoride based polymer electrolyte for sodium ion batteries’, E-MRS Spring Conference, France, May 2019
  4. S. Shetty, G. Ekbote, A. Mahendran, S. Anandhan, ‘Enhanced electroactive phase content and piezoelectric response of electrospun Ni-Co Layered hydroxide/poly(vinylidene fluoride) (PVDF) nanocomposite non-woven webs’, International Conference on ‘Advancements in Polymeric Materials APM-2019’, CIPET-Chennai, India, January 2019.
  5. Pavankumar R Sondar, Subray R Hegde, ‘Effect of Cryogenic Treatment on Plain Carbon and Low Alloy Steels’, International symposium on advanced materials for industrial and societal application , trivandrum, 13 Nov 2019.
  6. Basavaraj , Rakshan kumar J K, Pavan Kumar R Sondar , Sumanth Govindhrajan, Subray R Hegde, ‘Failure analysis of cooling tower fanarm’, International symposium on advanced materials for industrial and societal application ,trivandrum, 13 Nov, 2019.
  7. Pavankumar R Sondar, Subray R Hegde, ‘Deep Cryogenic Treatment of Plain Carbon and Low Alloy Steels’, International symposium on advanced materials for industrial and societal application , trivandrum, 13 Nov 2019.
  8. Basavaraj, Pavan Kumar R Sondar , Subray R Hegde, ‘Necking behaviour of ductile cast iron’, International conference on processing and characterization of metals , NIT-ROURKELA, 12 December, 2019.
  9. B. Kumara, Preetham Kumar G. V., ‘Effect of Multi Directional Forging on

#### **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

1. Narayan Prabhu, ‘Comparative Study on Cooling Performance of Hot Oil and Molten Salt Quench Media for Industrial Heat Treatment’, ASM Heat Treat 19, 30th Heat Treating Society Conference & Exposition, Detroit, Michigan October 15-17, 2019, (to be published in a peer reviewed journal).
2. . Nidhi Singh, Jagannatha Nayak, Jatin Bhatt and S. B. Arya,



- the mechanical properties of hypoeutectic Aluminium Silicon Alloy (Abstract), NMD ATM-2019, Thiruvananthapuram, 13<sup>th</sup> November, 2019.
10. T. S. Ajmal, Shashi Bhushan Arya, S.M. Shariff, "Influence of laser surface modification on flow assisted corrosion (FAC) behaviour of API X70 steel in oilfield water", International Symposium on Advanced Materials for Industrial and Societal Applications (NMD-ATM-2019), at Hotels Uday Samudra & Samudra, Kovalam, Trivandrum, November 13-16, 2019.
  11. Manjunath G, Sanjay Pujari, D. R. Patil<sup>2</sup>, Saumen Mandal, "Screen printing of solution combustion processed ZnO - a promising UV and gas sensors", Third International Conference on Advanced Materials (ICAM 2019) 9-11 August 2019, Mahatma Gandhi University, Kottayam, Kerala, India.
  12. Manjunath G, Saumen Mandal, "A novel, cost-effective and efficient approach to screen printable silver conductor by direct reduction of initial precursor for printable electronics" 5<sup>th</sup> International Conference on Nanoscience and Nanotechnology (ICONN-2019) SRM University, Kattankulathur, 28<sup>th</sup>-30<sup>th</sup> January 2019.
- (SoCTA2019) at NIT Patna, India. December 27-29, 2019.
3. Vadivel S.M and Sequeira A.H., "The impact of lean service practices, workplace environment practices, and social practices on the operational performance in India Post service industry", Proceedings of 7<sup>th</sup> International Business Analytics and Intelligence Conference (DCAL2019) at IIM Bangalore, India, December 05-07, 2019.
  4. Shrishya S and Kiran K B, "Technology, Demand and Innovation Capability of Indian MSMEs", Portland International Conference for Management of Engineering and Technology, Oregon, USA, August 2019.
  5. Kumar, S. Pavan. (2020). Workplace Spirituality as an Antecedent of University Teachers Subjective Well-being: Mediating Role of Job Satisfaction and Job Performance. Seventh International Conference on Transformations in Engineering Education (ICTIEE 2020), Organized by IUCEE and Anurag Group of Institutions, Hyderabad, held during 5<sup>th</sup>-8<sup>th</sup> January, 2020 at Anurag Group of Institutions, Hyderabad.
  6. Sheena, "Workplace Spirituality and Employee Engagement as Predictors of Job Satisfaction: A Case of Government Doctors in Kerala", International Conference on Changing Dynamics of Business Management, 25-26 September 2019.
  7. Sheena and Sudheer K.M, "An Analysis of leadership authenticity of women in the Universities in Kerala", 7<sup>th</sup> International HR Conference, K.J.Somaiya Institute of Management, Mumbai, January 28-30, 2020.
  8. Prithvi, Pradyot R jena and Ritanjali Majhi, Study on Port Performance dimensions and evaluation for Indian Major Sea Ports –A Conceptual Model, IAME 2019 Conference, Athens, Greece
  9. Dr. Rajesh Acharya, Exploring the Dependency between Energy Access and other Sustainable Development

### **SCHOOL OF MANAGEMENT**

1. Vadivel S.M., Sequeira A.H., Sunil Kumar Jauhar, Baskaran.R "Application of multi-criteria decision-making approach for the evaluation of Tamilnadu private bus companies from passengers' perspective", Proceedings of 4<sup>th</sup> international conference on soft computing: Theories and applications (SoCTA2019) at NIT Patna, India. December 27-29, 2019.
2. Vadivel S.M., Sequeira A.H., Sunil Kumar Jauhar, Amirthagadeswaran K.S., "CNC Machine Shop Floor Facility Layout Design using Genetic Algorithms", Proceedings of 4<sup>th</sup> international conference on soft computing: Theories and applications

- Goals: Global Evidence. Presented at the Two-Day International Conference on Sustainable Development and Education during 5-6 March 2020. Organized by Department of Economics, Central University of Kerala
10. Pradyot Ranjan Jena and Sunil Khosla (2019). Role of Direct Employment Scheme and Health Policy on Household Vulnerability to Poverty: Empirical Evidence from Eastern Rural India. Presented at PEGNet Conference "Promoting 8 social, economic and socio-political development through social protection", Bonn, Germany, September 9-10, 2019.
  11. Prathvi TN, R. Majhi and Pradyot R. Jena, "Study on Port Performance dimensions and evaluation for Indian Major Sea Ports –A Conceptual Model", Presented at the 27th Annual Conference of the International Association of Maritime Economists (IAME 2019 Conference), Athens, Greece, from 25th to 28th June 2019.
  12. Gopalakrishna BV, "Globalisation Impact on Human Development: Evidence from Panel Data Analysis, Two-day International Conference on Liberalisation, Privatisation and Globalisation: Three Decades of Experience in India, DOI: 14-15, February, 2020, The Gandhigram Rural Institute, Dindigul, Tamil Nadu.
  13. Bhat, Savita "Determinants of OFDI of Manufacturing Firms from India to the Developed Countries within OECD", 14th Annual Conference of the Forum for Global Knowledge Sharing (in partnership with Tata Trusts), IIT Madras, Chennai, India, October 11-13, 2019
  14. Haritha S and Bijuna C Mohan, "Consequences of Cognitive Dissonance in Online Shopping: Conceptual Framework", IIM Indore - NASMEI Summer Marketing Information Systems Conference, IIM Indore, IN, July 26-28, 2019.
  15. Raksha R Deshbhag and Bijuna C Mohan, "Study on Influential Role of Celebrity Credibility on Risk Perceptions of Indian Consumers", IIM Indore - NASMEI Summer Marketing Information Systems Conference, IIM Indore, IN, July 26-28, 2019.
  16. Shamal S and Bijuna C Mohan, "Branded Fortified Foods and Beverages: Knowledge Gap between Consumer", 7th International conference on Business Analytics and Intelligence, IIM Bangalore, IN, December 5-7, 2019.
  17. Ranjith V K and Bijuna C Mohan, "Business Model Innovation in Healthcare sector-An Exploration", 4th International Conference on Opportunities and Challenges in Business Management, MAHE, Dubai, Manipal International University, Malaysia and MIM, India, DUBAI, 25-26 February 2020
  18. Ms. Veena Shenoy and Dr. Rashmi Uchil, Presented paper titled Employee Experience and Organisational Effectiveness: A Mediating Role of Employee Engagement on 29th November -COSMAR 2019, organized by IISC Bangalore.
  19. Ms. Veena Shenoy and Dr. Rashmi Uchil, Paper presented at International Conference on "Future of Work, Workforce and Workplace" Organised by WE SCHOOL Mumbai on paper titled Flexible Working Arrangement, Employee Engagement, organizational commitment: A Mediation Model on 13th and 14th Jan 2020.
  20. R Pai, R., & Alathur, S. (2019, June). Mobile Health System Framework in India. In 20th Annual International Conference on Digital Government Research, Dubai United Arab Emirates. 186-195. ACM. <https://doi.org/10.145/3325112.3325235>
  21. Pai, R. R., & Alathur, S. (2020). Women Empowerment Through Social Media: Insights from #MeToo India. In ICT Analysis and Applications. 387-

395. Springer, Singapore. Print ISBN: 978-981-15-0629-1. Electronic ISBN: 978-981-15-0630-7.
22. Pai, R. R., & Alathur, S.. Determinants of Mobile Health Application Awareness and Use in India: An Empirical Analysis. 13th International Conference on Theory and Practice of Electronic Governance (ICEGOV2020). Accepted, Athens, Greece.
23. Jayan V, Sreejith Alathur, Vaccination Drive and Cyber Threats in India, 13th International Conference on Theory and Practice of Electronic Governance (ICEGOV2020), Accepted, Athens, Greece.
24. Vanitha, P.S. and Alathur, S., 2020. Cloud-Based E-Learning Service: Insight from India. In ICT Analysis and Applications, Proceedings of ICT4SD 2019, Volume 2. (pp. 417-425). Springer, Singapore.
25. Naganna Chetty and Sreejith Alathur (2020). Policies to Mitigate Select Consequence of Social Media: Insights from India. Proceedings of ICT4SD 2019, Volume 1, In ICT Systems and Sustainability (pp. 351-359). Springer, Singapore
26. T M, Rofin, "Impact of Channel-Power Structure on the Performance of Retailer and E-tailer in an Emission Sensitive Supply Chain" 52<sup>nd</sup> Annual Convention of ORSI & International Conference IIM Ahmedabad, December 15-18, 2019.

#### **DEPARTMENT OF PHYSICS**

1. Vinayaraj S, Brijesh K, P C Dhanush, H S Nagaraja, ZnWO<sub>4</sub>/SnO<sub>2</sub> Composite for Supercapacitor Applications, PHYSICA B CONDENSED MATTER PISSN:09214526, Karnataka, 15-01-2020 to 17-01-2020.
27. Amudha A, H.D, Shashikala, H.S, Nagaraja, Plasmasprayed graphene oxide reinforced alumina composite coatings on low carbon steel with improved fracture toughness, brittleness index and microhardness,

- Materials Today: Proceedings PISSN:, Tiruchirappalli, 27-12-2019 to 28-12-2019
3. K. Achyutha, M.N. Satyanarayan, Effect of Precursors Concentration Ratios on the Optical Properties of Methylammonium Tin Chloride Perovskite, Current Trends in Functional Materials, NITK Surathkal, 15-17 January (accepted in Physica B Special Issue)
  4. S. Varadharajaperumal, D. Alagarasan, M.L. Pradeep Kumar, R. Ganesan, Gopalkrishna Hegde and M.N. Satyanarayan, Cd free Sulphurated 1D-TiO<sub>2</sub> nanorods for heterojunction solar cells, Proceedings of the IMME 2019 at NIT Trichy, Dec. 27-28, 2019.
  5. M. Mohan, M.N. Satyanarayan and Darshak Trivedi, Biothiophene based red-light emitting material – Photophysical and DFT Studies, AIP Conf. Proc., AIP Publishing, 030577, 2019
  6. Sukanya Maity, Partha Pratim Das, and Sib Sankar Mal, Symmetric supercapacitor based on graphene oxide-phosphotetradecavanadate nanohybrid as an electrode material, International Conference on Nano Science and Technology (ICONSAT-2020), S. N. Bose National Centre for Basic Sciences, Kolkata, India, March 5-7, 2020.

#### **NATIONAL CONFERENCE**

#### **DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS**

1. Binumol S, Subba Rao, and AV Hegde, Physical modelling on hydraulic performance characteristics of perforated quarter circle breakwater, 1st National Conference on Applied Science, Engineering & Technology 2019, CASET – 2K19, 11th June 2019, Oman & has been honoured with BEST PAPER AWARD.
2. Sailesh Sairen, Subba Rao and Reddy N T., Comparison of overtopping discharges for impermeable and permeable breakwaters using MIKE 3 WFM, National Conference on Civil Engineering (NCCE-NITK) organized by Department of Civil Engineering Karnataka, Surathkal on 30 & 31 st January 2020.

3. Rifat Salahudeen ,Kumaran V, Subba Rao and Manu, Study on damage analysis of toe structure provided to a vertical caisson breakwater, National Conference on Civil Engineering (NCCE-NITK) organized by Department of Civil Engineering Karnataka, Surathkal on 30 & 31 st January 2020
4. Vishwanatha Mane, Aswathy K B, Subba Rao and Vittal Hegde , Study of the wave overtopping volume per wave on emerged quarter-circle breakwater, National Conference on Civil Engineering (NCCE-NITK) organized by Department of Civil Engineering Karnataka, Surathkal on 30 & 31 st January 2020.
5. Srinivasula Reddy I., Vadivuchezhian Kaliveeran, “Combined effect of temperature and contact pressure on coefficient of friction of dry sliding Al6061 T6 alloy contacts Materials and Manufacturing Methods - 2019, July 5 – 7, 2019, NIT Tiruchirappalli, India.
6. Raja Pandi R., Vadivuchezhian Kaliveeran, “Experimental and Numerical Study on New Displacement Sensor for Fretting Experiments”, Materials and Manufacturing Methods - 2019, July 5 – 7, 2019, NIT Tiruchirappalli, India.
7. Muralidhar N., Vadivuchezhian Kaliveeran, Arumugam V. and I. Srinivasula Reddy, “Flexural Strength and Flexural modulus of Epoxy Composites Reinforced with Arecanut Husk Fibre and glass fibre”, Materials and Manufacturing Methods - 2019, July 5 – 7, 2019, NIT Tiruchirappalli, India.
8. Ramachandra Rao N., Sandeep Kumar N., Vadivuchezhian Kaliveeran, “Effect of grooving technique on tensile specimens to improve the mechanical characteristics of IS 2062 grade mild steel”, Materials and Manufacturing Methods - 2019, July 5 – 7, 2019, NIT Tiruchirappalli, India.
9. Shwetha, H, R., Nagesh, Kumar, D., 2019. Evaluation of satellite based ETO models for all sky conditions. Water Future Conference, Bengaluru, and 24 – 27 September.

## **DEPARTMENT OF CHEMICAL ENGINEERING**

1. Lister Herington Falleiro and B. Ashraf Ali,” PBM coupled CFD simulation of batch crystallizer” 46<sup>th</sup> National conference on fluid mechanics and fluid power, PSG College of Technology Coimbatore, IN, Dec 9-11, 2019.
2. Sunil Kumar Singh and B. Ashraf Ali, “Computational investigation of air solid flow in a spray dryer for effluent treatment”, National conference on nanotechnology & environment,National Institute of Technology Raipur, IN, Feb 13-14, 2020.
3. Santhosh Kumar and B. Ashraf Ali, “Computational investigation of hydrodynamics and drying of industrial sludge waste”, National conference on nanotechnology & environment,National Institute of Technology Raipur, IN, Feb 13-14, 2020.
4. Sunaina S Patil, Gouramma Pattanashetti , Kirthi Rajvanshi, Hari Prasad Dasari ,\*, “Effect of synthesis method on Nickel Oxide nano-particles and its soot oxidation activity”, National symposium On Environmental pollution prevention and control:Future perspectives EPPC:FP-August 2019 at NITK Surathkal
5. Keyur Raval, Kartik G., Ritu Raval, “Sustainable application of crustacean waste product chitin as carrier material for bio-fertilizer”, EPPCFP-2019, NITK Surathkal, 21-23 August 2019
6. Keyur Raval, Harsha Thaira, Priyanka Bhat, Ritu Raval, “Increasing productivity of shaken cultures” BESCON 2019, IIT Madras 18-19 October 2019

## **DEPARTMENT OF CIVIL ENGINEERING**

1. Abasin Salihi, Arpitha, D. and Rajasekaran C., (2020) Suitability study of processed granulated blast furnace slag (PGBS) replacement as fine aggregate in concrete, *Proc. of National Conference on Civil Engineering (NCCE NITK 2020)*, 21

2. Kondababu K, Arpitha, D. and Rajasekaran C., (2020) measurement of porosity of mortar as an indicator of durability by partial replacement of river sand with processed granulated blast furnace slag, *Proc. of National Conference on Civil Engineering (NCCE NITK 2020)*, 24.
3. S. Anaswara and R. Shivashankar (2019), "Interference Study between a Retaining Soil Wall and a Closely Built Strip Footing on Lateritic Soil", Symposium on laterites and lateritic soils, Indian Geotechnical Society – Trivandrum Chapter (CET/LBSITW), February 08, 2019, pages 62-66.
4. S. Anaswara and R. Shivashankar (2019), "Studies on tilt of closely spaced strip footings on unreinforced and reinforced sands", Indian Geotechnical Conference IGC-2019, SVNIT Surat, Gujarat, Th2-38

#### **DEPARTMENT OF CHEMISTRY**

1. Nivedha Vinod, Ritesh Tiwari, Navya Subray Bhat, Sib Sankar Mal, and Saikat Dutta, High-yielding synthesis of alkyl stearates from stearic acid within a closed batch reactor using heteropolyacids as efficient and recyclable catalyst AIP Conference Proceedings **2225**,070004(2020); <https://doi.org/10.1063/5.0005580>.
2. Harsha Bantawal, D. Krishna Bhat, Improving the Photocatalytic Activity of SrTiO<sub>3</sub> by Altering the Sr/Ti Ratio: Unusual Effect of Viscosity of Synthesis Medium, One Day National Seminar on Current Trends in Chemical Research and Development (CTCRD-2019) held at Vivekananda College of Arts, Science & Commerce, Puttur, D.K., India, during 18th September, 2019.
3. National Workshop on "Recent Advances in Material Chemistry", 26<sup>th</sup> September 2019. NITK Surathkal.
4. Badekai Ramachandra Bhat and Anuma Saroja (2019) "Cobalt Ferrite

Nanoparticle by hydrothermal Synthesis for the efficient removal of cationic dyes from Wastewater" XXXVIII<sup>th</sup> Annual National Conference on Indian Council of Chemists, Jaipur National University, Jaipur during 26-28 December 2019. IO-5.

#### **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

1. Padala, S.K., D'Souza, J., "Performance of spatially coupled LDPC codes over underwater acoustic communication channel", 26<sup>th</sup> National Conference on Communications, NCC 2020, 9056068, 21- 23 February 2020.

#### **DEPARTMENT OF MECHANICAL ENGINEERING**

1. L. R. Thippeswamy, Ajay Kumar Yadav, Heat transfer performance of subcritical liquid CO<sub>2</sub> based natural circulation loop with end heat exchangers: an experimental study, Proceedings of the 46<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.
2. Prakash H. Jadhav, Banjara Kotresha, N. Gnanasekaran, D.A. Perumal, Forced convection analysis in a horizontal pipe in the presence of aluminium metal foam – a numerical study, Proceedings of the 46<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.
3. Jeena Joseph, S. Surya, A. Sathyabhama, A comparison on the effect of leading edge tubercle on straight and swept wing at low Reynolds number, Proceedings of the 46<sup>th</sup> National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.
4. K.L.V Manohar, R. Maniyeri, Numerical study of effect of asymmetry on performance of bio-mimetic caudal fin shapes,

Proceedings of the 46th National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.

5. M.P. Neeraj, R. Maniyeri, Mixing in oscillating lid driven cavity- a numerical study, Proceedings of the 46th National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.
6. B.C. Anil Kumar, R. Maniyeri, S. Anish, Numerical investigation on the effect of various geometries in a solar box type cooker: a comparative study, Proceedings of the 46th National Conference on Fluid Mechanics and Fluid Power (FMFP 2019), PSG College of Technology, Coimbatore, India, Dec 9-11, 2019.
7. Debasish Mahapatra, T.P. Ashok Babu, Time lag and decrement factor as a passive cooling tool for designing energy efficient building, 6th National Conference on Refrigeration and Air Conditioning (NCRAC 2020), IIT Madras and K.L.N College of Engineering, Madurai, India, Feb 20-22, 2020.

### **DEPARTMENT OF MINING ENGINEERING**

1. Reddy, S.K and Ram Chandar, K., 2020. Stability Assessment of Highwall Slope of an Open pit Coal Mine- A Case Study, Recent Advances and

Practices in Mineral Industry, 21-22 Feb, 2020, VNIT Nagpur, 6-12.

### **SCHOOL OF MANAGEMENT**

1. Pradyot Ranjan Jena, "Sustainable Agriculture in Development Countries: What Do We Know from Evidence?" Presented at National Conference on Inclusive Green Growth in India: Path Way to Sustainable Development. June 18-19, 2019 at Utkal University, Bhubaneswar, India.
2. Ms. Veena Shenoy and Dr. Rashmi Uchil, Presented paper titled Physical environment, employee engagement and organizational effectiveness on 30<sup>th</sup> August 2019, organized by MP Birla Institute of Management, Bangalore

## 14. TECHNICAL EVENTS

### DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS

#### STTPS/Schools/Seminars/Workshops etc

1. Seminar on Innovative concept in Ocean Engineering, 26.04.2019, NITK, Co-ordinator : Dr. Manu
2. Training programme on Geospatial Technologies, 11-31 July 2019, NITK, Co-ordinator : Dr. H. Ramesh
3. Seminar on Coastal Reservoirs as a sustainable strategy for water security, 22<sup>nd</sup> – 24<sup>th</sup> July, 2019, NITK, Co-ordinator : Dr. H. Ramesh
4. CEP Course for PWD Engineers, 'Drone survey on 3D mapping', 26<sup>th</sup> -30<sup>th</sup> , August 2019, co-ordinator : Dr. Pruthviraj U.
5. Training programme on Hydrology and Hydrologic modelling using MIKE (DHI) Software , 16.09.2019, AMD, NITK, Co-ordinator : Dr. K. Subrahmanya
6. Training programme on ARCGIS software, 18<sup>th</sup> to 20<sup>th</sup> Sept. 2019, AMD, NITK, Co-ordinator : Dr. Amba Shetty
7. GIAN programme on Design and analysis of offshore floating and turbine, 3<sup>rd</sup> to 7<sup>th</sup> Sept. 2019, MHRD, Co-ordinator : Dr. D. Karmakar
8. Workshop on Prakruti Infocus, 28.09.2019, NITK, Co-ordinator : Dr. Pruthviraj U.
9. Training programme on Pix4D Map Software, 23.09.2019, AMD, NITK, Co-ordinator : Dr. Pruthviraj U.
10. Training programme on Physical & Numerical Modelling in Coastal and Ocean Engineering' 4<sup>th</sup> to 10<sup>th</sup> Nov. 2019, NITK, Co-ordinators : Dr. Pruthviraj U. & Dr. Kiran G. Shiral
11. Symposium on 'Open source hydrodynamics program on numerical modelling' 13<sup>th</sup> Nov. 2019.
12. GIAN program on "Environmental loads and Design Approach for Fixed and Floating Offshore Structures" 24<sup>th</sup> -27<sup>th</sup> December 2019, Co-ordinators: Dr.T.Nasar & Prof Subba Rao

### FOREIGN VISITORS TO DEPARTMENT

1. Dr. Rituparna Datta, Computer Research Scientist, University of South Alabama, USA given a Expert talk on Topic Evolutionary Multiobjective Optimisation on 9<sup>th</sup>& 10<sup>th</sup> August 2019.
2. Prof. Motohiki Murai, Professor, Dept. of Environment and System Sciences, Yokohoma National University, Tokiwadai, Hodogaya Yokohama, Japan, for the Gian programme 'Design of analysis of floating wind turbine, 3<sup>rd</sup> to 7<sup>th</sup> Sept. 2019.
3. 3.Dr. Krish P Thiagarajan, Professor, Department of Mechanical Engineering, University Of Massachusetts Amherst, USA, for the GIAN programme Environmental loads and Design Approach for Fixed and Floating Offshore Structures , 24<sup>th</sup> - 27<sup>th</sup> December 2019.
4. Prof. Hans Bihs, Associate Professor, Marine Civil Engineering, NTNU, Trondhenim, Norway , Resource person for the Workshop on 'Physical & Numerical Modelling in Coastal and Ocean Engineering', 4<sup>th</sup> to 10<sup>th</sup> Nov. 2019.
5. Dr. Arun Kamath, Faculty, Marine Civil Engineering, NTNU, Trondhenim, Norway, Norway , Resource person for the Workshop on 'Physical & Numerical Modelling in Coastal and Ocean Engineering', 4<sup>th</sup> to 10<sup>th</sup> Nov. 2019

### INDIAN VISITORS TO DEPARTMENT

1. Dr. K.P. Sudheer, Professor, Environment and Water Resources Engineering Division, IIT, Madras, Visited for Viva-voce exam and Interaction with faculty and students of the Dept. 20.04.2019.
2. Dr. S.A.Sanasiraj, Professor, Ocean Department, IIT Madras, Visited for Viva-voce exam and Interaction with faculty and students of the Dept., 25.04.2019.

3. Dr. K.Ganesh Raj, RRSSC, Bangaluru, As a Chief Guest for Summer school 'Geospatial Technologies', 11.07.2019.
4. Prof. T.G. Seetharam, Director, IIT Guwahati, Chief Guest for the Workshop on, Coastal Reservoirs as a sustainable strategy for water security Under Scheme for Promotion of Academic and Research Collaboration (SPARC) , 22<sup>nd</sup> July, 2019.
5. Dr. Shamitha Kumar, Chairperson, Committee on Geospatial Capacity Building, Department of Science and Technology, Government of India, As a Chief Guest for Summer school 'Geospatial Technologies' for Valedictory, 31.07.2019.
6. Dr. P.G. Diwakar, Director of Earth Observations Applications and Disaster Management Programme, ISRO Bengaluru. As a Guest of honor for Summer school 'Geospatial Technologies' for Valedictory. 31.07.2019.
7. Dr. Nagesh Kumar, Professor, IISc. Bengaluru, Visited for Viva-voce exam and Interaction with faculty and students of the Dept. 20.08.2019 & 21.08.2019.
8. Prof. Erinjery Joseph James, Pro Vice Chancellor, Karunya Deemed University, Coimbatore, Talk on 'Role of Ecosystems in integrated water resource management, 05.09.2019.
9. Dr. M.C.Deo, Professor, IIT Bombay, Visited for Viva-voce exam and Interaction with faculty and students of the Dept. 10.10.2019. Dr. Nagesh Kumar , Professor, IISc. Bengaluru, Visited for Academic Audit, 11.10.2019.
10. Dr. Hari Prasad, Professor, IIT Roorkee. Visited for Academic Audit, 11.10.2019.
11. Dr. Jayakumar Saleem , Scientist, NIOT Goa. Visited for Academic Audit, 11.10.2019.
12. Dr. Suresh Kumar, Scientist, IIRS, Dehradun, Visited for Academic Audit, 11.10.2019.
13. Dr. S.A.Sanasiraj, Professor, Ocean Department, IIT Madras, Visited for Viva-voce exam and Interaction with faculty and students of the Dept. 04.12.2019.
14. Dr. K. Jayaraman, Professor, IIT Madras, Visited for Viva-voce exam and given a talk on 'Mechanical characterization of Aeracnut Husk fibre Husk composite panels using static and dynamic loading condition' 26.12.2019.
15. Dr. Balaji Ramakrishnan, Professor, IIT Bombay Visited for Viva-voce exam and Interaction with faculty and students of the Dept. 05.02.2020.
16. Dr. Kasi Vishwanathan, Professor, IIT Roorkee, Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 07.02.2020
17. Prof. S. K. Mishra , Professor, IIT Roorkee, Visited for Viva-voce exam and given a talk on 'Advances in curve numbering techniques', 14.02.2020

### AWARDS AND RECOGNITIONS

Binumol S, Subba Rao, and AV Hegde (2019) "Physical modelling on hydraulic performance characteristics of perforated quarter circle breakwater", 1st National Conference on Applied Science, Engineering & Technology 2019, CASET - 2K19, organised by Ibri college of Technology, Ibri, Sultanate of Oman on 11th June 2019, has been honoured with BEST PAPER AWARD, 11th June 2019

Infrastructure Development Setting up of new labs from Project funding and IRG  
Offshore Renewable Energy and Simulation Laboratory (Development in progress under project fund)

- HPC Server
- Desktop Computers (3 Nos)
- MATLAB
- Acceleration Sensors
- Pressure Sensors
- Anchor Load Sensors
- Tilting Sensors
- Wave Sensors
- Force Sensors



### BOOK CHAPTERS:

1. Prerna Kumari and Ramesh H., 2020. Extraction of Nearshore Bathymetry of Mangaluru Coast for Planning Coastal Reservoir using Remote Sensing Image. 13th chapter in the Book "Sustainable water resources development using Coastal reservoir". Edited by T. G. Sitharam et al., Springer.
2. B. Vinay Kumar, K. Sadhik, Kumaran V, Subba Rao, and Manu, "An Experimental Investigation on Toe Stability for Vertical- Caisson Breakwaters" In the book titled "Lecture Notes in Civil Engineering" edited by Mithun B M & Anil Kumar (eds.), Springer, Singapore, 2020.
3. Ramesh N., Hedge A.V., and Subba Rao, "Prediction of reflection coefficient of a perforated Quarter circle breakwater using artificial neural network (ANN)" in the book titled "Journal of Physics:conference series" IOP Publishing, 2019 J. Phys.: Conf. Ser. 1276 011001 (<https://iopscience.iop.org/article/10.1088/1742-6596/1276/1/012006>)(2019)
4. K. Chaitanya Sai, Ajay H. Patil & D. Karmakar (2019), Motion Response Analysis of Floating Wind Turbine Combined with Wave Energy Converter, *Proceedings of 10<sup>th</sup>International Conference on Asian and Pacific Coasts, (Springer Nature)*, 1099-1106.
5. Athul Krishna K.R., V. Venkateshwarlu & D. Karmakar, (2019), Wave transformation due to a submerged porous block associated with a vertical barrier, *Proceedings of 10<sup>th</sup>International Conference on Asian and Pacific Coasts (Springer Nature)*, 717-724.

### DEPARTMENT OF CHEMICAL ENGINEERING

#### Book Chapters:-

1. Raj Mohan Balakrishnan, Priyanka Uddandarao, Vishnu Manirethan, Keyur Raval, Insights on the advanced processes for treatment of inorganic

- water pollutants, Inorganic Pollutants in Water, Elsevier publishers, doi.org/10.1016/B978-0-12-818965-8.00016-0
2. Jananisree Ganesan, Madhangi Priyadharshini Gandhi, Maheswari Nagendran, Bin Li, Vaishakh Nair, and Padmanaban Velayudhaperumal Chellam, "Functional Properties of Nanoporous Membranes for the Desalination of Water" in, *Environmental Nanotechnology*, DOI: 10.1007/978-3-030-26668-4\_4, Springer , Volume 4, 2020, pp 131-164, ISBN: 978-3-030-26667-7. ISBN: 978-3-030-26668-4 (e-book).

### BOOKS PUBLISHED:

1. Contributed Chapter 2 - A perspective of advanced biosensors for environmental monitoring in book Tools, Techniques and Protocols for Monitoring Environmental Contaminants, 2019, Pages 19-51 (Elsevier Publishers) Authors: Raj Mohan Balakrishnan, Uddandarao Priyanka, Keyur Raval and Ritu Raval. doi.org /10.1016/B978-0-12-814679-8.00002-9.

### PATENTS

1. Kishor Kumar M.J. and Jagannathan T. K. "Method and composition for fabricating high-k dielectric material", *Indian Patent Office*, Patent Application No.: 201941047909, Nov 23, 2019

### POSTERS PRESENTED

1. Ashmitha Das, Irfana Shahjahan, Lakhan Lal, Kirthi Rajvanshi and Hari Prasad Dasari "Dilatometer studies of LAMOX based Electrolyte material for Solid oxide electrolysis Cell" International Conference on Nano Science and Technology (ICONSAT 2020) Biswa Bangla Convention Centre, New Town Kolkata March 5-7, 2020
2. Sahana Naik, Sunaina Patil, Irfana Shajahan and Hari Prasad Dasari " Synthesis And Characterization of Niobium Doped Ceria Based Solid

- Electrolytes”International Conference on Electrochemistry (EIHE–2020) organised by the Indian Society for2. ElectroAnalytical Chemistry (ISEAC) at DAE Convention centre, Anushaktinagar, Mumbai during January 21-25, 2020.
3. Shweta Ganiger, Irfana Shajahan, Sunaina Patil and Hari Prasad Dasari “Dilatometer Studies Of Praseodmium Doped Ceria Based Electrolyte Material For IT-SOFC” International Conference on Electrochemistry (EIHE–2020) organised by the Indian Society for ElectroAnalytical Chemistry (ISEAC) at DAE Convention centre, Anushaktinagar, Mumbai during January 21-25, 2020.
4. Varsha Mavath, Sunaina Patil, Irfana Shajahan, Hari Prasad Dasari “Synthesis and characterization of Ceria based material as a catalyst for soot oxidation activity” International Conference on Electrochemistry (EIHE–2020) organised by the Indian Society for ElectroAnalytical Chemistry (ISEAC) at DAE Convention centre, Anushaktinagar, Mumbai during January 21-25, 2020.

### Conference

1. National Symposium on Environmental Pollution Prevention and Control: Future Perspective-2019(EPPC:FP-2019) Organized by Department of Chemical Engineering ,NITK Surathkal in association with Ministry of Environment, Forests and Climate Change, GoI ; Central Pollution Control Board and Karnataka State Pollution Control Board. Held during 23rd and 25th August 2019. Symposium Chair: Prof. G. Srinikethan , Organizing Secretaries : Prof Vidya Shetty K and Prof B. Raj Mohan.

### WORKSHOPS

1. Dr. Maneesh K Poddar “Effective Digitization on Course Content for Blended Learning and Flipped Class Room” (Sponsored by TEQIP-III) two -

days workshop on March 9-10, 2020 at NITK, Surathkal.  
Dr. Maneesh K Poddar “AICTE/MHRD’s Innovation Ambassador Training Program” two days workshop on Feb 26-27, 2020 at ACS College of Engineering, Bangalore. The workshop was organized by MHRD’s Innovation Cell, AICTE, New Delhi.

### FOREIGN VISITORS TO DEPARTMENT

1. Dr. Antoinette P. Malan, Professor, Dept. of Conservative Ecology, Stellenbosch University, Cape Town, South Africa, visited on 14.10.2019
2. Ms. Ilisa Ishan, Faculty of Science, University Brunei Darussalam, Brunei did her AI-RTF/ RTF-DCS Fellowship during 1<sup>st</sup> Jan 2020 to 28<sup>th</sup> Feb 2020 in the department of Chemical Engineering under the guidance of Dr. Prasanna B.D

### VISIT TO ABROAD (Faculty):-

1. Dr Hari Prasad Dasari\* presented paper on “A Study On Multi Doping Effect On Ceria Based Materials For Soot Oxidation Activity” at KIST School ASEAN Alumni Partnership Symposium Hanoi, Vietnam, during December 20-21, 2019.
2. Dr. Prasanna B.D, Associate Professor in chemical Engineering department visited Stellenbosch University during 13-20, October, 2019 to pursue joint collaborative research project funded by DST, Govt. of India.
3. Prof.Vidya Shetty K ,Department of Chemical Engineering attended and presented a paper at Asia Pacific Conference on Nano-Micromaterials for Circular economy and Sustainability held during 29 Aug 2019 - 01 Sep 2019 at National University of Singapore organized by NUS Singapore, UCF USA and National Science Foundation.

**DEPARTMENT OF CIVIL  
ENGINEERING**

**BOOK CHAPTERS**

1. Azhoni, A. "Climate Change Adaptation for Sustainable Management of Water in India: Issues and Challenges" in *Sustainability: Fundamentals and Applications*. Wiley, 2020, ISBN: 9781119434016, <https://doi.org/10.1002/9781119434016.ch21>.
2. Thiviya, S. K., Krishnan, A. G., Kalathuru, M., Sharma, A. K., & Kolathayar, S. (2020). Strength Behavior of Rammed Earth Stabilized with Metakaolin. In *Advances in Geotechnical and Transportation Engineering* (pp. 29-39). Springer, Singapore.
4. Resmy V.R. and Rajasekaran C. (2020) Topology Optimization of Concrete Dapped Beams Under Multiple Constraints. In: Dutta D., Mahanty B. (eds) *Numerical Optimization in Engineering and Sciences. Advances in Intelligent Systems and Computing*, vol 979. Springer, Singapore
5. Srinivas F. Chitragar, Chandrashekhar B. Shivayogimath, Raviraj H. Mulangi (2019), "Study on Strength and Volume Change Behavior of Expansive Soil Using Non-traditional (Bio-enzyme) and Traditional (Lime and Bagasse Ash) Stabilizers", *Geotechnics for Transportation Infrastructure, Lecture Notes in Civil Engineering (Springer)*, Vol 29, pp 587-594.
6. Shivashankar R., Biji Chinnamma Thomas, K. T. Krishnanunni and D. Venkat Reddy (2019) "Slope Stability Studies of Excavated Slopes in Lateritic Formations". In book - *Geotechnical Applications:IGC2016*. Edited by Anirudhan, I. V. and V. B. Maji, *Lecture Notes in Civil Engineering*, vol 4, pp.127-134 Springer, Singapore. doi:10.1007/978-981-13-0368-5\_14.
- Patel, Radhika M; Jayalekshmi, B.R. and Shivashankar, R. (2019), "Seismic Response of Basal Geogrid Reinforced Embankments supported over floating and End Bearing Piles", 7<sup>th</sup> International Conference on Earthquake Geotechnical Engineering [7ICEGE], Rome, Italy, 17-20 June 2019, *Proceedings in Earth and geosciences*, Volume 4, *Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions*, Editors: Francisco Silvestri and Nicolal Moraci, ISBN978-0-367-14328-2 (Multimedia), ISBN: 978-0-429-03127-4 (e-book), DOI:<https://doi.org/10.1201/9780429031274>, CRC Press/Balkema.
7. Patel, R. M., Jayalekshmi, B. R. and Shivashankar, R. (2020) 'A Study on the Seismic Behaviour of Embankments with Pile Supports and Basal Geogrid. In: Prashant A., Sachan A., Desai C. (eds) *Advances in Computer Methods and Geomechanics. Lecture Notes in Civil Engineering*, Vol. 56, Springer, Singapore. DOI:<https://doi.org/10.1007/978-981-15-0890-5-22>.
8. Shreyasvi C, Venkataramana K (2020): "Seismic hazard estimation for Southwest India", *Advances in Computer Methods & Geomechanics (A Prashant et al (eds.))*, *Lecture Notes in Civil Engineering 56*, Springer Nature, pp. 207-220. [https://doi.org/10.1007/978-981-15-0890-5\\_18](https://doi.org/10.1007/978-981-15-0890-5_18).
9. Shreyasvi C, Badira Rahmath N and Venkataramana K (2020): "Influence of variabilities of input parameters on seismic site response analysis", *Advances in Computer Methods & Geomechanics (A Prashant et al (eds.))*, *Lecture Notes in Civil Engineering 56*, Springer Nature, pp. 233-244. <https://doi.org/10.1007/978>.
10. Manjunath and Mattur C Narasimhan- 'Alkali-activated Concrete Systems' in *New Materials in Civil Engineering*,

Elsevier. Ed: Pijush Samui, Dookie Kim, Nagesh Iyer and Sandeep Chaudhary ISBN 97801281.

