# National Institute of Technology Karnataka, Surathkal

## Mangalore - 575 025, India


# Annual Report

## 2018 - 19

## VISION

To facilitate transformation of students into good human beings, responsible citizens and competent professionals, focusing on assimilation, generation and dissemination of knowledge.

## MISSION

- Impart quality education to meet the needs of profession and society and achieve excellence in teaching-learning and research.
- Attract and develop talented and committed human resource ,and provide an environment conducive to innovation, creativity, team-spirit and entrepreneurial leadership.
- Facilitate effective interactions among faculty and students, and foster networking with alumni, industries, institutions and other stake-holders.
- Practise and promote high standards of professional ethics, transparency and accountability.

# NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL

## MANGALORE - 575 025 INDIA

# ANNUAL REPORT

# 2018-19


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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
5487 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 Progaramme (SIP).

## BUDGET (2018-19)

Total Financial Outlay Rs. 204.80 Crores
Internal Revenue Generated Rs. 56.53 Crores
Consultancy & Testing Earnings Rs.1.5 Crores
Corpus Fund of more than Rs. 219 Crores

## PUBLICATIONS (2018-19)

International Journals – 536
National Journals – 14
International Conference – 464
National Conference – 76

## DOCTORAL OUTPUT

2016 -17 - 57 candidates
2017- 18 - 58 candidates
2018 -19 – 124 candidates
Doctoral students on rolls –860

## 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.

### Career Development Centre

### (Formerly Training And Placement)

NITK is ranked among the top institutions for student placements. During 2018-19 about 270 companies visited.. UG placements 92% and 56% PG students got placement through the campus selection. The department also facilitates internships for students within India and overseas.

## 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.

### MOUs between Foreign Countries:

1. 5th April 2018, 5 Years, Universita Degli Studi di Pavia, Italy, Student exchange, Collaborative research.

2. 19th April 2018, 3 Years, Arya Technocrats, Belagavi, Collaborative research

3. Entrepreneurship Development - Institutional Association MOU

4. 30th May 2018 (3 Years), Eaton Technologies Pvt. Ltd, Additive Manufacturing Research and development

5. 13th August 2018, (36 Months), SimLife Electric Private Ltd Bangalore, Solar Inverters

6. 10th August 2018, (60 Months), Aum Techno Spray, Bangalore, Manufacturing of Engineering Components

7. 15th November 2018, (3Years), IIT Bombay, Faculty exchange/ Student exchange/Joint Research

8. 3rd December 2018, (4 Years), Kanchanaburi Campus, Mahidol University Thailand, Collaborative Research

9. 17th November,2018, 3 Years, National Institute of Disaster Management, New Delhi, Research & Development, Capacity building & Documentation activities for mainstreaming disaster risk reduction in several areas

10. 14th December 2018, 5 Years, National Law School of India University Bengaluru Technical Support for IPR Cyber Law & Forensics and other related areas, Research R&D, Workshop & Training Programs

11. 30th January 2019, 5 years, KIOCL Limited Mangalore, understanding to explore collaboration, exchange of knowledge and cooperation on the basis of mutual benefit to the both organization

12. 21st February, 2019, 5 Years, Human Resocia Co. Ltd NITK and Human will collaborate on effort to create employment opportunities in Japan for graduates from the NITK Herein after referred to as the “GNITK Project. Both NITK and Human shall ensure to make this Japanese employment opportunity the best human resource development opportunities.

13. 15th March 2019, 3 Years, Department of Nanoscience & Engineering/BK21PLUS Nano Convergence Project Group of INJE University, Republic of Korea, Exchange of Faculty/Exchange of Research Scholars and Students/Exchange of information and materials in those fields which are of interest to both parties /Activities such as collaborative research, Lectures, and Symposiums etc/ Joint Cultural Programmes.

14. 20th March, 2019, 3 Years, Institute of Radio Frequency and optoelectronics Integrated Circuits plus State Key Lab of Bioelectronics, South East University Exchange of Faculty/Exchange of Research Scholars and Students/Exchange of information and materials in those fields which are of interest to both parties /Activities such as collaborative research, Lectures, and Symposiums etc/ Joint Cultural Programme

## TEQIP – III

NITK has been consistently identified as one of the top performers in implementing the TEQIP project. Based on the good performance in TEQIP – I and TEQIP – II and on the merit & Strength of our institutional Development Proposal (IDP) for TEQIP- III, our Institute has been selected to participate in TEQIP – III with a total outlay of Rs. 700 lakhs. TEQIP – III commenced with effect from – 01-04-2017. Our Institute has been designated as Mentor institute for Government Engineering college, Jhalawar, Rajasthan. A Memorandum of understanding (MoU) with MHRD and agreement between NIT and Mentee Institute GEC Jhalawar have been signed on 7th july 2017.

# ANNUAL REPORT 2018-2019

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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. Subsquently, 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 5th 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 in looking at 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, 28 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 college campus.

## 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 and a healthy climate. The National Highway NH 66 separates the campus into Western Side and Eastern Side campus. TheWestern Side of the campus houses the Departments of E&E, E&C, Computer and Information Technology, Guest Houses, STEP, Yoga centre and pristine beach.

# 2. GOVERNANCE AND 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 nomines. 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 the Governement of India.

### COUNCIL, BOG AND OTHER COMMITTEES

### COUNCIL OF NIT'S

1. Minister of HRD, Government of India.
2. Education Secretary, Ministry of HRD, 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, Government of India
11. Secretary, Department of Space Goverentment of India.
12. Not less than three but not more than five persons to be nominated member by the Visitor, at lease one of whom shall be a woman, 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 that Government dealing with technical education.
15. Financial Advisor, 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
4th A Cross, 2nd Block, HRBR Layout,
Kalyana Nagar, Bengaluru – 560043

#### MEMBERS

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

Dr. Sukhbir Singh Sandhu IAS
Additional Secretary (TE) & CVO
Ministry of Human Resource Development
Govt. of India, Dept. of Higher Education
107-C, Shastri Bhavan, New Delhi - 110 001.

Ms. Darshana M Dabral IAS
Joint Secretary and Financial Advisor
Integrated Finance Bureau
Ministry of Human Resource Development,
Government of India, 120-C, Shastri Bhavan,
New Delhi - 110 001

**Nominee of the Director, IIT-Bombay.**

Prof. A K Suresh
Professor of Chemical Engineering and
Dy. Director (Academic & Infrastructure Affairs)

Indian Institute of Technology Bombay
Powai, Mumbai – 400 076

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

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

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

Prof. Udaya Bhat K.
Professor
Department of Metallurgical & Materials 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
4th A Cross, 2nd Block, HRBR Layout
Kalyana Nagar, Bangalore – 560043

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Govt. of India, Dept. of Higher Education
122-C, Shastri Bhavan
New Delhi - 110 001

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Joint Secretary and Financial Advisor
Integrated Finance Bureau
Ministry of Human Resource Development
Govt. of India
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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**

Shri. Madan Mohan
DDG (HE), MHRD, GOI, Dept. of Higher Education, Shastri Bhavan, New Delhi

Shri. Anil Kumar
Director - Finance
Dept. of Higher Education,
MHRD, GOI, Shastri Bhavan, New Delhi

Prof. Subhash C Yaragal
Dean (P&D), NITK, Surathkal
Mangaluru – 575 025

Dr. D Azad
HOD, School of Architecture
University Visvesvaraya College of Engineering, Bengaluru University, Jnana Bharathi, Bengaluru

Shri Aftab Ahmed, Chief Engineer, Chamundeshwari Electricity Supply Corporation Limited (CESC Ltd.), Zonal Office, Ring Road, Dattagalli,Kanakadasanagar, Mysuru – 570017

Shri P K Naidu, Project Manager, CPWD, NITK-S Project Circle, NITK Campus,Srinivasnagar, Mangaluru – 575025

***Member – Secretary***

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

***OTHER COMMITTEES:***

***SENATE***

**Chairman**

Dr. K. Uma Maheshwar Rao
Director
NITK, Surathkal – 575 025

***External Members***

Dr. N. C. Shivaprakash
Dr. (Ms.) Rama Govindarajan
Dr. (Ms.) Haripriya Gundimeda

***Members:-***

Ananthanarayana V. S., PhD.
M. B. Saidutta, PhD.
Aloysius Henry Sequeira, PhD.
Subhash C Yaragal, PhD.
U Shripathi Acharya, PhD.
K Panduranga Vittal, PhD.
Jagannath Nayak, PhD.
Vidya Shetty K, PhD.
Ashvini Chaturvedi, PhD.
Amba Shetty, PhD.
Dwarakish G S, PhD.
Kiran G. Shirlal PhD.
Lakshman Nandagiri, PhD.
Subba Rao, PhD.
A Mahesha, PhD.
Paresh Chandra Deka, PhD.
Hari Mahalingam, PhD.
G. Srinikethan, PhD.
Raj Mohan B, PhD.
Gopal Mugeraya, PhD. (on deputation to NIT Goa as Director)
Arun Mohan Isloor, PhD.
Denthaje Krishna Bhat, PhD.
A. Chitharanjan Hegde, PhD.
A. Nityananda Shetty, PhD.
A. Vasudeva Adhikari, PhD.
B Ramachandra Bhat, PhD.
K Swaminathan, PhD.
Katta Venkataraman, PhD.
A U Ravi Shankar, PhD.
K S Babu Narayan, PhD.
Varghese George, PhD.
M C Narasimhan, PhD.
R Shivashankar, PhD.
S Shrihari, PhD.
K N Lokesh, PhD.
Sitaram Nayak, PhD.
B R Jayalekshmi, PhD.
Alwyn Roshan Pais, PhD.
K. Chandrasekaran, PhD.
P. Santhi Thilagam, PhD.
Annappa, PhD.
T. Laxminidhi, PhD.
John D'Souza, PhD.
M. S. Bhat, PhD.
Muralidhar Kulkarni, PhD.
Sumam David S., PhD.
Shubhanga K N, PhD.
Gururaj S Punekar, PhD.
Udayakumar R.Y. PhD. (on deputation to MNIT, Jaipur as Director)
G. Ram Mohana Reddy, PhD.
B. R. Shankar, PhD.
Shyam S. Kamath, PhD.
Santhosh George, PhD.
A. Kandasamy, PhD.
Murulidhar N. N., PhD.
Suresh M Hegde, PhD.
Shrikantha S. Rao, PhD.
Prasad Krishna, PhD.
Ashok Babu T P, PhD.
G. C. Mohan Kumar, PhD.
Gangadharan K. V., PhD.
H. Suresh Hebbar, PhD.

Ravikiran Kadoli, PhD.
S. M. Kulkarni, PhD.
Narendranath S., PhD.
Vijay H. Desai, PhD.
S. M. Murigendrappa, PhD.
Anandhan Srinivasan, Ph.D
Udaya Bhat K., Ph.D
A. O. Surendranathan, Ph.D
K. Narayan Prabhu, Ph.D
Karra Ram Chandar, Ph.D
V. R. Sastry, Ph.D
Ch. S. N. Murthy, Ph.D
M. Govinda Raj, Ph.D
H.S. Nagaraja, Ph.D
M. N. Satyanarayan, Ph.D
H. D. Shashikala, Ph.D
Kasturi. V. Bangera, Ph.D
N. K. Udayashankar, Ph.D
S Pavan Kumar, Ph.D
K. B. Kiran, Ph.D
P. G. Mohanan
Mallikarjuna Angadi, Ph.D

**Secretary**

K. Ravindranath

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

***Constitution:***

| | |
|---|---|
| Dean (AA) | Chairman |
| Dean (Faculty Welfare) | Member |
| Dean (Planning & Development) | Member |
| Dean (Students' Welfare) | Member |
| Dean (Research & Consultancy) | Member |
| Dean (Alumni Affairs & Institutional Affairs) | Member |
| H.O.D. of each Department/ his nominee | Member |
| BOG member representing the faculty | Member |
| Three Representatives from the premier Academic Institutions such as IIT, NIT, IISc.,IIM, others belonging to Southern region | Member |
| Assistant Registrars (Academic) | Member |
| Registrar | Secretary |

## QUARTERS ALLOTMENT COMMITTEE 2018-19

| | |
|---|---|
| Director | President |
| A H Sequeira, Ph.D. Dean (F.W) | Chairman |
| Muralidhar Kulkarni, Ph.D (BOG Member) | Member |
| Uday Bhat, Ph.D (BOG Member) | Member |
| Ravindranath, Registrar | Member |
| Ram Mohan Y, Joint Registrar | Member |
| K Narayana Prabhu, Ph.D. | Member |
| P Santhi Thilagam, Ph.D. | Member |
| Monappa Mera, Supdt. A/cs II | Member |
| Sreejith A, Grievance Redressal Officer (PwD) | Member |
| The President, NITK, Employees Association(R) | Member |
| The President, NITK, Non-Teaching Employees Association (R) | Member |
| Arun Kumar Thalla, Ph.D., R.E. I/c & Faculty I/c (estate & Works | Member/ Secretary |

## INSTITUTE GRIEVANCE COMMITTEE 2018

| | |
|---|---|
| Dwarakish G S, Ph.D. Dept. of Applied Mechanics & Hydraulics | Chairman |
| Sripathi U, Ph.D., Dept. of E & C Engg. | Member |
| Satyanarayana, Ph.D., Dept. of Physics | Member |
| Sam Johnson P, Ph.D., Dept. of MACS | Member |
| Mrs. Yashavanthi, Asst. Engineer (SG-II) Dept. of Computer Engg. | Member |
| Vijaykumar Ghode., Sr. Scintific Officer, Central Computer Centre | Member |
| Gangamma S, Ph.D., Dept. of Chemical Engg. | Member |

| | |
|---|---|
| Mr. Soumen Karmakar, Asst. Registrar(Admn.) | Member |

## SECURITY COMMITTEE

Dean (Faculty Welfare)
Dean (P&D)
Dean (SW)
Registrar
Chairman, CCC
Prof. i/c Hostels
Resident Engineer
Dy. Registrar (A/cs)
Faculty i/c Estate & works
Faculty i/c Ele.works
Faculty i/c Security
Sri. Manohar Karanth, Security Officer

## *LIBRARY ADVISORY COMMITTEE*

| | |
|---|---|
| Lakshman Nandagiri, Ph.D. 1.1.2018 | Chairman |
| Subrahmanya K, Ph.D. | Member |
| Prasanna B D, Ph.D. | Member |
| Udaya Kumar D, Ph.D. | Member |
| Arun Kumar Thalla, Ph.D. | Member |
| B R Chandavarkar, Ph.D. | Member |
| Nagendrappa H, Ph.D. | Member |
| P Srihari, Ph.D. | Member |
| Sowmya Kamath, Ph.D. | Member |
| V Murugan, Ph.D. | Member |
| Anish S, Ph.D. | Member |
| Shashi Bhushan Arya, Ph.D. | Member |
| B M Kunar, Ph.D. | Member |
| Ajith K M, Ph.D. | Member |
| Suprabha K R, Ph.D. | Member |
| Iranna M Shettar | Member |
| Anasuya C | Member |
| Mallukarjun Angadi, Ph.D. | Secretary |

## *SPORTS ADVISIORY COMMITTEE*

| | |
|---|---|
| Director | President |
| Dean (S. W.) | Chairman |
| Dean (F.W.) | Member |
| Registrar | Member |
| Joint Registrar | Member |
| Hem Prasad Nath, Ph.D., SAS officer | Member |
| Manoj, PhD.,SAS Officer | Member |
| Resident Engineer | Member |
| Faculty In-charge Hostel Affairs | Member |
| N Lakshman, Ph.D | Member |
| Jagannath Nayak, Ph.D. | Member |
| B M Dodamani, Ph.D. | Member |
| Aruna M, Ph.D. | Member |
| Sam Johnson, Ph.D. | Member |
| Kalpana Bhat, Ph.D. | Member |
| Ram Prasad Chowdhury, Ph.D. | Member |
| Raviraj H Mulangi, Ph.D. | Member |
| Mr Iranna Shetter, Library | Member |
| Hari Prasad Dasari, Ph.D. | Member |
| President Students' Council | Member |
| Girls Representatives | Member |
| R. C. Convener | Member |
| All Captains | Member |
| Asst. Physical Director | Member/ Secretary |

## NITK HEALTH CARE COMMITTEE

| | |
|---|---|
| R Shivashankar, Ph.D. Dept.of Civil Engineering | Chairman |
| A Vittal Hegde, Ph.D. Dept.of Applied Mechnaics & Hydraulics | Member |
| Narayan Prabhu, Ph.D. Dept. of Metallurgical & Materials Engg. | Member |
| G Ram Mohana Reddy, Ph.D. Dept. of Information Technolgoy | Secretary |

## COMPLAINTS COMMITTEE

| | |
|---|---|
| Mrs. Vidya Shetty K, Ph.D. | Chairperson |
| Harsha Vardhan, Ph.D. | Member |
| Geetha V, Ph.D. | Member |
| Suprabha K. R., Ph.D. | Member |
| Sri. Shekar, Sr. Supdt. | Member |
| Ms. Octavia Zeena D'Souza, Stenographer (SG-II) | Member |
| Mrs. Manjula V Prasad | Secretary |

# 3. DEPARTMENTS AND SCHOOLS

| | |
|---|---|
| Applied Mechanics & Hydraulics | (AM) |
| Chemical Engineering | (CH) |
| Chemistry | (CY) |
| Civil Engineering | (CV) |
| Computer Engineering | (CO) |
| Electrical & Electronics Engineering | (E&E) |
| Electronics & Communication Engineering | (E&C) |
| Information Technology | (IT) |
| Mathematical & Computational Sciences | (MA) |
| Mechanical Engieering | (ME) |
| Metallurgical & Materials Engineering | (MT) |
| Mining Engineering | (MN) |
| Physics | (PH) |

**SCHOOLS** (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 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 Design And Precision Engg
13 Power & Energy Systems
14 VLSI Design
15 Commmunication Engg
16 Chemical Plant Design
17 Industrial Pollution Control Engg.
18 Industrial Biotechnolgy
19 Computational Mathematics
20 Materials Engg
21 Process Metallurgy
22 Nanotechnology
23 Computer Science & Engg
24 Computer Science & Engg- Information Security
25 Information Technology

***III M.Tech. by Research :*** In all the above M.TechProgramme and in the Department of Mining - M.Tech Research Programme in Rock Excavation Technolgy 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 course and interdisciplinary specializations.

## 4.2 ACADEMIC CALENDAR

| Academic Year | Programmes | Admission Commenced on | Admission closed on |
|---|---|---|---|
| 2018-19 | B.Tech. | 19.7.2018 | 23.7.2019 |
| 2018-19 | M.Tech. | 25.7.2018 | 27.7.2018 |
| 2018-19 | M.Tech. by Research/ Spon. | 9.7.2018 | 13.7.2018 |
| 2018-19 | MCA | 16.7.2018 | 31.7.2018 |
| 2018-19 | M.B.A. | 14.5.2018 | 18.5.2018 |
| 2018-19 | M.Sc. (Physics & Chemistry) | 25.7.2018 | 31.7.2018 |
| 2018-19 (July Session) | Ph.D. | 9.6.2018 | 13.7.2018 |
| 2018-19 (Dec. Session) | Ph.D. | 17.12.2018 | 24.12.2018 |

# 5. ADMISSION POLICIES

## 5.1 ADMISSION PROCEDURE

### B. Tech.:-

The Government of India, Department of 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 by CBSE New Delhi by giving 40% weightage to class XII and 60% to 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 as per the guidelines issued by the MHRD. 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. The Ministry of Human Resource Development, Government of India had taken a decision to, inter alia, improve the gender balance in the undergraduate programme at IITs, NITs from the current (approx) 8% to 14% in 2018-19 by creating supernumerary seats specifically for females.

### 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 NITK, Delhi.

After CCMT allotment of seats, the vacant and unfilled seats were filled in Spot admission on 8.8.2018 at NITK, Surathkal for the GATE candidates on merit basis.

### *M.Tech.(SponsoredSeats/Research):-*

Selection of candidates for admission were made on GATE score or in some of the programmes, selection will be based on at least 70% weightage to GATE score and the remaining 30% weightage to academic performance in qualifying examination or / 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 made on the basis of NIMCET. Admissions were made through a centralized counseling by NITK, Surathkal.

### M.B.A:-

Selection was based on CAT score and performance in the qualifying exam and Interview.

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

Selection of candidates for admissions was made on the basis of CCMN Admissions were made through a centralized counseling by NIT, Rourkela.

### *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.

# 6. ADMISSIONS FOR 2018-19

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

### I. B.Tech.

| | | |
|---|---|---|
| 1 | Admission through JEE (Main) Rank | 767 |
| 2 | ICCR Sponsored | 4 |
| 3 | DASA Scheme | 104 |
| 4 | Study in India Scheme | 6 |
| | **Total** | **881** |

### II. M.Tech Programme:-

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

| | | |
|---|---|---|
| 1 | With GATE qualifications for scholarship seats | 476 |
| 2 | Sponsored candidates | 02 |
| 3 | Admission under DASA Scheme | 01 |
| 4 | QIP candidates | 05 |
| 5 | L&T Sponsored Candidates | 29 |
| 6 | NAVY sponsored | 02 |
| 7 | ICCR Sponsored | 07 |
| | **Total** | **522** |

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

| | | |
|---|---|---|
| 1 | GATE qualified with Scholarship | 18 |
| 2 | Non Scholarship | 12 |
| | **Total** | **30** |

### 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.K Surathkal. A Total 92 candidates admitted were as follows:-

| | |
|---|---|
| OC | 43 |
| OBC | 25 |
| SC | 14 |
| ST | 07 |
| PWD | 03 |
| **Total** | **92** |

### V M.B.A.:

Selection of candidates were made on the basis of CAT 2018 / GMAT-2018 among candidates applied to NITK, Surathkal, in addition to Group Discussion and interview. A total 25 candidates were admitted as follows:-

| | |
|---|---|
| OC | 25 |
| OBC | 0 |
| SC | 0 |
| ST | 0 |
| **Total** | **25** |

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

Selection of candidates for admission to M.sc (Chemistry / Physics) , were made on the basis of score obtained in JAM-2018. Admissions were made through a Centralized counseling conducted by N.I.T. Rourkela. Following are the admission details.

### i. M.Sc ( Chemistry)

| | |
|---|---|
| OC | 13 |
| OBC | 07 |
| SC | 04 |
| ST | 02 |
| **Total** | **26** |

### ii M.Sc (Physics)

| | |
|---|---|
| OC | 13 |
| OBC | 06 |
| SC | 03 |
| ST | 02 |
| **Total** | **24** |

### VII. Ph.D. Programme:

| | |
|---|---|
| OC | 67 |
| OBC | 21 |
| SC | 12 |
| ST | 07 |
| Sponsored | 04 |
| External Registrants (Part Time) | 31 |
| NPIU -Sponsoring Assistant Professors (Temporary) Engaged under TEQIP-III | 01 |
| QIP | 12 |
| Ethiopian | 5 |
| INSPIRE / CSIR – Scholarship | 2 |
| **Total** | **162** |

A total number of 881 candidates have been admitted to the First Year B.Tech. Programmes according to the guidelines, instructions issued by the MHRD.