11. Manjunath R and Narasimhan M.C.(2019), "High Strength Flowable Alkali Activated Slag Concrete Mixes produced using industrial wastes", IOP Conference Series Materials Science and Engineering 561:0120, DOI: [10.1088/1757-899X/561/1/012003](https://doi.org/10.1088/1757-899X/561/1/012003)

#### **BOOKS EDITED:-**

1. Narasimhan, M.C., George, V., Udayakumar, G., Kumar, A. (Eds.), "Trends in Civil Engineering and Challenges for Sustainability", include select contributions from the International Conference on Civil Engineering Trends and Challenges for Sustainability (CTCS), held at Nitte, Karkala, India during May 2019

#### **REVIEWS:-**

1. Sridhar G, "[Review of the Journal Article: Improvement of Soft Clay by Vacuum Preloading Incorporated with Electroosmosis Used Electric Vertical Drains]", Journal of Testing and Evaluation, ASTM, JTE-2020-0050.R1.
2. Narasimhan M.C., Review of the Journal Article, "Preparation and properties of Sintering red mud unburned road brick using orthogonal experiments", Journal of Construction and Building Materials (Elsevier), Nov 2019.
3. Narasimhan M.C., Review of Journal Article, Experimental and theoretical investigations of recycled self-compacting concrete filled steel tubular columns subjected to axial compression", Journal of Construction and Building Materials (Elsevier) , Jan 2020.
4. Narasimhan M.C., Review of Journal Article, "Simulation of ultra-high-performance concrete mixed with hematite and barite aggregates using

Monte Carlo for dry cask storage" , Journal of Construction and Building Materials,(Elsevier), Jan 2020

#### **DEPARTMENT OF CHEMISTRY BOOK CHAPTERS:-**

1. Praveen Mishra, Badekai Ramachandra Bhat (20.01.2020) "Correlation between Synthesis and Properties of Graphene" chapter in the book Graphene as Energy Storage Material for Supercapacitors, Material Research Foundation 64 (2020) 25-62 Materials Research Forum LLC,
2. Praveen Mishra, Badekai Ramachandra Bhat (23.12.2019), "Zero-Dimensional Carbon Nanostructures for Supercapacitors" Chapter in a book Morphology Design Paradigms for Supercapacitors 1(2019), 1-32, CRC Press, ISBN: 13:978-0-367-20754-0, Taylor & Francis Group, 6000 Broken Sound Palcoog NW, Suit 300, Boca Raton, FL 33487-2742.

#### **BOOKS PUBLISHED :**

1. Dileep R and Badekai Ramachandra Bhat (13.03.2020), "Green conversion oxidation of alcohols using metal complexes: homogeneous catalysis" LAP LAMBERT Academic Publishing, Germany, Pages:220, ISBN-10: 6200786984, ISBN-13: 978-6200786982

#### **PATENTS**

Madav, Vasudeva; Dutta, Saikat and Mohan, Akhil, "Method, system and apparatus for upgrading tyre pyrolysis oil", Indian Patent Office, Application No.201841018816 A, November 22, 2019.

#### **SEMINARS(NATIONAL& INTERNATIONAL)**

#### **WORKSHOPS**

National workshop on Recent Advances in Material Chemistry

(RMAC) on 26<sup>th</sup> September 2019 as a part of Diamond Jubilee celebrations. Convener: Prof. B Ramachandra Bhat, Co-Convener: Dr. Udaya Kumar D

#### **VISIT TO ABROAD (Faculty):-**

6<sup>th</sup> International conference of Indian Council of Chemists at Hotel Novotel Wellness and Spa roissy (Paris) Courtyard by Marriot-Avenue des Olympiades (Brussels) June 6-8, 2019.

Research collaboration visit to Universiti Teknologi Malaysia by Dr Arun M. Isloor during July 2019 for 14 days.

#### **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

##### **MAGAZINE/NEWSPAPER ARTICLES:**

Pais, A.R, Rao, R.S., “Phishing attacks and the countermeasures”, InfoSecdepot-2019 Magazine, pp. 58-59. (2019)

##### **PATENTS:**

Dr. P. Santhi Thilagam , Amit Praseed, “System and Method for Detecting Asymmetric Application Layer DDoS Attacks using User Access Pattern Model” -Filed(Oms Reference C.000704)

Dr. B.R.Chandavarkar, V Saicharan and Mohit Bansil, “Rhombus-based travellers’ optimum route recommendation system” - Filed (Oms Reference C.000762)

##### **SEMINARS (NATIONAL & INTERNATIONAL):**

One day Seminar on “Industry Oriented Approaches in Big Data and Machine Learning” with experts from Ericson Research Lab , Bangalore organized by Dr. K. Chandrasekaran on 31-08-2019.

##### **WORKSHOPS:**

A FIVE days’ workshop on “Simulation of Underwater Communications (SUC’19)” was held during 9th to 13th December 2019. Co-ordinator(s): Dr. B.R. Chandavarkar.

##### **FACULTY DEVELOPMENT PROGRAMME:**

A FIVE days’ Faculty Development Programme on “Information Security” was held during 14th to 18th October 2019 [sponsored by AICTE]. Co-ordinator(s): Dr. Alwyn Roshan Pais and Dr. P Santhi Thilagam.

A FIVE days’ Faculty Development Programme on “Internet of Things (IoT)” was held during 4th to 8th November 2019 [sponsored by AICTE]. Co-ordinator(s): Dr. Alwyn Roshan Pais and Dr. P Santhi Thilagam.

A FIVE days’ Faculty Development Programme on “Cyber Security” was held during 16th to 20th December 2019 [sponsored by AICTE]. Co-ordinator(s): Dr. Alwyn Roshan Pais and Dr. P Santhi Thilagam.

##### **FOREIGN VISITORS TO DEPARTMENT:**

Dr. Govind Shenoy, Dept. of Computer Science, University of WISCOSIN Modison 53705 visited on 15-11-2019

##### **VISIT TO ABROAD (Faculty):-**

Dr. Mohit P Tahiliani attended GCI Grand Prize Winners Summit at Google Campus, San Francisco, USA , 10 – 13 June 2019

Dr. Mohit P Tahiliani attended ns-3 developers meeting and workshop on ns-3 at university of Florence , Italy and presented his paper, 17 – 21 June 2019

Dr. K. Chandrasekaran attended an International Conference on Software Engineering and Knowledge Engineering (SEKE2019) held in Hotel Tivoli, Lisbon, Portugal and presented his paper, 10-12 July 2019.

Dr. K. Chandrasekaran attended an International Conference on Knowledge Management in Organization (KMO) 2019 held in University of Salamanca, Spain and presented his paper, 15-18 July 2019.

Dr. Basavaraj Talawar attended OpenPower Summit to release the open source modules of the POWER system on the gem5 architecture simulator at San Diego, USA , 19-20 August 2019

Dr. Basavaraj Talawar attended "Sakura Science Exchange Program-2020" Japan Science and Technology Agency (JST), Japan, 25 Jan – 01 Feb 2020.

## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **BOOK CHAPTERS**

Deepa Puneet and Muralidhar Kulkarni, Book Chapter, "Data Aggregation Using Distributed Compressive Sensing in WSNs", SPRINGER NATURE Singapore Pte Ltd 2020, S. M. Thampi et. al.(Eds.): SIR'S 2019, Communications in Computer and Information Science (CCIS),1209, pp.276-290, 2020. [https://doi.org/10.1007/978-981-15-4828-4\\_23](https://doi.org/10.1007/978-981-15-4828-4_23).

Ranjan Kumar Mahapatra, N S V Shet, Topology Control in Wireless Sensor Networks: A Survey(Book Chapter), Lecture Notes in Networks and Systems, Volume 33, 2019, Pages 335-346.

Prabu K., A chapter author for a book "Principles and Applications of Free Space Optical Communication", IET Publications. Title of the chapter is "Performance analysis and mitigation of turbulence effects using spatial diversity techniques in FSO systems over combined channel", 2019.

Prabu K, A chapter author for a book "Turbulence and Related Phenomena", Intech Open. Title of the chapter is "Performance analysis of FSO systems over atmospheric turbulence channel for Indian weather conditions", 2019.

### **PATENTS**

Deep Bera, B.S. Raghavendra, Rangavittal Narayanan, Sandipan Chakroborty, Praveen Pankajakshan, Method and apparatus for classifying cardiac arrhythmia, US Patent, Patent No.: US 9,380,956 B2, Date of Patent: Jul. 5, 2016.

### **STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS**

Winter School on Applications of Machine learning techniques for Medical Image Analysis in association with Baylor College of Medicine, Houston as part of MHRD SPARC project and NITK Diamond Jubilee events by Dr. Sumam David S and Dr. Deepu Vijayasenan with Baylor College of Medicine, Houston, December 2-13, 2019.

5 day STTP on Speech, Audio and Music Processing (SAMP 2020) as a part of NITK Diamond Jubilee by Dr. Aparna P. and Dr. Deepu Vijayasenan with 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, January 28-February 1, 2020.

### **WORKSHOPS**

One day workshop on Recent Trends in Wireless Optical Communications –

NITK IEEE by Dr. Prabu K. and Dr. Sandeep Kumar with Prof. Arun Majumdar (USA) and Dr. T. Srinivas (IISc., Bangalore) Chair, IEEE Photonics Society Bangalore Chapter, 6<sup>th</sup> March 2020.

### EXPERT TALKS

Technical Talk on "A brief insight into the Physics and applications of ultrafast magnetism: Towards Ultrafast Spintronics" by Mr. Akshay Pattabhi, Researcher, University of California, Berkeley, 4<sup>th</sup> September 2019.

Guest Lecture on "NAND Flash and Solid Storage Drives" by Mr. Gajendra Singh, Director, STL Technologies, Bangalore, 1<sup>st</sup> October 2019.

Series of Industry Expert lectures on "Hands-on Xilinx PYNQ Board with FPGA" by Er. Prakash Ganesh Lead Application Engineer CoreEl Technologies, Bangalore, 2<sup>nd</sup> March 2020.

### FOREIGN VISITORS TO DEPARTMENT

Mr. Akshay Pattabhi, Researcher, University of California, Berkeley, 4<sup>th</sup> September 2019.

Dr. Mandava Pitchaiah, Associate Professor, Dept of Neurology, Baylor College of Medicine, Houston, Texas, visited during December 2-13, 2019.

Dr. Paul Litvak, Assistant Professor, Dept of Neurology, Baylor College of Medicine, Houston, Texas, visited during December 2-13, 2019.

Prof. Arun Majumdar (USA), visited on 6<sup>th</sup> March 2020.

### VISIT TO ABROAD (Faculty):

Ms. Kalpana G. Bhat, Department of E&C Engg, visited Bangkok, Thailand, to present a research paper, November 11-14, 2019.

Dr. Sumam David S., Department of E&C Engg, visited University in USA, as a Program Evaluator for ABET on behalf of IEEE ABET accreditation, October 27-29, 2019.

Dr. Sumam David S., Department of E&C Engg, visited Cambridge University, UK, to participate LEAP, June 3-7, 2019.

Dr. Aparna P., Department of E&C Engg, visited NTU, Singapore, to present a research paper, April 11-13, 2019.

### DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

#### Book Chapters:-

1. Tukaram Moger and Thukaram Dhadbhanjan Reactive Power Loss Index for Identification of Weak Nodes and Reactive Compensation Analysis to Improve Steady State Voltage Stability" Book Chapter in Novel Advancements in Electrical Power Planning and Performance published by IGI Global ([www.igi-global.com](http://www.igi-global.com)) USA, 2020, pp.177-237, [10.4018/978-1-5225-8551-0.ch007](https://doi.org/10.4018/978-1-5225-8551-0.ch007)

### PATENTS

1. Dr. N Gaonkar: Disclosure Title "A Method for islanding detection based on image classification with ensemble convolution neural networks" Inventors Santhosh K G Manikonda and D N Gaonkar (Application No (IPO): 201941036379 Date: 10<sup>th</sup> September 2019).

### CONFERENCES

1. "Power Electronics Applications and Technology in Present Energy Scenario, PETPES 2019, 1<sup>st</sup> International Conference, 29<sup>th</sup>-31<sup>st</sup> August 2019, Sponsored by TEQIP-III, Co-coordinator: Dr P Parthiban & Dr R Kalpana.

### SEMINARS (EXPERT LECTURE)

Prof. B.G. Fernandez, Dept. of Electrical Engg. IIT Bombay "An Integrated Control Scheme for the PV Systems, 28<sup>th</sup> September 2019, Co-Coordinator: K N Shubhanga.

Dr. Bhavanishankar T, CPRI, Bangalore, Capacitors for Power Systems Applications, 28<sup>th</sup> September 2019, Co-Coordinator: K N Shubhanga & Prof. G S Puneekar.

Prof.A.M. Kulkarni, Dept. of Electrical Engg., IIT Bombay, “Power System Oscillations: Visualization using Wide Area Frequency Measurement Systems, 11<sup>th</sup> March 2020, Coordinator: K N Shubhanga.

Dr Ashoka K S Bhat, , Professor (University of Victoria)Canada, “Power Converters for Interfacing Alternate Energy Sources to Utility Line”, 18<sup>th</sup> Feb 2020 Coordinator: Dr Nagendrappa Harischandrapa

### WORKSHOPS

A Department Level Comprehensive Review process was held on 28<sup>th</sup> September, 2019. For this, Prof. BG Fernandez (EE Dept., IITB) and Dr. Bhavanishankar. T, Joint Director, CPRI, visited the department. It was a TEQIP-III sponsored programme.

Conducted the Pre NBA UG workshop on 11<sup>th</sup> March 2020. In this workshop, two experts from Academia, Prof AM Kulkarni, (IITB), Prof. Anup Kumar Panda, NIT Rourkela, two experts from industry, Mr. Swaminathan, Infineon Tech. Bangalore, Mr. Muraleedharan, KIOCL, Mangalore, and two alumni, Mr. Amith Kamath, Mathworks, and Ms. Akshata Kotharkar, ONGC, MRPL, have participated.

### Administrative Responsibilities Of Faculty Members At The Institute Level

Prof. K. P. VITTAL: Standing Committee Member to frame guidelines and monitor MHRD funding scheme 2019, HEFA.

Dr. Nagendrappa H. “Faculty-in-Charge of Electrical works of NITK Surathkal.”

Dr. Tukaram Moger “Faculty-in-Charge of Institute Guest House, NITK Surathkal.”

### ACHIEVEMENTS, AWARDS, CONTRIBUTIONS AND RECOGNITIONS

1. Dr. Krishnan CMC Recipient of Visvesvaraya Young Faculty Fellowship Award Sponsored by MEITY, India.
2. Dr.Y. Suresh: Received Award for Research publication from Department of science and Technology, Government of Karnataka. (25000/-)
3. Prof. K. P. VITTAL: Invited talk “Role and Developments of Microgrid Controllers”, as part of an AICTE Sponsored Short Term Training Program (STTP) on “Control of Power Electronic Converters for Smart Power Systems” at NMAM Institute of Technology. Nitte, Udupi Dist. Karnataka, India 15th July 2019.
4. Prof. K. P. VITTAL: Invited talk “Frontier research areas in Power and Energy systems” EEE Faculty research orientation Initiative, Cambridge Institute of Technology, KR Puram, Bengaluru-560036, 27th June, 2019.
5. R Kalpana: POSOCO PPSA 2019 Award in Master Category. The award includes cash prize of Rs.30000/- and a citation , Miss. Khimavath Sai Chethana ,Thesis Title “Power quality improvements in AC Mains fed AC-DC rectifier using DC current injection technique”, 2019.
6. Dr Debashisha Jena: POSOCO award for a PhD student Mr. Prusty, 2019.
7. Dr G S Puneekar: PhD Main Guide to a student Mr. TESFAYE NAFO TEFERA in Addis Ababa science and technology university, Addis Ababa, Ethiopia.
8. Dr G S Puneekar: Invited talk to MESCOM engineering’s on the topic “Soil resistivity and Earth mat design” on 21<sup>st</sup> Sept 2019 as part of the Engineer’s day celebration at KEBEA Guest house Kavor.
9. Dr G S Puneekar: Invited-talk/Expert lecture at KIOCL on the occasion of National Energy Conservation Day celebration on 14<sup>th</sup> December 2019;



- and received appreciation letters
10. Dr G S Puneekar, Dr. Shubhanga KN, Dr. CMC Krishnan, Dr.A Karthikeyan, Dr. BV Perumal, Dr. Nagendrappa: Mentoring of 19 students from GEC-Jhalawar Rajasthan (Twinning institute under TEQIP-III) during summer vacation in the month of June 2019.
  11. Dr G S Puneekar: Appreciation letter from GEC-Jhalawar Rajasthan (Twinning institute under TEQIP-III) for reviewing their SAR of Electrical Engineering Department by Email communications.
  12. Dr G S Puneekar: POSOCO PPSA MARCH 2020 AWARD IN PHD CATEGORY, Student Name: Harimurugan. D
  13. Dr. Yashwant Kashyap: Best paper award: Mr. Vishnu Sidharthan and Dr. Yashwant Kashyap, P "Brushless DC Hub Motor Drive Control for Electric Vehicle Applications" from International Conference on Power, Control and Computing Technologies (ICPC2T) conducted at NIT Raipur (January 3<sup>rd</sup> -5<sup>th</sup>, 2020).
  14. Dr. Tukaram Moger: Elected to the grade of Senior Member of IEEE (USA) and IEEE Power & Energy Society (PES) by the Officers and the Board of Directors of IEEE in recognition of professional standing in 2019.
  15. Dr. Tukaram Moger : Invited-talk "Impact of different PQ types models of wind turbine generating units on system voltage performance" Electrical Power Quality and Distributed Generation, Jawaharlal Nehru National College of Engineering, Shivamogga, (TEQIP 1.3 Sponsored five days faculty development Programme )16th -20th December 2019.
  16. Dr. Tukaram Moger : Invited-talk "Fuzzy logic based reactive power and voltage control in grid connected wind farms to improve steady state voltage stability" Electrical Power Quality and Distributed Generation, Jawaharlal Nehru National College of Engineering, Shivamogga, (TEQIP 1.3 Sponsored five days faculty development Programme )16th -20th December 2019.
  17. Dr. DN Gaonkar: Institute of Engineers (IE) India, Fellow (FIE), June 2019.
  18. Dr. D N Gaonkar : Best Paper Award for the paper Titled "Power Quality Event Classification Using Long Short-Term Memory Networks " at IEEE DISCOVER 2019 Conference held at Manipal Institute of Technology, Manipal from 11-12 August 2019. A Certificate of merit along with a Cash Prize of Rs 3000/- is awarded. Authors Santhosh K G Manikonda, Joe Santhosh, Sanjayan Pradeep Kumar Sreekala, Siddharth Gangwani and Dattatraya N Gaonkar.
  19. Dr. D. N. Gaonkar: Invited-talk "Grid Integrated operation of distributed generation Resource: Issues and challenges" Next Generation Energy Technologies, Jain College of Engineering, Belagavi, Karnataka, (Visvesvaraya Technological University under TEQIP 1.3) 12-13 October 2019.
  20. Dr. D. N. Gaonkar: Invited-talk "Grid Integrated operation of distributed generation Resource: Issues and challenges" Control of Power Electronic converters for Smart Power Systems, NMAM Institute of Technology, Nitte-574110, (AICTE Sponsored Short Term Training Program), 15th-20 July 2019.
  21. Dr. D. N. Gaonkar: Invited-talk "Smart Grid operation and control: Demand Response" Resilient operation of electronically coupled systems in electrical power grid, National Institute of Engineering, Mysore, Karnataka, (TEQIP III, NIE Mysore), July 8 to 12, 2019.
  22. Dr. B. Dastagiri Reddy: Invited-talk "Smart Integration of Renewable Energy Sources" Recent Trends in Smart Grid, NIT Nagaland, (TEQIP – III Sponsored National Level Workshop), 24th-28th February 2020.
  23. Dr Prajof P. : Invited-talk "Battery Management System and Power Train for Electric Vehicles" IET Workshop on Electric Vehicle Technology - Opportunity and Challenges, Alliance University, Bangalore, (IET Workshop), 10th-11th Jan 2020.
  24. Dr Prajof P. : Invited-talk "Battery Management System" Renewable Powered EV Charging Station- Challenges in Converter Design and

Storage, National Institute of Technology Calicut, Kozhikode, (NaMPET Phase III sponsored Short term course), 10th to 14th March 2020.

25. Dr. Nagendrappa H: Elected to the grade of Senior Member of IEEE (USA) and IEEE Power & Energy Society (PES), Officers and the Board of Directors of IEEE, 2019.
26. Dr. A. Karthikeyan: Elected to the grade of Senior Member of IEEE (USA) and IEEE Power & Energy Society (PES), Officers and the Board of Directors of IEEE, 2019.
27. A few UG students have carried out their internship in abroad institutes such as University of Pennsylvania, USA, University of Illinois Urbana, Champaign, Illinois, Johns Hopkins University USA, University of Windsor.
28. Successfully conducted the Induction programme for the first year students during 25<sup>th</sup> July 2019 to 6<sup>th</sup> Aug. 2019.

#### **FOREIGN VISITORS TO DEPARTMENT**

Dr Ashoka K S Bhat, Adjunct Faculty – Professor (University of Victoria), Canada. September 2019-February 2020.

#### **INDIAN VISITORS TO DEPARTMENT**

Industry Expert:

Dr. Bhavanishankar T, Joint Director, CPRI, Bangalore, visited on 28<sup>th</sup> Sept., 2019 for Peer Review of the EE Dept.

Mr. Swaminathan Balasubramaniasarma, Senior Staff Engineer Systems, Infineon Technologies India Pvt. Limited, Bangalore, to participate in the Pre NBA UG workshop on 11<sup>th</sup> March 2020.

Shri Muraleedharan, DGM (Electrical), Blast Furnace Unit & Coordinator Energy Cell, KIOCL Ltd. Mangalore, to participate in the Pre NBA UG workshop on 11<sup>th</sup> March, 2020.

#### **Academic Expert:**

Prof. B G. Fernandez. Professor, IIT Bombay, visited on 28<sup>th</sup> Sept., 2019 for Peer Review of the EE Dept.

Prof. Anil M, Kulkarni. Professor, IIT Bombay, to participate in the Pre NBA UG workshop on 11<sup>th</sup> March, 2020.

Prof. Anup Kumar Panda, NIT Rourkela, to participate in the Pre NBA UG workshop on 11<sup>th</sup> March, 2020.

Alumni:

- Mr. Amith Kamath, MathWorks, India and Ms. Akshata Kotharkar, ONGC Mangalore Petrochemicals Ltd, to participate in the Pre NBA UG workshop on 11<sup>th</sup> March, 2020.

#### **DEPARTMENT OF INFORMATION TECHNOLOGY**

#### **BOOK CHAPTERS:-**

1. Shahzad Alam M., Ashwin T.S., Ram Mohana Reddy G. (2020), "Optimized Object Detection Technique in Video Surveillance System Using Depth Images". In: Elçi A., Sa P., Modi C., Olague G., Sahoo M., Bakshi S. (Eds.) Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, Vol 766, pp. 19-27, Springer, Singapore. DOI:[https://doi.org/10.1007/978-981-13-9683-0\\_3](https://doi.org/10.1007/978-981-13-9683-0_3)([https://link.springer.com/chapter/10.1007/978-981-13-9683-0\\_3](https://link.springer.com/chapter/10.1007/978-981-13-9683-0_3))
2. Tushaar Gangavarapu, Aditya Jayasimha, Gokul S Krishnan and Sowmya Kamath S. (2019), TAGS: Towards Automated Classification of Unstructured Clinical Nursing Notes. In: Métais E., Meziane F., Vadera, S. (eds) Natural Language Processing and Information Systems. NLDB 2019. Lecture Notes in Computer Science, Springer, Cham
3. Krishnan G.S., Sowmya Kamath S. (2019) A Supervised Approach

- for Patient-Specific ICU Mortality Prediction Using Feature Modeling. In: Hung J., Yen N., Hui L. (eds) Frontier Computing. FC 2018. Lecture Notes in Electrical Engineering, vol 542. Springer, Singapore
4. Ganesh, HB Barathi, et al. "MedNLU: Natural Language Understander for Medical Texts." Deep Learning Techniques for Biomedical and Health Informatics. Springer, Cham, 2020. 3-21. ISBN 978-3-030-33966-1.
  5. Anand Kumar M, Shivkaran Singh, Praveena Ramanan, Vaithehi Sinthiya and Soman K. P Creating Paraphrase Identification Corpus for Indian Languages: Opensource Data Set for Paraphrase Creation, IGI, Source Title: Handbook of Research on Emerging Trends and Applications of Machine Learning. DOI: 10.4018/978-1-5225-9643-1.ch008
  6. Dr. Bhawana Rudra "IMPACT OF BLOCKCHAIN FOR INTERNET OF THINGS SECURITY" in Cryptocurrencies and Blockchain Technology Applications 2020 (Pages: 99-127) Print ISBN:9781119621164 |Online ISBN:9781119621201 |DOI:10.1002/9781119621201 By Wiley Journal
  7. Dr. Bhawana Rudra "Impact of Internet of Things in Smart Cities" in IoT Technologies in Smart Cities: From sensors to big data, security and trust, 2020, 10.1049/PBCE128E\_ch2, ISBN: 9781785618703 by IET journal
  8. Bhawana Rudra and Thanmayee S Streamlining IPv6 Functionality for Low Power Nodes in IoT Architectures, Models, and Platforms for Smart City Applications Pages: 25 DOI: 10.4018/978-1-7998-1253-1.ch008 by IGI journal
  9. Mamatha K M and Kiran M, A Firefly Optimization Algorithm for Maximizing the Connectivity in Mobile Wireless Sensor Network. In: Singh P., Bhargava B., Paprzycki M., Kaushal N., Hong WC. (eds) Handbook of Wireless Sensor Networks: Issues and Challenges in Current Scenario's. Advances in

Intelligent Systems and Computing, Vol 1132, 2020, Springer, Cham, DoI: [https://doi.org/10.1007/978-3-030-40305-8\\_10](https://doi.org/10.1007/978-3-030-40305-8_10) Print ISBN 978-3-030-40304-1 Online ISBN 978-3-030-40305-8

#### **BOOKS PUBLISHED:**

#### **BOOKS EDITED**

1. Jiacun Wang, G. Ram Mohana Reddy, V. Kamakshi Prasad, and V. Sivakumar Reddy, Soft Computing and Signal Processing - Proc. of ICSCSP 2018 (Vols. 1 & 2). Advances in Intelligent Systems and Computing, Springer Nature, Singapore, 2019.

#### **REVIEWS:**

#### **Prof. G. Ram Mohana Reddy:**

##### Journal Reviewer:

1. IEEE Transactions on Industrial Informatics (April 2019-Till Date)
2. Elsevier Journal of Simulation Modelling Practice and Theory (July 2019 - Till Date)
3. Elsevier Journal of Medical Informatics (Aug. 2019 - Till Date)
4. Elsevier Journal of Computer Communications (Sept. 2019-Till Date)
5. Hindwai Journal of Electrical & Computer Engg. (Oct. 2019 - Till Date)
6. Taiwan Academic Network, Ministry of Education, Govt. of Taiwan: Journal of Internet Technology (October 2019 - Till Date)
7. Taylor & Francis Journal of Experimental & Theoretical Artificial Intelligence Editorial Office (Sept. 2019 - Till Date)

#### **Dr. Anand Kumar M:**

- ACM Transactions on Asian and Low-Resource Language Information Processing
- Computer Speech & Language
- Computers & Electrical Engineering

- Engineering Applications of Artificial Intelligence
- Future Generation Computer Systems
- ICT Express
- Pattern Recognition
- Pattern Recognition Letters
- Sādhanā

### **STTPS (SHORT TERM TRAINING PROGRAMMES) / SCHOOLS**

1. TEQIP-III sponsored five days Short-Term Program on “Applications of Data Mining and Deep Learning Technique in Multidisciplinary Area” organized by Dr. Nagamma Patil and Dr. Jaidhar C D during 24-28, June 2019.
2. Five Days Short Term Training Program on *Information Security and Machine Learning* during 10th-14th February -2020 at RTU Kota under Twinning activity with GEC Jalwar, TEQIP III by Dr. Nagamma Patil.

### **Conferences:**

1. 8th International Conference on Frontiers in Intelligent Computing - Theory and Applications (FICTA 2020), January 4-5, 2020, Jointly organized by School of Management and Department of Information Technology NITK Surathkal

### **Seminars (National & International)**

1. 1-Day Seminar on "Serverless Computing Applications" at NITK Surathkal, Nov. 27, 2019 organized by Prof. G Ram Mohana Reddy. Dr Piyush Harsh, Zurich Univ. of Applied Sciences, Switzerland is the resource persons of the event.

### **Workshops:**

1. TEQIP-III Sponsored 5-Day Workshop on "Deep Learning for Big Data and Cyber Security Applications", NITK Surathkal, July 1-5, 2019 organized by Dr. Bhawana Rudra, Dr. Anand Kumar M and Prof. G Ram Mohana Reddy. Dr. B. M Mehtre- IDRBT, Hyderabad, Mr.

- Koshik Raj-UniteServe, Bangalore, Dr. Soman K P, Mr. Akarsh and Mr. Vijay Krishna Menon-CEN Amrita, Bharathi Ganesh HB and Mr. Shyam R-ARKNET, Pune, Mr. Malhar-Sophos, Bangalore, Mr. Vivek-Pramati Technologies are the resource persons of the event.
2. TEQIP-III Sponsored 5-Day Workshop on "Simulations in Computer Networks and Computer Architecture", NITK Surathkal, July 1-5, 2019 organized by Dr. Kiran M, Dr. Basavaraj Talawar and Prof. G Ram Mohana Reddy.
  3. One Week National Workshop on "High Performance Computing and Applications (HPCA 2019)" held during August 12-17, 2019 organized by Dr. Sowmya Kamath S and Dr. Geetha V. Mr. Naresh Shah, President-India (R&D), Hewlett Packard Enterprise, Mr. Mahesha Nanjundaiah, Director (Engineering), Hewlett Packard Enterprise, Mr. Harish Kamath, Master Technologist, Hewlett Packard Enterprise, Mr. Prashanth Tamraparni, Master Technologist, Hewlett Packard Enterprise, Dr. Vatsala H, CDAC Bangalore, Mr. Neelesh Nayak, Program Manager, Hewlett Packard Enterprise, Mr. Nliesh Negi, Software Architect, Hewlett Packard Enterprise, Mr. Vivek Sharma, Software Architect, Hewlett Packard Enterprise, Mr. Tushaar Gangavarapu, NLP Engineer, Amazon Inc. are the resource persons of the event.
  4. Two days Workshop on "Computer Networks" 22-23 October, 2019 organized by Dr. Geetha V and Dr. Sowmya Kamath. Mr. Harish Kamath, Master Technologist and Mr. Santosh Nagaraj, Expert Technologist, Hewlett Packard Enterprises, Bangalore are the resource persons of the event.
  5. TEQIP-III Sponsored 5-Day Workshop on "Artificial Intelligence & Machine Learning Applications in the Emerging Areas of CSIT", NITK Surathkal, December 9-13, 2019 organized by Prof. G. Ram Mohana Reddy, Dr. Kiran M, Dr. Bhawana Rudra and Dr. Anand Kumar. Dr. Prakash Ragavendra, AMD, Bangalore, Dr. Sowmya V, Amrita, Coimbatore, Mr. SRIVATSHA GUNDA, SAP labs Bangalore, Mr. Sajith

Variyar, Amrita, Coimbatore, Mr. Mayur Patil, (Chief Electrol Officer, Bangalore are the resource persons of the event.

6. AICTE Sponsored 5 Days Workshop on "Block Chain Technology" held during December 16-20, 2019 organized by Dr. Bhawana Rudra. Dr. Ashuthosh Bahuguna, Scientist- B, CERT-in Delhi, Dr. Hiran V Nath, Assistant Professor, NIT Calicut, Mr. Vishesh, HP-Bangalore, Mr. Koshik Raj, CEO, UniteServe, Bangalore are the resource persons of the event.

#### Other Event:

1. Prof. G Ram Mohana Reddy organized by Induction Program for 1st Year B.Tech Students, NITK Surathkal, July 25-Aug. 5, 2019
2. Dr. Sowmya Kamath S, Faculty Convener for NITK National-level Hackathon, "HackVerse 2020" (January 25-26, 2020)
3. Dr. Sowmya Kamath S, Faculty-in-charge for Hewlett Packard Enterprise (HPE) sponsored High Performance Computing Lab Inauguration (17th August 2019)
4. Dr. Nagamma Patil organized an Alumni Talk/Expert Lecture on "Feature Selection Techniques for Biomedical Data" by Mr. Tushaar Gangavarapu – NLP Research Engineer, Amazon.com, Inc on 6/01/2020

#### FOREIGN VISITORS TO DEPARTMENT:

1. Prof. Venkat N Gudivada, Professor and Chair, Department of Computer Science, East Carolina University, Greenville, USA visited department on 6th January 2020.

#### VISIT TO ABROAD (FACULTY):-

1. Prof. G. Ram Mohana Reddy visited IFM Cambridge, UK during June 2019 for Leadership Programme in a Complex and Changing World. Also research interaction with Professors of Cambridge University, UK.
2. Dr. Sowmya Kamath S visited Hong Kong for paper presentation at

2019 Conference on Empirical Methods in Natural Language Processing during November 3-7, 2019. (Core A\* Conference)

#### DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES

##### Book Chapters:

1. M. Prasanna Lakshmi and D. Pushparaj Shetty, Parallel Processing for Range Assignment Problem in Wireless Sensor Networks, Intelligent System and Computing, Intech open Publishers.
2. KS Prashanthi, G. Chandhini, Regularization of highly ill- conditioned RBF asymmetric collocation systems in fractional models, Advances in Mathematical Methods and High Performance Computing, V K. Singh, D. Gao, A. Fischer (Editors), Vol 41, 105-116, 2019, Springer.

##### Books Published:

1. Argyros. I. K, George.S , Mathematical modeling for the solution of equations and systems of equations with applications, Volume-III, Nova Publishes, NY, 2019 NY, ISBN: 978-1-53615- 942-4.
2. Argyros. I. K, George.S ,Mathematical modeling for the solution of equations and systems of equations with applications, Volume-IV , Nova Publishes, NY, 2020 NY , ISBN: 978-1-53617-474-8

##### E-Print Archives:

1. K. Mahesh Krishna and P. Sam Johnson, "Multipliers for operator-valued Bessel sequences, generalized Hilbert-Schmidt and trace classes", *arXiv*, Cornell University Library, DOI: arXiv:1908.11059, Aug 2019
2. K. Mahesh Krishna and P. Sam Johnson, "Extension of frames and bases-II", *arXiv*, Cornell University Library, DOI: arXiv:2001.05128, Jan 2020

### Reviews:

1. Dr. P. Sam Johnson, “[Review of the paper: Quasi-compactness of Linear Operators on Banach Spaces. New Properties and Application to Markov Chains, by Leila Mebarki , Bekkai Messirdi and Mohammed Benharrat]”, *Asian-European Journal of Mathematics*, published online, May 2020.
2. Dr. P. Sam Johnson, “[Review of the paper : From Sommerfeld Diffraction Problems to Operator Factorisation, by Frank-Olme Speck]”, *Constructive Mathematical Analysis*, Vol. II, Issue IV, pp 183-216, December 2019.
3. Dr. Murulidhar N.N., “ [Review of the book: Adaptation process of Probability and Stochastic Processes by Roy D. Yates, David J. Goodman]”, December 2019
4. Dr. Jothi Ramalingam, Random-Telegraph-Noise-enabled true random number generator for hardware security” submitted to Scientific Reports journal from the publishers of Nature.
5. Dr. Chandhini G., Reviewed articles for journals like: “BIT Numerical Mathematics”, “Pramana - Journal of Physics”, Journal of Computer Vision and Robotics.
6. Dr. Srinivasa Rao Kola, “[Review of the paper: On the radio graceful labelling of graphs]” AKCE International Journal of Graphs and Combinatorics.
7. Dr. Srinivasa Rao Kola, “[Review of the paper: The radio coloring problems on some graphs]” AKCE International Journal of Graphs and Combinatorics.
8. Dr. Srinivasa Rao Kola, “[Review of the paper: On the centroid of increasing trees]” Mathematical Reviews/MathSciNet.
9. Dr. Srinivasa Rao Kola, “[Review of the paper: A new graph radio  $k$ -coloring algorithm]” Mathematical Reviews/MathSciNet.

### Visits by the faculty to abroad:

1. Dr. Jidesh P., July, 2019, Visited Spain to present a paper in ICIAM-2019.
2. Dr. R. Madhusudhan, attended IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON) and presented a paper during October, 2019, in New York, USA,

### DEPARTMENT OF MECHANICAL ENGINEERING

#### BOOKS PUBLISHED

1. Gajanan Anne, S. Ramesh, Goutham Kumar, Sandeep Sahu, Ramesh M. R., Shivananda Nayaka H., Shashibhushan Arya, Development, Characterization, Mechanical and Corrosion Behaviour Investigation of Multi-direction Forged Mg-Zn Alloy, V. Joshi et al. (eds.), Magnesium Technology 2019, The Minerals, Metals & Materials Series, doi.org/10.1007/978-3-030-05789-3\_50, Springer Link.
2. R.K Sahu, Vijay Kumar Pal, Pankaj Kumar, Micro-structural and Size Accuracy Study of Electro-Chemical Machined Aluminium Alloy Features, 2019, In Advances in Micro and Nano Manufacturing and Surface Engineering, Series Editor: J. Paulo Davim, Lecture Notes on Multidisciplinary Industrial Engineering, pp721-729, doi.org/10.1007/978-981-32-9425-7\_65, Springer Nature, Singapore.
3. Ranjeet Kumar Sahu, Somashekhar S. Hiremath, Corona Discharge Micromachining for the Synthesis of Nanoparticles: Characterization and Applications, 1st Edition, Print ISBN -9780367224738; eBook ISBN - 9781000065404, DOI: 10.1201/9780429275036, CRC Press, Taylor & Francis, Boca Raton, New York, 2019.
4. Santosh Chavan, Veershetty G., Perumal D.A., Numerical Analysis of Composite Phase Change Material

- in a Square Enclosure, 2020, In: Singh S., Ramadesigan V. (eds) *Advances in Energy Research*, Springer Proceedings in Energy book series, pp 359-370, doi.org/10.1007/978-981-15-2666-4\_35, Springer Nature, Singapore.
5. Maniyeri R., Kang S., Numerical Study on the Behavior of an Elastic Capsule in Channel Flow Using Immersed Boundary Method, 2020, In: Suryan A., Doh D., Yaga M., Zhang G. (eds) *Recent Asian Research on Thermal and Fluid Sciences*, Lecture Notes in Mechanical Engineering, pp 117-124, doi.org/10.1007/978-981-15-1892-8\_10, Springer Nature, Singapore.
  6. Kanchan M., Maniyeri R., Dynamics of Flexible Filament in Viscous Oscillating Flow, 2020, In: Suryan A., Doh D., Yaga M., Zhang G. (eds) *Recent Asian Research on Thermal and Fluid Sciences*, Lecture Notes in Mechanical Engineering, pp 147-160, doi.org/10.1007/978-981-15-1892-8\_13, Springer Nature, Singapore.
  7. Kolke D. K., Arun M., Maniyeri R., Numerical Analysis of Pulsating Flow in a Smooth Constriction Using Immersed Boundary Method, 2020, , In: Suryan A., Doh D., Yaga M., Zhang G. (eds) *Recent Asian Research on Thermal and Fluid Sciences*, Lecture Notes in Mechanical Engineering, pp 237-249, doi.org/10.1007/978-981-15-1892-8\_20, Springer Nature, Singapore.
  8. Dhruv V., Mishra U., Maniyeri R., Numerical Study on Fluid Flow Through Collapsible Channels, 2020, In: Manna S., Datta B., Ahmad S. (eds) *Mathematical Modelling and Scientific Computing with Applications*, Springer Proceedings in Mathematics & Statistics, pp 199-206, doi.org/10.1007/978-981-15-1338-1\_15, Springer Nature, Singapore.
  9. Harsha Kumar M. K., Vishweshwara P.S., Gnanasekaran N., A Surrogate Forward Model Using Artificial Neural Networks in Conjunction with Bayesian Computations for 3D Conduction-Convection Heat Transfer Problem, 2019, In: Das K., Bansal J., Deep K., Nagar A., Pathipooranam P., Naidu R. (eds) *Soft Computing for Problem Solving*, Advances in Intelligent Systems and Computing, pp 373-384, doi.org/10.1007/978-981-15-0184-5\_33, Springer Nature, Singapore.
  10. Debasish Mahapatra, Ashok Babu T.P., Variation of Time Lag, Decrement Factor and Inside Surface Temperature with Solar Optical Properties of Building Envelope in Different Climatic Zones of India, 2020, In: Reddy A., Marla D., Simic M., Favorskaya M., Satapathy S. (eds) *Intelligent Manufacturing and Energy Sustainability*, Smart Innovation, Systems and Technologies, pp 523-532, doi.org/10.1007/978-981-15-1616-0\_51, Springer Nature, Singapore.
  11. Sharmas Vali Shaik, Ashok Babu T.P., Theoretical Evaluation of Energy Performance of a Vapour Compression Refrigeration System Using Sustainable Refrigerants, 2020, In: Reddy A., Marla D., Simic M., Favorskaya M., Satapathy S. (eds) *Intelligent Manufacturing and Energy Sustainability*, Smart Innovation, Systems and Technologies, pp 361-370, doi.org/10.1007/978-981-15-1616-0\_35, Springer Nature, Singapore.
  12. Debasish Mahapatra, Ashok Babu T.P., Effect of Solar Optical Properties of Building Envelope on Time Lag, Decrement Factor and Energy Saving of Buildings, 2020, In: Vinyas M., Loja A., Reddy K. (eds) *Advances in Structures, Systems and Materials*, Lecture Notes on Multidisciplinary Industrial Engineering, pp 127-142, doi.org/10.1007/978-981-15-3254-2\_13, Springer Nature, Singapore.
  13. Veeresh Nayak C., Manjunath Patel G.C., Ramesh M.R., Desai V., Samanta S.K., Analysis and Optimization of Metal Injection Moulding Process, 2019, In: Gupta K. (eds) *Materials Forming*,

Machining and Post Processing, Materials Forming, Machining and Tribology, pp 41-74, doi.org/10.1007/978-3-030-18854-2\_2, Springer, Cham.Nil

### **PATENTS:**

1. Anish S, Swirl Generator for Human Arterial Network, App. No.201841010102; Dated 20/03/2018, Filed,2018
2. Anish S, Dual fence with tapered trailing edge for turbine /compressor blade passage, App. No. 201841003526; Dated 30/01/2018, Filed
3. Sathyabhama A, A PASSIVE LEADING EDGE MICRO PROTUBERANCE STRIP, App. No.201741035860, Filed, 2017
4. Gangadharan K V, A Nerve Trimming Kit 2.01741E+11, Filed, 2017
5. Gangadharan K V, Multi Material Structure with Controllable Multi Directional Property, 2.01741E+11, Filed, 2018
6. Gangadharan K V, Automated Illizarov Apparatus, 2.01641E+11, Filed, 2017
7. Gangadharan K V, Variable stiffness MRE spring device, C.000602, Filing, 2018
8. Gangadharan K V, MRE Torsional Isolator, C.000657, Filing, 2019

### **STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS**

- Dr. Mruthyunjaya Swamy K B and Dr. Pramod K, TEQIP-III sponsored Five days short term technical programme at Government college of Engineering, Jhalawar, Rajasthan, 11-15 Feb 2020, 5 days.

### **CONFERENCES**

- Prof. G. C. Mohan Kumar; Joint Secretaries: Design Engg : Dr. S. M. Murigendrappa and Dr. Subhashchandra Kattimani; Materials Engg : Dr. P. Jeyaraj and

Dr. M. R. Ramesh; Manufacturing : Dr. M.R. Doddamani and Dr. Sharnappa Joladarashi;Second International Conference on Design, Materials & Manufacture (ICDEM 2019), NITK-Surathkal, 6-8 Dec 2019, 3 Days.

### **WORKSHOPS:**

- Dr. N. Gnanasekaran, National Workshop on Intelligent Optimization Techniques for Engineering Problems, NITK, Aug 19-21, 3 Days.
- Dr. K V Gangadharan and Pruthviraj U, Virtual Lab Workshops at different institutions all the over India, 01Apr2019 to 30Mar2020, 1day each for total of 52 days.

### **FACULTY DEVELOPMENT PROGRAMME**

- Dr. N. Gnanasekharan, Dr. Srikanth Bontha, Dr. Sudhakar Jambagi, Dr. Somasekhara Rao Todeti, Frontiers in Design, Manufacturing and Energy Sustainability, NITK, September 3-7, 2018 TEQIP-III

### **GIAN COURSE**

- Dr. Subhaschandra Kattimani & Prof. S.M. Murigendrappa, Aeroelasticity-Fundamentals and Topics on Nonlinear Problems by Dr. Flavio D. Marques, USP Brazil, NITK, 12th - 16th , Nov 2018
- Dr. Mrityunjay Doddamani, Dr. P. Jeyaraj, Dynamic response of advanced composites, NITK, 10-14, December 2018

### **DEPARTMENT OF MINING ENGINEERING.**

#### **WORKSHOP:-**

- One day workshop was conducted on 20<sup>th</sup> Jan 2020 to review M.Tech curriculum in Industrial Health & Safety Engineering curriculum



- 1<sup>st</sup> SME- NITK Annual Convention (Seminar) was held on 6-7 March, 2020

### Visit to ABROAD(Faculty)

1. Prof. Ch, S. N. Murthy visited USA to present a paper on “Prediction of Load-Haul-Dumper (LHD) Machine Performance Characteristics using Feed-Forward-Back- propagation ANN Model” during International conference on “27<sup>th</sup> International Conference on Electronics, Artificial Intelligence & Robotics (ICEAIR)” during 16<sup>th</sup> and 17<sup>th</sup> December 2019 at New York, USA.

### Foreign Visitors to Department

Mr. Sudheer Kumar Gulwade, Group Head & CEO, African Industries Group Limited- Abuja-Nigeria has visited the Department on 7<sup>th</sup> March, 2020 and interacted with faculty and students.

## DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

### Books Published :

A. Surendran, S. Janakiraman, S. Anandhan, '*Separator Electrolyte Systems for Rechargeable Batteries*', ISBN: 9786200091239, Lambert Academic Publishers, Mauritius, 2019.

Workshop on “Advanced Materials and Characterization Techniques (AMCT 2019)”, on August 7 – 11, 2019

Conveners:

Prof. Udaya Bhat K.

Dr. M. Rizwanur Rahman

Dr. Saumen Mandal

National Seminar on “Frontiers in Materials” during 29<sup>th</sup> to 30<sup>th</sup> October, 2019.

Conveners:

Prof. K. Narayan Prabhu

Workshop on “Advanced XRD Theory, Practical and Training 2020” during 20 – 24 January, 2020.

Conveners:

Prof. Udaya Bhat K.  
Dr. M. Rizwanur Rahman  
Dr. B. Rajasekaran

Two-day Workshop on “Effective Digitization of Course Content for Blended Learning and Flipped Classroom” (Sponsored by TEQIP-III) for Faculties.

Organizers: Dr. Sumanth Govindarajan (Dept. MME) and Dr. Krishnan C.M.C (Dept EEE) 9<sup>th</sup> and 10<sup>th</sup> March 2020.

### Foreign Visitors to Department:

1. Dr. Dhavala Suri, Post-Doctoral Associate, Francis Bitter Magnet Laboratory and Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, USA – 28<sup>th</sup> June 2019.

2. Dr. Wayne Chen, Director of Research and Managing Director, Asia – Pacific Operations Dynamic System Inc., USA- 30<sup>th</sup> July, 2019

### Visit to Abroad (Faculty):

1. Prof. A. O. Surendranathan attended International Conference on “Graphene and Novel Nanomaterials” (GNN 2019) at Bangkok, Thailand during 8 to 11 July, 2019.

2. Prof. A. O. Surendranathan attended and presented a paper titled on “Ocean contained nuclear farms integrated with global free gravity transportation – restoring climate health to the best condition” in an International Conference on Climate Change and Role of Nuclear Power at IAEA Headquarters, Vienna, Austria during 7 – 11 October, 2019.

3. Prof. K. Narayan Prabhu attended and presented an oral research paper on “A comparative study on cooling performance of hot oil and molten salt media for industrial heat treatment” in the International Conference on “ASM Heat Treat 2019” at COBO Centre,

Detroit, Michigan, USA during 15 – 17 October, 2019.

## **SCHOOL OF MANAGEMENT**

### **Book Chapters:-**

Vadivel S.M., and Sequeria A. H. (2019) “A Novel Approach for Operational Performance Mail Processing Facility Layout selection using Grey Relational Analysis: A Case on India Speed Post Service Industry”, *Advances in Intelligent Systems and Computing*, Springer publishers, vol.940, pp.1123-1132, DOI: [https://doi.org/10.1007/978-3-030-16657-1\\_105](https://doi.org/10.1007/978-3-030-16657-1_105).

Vadivel S.M., Sequeria A. H, Sunil Kumar Jauhar. (2019) “Metaheuristic for Optimize the India Speed Post Facility Layout Design and Operational Performance Based Sorting Layout Selection Using DEA Method”, *Advances in Intelligent Systems and Computing*, Springer publishers, vol.941, pp.1035-1044, DOI: [https://doi.org/10.1007/978-3-030-16660-1\\_101](https://doi.org/10.1007/978-3-030-16660-1_101).

Anish, B.Majhi and Ritanjali Majhi , A novel hybrid model using RBF and PSO for net asset value prediction *Intelligent Systems: Concepts, Methodologies, Tools, and Applications*

Arjun R, Suprabha K. R, “Financial Technology Implications: Emerging Markets Context”, in *Financial Technology and Disruptive Innovation in ASEAN*, Hershey, PA: IGI DOI: 10.4018/978-1-5225-9183-2.ch002., Aug 2019

Arjun R, Suprabha K. R, Modelling Hybrid Indicators for Stock Index Prediction, *Advances in Intelligent Systems and Computing*, 940, Springer, April 2019.

Doddahulugappa Goutam and Gopalakrishna BV, “Examining the Mediating Roles of E-Satisfaction. E-Trust and E-Commitment of Cognitive

Loyalty Development”, *Marketing Mix New Trends of 21<sup>st</sup> Century*, Skirec Publications 2019, pp 7-32, ISBN: 978-93-87176-42-3

Doddahulugappa Goutam and Gopalakrishna BV, “Website Recommendation: Antecedents of Emotional Satisfaction and Repurchase Intention among Working Adults Online Shoppers”, *Marketing Mix New Trends of 21<sup>st</sup> Century*, Skirec Publications 2019, pp 147-56, ISBN: 978-93-87176-42-3

Doddahulugappa Goutam and Gopalakrishna BV, “Will you Trust the Faceless? Exploration of Antecedents and Consequences of E-Trust in E-commerce Environment”, *Marketing Mix New Trends of 21<sup>st</sup> Century*, Skirec Publications 2019, pp 223-239-32, ISBN: 978-93-87176-42-3

Bhat, Savita, “Firm-Specific Determinants of R&D Behaviour of Foreign Affiliates in India”, in *FDI, Technology and Innovation*, DOI: 10.1007/978-981-15-3611-3\_7, Springer Nature, 2020, pp 145-167, ISBN: 978-981-15-3610-6

## **OTHERS**

Prof. Shashikantha Koudur - Invited lecture at the Department of English, Kuvempu University, Shimogga, on ‘Translation and the Postcolonial Context’

## **STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS**

*International Summer University Program* in the School of Management, National Institute of Technology Karnataka, by Dr. Dhishna Pannikot in collaboration with University of Applied Sciences Western Switzerland, School of Business and Engineering Vaud (HEIG-VD), Switzerland, 09<sup>th</sup>-19<sup>th</sup> February 2020.

## CONFERENCES

Dr. Ritanjali Majhi, Dr. Pradyot Ranjan Jena, Dr. Suprabha K.R., Dr. Rashmi Uchil are Organizing chair for the International Conference Frontiers of intelligent computing : theory and Applications-FICTA 2020, January 3-4,2020.

Dr Dhishna Pannikot was the resource person on “New Literatures in English” in the One Day National Conference on “New Literatures in English” Department of English, Siri PSG Arts and Science College for Women, Salem, Tamilnadu, 24<sup>th</sup> February 2020.

## SEMINARS (NATIONAL & INTERNATIONAL)

Dr Dhishna Pannikot delivered an invited talk on “Emerging Perspectives of Research in Studying Literature and Environment” in the Two Day National Seminar on “Transcending the Borders of Canon: A Trans-epistemic Approach to Nature” organised by the Department of English, Govt. College Kasargod, Kasargod, Kerala, 21st November 2019.

Dr Dhishna Pannikot delivered an invited talk on “Future Prospects for Research in Postcolonial Studies” in the Two Day National Seminar on “Post-Colonial Paradigms” held organised by the Department of English, Shri Vijay Vidyalaya College of Arts & Science, Dharmapuri, Tamilnadu, 1 -2 March 2019.

Kiran Raveendran and Dhishna Pannikot “Exploring Third Gender Politics in Indian Cinema: A Comparative Study of Chitrangada and Naanu Avanalla Avalu” International Interdisciplinary Conference on "Recent Research in Arts, Culture, Literature, Languages, Philosophy, Spirituality and Education" Dr G. C. Mishra Educational Foundation at Jawaharlal Nehru University, New Delhi, 3<sup>rd</sup> August 2019.

## WORKSHOPS

A One Day Workshop organized jointly by School of Management, NITK Surathkal and Department of Agriculture and Farmers' Empowerment, Ministry of Agriculture, Odisha on 13<sup>th</sup> January, 2020, Dr. Pradyot Ranjan Jena.

A 5 days workshop on “Management Development Program for Middle Management” held during January 13th - 17th, conducted in collaboration with Executives of @MRPL\_CC Mangalore on Transformational Leadership, NITK Surathkal by the coordinators Dr. Suprabha K.R. & Dr. Rashmi Uchil.

A 5 days workshop on “Management Development Program for Middle Management” held during January 20th - 24th, 2020, conducted in collaboration with Executives of @MRPL\_CC Mangalore on Transformational Leadership, NITK Surathkal by the coordinators Dr. Suprabha K.R. & Dr. Rashmi Uchil.

## Talk

Expert Talk on” Kaizen and 5 S Model“ by Mr. Anantpadmakar Ayyo, Trainer & Consultant, Tuesday, 27<sup>th</sup> August 2019.

Expert Talk on ”HR Metrics“ by Mr. Praveen Kamath, General Manager & HR Head - Global Delivery & Enablement at Wipro Limited, Saturday, October 12<sup>th</sup> 2019.

Expert Talk on ”Balanced score card deployment“ by Mr. K. Krishnamoorthy Aithal, Alumni of NITK, Surathkal, Monday, 6<sup>th</sup> January 2020.

## Constitution Day:

Constitution Day- The Philosophy of Indian Constitution, on November 26th 2019, Coordinated by Prof. Shashikantha Koudur.

## **FOREIGN VISITORS TO DEPARTMENT**

Prof. Shunsuke Managi (KYUSHU UNIVERSITY) visited the School of Management during 3 – 18, December 2019 under the SPARC project sponsored by MHRD, GOI. PI – Dr. Pradyot R. Jena and Co-PI- Dr. Ritanjali Majhi.

### **VISIT TO ABROAD (Faculty):-**

Dr Dhishna Pannikot, Associate Professor in English, SoM delivered a keynote speech on “Advances in Research in Comparative Literature” in the Two Day International Seminar on “Language and Literature Studies” organised by Global Academic Research Institute at Galle Face Hotel, Colombo, Sri Lanka, December 17-18, 2019.

Dr. Pradyot Ranjan Jena, Associate Professor in School of Management, attended PEGNet Conference in Bonn, Germany, September 9-10, 2019.

## **DEPARTMENT OF PHYSICS**

### **INTERNATIONAL CONFERENCE:-**

Prof. M. N. Satyanarayan & Dr. Kartick Tarafder, International Conference, Current Trends in Functional Materials, 15-01-2020 to 17-01-2020 NITK Surathkal, DST-SERB, Anton-Paar, Carl-Zeiss, Advanced RealTekSystems.

### **Foreign Visitors to Department**

International Conference Prof. Thomas A Jung, Paul Scherrer Institute, Switzerland, 15-01-2020 to 17-01-2020.

International Conference, Prof. Ulrich Nowak, University of Konstanz, Germany 15-01-2020 to 17-01-2020

### **Indian Visitors to Department**

Expert Lecture Prof. Subhasis Ghosh, Professor, School of Physical Science Jawaharlal Nehru University, New Delhi April 1, 2019.

Prof. Rajendra Singh, Associate Professor, Department of physics, Indian Institute of Technology, Delhi Hauz Khas, New Delhi, 110016, India, Academic Audit 2019-2020 04-10-2019.

Dr. A S Prakash, Principal Scientist CSIR CECRI-Madras unit CSIR Madras Complex Taramani, Chennai, Academic Audit 2019-2020, 04-10-2019

Dr. R Venkataraghavan, HUL Bangalore & Adjunct Faculty IIT Palakkad, Academic Audit 2019-2020, 04-10-2019

Prof. Deshdeep Sahdev, Professor, Dept of Physics, IIT Kanpur, Expert Lecture, 31-10-2019

Dr. Biplab Sanyal, Senior Lecturer/Associate Professor at Department of Physics Astronomy, Materials Theory, Uppsala University, Sweden, International Conference, 15-01-2020 to 17-01-2020

Prof. Subhasis Ghosh, Professor, School of Physical Science Jawaharlal Nehru University, New Delhi, International Conference, 15-01-2020 to 17-01-2020

Prof. Indra Das Gupta, Senior Professor, Indian Association for the Cultivation of Science, Jadhavpur, Kolkata, International Conference, 15-01-2020 to 17-01-2020

Prof. Subhradip Ghosh, Professor, Department of Physics, IIT Guwahati, International Conference, 15-01-2020 to 17-01-2020

## CONSULTANCY PROJECTS

### DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES

1. Dr. Jidesh P, Generalized framework for restoring medical and satellite images corrupted by data correlated noise, DST, Budget : 17,43,070/-, 2017-2020.
2. Prof. Santhosh George and Dr. Jidesh P., Efficient Regularization methods for ill-posed Operator Equations and their Applications, DST, Budget: 18,46,020/-, 2018-2021.
3. Dr. V. Murugan, Applications of Kneading Theorem in Iterative Root Problems Sponsored by SERB, DST, India(4.18 Lacs)

### DEPARTMENT OF MINING ENGINEERING

1. Monitoring of blasting operations of railway tunnel at Kulshekara, Mangalore, Southern Railway, Mangalore (Dr. K. Ram Chandar).
2. Assessment of intensity of ground vibrations from blasting operations in Quarry (Survey No. 172, Lease no. DKD/66 (1) Pane Mangalore Village, Bantwal Taluk, DK Dist, (Dr. K. Ram Chandar).
3. Assessment of Intensity of Blasting Operations in Stone Quarry- Lease No. Dkd-344, Survey No. 26/1a3p1 in Kabaka Village, Puttur Taluk, DK-Dist, (Dr. K. Ram Chandar).
4. Scientific study for stability analysis of benches of Vyasanakere Iron Ore Mine of M/S. MSPL Limited, Hospet, (Dr. K. Ram Chandar).
5. Stability analysis of benches of Iyili Gurunath Iron Ore Mine of M/S. RMML Limited, Hospet, (Dr. K. Ram Chandar). Assessment of Impact of Blasting Operations in Bharathi

Limestone Mine on Surrounding Structures, Bharathi Cements, Kadapa, AP, (Dr. K. Ram Chandar).

6. Scientific study for the stability of structures falling within 45m (upto 3m) of proposed working of inland Mining at Manavalakurichi Ilmenite Mine, IREL Limited, (Dr. K. Ram Chandar & Prof. Harsha Vardhan).
7. Scientific study for slope stability, OB dumps and highwalls at KTK OC III of BHPL Area, SCCL, (Dr. K. Ram Chandar).
8. Scientific study for design of ultimate pit slope, OB dump slope and monitoring of stability of pit and dump at KTK OC-II project, Bhupalpalli Area, SCCL, (Dr. K. Ram Chandar).
9. Assessment of ground vibrations generated due to excavation activity at JC Road, Bangalore, TJN Construction Pvt Ltd-Bangalore, (Dr. K. Ram Chandar).
10. Assessment of ground vibrations generated due to Blasting in Palakkal Quarry in Kozhikode District of Kerala, (Dr. K. Ram Chandar).
11. Assessment of ground vibrations generated due to Blasting in the Quarry of Kenneth Industries, Malappuram District of Kerala, (Dr. K. Ram Chandar).

### DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

1. Dr. Subray Hegde - 'Life Extension of K-Type Thermocouple' for MRPL, Mangalore - Rs.20,00,000/- (on going)
2. Dr. Subray Hegde - 'Failure of CO<sub>2</sub> Compressor' for MCF, Mangalore - Rs.2,42,000/- (on going)
3. Dr. Subray Hegde, Rakshan Kumar & Preetish D'Silva - 'Analysis of Inclusion in Steam Turbine Generator' for MRPL, Mangalore - Rs. 3,30,400/-.
4. Dr. Subray Hegde, Basavaraj & Rakshan Kumar - 'Failure Analysis of

- Cooling Water Pump' for MRPL, Mangalore - Rs.5,31,000/-.
5. Dr. Subray Hegde, Basavaraj & Rakshan Kumar – 'Inclusion Analysis of Turbine Blade Material' for MRPL, Mangalore - Rs.2,65,500/-.
  6. Dr. Subray Hegde, Sumanth Govindarajan, Basavaraj, J.K. Rakshan Kumar- 'Failure of CT Fan Arm' for MRPL, Mangalore – Rs.7,78,800/-
  7. Dr. Subray Hegde, Pavan R. Sondar, Rakshan Kumar & Preetish D'Silva – 'Standard Brinell Hardness Measurement of Thermit Welded Rail Specimen' for Konkan Railway Corporation Limited, Karwar, Rs.1,88,800/-
  8. Dr. Subray Hegde, Rakshan Kumar & Preetish D'Silva – 'Cathodic Protection of Heat Exchanger H2O4' for MCF, Mangalore – Rs.1,94,700/-
  9. Investigators: Sumanth Govindarajan and Subray Hegde - Testing of coatings on woven Gabion box mesh wires for Southern Railways Worth ~Rs 23,000/- Dec 2019.
  10. Investigators: Akshay Hegde, Adithya Dev, Sumanth Govindarajan and Subray Hegde "Failure analysis of centrifugal water pump shaft" for MRPL (Report submission pending).
  11. Pavankumar R Sondar, Ganesh, Rakshan Kumar, Basavaraj, Sumanth Govindarajan, Subray R. Hegde - "Failure investigation of KRCL flash butt welded joints"
  12. "Failure of FRP fin fan blades at CHTU"

Memory Devices, VGST, Partha P Das, 2020-2022, 5.0 lakhs.

Development and Characterization of advance solar cell, UGST, Dr. S n Murthy, Dr. M Aruna & Dr. Kartick Taradfer, Dec.- 2017 -0Dec 2020, 30 Lakhs

#### **DEPARTMENT OF PHYSICS:-**

Dynamics of Low Energy Antifibrillation Pacing, DST – SERB, Dr. T K Shajahan, Jan 2017 to Jan 2020, 28 Lakhs.

Transition Metal Oxide Based Devices for Nonvolatile Resistive Random Access Memory Applications, SERB, Partha P Das, 2017-2020, 38 lakhs.

Design and Fabrication of Two Terminal Thin Film Based Nonvolatile

## 15 HUMAN RESOURCE DEVELOPMENTS

### 15.1 TRAINING STATUS

#### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Dr. Annappa attended a workshop on Smart Classroom at IIT Bombay on 24-25 June 2019

Dr. Annappa and Dr. Shashidhar G Koolagudi attended training programme on Scientific Perspective on Mind Meditation and Human Value at IIT-Delhi during 20-25 October 2019

Dr. Basavaraj Talawar attended Technical Workshop for Young Faculty Research Fellows of Visvesvaraya PhD Scheme held at IISc, Bangalore during 10<sup>th</sup> May 2019.

#### DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Dr. Rathnamala Rao, Department of E&C Engg., attended International workshop on "The Physics of Semiconductor Devices" (IWPSD 2019) at Kolkata, December 16-20, 2019.

Dr. U Shripathi Acharya Department of E&C Engg., attended workshop "DRDO – Academia Interaction for achieving leadership in future Technologies" at DRDO Bhawan, New Delhi, 13<sup>th</sup> November 2019.

#### DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Prof. K P Vittal attended a training program 'Leadership for Academician Program (LEAP)' held during 25<sup>th</sup> Feb. to 9<sup>th</sup> March, 2020, at IIT Bombay, supported by MHRD GOI.

Dr. Krishnan CMC attended a "Technical Workshop of YFRFs of Visvesvaraya PhD scheme", IISc, Bangalore, 9<sup>th</sup> -10<sup>th</sup> May 2019.

Dr. Krishnan CMC: "Visvesvaraya PhD Scheme: WORKSHOP FOR PRESENTATIONS OF RESEARCH WORK of Visvesvaraya PhD Scholars, Invited all Young Research Fellows" Punjab Engineering College, Chandigarh, 17<sup>th</sup> - 19<sup>th</sup>, July 2019.

K.Malinga Naik, Asst. Engg., (SG-1) attended 'Capacity Building training for Non-Teaching, Administrative and Finance Staff, Librarians, Lab Technicians' held at Gangtok, Sikkim, during 19-06-2019 to 23-06-2019.

Dr. Jora M. Gonda attended a Faculty Development Programme on Machine Learning held at IIM, Bangalore during 20<sup>th</sup> to 25<sup>th</sup> of May 2019.

#### DEPARTMENT OF INFORMATION TECHNOLOGY

- 1 Prof. G. Ram Mohana Reddy attended Indian Institute of Technology Kharagpur: Leadership for Academicians Programme (LEAP-2019), IIT Kharagpur, India, May 12-24, 2019.
- 2 Prof. G. Ram Mohana Reddy attended Cambridge University, United Kingdom: Leadership in a Complex and Changing World (LEAP-2019), IFM and St. John's College, Cambridge University, June 2-7, 2019.
- 3 Prof. G. Ram Mohana Reddy attended National Board of Accreditation, New Delhi: Orientation Workshop on Outcome Based Education and Accreditation, India Habitat Center, New Delhi, August 31, 2019.

#### DEPARTMENT OF MINING ENGINEERING

Dr. S. Kumar Reddy has joined as faculty member in Sept, 2020.

### **DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES**

Dr. Jothi Ramalingam attended IITM-RBCDSAI's International Summit on Data Science and AI (held online) during 18-20, June 2020.

Dr. Vishwanath K. P. attended the Innovation Ambassador Program organized by MHRD Innovation Council at ACS College, Bangalore on 26<sup>th</sup> and 27<sup>th</sup> February, 2020.

### **SCHOOL OF MANAGEMENT**

Dr. S. Pavan Kumar has attended Management Development Program on Natural language processing (NLP), organized by IIM Bangalore on 14<sup>th</sup> & 15<sup>th</sup> December, 2019. Venue: Christ University Bangalore.

Dr Ritanjali Majhi, attended two days workshops on Machine Learning using Python and Deep Learning scheduled on the 19 & 20 June, 2019, IIM Bangalore Sponsored by TEQIP, NITK.

Dr. Sreejith A, attended the Workshop on Reservation for SCs, STs, OBCs, EWS and PWDs in Services, 17<sup>th</sup> and 18<sup>th</sup> February, 2020, New Delhi.

Dr. Sreejith A, attended the Faculty Development Programme (FDP) on 'Machine Learning with Business Applications' of Indian Institute of Management Bangalore (IIMB) during 4<sup>th</sup> to 9<sup>th</sup> November, 2019.

### **PLACEMENT OF STAFF FOR ACADEMIC EXCELLENCE**

### **DEPARTMENT OF CIVIL ENGINEERING**

Narasimhan M.C appointed as a member of Academic Council, National Institute of Engineering, Mysore (An autonomous Institute under VTU, Belagavi) - University Nominee - Academic Years 2020-22.

Narasimhan M.C. appointed as University Nominee by VTU, Belagavi, for the Inspection Visit of UGC Team to Vidyavardhaka College of Engineering, Mysore, during Nov 2019, for considering Grant of Autonomy.

### **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

Dr. Ashvini Chaturvedi, Department of E&C Engg., attended BOG meeting of GEC, Jhalawar as invited member at Takniki Shiksha Bhavan, Jaipur on 18<sup>th</sup> December 2019.

### **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

Dr. Shashi Bhushan Arya, Best Paper: Technical Paper Microbial Induced Corrosion Behaviour of Multilayer Nanocomposite Coatings for the Marine Applications. (Preethi, Shashi Bhushan Arya, Vidya Shetty) CORCON 2019 during 23-26 September, 2019 at Mumbai.

### **SCHOOL OF MANAGEMENT**

#### **Dr. Ritanjali Majhi:**

1. BOS, Member, MSc Analytics, MAHI, Manipal University for the year 2019-2020.
2. BOS, NIT Andhra Pradesh, Management Studies, for the year 2019-2020.
3. Dr. S. Pavan Kumar had bagged "Engineering Education Research Leader" award, an IUCEE showcase awards program, during Seventh International Conference on Transformations in Engineering Education (ICTIEE, 2020). Anurag Group of Institutions and IUCEE are the joint organizers during 5<sup>th</sup> - 8<sup>th</sup> January, 2020. Venue: Anurag Group of Institutions, Hyderabad.
4. Dr. Sreejith A, 2020 United Nations University (UNU) - eGOV Fellowship.



**DEPARTMENT OF CHEMISTRY**

Prof. S. T. Nandibewoor Award-2019 by Indian Council of Chemists held its 38<sup>th</sup> Annual Conference at Jaipur National University, Jaipur during 26-28<sup>th</sup> December 2019.

## 16 STUDENTS PLACEMENTS

### Placement Details Highlights

#### Highlights

The year 2019-20 has been a very successful year for Career Development Centre. We had reasonably very high percentage of Placements and Training slots.

**Main Objectives:-** provide opportunities for,

1. Placement to all students of the final year B.Tech, M.Tech, MCA, MBA and M.Sc.
2. Training to all students to be covered during the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> Semester vacations. The compulsory training for B.Tech. Mining Engg. Students during the 5<sup>th</sup> and 6<sup>th</sup> Semester vacations.
3. Provide Counseling and facilitate development of Soft Skills and Personal Effectiveness to help students build a successful career.

#### Performance Overview:

- ❖ A total of 267 Companies visited NITK Surathkal for Campus Recruitment/Internship.
- ❖ 65 Companies visited NITK for Placement process for the first time.
- ❖ 930 students were placed – 599 B.Techs, 225 M.Techs, 73 MCAs, 17 MBAs, 8 MSc (Chemistry) and 8 MSc (Physics)

The recruitment process by few companies expected to happen in March / April 2020 has been carried forward on account of COVID-19 and is expected to complete by Mid of August 2020. The average salary for 2019-20 UG programs is 10.8 LPA.

#### PLACEMENT RECORD FOR 2019-20

Program	% placed
B.Tech	89.40
M.Tech	48.38
MCA	89.02
MBA	94.44
MSc(PHY+CHEM)	34.04

#### BRANCHWISE UG PLACEMENTS 2019-2020 (as on 31-07-2020)

Branch	Total Eligible Students	Placed
CIVIL	71	51
CHEMICAL	31	27
COMPUTER	97	96
E & C	97	91
E & E	95	85
IT	95	95
MECHANICAL	118	104
METALLURGY	36	31
MINING	30	19
<b>Total</b>	<b>670</b>	<b>599</b>

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

<b>Sl. No.</b>	<b>Branch</b>	<b>No. of Slots</b>
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
	<b>Total Number of Students</b>	<b>485</b>

<b>Number of Companies : 142</b>	<b>Number of Training Slots : 485</b>
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## 17. SPECIAL INITIATIVES

### 17.1 Scholarships / Assistanceship

As per the guidelines of Govt. of India (MHRD) Merit and Merit cum Means Scholarship have been awarded to I B.Tech. students every year who have got 60% above marks in +2 exam and the same will be continued based on their performance in II, III & IV B.Tech. Examinations. In addition, based on performances at the semester Examinations scholarship have been awarded to the students of II, III and IV year B.Tech. Several other scholarship awarded by Central and State Govts., Endowments, Institution of Engineers etc., are enjoyed by the students. SC/ST students will be paid post-matric scholarship and facilities of Fee Concessions.

The Post Graduate students who have qualified with GATE are paid a sum of Rs.12,400/- as P.G. stipend per month. M.Tech. (Q.I.P.) Regular and (Q.I.P.) Poly are paid Rs.4,000/- per month.

Full-Time Ph.D. Research Scholars are paid institute scholarship @ Rs.25,000/-p.m for I and II year and III, IV and V year Rs. 28,000/- per month. Ph.D. QIP( R) students are paid Fellowship of Rs.9,000/- per month and a contingent grant of Rs.10,000/- per year.

## 17.2 Memorandum of Understanding

<b>Date of Signing MOUs and Duration</b>	<b>Duration</b>	<b>Organization/ Institute</b>	<b>Domain</b>
20th August, 2019, 5 years	5 Years	Hewlett Packed Enterprise Globalsoft Pvt. LTD, Bangalore	Initiating research collaboration activities with NITK Faculty on areas of Mutual Interest, Engaging NITK students in potential internship activities and in-semester projects, Conducting periodic workshop /seminars (with HPE experts and organised by NITK )on topics of mutual interest at NITK Surathkal .Faculty and students of NITK could be Participants, Organising webinars, conference , coding Competitions etc, Explore potential setup of lab facility at NITK, to explore research avenues in high performance computing and other research activities, Hewlett Packed Enterprise Globalsoft Pvt. LTD, Bangalore, 20th August ,2019, 5 Years
31 <sup>st</sup> August, 2019 (Renewed MOU), 3 years	3 Years	Robert Bosch Engineering and Business Solutions Limited (RBEI), Bangalore	Mechanical /Electronics/Collaborative research and student Internship, Robert Bosch Engineering and Business Solutions Limited (RBEI), Bangalore, 31 <sup>st</sup> August, 2019 (Renewed MOU), 3 Years
15th December , 2019, 5 years	5 years	Indian Institute of Technology Jammu	To Promote defence research, National and International academic cooperation in education, research and consultancy: <ul style="list-style-type: none"> <li>● Exchange of materials in education, research and consultancy, Publications, and academic information;</li> <li>● exchange of faculty and research scholars;</li> <li>● Exchange of students ;</li> <li>●Joint research and meetings for education, research and consultancy ;</li> <li>●Technical assistance, training for defence personnel, faculty students and the local community.</li> <li>● Both the institute will share their resources for the benefit of students, faculty and research scholars of the institutes.</li> </ul>

<b>Date of Signing MOUs and Duration</b>	<b>Duration</b>	<b>Organization/Institute</b>	<b>Domain</b>
03rd January, 2020, 10 years	10 Years	Indian Space Research Organisation (ISRO) Bengaluru	Research Activities
9th January, 2020, 3 years	3 Years	L&T Technology Services Pvt. Ltd	Research Activities
10th January, 2020, 5 years	5 years	Tashkent Institute of Irrigation and Agricultural Mechanization Engineer	International Academic Cooperations
15 <sup>th</sup> January, 2020, 3 years (Renewed)	3 years	Kompetenzzentrum Holz GmbH	Faculty exchange/ Collaborative research
24th January, 2020, 1 year	1 year	Sanjay Gandhi Institute of Trauma and Orthopaedics,	To Foster cooperation in education and medical
10 <sup>th</sup> Feb, 2020 (Renewed MOU), 5 years	5 Year	Michigan State University, U. S. A.	Faculty exchange / Student exchange Program
27 <sup>th</sup> Feb, 2020 (Renewed) 5 years MOU) 5 years	5 years	Faculty of Engineering and Graduate School of Science and Technology, Kumamoto University, Japan	Student exchange Program
27th April , 2020, 5 years	5 years	SreeChitra Tirunal Institute for Medical Sciences 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 tumors of the Spinal Canal".
9 <sup>th</sup> March, 2020, 5 years (Renewed MOU)	5 Years	Kagoshima University, Japan	Academic exchange program for students
27 <sup>th</sup> March, 2020		Tecnimont Private Ltd, Mumbai	Implementing Bio waste Recycling Pilot Plant Project and providing two Maire

### 17.3 Innovations & Technology Transfer

#### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

##### INNOVATIONS:-

FULL SYSTEM modeling of POWER9 processor in a standard architecture simulator, gem5. The models are in the queue to being up streamed in the core gem5 thread.

#### INDUSTRY INSTITUTE INTERACTION

Process is going on to setup MoU with ICMR- National Institute for Research in Tuberculosis.

#### DEPARTMENT OF MINING ENGINEERING

##### Industry Institute interaction:-

The Department of Mining Engineering has excellent interaction with industry. Every year students are being sent to various industries to take practical training at mine site and as well as short visits. The Department also giving technical services to not only for mining but also for civil engineering projects. This year our services are utilized by 8 Mining companies and two civil engineering excavation companies in the form of consultancy projects.

#### SCHOOL OF MANAGEMENT INNOVATIONS:-

Details of Innovation:- Implementing Lean Service in Indian Postal Service - NSH Mangalore, Karnataka, India  
Names of the faculty/staff/students involved:-  
Prof. Sequeira A. H. & Vadivel S. M

### 17.4 Concessions For SCs, STs, Handicapped Students

All SC/ST candidates are eligible for exemption of Tuition Fees as per the order of M.H.R.D., GOI, New Delhi.