The PG & Ph.D. admissions have been made according to the Rules and Regulations issued by the Senate of the Institute.

| B.Tech I Year | 6. 2 B.Tech. students strength for the year 2018-19 | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 |
| Civil Engg | 12 | 2 | 14 | 6 | 1 | 7 | 21 | 3 | 24 | 11 | 3 | 14 | 1 | 0 | 1 | 1 | 0 | 1 | 38 | 9 | 47 | 90 | 18 | 108 |
| Mechanical Engg. | 19 | 3 | 22 | 10 | 2 | 12 | 38 | 6 | 44 | 19 | 4 | 23 | 1 | 0 | 1 | 0 | 0 | 0 | 66 | 11 | 77 | 153 | 26 | 179 |
| Electrical & Electronics Engg. | 12 | 3 | 15 | 6 | 1 | 7 | 23 | 4 | 27 | 9 | 5 | 14 | 0 | 0 | 0 | 1 | 0 | 1 | 40 | 7 | 47 | 91 | 20 | 111 |
| Electronics & Communication Engg. | 11 | 3 | 14 | 5 | 1 | 6 | 21 | 5 | 26 | 13 | 4 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 7 | 46 | 89 | 20 | 109 |
| Chemical Engg. | 5 | 1 | 6 | 3 | 1 | 4 | 11 | 2 | 13 | 4 | 3 | 7 | 0 | 0 | 0 | 1 | 0 | 1 | 16 | 5 | 21 | 40 | 12 | 52 |
| Metallurgical & Materials Engg. | 6 | 2 | 8 | 4 | 0 | 4 | 9 | 4 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 4 | 23 | 38 | 10 | 48 |
| Mining Engg. | 5 | 1 | 6 | 2 | 2 | 4 | 7 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 19 | 30 | 8 | 38 |
| Computer Sci'ence & Engg. | 14 | 2 | 16 | 5 | 2 | 7 | 23 | 4 | 27 | 12 | 2 | 14 | 4 | 0 | 4 | 1 | 0 | 1 | 42 | 6 | 48 | 101 | 16 | 117 |
| Information Technology | 12 | 2 | 14 | 6 | 0 | 6 | 21 | 5 | 26 | 8 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 11 | 47 | 83 | 21 | 104 |
| **Total** | **96** | **19** | **115** | **47** | **10** | **57** | **174** | **35** | **209** | **76** | **24** | **100** | **6** | **0** | **6** | **4** | **0** | **4** | **312** | **63** | **375** | **715** | **151** | **866** |

| B.Tech II 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 |
| Civil Engg | 11 | 3 | 14 | 5 | 1 | 6 | 21 | 1 | 22 | 6 | 5 | 11 | 36 | 6 | 42 | 79 | 16 | 95 |
| Mechanical Engg. | 19 | 0 | 19 | 10 | 1 | 11 | 34 | 1 | 35 | 21 | 3 | 24 | 66 | 3 | 69 | 150 | 8 | 158 |
| Electrical & Electronics Engg. | 14 | 0 | 14 | 6 | 1 | 7 | 24 | 2 | 26 | 7 | 3 | 10 | 38 | 9 | 47 | 89 | 15 | 104 |
| Electronics & Communication Engg. | 12 | 2 | 14 | 7 | 0 | 7 | 23 | 2 | 25 | 13 | 4 | 17 | 37 | 8 | 45 | 92 | 16 | 108 |
| Chemical Engg. | 4 | 2 | 6 | 2 | 1 | 3 | 10 | 2 | 12 | 6 | 2 | 8 | 17 | 5 | 22 | 39 | 12 | 51 |
| Metallurgical & Materials Engg. | 7 | 0 | 7 | 3 | 0 | 3 | 12 | 0 | 12 | 0 | 0 | 0 | 16 | 3 | 19 | 38 | 3 | 41 |
| Mining Engg. | 4 | 0 | 4 | 3 | 0 | 3 | 10 | 2 | 12 | 0 | 0 | 0 | 19 | 1 | 20 | 36 | 3 | 39 |
| Computer Engg. | 12 | 1 | 13 | 7 | 0 | 7 | 23 | 3 | 26 | 11 | 5 | 16 | 44 | 2 | 46 | 97 | 11 | 108 |
| Information Technology | 12 | 1 | 13 | 4 | 2 | 6 | 22 | 5 | 27 | 10 | 2 | 12 | 40 | 5 | 45 | 88 | 15 | 103 |
| **Total** | **95** | **9** | **104** | **47** | **6** | **53** | **179** | **18** | **197** | **74** | **24** | **98** | **313** | **42** | **355** | **708** | **99** | **807** |

| B.Tech III 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 |
| Civil Engg | 10 | 3 | 13 | 7 | 0 | 7 | 18 | 2 | 20 | 11 | 4 | 15 | 1 | 0 | 1 | 22 | 11 | 33 | 69 | 20 | 89 |
| Mechanical Engg. | 19 | 0 | 19 | 11 | 0 | 11 | 34 | 2 | 36 | 20 | 0 | 20 | 2 | 0 | 2 | 51 | 4 | 55 | 137 | 6 | 143 |
| Electrical & Electronics Engg. | 10 | 4 | 14 | 3 | 0 | 3 | 15 | 10 | 25 | 11 | 3 | 14 | 4 | 0 | 4 | 30 | 17 | 47 | 73 | 34 | 107 |
| Electronics & Communication Engg. | 11 | 3 | 14 | 7 | 0 | 7 | 24 | 1 | 25 | 14 | 4 | 18 | 0 | 1 | 1 | 35 | 12 | 47 | 91 | 21 | 112 |
| Chemical Engg. | 5 | 1 | 6 | 3 | 1 | 4 | 9 | 1 | 10 | 7 | 2 | 9 | 0 | 0 | 0 | 7 | 9 | 16 | 31 | 14 | 45 |
| Metallurgical & Materials Engg. | 5 | 1 | 6 | 1 | 3 | 4 | 8 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 7 | 17 | 24 | 13 | 37 |
| Mining Engg. | 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 | 13 | 3 | 16 | 0 | 2 | 2 | 34 | 12 | 46 | 81 | 27 | 108 |
| Information Technology | 10 | 3 | 13 | 1 | 3 | 4 | 18 | 8 | 26 | 9 | 3 | 12 | 0 | 0 | 0 | 39 | 7 | 46 | 77 | 24 | 101 |
| **Total** | **87** | **18** | **105** | **42** | **9** | **51** | **150** | **32** | **182** | **85** | **19** | **104** | **7** | **3** | **10** | **241** | **80** | **321** | **612** | **161** | **773** |

| B.Tech IV Year | SC | | | ST | | | OBC | | | DASA | | | MEA | | | 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 |
| Civil Engg | 14 | 0 | 14 | 5 | 1 | 6 | 21 | 3 | 24 | 8 | 5 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 10 | 39 | 77 | 19 | 96 |
| Mechanical Engg. | 19 | 0 | 19 | 9 | 2 | 11 | 35 | 1 | 36 | 22 | 1 | 23 | 1 | 0 | 1 | 0 | 0 | 0 | 70 | 0 | 70 | 156 | 4 | 160 |
| Electrical & Electronics Engg. | 10 | 2 | 12 | 6 | 0 | 6 | 18 | 5 | 23 | 13 | 1 | 14 | 0 | 1 | 1 | 0 | 1 | 1 | 34 | 13 | 47 | 81 | 23 | 104 |
| Electronics & Communication Engg. | 11 | 2 | 13 | 2 | 3 | 5 | 19 | 5 | 24 | 12 | 2 | 14 | 1 | 0 | 1 | 0 | 0 | 0 | 34 | 13 | 47 | 79 | 25 | 104 |
| Chemical Engg. | 4 | 1 | 5 | 4 | 0 | 4 | 11 | 1 | 12 | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 11 | 20 | 35 | 14 | 49 |
| Metallurgical & Materials Engg. | 3 | 3 | 6 | 3 | 1 | 4 | 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 6 | 15 | 26 | 10 | 36 |
| Mining Engg. | 5 | 1 | 6 | 2 | 1 | 3 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 18 | 34 | 3 | 37 |
| Computer Engg. | 10 | 4 | 14 | 5 | 1 | 6 | 20 | 5 | 25 | 12 | 3 | 15 | 1 | 0 | 1 | 0 | 0 | 0 | 38 | 8 | 46 | 86 | 21 | 107 |
| Information Technology | 9 | 5 | 14 | 3 | 3 | 6 | 13 | 13 | 26 | 9 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 13 | 46 | 67 | 36 | 103 |
| **Total** | **85** | **18** | **103** | **39** | **12** | **51** | **158** | **33** | **191** | **83** | **15** | **98** | **3** | **1** | **4** | **0** | **1** | **1** | **273** | **75** | **348** | **641** | **155** | **796** |

## M.Tech. Students Strength for the year 2018-19

| M.Tech (I Year) | SC | | | ST | | | OBC | | | QIP | | | DASA | | | ICCR | | | Sponsored | | | GENERAL | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | To | M | F | To | M | F | To | M | F | To | M | F | T | M | F | T | M | F | To | M | F | To | M | F | To |
| Structural Engg. | 4 | 0 | 4 | 1 | 1 | 2 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 1 | 9 | 3 | 12 | 20 | 7 | 27 |
| Geotechnical Engg. | 0 | 2 | 2 | 1 | 0 | 1 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 7 | 7 | 7 | 14 |
| Environmental Engg. | 3 | 1 | 4 | 1 | 0 | 1 | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 7 | 15 | 22 |
| Transportation Systems Engg. | 1 | 1 | 2 | 2 | 0 | 2 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 13 | 16 | 8 | 24 |
| Construction Technology & Mgt. | 1 | 3 | 4 | 1 | 0 | 1 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 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 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 9 | 3 | 12 | 19 | 5 | 24 |
| Water Resources Engg. & Management | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 6 | 6 | 12 |
| Remote Sensing & GIS | 2 | 0 | 2 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 11 | 11 | 9 | 20 |
| Thermal Engg. | 2 | 0 | 2 | 1 | 0 | 1 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 1 | 7 | 0 | 7 | 16 | 1 | 17 |
| Mechatronics Engg. | 4 | 0 | 4 | 1 | 0 | 1 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 10 | 17 | 4 | 21 |
| Manufacturing Engg. | 0 | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 1 | 9 | 13 | 2 | 15 |
| Design and Precision Engg. | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 0 | 5 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 16 | 0 | 16 |
| Power & Energy Systems | 2 | 2 | 4 | 1 | 1 | 2 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 9 | 3 | 12 | 20 | 6 | 26 |
| VLSI Design | 3 | 1 | 4 | 1 | 0 | 1 | 6 | 1 | 7 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 3 | 13 | 22 | 6 | 28 |
| Communication Engg. | 1 | 0 | 1 | 1 | 0 | 1 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 13 | 6 | 19 |
| Chemical Plant Design | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 8 | 1 | 9 |
| Industrial Pollution Control | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 9 | 5 | 5 | 10 |
| Industrial Biotechnology | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 11 | 6 | 13 | 19 |
| Process Metallurgy | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 7 | 9 | 1 | 10 |
| Materials Engg. | 2 | 0 | 2 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 17 | 0 | 17 |
| Nanotechnology | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 6 | 0 | 6 |
| Computer Science & Engg | 4 | 0 | 4 | 1 | 0 | 1 | 5 | 1 | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 13 | 3 | 16 | 25 | 4 | 29 |
| Computer Science & Engg. - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Information Security | 4 | 0 | 4 | 2 | 0 | 2 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 12 | 23 | 2 | 25 |
| Computational Mathamatics | 1 | 0 | 1 | 0 | 1 | 1 | 7 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 12 | 19 | 2 | 21 |
| Information Technology | 5 | 0 | 5 | 1 | 0 | 1 | 3 | 4 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 17 | 7 | 24 |
| **TOTAL** | **49** | **11** | **60** | **20** | **4** | **24** | **96** | **36** | **132** | **4** | **1** | **5** | **1** | **0** | **1** | **6** | **1** | **7** | **31** | **2** | **33** | **173** | **73** | **246** | **380** | **128** | **508** |

| M.Tech (II Year) | SC | | | ST | | | OBC | | | QIP | | | DASA | | | ICCR | | | Sponsored | | | GENERAL | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | To | M | F | To | M | F | To | M | F | To | M | F | T | M | F | T | M | F | To | M | F | To | M | F | To |
| Structural Engg. | 2 | 2 | 4 | 2 | 0 | 2 | 3 | 4 | 7 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 4 | 12 | 17 | 10 | 27 |
| Geotechnical Engg. | 0 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 7 | 6 | 7 | 13 |
| Environmental Engg. | 2 | 1 | 3 | 0 | 0 | 0 | 3 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 12 | 10 | 11 | 21 |
| Transportation Systems Engg. | 3 | 0 | 3 | 2 | 0 | 2 | 4 | 2 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 13 | 18 | 7 | 25 |
| Construction Technology & Mgt. | 3 | 0 | 3 | 1 | 0 | 1 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 26 | 2 | 28 | 11 | 2 | 13 | 49 | 4 | 53 |
| Marine Structures | 3 | 0 | 3 | 1 | 0 | 1 | 6 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 4 | 11 | 17 | 5 | 22 |
| Water Resources Engg. & Management | 2 | 0 | 2 | 0 | 0 | 0 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 | 6 | 5 | 11 |
| Remote Sensing & GIS | 1 | 1 | 2 | 0 | 0 | 0 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 12 | 11 | 10 | 21 |
| Thermal Engg. | 1 | 1 | 2 | 1 | 0 | 1 | 4 | 0 | 4 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 12 | 2 | 14 |
| Mechatronics Engg. | 1 | 1 | 2 | 2 | 0 | 2 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 8 | 1 | 9 | 17 | 2 | 19 |
| Manufacturing Engg. | 1 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 11 | 0 | 11 |
| Design and Precision Engg. | 2 | 0 | 2 | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 5 | 10 | 1 | 11 |
| Power & Energy Systems | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 16 | 0 | 16 |
| VLSI Design | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 10 | 16 | 5 | 21 |
| Communication Engg. | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 4 | 12 | 16 | 5 | 21 |
| Chemical Plant Design | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 3 | 2 | 5 |
| Industrial Pollution Control | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 | 3 | 2 | 5 |
| Industrial Biotechnology | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 11 | 7 | 8 | 15 |
| Process Metallurgy | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 4 | 0 | 4 |
| Materials Engg. | 4 | 0 | 4 | 1 | 0 | 1 | 6 | 0 | 6 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 1 | 13 | 24 | 1 | 25 |
| Nanotechnology | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | 3 | 6 |
| Computer Science & Engg | 4 | 0 | 4 | 1 | 0 | 1 | 5 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 6 | 11 | 16 | 7 | 23 |
| Computer Science & Engg. - Information Security | 2 | 1 | 3 | 1 | 1 | 2 | 5 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 2 | 10 | 16 | 6 | 22 |
| Computational Mathamatics | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 4 | 11 | 8 | 5 | 13 |
| Information Technology | 1 | 1 | 2 | 1 | 0 | 1 | 2 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | 11 | 12 | 8 | 20 |
| **TOTAL** | **39** | **12** | **51** | **19** | **1** | **20** | **82** | **31** | **113** | **3** | **1** | **4** | **0** | **1** | **1** | **4** | **0** | **4** | **27** | **2** | **29** | **154** | **68** | **222** | **328** | **116** | **444** |