### 17.5 SC/ST CELL

In order to ensure prompt disposal of the grievances of the SC/ST employees, scrutinize and consolidate the statistical data to conduct annual inspection of the rosters, SC-ST Cell was established in 2006.

The Cell also coordinates Scholarship Schemes for the benefit of the students belonging to SCs/STs category.

In 2018-2019 onwards Ministry of Social Justice and Empowerment under the Central Sector Top Class Education Scholarship (TCES) Scheme for B.Tech. SC students, Top 10 students from first year and second year were awarded TCES who's family income is below 6 lakhs. 23 students from third and final year were awarded TCES who's family income is below 4.5 Lakhs.

In 2018-19, Ministry of Tribal Affairs under Central Sector Top Class Education Scholarship (TCES) scheme for B.Tech/MTech ST students who have registered online in the National Scholarship Portal who's family income is below 6 lakhs. 76 ST students (Ministry of Tribal Affairs) from first, second, third and fourth year B.Tech/M. Tech are receiving TCES scholarship.

To cater the need of academic weaker students and support, Cell arranged the Special Coaching Classes for all theory subjects and Computer Programming Lab for first year B.Tech students belonging to SC/ST/OBCs, Minorities and PwDs.

To promote qualitative education in Engineering, following schemes drawn under financial assistance to the SC/ST students of the Institute to all academic programs whose family income from all sources doesn't exceed Rs.4.5 lakhs per annum.

Book allowance- Rs.6000/- (Rs.3000/- per semester).

Waiver of Hostel Fee (except caution deposit).

Latest computer with full accessories limited to Rs.45000/- per student as one time assistance.

Students Academic Performance Incentives (Rs.12,000-00 if CGPA is more than 6.5 and Rs.18,000-00 if CGPA is more than 8.0 in previous year).

### **SKILL DEVELOPMENT PROGRAMME**

Skill Development Programme was conducted for final year B.Tech/M.Tech SC/ST students of NITK-Surathkal. This was conducted during 3<sup>rd</sup> to 28<sup>th</sup> July 2019 in evening hours from 5.30 to 8.30 PM. The trainers for this programme are from FACE (Focus Academy for Career Enhancement). In the programme 60 students actively participated. The programme was aimed to focus on English communication skills, Self Enrichment & Employability enhancement, Teamwork, Leadership, Interpersonal skills, CV writing, Interviews, Group Discussions, Presentation skills, Career planning.

The modules of the proposed programme were: (1) Confidence building: to improve the confidence level of students with respect to public speaking, (2) Aptitude-consistent with the three-point tonic system in which importance is given to learning three major skills important for success in aptitude tests: (i) Question selection (ii) Shortcuts to questions (iii) Enhanced calculation speed, (3) Speed Maths-it helps to minimize their computation time drastically, enhances the computational efficiency, (4) Communique- to improving the s

grammar knowledge, (5) Recruitment Essentials- to prepares the students for mock group discussion, personal Interview and successfully crack personal interviews.

### **NET Coaching Classes for 2<sup>nd</sup> year M.Sc. (Physics ) Students**

NET Coaching Classes was conducted for 2<sup>nd</sup> year M. Sc. (Physics) students of NITK-Surathkal. This was conducted during 15<sup>th</sup> September to 30<sup>th</sup> November 2019 in evening hours from 5.30 to 8.30 PM.

### **17.6 NSS (National Service Scheme)**

The NSS unit of the NITK Surathkal (formerly KREC Surathkal) has been actively rendering its services to the backward areas and villagers of Dakshina Kannada district since its inception in this institute in 1964. The NSS unit organizes regular activities like, tree plantation, clean up of the hostels and NIT K Beach, organizes blood donation, medical, dental and eye camp for the villagers. It also involves in promoting literacy to villagers irrespective of their age, and enhances educational tools and, motivates primary school children of the schools located in various villages. The NSS unit of the institute was initially part of the Mysore University, Mangalore University and Vishvesvaraya Technological University. For the year 2010, the institute has already obtained permission from the Karnataka state NSS unit to have NSS unit which is independent to NIT K Surathkal.

### **17.7 RIGHT TO INFORMATION ACT (RTI 2005)**

The Right to Information Act, 2005 empowers citizens to get information from any 'public authority'. The Central Public Information Officer (CPIO) of a public authority plays pivotal role in making



the right of a citizen to information a reality. The Act casts specific duties on him and makes him liable for penalty in case of default.

### **What is Information**

Information is any material in any form. It includes records, documents, memos, e-mails, opinions, advices, press releases, circulars, orders, logbooks, contracts, reports, papers, samples, models, data material held in any electronic form. It also includes information relating to any private body which can be accessed by the public authority under any law for the time being in force.

### **Right to Information under the Act**

A citizen has a right to seek such information from a public authority which is held by the public authority or which is held under its control. This right includes inspection of work, documents and records; taking notes, extracts or certified copies of documents or records; and taking certified samples of material held by the public authority or held under the control of the public authority.

The Act gives the citizens a right to information at par with the Members of Parliament and the Members of State Legislatures. According to the Act, the information which cannot be denied to the Parliament or a State Legislature shall not be denied to any person.

## **17.8 YOGA CENTRE HISTORY**

Yoga club is a club which organizes all sorts of meditation methods like different yam or self discipline, niyam or discipline, Asanas or position, Bandha or Mudra, Pranayama or control of breath, pratyahar or determination, dharana or dedication, dhayan or meditation and Samadhi or deep meditation which help in concentration in study, helping in

attaining happiness by removing all sorts of diseases, for the purity of external life and for internal purity by following regulation of purity of thoughts. It has been organizing yoga events from the last 15 years in NITK.

### **RECENT INITIATIVES**

- We have planned to organize 6 batches in this year which is much more than last year in which only 3 batches were conducted in one year and previous years.
- We are also planning to conduct some special yoga practices for faculty members who are willing to join in large number. A large number of faculty members have enquired and wanted to join the yoga practices.
- We are planning to attract more number of B.TECH students by increasing the size of organizing members and also inducting 1<sup>st</sup> years into organizing committee.
- We are trying to make people aware of yoga programs more and more by notices as well through personal and group contacts.

### **MAJOR ACHIEVEMENTS**

- 180 people have been enrolled in this semester in different batches which is very large as compared to previous year enrolments and about same number of students are likely to enroll in the next semester yoga practices.
- More than 60 girl students have enrolled for yoga practices this year and are actively participating in almost all batches.
- Postgraduate students and Ph.D scholars have shown much more interest in practicing and learning yoga asanas and pranayams than undergraduate people.

### **17.9 TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)**

TEQIP-III project awarded to the institute has been successful in implementing diversified activities as laid under the three heads, namely, procurement, academic and operating cost. Until the last quarter (April-June 2020) funds utilised under various heads are Rs.156 lacs for procurement, Rs.227 lacs for academic activities, and 0.470 lacs for operating cost. The project has benefitted as many as 12 faculty in publication of their research articles in peer reviewed journals plus 35 faculty have attended workshop/conference, plus 12 faculty have organised FDPs/Workshops/STTPs/Conferences; 98 students inclusive of UG, PG and Ph.D. students have been supported to attend the conference and presented research papers in conferences; and 10 non-teaching staff have attended knowledge/skill development programmes. 84 UG students were provided financial support for their internship at industry and IITs/IISc/R and D organisations. Students appearing for GATE 2020 have been provided learning material and training. The project has also supported Seminars/Training/Skill development programmes for the UG and PG students in the direction to enhance their employability skills. Under the equity action plan (EAP), seminars, training programs and workshops were organised for the UG and PG students for improving employability skills, communication skills, and over all personality development. Major responsibility assigned to the TEQIP-III project institutes under 1.3 component is the Mentoring activity /Twinning system. NITK Surathkal has been mentoring Engineering College (EC), Jhalawar (Formerly Government Engineering College, Jhalawar), Rajasthan since the inception of the project in 2017. Accordingly, there has been a series of academic activities organised by

faculty of NITK benefiting the faculty and UG students of the mentee institute. During the last three academic years nearly five visits have taken place between the faculty of EC Jhalawar to NITK and vice versa. From NITK Surathkal nearly, 15 to 20 faculty from NITK visit EC Jhalawar for about a week. Faculty from IT, CSE, EEE, ECE, ME, CV, Physics, and Chemistry have been the major contributors. During this academic year the faculty of NITK interacted with the students and faculty of EC Jhalawar. Faculty of NITK have engaged classes to UG students of EC Jhalawar based on Rajasthan Technical University (RTU) Kota curriculum, engaged in practical classes as well. Few focused and theme based training programmes, motivational talks, seminars have also been organised with the objective that their technical, soft skills, cognitive and non-cognitive skills be enhanced. EC Jhalawar faculty were assisted by NITK Faculty to successfully apply for NBA accreditation, accordingly NITK faculty of various departments have helped EC Jhalawar to prepare their e-SAR. Workshops on Pedagogy, OBE, Effective Governance practices, and theme based workshops/seminars were organised for the benefit of the faculty of EC Jhalawar. NITK Surathkal has provided UG students of EC Jhalawar with the opportunity of undergoing internship at NITK for about 30 to 45 days. During the academic year 2017-18 and 2018-2019 nearly 154 and 89 students have visited NITK for their internship with a focus to help improve knowledge in the courses relevant to RTU Kota curriculum. Faculty of NITK Surathkal were in the forefront to help EC Jhalawar to take up joint research activity which has resulted in two joint research projects being sanctioned for EC Jhalawar under the TEQIP Collaboration Research Scheme.

## 18. INDUSTRY INSTITUTE INTERACTION

### 18.1 INDUSTRY INSTITUTE PARTNERSHIP CELL (I.I.P.CELL)

The IIP Cell at NITK, Surathkal is engaged in building Institute Industry Collaboration for mutual benefit. The Cell is headed by a faculty member of Associate Professor or above grade supported by a Clerical Assistant. The Faculty in-charge reports to Dean (R&C), Dean (P&D) and Director. IIP Cell is mainly involved in handling of

Testing and Consultancy works of all the departments and arranging endowment lectures.

The Institute Revenue generation through Testing and Consultancy has been improving substantially. The total revenue generated through Testing and Consultancy works for the year 2019-20 is Rs.1.77 (one Crores seventy-seven lakhs).

Enclosed here with the list of NITK Clients for T&C activities for the year 2019-2020.

<b>Details of Patent application filed by NITK in Indian Patent office for the year 2019-2020</b>			
<b>Inventors</b>	<b>Title of Patent application</b>	<b>Application No</b>	<b>Date of Filig</b>
Dr.K.V Gangadharan,Kiran Katari	Variable stiffness Magnetorheological Isolator	201941018353	08-05-2019
Roopa Vishwadev, Venkata Ramana vanjari, Arjun Mudlapur, Dr, Venkateshperumal B, Pavankumar Pothapragada, (Joint application: NITK & Simlife Electric Private Limited)	Transformer-less Solar Photovoltaic Gird Connected Inverter	201841038650	11-10-2018
Dr.Bhawana Rudra	Method, System and Apparatus for Accurate Run-out Decision	201941032006	07-08-2019
Dr.Subray R.Hegde, Preetish Crimson D'Silva	Method and System for producing elongated grains in wrought metals with superior creep resistance.	201941033324	19-08-2019
Dr.Subray R.Hegde, J.K Rakshan Kumar, Sudhir Hegde, Sudarshan B, Jayaram Bhat M, Ganesh Bhat, Allen Johan, Praveen R.	Industrial thermocouples with superior creep resistance	201941033961	22-08-2019
Santhosh K.G, Manikonda, Dr.Dattatraya N Gaonkar	A method for islanding detection based on image classification with ensemble convolution neural networks.	201941036379	10-09-2019
Dr.P.Shanthi Thilagam, Amith Praseed	Method and system for detecting asymmetric application layer DDOS attacks based on user access patterns	201941040132	03-10-2019
Aranganathan Vishwanathan, Dr Adka Nithyananda Shetty	Method and system for Synthesis of elctrode and electrolyte Materials for High Energy storage devices.	201941044515	03-11-2019
Jagananthan T.K, Kishore Kumar M.J	Method and composition for fabricating a high-k-dielectric materials	201941047909	23-11-2019
Suresha S.N, Nigappa A	Direct compaction Mould for preparation of Bitumen Bounded Fine Aggregate matrix Specimen	202041006193	13-02-2020
Saikat Dutta, Sib Sankar Mal, Sharath B Onkarappa, Navya Subray Bhat	Efficient production of furanics and levulinic acid from carbohydrates using quaternary ammonium salts as an additive	TEMP/E-1/7790/2020-CHE(202041007329)	20-02-2020

<b>S.No</b>	<b>Clients Name</b>
1	Mangalore International Airport, Mangalore
2	Premier Builders, Udupi
3	Wadia Techno Engineers Services Ltd, Bangalore
4	Mangalore Chemicals and Fertilizers Limited, Bangalore
5	Westtek Enterprises Pvt Ltd, Manipal
6	Wonderla Holidays Limited, Hyderabad
7	The Executive Engineer, Bangalore Central Division, Bangalore
8	The Secretary, Agriculture Produce Market committee, Belthangady D.k
9	RKEC Projects Limited, Uttara kannada
10	The Singareni Colliries Co Ltd, Telangana
11	Rajeev Kumar Gupta, Mangalore International Airport authority,
12	The Senior General Manager, Mangalore SEZ Ltd
13	KIOCL Limited, Panambur, Mangalore
14	High Grip Granites, Kerala
15	Kudroli Construction, Kasaragod
16	Hi-Tech Civil Engineers Pvt Ltd, Lakshadweep
17	Assistant Engineer, City Corporation, Mangalore
18	Konkan Railway Company
19	IIT, jammu, Jagti, PO Nagrota, NH-44, Jammu
20	IREL India, Ltd, Tamilnadu
21	Mangalore Refinery and Petrochemical Ltd, Surathkal
22	Mangalore Chemical and Fertilizer Limited, Mangalore
23	Sr.Geologist, Mines and geology Dept, Rajathadri, Manipal, Udupi
24	Pixellogic Solutions Pvt Ltd, Vidyanarayanapura, Bangalore
25	The Singareni Co Ltd, Telangana
26	TJN Construction Pvt Ltd, Bangalore
27	Sri.Palimaru Matha, Udupi
28	M.Manohar Rao, Mangalore
29	Green Enviro Tech Services, Bangalore
30	Sai Radha Developers, udupi
31	THR. Infrastructure, Moodabedri
32	Mineral Enterprises Ltd, West Wine , Mangalore
33	Sukhdevraj Sharma Engineers, NITK, Mangalore
34	REX Polyextraction Pvt Ltd, Opp KWC College, Sangli
35	Shri.Durgaparameshwari Temple, Kateel
36	Kamath Granite Crushers , Puttur
37	New Mangalore Port Trust, Panambur, Mangalore

38	Geo Marine Solutions Private Limited, Bejai, Mangalore
39	Central Research Laboratory(CRL), Bangalore
40	Indian Institute of Science, Kundapura, Challakere T.q
41	Kilinakod Rock Products Private Limited, Kerala
42	L&T Limited Constructions, Chennai

## 18.2 INDUSTRY INSTITUTE COLLABORATION

### DEPARTMENT OF COMPUTER ENGINEERING

IBM and NITK-IBM Computer Systems Research Group, NITK are working to build POWER Processor models into the gem5, full system simulator.

### DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

#### Name of the industry:-

Texas Instruments India Ltd.,  
DRDO  
LRDE  
ISRO  
ANRC, Boeing  
Intel  
Dell, EMC  
Maxlinear  
MediaTek  
NXP India Pvt. Ltd.  
Samsung RD  
Analog Devices  
National Instruments

**Nature of Collaboration (academic, research, training etc):-** Academic and Research.

**Period/Duration:-** April 2019 to March 2020

### SCHOOL OF MANAGEMENT

Period/Duration:- Ongoing **Dr. Suprabha K.R.:**

Name of the industry:- Wadhvani Foundation

Nature of Collaboration: Academic and Training.

Period/Duration:- 2018-2021

Dr. Bijuna C. Mohan:

Name of the industry:- New Mangalore Port Trust (NMPT)

Nature of Collaboration (academic, research training etc):- Research/consultancy.

Looking for collaboration with Data Analytics and Computational laboratory (DACL), a center of excellence of Indian Institute of Management Bangalore (IIMB) for conducting joint academic activities.

### DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

1. M/s Infineon Technologies India Pvt. Limited, Bangalore has sponsored the visit of Mr. Swaminathan Balasubramaniasarma, a Senior Staff Engineer, who participated as an Industry expert in Pre NBA UG workshop held on 11<sup>th</sup> March, 2020.
2. Dr G S Puneekar has been requested to do the consultancy work to MESCOM for 11 kV/33 kV GIS-substation earth mat design. Field visit done on 14<sup>th</sup> December 2019.
3. In association with the Dean (R&C) Efforts are being to done to prepare a DPR with regard to setting up of a Center of Excellence (COE) supported by Siemens in the institute.
4. UG/PG students have done their Major project/internships in industry such as Infineon Technologies, Bangalore, ABB, Mercedes-Benz Research and Development India, KPIT Technologies, Pune, Raptor Design Technologies Pvt. Ltd. Bangalore, National Brain Research Centre, Haryana, TIFR Mumbai, IITBombay, Central Water & Power Research Station, Pune, National Institute of Oceanography, Goa, etc.

### DEPARTMENT OF INFORMATION TECHNOLOGY

#### Dr. SOWMYA KAMATH S

Name of Industry: Hewlett Packard Enterprise (HPE)

Nature of Collaboration: MoU signed for Research and academic collaboration, Student internships, joint projects. Expert lectures

Period/Duration: Aug 2019 - Aug 2024

Outcome: HPE donated six high-end servers and other equipment for setting up a High Performance Computing Lab at Department of Information Technology. The donated equipment are valued at Rs. 77 lakhs (as per prevailing market prices) and the Lab was inaugurated by Mr. Naresh Shah (President India-R&D, HPE) on August 17th, 2019.

### **DEPARTMENT OF MECHANICAL ENGINEERING**

- IFB Goa , Industry sponsored research, Dr. Hemanth Kumar, Dr. Jeyaraj P, Dr. Sharanappa, Dr. K V Gangadharan
- NMPT, Industrial Consultancy, Dr. Bijuna (SOM), Dr. K V Gangadharan,
- MRPL, Industrial Consultancy, Dr. K V Gangadharan, Dr. Pruthviraj (app Mech)
- NMPT, Industrial Consultancy, Dr. Pruthviraj (AppMech) , Dr. Sheena(SOM) , Dr. K V Gangadharan
- Wonderla Kochin, Industrial Consultancy, Dr. K V Gangadharan
- Wonderla Bangalore, Industrial Consultancy, Dr. K V Gangadharan
- Wonderla Hyderabad, Industrial Consultancy, Dr. K V Gangadharan
- MRPL, Management Training Program, Dr. Sheena (SOM) Dr. K V Gangadharan
- OMPL, Industrial Consultancy, Dr. Ranjith and Dr. K V Gangadharan
- Clasic Fussion, Industrial Consultancy, Dr. Bijuna (SOM), Dr. K V Gangadharan,
- Hi Tech Batteries, Industrial Consultancy, Dr. Bijuna (SOM), Dr. K V Gangadharan,
- IKP knowledge park, BRIC Hackathon, Dr, Sowmya Kamath (CS) and Dr. Suprabha (SOM) , Dr. K V Gangadharan
- MRPL, INVENCIO - Design Contest, Dr. Pruthviraj (AppMech) , Dr. K V Gangadharan

- Rambal India Ltd. Chennai, Industry sponsored research, Dr. Hemantha Kumar, Prof. K.V.Gangadharan, Dr. Sharnappa J, Dr. Mohd.Rizwan Rahman (Material and Metallurgy Engg),
- Ashok Leyland Ltd. Chennai, Industry sponsored research, Dr. Hemantha Kumar, Prof. K.V.Gangadharan, Dr. Sharnappa J, Dr. Mohd.Rizwan Rahman (Material and Metallurgy Engg),
- Arya Technokrats Belgaum, Collaboration for Fabrication, Dr. Hemantha Kumar
- AUM Techno Spray, Research, Dr. Ramesh M R and Dr Sharnappa J

### **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

Name of Industry: Foundry & Forging Division, Hindustan Aeronautics Limited Bangalore)

Nature of Collaboration: Internship

Period/Duration: May to June 2019

Name of Industry: Carborundum Universal Limited

Nature of Collaboration: Internship

Period/Duration: May to June 2019

Name of Industry: NCL INDUSTRIES LTD

Nature of Collaboration: Internship

Period/Duration: May to June 2019

Name of Industry: PEEKAY STEELS CASTING LTD

Nature of Collaboration: Internship

Period/Duration: May to June 2019

Name of Industry: JSW Steel Limited, Ballari

Nature of Collaboration: Internship

Period/Duration: May to June 2019

Name of Industry: Vichar Technology

Nature of Collaboration: Internship

Period/Duration: May to June 2019



## 19. SIGNIFICANT ACHIEVEMENTS

### DEPARTMENT OF APPLIED MECHANICS & HYDRAULICS

Organized events

1. Seminar on Innovative concept in Ocean Engineering, 26.04.2019, NITK, Co-ordinator : Dr. Manu
2. Summer School on on Geospatial Technologies, 11-31 July 2019, NITK, Co-ordinator : Dr. H. Ramesh
3. Seminar on Coastal Reservoirs as a sustainable strategy for water security, 22<sup>nd</sup> – 24<sup>th</sup> July, 2019, NITK, Co-ordinator : Dr. H. Ramesh
4. CEP Course for PWD Engineers, 'Drone survey on 3D mapping', 26<sup>th</sup> -30<sup>th</sup> , August 2019, co-ordinator : Dr. Pruthviraj U.
5. Training programme on Hydrology and Hydrologic modelling using MIKE (DHI) Software , 16.09.2019, AMD, NITK, Co-ordinator : Dr. K. Subrahmanya
6. Training programme on ARCGIS software, 18<sup>th</sup> to 20<sup>th</sup> Sept. 2019, AMD, NITK, Co-ordinator : Dr. Amba Shetty
7. GIAN programme on Design and analysis of offshore floating and turbine, 3<sup>rd</sup> to 7<sup>th</sup> Sept. 2019, MHRD, Co-ordinator : Dr. D. Karmakar
8. Workshop on Prakruti Infocus, 28.09.2019, NITK, Co-ordinator : Dr. Pruthviraj U.
9. Training programme on Pix4D Map Software, 23.09.2019, AMD, NITK, Co-ordinator : Dr. Pruthviraj U.
10. Training programme on Physical & Numerical Modelling in Coastal and Ocean Engineering' 4<sup>th</sup> to 10<sup>th</sup> Nov. 2019, NITK, Co-ordinators : Dr. Pruthviraj U. & Dr. Kiran G. Shirlal
11. Symposium on 'Open source hydrodynamics program on numerical modelling' 13<sup>th</sup> Nov. 2019.
12. GIAN program on "Environmental loads and Design Approach for Fixed and Floating Offshore

Structures" 24<sup>th</sup> -27<sup>th</sup> December 2019, Co-ordinators: Dr.T.Nasar & Prof Subba Rao

### Photographs attached

1. Invitation of Prakruti Infocus
2. Talk by Mr. Gururaj K.V. in Prakruti Infocus 28.09.2019
3. Prakuruti Infocus workshop on 28.09.2019
4. Inaugural function of Workshop on Innovative concept in Ocean Engineering, 26.04.2019.
5. Inaugural function of 3 days workshop on Coastal reservoirs as sustainable strategy for water security, 22-24, July 2019.

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Dr. P Santhi Thilagam

- DISTINGUISHED ALUMNI Award, National Institute of Technology Karnataka, Surathkal Sept 2019
- Resource person of AICTE sponsored one-week STTP on "WSN & Ubiquitous Computing", during September 16-20, 2019, Jaipur, Rajasthan.
- Resource person of AICTE Sponsored two weeks FDP on Recent Trends in Machine Learning and Pattern Recognition-11-24 December 2019, MIT Manipal.

Dr. Annappa B

- Keynote address on Latest Trends in Research Methodologies and session chair for International conference on Technical Advancements in Computer Science & Engineering held on 6<sup>th</sup> December 2019.
- Volunteered as Proctor to guide and oversee competing teams for the IEEEExtreme 13.0 programming competition held on 19<sup>th</sup> October 2019.

Dr. Mohit P Tahiliani

- Added as a member of the Steering Committee by NS-3 Consortium.
- Served as an Organization Administrator for ns-3's Google Code-in (GCI) contest.
- Received a consultancy project from ABB Global Industries and Services Pvt. Ltd. in Bangalore.
- Speaker at FOSSCON 2019.
- New packet scheduler developed by team got merged into the mainline of the Linux kernel

### **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

#### **ACHIEVEMENTS DURING 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020**

Dr. C S Asha, PhD scholar, Department of Electronics and Communication Engineering (2014-2018) has been awarded Special Mention of the Jury Award in category of Electronics and communication by Board for IT Education Standards (BITES). The research work was carried out under the guidance of Dr. Narasimhadhan, Assistant Professor, Department of Electronics and Communication Engineering.

Dr. M. S. Bhat, IEEE Student Branch Counselor was awarded the Outstanding Large Students Branch Counselors Award 2019 by IEEE Bangalore Section.

IEEE Student Branch won 18th place in Global Ranking in IEEEExtreme 13.0 coding competition-2019.

IEEE Darrel Chong Student Activity Award 2019 - Bronze

IEEE R10 (Asia-Pacific) Exemplary Student Branch Award - 2019

Best paper award for the paper titled "Ultra low voltage, low power active-RC filter in 90 nm CMOS technology" by Y. P. Yeshwanth, T. P. Vara Prasad, Vivek Mudadla, Pavan

and Rekha S. in the IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER 2019), 11-12 Aug. 2019.

Dr Anu Shaju Areeckal, PhD Scholar, Department of Electronics and Communication Engineering (2014-2018) has been awarded Gandhian Young Technological Innovation Awards 2019 for her research work, *Early diagnosis of Osteoporosis using metacarpal radiogrammetry and texture analysis*. The research work was done in collaboration with Kasturba Medical College, Mangalore & Center for Biomedical Imaging, Geneva under the guidance of Prof. Sumam David S and Prof. Michel Kocher, Institut d'Automatisation Industrielle, Haute Ecole d'Ingenierie et de Gestion du Canton de Vaud (HEIG-VD), Yverdon les-Bains, Switzerland.

- Proceedings of International Conference on Innovations in Power and Advanced Computing Technologies, IPACT-2017 held at VIT University, Vellore,, INDIA, April 21st and 22nd 2017. This paper has won the best paper award.

### **DEPARTMENT OF INFORMATION TECHNOLOGY**

#### **ACHIEVEMENTS DURING 1<sup>ST</sup> APRIL 2019 TO 31<sup>ST</sup> MARCH 2020**

1. Prof. G. Ram Mohana Reddy, Department of IT awarded Best Research Paper Award at Springer 8th International Conference on FICTA 2020, National Institute of Technology Karnataka Surathkal, Mangalore, India, January 4-5, 2020
2. Dr. Sowmya Kamath S, Department of IT, Set up of Industry sponsored High Performance Computing Lab (in collaboration with HPE) on 17th August 2019.
3. Dr. Sowmya Kamath S, Department of IT, Signing of MoU with HPE for research and

academic collaborations on 17th August 2019.

4. Dr. Anand Kumar M, achieved the Second best team in "Arabic Deception Detection" and the Third best team in "Arabic Author Profiling" shared tasks of the Author Profiling and Deception Detection in Arabic (APDA) track co-located with the Forum for Information Retrieval Evaluation (FIRE'19), 12th - 15th December, at Indian Statistical Institute, Kolkata, India.
5. A research article written by Raghavendra K Marangappanavar and Kiran M entitled *Proof-of-Equality: Fairness Ensured Consensus Mechanism for Blockchain Technology*, has own best paper award in the international conference International Conference on Advances in Systems, Control and Computing (AISCC-2020), Springer, conducted during Feb. 2020 in MNIT Jaipur.

## **DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES**

### **Awards and Recognitions:-**

Dr. Pushparaj Shetty D., Vice chair of the IEEE Mangalore subsection during the year 2019.

Dr. Pushparaj Shetty D., Chair elect of the IEEE Mangalore subsection during 2020.

### **Notable Achievements during the year**

Dr. Pushparaj Shetty D., Vice chair of the IEEE Mangalore subsection during the year 2019.

Dr. Pushparaj Shetty D., Chair elect of the IEEE Mangalore subsection during 2020.

## **DEPARTMENT OF MINING ENGINEERING**

### **Significant Achievements -**

Dr. B.M. Kunar and Dr. M.Aruna Received Core Research grant from SERB, DST Govt of India.

### **Awards and Recognitions -**

1. Dr. B.M. Kunar received the Outstanding reviewer award from Journal of Safety Science (Elsevier Publisher).
2. Dr. B.M. Kunar received the Best reviewer award from Journal of safety science (Elsevier Publisher).
3. Dr. K. Ram Chandar revived Mining, Geological and Metallurgical Institute of India (MGMI)- Gold Medal for his outstanding contribution to Mining Engineering field.

## **DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING**

### **Students Achievements:**

1. Rahul Chandrasekhar, Shamil K. M., Aju Ajmal and Sreejith, 2<sup>nd</sup> Year M.Tech. - Runners up in PG Football.
2. Vicky U. M., Ganesh Kumar B. and J. Rakshan Kumar, 2<sup>nd</sup> year M.Tech. - Finalists for Exceed 2020 Campus challenge conducted by WABTEC Corporation.
3. Bharadwaj, IV Sem. B.Tech. - NITTE JKSHIM Biz Quiz 1st Place.
4. Shubhang Bhandarkar, IV Sem. B.Tech. - NITTE JKSHIM Biz Quiz 1st Place, exQUIZite - St.Aloysious College 2nd Place, IEEE Sci Tech Quiz SJEC Chapter 2nd Place.
5. K Sujith Bhatt, IV Sem. B.Tech. - OPJEMS Scholar 2019.
6. Sowmya G. , IV Sem. B.Tech. - InterNit Lawn Tennis 2018 and 2019 Runners up(both the years).
7. Aakash Wilfred, IV Sem. B.Tech. - exQUIZite - St.Aloysious College 2nd Place.

8. Karthik Manjunath, IV Sem. B.Tech. - PATW qualified University level.
  9. Shaurya Seth, B.Tech. 6th Sem. – Became a Technical Head and Sig Head for the technical club IE in April 2019.
  10. Research Scholar of our dept. – Runners up in RPL 2020.
7. Talk on “Materials for space program” on 17<sup>th</sup> February, 2020 by Mr. Gopinath Pai, Vikram Sarabhai Space Centre, Trivandrum.
  8. Talk on “Proximity Effect in Hierarchically Structured Superconductor/Ferromagnet Multi – Layers” on 19<sup>th</sup> February, 2020 by Dr. D. Paul Joseph, Asst. Professor, Dept. of Physics, NIT Warangal.

### Special talk from Institute/Industries/R&D

1. Talk on “A review of Graphene Proximitized with Ferromagnets – Nanofabrication and Results” on 28<sup>th</sup> June 2019 by Dr. Dhavala Suri, Postdoctoral Associate, Francis Bitter Magnet Laboratory and Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, USA.
2. Lecture on “Advancement of Physical Simulation Technology in Materials Research with Gleeble Thermo-Mechanical Simulator, on 30<sup>th</sup> July, 2019 by Dr. Wayne Chen, Director of Research and Managing Director, Asia – Pacific Operations Dynamic System Inc., USA.
3. Talk on “Metallurgical Engineering Role in Nation Building: An Indian Prospective” on 27<sup>th</sup> September, 2019 by Mr. Venkata Ramana, Head of Manufacturing, L&T Heavy Engineering, Surat.
4. Prof. T. R. Lecture Series on “High Energy Rare Earth Permanent Magnets: The Indian Landscape”, on 29<sup>th</sup> October, 2019 by Prof. Amol A. Gokhale, Professor, Dept. of Mechanical Engineering, IIT Bombay.
5. Talk on “Micro X-Ray Scan for Different Capabilities” on 6<sup>th</sup> November 2019 by Mr. Samaresh Changdar, Senior Manager – Digital/CT India Baker Hughes – GE Company.
6. Talk on “Spark Plasma Sintering: A novel powder metallurgy processing tool for niche application” on 24<sup>th</sup> December, 2019 by Dr. Dibyendu Chakravarty, Scientist-E, Center for Nanomaterials, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Balapur P. O., Hyderabad.

### SCHOOL OF MANAGEMENT

#### International Summer University Program 2020

The Indian Leg of International Summer University Program 2020 was organized by the School of Management (SoM), National Institute of Technology Karnataka, Surathkal (NITK) in collaboration with University of Applied Sciences Western Switzerland, School of Business and Engineering Vaud (HEIG-VD), Switzerland. The program was held during 09<sup>th</sup> February to 19<sup>nd</sup> February 2020.

Dr. Dhishna Pannikot from SoM, NITK and Prof Eytan Zysman from HEIG-VD, Switzerland were the coordinators for the event. Dr. S. Pavan Kumar, Head, SoM had supervised the event and Prof. Aloysius Henry Sequeira (Dean, Faculty Welfare), NITK presided over the function. 16 students from both the collaborating institutions participated in the programme.

### DEPARTMENT OF PHYSICS

One Day Lecture Series, “Physics of Materials” at ST AGNES COLLEGE MANGALURU on 06-03-2020 **Addition(s) to Building Infrastructure**, Dr. Ajith K M

“Quantum Error Correction in a Loop Quantum Gravity Inspired Model of Elementary Particles” Loops' 19, Biennial international conference on Loop Quantum Gravity and allied approaches to Quantum Gravity, Pennsylvania State University, USA.

17-06-2019 to 21-06-2019, Dr. •  
Deepak Vaid

International Conference on "Dynamics In Functional Materials" Transition Metal Quinonoids and Oxides for Spintronic Applications Kyriad Prestige Calangute, Umtavaddo, Calangute Bardez, Goa - 403516, India 12-02-2020 14-02-2020, Dr. Kartick Tarafder

Offshore Renewable Energy and Simulation Laboratory (Development in progress under project fund)  
HPC Server  
Desktop Computers (3 Nos)  
MATLAB  
Acceleration Sensors  
Pressure Sensors  
Anchor Load Sensors  
Tilting Sensors  
Wave Sensors  
Force Sensors

## Department of Physical Education & Sports

### **ACHIEVEMENTS:**

1. Dasara Tournaments: Basketball
2. (Men) District level Runners, TT (Men) – Runners-Up.
3. BSA Kumar Inter collegiate Basketball tournament conducted by yenepoya University – Runner-Up.
4. All India Inter NIT Athletics, Weight Lifting, Power Lifting and Body building Championship Held at MNIT Jaipur: Won Team Championship In Body Building and Mr. Prathamesh of I MTech was declared as Mr.NIT for the year, 2015-16.
5. All India Inter NIT Sports held at SVNIT Surat, Badminton, (Men) Second Runner-Up, Tennis, Runner-Up.
6. All India Inter NIT Sporta held at NIT, Calicut, Basketball Men anf Women teams were Second Runner-Ups.
7. All India Inter NIT Sports held at NITK Surathkal during, 18<sup>th</sup> to 20<sup>th</sup> March, 2016 Institute Aquatics Men team won Team Championship, Aquatics Women team won team Championship and Hockey team won First place.
8. In “REVELS” All India Inter Engineering Collegiate Tournaments organized by MIT, Manipal: Volleyball Women teams were Runners-Up.
9. NITK Cup, 2015-16 Chess Tournament hels at NITK Surathkal: Institute Men & Women Team were `Winners.

### **Infrastrucure Development**

Infrastructure Development  
Setting up of new labs from Project fundingand IRG

## DEPARTMENT OF ELELCTRONICS & COMMUNICATION ENGINEERING

The building vacated by the Dept. of Computer Science and Engg. (while moving to a new building) has been alloted to the Dept. of E&C Engg.

**During the year 2019-20, the following additions have been made building infrastructure:-**

One type V Residential apartment of 5,245 sqm of built-up area with 24 dwelling unit.

One Type VI Residential apartment of 6840 sqm of built-up area with 24 dwelling unit

**Distinguished Alumni Felicitation Programme Conferring of Distinguished Alumnus / Alumna Award (To Alumni of B.Tech. Batches 1965 to 1979) On 60th Foundation Day of NITK Surathkal August, 6th, 2019, 2pm to 6pm. Venue: SJA**



**Brief Report:**

In commemoration of 60 years of fruitful existence, NITK is celebrating its Diamond Jubilee during the period August 2019 – August 2020. It was planned to start the Diamond Jubilee Celebrations on August 06, 2019 which coincides with the 60<sup>th</sup> Foundation Day of the Institute. This celebration of 60<sup>th</sup> year of glorious existence is mainly due to outstanding

performance of our Alumni all over the globe and it was to rejoice this success through active participation of beloved Alumni through various events. Given the importance, we attach to the alumni, it was the collective desire of Team-NITK to invite distinguished alumni as an Institute Guest for the inaugural function of Diamond Jubilee Celebrations. The first Alumni meet was specially scheduled to felicitate “Distinguished Alumnus” graduated during 1965 to 1979 (decade and a half long). This Alumni meet had major objective of identifying the Alumni serving Industry / Research Organisations / Government Services across India and felicitate them conferring “Distinguished Alumnus / Alumna Award” on the eve of Diamond Jubilee Year. To ensure participation of Alumni from every department, respective departments were requested to nominate one distinguished alumnus/alumna serving Indian industry / organisations. To part benefit of their wisdom to faculty and students of NITK, invited alumni were requested to address gathering. The event started with welcome address by Prof. K. P. Vittal, Dean (AA & IR), then address by Prof. K. U. M. Rao, Director, NITK, and presidential address by Prof. K. Balaveera Reddy, Chairman, BOG.



Thirty One Alumni serving Industry / Research Organisations were invited and felicitated conferring “Distinguished Alumnus / Alumna Award”:

## Teachers' Day Celebrations

### Brief Report:



All former faculty and staff felicitation program were organised on Teachers' Day to mark distinction among series of events slated during Diamond Jubilee Year of NITK Surathkal. This Teachers' Day had major objective of honouring all former faculty and staff who served NITK (KREC) since its inception. To ensure participation of

former faculty and staff, their addresses were obtained from pension section and personal invitation were posted. Further, respective departments heads were requested to personally invite their faculty and staff. The event started with welcome address by Prof. Subhash Yaragal In-charge Dean (FW), followed with address by Prof. Ananthanaryana V. S., Deputy Director, NITK, and presidential address by Prof. K. Balaveera Reddy, Chairman, BOG.



## 1971 BTech Batch Reunion Organised at NITK Surathkal on 14<sup>th</sup>& 15<sup>th</sup> Dec 2019



The BTech 1971 Batch of NITK Surathkal organised Golden Jubilee reunion at NITK campus on 14<sup>th</sup> Dec & 15<sup>th</sup> Dec. 2019. Prof. Panduranga Vittal K, Dean AA&IR NITK, Prof. U. Shripathi Acharya, Prof. M.S Bhat were invited during the occasion. To mark the occasion the reunion group offered their donation of Rs 1,35,000/-

to NITK(KREC) Hr Primary school.

## Academic Summit Sept 5 (Thu), 2019, Venue: SJA, At 10.00 hrs

### Brief Report:-



An Academic Summit has been organised on Teachers' Day to mark distinction among series of events slated during Diamond Jubilee Year of NITK Surathkal. This Academic Summit had major objective of identifying the Alumni serving Academia across India and felicitate them conferring "Distinguished Alumnus / Alumna Award" on the eve of Diamond Jubilee Year. To ensure participation of

Alumni from every department, respective departments were requested to nominate

one distinguished alumnus / alumna serving Indian academia. To part benefit of their wisdom to faculty and students of NITK, seminar and panel discussion were organised. All invited alumni were requested to deliver a seminar on the topic: "Future Challenges in Engineering Education". This was



followed by Panel Discussion on the topic: "Mission to realise Academic Excellence in NITK", which had participation of invited Alumni and moderated by Prof. M B Saidutta, Dean (Academic). The event started with welcome address by Prof. K. P. Vittal, Dean (AA & IR), followed with address by Prof. K. U. M. Rao, Director, NITK, and presidential address by Prof. K. Balaveera Reddy, Chairman, BOG. Ten Alumni serving Academia were invited and felicitated conferring "Distinguished Alumnus / Alumna Award": Panel discussion with Alumni moderated by Prof. M. B. Saidutta, Distinguished Alumni felicitated during Academic Summit



**Engineers' Day & Technology Summit Sept 15 (Sun), 2019, Venue: SJA**

**Brief Report:**



A Technology Summit has been organised on Engineers' Day to mark distinction among series of events slated during Diamond Jubilee Year of NITK Surathkal. This Technology Summit had a primary objective of identifying the Alumni serving Industry / Research Organisations / Government Services across India and felicitate them conferring

“Distinguished Alumnus / Alumna Award” on the eve of Diamond Jubilee Year. To ensure participation of Alumni from every department, respective departments were requested to nominate one distinguished alumnus/alumna serving Indian industry/organisations. To part benefit of their wisdom to faculty and students of NITK, seminars were organised. All invited alumni were requested to deliver a seminar on the topic: “Future Challenges in Indian Engineering Industry / Organisation”. The event started with welcome address by Prof. U. Shripathi Acharya, Dean (R & C), followed with briefing on Technology Summit by Prof. K. P. Vittal, Dean (AA & IR), then address by Prof. K. U. M. Rao, Director, NITK, and presidential address by Prof. K. Balaveera Reddy, Chairman, BOG. Fifteen Alumni serving Industry / Research Organisations were invited and felicitated conferring “Distinguished Alumnus / Alumna Award”:



**The 13<sup>th</sup> GLOBAL CONVENTION was held on 21st and 22nd December 2019 at Hyderabad, Telangana**



The 13th Global convention was held in Telangana on 21<sup>st</sup> and 22<sup>nd</sup> December 2019. The convention was inaugurated by Prof. K Balaveera Reddy, Chiaperson NITK Surathkal. Dr. Adimulapu Suresh Education Minister (Government of Andhra Pradesh) was Chief Guest of Honour. Mr. B K Krishnamurthy, President NITK Alumni Association, Mr.

M.Chitti Babu, Dr. Gopal Mugeraya, Director NIT Goa, Udaykumar Yaragatti, Director MNIT Jaipur, Dr. K Panduranga Vittal, Dean AA&IR NITK, Dr. V.R Sastry VC- DBATU, Past Global President Yajna Narayana, Past Global President Gopala Bhupala were also present

during the occasion. More than 500 Alumni and their family members from all over India and abroad attended the event and made GC13 a successful event.

### 1994 B.Tech Silver Jubilee Reunion has been organised at NITK Surathkal on 21<sup>st</sup> Dec 2019



1994 Silver Jubilee Reunion batch was celebrated at NITK campus on 21<sup>st</sup> Dec 2019. They felicitated Prof. Karnam Umamaheshwar Rao, Director NITK Surathkal, former Faculties and staff. Around 194 alumni with their families had attended the reunion. The reunion batch gave donation of around Rs.11 Lakhs to Trishul Jal Sanchayan initiative of Alma mater and offered donations of around 4 Lakhs to NITK(KREC) Hr Primary school.

### 1976 B.Tech. batch reunion was held at NITK Surathkal on 21<sup>st</sup> Dec 2019

The 1976 B.Tech. Batch of NITK Surathkal organised Reunion at NITK Campus on 21<sup>st</sup> December 2019. They had shared their facilities with 1994 Silver Jubilee Reunion batch and had a small scale assembly and with campus tour and had few entertainment programmes in Main seminar hall.

### NITK Karavali Marathon 2020:

The NITK Karavali Marathon is an annual marathon organised by the NITK Alumni Association, backed by the Rotaract Club, Students' Council, TaskForce, NCC, NSS and CSD NITK Surathkal. The Marathon was started as the NITK Beach Run in its first edition to celebrate India's only privately-owned college beach, to promote a healthy lifestyle among the students and the staff of the college. This edition of the run, i.e. the 2020 edition, was the fifth edition of the Marathon held on January 12, 2020 and it is the biggest Marathon ever. In addition to promoting #Fit India Movement, the 2020 edition of the Karavali Marathon will drive awareness to "Combat Climate Change" and call to action in Karavali region. The NITK Karavali Marathon 2020 will be a special edition as part of NITK Diamond Jubilee year celebration with International Athlete, Arjun awardee Arjun Devaiah as the marathon ambassador. Another notable guest invited was Sandalwood, Kannada film actress Ms Krishnaa Bhat. More than 4000 runners have participated in this Karavali Marathon. The unique feature of the run is that the part of marathon trail is on the scenic NITK Surathkal beach, along with the beachside temple and lighthouse. Besides, the Marathon is aimed at creating awareness on combating climate change and starting action-based



activities in the coastal belt. There was total prize money of ₹ 3 lakh. In addition to that, they have given sports coupons worth ₹ 2 lakh.

The theme of NITK Karavali Marathon 2020 :NITK Karavali Marathon strives to improve year upon year, but have chosen to use the brand value to promote different causes in our society. Being one of India's only student-organised full marathons, the 2020 edition is themed with the vigour to raise awareness about one of the most significant issues endangering the future of the younger generations: Combat Climate Change. Join us in helping to promote the importance of living a fit and healthy lifestyle, and the importance of co-existing with our ecosystem and protect the younger generations as well as Mother Earth from devastating effects of climate change.

The Schedule of Karavali Marathon:

1. 42.2 Km Timed Run Flag Off - 5:00 am
2. 21.1 Km Timed Run Flag Off - 6:00 am
3. 10 Km Timed Run Flag Off - 6:30 am
4. 5 Km Timed Run Flag Off - 7:30 am

Perks for the timed race categories to the participants:

1. Timing certificate
2. Unique BIB number with RFID tag
3. Complimentary T-shirt
4. Finisher medal
5. Complimentary breakfast
6. Various refreshments and first aid support during and after the run
7. Physio team for warm up and post run recovery

### Ring Presentation 2019

Ring Presentation was organized during 5<sup>th</sup> April 2019 in the Main Ground of the Institute, 1000 students were awarded with Silver Ring as a memory of NITK student.



### Yoga Day Celebration 2019



**Fifth International Day of Yoga** was celebrated at National Institute of Technology Karnataka Surathkal on 21<sup>st</sup> June 2019 at New Sports Complex with full of enthusiasm and healthy spirit. The programme started at 9 a.m. with a massive crowd of around 300 students. NITK faculty and staffs and their family members also participated in the programme.

### Orientation and Induction Programme:



The Orientation Programme for all the first year B.Tech. students was conducted on 24 July, 2019 at Silver Jubilee Auditorium (SJA) of the Institute. All the First year students along with their parents have attended the programme.

Induction Programme for the benefit of newly joined first year students was conducted from 25<sup>th</sup> to 6<sup>th</sup> August 2019.

First year students given training in various aspects of fitness, stress management. They also exposed to various art forms, music, etc..



### Hudugata Hudukata (Treasure Hunt)

Kannada Vedike organized “ Hudugata-Hudukata” (Treasure Hunt)for all the freshers of the academic year 2019-20 on 17<sup>th</sup> August, 2019. The main theme of the event is to make the freshers explore the vast campus and be familiar with all the main locations present in the campus. Around 400 people participated in the event and the event was a huge success.



### Fit India Movement



The live telecast of the launching of the movement by our Honorable Prime Minister Narendra Modi was arranged in our Institute Main Seminar Hall and was witnessed by the Director, Deans, Registrar, Faculty, Staff and Students. It was resolved to include fitness activities and sports in their daily lives to pave way for a healthy and fit lifestyle. After the Launch, all the participants took walk through the entire

campus covering a reasonably good number of footsteps. In connection with Fit India Movement Plog Run Event was conducted.

### International Coastal Cleanup Day 2019

As a part of **Swacchhataa Hi Seva** movement, The NITK students along with the Director, Dean (SW) and SAS officers joined the Coastal Guard team in the Coastal Cleanup drive on 21<sup>st</sup> September 2019. The Director inaugurated the programme emphasized the importance of such activities.



### Self Defense Training Programme

As per MHRD guidelines to provide better and safe environment to women and child development, Self Defense Training Programme was inaugurated on 24<sup>th</sup> September 2019 in ISTE seminar hall of our Institute. The training programme is being conducted from 25<sup>th</sup> September to 16<sup>th</sup> October 2019. Many women and girl students are taking part in the training programme.

### Fresher's Cup

Phoenix Committee NITK organized Fresher's Cup from 12<sup>th</sup>-14<sup>th</sup> October 2019. This is the first sporting event of the academic year and it was exclusively for all the fresher's of the academic year. The event had inter Section indoor and outdoor games such as Cricket, football, Kabaddi, Basketball, Throw ball, Badminton, Table tennis, Volleyball, Chess, Carom. This event attracted around 700 participants who took part in different sports for the quest of glory.

### Rashtriya Ekta Diwas Celebrations 2019 and "Unity Run"

On the occasion of 144<sup>th</sup> birthday of Sardar Vallabhbhai Patel, NITK Surathkal organized Rashtriya Ekta Diwas celebration followed by Unity Run on 31<sup>st</sup> October 2019. Director, Dy. Director, Deans, Registrar, Faculty, Staff and Students assembled at the Institute Main Building at 6.45AM.

The Unity Run from NITK to Surathkal Junction (which is the nearby town) and back to NITK covering a distance of about 5 kms was kick started by waving the Flag by the Chairperson, Prof. K B V Reddy. More than 800 students including 200 girls along with faculty and staff participated and successfully completed the run.

### Visit to Special School

Members of Kannada Vedike visited Lion's Club school for mentally disabled Children in Surathkal on 4<sup>th</sup> November 2019 as a part of our annual Social Responsibility. We organized a few fun events for the children and also provided the school with books and sports equipment

### Engineer 2019:-

The annual technical symposium of National Institute of Technology Karnataka (NITK) Surathkal, Engineer 2019 was celebrated from 18<sup>th</sup> to 20<sup>th</sup> October 2019. The 3 day long event commenced in the presence of Mitra-humanoid robot. Alok Ohrie, Chairman of Dell India was the chief guest for the inauguration ceremony. The first day was filled with eye-catching events like Bot Hockey(hockey played by bots built by students), wright flight(flying models built by students), NITK MUN, and Mock press. For gaming enthusiasts there were several gaming competitions like CS GO, DOTA, FIFA, etc. In addition to this, there were workshops such as IOT with google assistant, drone workshop, Autonomous driverless car design workshop. The day was concluded with Engi-talks by Sharad Sagar, CEO of Dexterity Global and Technites, an exhibition of the technical projects done by NITK students.

The second day had exciting events in the pocket. The day started with Techmela where students witnessed various scientific inventions such as hand gesture controlled drone, dancing robots, and formula one car simulation game. Techmela was followed by Engi talk in which the crowd was inspired by the words of Major Deepak Rao. The talk was attended by every NITK NCC cadets. Major Rao was presented a memento by Ram Prasad BS Bhat NITK Security Officer. In the evening, the crowd burst out laughing witnessing the performances by

TVFstarsShivankitSinghandBadriChavan.Toconclude,bothwerepresentedbya memento by Mr. Shubham Bharadwaj,Engineer Convener and Mr. Sujeet Kumar,Chief Coordinator of Engineer-19 .Following the hilarious event the audience was mesmerized by lasershow.The starting of third day was marked by Robo wars. In the afternoon,a rally was organized to support Cauvery Calling,an initiative to revive Cauvery by planting trees on its basin.Students were encouraged to donate for this noble cause.This was followed stunning bike stunts of RDX,a renowned bike stunt group. At the night, the atmosphere was filled with echoes of the musical tune performed by the Zephyrtone. Following this the college aura was heated up as the students danced in the beats of DJ Shireen.

### **Film Festival:**

NITK's 5th annual film fest began with great audacity from 25<sup>th</sup> October to 27<sup>th</sup> October 2019, being the diamond jubilee year of the college the inauguration was graced by the national award-winning film critic MK Raghavendra who spoke about the necessity of watching the right kind of films for our personal development, this was followed by eventful-interaction with the cast of 'Mundina Nildana'.The festival also included interactions with the director of Shuddhi and cast of kavaludaari. The movies screened were peculiar and aimed at creating awareness about societal issues. The film fest comprised multi-lingual movies such as Capernaum(Arabic), Shuddhi(Kannada), Mahanati(Telugu), etc. which reach a wide variety of audiences. The former editions of the festival have seen the likes of artists such as D Satyaprakash, Vivek Agnihotri, P Seshadri, Hemanth Rao, and many others.

As a pre-fest competition, the NITK Films' club had a national short film contest to encourage the skill of film-making by screening the winner's film.

It also had a film's quiz for movie enthusiasts with questions about all genres of movies.

### **Parva 2019**

The major event of the club, the celebration of Karnataka's Culture and Heritage, Parva 2019 was celebrated on 10<sup>th</sup> November 2019. Shri. Santhosh Hegde, former judge of Supreme Court of India was the chief guest for the event. The event started with the Procession of Bhuvaneshwari Devi from Reddy Gate to SJA followed by address by the guest and cultural program. Along with state's culture, Karnataka's cuisine was also celebrated.

Director Prof. K Uma Maheshwar Rao Presided the ceremony. Dean student welfare Prof. Jagannatha Nayak along with the club's faculty advisor Dr. Nagamma Patil were also present.

### **Floodlit Tournament**

Phoenix Committee Organized Floodlit tournament from 3<sup>rd</sup> -5<sup>th</sup> January 2020. This tournament was open for all the year students (both UG and PG). It was a battel under the lights as all the sports were conducted under floodlit. More than 500 students actively participated in this event and this event was a huge success.

Phoenix Committee Organized Floodlight tournament from 3<sup>rd</sup> -5<sup>th</sup> January 2020. This tournament was open for all the year students (both UG and PG). It was a battel under the lights as all the sports were conducted under floodlights. More than 500 students actively participated in this event and this event was a huge success.

### **NITK Karavali Marathon 2019**

The 5<sup>th</sup> edition of the NITK -Karavali Marathon took place on January 12<sup>th</sup>, 2020, and in addition to promoting the Fit India Movement, the 2020 edition will drive awareness to

Combat Climate Change and call to action in the Karavali region. The NITK Karavali Marathon 2020 will be a special edition as part of NITK Diamond Jubilee year celebration with International Athlete, Arjun awardee Arjun Devaiah as the marathon ambassador. The event saw a participation of over 2500 participants in four different run categories- namely 5 km, 10 km, 21.1 km (half marathon) and 42.2 km (full marathon) and contributing to the cause of the Karavali Region with cash prizes worth Rs.3 lakhs.

**TEDxNITKSurathkal** hosted its sixth edition on 17th January 2020 at the Silver Jubilee Auditorium. The talks began at 3PM and went on till 8PM at night. The theme of the event was '**Mirrors and Windows**'. Mirrors serve as a symbolic representation of self-introspection while windows represent portals meant to connect the audience and give them a sneak peek of the speakers' lives and experiences. 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, 2nd year BTech student of NITK, who was selected after auditioning a pool of applicants from NITK.

#### **All India Inter NIT Sports meet 2019**

NITK Surathkal organized, All India Inter NIT Sports in Kabaddi (men & women), Swimming (men & women) and basketball (men & women) during 17<sup>th</sup> to 19<sup>th</sup> January 2020. Around 900 students from other NITs participated in All India Inter NIT Sports. Participants were being provided with free Boarding and Lodging facilities.

#### **Results of All India Inter NIT Sports meet 2019-2020**

**Date : 17th to 19th January 2020**

<b>Game</b>	<b>Team Name</b>
<b>SWIMMING (Men )</b>	Team
Championship	
Winners	NITK Surathkal
Runners	NIT Trichy
III Place	VNIT Nagpur
<b>Champion of Adhitya S, NITK the Surathkal Tournament</b>	
<b>SWIMMING (Women)</b>	Team
Championship	
Winners	NIT Trichy
Runners	NITK Surathkal
III Place	NIT Nagpur
Champion of the Tournament	C H Esha, NIT Trichy
<b>KABADDI (Men)</b>	
Winners	NIT Kurukshetra
Runners	MANIT Bhopal
III Place	NIT Warangal
IV Place	NIT Silchar
<b>KABADDI (Women)</b>	
Winners	MNIT Jaipur
Runners	NIT Delhi
III Place	NITK Surathkal
IV Place	NIT Warangal
<b>BASKETBALL (Men)</b>	
Winners	NIT Kurukshetra
Runners	NIT Trichy
III Place	MNIT Jaipur
IV Place	MANIT Bhopal
<b>BASKETBALL (Women)</b>	
Winners	NITK Surathkal
Runners	NIT Calicut
III Place	NIT Kurukshetra
IV Place	MNIT Jaipur

#### **Bharat Darshan**

On 26th January, 2020 , this Republic Day, Dance, Drama and Fashion Club successfully conducted its biggest cultural event of NITK, **Bharat Darshan**. The event was a huge success. Bharat Darshan is a celebration of the diversity of India, with each state putting up a display of about 15-20 mins. The aim is to represent the traditions and cultures

of different states through a variety of traditional dance forms. This year we saw maximum participation from students from every year. All the fuss around this event is because of the prestige attached with our own state and the desire to be the best amongst everyone out there.

### **MatribhashaDiwas (Mother Tongue day)**

On the auspicious occasion of International Mother Language Day, on 21/02/20, the following programs were organized by Hindi Evam Sanskrit Club:

#### **1. Article Writing Competition**

In the Article writing competition, around 180 NITK students participated from different stream like B.Tech, M.tech and MCA and some students from MSC ( physics and chemistry department). In this, competition students were asked to write article on a given topic in their own- mother language. Overwhelming response were received where students tried to write article in different Indian languages like Hindi, English, Kannada, Telugu etc. ( as per their choice). The top 10 students received a special award and next 10 students were given consolation prize.

#### **2. Quiz competition**

About 300 students participated in the quiz competition where questions were asked from the current affairs, general knowledge and importance and literature of various Indian languages. The top 05 performers were awarded with special prize and next 10 students were given consolation prize.

#### **3. Presentation of different languages and prize distribution**

The program was started in the presence of Dr. Darshak Trivedi, the advisor of Hindi and Sanskrit Club. After this, Hindi and Sanskrit Club member Nitish Kumar highlighted the

importance of mother tongue which was followed by various cultural programs in different Indian languages e.g. Hindi, Sanskrit, Kannada, Malayalam and other regional languages.

At the end of the program, the main guests explained the importance of the mother tongue followed by prize distribution ceremony.

### **Incident**

The annual cultural festival of National Institute of Technology Karnataka (NITK) Surathkal, Incident 2020 was celebrated from 27<sup>th</sup> Feb to 1<sup>st</sup> March 2020 . Incident 2020 was inaugurated on 27<sup>th</sup> February evening by Prof. K Balaveera Reddy with Diganth Manchale as Chief Guest and Smt. Vidhathri U and Shri. Anantha Padmanabha K as guests of honour. 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.

Day 1 consisted of classical forms called Nritya(Solo) and Tandav(group). Day 3 consisted of Hip Hop forms called Step up solo, Step up duet and Promenade(group) which was a prelims to the National level Hip Hop International competition. Total number of participants-287 .NITK student won first place in Nritya.

Day 1 consisted of Raaga Rhapsody(Solo) and Unplugged(Acoustic band). Day 2 consisted of Pulse(Western Rock Band) which was a prelims to the Bangalore Open Air competition. Day 3 consisted of Bandish(Eastern Rock Band).

Day 1- Day 3 consisted of Slam Dunk(Basket Ball) and Spike



It(Volleyball).Day 2 consisted of Spinshock(Throwball).

Day 1- Day 2 consisted of B-Plan, Best Management Team and Crisis Management competition. NITK students bagged both the places in Best Management team and Crisis Management and also runners up in B-Plan competition

Day 1 to Day 3 we had Kalakriti(Arts exhibition) and Expose(Photography exhibition) which were set up in Old Sports Complex. Fine Arts included T-shirt painting(day 1), Newspaper costume(day 2) and Face painting(day 3).

Day 1 to Day 3 we had Gaming events including CS-GO, PUBG, COD and FIFA, Escape Room and Sony Playstation Zone which were set up in New Chemical Department. Day 1- we also had Hogathon. NITK students bagged 3<sup>rd</sup> in CS-GO,1<sup>st</sup> in COD and 1<sup>st</sup> in FIFA.

Inci Talks was held on Day 2 with the theme of 'Sheroes of India'. The speakers line up consisted of 4 women speakers. Nikitha Sharma- Young

Woman Achievers Awardee,Henna Jayanth- India's first woman F4 Racer, Prajakta Koli-India's most celebrated Youtuber, Aranya Johar-Stand up poet/Feminist.

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.

Pronites was fusion night which saw 2 major South Indian bands performing in Main Ground. Opening Act-ThaiKuddam Bridge-Kerala based band with elements of classical, folk and rock music. Headlining Act -The Raghu Dixit Project-Contemporary Indian folk band.Opening Act-DJ SE3K-Sunburn artist known for famous pop song remixes. Headlining Act -DJ Seezi- one of India's youngest and talented DJs specializes in Future Bass and Trap music.Avg Footfall each day around 3500.

The fest concluded successfully on the night of 1<sup>st</sup> March 2020.

## 20. ASSOCIATED CENTRES

### 20.1. National Institute Of Technology Karnataka (STEP)

#### Entrepreneurship Development Center -NITK STEP Journey

NITK is equipped with a Science & Technology Entrepreneurs' Park (STEP) in a separate earmarked zone [20 acres land] of the vast complex of NITK. The major goals of the NITK-STEP is to create a healthy start up technology ventures through Business Incubation, capitalize on the intellectual base at the academia to develop competitive business units, to nurture and grow the spirit of Techno-Entrepreneurship and Entrepreneurial Thinking through promotion of appropriate training programs and capacity building, to reach out to the young, unemployed youth in the region and improve their employability by imparting Technology based skill development programs etc. STEP was formed as an independent registered society in the year 1994 by KREC. It became functional in 1998 by setting up its administrative and entrepreneurs' block along with other required infrastructure.

**NITK- STEP** has incubated so far about 73 incubatees of which a few have established multi crores sales turnover companies employing hundreds of knowledge workers. A few of the innovators promoted have turned out to be outstanding ones bagging reputed, national and international level awards.

**NITK-STEP** has been identified as the Technopreneur Promotion Program (TePP) "Out Reach Centre" an initiative by Department of Scientific & Industrial Research (DSIR) Govt. of India towards promoting the spirit of Entrepreneurship through funding assistance to innovators, aspiring technopreneurs and other interested groups to develop innovative products & transform the product idea into viable project.

The overall activities of NITK-STEP have helped the society in creating a considerable self employment opportunities and job generation avenues. The steady transformation among people in the region for achieving entrepreneurial culture and spirit helped the first generation Techno entrepreneurs to start more and more hi-tech industries with high value addition capabilities. In this context NITK-STEP has been recognized by MSME, New Delhi to promote their scheme "Entrepreneurial & Managerial Development of SMEs through Incubators". Department of Information Technology Govt. of India to promote their scheme "Technology Incubation & Development of Entrepreneurs' (TIDE)" and also Technology Development Board, Govt. of India, New Delhi to extend "Seed Fund Support to startup in house Incubators".

**NITK-STEP** hopes to enhance its activities by way of assistance to potential and existing entrepreneurs so that more and more nontraditional enterprises can be started and upgrade the skills of educated unemployed youth to enable them in getting suitable job opportunities. With the encouraging results in a short span, NITK-STEP hopes to achieve much more in the long run, tapping the growth potential in the coastal area.

#### VISION.

Entrepreneurship Development through Business Incubation, Innovation, Training and Skill Enhancement in a value driven and service focused environment-targeting benefits to all the participating agencies.

#### GOALS:

- To create healthy startup units through Business Incubation, innovative business models.

- To capitalize on the Intellectual base at academia to develop competitive units.
- To grow the spirit of Entrepreneurship, entrepreneurial thinking and leveraging entrepreneurial capabilities by promoting EDPs, TEDPs, FDPs in the region.
- To reach out to young unemployed youths in the region & improve employability through Skill Development Programmes.
- To gear up as an “Out Reach Center” to interface with innovators, funding agencies for speedy implementation of innovative projects of commercial potential.
- Networking with technologists, entrepreneurs and commercial funding agencies.
- To constantly improve the quality of value added service to our clients.

#### **FACILITIES:**

Dedicated building for Business Incubation with independent units of sizes 200, 250,280,350, 500, 650, 1250 sq.ft (Total 13 No's) to accommodate 19 units of varying employee strengths.

Video Conferencing, Executive training hall, Dedicated DG sets for 24 hrs power supply and round the clock security is there at present.

**NITK- STEP** is managed by BOG and presently **Prof. B. Venkatesa Perumal**, Professor I/C Dept. of Electrical & Electronics Engineering ,NITK manages day to day activities as Professor i/c. NITK-STEP And a Core Advisory Group of NITK-STEP was constituted with the following Faculty members of NITK:

#### Professors:

Prof. Lakshman Nandagiri Applied Mechanics and Hydraulics

Prof. K.V.Gangadharan Mechanical Engineering

#### Associate Professors:

Dr. Hari Prasad Dasari Chemical Engineering

Dr.Manu Basavaraju Computer Science and Engineering

#### Asst. Professors:

Dr.Ravi Raushan  
Electrical and Electronics Engineering  
Dr.Sowmya Kamath S. Information Technology Engineering  
Dr.Suprabha K.R.School of Management

#### **Existing Entrepreneurs:**

1. Expert Vision Labs Pvt. Ltd.
2. Mindstack Technologies
3. Kambala Solutions Pvt. Ltd.
4. Serpro Consultations
5. Aakruthi , 3D
6. Bellare GIS Consultancy Pvt.Ltd.,
7. Avishkar
8. Penzigo Technology Solutions Pvt.Ltd (Startup company)
9. Indhra Dhanush Autonomous Platforms (OPC) Pvt.Ltd.
10. Dime Klear Pvt.Ltd.
11. Sri Shasha Prayathi Technologies Limited
12. Hitham Herbal Products
13. Apahatech Solutions LLP

#### **Existing Entrepreneurs NITK faculty members**

1. Dr.Pathipati Srihari,- (Sri Shasha Prayathi Technologies Limited)
2. Dr.Arun Mohan Isloor -(M/S Apahatech Solutions LLP)

#### **Student Startup:**

1. Shilpa K Nayana (founder and 1<sup>st</sup> Student Women Entrepreneur) MBA STUDENT @ NITK (2021) ,Biotechnology and Biochemical Engineer .

#### **Work done by our Incubator:**

One of our incubator Aakruthi3D Private Limited Mr. Raghavendra and his team supported with their extraordinary capabilities of 3D printing technology to combat COVID-19 crisis by locally manufacturing medical equipment/tools such as face shields, respirator masks, ventilator manifolds and no touch sanitary tools.

#### **Entrepreneurship and IPR Course in Curriculum:**

At present, there is a course on entrepreneurship and IPR as an open elective in the fifth year which generally runs in two sections based

on the strength of students applying for the course. The new scheme of B-Tech curriculum allows students to enroll for basic and advanced course on entrepreneurship. This course is tailored based on what industry demands. There are also faculty members who are trained resource persons in the field of Innovation and Entrepreneurship.

### **MOU with GINSERV:**

The Institute has decided to sign an MOU with GINSERV is a TBI based in Bangalore promoted and supported by Govt. of India and JSS Mahavidyapeetha, Mysore, one of India's modernistic educational organization.

The company aims at enhancing the success rate of early stage businesses by providing the funding opportunities but also works significantly towards mentoring the start-ups on the strategy and execution to create a robust business venture/environment.

### **Proposed Activities to be implemented by NITK – STEP**

The NITK-STEP would focus on:

#### 1. Field level study on Skill Gap analysis

Here, an attempt would be done to investigate the trends, constraints and opportunities faced by the unorganized sector in selected villages of Dakshina Kannada district in light of the enormous changes taking place in the economy. The skill gap analysis would be made sector-wise, need of specific skill would be identified and suitable training would be provided on case by case basis.

#### 2. Short Term Training Program:

Here, the Institute would conduct short term Training Program for 3 weeks to the emerging entrepreneurs, nearby engineering college students and faculty members. The program also aims at strengthening the knowledge in the area of IPR to

MSMEs, entrepreneurs and academicians in particular

#### 3. Entrepreneurship Development:

Here, the primary focus of the center is to encourage and identify students and faculty members and people in the rural areas with specific ideas and handhold them towards setting up enterprises. Need based training would be planned on a weekly basis to the emerging entrepreneurs. End to end mentoring support in various areas based on their specific needs (starting from licensing to marketing the finished product) would be provided. In addition, entrepreneurship awareness camps would be conducted in the villages of Dakshina Kannada district to encourage towards entrepreneurship.

4. Proposals would also be sent to DST, Government of India Government of Karnataka, MRPL and other agencies for entrepreneurship and technology development activities at the Institute.

## Training Programmes

## Conducted.

<b>Name of Program</b>	<b>Program Start Date</b>	<b>Program End Date</b>	<b>Program Duration (in Days / months)</b>	<b>Total No. of Participants</b>
Workshop on Geomatics conducted for M.Tech.Students of Manipal Institute of Technology	02.01.2020	06.01.2020	07 days	19
German Language course (Third batch)	20.01.2020	31.03.02020	03 Months	16
Python in Action -05 Days Workshop on Python & its Applications-Registration	03.02.2020	07.02.2020	06 days	12
Chemical and Oil Spill Management(COSM-2020)	07.02.2020	08.02.2020	02 days	50
Webinar on Brain-Computer Interface (conducted Online workshop)	05.06.2020	06.06.2020	02 days	2000
FDP on Machine Learning using Python. (conducted Online workshop)	09.07.2020	11.07.2020	03 days	156
FDP on Internet of Things. (conducted Online workshop)	16.07.2020	18.07.2020	03 days	110

**20.2 CENTRE FOR CONTINUING EDUCATION (C.C.E)****Details of Short term courses conducted through CCE-NITK from April 2019 to March 2020**

Sl. No.	Title of the Course	Duration	Organized through	Name of the Course Coordinators	No. of Participants attended	Course Intended for
1	Summer School on "Deep Learning"	17-05-2019 to 21-05-2019	Department of Computer Science Engineering, NITK	Dr. Jeny Rajan and Dr. Venkatesan	50	Faculty and Students of NITK, sponsored by NITK, Surathkal
2	"Drone Survey and 3D Mapping"	26-08-2019 to 30-08-2019	Department of Civil Engineering, NITK	Dr. Pruthviraj U.	19	The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara.
3	"Quality Management System in Civil Engineering"	23-09-2019 to 27-09-2019	Department of Civil Engineering, NITK	Dr. B.B. Das and Dr. Azhoni	18	The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara.
4	"Design, Construction and Maintenance of all Weather Roads"	14-10-2019 to 18-10-2019	Department of Civil Engineering, NITK	Dr. Raviraj H.M.	16	The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara.
5	"Disaster Prevention"	09-12-2019 to 13-12-2019	Department of Civil Engineering, NITK	Dr. B.M. Sunil and Dr. Babloo Chaudhary	03	The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara.
6	"Simulation of Underwater Communication"	09-12-2019 to 13-12-2019	Department of Computer Science Engineering, NITK	Dr. Chandavar kar	17	Faculty of Engineering & Diploma Institutions, Industry Personnel & Students of Ph.D/PG/UG

## 21. FINANCE AND ACCOUNTS

### Expenditure position for the last three years:-

<b>Year</b>	<b>Plan (Rs. In Lakhs)</b>	<b>Non Plan (Rs. In Lakhs)</b>	<b>Total</b>
2017-18	9084.36	12764.00	21848.36
2018-19	5413.50	15067.04	20480.54
2019-20	1094.76	16311.21	17405.97

<b>BALANCE SHEET AS AT 31-03-2020</b>			
			<b>(AMOUNT - Rs.)</b>
<b>PARTICULARS</b>	<b>SCH. NO.</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b><u>SOURCE OF FUNDS :</u></b>			
CORPUS/CAPITAL FUND	1	(75,85,777)	19,48,68,495
DESIGNATED/ EARMARKED/ ENDOWMENT FUNDS	2	3,27,81,89,351	3,04,12,16,651
LOANS/BORROWINGS	3	12,65,88,449	
CURRENT LIABILITIES AND PROVISIONS	4	5,85,52,99,993	5,26,79,23,971
TEQIP PROJECT - PHASE III	26	1,59,07,028	1,23,48,932
<b>TOTAL</b>		<b>9,26,83,99,044</b>	<b>8,51,63,58,049</b>
<b><u>APPLICATION OF FUNDS :</u></b>			
FIXED ASSETS	5		
Tangible Assets	5(A)+ (D- ii)	3,58,19,80,526	3,54,33,01,719
Intangible Assets	5(c)	247	82,81,801
Capital Works-In-Progress	5(B)	78,84,56,410	67,72,34,141
INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS	6		
Long Term		3,29,25,71,692	3,00,21,75,678
Short Term		-	-
INVESTMENTS - OTHERS	7	-	-
CURRENT ASSETS	8	1,01,36,60,383	61,75,15,749
LOANS, ADVANCES & DEPOSITES	9	57,58,22,758	65,55,00,029
TEQIP PROJECT - PHASE III	26	1,59,07,028	1,23,48,932
<b>TOTAL</b>		<b>9,26,83,99,044</b>	<b>8,51,63,58,049</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES & NOTES ON ACCOUNTS	25		



<b>INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2020</b>			
			<b>(AMOUNT - Rs.)</b>
<b>PARTICULARS</b>	<b>SC.NO.</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b><u>INCOME:</u></b>			
ACADEMIC RECEIPTS	10	35,92,31,468	35,53,35,698
GRANTS/SUBSIDIES	11	1,63,11,21,368	1,41,00,64,378
INCOME FROM INVESTMENTS	12	1,61,63,188	1,15,63,558
INTEREST EARNED	13	35,82,379	10,90,655
OTHER INCOME	14	23,35,78,847	19,73,30,544
OTHER RESEARCH PROJECTS		14,50,39,136	9,43,43,983
PRIOR PERIOD INCOME	15	-	-
<b>TOTAL (A)</b>		<b>2,38,87,16,386</b>	<b>2,06,97,28,816</b>
<b><u>EXPENDITURE:</u></b>			
STAFF PAYMENTS & BENEFITS	16	1,63,01,17,311	1,31,10,60,030
ACADEMIC EXPENSES	17	43,43,99,141	42,08,16,300
ADMINISTRATIVE & GENERAL EXPENSES	18	32,09,03,127	25,55,22,869
TRANSPORTATION EXPENSES	19	15,65,442	15,67,877
REPAIRS & MAINTENANCE	20	12,76,88,498	9,42,33,326
FINANCE COST	21	54,80,327	-
DEPRECIATION	5	20,12,30,981	35,13,11,889
OTHER EXPENSES	22	7,92,92,644	21,97,82,064
PRIOR PERIOD EXPENSES	23	-	-
<b>TOTAL (B)</b>		<b>2,80,06,77,471</b>	<b>2,65,42,94,356</b>
<b><u>BALANCE:</u></b>			
EXCESS OF EXPENDITURE OVER INCOME	(A-B)	<b>41,19,61,085</b>	<b>58,45,65,540</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES & NOTES ON ACCOUNTS	25		

<b>RECEIPTS &amp; PAYMENTS FOR THE YEAR ENDED 31-03-2020</b>						
<b>RECEIPTS</b>	<b>Current Year</b>	<b>Previous Year</b>	<b>PAYMENTS</b>	<b>Current Year</b>	<b>Previous Year</b>	<b>Current Year</b>
<u>Opening Balances:</u>			<u>Expenses:</u>			
(a) Cash in hand	7,178	1,829	(a) Establishment Expenses	1,32,37,08,937		
<u>(b) Bank Balances:</u>			(b) Administrative Expenses	57,65,47,648	1,90,02,56,585	1,54,25,47,895
(i) In current accounts	6,98,91,862	69,28,016				
(ii) Savings accounts	4,38,36,079	12,85,18,729	Payments Against Earmarked/Endowment Funds		21,22,36,366	5,24,82,215
(iii) HEFA accounts	9,125	-				
<u>Grants Received:</u>			Payments Against Sponsored Projects/ Schemes		24,91,54,725	18,72,75,396
(a) From Govt. of India						
Capital Grant		27,52,00,000	Investments Made		1,68,50,09,359	1,80,69,31,412
Revenue Grant	1,90,34,66,432	2,50,40,56,000	Out of Earmarked/Endowment Fund			
(b) From State Government	-	-	Out of Own Fund			
Academic Receipts	44,48,23,110	34,23,37,932	Expenditure on Fixed Assets & Capital Work - in - progress:		34,20,05,221	42,53,38,582
Receipts Against Earmarked/Endowment Funds	45,69,85,431	52,30,19,639	Deposits & Advances		1,37,68,89,484	1,24,42,39,336

Receipts Against Sponsored Projects/ Schemes/Plan	61,55,75,239	24,32,16,813					
Income on Investments.	1,61,63,188	1,07,66,669				2,19,73,77,031	
Interest Received :	35,82,379	6,52,431				98,65,68,646	75,49,76,453
Deposits & Advances	1,58,51,53,408	1,08,17,49,347					
Investments Encashed/ matured	98,32,47,879	81,22,86,679				33,617	7,178
Any other receipts:	3,33,51,32,995	2,67,13,78,479				1,69,11,111	6,98,91,862
						8,54,50,844	4,38,36,079
						4,35,985	9,125
<b>TOTAL</b>	<b>9,45,78,74,305</b>	<b>8,32,49,12,564</b>				<b>9,45,78,74,305</b>	<b>8,32,49,12,564</b>



# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL

MANGALORE - 575 025 INDIA



## AUDIT REPORT 2019-20

Website : [www.nitk.ac.in](http://www.nitk.ac.in)  
E-mail : [director@nitk.ac.in](mailto:director@nitk.ac.in)

Tel : 0824-2474000 (24 lines)  
Fax : 0824-2474033



# AUDIT REPORT 2019-2020

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**SEPARATE AUDIT REPORT ON THE ACCOUNTS OF THE NATIONAL  
INSTITUTE OF TECHNOLOGY, KARNATAKA, SURATHKAL,  
MANGALORE FOR THE YEAR 2019-20.**

We have audited the attached Balance Sheet of National Institute of Technology, Surathkal, Mangalore, as at 31 March 2020 and the Income & Expenditure Account / Receipts & Payment Account for the year ended on that date under Section 19(2) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The audit on the accounts of the Director, National Institute of Technology, Karnataka, Surathkal is entrusted under the NIT Act 2007. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller and Auditor General of India (CAG) on the accounting treatment only with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules and Regulations (Propriety and Regularity) and efficiency-cum-performance aspects etc., if any, are reported through Inspection Reports / CAG's Audit Reports separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining on a test basis, evidences supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

**4. Based on our audit, we report that:**

- i We have obtained all the information and explanations, which to the best of our knowledge and belief, were necessary for the purpose of our audit.
- ii The Balance Sheet and Income & Expenditure Account/Receipt & Payment Account dealt with by this report have been drawn up in the format prescribed by the Government of India, Ministry of Education.
- iii In our opinion, proper books of accounts and other relevant records have been maintained by the Institute in so far as it appears from our examination of such books.
- iv We further report that :

**(A) Financial position/Grants-in-Aid**

During the financial year 2019-20, NITK received a total income of Rs.249.63 Crore (Capital grants – Rs.27.52 Crore, Revenue grants – Rs.162.83 Crore, Academic receipts – Rs.35.92 Crore and other income – Rs.23.36 Crore). An amount of Rs.11.88 Crore was also available as the Opening Balance in the said Account. Out of this Rs.233.35 Crore was utilised leaving an unutilized balance of Rs.28.16 Crore as on 31<sup>st</sup> March 2020.