| M.Tech Research | SC | | | OBC | | | GENERAL | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Students Strength 2018-19** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** |
| Marine Structure | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 3 | 1 | 3 | 4 |
| Remote Sensing & GIS | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 2 | 2 | 4 |
| Water Resources Engg. & Management | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 4 | 2 | 3 | 5 |
| Structural Engg. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| Environmental Engg. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 2 | 2 |
| Transportation Engg | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Thermal Engg. | 0 | 0 | 0 | 4 | 0 | 4 | 8 | 0 | 8 | 12 | 0 | 12 |
| Mechatronics Engg. | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 3 | 4 | 1 | 5 |
| Manufacturing Engg. | 1 | 0 | 1 | 1 | 0 | 1 | 6 | 0 | 6 | 8 | 0 | 8 |
| Design and Precision Engg. | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 6 | 5 | 1 | 6 |
| Power & Energy Systems | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 2 |
| VLSI Design | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 2 | 2 | 2 | 4 |
| Communication Engg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Materials Engg. | 0 | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 1 | 3 | 0 | 3 |
| Nanotechnology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| Industrial Pollution Control | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 2 | 2 |
| Chemical Plant Design | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 2 |
| Industrial Biotechnology | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Computer Science & Engg | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| Computer Science & Engg. - Information Security | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 3 | 3 |
| Rock Excavation Technology & Mgt | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 0 | 2 |
| Information Technology | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 |
| **TOTAL** | **2** | **0** | **2** | **11** | **2** | **13** | **35** | **21** | **56** | **49** | **23** | **72** |

| MCA Students Strength for the year 2018-19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **SC** | | | **ST** | | | **OBC** | | | **GENERAL** | | | **TOTAL** | | |
| | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** |
| **I YEAR** | 11 | 2 | 13 | 6 | 1 | 7 | 21 | 5 | 26 | 32 | 13 | 45 | 70 | 21 | 91 |
| **II YEAR** | 11 | 3 | 14 | 6 | 1 | 7 | 15 | 5 | 20 | 31 | 14 | 45 | 63 | 23 | 86 |
| **III YEAR** | 10 | 2 | 12 | 5 | 2 | 7 | 21 | 4 | 25 | 30 | 16 | 46 | 66 | 24 | 90 |
| **TOTAL** | **32** | **7** | **39** | **17** | **4** | **21** | **57** | **14** | **71** | **93** | **43** | **136** | **199** | **68** | **267** |

| MBA Students Strength for the year 2018-19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **SC** | | | **ST** | | | **OBC** | | | **GENERAL** | | | **TOTAL** | | |
| | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** |
| **I YEAR** | 0 | 0 | 0 | 1 | 0 | 1 | 4 | 2 | 6 | 8 | 8 | 16 | 13 | 10 | 23 |
| **II YEAR** | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 19 | 11 | 30 | 20 | 13 | 33 |
| **TOTAL** | **1** | **0** | **1** | **1** | **1** | **2** | **4** | **3** | **7** | **27** | **19** | **46** | **33** | **23** | **56** |

| M.Sc(Chemistry) Students Strength for the year 2018-19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **SC** | | | **ST** | | | **OBC** | | | **GENERAL** | | | **TOTAL** | | |
| | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** |
| **I YEAR** | 0 | 3 | 3 | 1 | 1 | 2 | 4 | 3 | 7 | 4 | 9 | 13 | 9 | 16 | 25 |
| **II YEAR** | 4 | 0 | 4 | 1 | 0 | 1 | 2 | 5 | 7 | 5 | 9 | 14 | 12 | 14 | 26 |
| **TOTAL** | **4** | **3** | **7** | **2** | **1** | **3** | **6** | **8** | **14** | **9** | **18** | **27** | **21** | **30** | **51** |

| M.Sc(Physics) Students Strength for the year 2018-19 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Year** | **SC** | | | **ST** | | | **OBC** | | | **GENERAL** | | | **TOTAL** | | |
| | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** | **M** | **F** | **To** |
| **I YEAR** | 0 | 3 | 3 | 1 | 1 | 2 | 6 | 3 | 9 | 6 | 3 | 9 | 13 | 10 | 23 |
| **II YEAR** | 2 | 1 | 3 | 0 | 1 | 1 | 0 | 7 | 7 | 7 | 6 | 13 | 9 | 16 | 25 |
| **TOTAL** | **2** | **4** | **6** | **1** | **2** | **3** | **6** | **10** | **16** | **13** | **9** | **22** | **22** | **26** | **48** |

## Ph.D. Students Strength for the year 2018-19

| Branch | SC | | | ST | | | OBC | | | QIP | | | Ethiopian | | | VTU Scheme | | | Sponsored | | | 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 |
| Civil | 7 | 2 | 9 | 2 | 1 | 3 | 8 | 11 | 19 | 1 | 1 | 2 | 3 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 2 | 30 | 25 | 55 | 52 | 41 | 93 |
| App. Mechanics | 6 | 1 | 7 | 1 | 1 | 2 | 11 | 3 | 14 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 29 | 16 | 45 | 50 | 21 | 71 |
| Mechanical | 18 | 0 | 18 | 8 | 0 | 8 | 27 | 2 | 29 | 7 | 0 | 7 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 5 | 85 | 142 | 7 | 149 |
| E&E | 5 | 0 | 5 | 2 | 0 | 2 | 11 | 4 | 15 | 3 | 2 | 5 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 30 | 4 | 34 | 52 | 11 | 63 |
| E&C | 2 | 0 | 2 | 3 | 0 | 3 | 9 | 0 | 9 | 6 | 0 | 6 | 0 | 0 | 0 | 4 | 1 | 5 | 2 | 1 | 3 | 30 | 12 | 42 | 56 | 14 | 70 |
| Chemical | 2 | 1 | 3 | 1 | 2 | 3 | 2 | 5 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 20 | 30 | 15 | 28 | 43 |
| Metallurgy | 5 | 0 | 5 | 2 | 0 | 2 | 9 | 2 | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 2 | 21 | 36 | 4 | 40 |
| Mining | 5 | 0 | 5 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 11 | 1 | 12 | 23 | 1 | 24 |
| Computer | 4 | 3 | 7 | 1 | 0 | 1 | 6 | 1 | 7 | 3 | 0 | 3 | 0 | 0 | 0 | 7 | 2 | 9 | 0 | 1 | 1 | 14 | 9 | 23 | 35 | 16 | 51 |
| Information Technology | 3 | 0 | 3 | 1 | 1 | 2 | 3 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 0 | 1 | 1 | 9 | 1 | 10 | 18 | 6 | 24 |
| Physics | 1 | 1 | 2 | 0 | 0 | 0 | 9 | 1 | 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 15 | 29 | 25 | 17 | 42 |
| Chemistry | 2 | 2 | 4 | 0 | 1 | 1 | 7 | 6 | 13 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 8 | 21 | 23 | 17 | 40 |
| MACS | 1 | 1 | 2 | 1 | 0 | 1 | 2 | 7 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 16 | 13 | 29 | 21 | 21 | 42 |
| School of Mgt. | 4 | 4 | 8 | 1 | 0 | 1 | 7 | 4 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 10 | 14 | 24 | 25 | 22 | 47 |
| **Total** | **65** | **15** | **80** | **23** | **6** | **29** | **117** | **47** | **164** | **22** | **3** | **25** | **7** | **0** | **7** | **15** | **6** | **21** | **9** | **4** | **13** | **315** | **145** | **460** | **573** | **226** | **799** |

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

### Particulars of sanctioned intake and admissions made during 2018-19

| Sl. No. | Courses offered | Sanctioned intake | | | | | Admissions made to Undergraduate Programmes | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Normal Intake | | | | | | | | |
| | | Normal Intake | ICCR | DASA | Study In India Scheme | Total | OC | SC | ST | OBC | PWD | ICCR | DASA | Study In India Scheme | Total Admission |
| 1 | Civil Engineering | 94 | 3 | 16 | 4 | 117 | 46 | 14 | 7 | 23 | 1 OC, 2 OBC | 1 | 14 | 1 | 109 |
| 2 | Mechanical Engineering | 156 | 3 | 24 | 4 | 187 | 75 | 20 | 11 | 42 | 4 OC, 1 OBC, 2 SC, 1 ST | 0 | 24 | 1 | 181 |
| 3 | Electrical & Electronics Engineering | 97 | 4 | 14 | 4 | 119 | 44 | 14 | 6 | 26 | 3 OC, 1 OBC, 1 SC, 1 ST | 1 | 14 | 0 | 111 |
| 4 | Electronics & Communication Engineering | 94 | 3 | 17 | 4 | 118 | 45 | 14 | 7 | 24 | 2 OC, 2 OBC | 0 | 17 | 0 | 111 |
| 5 | Chemical Engineering | 48 | 2 | 9 | 4 | 63 | 22 | 7 | 4 | 12 | 1 OBC | 1 | 7 | 0 | 54 |
| 6 | Metallurgical & Materials Engineering | 50 | 0 | 2 | 4 | 56 | 22 | 8 | 4 | 13 | 1 OC | 0 | 0 | 0 | 48 |
| 7 | Mining Engineering | 49 | 0 | 1 | 4 | 54 | 20 | 7 | 4 | 9 | 0 | 0 | 0 | 0 | 40 |
| 8 | Computer Engineering | 100 | 2 | 16 | 4 | 122 | 46 | 16 | 6 | 26 | 4 OC, 1 OBC, 1 ST | 1 | 16 | 4 | 121 |
| 9 | Information Technology | 94 | 0 | 12 | 4 | 110 | 44 | 14 | 6 | 25 | 3 OC, 2 OBC | 0 | 12 | 0 | 106 |
| | **Total** | **782** | **17** | **111** | **36** | **946** | **364** | **114** | **55** | **200** | **34** | **4** | **104** | **6** | **881** |

## ADMISSION STATISTICS – B.TECH. 2018-9

### Details of Male & Female admissions – course wise and category wise

| Sl. No. | Programme | OC | | OBC | | SC | | ST | | ICCR | | DASA (Direct Admission of Students Abroad) | | Study in India Scheme | | Total Admission | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M | F | M | F | M | F | M | F | M | F | M | F | M | F | M | F | Total |
| 1 | Civil Engg | 37+1PH | 9 | 20+2PH | 3 | 12 | 2 | 6 | 1 | 1 | 0 | 11 | 3 | 1 | 0 | 91 | 18 | 109 |
| 2 | Mechanical Engg | 65+ 3PH | 10+ 1PH | 36+1PH | 6 | 17+2 PH | 3 | 9+1PH | 2 | 0 | 0 | 20 | 4 | 1 | 0 | 155 | 26 | 181 |
| 3 | Electrical & Electronics Engg | 37+ 3PH | 7 | 22+1PH | 4 | 12 | 2+1 PH | 5+1PH | 1 | 1 | 0 | 9 | 5 | 0 | 0 | 91 | 20 | 111 |
| 4 | Electronics & Communications Engg. | 38+ 2PH | 7 | 20+ 1PH | 4+ 1PH | 11 | 3 | 5 | 2 | 0 | 0 | 13 | 4 | 0 | 0 | 90 | 21 | 111 |
| 5 | Chemical Engg | 17 | 5 | 10+1PH | 2 | 5 | 2 | 3 | 1 | 1 | 0 | 4 | 3 | 0 | 0 | 41 | 13 | 54 |
| 6 | Metallurgical & Materials Engg | 18+ 1PH | 4 | 9 | 4 | 6 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 10 | 48 |
| 7 | Mining Engg | 16 | 4 | 7 | 2 | 6 | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 9 | 40 |
| 8 | Computer Engg | 40+ 4PH | 6 | 22+ 1PH | 4 | 14 | 2 | 4+1PH | 2 | 1 | 0 | 13 | 3 | 4 | 0 | 104 | 17 | 121 |
| 9 | Information Technology | 33+3PH | 11 | 21+ 1PH | 4+ 1PH | 12 | 2 | 6 | 0 | 0 | 0 | 9 | 3 | 0 | 0 | 85 | 21 | 106 |
| | **Total** | **301+ 17PH** | **63+ 1PH** | **167+ 8PH** | **33+2 PH** | **95+ 2PH** | **19+ 1PH** | **44+ 3PH** | **11** | **4** | **0** | **79** | **25** | **6** | **0** | **726** | **155** | **881** |