**(B) COMMENTS ON ACCOUNTS: - NIL -**

**(C) REVISION OF ACCOUNTS**

NITK revised the accounts on the basis of audit observation and resubmitted the revised accounts on 25.08.2020. The effect of revision was that Income decreased by Rs.50.05 lakh and expenditure decreased by Rs.70.86 lakh.

**(D) GENERAL OBSERVATION:**

**1. Schedule 5 – Fixed Assets & Depreciation and Schedule 24 – Significant Accounting Policies**

**Change in Accounting Policy in respect of depreciation accounting**

Audit Scrutiny of Schedule 24 for the year 2019-20 revealed that the Institute had changed the method of depreciation from written down value method and adopted the straight line method for depreciation of assets under Schedule 5 from the year 2019-20. In the absence of the details of legacy of each Fixed Asset arrived with relevance to residual value, the residual shelf life for calculating depreciation of the current year with Straight Line Method and the impact of the value of the asset vis-à-vis depreciation as on 31<sup>st</sup> March 2020 could not be ensured.

The impact due to the change in Accounting Policy has also not been quantified.

**1.1 Schedule 25 – Contingent Liabilities and Notes on Accounts**

**2 – Fixed Assets – 2.1 Assets purchased out of IRG – Rs.785.58 lakh  
Overstatement of transfer to Corpus/Capital Fund – Rs.99.82 lakh.**

A reference is invited to the aforesaid Note wherein it is stated that additions in the year to fixed assets include Rs.785.59 lakh incurred under the head Internal Revenue Generation (IRG). However, as per the details furnished by the Institute the same amounts to Rs.685.76 lakh. The difference of Rs.99.82 lakh was on account of inclusion of operating/non-plan expenditure under the said head which is not correct. Consequently, the depiction of Rs.785.59 lakh under Schedule 22 Other Expenses : Transfer of Corpus/Capital Fund to the extent of capital Expenses from IRG is also not correct as the aforesaid operating/non-plan expenditure should have been depicted separately.

v. We report that the Balance Sheet and Income & Expenditure Account/Receipt & Payment Account dealt with by this report are in agreement with the books of accounts.

- vi. In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read with the Accounting Policies and Notes on Accounts, and subject to the matters stated above and other matters mentioned in Annexure to this Audit Report gives a true and fair view in conformity with accounting principles generally accepted in India.
- a. In so far as it relates to the Balance Sheet, of the state of affairs of the National Institute of Technology, Karnataka, Surathkal as at 31 March 2020; and
- b. In so far as it relates to Income & Expenditure Account of the surplus for the year ended on that date.

**PRINCIPAL DIRECTOR OF AUDIT (CENTRAL)  
BANGALORE**

## Annexure

### Adequacy of Internal Audit System

The internal audit department (IAD) of the NITK is adequate as it deals with all matters relating to local/foreign purchase orders, rate contracts entered into by the institute, verification of utilisation certificates, audit of manpower management bills besides check of TA/LTC bills and claims, bills pertaining to civil works. Service matters relating to Group A, B, C and D are also dealt by the IAD. However, the manpower in the IAD could still further be strengthened.

### Adequacy of Internal Control System

The prevailing internal control system is adequate. The Internal Audit Wing is excluded from the preparation of the annual accounts and no Chartered Accountants are involved in the preparation of the annual accounts.

### System of physical verification of fixed assets/inventory

Physical verification of fixed assets is conducted annually, the reports of which were produced to audit for the audit period.

### System of physical verification of inventory

Physical verification of inventory is conducted annually, the reports of which were produced to audit for the audit period.

### Regularity in payment of statutory dues

All the statutory dues of the Institute are collected and remitted within the stipulated date besides maintaining necessary accounts.

*Shoral*

PRINCIPAL DIRECTOR OF AUDIT (CENTRAL)  
BANGALORE



## DIRECTOR'S REPORT

### Introduction

National Institute of Technology Karnataka, Surathkal formerly, Karnataka Regional Engineering College Surathkal is one of the Seventeen REC's established in the country by the Government, started in the year 1960. It was the second among the first batch of Eight RECs' set up in the Country. The Institute was upgraded as NIT and conferred Deemed University status w.e.f. 26.06.2002 as per GOI order No.F9 6/95 U3 Dt 26.06.2002 and now holds a statutory status as "Institute of National Importance" by an Act of Parliament - NIT Act notified on 15<sup>th</sup> August 2007, further amended and notified as NITSER Act 2012.

The Institute is located at Srinivasnagar, Surathkal, of Mangaluru city in Dakshina Kannada District, Karnataka State, on the West Coast National Highway (NH 66), having campus area of 295 acres.

During the year NITK has achieved significant growth in various spheres of its activities. Our efforts in teaching, infrastructure building, Research and development, Testing and Consultancy, developing entrepreneurship, and student training and placement have been responsible for NITK being placed amongst the top technological institutions in the country. We wish to acknowledge the strong support we receive in all our activities from our distinguished alumni who occupy coveted positions in the Industry.

It is now my pleasant duty to place before you, a brief report highlighting our significant achievements during the year 2019-20. I wish to place before you, some of the new initiatives taken at NITK so as to scale greater heights in teaching, research and outreach activities and get recognised as 'A National Institute with an International Recognition'.

### Governance:

NITK, an Institute of National Importance, is governed by the Board of Governors, under the NITSER Act 2012 and Statutes laid down by the Govt. of India. The Board consists of representatives from Govt. of India, Govt. of Karnataka, Industry, Educationists and the Institute Senate. The Director is the Executive Head of the Institute. The day-to-day activities are carried out by the Director, with the support of Deans, Registrar, Joint Registrar, Heads of the Departments, Professor-in-charge of various activities and Assistant Registrars. Several committees have also been formed to facilitate decision-making process, effective.

### Faculty and Staff:

Availability of high-quality human resources has been the major factor contributing to the success achieved in different spheres of activities at NITK, all these years. The institute is making concerted efforts to fill up all the vacant positions, both in faculty cadre as well as non-teaching staff. During the period of the report, the total number of faculty and non-faculty are 280 and 138 respectively.

### Institute Ranking:

The NITK has secured 13<sup>th</sup> Rank in all India Ranking for Engineering by the NIRF and secured 33<sup>rd</sup> position in overall ranking category. The institution has moved up by 8 ranks from previous year 21<sup>st</sup> Rank, similarly moved up 20 Rank in the overall ranking category from previously 53<sup>rd</sup> Rank. NITK also secured 63<sup>rd</sup> Rank in the Q.S India Ranking.

### **Financial Support:**

There has been an enhanced Revenue and Capital grants, increase in R&D funding, an increase in student intake, Testing and consultancy output and initiation of a few new infrastructural projects. The total internal revenue generation through fee collection and other receipts were Rs. 61.68 crores. Our Corpus fund and Institute Development fund has grown steadily to about Rs. 313 Crores.

NITK is the beneficiary of financial support extended to Centrally Funded Institutions under Phase-III of the World Bank Assisted TEQIP Program. Under the scheme, NITK has received a total grant of Rs. 1.69 Cr. for the year 2019-20. The main focus of this phase of the project is on the improvement of post-graduate education and enhancement of our research activities and output.

### **Academic Activities:**

Presently, NITK offers B.Tech programs in 9 disciplines and M.Tech programs in 25 specialisations. In addition, MSc Programs are offered by both Departments, Physics and Chemistry and the MBA and MCA programs are offered by the School of Management and MACS Department respectively. While M.Tech (Research) Programs are offered in all PG specialisations, doctoral research is also being undertaken with scholars registered in all the Departments.

For the academic year 2019-20, about 953 students were admitted to the B.Tech. Program based on their scores in JEE-Mains /SAT Examinations, 585 M.Tech and M.Tech by Research through GATE, 48 in MSc, 28 in MBA and 50 in MCA. A total of 186 students joined the doctoral programs, focusing increased research at the Institute. There are about 859 Research Scholars in the Institute and during the reference year, 116 students have been awarded PhDs.

Students' performance in examinations continues to be excellent with an overall pass percentage of more than 98.80%. A large number of our students have graduated with distinction. This year too, our students have excelled in GATE-2019 and CAT-2019 examinations which have fetched them admissions to top technological and business schools of India to pursue their post-graduate programs or MBA studies. A higher percentage of students, compared to last year, have been successful in obtaining admissions to the top universities in the USA and Europe.

### **R & D Activities:**

The Institute is steadily transforming itself into a Teaching-cum-Research Institute, with more and more R&D initiatives being pursued by the faculty. While the administration is trying to improve the research ambience in the Institute, the members of the faculty are responding to such initiatives by getting a large number of innovative R&D Projects sanctioned by various funding agencies like DST, CSIR, ICSSR, MeitY, NRB, ISRO, DHI, MoES, MoWR, MHRD and KST&PS. Also, global R&D activities are being carried out with higher learning Universities/Institutes across various countries and potential MoUs have been signed with them. Currently 19 active MoUs with highly reputed Institutes all over the world. Central Research Facility(CRF) has been set up in the Institute with HEFA funding. ISRO has set up a Regional Academic Centre-Space(RAC-S) the Institute with annual endowment of Rs.2 cr. for space related research. Centre of Excellence (CoEs) also been set up in the Institute.



**Infrastructural Facilities:**

The following were the on-going projects during 2019-20 being executed through CPWD on deposit work basis:

Sl. No	Name of work	Estimate cost (In Rs. Crores)
1.	New Faculty apartments – One Type – V and one Type – VI (24 dwelling units in each apartment)	Rs.38.81 crore
2.	New Boys' hostel building of 500 single occupancy rooms [Block No. 10]	Rs.51.14 crore
3.	Extension of 11kV LT line from 33kV substation to western side of the campus, Transformers, DG set and a Service building	Rs. 5.49 crore

The following new Infrastructural works has been initiated in 2019-20 under HEFA loan Scheme:

Sl. No	Name of work	Estimate cost (In Rs. Crores)
1	Construction of Building for School of Interdisciplinary studies and Central Research Facility Rs.48.00 Crore.	Rs.48 crore
2	EWS Scheme – Cost of New Boys hostel of triple occupancy (Block no. 11)	Rs.43 crore

**Industry-Institute Collaborations**

NITK understands that the objective of effective training of our students can only be met when we have meaningful and continuous interaction with industry. Efforts are on for establishment of industry-sponsored professorial chairs, creating opportunities for training of faculty, staff and students in the collaborating industry and providing for content/skill up-gradation to industrial personnel. Active MoUs with reputed global industries and National Research agencies like Universita Degli Studi di Pavia, Italy, Arya Technocrats, Belagavi, Wadhvani Operating Foundation, Los Altos, California, USA, Eaton Technologies Pvt. Ltd, SimLife Electric Private Ltd Bangalore, Aum Techno Spray, Bangalore, IIT Bombay, Kanchanaburi Campus, Mahidol University Thailand, National Institute of Disaster Management , New Delhi, National Law School of India University Bengaluru, KIOCL Limited Mangalore, Human Resocia Co. Ltd, Japan, Department of Nanoscience & Engineering/BK21PLUS Nano Convergence Project Group of INJE University , Republic of Korea, Institute of Radio Frequency and optoelectronics Integrated Circuits plus State Key Lab of Bioelectronics, South East University. One Professorial Chair has been established with sponsorship from Ministry of Steel (GOI). Postgraduate courses are being offered in collaboration with L & T Construction, Chennai, CMTI, Bangalore and Robert Bosch, Bangalore. Also, there are outreach collaborative activities carried out in the field of Testing and Consultancy.

### **Training and Placement:**

The Department of Training and Placement of the Institute facilitates on-campus recruitment and placement of our students and also arranges for their training/internship in Industry. NITK is one of the top preference institutions in the country to many companies for campus placements and internships. During 2019-20 the placement was 89.25% for UG and 53.4 % for PG. The recruitment process which was expected to happen in March 2020 has been carried forward on account of COVID-19 and is expected to complete by Mid of July 2020. The average salary for 2019-20 is 10.8 LPA. This year top PSU's like HPCL, IOCL, GAIL, ITI, C-DAC and ISRO visited the campus.

### **Social outreach activities:**

Department of Chemical Engineering has developed a cost-effective technology which will help to preserve taro and remove the acidity. This has been offered free of cost to the tribal farmers of Joida Taluk in Uttarakannada District, Karnataka and the pilot scale production in the area is under progress. Under Covid19 task force, Institute has provided top most priority to effectively overcome the Covid crisis. Institute Hostels were handed over to District administration for quarantine purpose. Over 1500 food kits were distributed to needy people living in nearby village area, with the generous contribution received from Staff and Alumni. The hand sanitizer and face shield prepared in the Department were distributed to District administration, Police stations, local Govt Departments and traders.

### **Acknowledgement and Conclusions:**

At this juncture, I personally acknowledge the support and encouragement received from the Chairman and members of the Board of Governors. The members of the Senate, all my colleagues – both faculty and non-teaching members have been very supportive of all the new initiatives being contemplated and implemented. I record my appreciation for the students of the outgoing batch for their disciplined behaviour and keen participation in the activities of the Institute. Again, on behalf of all the members of Team-NITK, I wish to place on record, our gratitude to the MHRD-GOI, Govt. of Karnataka and other agencies for their constant support and encouragement.

Date: 24-08-2020

Place: Surathkal

**DIRECTOR**  
**(PROF. K.UMA MAHESHWAR RAO)**

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**

SURATHKAL

P.O. SRINIVASNAGAR - 575 025

**BALANCE SHEET AS AT 31-03-2020****(AMOUNT - Rs.)**

<b>PARTICULARS</b>	<b>SCH. NO.</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b><u>SOURCE OF FUNDS :</u></b>			
CORPUS/CAPITAL FUND	1	(75,85,777)	19,48,68,495
DESIGNATED/ EARMARKED/ ENDOWMENT F	2	3,27,81,89,351	3,04,12,16,651
LOANS/BORROWINGS	3	12,65,88,449	
CURRENT LIABILITIES AND PROVISIONS	4	5,85,52,99,993	5,26,79,23,971
TEQIP PROJECT - PHASE III	26	1,59,07,028	1,23,48,932
<b>TOTAL</b>		<b>9,26,83,99,044</b>	<b>8,51,63,58,049</b>
<b><u>APPLICATION OF FUNDS :</u></b>			
FIXED ASSETS	5		
Tangible Assets	5(A)+(D- ii)	3,58,19,80,526	3,54,33,01,719
Intangible Assets	5(c)	247	82,81,801
Capital Works-In-Progress	5(B)	78,84,56,410	67,72,34,141
INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS	6		
Long Term		3,29,25,71,692	3,00,21,75,678
Short Term		-	-
INVESTMENTS - OTHERS	7	-	-
CURRENT ASSETS	8	1,01,36,60,383	61,75,15,749
LOANS, ADVANCES & DEPOSITES	9	57,58,22,758	65,55,00,029
TEQIP PROJECT - PHASE III	26	1,59,07,028	1,23,48,932
<b>TOTAL</b>		<b>9,26,83,99,044</b>	<b>8,51,63,58,049</b>
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES & NOTES ON ACCOUNTS	25		

PLACE: SURATHKAL

DATE : 24-08-2020

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**

SURATHKAL

P.O. SRINIVASNAGAR - 575 025

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2020****(AMOUNT - Rs.)**

<b>PARTICULARS</b>	<b>SC.NO.</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b><u>INCOME:</u></b>			
ACADEMIC RECEIPTS	10	35,92,31,468	35,53,35,698
GRANTS/SUBSIDIES	11	1,63,11,21,368	1,41,00,64,378
INCOME FROM INVESTMENTS	12	1,61,63,188	1,15,63,558
INTEREST EARNED	13	35,82,379	10,90,655
OTHER INCOME	14	23,35,78,847	19,73,30,544
OTHER RESEARCH PROJECTS		14,50,39,136	9,43,43,983
PRIOR PERIOD INCOME	15	-	-
<b>TOTAL (A)</b>		<b>2,38,87,16,386</b>	<b>2,06,97,28,816</b>
<b><u>EXPENDITURE:</u></b>			
STAFF PAYMENTS & BENEFITS	16	1,63,01,17,311	1,31,10,60,030
ACADEMIC EXPENSES	17	43,43,99,141	42,08,16,300
ADMINISTRATIVE & GENERAL EXPENSES	18	32,09,03,127	25,55,22,869
TRANSPORTATION EXPENSES	19	15,65,442	15,67,877
REPAIRS & MAINTENANCE	20	12,76,88,498	9,42,33,326
FINANCE COST	21	54,80,327	-
DEPRECIATION	5	20,12,30,981	35,13,11,889
OTHER EXPENSES	22	7,92,92,644	21,97,82,064
PRIOR PERIOD EXPENSES	23	-	-
<b>TOTAL (B)</b>		<b>2,80,06,77,471</b>	<b>2,65,42,94,356</b>

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
SURATHKAL  
P.O. SRINIVASNAGAR - 575 025

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31-03-2020**

(AMOUNT - Rs.)

PARTICULARS	SC.NO.	CURRENT YEAR	PREVIOUS YEAR
<b>BALANCE:</b>			
EXCESS OF EXPENDITURE OVER INCOME	(A-B)	41,19,61,085	58,45,65,540
SIGNIFICANT ACCOUNTING POLICIES	24		
CONTINGENT LIABILITIES & NOTES ON ACCOUNTS	25		

PLACE: SURATHKAL

DATE : 24-08-2020

( RAVINDRANATH K. )  
REGISTRAR  
N.I.T.K.,SURATHKAL

(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K.,SURATHKAL

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
SURATHKAL  
P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOs.	(AMOUNT Rs.)		
	CURRENT YEAR	PREVIOUS YEAR	
<b>I</b>			
<b><u>CORPUS /CAPITAL FUND:</u></b>			
<b>A</b>			
<b><u>CORPUS FUND:</u></b>			
Balance at the Beginning of the Year	19,48,68,495	14,82,04,729	
Add: Contributions towards Corpus/Capital Fund	10,94,76,415		
Add: Grants from MHRD, Govt. of India to the extent utilised for Capital Expenditure	-		
Add: Assets Purchased out of Earmarked Funds	2,14,71,853		
Add: Assets Purchased out of completed Sponsored Projects, Where Ownership Vests in the Institution	7,85,58,545	63,12,29,306	
Add: Assets Purchased out of IRG	40,43,75,308	77,94,34,035	
Less : Interest on Mobilisatin Advance .	-	-	
Less : Deficit Transferred from Income & Expenditure Account	41,19,61,085	58,45,65,540	
	<b>(75,85,777)</b>	<b>19,48,68,495</b>	
<b>TOTAL - A</b>			
<b>B</b>			
<b><u>CAPITAL FUND OF PROJECTS &amp; EARMARKED FUNDS</u></b>			
Opening Balance.	-	-	
Add: Assets Donated/Gift Received	22,23,639	-	
Add: Assets from Completed Projects	1,52,03,807	1,20,91,145	
Add: Assets from Workshops	4,85,943	61,950	
Add: Assets from Funds	35,58,464	48,56,743	
Add : Additions during the year	2,14,71,853	1,70,09,838	
Less : Assets of incomplete projects	-	-	
Less : Transferred to Corpus Fund	2,14,71,853	1,70,09,838	
	<b>(75,85,777)</b>	<b>19,48,68,495</b>	
<b>TOTAL - B</b>			
<b><u>BALANCE AS AT THE YEAR - END FOR SHEDULE - I (A+B)</u></b>			
	<b>(75,85,777)</b>	<b>19,48,68,495</b>	

## NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

SURATHKAL, P.O. SRINIVASNAGAR- 575 025

## SCHEDULE 2 - DESIGNATED/ EARMARKED/ ENDOWMENT FUNDS AS ON 31-03-2020

PARTICULARS	INSTITUTE DEVELOPMENT FUND	ENDOWMENT CHAIR FUND	STUDENT ACTIVITY COUNCIL	NITK CORPUS FUND	CCE FUND	STUDENT PRIZE FUND	NIMCET 2018/19	NITK/KREC ENDOWMENT FUND	DASA	GRAND TOTAL 2019-20	GRAND TOTAL 2018-19
(a) Opening Balance of the Fund	70,94,34,209	69,35,585	5,21,92,959	2,24,34,75,648	37,16,869	63,26,158	1,79,52,325	17,85,235	(6,02,338)	3,04,12,16,651	2,69,88,42,621
(b) Additions during the year	-	-	1,72,83,950	7,17,31,230	4,29,926	8,52,894	80,26,316	68,16,880	5,03,06,071	15,54,47,267	26,67,29,916
(c) Income from Investments	-	4,01,929	44,24,166	14,95,81,296	2,22,213	-	11,01,891	88,584	90,47,671	16,48,67,750	14,11,94,599
(d) Interest on Savings Bank A/c.	-	-	1,03,547	75	10,548	-	-	-	-	1,14,170	8,48,127
(e) Other Additions	-	-	-	-	-	-	-	-	-	-	-
(a) Consultancy Fund	1,26,58,808	-	-	-	-	-	-	-	-	1,26,58,808	80,79,245
(b) Testing & Consultancy	1,81,33,001	-	-	-	-	-	-	-	-	1,81,33,001	1,64,93,888
(c) Institute Development Fund	4,05,48,927	-	-	-	-	-	-	-	-	4,05,48,927	3,11,97,809
(d) Staff Development Fund	6,15,57,591	-	-	-	-	-	-	-	-	6,15,57,591	5,98,34,419
(e) Professional Development Fund	22,17,717	-	-	-	-	-	-	-	-	22,17,717	13,96,925
(f) Campus Development Fund	42,000	-	-	-	-	-	-	-	-	42,000	33,66,000
(g) Equipment Maintenance Fund	18,64,877	-	-	-	-	-	-	-	-	18,64,877	8,04,566
(h) Golden Jubilee Fund	-	-	-	-	-	-	-	-	-	-	-
(i) III Cell Fund	4,61,386	-	-	-	-	-	-	-	-	4,61,386	2,21,802
(j) Institute Scholarship Fund	-	-	-	-	-	-	-	-	-	-	-
(k) Staff Welfare Fund	4,89,523	-	-	-	-	-	-	-	-	4,89,523	5,56,925
(l) Miscellaneous Income	-	-	30,500	-	-	-	-	4,660	-	35,160	-
(g) Transfer/TDS	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL A</b>	<b>84,74,08,039</b>	<b>73,37,514</b>	<b>7,40,35,122</b>	<b>2,46,47,88,249</b>	<b>43,79,556</b>	<b>71,79,052</b>	<b>2,70,80,532</b>	<b>86,95,359</b>	<b>5,87,51,404</b>	<b>3,49,96,54,827</b>	<b>3,22,95,66,842</b>
<b>B</b>											
Utilisation/ Expenditure towards Objectives of Funds:											
(I) Capital Expenditure	-	-	-	-	-	-	-	-	-	-	-
Fixed Assets	2,65,908	-	39,450	18,03,866	-	-	11,38,521	-	3,10,719	35,58,464	45,30,236
(II) Revenue Expenditure	-	-	-	-	-	-	-	-	-	-	-
Salaries, Wages & Allowances Etc	-	-	-	-	1,17,566	-	10,00,000	-	6,54,752	17,72,318	17,41,104
Other Administrative/ Activity Expenses	2,89,04,396	-	96,84,815	-	4,11,534	-	69,90,955	-	44,14,371	5,04,74,711	3,86,82,847
Sports & Games/Swimming Pool	-	-	94,23,615	-	-	-	-	-	-	94,23,615	81,81,122
(III) Transfer/ Refund-Admission Fee/TDS	-	-	-	15,62,36,368	-	-	-	-	-	15,62,36,368	13,52,14,883
<b>TOTAL B</b>	<b>2,91,70,304</b>	<b>-</b>	<b>1,91,47,880</b>	<b>15,80,40,234</b>	<b>5,29,100</b>	<b>-</b>	<b>91,29,476</b>	<b>68,641</b>	<b>53,79,842</b>	<b>22,14,65,476</b>	<b>18,83,50,191</b>
<b>Closing Balance at the year end (A-B)</b>	<b>81,82,37,735</b>	<b>73,37,514</b>	<b>5,48,87,243</b>	<b>2,30,67,48,015</b>	<b>38,50,456</b>	<b>71,79,052</b>	<b>1,79,51,056</b>	<b>86,26,718</b>	<b>5,33,71,563</b>	<b>3,27,81,89,351</b>	<b>3,04,12,16,651</b>
<b>Represented by</b>											
Cash & Bank Balance	-	-	29,25,258	12,98,923	3,19,593	-	13,25,302	70,87,112	44,56,405	1,74,12,593	1,50,81,484
Investments	81,82,37,735	73,37,514	5,10,52,633	2,39,88,49,545	34,23,428	71,79,052	1,73,28,040	15,80,592	5,04,00,000	3,35,53,88,539	2,87,32,91,067
Interest Accrued but not due	-	-	1,48,087	69,56,028	53,177	-	80,760	-	21,45,083	93,83,135	9,81,34,465
TDS	-	-	13,42,376	5,58,79,886	54,257	-	1,20,479	9,019	9,04,768	5,83,10,785	4,80,67,623
Sundry Creditors/Payables	-	-	(8,09,913)	(15,62,36,368)	-	-	(9,03,525)	(50,005)	(48,79,993)	(16,28,79,804)	(14,02,49,966)
Misc Advance/Receivable	-	-	2,28,802	-	-	-	-	-	3,45,300	5,74,102	14,68,91,977
<b>TOTAL</b>	<b>81,82,37,735</b>	<b>73,37,514</b>	<b>5,48,87,243</b>	<b>2,30,67,48,015</b>	<b>38,50,455</b>	<b>71,79,052</b>	<b>1,79,51,056</b>	<b>86,26,718</b>	<b>5,33,71,563</b>	<b>3,27,81,89,351</b>	<b>3,04,12,16,651</b>

PLACE: SURATHKAL

DATE : 24-08-2020

(RAVINDRANATH K.)  
REGISTRAR  
N.I.T.K.,SURATHKAL(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K.,SURATHKAL

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
SURATHKAL  
P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOS.		CURRENT YEAR	PREVIOUS YEAR	(AMOUNT Rs.)
<b>3</b>	<b>LOANS/BORROWINGS :</b>			
	<b>A SECURED LOANS</b>			
	1. Central Government	-	-	-
	2. State Government (Specify)	-	-	-
	3. Financial Institutions			
	a) Term Loans	-	-	-
	b) Interest accrued and due	-	-	-
	4. Banks:			
	a) Term Loans	-	-	-
	- Interest accrued and due	-	-	-
	b) Other Loans (Specify)	-	-	-
	- Interest accrued and due	-	-	-
	5. Other Institutions and Agencies	-	-	-
	6. Debentures and Bonds	-	-	-
	7. Others (Specify)	-	-	-
	Total	-	-	-
	Note: Amounts due within one year			
	<b>B UNSECURED LOANS</b>			
	1. Central Government	-	-	-
	2. State Government (Specify)	-	-	-
	3. Financial Institutions			
	4. Banks:			
	a) Term Loans			
	i) HEFA Loan A/c.No.0010110000070	7,75,60,284		
	ii) HEFA Loan A/c.No.0010110000075	4,90,28,165		
	b) Other Loans (Specify)	-	-	-
	5. Other Institutions and Agencies	-	-	-
	6. Debentures and Bonds	-	-	-
	7. Fixed Deposits	-	-	-
	8. Others (Specify)	-	-	-
	Total	<b>12,65,88,449</b>		
	Note: Amounts due within one year			
	<b>BALANCE AS AT THE YEAR - END FOR SCHEDULE - 3 (A+B)</b>	<b>12,80,00,000</b>		
		<b>12,65,88,449</b>		
		<b>12,65,88,449</b>		



**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**

SURATHKAL

P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOs.	(AMOUNT Rs.)	
	CURRENT YEAR	PREVIOUS YEAR
<b>4 CURRENT LIABILITIES AND PROVISIONS:</b>		
<b>A. CURRENT LIABILITIES:</b>		
1 Deposits from Staff & Lease	6,95,517	13,32,224
2 Deposits from Students	2,79,16,226	2,48,14,646
3 <u>Sundry Creditors - Others</u>		
<u>Student Activity Council</u>		
a) Liability for Expenses		809913.28
<u>Deposit: Institute Development Fund</u>		-
<u>DASA 2019</u>	4879993.00	21,28,366
<u>NITK/KREC Endowment Fund</u>	50004.78	10,10,000
<u>NIMCET</u>	903525.00	-
<u>NITK Corpus Fund</u>		12,584
a) Liability towards Security Deposit		17,23,025
b) DASA Admission Fee Payable		13,52,14,883
c) Payable to NITK - IRG	15,62,36,368	-
<u>TEQIP - II Payable to NPIU</u>		-
4 <b>Deposit - Others</b>	7,53,92,625	4,48,30,239
5 <b>Statutory Liabilities</b>		
a) Overdue	-	-
b) Others	-	-
6 <b>MHRD Surplus Grant</b>	28,16,22,373	11,87,53,724
7 <b>Other Current Liabilities</b>		
Bills Payable		24,80,81,775
Salary Deductions		9,11,636
Projects/Other Reseach Schemes:		
SC/ST Student Fee Refundable		25,45,64,211
SC/ST Scholarship Grant		16,50,000
Workshop/seminar Grant	4,47,627	7,65,272
<b>TOTAL (A)</b>	35,61,75,886	32,80,086
	90,46,82,431	84,13,62,145

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
SURATHKAL  
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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOs.	(AMOUNT Rs.)	
	CURRENT YEAR	PREVIOUS YEAR
<b>B. PROVISIONS:</b>		
1 Gratuity	34,26,43,959	32,05,95,134
2 Superannuation Pension	4,12,73,57,976	3,69,60,87,277
3 Accumulated Leave Encashment	36,65,79,777	30,97,46,333
4 Audit Fee	1,50,000	2,78,865
5 Children Education allowance	70,74,300	59,97,853
6 Electricity charges	22,00,000	30,57,571
7 Fellowship/Stipend	3,14,33,169	2,71,00,000
8 Hostel Establishment Charges	13,83,325	31,38,334
9 Mice of Electrical Installation	2,21,140	-
10 Mice of Waste Water Disposal	3,23,137	-
11 Merit Cum Means Scholarship	27,68,000	-
12 Merit Scholarship	5,80,000	-
13 Pay & Allowance	6,25,76,179	5,82,24,346
15 Professional Fee	2,79,660	-
16 Rate & Taxes	17,59,577	-
17 Visveshwarayya Phd Sch.for EC & IT	2454234.00	10,76,930
18 Telephone /Telex	94,036	-
19 Travelling Allowance	6,360	-
20 Water Supply	7,32,733	12,59,183
<b>TOTAL (B)</b>	4,95,06,17,562	4,42,65,61,826
<b>BALANCE AS AT THE YEAR - END FOR SCHEDULE - 4</b>	<b>5,85,52,99,993</b>	<b>5,26,79,23,971</b>
	<b>(A + B)</b>	

## SCHEDULE 4(A): SPONDERED PROJECTS

Sl.No.	PARTICULARS	OPENING BALANCE	RECEIPTS	INTEREST	EXPENDITURE	CLOSING BALANCE
1	5G Project Funding - Mohit Titlani	3294321	847800	73930	2919958	1296093
2	Alumni Android Based Home Automtn - Venkatesh P	113829	0	3255	27764	89320
3	Alumni DC Hoome Sikar Based Grid- Suresh Y	114016	0	2394	78200	38210
4	Alumni-Desig Dev of 3D Printed Heart - Mritunjay D	25000	0		24957	43
5	Alumni-Design & Dev - Brain Computer	78342	10000	2178	51004	39516
6	Alumni- Design & Dev - Terrain Vehicle - Pruthviraj	438372	100251	2817	535183	6257
7	Alumni-Design & Devt of Swirl Generator -Anish S	25000	0	875		25875
8	Alumni-Develop of Dense & Porous - Rajasekaran	100000	0	3500		103500
9	Alumni-Dev of Battery Mgt - R Kalpana	20000	0	700		20700
10	Alumni-Evaluation of Novel Clot - Prasanna B D	330000	0	7272	209528	127744
11	Alumni-Extraction of Anthocyanins - I Regupathi	250000	0	3691	247800	5891
12	Alumni-High Attitude Wind Power - Yashwant Kashyap	158039	0	3544	157397	4186
13	Alumni-Mode Design of Chromophones- A V Adhikari	92000	0	1820	48000	45820
14	Alumni-NBO-Sumanth Govindarajan		25000	510		25510
15	Alumni Proj.Open Source G I S - Pruthviraj U	279288	50005	5572	334865	0
16	Alumni-Prototype of Reliable ICN- Mohit P T	100000	0	3500		103500
17	Alumni-Robocon Project - K V Gangadharan	127651	0	3870	122134	9387
18	Alumni-Rotating Packed Disc Bioreactor - Keyur Ra	66510	0	2067	17747	50830
19	Alumni Silent Speech Interface Dev - Krishnan	103580	0	2582	71516	34646
20	Boeing Company- Vijay Desai	953024	0	32928	13327	972625
21	Building Capacity & Collaborative Res-Saidatta	1050988	368156	46449		1465593
22	Computational Studies of Thermo-Ajith	243955	0	8538		252493
23	CSD-Student Project - AGV	7372	0	183	6455	1100
24	CSIR-BIOMASS Fuel Burning-Dr Gangamma	5703	0		5703	0
25	CSIR - Chemo - Dr Saikat Dutta	220886	0	7731		228617
26	CSIR-Devt of Novel - Krishna Bhat	52372	249399	5470		307241
27	CSIR-Vanadium-Dr Sib Sankar Mal		261409		261409	0
28	CSRI-Auto System for Identification -Shashidhar	602406	0	16310	312634	306082
29	DBT-Social Economic-A Azhoni		1301680	27277	457732	871225
30	Design Innovation Center -S.M.Kulkarni	1817054	0	36690	1120218	733526
31	Dev of Effluent Treatment Tech for CN- B Manu		84745	989		85734
32	Devt. of Korea Institute-Dr Hariprasad Dasari	93441	0		93441	0
33	DHI-Devt of Brushless DC- Gangadhar		2826000	8243		2834243
34	DHI Fame Project -K V Gangadharan	60060152	72530968	1374515	105335334	28630301
35	Digital India In Faculty Youth Award	2845455	0	75146	1649803	1270798
36	DRDO-Sigma Delta Space Time Adaptive- Srihari	226143	0	4526	129639	101030
37	DST-Cp-ABE Scheme Decryptn-Alwyn	1276973	0	38687	776332	539328
38	DST-CSRI-Automatic Detection & Qlfn- Jenny	458969	925000	7173	900898	490244
39	DST-Development of Composite- M Doddamani	166351	0		43660	122691
40	DST- Devl of Value -Dr.B.B.Das	219998	0		219027	971
41	DST-Devt of Solar Based Humidi -Ajay Kumar		500000	7139	485643	21496
42	DST-DS (ICPS) Multi Graph Base Anomaly- Venkatesan	1000000	0	31423	438895	592528
43	DST Fellowship - Venkatramana		843520	4137	571800	275857
44	DST-FIST-PROGRAM-HOD-CSE	329252	0	11524		340776
45	DST-FIST-PROGRAM-HOD MET. ENGG.	28504008	0	830077	15028753	14305332
46	DST-FIST-Program-HOD of App. Mech	12258452	0	429046		12687498
47	DST-Heavy Metals Removal- Keyyur Raval	347056	0	12147		359203
48	DST - HOD - Chemical Engg	6136661	0	211221	340242	6007640
49	DST - HOD - Civil Engg	2270012	0	27436	2270012	27436
50	DST-Indo-Portugal-Debabrata Karma	297925	0	10351	26321	281955
51	DST Inspire - Dr Poornesh K K	788574	0	20568	705264	103878
52	DST-INSPIRE -Faculty-Beneesh P B	703361	0		127305	576056
53	DST-Optimigation of Media - Prasanna B D		110000		103572	6428
54	DST-Renewable Synthesis-SaiKat Dutta	124953	99355		224308	0
55	DST-Standalone Evaporative Air Cooler-Venkatesh Per	678945	0	21012	104821	595136

## SCHEDULE 4(A): SPONDORED PROJECTS

Sl.No.	PARTICULARS	OPENING BALANCE	RECEIPTS	INTEREST	EXPENDITURE	CLOSING BALANCE
56	DST Synthesis & Charactn-Jagadeesh Babu	228492	0	7997		236489
57	Dynamic Soil Structure-R Shivashankar	384269	0	13449		397718
58	ESTC-Coastal Ocean Tech-Dr Manu	336400	415000	7342	742057	16685
59	Experimental & Numerical - Jeyaraj P	417027	0	12132	86458	342701
60	FIST Program-Vijay Desai Mechl	7638984	0	233959	2145693	5727250
61	Framework for Deep Learning Based Analytics-Sowmya	442723	335690	12484	495173	295724
62	Glimpse of Kudremukh - Pruthviraj	9462	0	331		9793
63	Hexagon Next Gen 3D Lab-KV Gangadharan	11901	0	417		12318
64	HGML-Devt.of New Type -Harsha	173499	0	6072		179571
65	Hindustan Zinc -Services & Proleft - M R Rehman		1175280	18286	1166111	27455
66	Hutti Gold Mines-Development of Value - Aruna	163956	0	4847	63981	104822
67	IBM FACULTY AWARD- Basavaraj Talwar	316588	0		316587	1
68	I B M SUR Award - Basavaraj Talwar		2086000	66926		2152926
69	ICSSR:Reforming Higher Education for Civic-A Sreeji	7255	0	254	7255	254
70	ICSSR:Study of Adaptation to Tech Innovation-P R Je	163920	240000	6500	319737	90683
71	ICSSR: Sustainability Reporting & India Cos-Suprabh	64632	0		64632	0
72	ICSSR-Assing Impact of Climate Change - Rajesh A		162000	1418		163418
73	ICSSR-Assing the Impact of PMFBY- Rajesh A		160000	1867		161867
74	ICSSR-Exp Efficient Solutions - Ritanjali M		480000	2800		482800
75	ICSSR-Governing Extereme & Explotn- Sreejith		354480	8559	244777	118262
76	ICSSR-JSPS(Japan) -Moving Climate - Jena		500000	8046	187437	320609
77	ICSSR-Make in India Initiative- Sheena , SOM		320000	3666	23056	300610
78	ICSSR-Socio-Economic - A Azhoni		320000	3243	79057	244186
79	Imprint Project - Arun Kumar Thalla	680767	288000	25641	934894	59514
80	Indo US Methanal As A Clean-M B Saidutta	3233761	0	113182		3346943
81	Industry Sponsor Research-Imprint		42372	124		42496
82	Info.Security Education & Aware-Phase II-Alwyn	2153813	0	73930	112713	2115030
83	INSPIRE Faculty Award-Kishore Sridharan	1207767	0	42272		1250039
84	INSPIRE Project - Hari Prasad Dasari	183008	0		183008	0
85	ISRO Des & Dev of Wideband Ciruly- Krishna	472908	790263	10057	883036	390192
86	ISRO-Design &Analysis - Partha Sarathy		1637000	18678	144000	1511678
87	ISRO-Respond Dev of Automatic Land- Shyاملal		1098000	9089	150000	957089
88	Karnataka State Bio Fuel Dev Board	99048	321500	1344	117003	304889
89	KFD-Compilation -Virajpet-Pruthviraj	787	0	28		815
90	KSCST-Dr Shashidhar Koolagudi	4285	0	150		4435
91	KSCST Project	19302	0	676		19978
92	KSCT-Devt of Copper 316 Stainless -Dr.Udaya Bhat		7500		7500	0
93	KSMC - Devt. of A Communion -Dr.Harsha	977058	0	21701	624222	374537
94	KSRTC-Commuter Perception on Service Quality-Ravira	8187	0	287		8474
95	KSTePS:Experi Verification of Three Phase-Y Suresh	510208	0	17857		528065
96	KSTEPS-Des & Fab - Partha P Das		500000	4375		504375
97	KSTePS-Development of Anti-Udaya Bhat K	2030487	0	61252	1507267	584472
98	KSTEPS- Devlpt of Met - M R Rehman		500000	4359	5525	498834
99	KSTePS-Effective Online Framework-Nagamma Patil	508750	0	11026	464920	54856
100	KSTEPS-Optimal Controller Wide Speed-Parthiban		500000	4375		504375
101	KSTEPS-Synthesis of Levulinate - Sib Sankar Mal		500000	5833		505833
102	Kudremukh-Camera Trap Data- Pruthvirj U	3725	0		3705	20
103	L&T Sponsored MTech(CTM)Project	26384497	12529256	992519	6516378	33389894
104	LUH-Ger-Coffee Certificatn & Food - Jena	84375	0	1835	69360	16850
105	MEIT:Dev of Tool for Detecting of ALD- S Thilagam	441292	879000	10877	1136493	194676
106	Metallurgical Investigatin-Jagannath Nayak	62551	0	2189		64740
107	MHRD-IMPRINT Project- Hemanth Kumar	1446417	4249100	15482	2659872	3051127
108	MHRD-Virtual Lab- K.V Gangadharan	151342	0	4117	126498	28961
109	MHRD Virtual Lab Phase2 Gangadharan	614920	3652000	50017	805835	3511102
110	Ministry of Mines -Devt of Novel - Arun Isloor		500000	1391	23240	478151

## SCHEDULE 4(A): SPONDORED PROJECTS

Sl.No.	PARTICULARS	OPENING BALANCE	RECEIPTS	INTEREST	EXPENDITURE	CLOSING BALANCE
111	MOES-Unraveling Submarine-Ramesh H	1018963	0	31448	483473	566938
112	MOWR-Impact of Climate - Mahesha A	1156756	0	28507	873302	311961
113	M S T-In Vitro Mass-Dr Prasanna B D	358367	0	10190	196799	171758
114	NBHM/DAE Post Doctoral Fellow - Shubha		652000		652000	0
115	NRB-Study Corrosion - Dr Narendranath	18511	4112		22623	0
116	NRB-Theoretical Study & Design of H E - Prarthiban		2125200	29852	296081	1858971
117	Phase 3-Virtual Lab-K V Gangadharan	936955	7000000	60937	915784	7082108
118	Raptor Design -High Gain- V Preumal , EE	100000	0	3500		103500
119	Raptor Design-Voyager-V Perumal, EE	34076	0	852	23371	11557
120	R & D Project-Investigation to Reduction-Harsha Var	459413	1000	15966	48750	427629
121	Remote Sensing & GIS-K N Lokesh	60535	338036		398571	0
122	Research Training Fellowship - Rajmohan B		651667	4594	388680	267581
123	RS and GIS Tools to Support Conser	11019	0	386		11405
124	SERB: Adaptive MPPT of Grid-Tied-D Jena	399475	560000	10114	632656	336933
125	SERB:Utility Interactive BasedHybrid Power-Kalpana	85313	243486		328799	0
126	Serb-Active Vibration-Subhas C Katti	3272618	550000	71692	2773734	1120576
127	SERB-All Solution-Saumen Mandal	22952	10069		33021	0
128	SERB-Analytical & Numerical - Gnanasekaran	1087809	0	24312	858491	253630
129	SERB-Application of Kneading Theory -Murugan	116655	70000	4411	27467	163599
130	SERB-Atomistic Modelling- Kartick Tarafder	183086	0		183086	0
131	SERB-Automatic Multi Speaker- Deepu V	886282	500000		925044	461238
132	Serb-Characterize & Identiftn of Dialect-Shashidhar	209605	1000000	8607	1003908	214304
133	SERB-Compact Multi-Band Antenna - Krishnamoorthy	564360	432108	8972	851350	154090
134	SERB-Conjunctive Use - Ramesh H	444633	0	7941	427691	24883
135	SERB-Corrosion & Impedance-Shashi Bhushan Arya	1516947	0	36419	1429248	124118
136	SERB-Des & Dev of Automed Kidney Cancer-Shyاملal	1629740	0	47626	764777	912589
137	SERB-Design Analysis - Debabrata Karmakar	2642856	0	66803	2474082	235577
138	SERB - Design & Fabrication -Saurabh Chandraker		1796870	51359	138732	1709497
139	SERB-Design of Modular FPGA-B.Talawar	273114	0		273114	0
140	SERB-Des & Impln of Multi Attribute-Chandavarkar	3164870	0	100540	897094	2368316
141	SERB-Dev of Innovative - Palanisamy		1840408	15863	82500	1773771
142	SERB-Dev & Real Time Implementatn-Shyاملal	161291	0	5138	89805	76624
143	SERB-Devt & Demonstration - Hari Prasad Dasari	6534002	0	207563	1401190	5340375
144	SERB-Devt of Cost - Ajay Kumar Yadav	2850289	0	75197	2322591	602895
145	SERB-Devt. of Novel - Hari Prasad Dasari		37200		37200	0
146	SERB - Devt of Sust - Prasanna B D	394266	0	13799		408065
147	SERB-Dynamic of LOW-Shajahan	873021	0	28970	85699	816292
148	SERB-Effect of Frictional - Vadivuchezhian	454617	300000	13692	336753	431556
149	SERB-Effect of High - Debashree Chakrabborthy		2624000	14968	116133	2522835
150	SERB- Efficient Regularization Methods-Santhosh	436673	250000	9699	396610	299762
151	SERB-Experimental - Armuga Perumal	2976004	0	98118	1107000	1967122
152	SERB-Experimental Charact- Subhas Kattimani	686212	0	10861	668108	28965
153	SERB-Experimental-Dr Murigendrappa	122086	200000	1483	289657	33912
154	SERB-Experimental Invest- Sharanappa J	225336	865030	19223	720642	388947
155	SERB-Experimental & Numerical -Sathyabhama	260420	500000	12276	576851	195845
156	SERB-Expert Technique- Shivananda Nayak		2725000	86048	194000	2617048
157	SERB Fellowship- Vipin Joseph	274999	0	9625		284624
158	SERB- Generalized Framework for Restoring -Jidesh	337510	314820	13246	470892	194684
159	SERB-Grid Interfacing of Solar Power-H Nagendrappa	243170	776990	11488	605092	426556
160	SERB-High Performance-Dr Krishna Bhat	584841	0	20469		605310
161	SERB-Impact of Maternal - Keyur Raval	27440	0	742	14986	13196
162	SERB-Impounding of River - Ramesh H & Nasar	5861846	1254400	92943	4688920	2520269
163	SERB-Improvement in the Prop - Sudhakar C J	2607897	0	83674	1096373	1595198
164	SERB-Influence of Binary - B B Das	940988	630000	26151	831681	765458
165	SERB-Investigations on Origin - Poornesh K	3732350	0	111383	3318697	525036

**SCHEDULE 4(A): SPONDORED PROJECTS**

Sl.No.	PARTICULARS	OPENING BALANCE	RECEIPTS	INTEREST	EXPENDITURE	CLOSING BALANCE
166	SERB-Investigations - Ranjith M	254226	0	8458	52622	210062
167	SERB - Invest Induced - Anish S		1018333	5799	48333	975799
168	SERB-Optimal Damping-Dr Nasar T	277145	0	6896	119668	164373
169	SERB-Organinc Rankine - Veersetty Gumpta		2200000	18993	88000	2130993
170	SERB-Perforce Analysis & Enhancet- Prabhu Krish	1625000	0	48653	627803	1045850
171	SERB Post Doctoral Fellowship- Dr.Kalpana	148778	0	5207		153985
172	SERB-Predictive Asst of Posteral Risk-Bijay Mihir		735281	2145		737426
173	SERB-Project	450000	0	11083	200000	261083
174	SERB-Proteins at-Debashree Chakraborty	166760	400000		566760	0
175	SERB-Retinal Cysts Identifn & Quantificatn	169646	854223	13872	907150	130591
176	SERB-Selective Extraction - Regupathi	3392933	0	107859	2286862	1213930
177	SERB-Solutions for Visous & Inviscid -Engu Satyanar	423901	0	14392	41333	396960
178	SERB-Synthesis of B Cyclo - Rajmohan B	384936	788064	14814	668451	519363
179	SERB-Transition Metal - Partha P Das		500000	8860	196263	312597
180	Smart Grid Tech-COE -K P. Vittal	7837763	0	272743	195171	7915335
181	Sparc-Adaption of Climate Smrt Agri- Pradyot		1000000	14583	44997	969586
182	Sparc-Additive Manu - M Doddamani		1000000	13925	100389	913536
183	Sparc-Environmental-Dr Pritviraj		1449970	36085	1049578	436477
184	Sparc-Exploring Appns of Radiomies - Sumam		1000000	8471	955025	53446
185	SPARC Project - Hemanth Kumar		340900	7595	24657	323838
186	Spare -Coastal-Dr Ramesh H		1449970	23336	1382314	90992
187	Special Manpower Devt. Programme - DEIT-R Kini	3466031	1768000	183140	17593	5399578
188	Study on Low Temperature -GN Kumar	557037	0	19496		576533
189	TARE - Nitte - Shrikantha Rao		335000	4769	32464	307305
190	U K Project- Collaborative Research - B B Das		1412310	46678	94388	1364600
191	Unnath Bharath Abhiyan Scheme	181125	0	6339		187464
192	Usage of Granulated Slag -Kirlosker Ltd, Dr.Sunil	5369	101749	1621	17527	91212
193	Utilization of Fine Material of Mines Waste-Harsha	106074	0	3457	12764	96767
194	VGST-Dev. & Characterization -Ch S N Murthy	1026285	0	21302	818110	229477
195	V GST-Develop of Low Cost-Arun M Isloor	398458	2000000	76563	394703	2080318
196	VGST-Pre Operative-M Doddamani	71234	0		71234	0
197	Visvesvarya PhD Scheme for EC & IT	985286	12172113		13074480	82919
		<b>254262907</b>	<b>174454038</b>	<b>7971052</b>	<b>220877828</b>	<b>215810169</b>

**SCHEDULE 4(b): SPONSORED FELLOWSHIP AND SCHOLERSHIP**

Sl.No.	NAME OF SPONSOR	OPENING BALANCE AS ON 01.04.2019		TRANSACTIONS DURING THE YEAR		CLOSING BALANCE AS ON 31.03.2020	
		3 CR.	4 DR.	5 CR.	6 DR.	7 CR.	8 DR.
1	2						
1	AICTE GRANT QIP REGULER	207001	-	-	-	207001	-
2	AICTE GRANT QIP PLAN (POLY)	94303	-	-	-	94303	-
3	SC/ST Scholership Grant - MSJE	765272	-	1548174	1865819	447627	-
4	Other External Scholership	7466684	-	4925056	6982394	5409346	-
	<b>TOTAL</b>	<b>8533260</b>	<b>-</b>	<b>6473230</b>	<b>8848213</b>	<b>6158277</b>	<b>-</b>

## SCHEDULE 4 (C) UNUTILIZED GRANTS FROM GOVERNMENT OF INDIA

` in lakhs

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
<b>A. Capital Grants:</b>		
Balance B/F	313.86	576.36
Add: Receipts during the year	2,752.00	5,151.00
<b>Total (a)</b>	<b>3,065.86</b>	<b>5,727.36</b>
Less: Refunds	-	-
Less: Utilized for Revenue Expenditure	-	-
Less: Utilized for Capital Expenditure	1,094.76	5,413.50
<b>Total (b)</b>	<b>1,094.76</b>	<b>5,413.50</b>
<b>Unutilized carried forward (a-b) = (A)</b>	<b>1,971.10</b>	<b>313.86</b>
<b>B.i) Revenue Grants: OH 31</b>		
Balance B/F	873.68	681.63
Add: Receipts during the year	6,682.66	7,003.56
<b>Total (c)</b>	<b>7,556.34</b>	<b>7,685.19</b>
Less: Refunds	-	-
Less: Utilized for Non-Salary Expenditure	7,556.34	6,811.51
<b>Total (d)</b>	<b>7,556.34</b>	<b>6,811.51</b>
<b>Unutilized carried forward (c-d)</b>	<b>-</b>	<b>873.68</b>
<b>B.ii) Revenue Grants: OH 36</b>		
Balance B/F	-	(5,596.86)
Add: Receipts during the year	9,600.00	12,886.00
<b>Total (c)</b>	<b>9,600.00</b>	<b>7,289.14</b>
Less: Refunds	-	-
Less: Utilized for Salary Expenditure	8,754.87	8,255.53
<b>Total (d)</b>	<b>8,754.87</b>	<b>8,255.53</b>
<b>Unutilized balance grant (c-d)</b>	<b>845.13</b>	<b>(966.39)</b>
<b>Add: Transfer from IRG</b>	<b>-</b>	<b>966.39</b>
<b>Unutilized grant Grand Total (A+B)</b>	<b>2,816.22</b>	<b>1,187.54</b>

## IRG STATEMENT 2019-20

` in lakhs

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
TOTAL INTERNAL RECEIPTS	6,168.02	5,653.20
LESS: NON SALARY EXPENDITURE	3,179.11	3,218.07
	<b>2,988.91</b>	<b>2,435.13</b>
Less Negative Salary grant	-	966.39
<b>SURPLUS UNDER CAPITAL FUND/CORPUS</b>	<b>2,988.91</b>	<b>1,468.74</b>



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**SCHEDULE NO. 5 FIXED ASSETS & DEPRECIATION AS ON 31-03-2020**

(AMOUNT - Rs.)

PARTICULARS	GROSS BLOCK			RATE OF DEP.(%)	DEPRECIATION				BALANCE AS ON 31-03-2020
	BALANCE AS ON 01-04-2019	ADDITIONS DURING THE YEAR	DELETIONS DURING THE YEAR		TOTAL	DEPRECIATION UP TO 31.03.19	DEPRECIATION FOR THE YEAR	TOTAL DEPRECIATION	
	1	2	3	4 = (1+2-3)	5	6	7	8 = (6+7)	9 = (4+8)
<b>(A) FIXED ASSETS</b>									
(i) Tangible Asset									
Land : Freehold	90,49,981	-	-	90,49,981	-	-	-	-	90,49,981
Buildings : Freehold.	2,37,00,99,341	7,79,68,399	-	2,44,80,67,740	2.00	54,64,58,764	4,89,61,355	59,54,20,119	1,85,26,47,621
Buildings : Freehold (Residential)	37,54,08,986	3,23,318	-	37,57,32,304	2.00	3,61,87,370	75,14,646	4,37,02,016	33,20,30,288
Buildings : Freehold (Hostel).	1,03,25,27,985	25,00,830	-	1,03,50,28,815	2.00	38,85,59,008	2,07,00,576	40,92,59,584	62,57,69,231
Plant & Equipments	24,87,62,001	-	-	24,87,62,001	5.00	14,05,12,549	1,24,38,100	15,29,50,649	9,58,11,352
Vehicle	71,15,444	-	-	71,15,444	10.00	39,51,703	7,11,544	46,63,247	24,52,197
Furniture & Fixtures	20,74,46,825	1,23,46,724	-	21,97,93,549	7.50	6,97,65,790	1,64,84,516	8,62,50,306	13,35,43,243
Office Equipments	2,60,70,633	35,07,626	-	2,95,78,259	7.50	91,18,757	22,18,369	1,13,37,126	1,82,41,133
Computer & Peripherals	25,11,07,211	3,44,51,709	-	28,55,58,920	20.00	20,16,07,958	5,71,11,784	25,87,19,742	2,68,39,178
Electrical Installation	4,06,88,021	1,15,65,898	-	5,22,53,919	5.00	98,27,544	26,12,696	1,24,40,240	3,98,13,679
Library Books	2,29,01,322	3,47,965	-	2,32,49,287	10.00	1,99,66,823	23,24,929	2,22,91,752	9,57,535
Audio Visual Equipments	98,36,436	23,33,022	-	1,21,69,458	7.50	35,06,621	9,12,709	44,19,330	77,50,128
Tube Wells and Water Supply	4,97,679	2,98,059	-	7,95,738	2.00	1,53,379	15,915	1,69,294	6,26,444
Lab & Scientific Equipments	14,40,18,456	8,32,21,600	-	22,72,40,056	8.00	5,38,69,344	1,81,79,204	7,20,48,548	15,51,91,508
<b>TOTAL 5(A)</b>	<b>4,74,55,30,321</b>	<b>22,88,65,150</b>	<b>-</b>	<b>4,97,43,95,471</b>		<b>1,48,34,85,610</b>	<b>19,01,86,343</b>	<b>1,67,36,71,953</b>	<b>3,30,07,23,518</b>

\* Proportionate book value of land acquired by NHAI to be recoverable from GOK.

## B. CAPITAL WORK IN PROGRES AS ON 31.03.2020

PARTICULARS	OP. BALANCE	ADD / TRANS.	TOTAL	TR. TO REVENUE	TR. TO ASSET	CL. BALANCE
Constn. of 5th & 6th Floor Over PG Chem	-	10,620	10,620	-	10,620	-
Constn. of Addl. Bldg. for Library	-	5,63,606	5,63,606	-	5,63,606	-
Constn. of New Boys Hostel	33,25,78,928	9,08,24,157	42,34,03,085	-	-	42,34,03,085
Constn. of New Faculty Apartment	30,62,33,573	5,80,58,321	36,42,91,894	-	-	36,42,91,894
Constn. of New Ladies Hostel	-	25,00,830	25,00,830	-	25,00,830	-
Constn. of New Non Faculty Apartment	-	1,73,981	1,73,981	-	1,73,981	-
Constn of New Sports Complex	-	1,59,12,917	1,59,12,917	-	1,59,12,917	-
Equipment/furniture-Annual	-	56,24,702	56,24,702	-	56,24,702	-
Furniture & Other Furnishings - New Comp Sc Bldg	-	21,79,732	21,79,732	-	21,79,732	-
Provdg 11KV HT Line 33KV Substation	3,84,21,640	2,16,57,620	6,00,79,260	-	6,00,79,260	-
Provdg Power Supply to New Residential Bldg	-	1,49,337	1,49,337	-	1,49,337	-
Prov Power Supply to New Faculty Apart	-	6,698	6,698	-	-	6,698
Renovtn of Room No 3 of LHC - B	-	11,66,696	11,66,696	-	11,66,696	-
Vertical Extn. of Applied Mech. Bldg.	-	23,000	23,000	-	23,000	-
Vertical Extn. of Basic Science Bldg.	-	1,39,750	1,39,750	-	1,39,750	-
Vertical Extn. of New Mech Engg. Block	-	72,550	72,550	-	72,550	-
Construction of CoE & CRF Bldg (HEFA)	-	7,54,733	7,54,733	-	-	7,54,733
CRF: HEFA Loan Equipment	-	4,30,00,855	4,30,00,855	-	4,30,00,855	-
<b>TOTAL</b>	<b>67,72,34,141</b>	<b>24,28,20,105</b>	<b>92,00,54,246</b>	<b>-</b>	<b>13,15,97,836</b>	<b>78,84,56,410</b>
<b>Figures for 2018-19</b>	<b>95,56,22,215</b>	<b>33,54,59,470</b>	<b>1,29,10,81,685</b>	<b>-</b>	<b>61,38,47,544</b>	<b>67,72,34,141</b>

PARTICULARS	GROSS BLOCK				RATE OF DEP.(%)	DEPRECIATION			BALANCE AS ON 31-03-2020
	BALANCE AS ON 01-04-2019	ADDITIONS DURING THE YEAR	DELETIONS DURING THE YEAR	TOTAL		DEPRECIATION UP TO 31.03.19	DEPRECIATION FOR THE YEAR	TOTAL DEPRECIATION	
	1	2	3	4 = (1+2-3)	5	6	7	8 = (6+7)	9 = (4-8)
<b>(C) FIXED ASSETS</b>									
Intangible Asset									
Software	2,85,50,585	23,63,170	-	3,09,13,755	40	2,10,07,287	99,06,222	3,09,13,509	246
E-Books	91,28,174	3,99,914	-	95,28,088	40	83,89,671	11,38,416	95,28,087	1
<b>TOTAL (C)</b>	<b>3,76,78,759</b>	<b>27,63,084</b>	<b>-</b>	<b>4,04,41,843</b>		<b>2,93,96,958</b>	<b>1,10,44,638</b>	<b>4,04,41,596</b>	<b>247</b>
<b>TOTAL (A) + (C)</b>	<b>4,78,32,09,080</b>	<b>23,16,28,234</b>	<b>-</b>	<b>5,01,48,37,314</b>		<b>1,51,28,82,568</b>	<b>20,12,30,981</b>	<b>1,71,41,13,549</b>	<b>3,30,07,23,765</b>
Figures for 2018-19	4,07,94,82,424	70,37,26,656	-	4,78,32,09,080		1,16,15,70,679	35,13,11,889	1,51,28,82,568	3,27,03,26,512

**( D - i ) FIXED ASSETS OF VARIOUS PROJECTS & FUNDS AS ON 31-03-2020**

OTHER RESEARCH SCHEMES	GROSS BLOCK			TRANSFER	CL. BALANCE
	OP. BALANCE	ADDITIONS	DELETIONS		
Computer & Peripherals.	3,72,30,024	98,24,079	-	53,15,968	4,17,38,135
Plant & Equipment.	4,77,06,595	-	-	-	4,77,06,595
Electrical Installations.	52,71,424	16,99,703	-	6,52,568	63,18,559
Furniture & Fixtures	31,28,171	1,62,960	-	27,000	32,64,131
Office Equipments.	16,98,169	50,550	-	-	17,48,719
Books	4,80,814	1,60,548	-	33,485	6,07,877
Software	1,29,67,371	85,36,527	-	1,04,639	2,13,99,259
Audio Visual Equipments	15,94,090	1,03,662	-	61,283	16,36,469
Lab & Scientific Equipments	10,69,03,862	5,53,00,663	-	90,08,864	15,31,95,661
<b>TOTAL ( D - i )</b>	<b>21,69,80,520</b>	<b>7,58,38,692</b>	<b>-</b>	<b>1,52,03,807</b>	<b>27,76,15,405</b>
Figures for 2018-19	18,99,36,339	3,91,35,326	-	1,20,91,145	21,69,80,520

## (D - ii) FIXED ASSETS OF TEQIP AS ON 31-03-2020

PARTICULARS	GROSS BLOCK			RATE OF DEP.(%)	DEPRECIATION			BALANCE AS ON 31-03-2020
	BALANCE AS ON 01-04-2019	ADDITIONS DURING THE YEAR	DELETIONS DURING THE YEAR		TOTAL	DEPRECIATION UP TO 31.03.18	DEPRECIATION FOR THE YEAR	
	1	2	3	5	6	7	8 = (6+7)	9 = (4-8)
TEQIP I Assets	18,42,37,765	-	-	-	-	-	-	18,42,37,765
TEQIP II Assets	9,70,19,243	-	-	-	-	-	-	9,70,19,243
<b>TOTAL (D - ii)</b>	<b>28,12,57,008</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>28,12,57,008</b>
<b>GRAND TOTAL (A) + (C) + (D - ii)</b>								<b>3,58,19,80,773</b>
<b>Figures for 2018-19</b>								<b>3,55,15,83,520</b>

PLACE: SURATHKAL

DATE : 24-08-2020

( RAVINDRANATH K. )  
REGISTRAR  
N.I.T.K.,SURATHKAL

( PROF. K. UMAMAHESHWAR RAO )  
DIRECTOR  
N.I.T.K.,SURATHKAL

## NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

SURATHKAL

P.O. SRINIVASNAGAR - 575 025

## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

SCH. NOs.	(AMOUNT Rs.)	CURRENT YEAR	PREVIOUS YEAR
<b>6 INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS</b>			
1 In Central Government Securities		-	-
2 In State Government Securities		-	-
3 Other Approved Securities		-	-
4 Shares		-	-
5 Debentures and Bonds		-	-
6 Term Deposits with Banks		-	-
<u>Long Term Investments:</u>			
<u>Main Account Funds</u>			
Balance at the beginning of the year	75,34,46,098		
Add: Additions during the year	5,87,16,525		
	81,21,62,623		
Less: Transferred/Matured.	5,16,08,304	76,05,54,319	75,34,46,098
Student Activity Council.	5,12,00,720		5,11,45,740
NIMCET	1,74,08,800		65,94,742
NITK Corpus Fund	2,40,58,05,573		2,18,60,53,309
KREC/NITK Endowment Investments	15,80,592		15,01,027
DASA	5,25,45,083		-
CCE Fund	34,76,605	2,53,20,17,373	34,34,762
7 Other		-	-
<b>BALANCE AS AT THE YEAR - END FOR SCHEDULE -6</b>		<b>3,29,25,71,692</b>	<b>3,00,21,75,678</b>
<b>7 INVESTMENTS - OTHERS</b>			
1 In Central Government Securities		-	-
2 In State Government Securities		-	-
3 Other Approved Securities		-	-
4 Shares		-	-
5 Debentures and Bonds		-	-
6 Other		-	-
<b>BALANCE AS AT THE YEAR - END FOR SCHEDULE - 7</b>			

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**

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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOs.	(AMOUNT Rs.)	
	CURRENT YEAR	PREVIOUS YEAR
<b>8 CURRENT ASSETS</b>		
1 Stock	-	-
2 Sundry Debtors	-	-
3 Cash and Bank Balances	33,617	7,178
a) Cash in Hand		
b) With Scheduled Banks		
In Current Accounts		
State Bank of India CA 1	57,04,893	6,39,81,575
State Bank of India CA 2	1,12,01,232	57,43,521
Syndicate Bank A/c	4,985	1,66,767
In Term Deposit Accounts		
Balance at the beginning of the year	48,86,89,177	
Add: Additions during the year	1,24,53,56,636	
	1,73,40,45,813	
	84,06,46,245	
Less: Transferred/Matured.		
In Savings Bank Accounts		
Canara Bank - SB A/c 1	25,19,564	30,33,528
Canara Bank - HEFA Principle+Int	4,35,985	9,125
SBI SB Account	8,29,31,280	4,08,02,551
DASA Bank Account-SBI	44,56,405	4,07,662
SBI-CCE Fund	3,19,593	2,50,073
SBI - NIMCET	13,25,302	1,13,47,531
SBI - NITK/KREC Endowment Fund	70,87,112	2,66,221
SBI-NITK Corpus Fund	12,98,923	4,60,452
SBI-Student Activity Council	29,25,258	23,49,544
c) With non-Scheduled Banks		
4 Stamps	-	-
	16,665	844
<b>BALANCE AS AT THE YEAR - END FOR SCHEDULE - 8</b>	<b>1,01,36,60,383</b>	<b>61,75,15,749</b>

## NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

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## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

SCH. NOs.	(AMOUNT Rs.)	CURRENT YEAR	PREVIOUS YEAR
<b>2</b>	<b>LOANS, ADVANCES &amp; DEPOSITS</b>		
1	Advance to Employees		
a)	Salary	-	-
b)	Festival	-	-
c)	Medical	-	-
d)	Other	3,45,000	-
2	Long Term Advances to Employees (Interest Bearing)		
a)	Vehicle Loan	-	-
b)	Home Loan	-	-
c)	Other	-	-
3	Advances and Other Amounts Recoverable in Cash or in Kind or for Value to be Received		
a)	On Capital Accounts	-	-
b)	To Suppliers	3,59,07,782	26,82,37,547
	To CPWD	23,16,79,500	-
	To Staff	152	-
	To Others	12,59,284	-
c)	Other		
	Rent Receivable	3,85,153	53,425
	Interest Receivable	4,09,285	3,94,402
	Water Charges Receivable (Qtr)	24,234	-
	NITK Corpus Fund - Interest Receivable	14,95,81,296	13,52,14,883
	Receivable - NITK/KREC Enow Fund.	50,005	-
	TDS Receivable	2,43,66,366	2,82,63,748
	Pre-Deposit-Service Tax-Immovable Property	9,591	9,591
	Pre-Deposit-Service Tax Penalty-T&C	2,20,209	2,20,209
	<u>Loans, Advance/Receivable of Project/ Funds</u>		
	Institute Development Fund	21,28,366	21,28,366
	NITK Corpus Fund - IRG	-	14,68,73,990
	NITK Corpus Fund - TDS	5,58,79,886	4,70,38,388
	CCE - TDS	54,257	32,033
	NIMCET - TDS	1,20,479	10,052
	NITK/KREC Endowment Fund	-	17,987
	NITK/KREC Endowment Fund - TDS	9,019	-
	DASA	3,45,300	-

## NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

SURATHKAL

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## SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020

SCH. NOs.	(AMOUNT Rs.)		
	CURRENT YEAR	PREVIOUS YEAR	
DASA - TDS	9,04,768	-	
SAC	2,28,802	-	
SAC - TDS	13,42,376	9,87,150	
4 Prepaid Expenses			
a) Insurance	23,057	29,899	
b) Other Expenses			
Prepaid Road Tax	864		
Prepaid Maintenance of Computers	1,08,00,000		
Prepaid Operating Cost - Library	2,25,20,693	864	
5 Deposits			
a) Telephone	77,466	77,466	
b) Lease Rent	-	-	
c) Electricity	70,41,939	65,50,012	
d) Other - Gas & Oil suppliers	1,02,120	1,02,120	
6 Income Accrued			
a) On Investments from Earmarked/ Endowment Funds	26,63,089	33,76,666	
b) On Investment - Others	-	-	
c) On Loans & Advances	-	-	
d) Other			
Leave Salary & Pension Receivable	19,61,944	19,37,332	
SPDC Tuition Fee Receivable	-	935	
Student Fee Receivable	-	3,18,840	
7 Other - Current Assets, Receivables from UGC/Sponsored Projects			
a) Debit Balance in Sponsored Projects			
b) Debit Balance in Sponsored Fellowships & Scholarships			
c) Grants Receivable			
Summer School Exp Receivable	69,38,840	69,38,840	
Winter School Exp Receivable	4,69,929	4,69,929	
AICTE-NTMIS Grant Receivable	39,14,232	39,14,232	
Ammar Ali Fee Receivable	-	4,500	
CSIR Grant Receivable	11,409	-	
DAE Grant Receivable	-	-	
DEIT Grant Receivable	99,69,379	3,08,340	



**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**

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**SCHEDULES FORMING PART OF BALANCE SHEET AS AT 31-03-2020**

SCH. NOS.	(AMOUNT Rs.)		
	CURRENT YEAR	PREVIOUS YEAR	
DASA Tuition Fee Receivable	-	5,57,600	
DST Grant Receivable	11,51,136	11,51,136	
DST Interest Receivable	26,73,639	-	
GOI Proj.Grant Receivable	-	25,885	
GOK - Recoverable on Compulsory acquisition of Land by NHAI	-	43,062	
NRB Grant Receivable	4,112		
SERB Grant Receivable	37,200		
SERB Grant Receivable	2,10,600	2,10,600	
d) Other Receivables from UGC	-	-	
8 Claims Receivable.	-	-	
<b><u>BALANCE AS AT THE YEAR - END FOR SCHEDULE - 9</u></b>	<b>57,58,22,758</b>	<b>65,55,00,029</b>	

PLACE: SURATHKAL  
DATE : 24-08-2020

( RAVINDRANATH K. )  
REGISTRAR  
N.I.T.K.,SURATHKAL

(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K.,SURATHKAL

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
SURATHKAL  
P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

SCH. NOs.	CURRENT YEAR	PREVIOUS YEAR
<b>(AMOUNT Rs.)</b>		
<b>10 <u>ACADEMIC RECEIPTS:</u></b>		
<b>A <u>Academic</u></b>		
Admission Fee-College & Hostel	20,45,000	12,93,750
Library Fee	1,02,60,500	87,57,500
M.B.A .Tution Fee	40,70,000	39,55,000
M.C.A .Tution Fee	1,30,30,854	1,85,15,000
M.Sc.Tution Fee	12,75,000	14,92,500
Phd Thesis Processing/Evaluation Fee	35,65,000	7,85,000
Phd. Tution Fee.	1,02,67,902	1,38,36,848
Tution Fee - M.Tech	7,46,19,085	7,09,45,771
Tuition Fee - U.G	22,08,01,105	22,39,40,252
<b>TOTAL (A)</b>	<b>33,99,34,446</b>	<b>34,35,21,622</b>
<b>B <u>Examinations</u></b>	-	-
<b>TOTAL (B)</b>	-	-
<b>C <u>Other Fees</u></b>		
Central Computing Facilities Fee	90,41,375	66,38,250
Identity Card	3,100	14,900
Campus Amenities	17,00,000	-
Career Development Fee	22,91,500	-
Certificate Fee	2,22,425	1,91,650
Convocation Fee	34,49,750	34,56,650
Health Care Facility	14,92,000	-
Late Fee, Fine & Processing Fee	3,85,770	6,78,553
<b>TOTAL (C)</b>	<b>1,85,85,920</b>	<b>1,09,80,003</b>
<b>D <u>Sale of Publications</u></b>		
Application Form/Prospectus	7,11,102	8,34,073
<b>TOTAL (D)</b>	<b>7,11,102</b>	<b>8,34,073</b>
<b>E <u>Other Academic Receipts</u></b>	-	-
<b>TOTAL (E)</b>	-	-
<b>TOTAL (F) = (A)+(B)+(C)+(D)+(E)</b>	<b>35,92,31,468</b>	<b>35,53,35,698</b>
Less : Utilised for Capital Expenditure (G)	-	-
<b>TOTAL (F)-(G)</b>	<b>35,92,31,468</b>	<b>35,53,35,698</b>
<b>11 <u>GRANTS / SUBSIDIES :</u></b>		
Balance B/F	11,87,53,724	(43,38,87,704)
Add : Receipts during the year - Revenue Grant	1,62,82,66,432	1,98,89,56,000
- Capital Grant (Previous Year)	-	-
- Capital Grant	27,52,00,000	51,51,00,000
	2,02,22,20,156	2,07,01,68,296
Less : Refund to MHRD	-	-
Balance	2,02,22,20,156	2,07,01,68,296
Less : Utilised for Capital Expenditure (A)	10,94,76,415	54,13,50,194
Balance	1,91,27,43,741	1,52,88,18,102
Less : Utilised for Revenue Expenditure (B)	1,63,11,21,368	1,41,00,64,378
Balance C/F (C)	<b>28,16,22,373</b>	<b>11,87,53,724</b>

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
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**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

<b>SCH. NOs.</b>	<b>(AMOUNT Rs.)</b>	
	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
<b>12 INCOME FROM INVESTMENTS :</b>		
1 Interest		
a. On Government Securities	-	-
b. Other Bonds / Debentures	-	-
2 Interest on Term Deposits	18,10,30,938	15,27,58,157
3 Income Accrued but not Due on Term Deposits	-	-
4 Interest on Savings Bank Accounts	1,14,170	8,48,127
5 Others	-	-
<b>TOTAL (A)</b>	<b>18,11,45,108</b>	<b>15,36,06,284</b>
Less : Transferred to Earmarked / Endowment Funds ( B)	16,49,81,920	14,20,42,726
<b>TOTAL (A)-(B)</b>	<b>1,61,63,188</b>	<b>1,15,63,558</b>
<b>13 INTEREST EARNED :</b>		
1 Interest on Savings Bank Accounts	17,48,220	6,52,431
2 On Loans	-	-
3 On Debtors & Receivable		
Interest on Income Tax Refund	13,79,398	-
Interest on MESCOM Deposit	4,54,761	4,38,224
<b>TOTAL</b>	<b>35,82,379</b>	<b>10,90,655</b>
<b>14 OTHER INCOME :</b>		
<b>A 1 Income from Land &amp; Building</b>		
Hostel Room Rent	5,37,44,476	4,51,79,796
Rent From Building	25,17,101	21,89,389
Rent from Guest House	28,11,312	29,69,900
Rent from Quarters	40,01,303	34,82,513
2 Water Charges Collection-Qtrs	5,27,344	4,45,005
3 Water Charges-Contractor	4,17,398	3,78,364
4 NITK Corpus Fund - Interest.	14,95,81,296	13,52,14,883
<b>TOTAL (A)</b>	<b>21,36,00,230</b>	<b>18,98,59,850</b>
<b>B Sale of Institute's Publications</b>	-	-
<b>TOTAL (B)</b>	-	-
<b>C Income from Holding Events</b>	-	-
<b>TOTAL (C )</b>	-	-

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
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**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(AMOUNT Rs.)