*PH= Persons with Disabilities*

# ADMISSION STATISTICS - POST GRADUATE PROGRAMMES

## M. Tech. Programme - Particulars of Intake and Admissions during 2018-19

| Sl. No. | Name of the Programmes | Intake | Admitted | | | | | Out of the total admissions-No. of candidates admitted under category | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | GATE (Scholar ship seats) | Other | Total | | | SC | | | ST | | | OBC | | | OC | | | PWD | | |
| | | | | | M | F | TO | M | F | TO | M | F | TO | M | F | TO | M | F | TO | M | F | TO |
| 1 | Structural Engg. | 27+1*+ 2*** | 24 | 1 spon 2 ICCR | 20 | 7 | 27 | 4 | 0 | 4 | 1 | 1 | 2 | 3 | 3 | 6 | 9+2 ICCR+ 1 spon | 3 | 15 | - | - | - |
| 2 | Geotechnical Engg. | 15+1**+ 1*+2*** | 14 | -- | 7 | 7 | 14 | 0 | 2 | 2 | 1 | 0 | 1 | 3 | 1 | 4 | 3 | 4 | 7 | - | - | - |
| 3 | Environmental Engg. | 27+1*+ 2*** | 23 | -- | 7 | 16 | 23 | 3 | 1 | 4 | 1 | 0 | 1 | 1 | 5 | 6 | 2 | 10 | 12 | - | - | - |
| 4 | Transportation Engg. | 27+1*+ 2*** | 24 | -- | 16 | 8 | 24 | 1 | 1 | 2 | 2 | 0 | 2 | 5 | 2 | 7 | 8 | 5 | 13 | - | - | - |
| 5 | Construction Technology & Management | 27+1*+ 2***30 (L&T) | 25 | 1 ICCR 29 L&T | 43 | 12 | 55 | 1 | 3 | 4 | 1 | 0 | • | 1 | 4 | 4 | 8 | 9+1 ICCR+ 27L&T | 3+ 2 L&T | 42 | - | - |
| 6 | Marine Structures | 27+1**+1* | 23 | 1 spon | 19 | 5 | 24 | 3 | 0 | 3 | 1 | 0 | 1 | 5 | 2 | 7 | 9+ 1 spon | 3 | 13 | - | - | - |
| 7 | Water Resources Engg. & Management | 15+1* | 12 | - | 6 | 6 | 12 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 5 | 7 | 2 | 1 | 3 | - | - | - |
| 8 | Remote Sensing & Geographic Information Systems | 27+1**+1* | 20 | -- | 11 | 9 | 20 | 2 | 0 | 2 | 0 | 0 | 0 | 4 | 3 | 7 | 5 | 6 | 11 | - | - | - |
| 9 | Design and Precision Engg. | 15+1* | 15 | 2 QIP | 17 | 0 | 17 | 2 | 0 | 2 | 1 | 0 | 1 | 5 | 0 | 5 | 7+2 QIP | 0 | 9 | - | - | - |
| 10 | Manufacturing Engg. | 15+1*+ 4*** | 14 | 1 ICCR | 13 | 2 | 15 | 0 | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 3 | 8+1I CCR | 1 | 10 | - | - | - |
| 11 | Mechatronics Engg. | 27+1* | 23 | ---- | 19 | 4 | 23 | 4 | 0 | 4 | 1 | 0 | 1 | 5 | 1 | 6 | 9 | 3 | 12 | -- | - | - |
| 12 | Thermal Engineering | 15+1**+1* | 14 | 1 Navy Spon 2 ICCR | 16 | 1 | 17 | 2 | 0 | 2 | 1 | 0 | 1 | 4 | 0 | 4 | 7+1ICCR +1Navy spon | 0+1I CCR | 10 | - | - | - |
| 13 | Power & Energy Systems | 27+1*+ 4*** | 25 | 1 Navy Spon | 20 | 6 | 26 | 2 | 2 | 4 | 1 | 1 | 2 | 7 | 0 | 7 | 9+1Navy spon | 3 | 13 | - | - | - |
| 14 | VLSI Design | 27+1**+ 1*+4*** | 25 | 3 QIP | 22 | 6 | 28 | 3 | 1 | 4 | 1 | 0 | 1 | 6 | 1 | 7 | 10+ 2 QIP | 3+1 QIP | 16 | | | |
| 15 | Communication Engg. | 27+1**+1* | 21 | -- | 15 | 6 | 21 | 2 | 0 | 2 | 1 | 0 | 1 | 6 | 1 | 7 | 6 | 5 | 11 | -- | -- | -- |

| Sl. No. | Name of the Programmes | Intake | Admitted | | | | | Out of the total admissions-No. of candidates admitted under category | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | GATE (Scholar ship seats) | Other | Total | | | SC | | | ST | | | OBC | | | OC | | | PWD | | |
| | | | | | M | F | TO | M | F | TO | M | F | TO | M | F | TO | M | F | TO | M | F | TO |
| 16 | Chemical Plant Design | 15+1*+ 4*** | 10 | - | 9 | 1 | 10 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 2 | 5 | 1 | 6 | -- | -- | -- |
| 17 | Industrial Pollution Control Engg. | 27+1* | 11 | -- | 6 | 5 | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | -- | -- | -- |
| 18 | Industrial Biotechnology | 27+1* | 20 | -- | 6 | 14 | 20 | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 3 | 6 | 2 | 10 | 12 | -- | -- | -- |
| 19 | Materials Engg. | 27+1* | 19 | -- | 19 | 0 | 19 | 2 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | 7 | 10 | 0 | 10 | -- | -- | -- |
| 20 | Process Metallurgy | 15+1**+1* | 10 | -- | 9 | 1 | 10 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 6 | 1 | 7 | -- | -- | -- |
| 21 | Nanotechnology | 15+1* | 6 | -- | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 0 | 5 | -- | -- | -- |
| 22 | Computer Science & Engg. | 27+1**+ 1* | 27 | 1 DASA, 1 ICCR | 26 | 4 | 30 | 4 | 0 | 4 | 1 | 0 | 1 | 6 | 1 | 7 | 13+1 ICCR +1DASA | 3 | 18 | 1 OBC | 0 | 1 |
| 23 | Computer Science & Engg. – Information Security | 27+1* | 26 | -- | 23 | 2 | 25 | 4 | 0 | 4 | 2 | 0 | 2 | 6 | 1 | 7 | 11 | 1 | 12 | 1 OC 1 OBC | - | 2 |
| 24 | Information Technology | 27+1*+ 4*** | 24 | -- | 17 | 7 | 24 | 5 | 0 | 5 | 1 | 0 | 1 | 3 | 4 | 7 | 8 | 3 | 11 | 1 OC | -- | 1 |
| 25 | Computational Mathematics | 27+1*+ 4*** | 21 | -- | 19 | 2 | 21 | 1 | 0 | 1 | 0 | 1 | 1 | 7 | 0 | 7 | 11 | 1 | 12 | | | |
| | **Total** | **642+ 34*** ** | **476** | **2Spon 7 ICCR 2 NAVY 1 DASA 5 QIP 29 L&T** | **391** | **131** | **522** | **50** | **11** | **61** | **20** | **4** | **24** | **100** | **37** | **137** | **179+6 ICCR+4 QIP+27 L&T + 2 NAVY Spon + 2 Spon+ 1 DASA** | **75+ 2 L&T+ 1 ICCR +1 QIP** | **300** | **4** | **-** | **4** |

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

** Sanctioned seats for DASA candidates

*** Additional seats reserved for Study in India Scheme

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) 2018-19

**Intake**

| OC | OCPWD | OBC | OBCPWD | SC | SCPWD | ST | STPWD | Total |
|---|---|---|---|---|---|---|---|---|
| 24 | 01 | 13 | 01 | 07 | 01 | 3 | 0 | 50 |

| Sl. No. | Name of the Programme | No. of candidates admitted | | Total number of candidates admitted | | |
|---|---|---|---|---|---|---|
| | | Gate Scholarship Seat | Non-Scholarship Seat | Male | Female | Total Admission |
| **DEPARTMENT OF CIVIL ENGINEERING** | | | | | | |
| 1 | Structural Engg. | 01(OC) | -- | 01 | -- | 01 |
| 2 | Transportation Engg. | -- | -- | -- | -- | -- |
| 3 | Construction Technology and Management | -- | -- | -- | -- | -- |
| | Geotechnical Engineering | -- | -- | -- | -- | -- |
| 4 | Environmental Engg. | -- | -- | -- | -- | -- |
| **DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING** | | | | | | |
| 1 | Nanotechnology | -- | -- | -- | -- | -- |
| 2 | Process Metallurgy | | | | | |
| 3 | Materials Engg. | 01(OBC) | 01 (OBC) | 02 | -- | 02 |
| **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING** | | | | | | |
| 1 | VLSI Design | 01(OC), 1 (OBC) | 1 (OBC) ER Spon | 02 | 01 | 03 |
| 2 | Communication Engineering | 01 (OC) | -- | -- | 01 | 01 |
| **DEPARTMENT OF MECHANICAL ENGINEERING** | | | | | | |
| 1 | Design and Precision Engg. | 01(OC), 1(OBC) | 01(OC) | 03 | -- | 03 |
| 2 | Mechatronics Engg. | -- | 1 (OC) | 01 | -- | 01 |
| 3 | Manufacturing Engg. | 1(OC), 1(OBC) | -- | 02 | -- | 02 |
| 4 | Thermal Engg. | 1(OC), 1 (OBC) | 01 (OC), 1 (OBC) | 04 | -- | 04 |
| **DEPARTMENT OF MINING ENGINEERING** | | | | | | |
| 1 | Rock Excavation Technology and Management | -- | 1 (OBC) | 01 | -- | 01 |
| **DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS** | | | | | | |
| 1 | Remote Sensing & Geographic's Information Systems | -- | 1 (OC) | -- | 01 | 01 |
| 2 | Marine Structures | 01 (OC) | 01 (OC) | 01 | 01 | 02 |
| 3 | Water Resources Engg. & Mgt. | 01 (OBC) | 01 (OC) | 01 | 01 | 02 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **DEPARTMENT OF CHEMICAL ENGINEERING** | | | | | | |
| 1 | Chemical Plant Design | -- | -- | -- | -- | -- |
| 2 | Industrial Pollution Control | -- | 1 (OC) | -- | 01 | 01 |
| 3 | Industrial Biotechnology | 01 (OC) | -- | 01 | -- | 01 |
| **DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING** | | | | | | |
| 1 | Power and Energy Systems | -- | 1 (OC) ER Spon | 01 | -- | 01 |
| **COMPUTER SCIENCE & ENGINEERING** | | | | | | |
| 1 | Computer Science and Engineering | 01 (OC) | -- | 01 | -- | 01 |
| 2 | Computer Science and Engineering - Information Security | 02 (OC) | | -- | 02 | 02 |
| **INFORMATION TECHNOLOGY** | | | | | | |
| 1 | Information Technology | 01 (OC) | | 01 | -- | 01 |
| | **Total** | **12 (OC), 6 OBC** | **7 (OC), 01 (OC) ER Spon, 3 (OBC), 1 (OBC) ER Spon** | **22** | **8** | **30** |