SCH. NOs.	CURRENT YEAR	PREVIOUS YEAR
<b>D Other</b>		
1 Income from Consultancy	-	-
2 RTI Fees	-	-
3 Income from Royalty	-	-
4 Sale of Application Form (Recruitment)	27,41,989	14,40,100
5 Miscellaneous Receipts	94,66,516	9,56,383
6 <u>Profit on Sale/Disposal of Assets</u>		
a) Owned Assets	-	-
b) Assets Received Free of Cost	-	-
7 Grants/Donations from Insitutions, Welfare Bodies & International Bodies	-	-
8 Others (Specify)		
Auction Sales	11,54,800	4,73,219
Leave Salary & Pension Contrib	27,19,916	31,08,278
Postage Collected	7,59,101	-
SC/ST Student Fee Refundable Written Off	16,50,000	-
Transcript Charges	6,67,429	7,11,501
Verification Fee	8,18,866	7,81,213
<b>TOTAL (D)</b>	<b>1,99,78,617</b>	<b>74,70,694</b>
<b>TOTAL (A)+(B)+(C)+(D)</b>	<b>23,35,78,847</b>	<b>19,73,30,544</b>
<b>15 <u>PRIOR PERIOD INCOME</u></b>		
1 Academic Receipts	-	-
2 Income from Investments	-	-
3 Interest Earned	-	-
4 Other Income	-	-
<b>TOTAL</b>	<b>-</b>	<b>-</b>
<b>16 <u>STAFF PAYMENTS &amp; BENEFITS (ESTABLISHMENT EXPENSES)</u></b>		
a) Pay Non-Teaching	19,07,34,463	18,23,02,443
b) Pay-Teachng	57,50,13,556	52,50,12,135
c) New Defined Pension Contribution	3,92,65,621	1,98,75,911
d) LTC/Home Travel Concession	86,28,550	80,24,412
e) Medical Facility	93,83,818	75,55,254
f) Children Education Allowance	1,40,69,550	59,97,853
g) Others		
1 Livery to Class IV Staff	-	77,788
2 Leave Salary/pension Contribution	10,70,942	-
3 Cumulative Professional Dev Allowace	92,34,310	67,64,374
4 Staff Research Project	1,27,581	-
5 Training to Staff and Faculty	1,92,645	3,68,175
<b>TOTAL</b>	<b>84,77,21,036</b>	<b>75,59,78,345</b>

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
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**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

SCH. NOs.	(AMOUNT Rs.)	
	CURRENT YEAR	PREVIOUS YEAR
<b>16A EMPLOYEES RETIREMENT AND TERMINAL BENEFITS</b>		
Opening Balance as on 01.04.2019	4,32,64,28,744	4,05,50,73,305
Add: Capitalised Value of Contributions Received from other Organisations	-	-
Total (a)	-	-
Less: Actual Payment during the year (b)	27,22,43,307	28,37,26,246
Balance as on 31.03.2020 (c)	4,05,41,85,437	3,77,13,47,059
Provision required on 31.03.2020 as per Actuarial Valuation (d)	4,83,65,81,712	4,32,64,28,744
A Provision to be made in the Current year (d-c)	78,23,96,275	55,50,81,685
B Contribution to New Pension Scheme	-	-
C Medical Reimbursement to Retired Employees	-	-
D Travel to Hometown on Retirement	-	-
E Deposit Linked Insurance Payment	-	-
<b>TOTAL</b>	<b>78,23,96,275</b>	<b>55,50,81,685</b>
<b>TOTAL</b>	<b>1,63,01,17,311</b>	<b>1,31,10,60,030</b>
<b>17 ACADEMIC EXPENSES</b>		
a) Field work/Participation in Conferences	10,73,200	16,16,621
b) Expenses on Seminars/Workshops	12,88,737	20,97,827
c) Payment to Visiting Faculty	24,88,511	23,24,178
d) Convocation Expenses	41,34,301	22,73,077
e) Stipend/Mean-cum-merit Scholarship	33,48,000	32,94,000
f) SC/ST Plan Grant Exp	2,75,09,389	4,73,44,764
g) Others		
1 Centre of Excellence	4,07,555	2,83,197
2 Coaching to SC/ST Students	3,15,112	7,82,727
3 Expert Lectures	7,71,105	8,98,062
4 Internship-UG Non Plan	6,49,100	1,01,559
5 NCC/NSS Activities Expenses	14,08,182	15,30,991
6 Phd Contingencies	86,80,124	99,51,727
7 Phd Evaluation/Viva Exp	54,28,894	-
8 Practical Training at Mining Site	5,49,300	4,06,323
9 Research Interaction	11,08,622	6,26,610
10 Annual Plan Recurring Exp - PG Stipend/ Fellowship	31,47,26,618	28,25,12,372
11 Hindi Cell Activities	88,673	-
12 Operating Cost- Applied Mech.	17,22,932	27,00,663
13 Operating Cost- Career Development Centre(CDC)	13,43,986	7,28,224
14 Operating Cost- Central Computing Facility	6,30,931	5,60,417
15 Operating Cost - Central Research Facility	3,02,038	-
16 Operating Cost- Chemical Engg.	54,72,557	52,39,699
17 Operating Cost- Chemistry	47,04,212	44,27,509
18 Operating Cost -Civil	45,28,329	36,20,465
19 Operating Cost- Computer Engg	11,84,659	16,55,155
20 Operating Cost- E&C Engg.	13,65,728	7,76,457
21 Operating Cost- E&E Engg.	11,32,095	15,56,174
22 Operating Cost- Humanities Dept.	11,67,325	15,36,844
23 Operating Cost- Information Tech	6,90,174	6,74,480
24 Operating Cost- Library	2,05,40,894	3,09,02,491
25 Operating Cost- MACS Dept.	17,03,087	10,27,999
26 Operating Cost- Mechanical Engg	62,94,404	43,49,451
27 Operating Cost- Metallurgical Engg.	18,75,722	15,30,813
28 Operating Cost- Mining	8,51,303	6,32,163
29 Operating Cost- Physics	20,95,845	28,53,261
30 Diamond Jubilee Expenses	28,17,497	-
<b>TOTAL</b>	<b>43,43,99,141</b>	<b>42,08,16,300</b>

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
**SURATHKAL**  
P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(AMOUNT Rs.)

SCH. NOs.	CURRENT YEAR	PREVIOUS YEAR
<b>18 <u>ADMINISTRATIVE AND GENERAL EXPENSES</u></b>		
A Infrastructure		
a) Electricity & Power	4,49,66,542	3,76,61,406
b) Water Charges	1,61,32,634	1,58,89,429
c) Insurance	-	-
d) Rent, Rates & Taxes (including property tax)	17,59,577	15,99,615
B Communication		
e) Postage	7,33,999	2,43,652
f) Telephone, Fax & Internet Charges	9,67,548	12,89,799
C Others		
g) Printing & Stationery	36,03,753	25,55,703
h) Travelling, TA & Conveyance	78,26,525	1,06,68,206
i) Hospitality/Entertainment	11,26,296	10,11,727
j) Auditor Remuneration	16,035	-
k) Professional Charges	16,94,444	21,75,000
l) Advertisement & Publicity	24,91,293	15,63,381
m) Magzines & Journals	62,429	50,000
n) Hostel Establishment	1,74,63,629	1,74,03,632
o) I R G - Contingencies	-	23,275
p) <u>Others</u>		
Dispensary	1,83,44,704	1,71,00,688
Security Outsourcing	5,63,65,540	4,89,15,832
Miscellaneous Expenses	23,09,043	30,27,541
Recurring Expenses from Prjects: Other Research Project	14,50,39,136	9,43,43,983
<b>TOTAL</b>	<b>32,09,03,127</b>	<b>25,55,22,869</b>
<b>19 <u>TRANSPORTATION EXPENSES</u></b>		
1 Vehicles		
a) Running Expenses	15,65,442	15,67,877
b) Repairs & Maintenance	-	-
c) Insurance Expenses	-	-
2 Vehicles taken on Rent/Lease		
a) Rent/Lease Expenses	-	-
3 Vehicles Hiring Expenses	-	-
<b>TOTAL</b>	<b>15,65,442</b>	<b>15,67,877</b>

**NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA**  
**SURATHKAL**  
P.O. SRINIVASNAGAR - 575 025

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE FOR THE YEAR ENDED 31-03-2020**

(AMOUNT Rs.)

SCH. NOs.		CURRENT YEAR	PREVIOUS YEAR
<b>20</b>	<b><u>REPAIRS &amp; MAINTENANCE</u></b>		
a)	Building (ACB)	2,99,31,801	2,11,63,264
	Hostel	96,51,283	1,06,73,424
	Residential Bldg	33,06,454	47,50,541
b)	Furniture & Fixtures	1,49,165	44,784
c)	Machinery & Equipments	93,28,934	90,19,539
d)	Computers	2,06,81,722	1,36,41,503
e)	Gardening	40,46,349	36,26,281
f)	<u>Others</u>		
	Internal Telephone	20,49,485	24,63,580
	Guest House	62,54,050	55,51,622
	Campus Maint/upkeeping	51,69,453	23,42,876
	Electrical Installation	1,76,40,184	1,14,70,854
	House Keeping Charges	68,22,303	-
	Maintenance of Road	68,59,780	38,48,911
	Maint. of Waste Water Disposal	54,20,684	53,16,767
	Swachha Bharath Abhiyan	26,851	69,380
	NIT Transit House	3,50,000	2,50,000
	<b>TOTAL</b>	<b>12,76,88,498</b>	<b>9,42,33,326</b>
<b>21</b>	<b><u>FINANCE COSTS</u></b>		
a)	Bank Charges	18,23,260	-
b)	Others	36,57,067	-
	<b>TOTAL</b>	<b>54,80,327</b>	<b>-</b>
<b>22</b>	<b><u>OTHER EXPENSES</u></b>		
a)	IRG-Asset & Utility Mapping for NITK	3,56,812	38,800
b)	Transfer to Corpus/Capital fund to the extent of Capital expenses from IRG	7,85,58,545	7,28,69,274
c)	Provision for Bad & Doubtful Debts/Advances	-	-
d)	Irrecoverable Balances Written Off	3,77,287	-
e)	Grants/Subsidies to other Insitutions/Organisations	-	-
f)	Others : Surplus of Internal Generation over Non-Salary Expenditure transferred to NITK Corpus Fund	-	14,68,73,990
	<b>TOTAL</b>	<b>7,92,92,644</b>	<b>21,97,82,064</b>
<b>23</b>	<b><u>PRIOR PERIOD EXPENSES</u></b>		
1	Establishment Expenses :	-	-
2	Academic Expenses	-	-
3	Administrative Expenses	-	-
4	Transportation Expenses	-	-
5	Repairs & Maintenance	-	-
6	Other Expenses - Depreciation on Fund/Project Assets	-	-
	<b>TOTAL</b>	<b>-</b>	<b>-</b>

PLACE: SURATHKAL

DATE : 24-08-2020

( RAVINDRANATH K. )  
REGISTRAR  
N.I.T.K.,SURATHKAL

(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K.,SURATHKAL

## NATIONAL INSTITUTE OF TECHNOLOGY, KARNATAKA

## RECEIPTS &amp; PAYMENTS FOR THE YEAR ENDED 31-03-2020

RECEIPTS	Current Year	Previous Year	PAYMENTS	Current Year	Previous Year
<b>Opening Balances:</b>			<b>Expenses:</b>		
(a) Cash in hand	7,178	1,829	(a) Establishment Expenses	1,32,37,08,937	1,54,25,47,895
(b) Bank Balances:			(b) Administrative Expenses	57,65,47,648	5,24,82,215
(i) In current accounts	6,98,91,862	69,28,016	Payments Against Earmarked/Endowment Funds	21,22,36,366	18,72,75,396
(ii) Savings accounts	4,38,36,079	12,85,18,729	Payments Against Sponsored Projects/Schemes	24,91,54,725	1,80,69,31,412
(iii) HEFA accounts	9,125	-	Investments Made	1,68,50,09,359	42,53,38,582
<b>Grants Received:</b>			Out of Earmarked/Endowment Fund		
(a) From Govt. of India			Out of Own Fund		
Capital Grant			Expenditure on Fixed Assets &	34,20,05,221	1,24,42,39,336
Revenue Grant	1,90,34,66,432	2,50,40,56,000	Capital Work - in - progress:		
(b) From State Government	-	-	Deposits & Advances	1,37,68,89,484	2,19,73,77,031
Academic Receipts	44,48,23,110	34,23,37,932	Payments made against	2,60,29,22,362	75,49,76,453
Receipts Against Earmarked/Endowment Funds	45,69,85,431	52,30,19,639	Funds for various projects:		
Receipts Against Sponsored Projects/Schemes/Plan	61,55,75,239	24,32,16,813	Any Other Payments :	98,65,68,646	
Income on Investments.	1,61,63,188	1,07,66,669	Closing Balances:		
Interest Received :	35,82,379	6,52,431	(a) Cash in hand	33,617	7,178
Deposits & Advances	1,58,51,53,408	1,08,17,49,347	(b) Bank Balances:		
Investments Encashed/matured	98,32,47,879	81,22,86,679	(i) In current accounts	1,69,11,111	6,98,91,862
Any other receipts:	3,33,51,32,995	2,67,13,78,479	(ii) Savings accounts	8,54,50,844	4,38,36,079
			(iii) HEFA accounts	4,35,985	9,125
<b>TOTAL</b>	<b>9,45,78,74,305</b>	<b>8,32,49,12,564</b>	<b>TOTAL</b>	<b>9,45,78,74,305</b>	<b>8,32,49,12,564</b>

PLACE: SURATHKAL

DATE : 24-08-2020

( RAVINDRANATH K. )  
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**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA**  
**SURATHKAL, P.O. SRINIVASNAGAR - 575 025**

**SCHEDULE: 24**

**SIGNIFICANT ACCOUNTING POLICIES (2019-20)**

**1. BASIS FOR PREPARATION OF ACCOUNTS**

The accounts are prepared under Accrual method of accounting.

**2. REVENUE RECOGNITION**

**2.1** Revenues are recognised on accrual basis except for interests on Savings Bank Accounts.

**3. FIXED ASSETS AND DEPRECIATION**

**3.1** Fixed assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition, installation and commissioning.

**3.2** Fixed assets are valued at cost less accumulated depreciation under different blocks. During the year depreciation is provided under Straight Line method. (Detailed working is given in the Schedule No. 5 to the Balance Sheet). Where the value of the asset becomes nil due to depreciation, it will be carried at a residual value of Re.1 in the Balance Sheet and will not be further depreciated. Thereafter, depreciation is calculated on the additions of each year separately at the rate of depreciation applicable for that asset head. Depreciation is provided for the whole year on additions during the year.

**3.3** The total value of assets acquired out of the Earmarked fund and sponsored funds of completed projects has been incorporated in the books of accounts and considered as Institute assets. The assets acquired from the ongoing sponsored projects are held and used by the Institution are not included in **Schedule 5**.

**3.4 Intangible Assets:** E-Journals and Computer Software are grouped under Intangible Assets.

**4. STOCKS:**

Expenditure on the purchase of chemicals, glassware, Stationary and other stores is accounted as revenue expenditure.

**5. RETIREMENT BENEFITS**

Employees Gratuity, Leave Encashment and Pension liability has been valued by the actuaries and the same has been incorporated in the statement of accounts during the financial year 2019-20. Ref: **Notes on Accounts Sl. No. 9**.

## **6. INVESTMENTS**

Investments are stated at cost and the same is disclosed in detail as per the standard format.

## **7. EARMARKED/ENDOWMENT FUNDS**

The income from investments is credited on an accrual basis to the respective Funds. The expenditures are debited to the Fund. The assets created out of Earmarked Funds where the ownership Vests in the institution, are merged with the assets of the Institution by crediting an equal amount to the Capital Fund. The balance in the respective funds is carried forward and is represented on the assets side by the balance at Bank, Investments and accrued interest.

### **7.1 NITK CORPUS FUND**

The fee received from DASA students, Institution share of Consultancy fees and surplus Revenue over expenses of the Institute (IRG) are considered to Corpus fund. Income earned from the investment is added to the Fund. Only the investment Interest earned under the Corpus Fund may be utilised for both Revenue and Capital expenditure based on the guidelines of the Institution. The 44<sup>th</sup> BOG held on 23-03-2016, it was resolved to remove the upper accumulation ceiling limit for NITK Corpus Fund (FC Item No. 34.3.11 dated 23-03-2016). The interest earned out of the Investment shall be transferred to Institute Revenue account as per the BoG resolution No.53.3 dated 05.10.2018.

### **7.2 ENDOWMENT FUNDS**

Endowment funds are received from various individual donors, Trusts and other organisations for establishing Chairs and for Medals & Prizes as specified by the Donors. The income from the investment of each Endowment Fund is added to the respective Fund. The expenditure on Medals & Prizes is met from the interest earned on the investment of the respective Endowment Funds and the balance is carried forward. The balances are represented by Investment in Fixed Deposits and balance in the Saving Bank Account and Accrued Interest on Investments.

## **8. GOVERNMENT (MHRD) GRANTS**

**8.1** Government Grants are accounted on sanction/realization basis. However, where a sanction for release of grant pertaining to the financial year is received before 31<sup>st</sup> March and the grant is actually received in the subsequent financial year, that grant is accounted on accrual basis and an equal amount is shown as receivable from the Government.

**8.2** Government Grants utilised towards capital expenditure, (on an accrual basis) is transferred to the Capital Fund to the extent of the amount spent on capital expenditure.

**8.3** Government grants for meeting Revenue Expenditure (on an accrual basis) are treated, to the extent utilised, as income of the year in which they are realised.

**8.4** Unutilized grants (including advances paid out of such grants) are carried forward and exhibited as a liability in the Balance Sheet.

**8.5** Surplus Grant from MHRD as on 31.03.2020 is ` 28,16,22,373/-. (Schedule 11 (C)).

## **9. HEFA LOAN**

As per the Govt of India policy for providing financial assistance for creation of educational infrastructure and R&D in India's Premier Educational Institutions through HEFA, our Institute has got sanctioned HEFA loan for two major projects of Rs.128 crores. The principal amount will be repayable out of the Internal Revenue Generation of the Institute in 10 years in half yearly instalment. **(Schedule 3B)**

## **10. INVESTMENTS OF EARMARKED FUNDS AND INTEREST INCOME ACCRUED ON SUCH INVESTMENTS:**

To the extent not required immediately for expenditure, the amounts available against such funds are invested in Short/Long Term Deposit in Scheduled Nationalized Banks, leaving a balance in Savings Bank Accounts. Interest received, interest accrued and due and interest accrued but not due on such investments are added to the respective funds and not treated as income of the Institution.

## **11. SPONSORED PROJECTS**

**11.1** In respect of ongoing Sponsored Projects, the amounts received from sponsors are credited to the head "current liabilities and Provisions - Current Liabilities - Other Liabilities - Receipts against ongoing sponsored projects." As and when expenditure is incurred/advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited.

**11.2** Fellowships and Scholarships sponsored by various organisations are accounted in the same way as sponsored Projects and the expenditure generally for disbursement of Fellowships, Scholarships and contingent expenditure.

**11.3** The Institution awards Fellowships and Scholarships to Under Graduate and Post Graduate students, which are accounted as Academic expenses.

## **12. INCOME TAX**

The income of the Institution is exempt from Income Tax under Section 10(23C) of the Income Tax Act. No provision for tax is therefore made in the accounts.

**Date: 24-08-2020**

**Place: Surathkal**

**(RAVINDRANATH K.)  
REGISTRAR**

**(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR**

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**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA**  
**SURATHKAL, P.O. SRINIVASNAGAR - 575 025**

**SCHEDULE: 25**

**CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS (2019-20):**

**A. CONTINGENT LIABILITIES:**

**1. CONTINGENT LIABILITIES:**

1.1 As on 31.03.2020 following arbitration case is pending for decision with regard to the contractor. Construction of Ladies Hostel ` 29,79,122/-

1.2 Disputed demands in respect of Service Tax is ` 22,97,932/-. Presently the appeal is with the Commissioner of Central Excise (Appeals) and we have paid the mandatory pre-deposit of ` 1,72,345/- being the 7.5% of the service tax demand of ` 22,97,932/- [Appeal File No. A.No.35/16/MR/ST].

**B. NOTES TO ACCOUNTS:**

**2. FIXED ASSETS:**

2.1 Additions in the year to Fixed Assets in Schedule include Assets purchased out of Capital Grant ` 13,15,97,836/- , IRG ` 7,85,58,545/-, other designated funds ` 40,44,407/-, Gift ` 22,23,639/- . Assets Transferred from Completed Other Research Projects is ` 1,52,03,807/-.

2.2 Assets of TEQIP I & II Project Scheme of Rs. 28,12,57,008/- has been exhibited in Schedule 4 (D-ii).

<u>Project Phase</u>	<u>Start of Proj(Year)</u>	<u>End of Proj(Year)</u>	<u>Total Value of Assets Acquired</u>
TEQIP – I	2003	2009	Rs. 18,42,37,765
TEQIP – II	2011	2017	Rs. 9,70,19,243

2.3 Fixed Assets acquired out of Capital Grant, Revenue Grant and other funds have been exhibited in Sub Schedules A, B & C of the main schedule of Fixed Assets. (Schedule 5).

2.4 Depreciable fixed assets as set out in Schedule 5 do not include assets purchased out of funds of sponsored ongoing projects, as project contracts include stipulations that all such assets purchased out of project funds will remain the property of the sponsors.

2.5 During the year depreciation is calculated under SLM. Under this method the depreciation is calculated on original cost of the asset. When the depreciation is calculated on original cost of the asset, the amount of depreciation for the year is more than the opening balance of the asset under “intangible asset” and in turn it results in negative balance in closing balance of intangible assets. Hence we have kept Rs. 247 as closable balance being Re 1 per asset and depreciation amount is reduced to that extent.

**3. DEPOSIT LIABILITIES** –No deposit liabilities.**4. EXPENDITURE IN FOREIGN CURRENCY:**

During the year 2019-20 the Institute has incurred expenditure in foreign currency and remitted the amount as under:

<b><u>Type of Currency</u></b>	<b><u>Amount `</u></b>	<b><u>Purpose</u></b>
Euro	2,53,235/-	Procurement
USD	7,59,541/-	Procurement
GBP	5,141/-	Procurement

**5. CURRENT ASSETS, LOANS, ADVANCES AND DEPOSITS:**

In the opinion of the Management, the current assets, Loans, Advances and Deposits have a value on realisation in the ordinary course, equal at least to the aggregate amount shown in the Balance Sheet.

**6.** The details of balances in Saving Bank Accounts, Current Accounts and Fixed Deposit Accounts with Banks shown in schedule 8 are detailed as below:

<b><u>Particulars</u></b>	<b><u>Amount</u></b>
<b><u>I-Savings Bank Accounts:</u></b>	
1. Institute - Canara Bank	25,19,564
2. Institute - Canara Bank - HEFA	4,35,985
3. SBI SB Account	8,29,31,280
4. DASA Bank Account-SBI	44,56,405
5. SBI-CCE Fund	3,19,593
6. SBI – NIMCET	13,25,302
7. SBI - NITK/KREC Endowment Fund	70,87,112
8. SBI-NITK Corpus Fund	12,98,923
9. SBI-Student Activity Council	29,25,258
<b><u>II-Current Account:</u></b>	
1. Institute - State Bank of India	57,04,893
2. Institute - State Bank of India	1,12,01,232
3. Institute - Syndicate Bank A/c	4,985
<b>III-Term Deposits with Schedule Banks</b>	<b>89,33,99,568</b>

**7.** Figures in the Final accounts have been rounded off to the nearest rupee.

**8.** Schedules 1 to 25 are annexed to and form an integral part of the Balance Sheet at 31st March 2020 and the Income & Expenditure account for the year ended on that date.

**9.** The existing employees' terminal benefit & Pensioners liability as per the requirement under the uniform accounting standards prescribed by the Ministry valued at ` 483.66 crores, as on 31-03-2020 by actuaries M/s. K.A.PANDIT an approved Consultants and Actuaries, Mumbai. The details are as follows:

Pension Liability	` 412.74 Crore
Leave Encashment Liability	` 36.66 Crore
Gratuity Liability	` 34.26 Crore

**10.** The General Provident Fund Account is owned by the members of NITK GPF Trust and are maintained separately. A Receipts & Payments Account, Income & Expenditure Account (on Accrual basis) and a Balance Sheet of General Provident Fund Accounts for the year 2019-20 have been attached to the Institute's Accounts. During the year a sum of ` 4,40,46,010/- has been collected and transferred to the GPF Trust Account [Investment Pattern : Central Govt. Securities 22.16%, State Govt. Securities 23.53%, Public Finance Bonds 29.20%, Combination of all the three categories 25.12%].

All portion of the New Pension Scheme funds of ` 2,60,91,409/- in respect of 199 employees who have been allotted PRA numbers has been transferred to National Securities Depository Limited (NSDL) - Central Record Keeping Agency (CRA).

**11. WORKS IN PROGRESS:**

Works in Progress is valued at cost incurred basis

**12. HEFA LOAN:**

During the year total loan availed from HEFA (Through Canara Bank) is Rs.12.41 Crores (Rs.7.61 Crore + Rs.4.80 Crore) and Interest charged to both Loans is Rs. 0.37 Crores. The interest on HEFA loans are treated as revenue expenditure and shown under Schedule no.21 of Income & Expenditure Account.

**13. TUITION FEE:**

The tuition fee is collected on a semester basis and accounted as per semester fee collection basis even though the period is spread over to two financial years.

**14. OTHER:**

1. Previous year figures have been re-casted and regrouped wherever necessary in conformity with current year presentation.

2. Tuition fee exemption has been extended to all SC/ST students along with other benefits. Hence Tuition Fee is accounted on accrual basis and other benefits such as Laptop, Book allowance, Mess Allowance etc., accounted on claim basis.

3. (i) During the year 2013-14 area of the land measuring 1.40 acres of land acquired by NHAI and compensation for the same is not yet received.

(ii) Land includes measuring 78 cents of book value ` 24,014/- which was under dispute. Out of which 62 cents of land was in the revenue court was decreed in favour of the Institute and same is appealed by the party in the tribunal and 16 cents of land is under encroachment.

4. Accrued interest earned on Investments includes Rs. 1,29,30,322/- in Investments shown under schedule 6.

5. N.I.T.K. Hostel Mess Account is maintained separately. It is a separate entity governed by the NITK Hostel Trust (R).

**Date: 24-08-2020**

**Place: Surathkal**

**(RAVINDRANATH K.)  
REGISTRAR**

**(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR**

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)  
PHASE - III  
NITK SURATHKAL, SRINIVASNAAR.**

**RECEIPT & PAYMENT FOR THE YEAR ENDED 31ST MARCH 2020**

Sl.No.	RECEIPT	Upto Previous Year Amount in Rs.	Current Year Amount in Rs.	Cumulative Amount in Rs.	Sl.No.	PAYMENT	Upto Previous Year Amount in Rs.	Current Year Amount in Rs.	Cumulative Amount in Rs.
<b>1</b>	<b>Opening Balance</b>				<b>1</b>	<b>Procurement of Assets</b>			
	i) Cash in Hand	-	-	-		Books, LRs and Software	49,46,867	-	49,46,867
	ii) Cash at Bank	-	1,42,817	-		Equipment	72,52,350	34,02,000	1,06,54,350
	iii) Fixed Deposit with Bank	-	-	-		Furniture	-	-	-
<b>2</b>	<b>Grant</b>				<b>2</b>	<b>Improve Student Learning</b>			
	TEQIP III Grant from MHRD	2,60,17,701	1,68,82,152	4,28,99,853	<b>3</b>	<b>Research Assistantship</b>			
							2,09,549	-	2,09,549
<b>3</b>	<b>Other</b>				<b>4</b>	<b>Graduates Employability</b>			
	Advances	2,03,000	2,37,858	4,40,858	<b>5</b>	<b>Faculty &amp; Staff Development</b>			
	TDS on Payments	2,01,698	62,900	2,64,598			4,82,220	-	4,82,220
	TDS on Salaries	4,368.00	-	4,368	<b>6</b>	<b>Research &amp; Development</b>			
	Deposit TDS on GST	34,800.00	77,223	1,12,023			30,89,584	31,92,874	62,82,458
	Registration Fee Collected	1,55,115.00	-	1,55,115	<b>7</b>	<b>MOOCs and Digital Learning</b>			
	GST Collected	27,920.00	-	27,920			11,79,775	43,64,363	55,44,138
	Miscellaneous Receipt	4,000.00	5,500	9,500	<b>8</b>	<b>Mentoring/Twinning System</b>			
							11,81,648	5,28,584	17,10,232
					<b>9</b>	<b>Reforms, Governance</b>			
							-	1,27,318	1,27,318
					<b>10</b>	<b>Management Capacity Development</b>			
							43,037	26,226	69,263
					<b>11</b>	<b>Hiring Consultancy Services</b>			
							41,300	41,300	82,600
					<b>12</b>	<b>Industry-Institute Interaction</b>			
							2,03,126	6,35,707	8,38,833
					<b>13</b>	<b>Incremental Operating Cost</b>			
						Consumables	-	-	-
						Operation & Maintenance of Equipment	21,240	9,440	30,680
						Office Expenses	1,40,212	34,416	1,74,628
						Meeting Expenses	6,81,031	1,28,244	8,09,275
						Hiring of Vehicles	-	-	-
						Travelling Expenses	3,92,344	85,361	4,77,705
						Staff Salary & Allowance	20,96,709	9,60,116	30,56,825

Sl.No.	RECEIPT	Upto Previous Year Amount in Rs.	Current Year Amount in Rs.	Cumulative Amount in Rs.	Sl.No.	PAYMENT	Upto Previous Year Amount in Rs.	Current Year Amount in Rs.	Cumulative Amount in Rs.
					<b>14</b>	<b>Other</b>			
						Advance.	2,09,898	3,87,518	5,97,416
						TDS Remitted (Contractor)	2,01,698	62,900	2,64,598
						TDS Remitted (Salary)	4,368	-	4,368
						Bank Charges	1,298	649	1,947
						GST Remitted	27,920	-	27,920
						Deposit TDS on GST	34,800	77,223	1,12,023
					<b>15</b>	<b>Closing Balance</b>			
						i) Cash in Hand	-	-	-
						ii) Cash at Bank	1,42,817	1,49,253	1,49,253
						iii) Fixed Deposit with Bank	-	-	-
	<b>Total</b>	<b>2,66,48,602</b>	<b>1,74,08,450</b>	<b>4,39,14,235</b>		<b>Total</b>	<b>2,66,48,602</b>	<b>1,74,08,450</b>	<b>4,39,14,235</b>

Significant Accounting Policies and Notes to accounts form part of account

Place : Mangalore

Date : 23.06.2020

**For NITIN J. SHETTY & CO**

Chartered Accountants

Firm Reg. No. 008891S

sd

**CA. NITIN J. SHETTY, Partner**

Membership No. 025990

**DIRECTOR**  
**NITK, SURATHKAL****REGISTRAR**  
**NITK, SURATHKAL**



**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)  
PHASE - III  
NITK SURATHKAL, SRINIVASNAAR.**

**INCOME & EXPENDITURE FOR THE YEAR ENDED 31ST MARCH 2020**

<b>EXPENDITURE</b>		<b>INCOME</b>	
Upto Previous Year Amount in Rs.	Current Year Amount in Rs.	Upto Previous Year Amount in Rs.	Current Year Amount in Rs.
40,64,811	31,94,958	1,55,115	-
To Improve Student Learning		By Registration Fee Collected	
2,09,549	-	4,000	5,500
" Research Assistantship		" Miscellaneous receipt	
4,82,220	-	1,73,91,137	1,33,24,056
" Graduates Employability		" Excess of Expenditure over Income.	
30,89,584	31,92,874		
" Faculty & Staff Development			
11,79,775	43,64,363		
" Research & Development			
11,81,648	5,28,584		
" Mentoring/Twinning System			
2,03,126	6,35,707		
" Industry-Institute Interaction			
41,300	41,300		
" Hiring Consultancy Services			
-	1,27,318		
" Reforms, Governance			
-	26,226		
" Management Capacity Development			
" <b>Incremental Operating Cost</b>			
1,40,212	34,416		
Office Expenses			
6,81,031	1,28,244		
Meeting Expenses			
7,29,645	85,361		
Travelling Expenses			
14,66,613	9,60,116		
Staff Salary & Allowance			
40,79,440	9,440		
Operation & Maintenance of Equipment			
1,298	649		
Bank Charges			
<b>1,75,50,252</b>	<b>1,33,29,556</b>	<b>1,75,50,252</b>	<b>1,33,29,556</b>
<b>Total</b>	<b>3,08,79,808</b>	<b>Total</b>	<b>3,08,79,808</b>

Significant Accounting Policies and Notes to accounts form part of account

Place : Mangalore  
Date : 23.06.2020

**For NITIN J. SHETTY & CO**  
Chartered Accountants  
Firm Reg. No. 008891S

**REGISTRAR**  
NITK, SURATHKAL

**DIRECTOR**  
NITK, SURATHKAL

**CA. NITIN J. SHETTY, Partner**  
Membership No. 025990

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)  
PHASE - III  
NITK SURATHKAL, SRINIVASNAGAR.  
BALANCE SHEET AS AT 31ST MARCH 2020**

S.NO.	PARTICULARS	SCHEDULE NO.	Rs.	CURRENT YEAR Rs.	PREVIOUS YEAR Rs.
<b>A</b>	<b>SOURCE OF FUNDS</b>				
	Opening Balance.		1,23,48,932		49,59,882
	Add: TEQIP III Grant received during the year from MHRD		<u>1,68,82,152</u>		<u>1,69,99,619</u>
			2,92,31,084		2,19,59,501
	Less : Excess of Expenditure over Income		<u>1,33,24,056</u>	1,59,07,028	1,23,48,932
	<b>TOTAL</b>		<b><u>1,59,07,028</u></b>		<b><u>1,23,48,932</u></b>
<b>B</b>	<b>APPLICATION OF FUNDS</b>				
	1) Fixed Assets:	I		1,56,01,217	1,21,99,217
	2) Work in Progress			-	-
	3) A. Current Assets, Loans and Advances:				
	a) Cash Balance		-		-
	b) Bank Balance		1,49,253		1,42,817
	c) Advance for Capital Goods		-		-
	d) Loans and Advances		<u>1,56,558</u>		<u>6,898</u>
			3,05,811		1,49,715
	B. Less : Current Liabilities.		-	3,05,811	1,49,715
	<b>TOTAL</b>			<b><u>1,59,07,028</u></b>	<b><u>1,23,48,932</u></b>

Significant Accounting Policies and Notes to accounts forming part of account

Place : Mangalore

Date : 23.06.2020

**For NITIN J. SHETTY & CO**  
Chartered Accountants  
Firm Reg. No. 008891S

sd

**CA. NITIN J. SHETTY, Partner**  
Membership No. 025990

**DIRECTOR**  
**NITK, SURATHKAL**

**REGISTRAR**  
**NITK, SURATHKAL**

## NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL COLLEGE, PROVIDENT FUND TRUST BOARD.

Receipts and Payment Account for the year ended 31st March, 2020

RECEIPTS		PAYMENTS	
Amount in Rupees		Amount in Rupees	
To		By	
<b>OPENING BALANCE:</b>		Interest Paid to GPF Members	22261824
S.B.I., Surathkal, S.B. A/c. No. 1017536747-6	1881064	Interest Paid on Purchase of Investments	295977
Investments	<u>268118609</u>	Premium Paid on Purchase of Investments	355500
<b>INTEREST:</b>		Final/Partial Settlement to GPF Members	35220179
On Investments.	22388878	Audit Fee	23600
On Special Deposit with S.B.I., Mangalore A/C No.4	605679	Bank Charges	89
On Bank Balance	<u>226033</u>		
GPF Subscription & Interest	23220590		
Income Tax Refund and Interest on IT Refund	66307834		
	230910		
		<b>CLOSING BALANCE:</b>	
		S.B.I., Surathkal, S.B. A/c. No. 1017536747-6	10483230
		Investments	<u>291118609</u>
			301601839
			<u><b>359759007</b></u>
			<u><b>359759007</b></u>

As per report of even date.

Place : Mangalore.  
Date : 23-06-2020Place : Mangalore.  
Date : 23-06-2020For **NITIN J. SHETTY & CO.,**  
Chartered Accountants  
Firm Reg. No. 008891S

sd

**PRESIDENT****SECRETARY****CA. NITIN J. SHETTY, Partner**  
Membership No. 025990

## NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL COLLEGE, PROVIDENT FUND .

Income and Expenditure Account for the year ended 31st March, 2020

EXPENDITURE		INCOME	
Amount in Rupees		Amount in Rupees	
To	Interest Paid to GPF Members	22261824	By Interest Received :
"	Interest Paid on Purchase of Investments	295977	Interest on Investments
"	Premium Paid on Purchase of Investments	355500	Add : Accrued Int. of Current Year
"	Audit Fee	23600	22388878
"	Bank Charges	89	32366666
"	Excess of Income over Expenditure	1070243	25625544
			23028066
			605679
			226033
			147454
			24007232
		<u>24007232</u>	<u>24007232</u>

As per report of even date.

Place : Mangalore.  
Date : 23-06-2020Place : Mangalore.  
Date : 23-06-2020

For NITIN J. SHETTY &amp; CO.,

Chartered Accountants  
Firm Reg. No. 008891S

PRESIDENT

SECRETARY

CA. NITIN J. SHETTY, Partner  
Membership No. 025990

sd

**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL COLLEGE, PROVIDENT FUND.  
BALANCE SHEET AS ON 31ST MARCH, 2020**

<b>LIABILITIES</b>	Amount in Rupees	<b>ASSETS</b>	Amount in Rupees
<b>GENERAL FUND :</b>		<b>INVESTMENTS :</b>	
Balance as per last Balance Sheet	7977015	Govt. and Other Securities	291118609
Add : Excess of Income over Expenditure	<u>1070243</u>	Accrued Interest on Investments	<u>3236666</u>
			294355275
<b>GPF SUBSCRIPTION :</b>		<b>TAX DEDUCTED AT SOURCE.</b>	45297
Balance as per last Balance Sheet	264748889		
Add : GPF Subscription & Interest	<u>66307834</u>	<b>CLOSING BALANCE :</b>	
	331056723	With SBI SB. A/c. No. 1017536747-6	10483230
Less : Final/Partial Settlement	<u>35220179</u>		
	295836544		
	<u><u>304883802</u></u>		<u><u>304883802</u></u>

**As per report of even date.**

Place : Mangalore.  
Date : 23-06-2020

Place : Mangalore.  
Date : 23-06-2020

**For NITIN J. SHETTY & CO.,**  
Chartered Accountants  
Firm Reg. No. 008891S

sd  
**CA. NITIN J. SHETTY, Partner**  
Membership No. 025990

**SECRETARY**

**PRESIDENT**

## NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL COLLEGE, NPS TIER - 1 ACCOUNT

Receipts and Payment Account for the year ended 31st March, 2020

	Rs.	Ps.	Rs.	Ps.	PAYMENTS	Rs.	Ps.	Rs.	Ps.
<b>RECEIPTS</b>									
To									
<b>OPENING BALANCE :</b>									
Balance with main Fund		282498.00			By Remittance to NSDL			61373486.00	
"					"				
<b>NPS Tier-I Account :</b>					<b>CLOSING BALANCE :</b>				
Own Subscription	26091409.00				Balance with main Fund			4266042.00	
Institutes Subscription	39265621.00			65357030.00					
				<b>65639528.00</b>				<b>65639528.00</b>	

PLACE: SURATHKAL

DATE : 24-08-2020

(RAVINDRANATH K.)  
REGISTRAR  
N.I.T.K., SURATHKAL(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K., SURATHKAL

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL COLLEGE, NPS TIER - 1 ACCOUNT  
BALANCE SHEET AS ON 31ST MARCH, 2019

	Rs. Ps.	Rs. Ps.	ASSETS	Rs. Ps.	Rs. Ps.
<b>LIABILITIES</b>					
<b>CURRENT LIABILITIES:</b>			<b>CLOSING BALANCE:</b>		
Amount Payable to NSDL		4266042.00	Balance with main Fund		4266042.00
		<u>4266042.00</u>			<u>4266042.00</u>

PLACE: SURATHKAL  
DATE : 24-08-2020

( RAVINDRANATH K. )  
REGISTRAR  
N.I.T.K.,SURATHKAL

(PROF. K. UMAMAHESHWAR RAO)  
DIRECTOR  
N.I.T.K.,SURATHKAL

# NOTES

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## NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL

Mangalore, Karnataka, India - 575 025

Phone: +91 - 824 - 2474000/26

Fax: +91 - 824 - 2474033

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