## M.C.A., M.B.A. AND M.Sc. PROGRAMMES

### Particulars of Admissions during 2018-19

| Sl. No. | Programme | Intake | Admission | | | SC | | ST | | OBC | | OC | | PWD | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | M | F | Total | M | F | M | F | M | F | M | F | M | F |
| 1 | Master of Computer Applications (MCA) | 92+1** +4*** | 70 | 22 | **92** | 11 | 3 | 6 | 1 | 20 | 5 | 31 | 12 | 2 (1 OC, 1 OBC) | 1 OC |
| 2 | Master of Business Administration (MBA) | 64+5*+ 1**+4*** | 14 | 11 | **25** | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 11 | - | - |
| 3 | M.Sc. (Chemistry) | 27+1** | 10 | 16 | **26** | 1 | 3 | 1 | 1 | 4 | 3 | 4 | 9 | - | - |
| 4 | M.Sc. (Physics) | 27+1** | 13 | 11 | **24** | 0 | 3 | 1 | 1 | 4 | 2 | 8 | 5 | - | - |
| | **Total** | **210+5*** | | | | | | | | | | | | | |
| | | **+4**+8* ** =227** | | | | | | | | | | | | | |

* Seats reserved for DASA candidates

** Additional seats for the international students under ICCR Scheme

*** Seats reserved for Study in India Scheme

PWD – Persons with Disabilities

## Ph.D. PROGRAMME

# Particulars of Intake & Admissions made during 2018-19

## Intake for the year 2018-19

| OC | OCPWD | OB | OBPWD | SC | SCPWD | ST | STPWD | Total |
|---|---|---|---|---|---|---|---|---|
| 74 | 02 | 39 | 01 | 21 | 01 | 11 | 01 | 150 |

## Details of Admissions made during 2018-19

| 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 and Admissions under Visvesvaraya Ph.D Scheme | | | | OC | | OB | | SC | | ST | | |
| | | M | F | M | F | M | F | M | F | M | F | M | F | | M | F |
| 1 | Civil Engg | 10 | 4 | 1 QIP (R)<br>1 Ethiopian | - | 4 OC | 3 OBC | 6 | 3 | 2 | 1 | 1 | - | | 1 | - |
| 2 | Applied Mech. & Hydraulics | 2 | 3 | 1 QIP (R ) | -- | 2 OC,<br>1 SC IR,<br>1 OC IR* | 3 OC,<br>2 OC IR*,<br>1 OBC IR* | 2 | 2 | - | - | - | - | | - | 1 |
| 3 | Mechanical Engg | 14 + 5* | - | 2 QIP (R)<br>2 Ethiopian | - | 2 OC<br>1 OC IR<br>2 OC IR* | - | 7 (1PWD) 3* | - | 2+1* | - | 4 | - | | 1+1* | - |
| 4 | Electrical & Electronics Engg | 6+3* | 1+1* | 2 QIP | 1 QIP | - | - | 3+1* | 1+1* | 2+1* | - | 1 | - | | 1* | - |
| 5 | Electronics & Communication Engg | 8+4* | - | 1 QIP<br>1OC SP | 2 QIP<br>1OC SP | - | 1OC | 7 | - | 3* | - | 1 | - | | 1* | - |
| 6 | Chemical Engg | 2 | 4+1* | - | - | - | - | 1 | 2+1* | 1 | - | - | 1 | | - | 1 |
| 7 | Metallurgical & Materials Engg | 3 | 1 | - | - | 1 OC | - | 2 | 1 | - | - | 1 | - | | | |
| 8 | Mining Engg | 1 | - | - | - | - | - | 1 | - | - | - | - | - | | - | - |

| 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 and Admissions under Visvesvaraya Ph.D Scheme | | | | OC | | OB | | SC | | ST | |
| | | M | F | M | F | M | F | M | F | M | F | M | F | M | F |
| 9 | Computer Science & Engg | 1* | 3+1* | 2 QIP | | 1 OC IR 2 OBC IR 1OBC IR* | 1 OC IR | 1* | 3 | - | - | - | 1* | - | - |
| 10 | Information Technology | 2+1* | 1 | - | 1 OC SP | 1 SC | 1 OC (NPIU)* | 1 | 1 | 1* | - | 1 | - | - | - |
| 11 | Physics | - | 3 | 1 Ethiopian | - | - | - | - | 3 | - | - | - | - | - | - |
| 12 | Chemistry | 2 | 3 | 1 Ethiopian | 1 OBC INSPIRE | - | - | 2 | 1 | - | 2 | - | - | - | - |
| 13 | Mathematical & Computational Sciences | 4+2* | 4+2* | - | 1 OBC CSIR | - | - | 3+2* | 2+2* | 1 | 2 | - | - | - | - |
| 14 | School of Management | 1+1* | 2+1* | 1 OC SP | - | 1 OC | - | 1 | 1* | 1* | 1 | - | 1 | - | - |
| | **Total** | **55+ 17*** | **29+6*** | **9 QIP 2 OC Spon 5 Ethiopian.** | **3 QIP, 2 OC Spon. 1 OBC INSPIRE+ 1CSIR** | **16+4*** | **8+3*+ 1NPIU+** | **36 (1PWD) +7*** | **19+ 5*** | **8+7*** | **6** | **9** | **2+1*** | **2+3*** | **2** |
| **Total Admission - 162** | | | | | | | | | | | | | | | |

** Admissions made during December session 2018*

*Spon= Sponsored. QIP = Admitted Under AICTE QIP Scheme*

*NPIU = Sponsoring Assistant Professors (Temporary) Engaged under TEQIP-III*

*PWD – Persons with Disabilities*

***Total Student's Strength***

| | **Programme** | **Strength** |
|---|---|---|
| 1. | Undergraduate | 3242 |
| 2. | Post Graduate (Including MCA/M.Tech./ M.Tech (Research)/MBA/M.Sc.) | 1446 |
| 3. | Ph.D. Programme | 799 |
| | **Total** | **5487** |

# 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. by Research program the duration of study shall be minimum of 4 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 year. 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 were submitted to the Examination/Evaluation Section for processing their Grade Cards as per the regulations of the Institute. The results were declared and pubished on the website of the Institute in time and Grade Cards were issued to all eligible students.

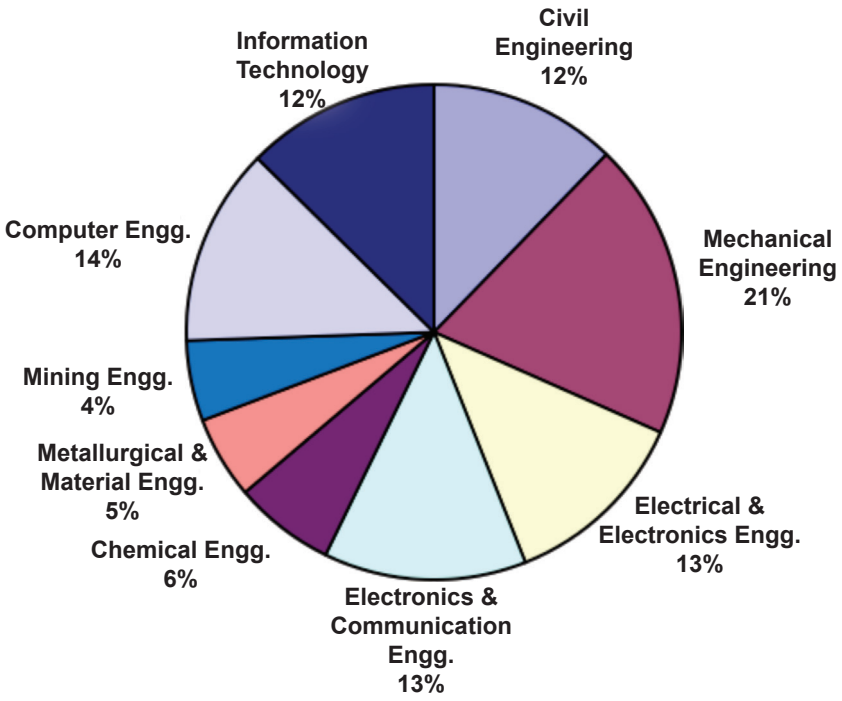
# 8. EXAMINATION RESULTS FOR 2018

| Under Graduate | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Sl.No.** | **Branch** | **Total No. Appeared** | **No. of students passed in** | | | | **Total Passed** | **Percentage of passed** | **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 | 104+1* | 74 | 20 | 8 | 1+1* | 103+1* | 99% | 21+1* |
| 2. | Mechanical Engineering | 159+3* | 109 | 37 | 8+2* | 2+1* | 156+3* | 98% | 29+1* |
| 3. | Electrical And Electronics Engineering | 107 | 69 | 26 | 10 | 1 | 106 | 99% | 18 |
| 4. | Electronics And Communication Engineering | 111+1* | 83 | 20 | 7 | 1+1* | 111+1* | 100% | 21 |
| 5. | Chemical Engineering | 54 | 37 | 10 | 6 | 1 | 54 | 100% | 11 |
| 6. | Metallurgical And Materials Engineering | 38 | 23 | 9 | 6 | 0 | 38 | 100% | 11 |
| 7. | Mining Engineering | 39+1* | 32 | 6 | 1+1* | 0 | 39+1* | 100% | 11+1* |
| 8. | Computer Engineering | 109+3* | 76 | 23+1* | 7+1* | 1* | 106+3* | 97% | 20+2* |
| 9. | Information Technology | 101 | 76 | 18 | 3 | 0 | 97 | 96% | 17 |
| | | 822+9* | | | | | 810+9* | 99% | |
| | *- Repeaters | | | | | | | | |

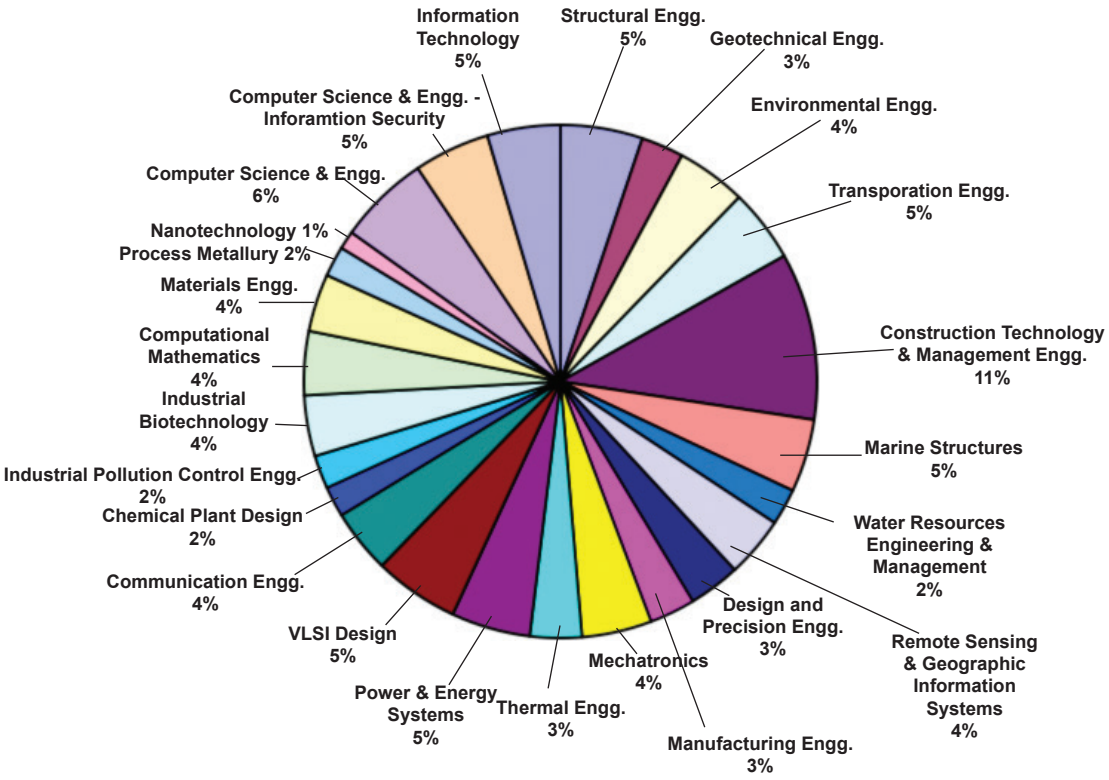
## POST GRADUATE

| Sl.No.. | Branch | Total No. Appeared | No. of students passed in | | | Total Passed | Percentage of passed | 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 | 51 | 50 | 1 | 0 | 51 | 100.00 | 5 |
| 2. | Structural Engineering | 23 | 23 | 0 | 0 | 23 | 100.00 | 4 |
| 3. | Geotechnical Engineering | 14 | 14 | 0 | 0 | 14 | 100.00 | 3 |
| 4. | Environmental Engineering | 24 | 23 | 1 | 0 | 24 | 100.00 | 6 |
| 5. | Transportation Engineering | 19 | 17 | 2 | 0 | 19 | 100.00 | 2 |
| 6. | Marine Structures | 21 | 18 | 3 | 0 | 21 | 100.00 | 2 |
| 7. | Remote Sensing & Geographic Information System | 17 | 15 | 1 | 0 | 16 | 94.12 | 3 |
| 8. | Water Resources Engineering & Management | 10 | 9 | 0 | 0 | 9 | 90.00 | 1 |
| 9. | Design and Precision Engineering | 15 | 13 | 2 | 0 | 15 | 100.00 | 3 |
| 10. | Manufacturing Engineering | 16 | 15 | 1 | 0 | 16 | 100.00 | 4 |
| 11. | Mechatronics Engineering | 24 | 18 | 4 | 1 | 23 | 95.83 | 4 |
| 12. | Thermal Engineering | 11 | 10 | 1 | 0 | 11 | 100.00 | 2 |
| 13. | Power & Energy Systems | 21 | 14 | 5 | 1 | 20 | 95.24 | 5 |
| 14. | VLSI Design | 23 | 16 | 4 | 3 | 23 | 100.00 | 5 |
| 15. | Communication Engineering | 22 | 15 | 5 | 2 | 22 | 100.00 | 4 |
| 16. | Chemical Plant Design | 5 | 2 | 3 | 0 | 5 | 100.00 | 2 |
| 17. | Industrial Biotechnology | 23 | 13 | 8 | 1 | 22 | 95.65 | 3 |

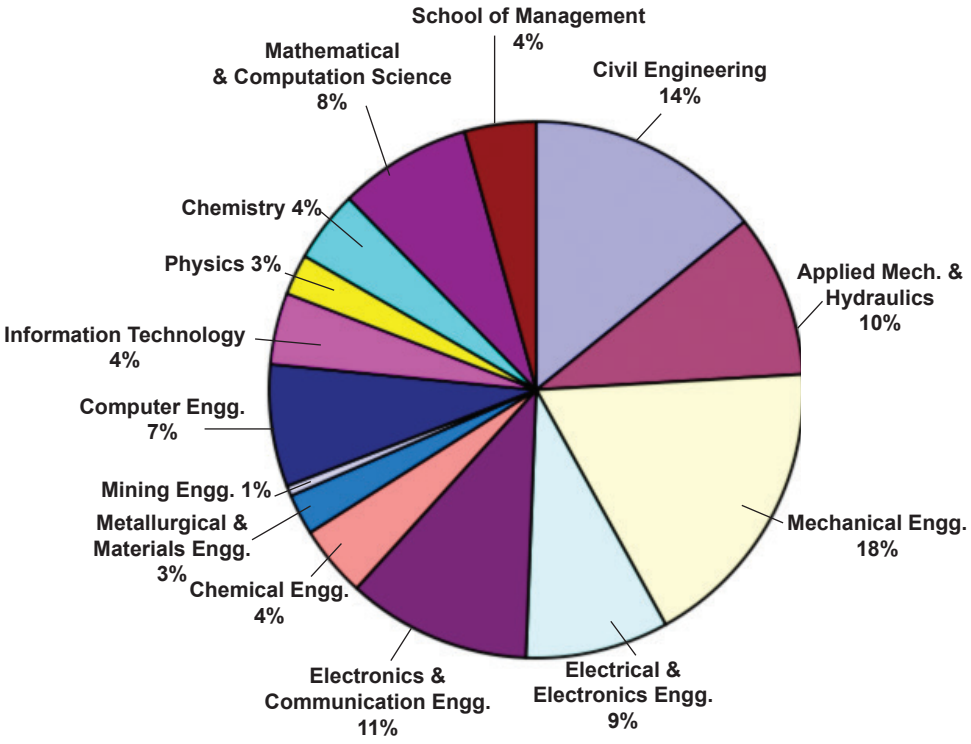
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 18. | Industrial Pollution Control | 9 | 4 | 4 | 1 | 9 | 100.00 | 2 |
| 19. | Process Metallurgy | 5 | 3 | 2 | 0 | 5 | 100.00 | 1 |
| 20. | Materials Engineering | 21 | 20 | 1 | 0 | 21 | 100.00 | 4 |
| 21. | Nanotechnology | 5 | 5 | 0 | 0 | 5 | 100.00 | 0 |
| 22. | Computational Mathematics | 15 | 10 | 3 | 1 | 14 | 93.33 | 1 |
| 23. | Computer Science and Engineering | 21 | 17 | 2 | 2 | 21 | 100.00 | 4 |
| 24. | Computer Science and Engineering - Information Security | 22 | 14 | 6 | 2 | 22 | 100.00 | 6 |
| 25. | Information Technology | 15 | 14 | 1 | 0 | 15 | 100.00 | 4 |
| 26. | Master of Computer Applications | 86 | 50 | 32 | 4 | 86 | 100.00 | 17 |
| 27. | Master of Business Administration | 45 | 36 | 9 | 0 | 45 | 100.00 | 8 |
| 28. | Master of Science (Chemistry) | 25 | 21 | 4 | 0 | 25 | 100.00 | 6 |
| 29. | Master of Science (Physics) | 24 | 15 | 6 | 1 | 22 | 91.67 | 4 |
| | | **632** | | | | **624** | **98.73** | |



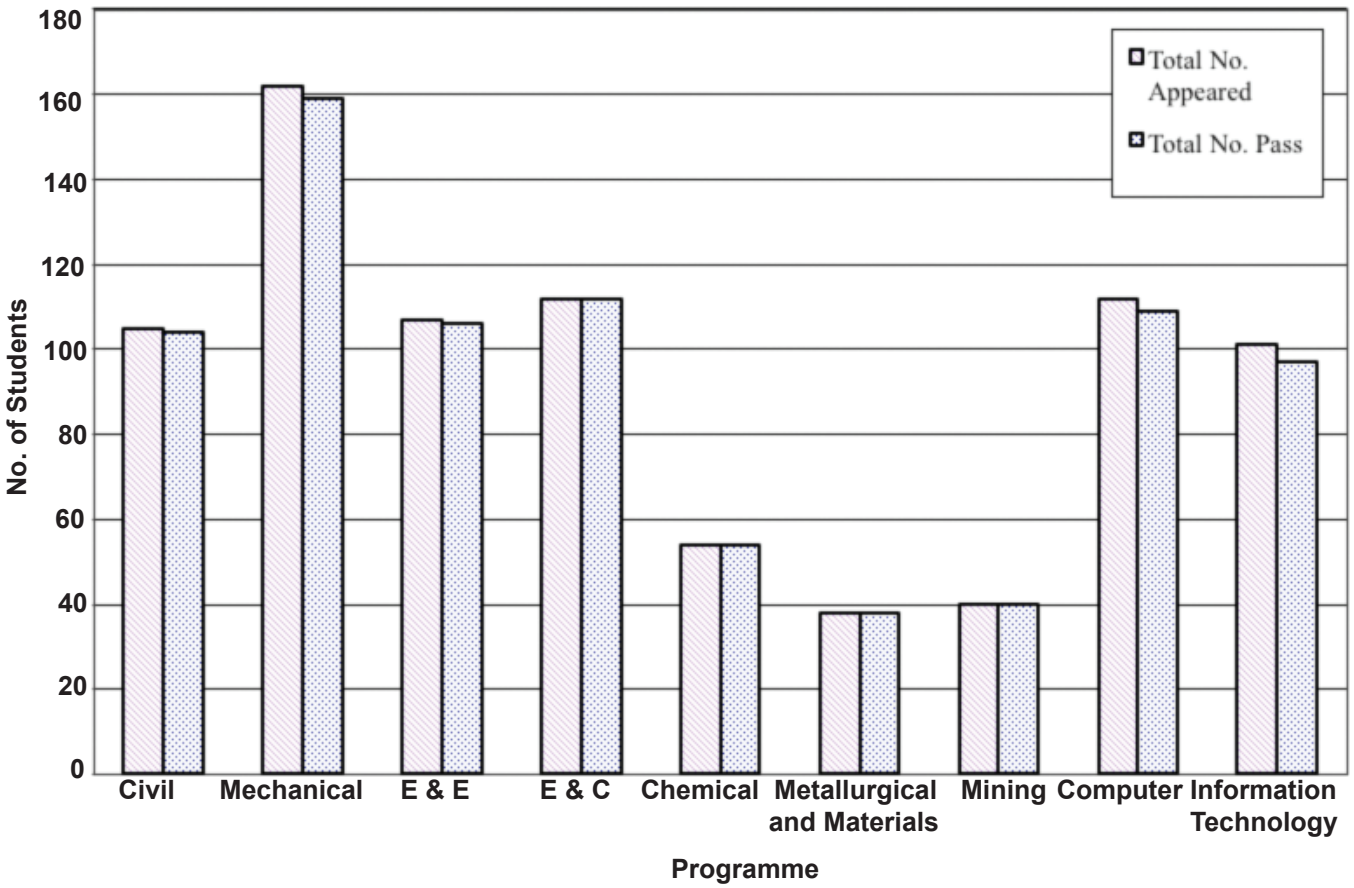

**Pie - chart showing discipline wise B.Tech. admissions 2018-19**



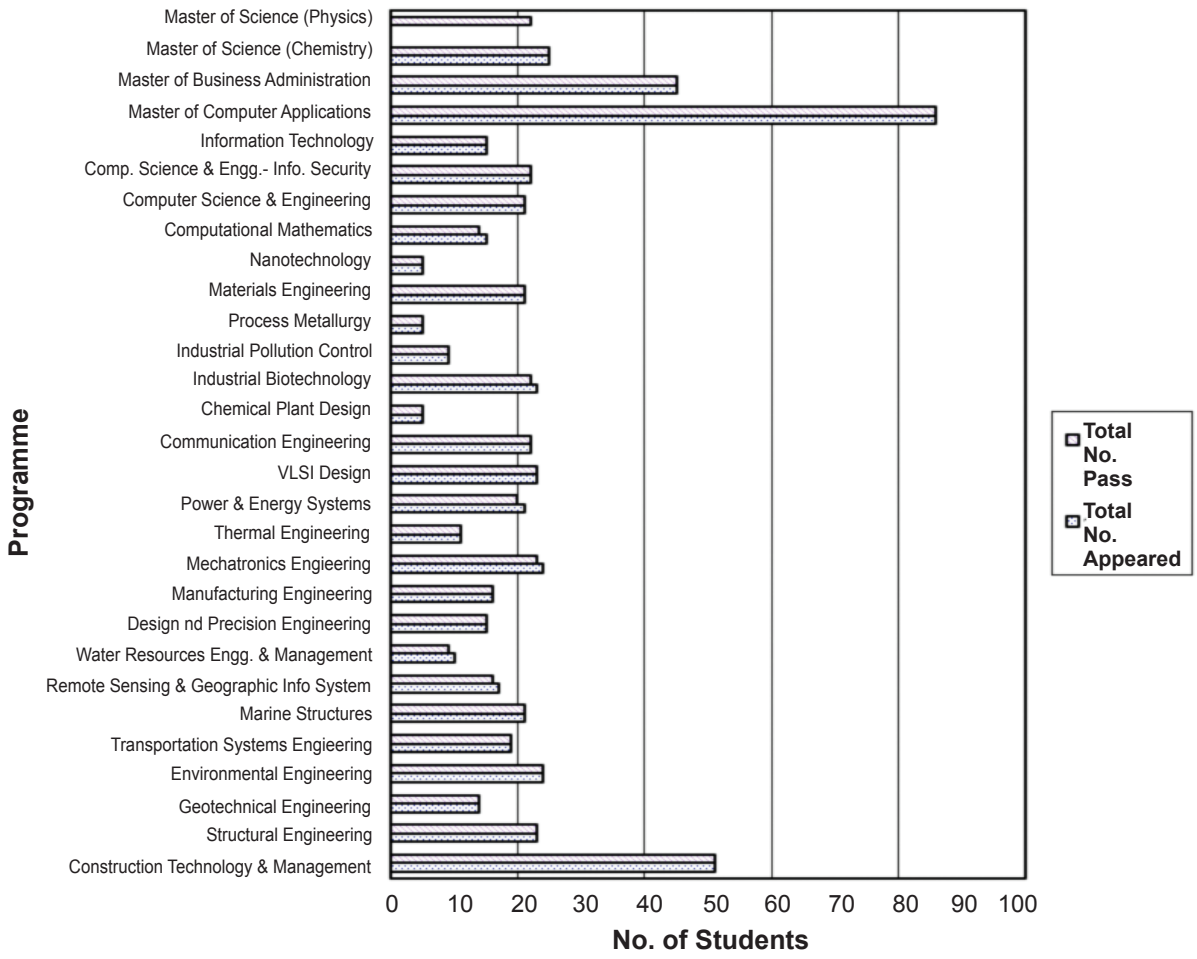

**Pie - chart showing discipline wise M.Tech. admissions 2018-19**



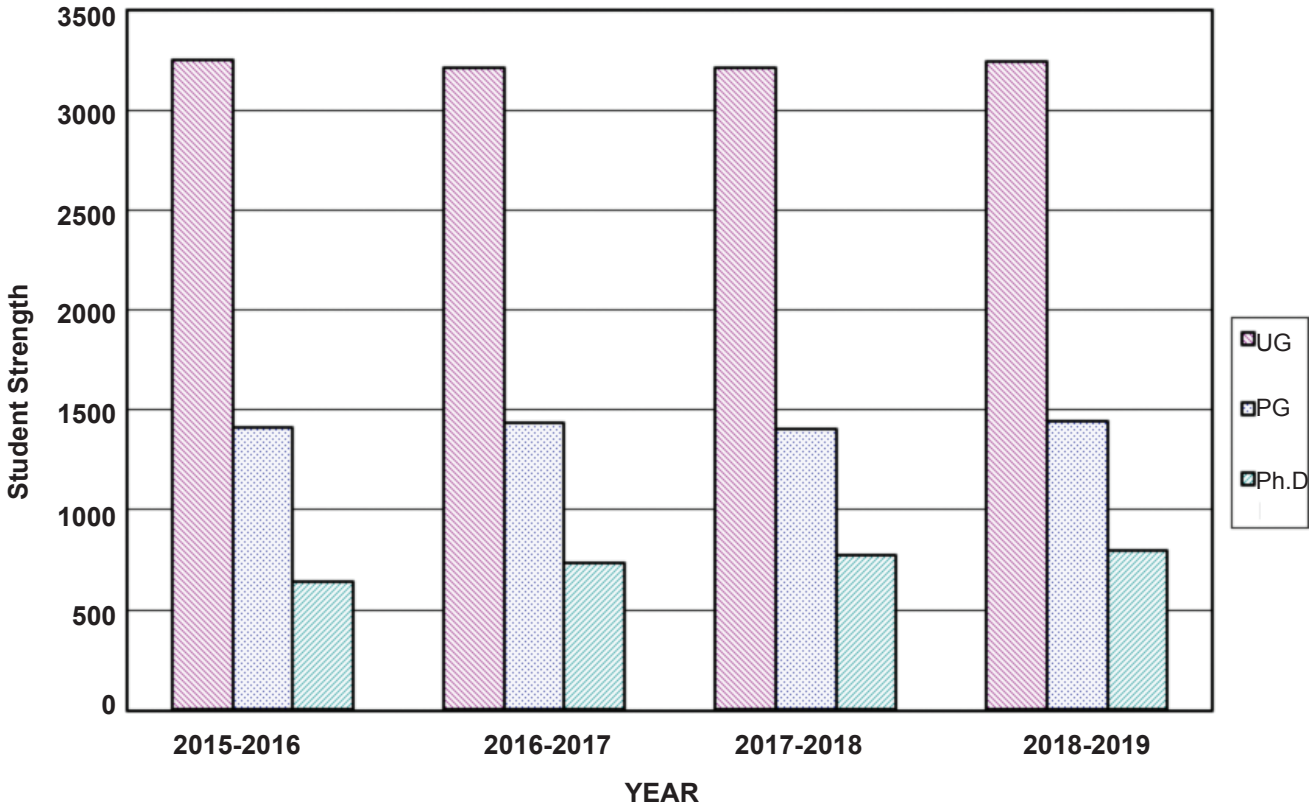

**Pie - chart showing discipline with Ph.D. admissions 2018-19**



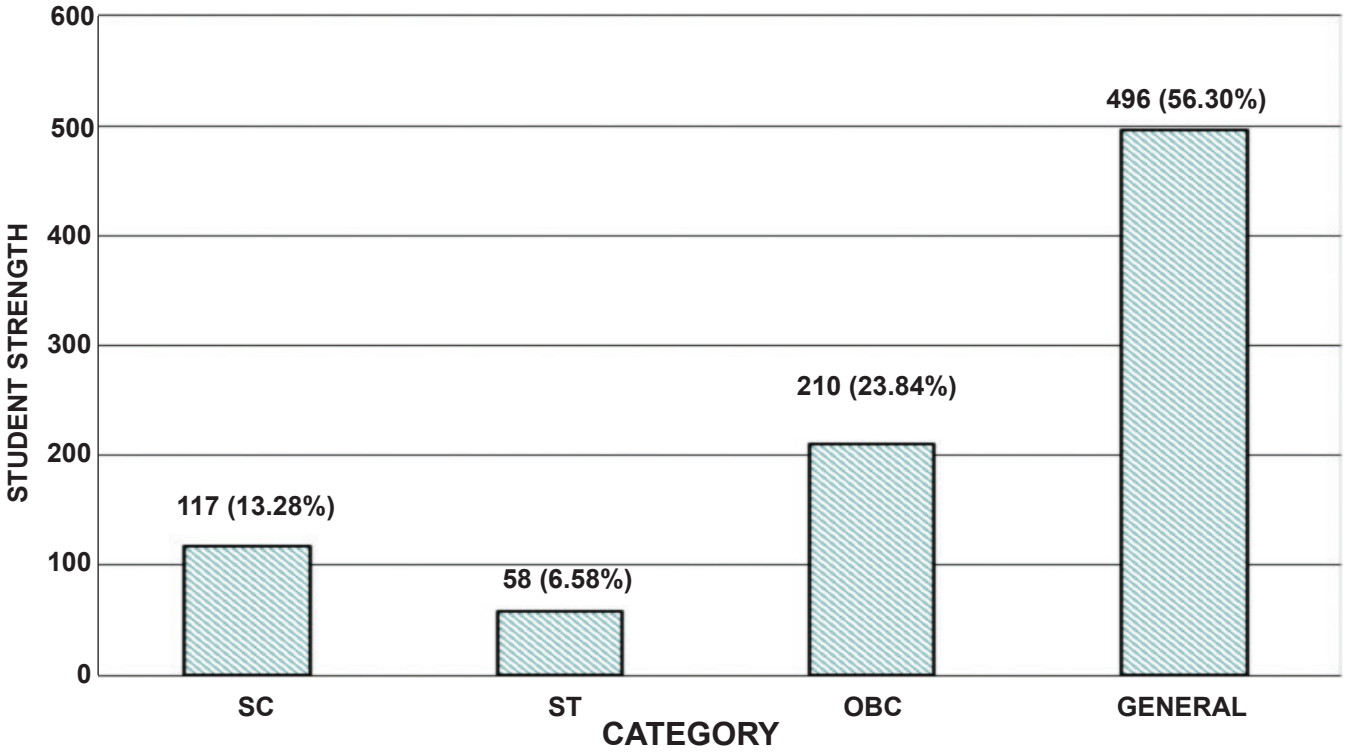

**Examination Results (UG) 2018**



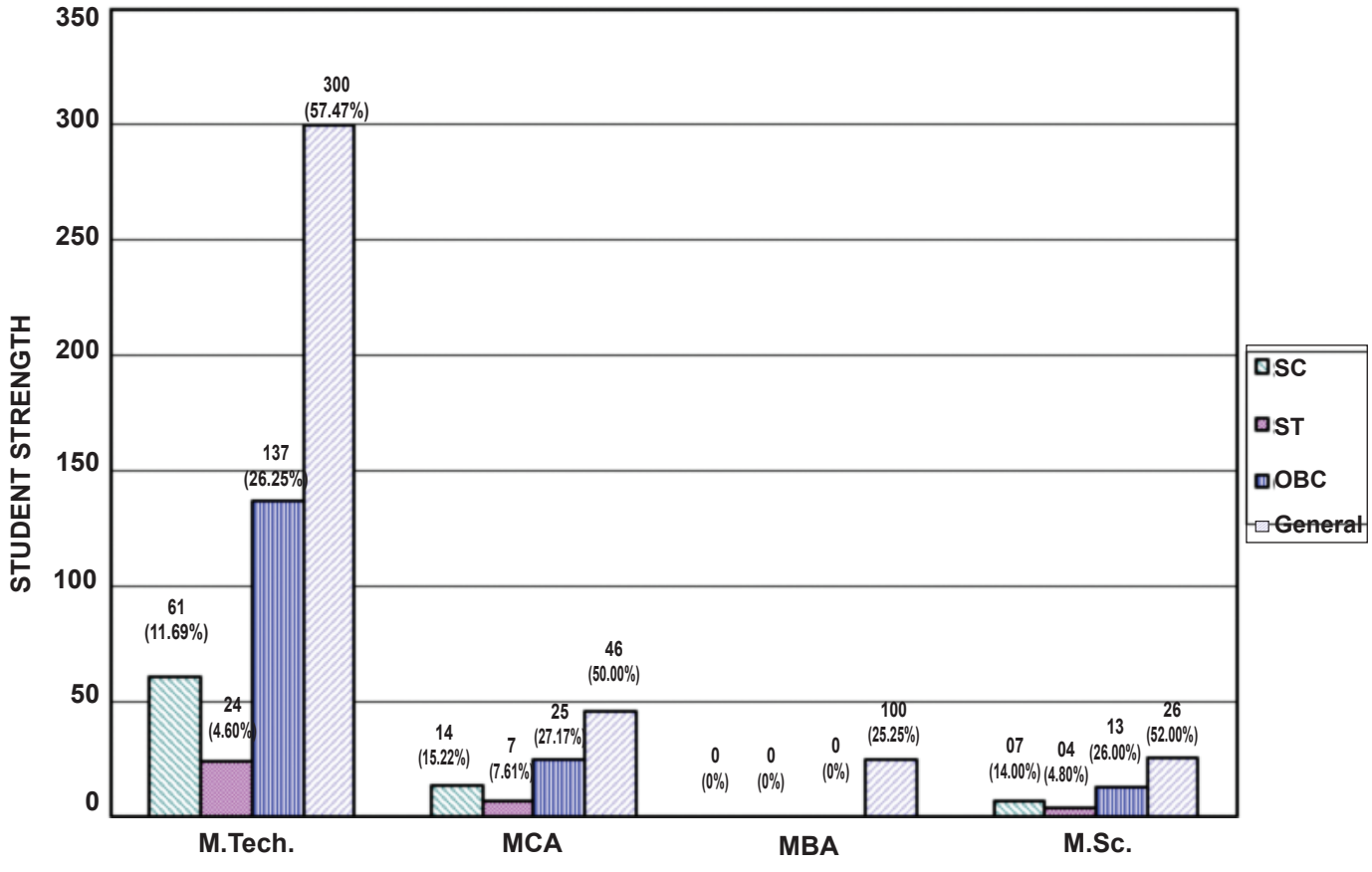

**Examination Results (PG) 2018**




**Growth in enrolment UG/PG/Ph.D. students during the last Five years 2015-2018**




**Categorywise details of UG Admissions 2018-19**




**Categorywise details of PG Admissions**

## Ranks securedby the B.Tech./M.Tech./MCA/MBA/M.Sc. (Physics & Chemistry) Examination held in April/May, 2018

### B.Tech.

| Sl.No. | Branch | Reg. No. | Name of the Student |
|---|---|---|---|
| 1 | CHEMICAL ENGINEERING | 14634014CH37 | ROHAN ADHIKARI S<br>1) Institute Medal<br>2) Mohan V Hosur Gold Medal<br>3) 1986 Batch Gold Medal |
| 2 | CIVIL ENGINEERING | 14601214CV140 | PRERANA KRISHNARAJ<br>1) Institute Medal<br>2) Prof. M. N. Shivshankar Gold Medal<br>3) Dr. R.K. Yaji Gold Medal<br>4) 1986 Batch Gold Medal |
| 3 | COMPUTER SCIENCE AND ENGINEERING | 14624014CO103 | ANANDA RAO H<br>1) Institute Medal |
| 4 | ELECTRONICS & COMMUNICATION ENGINEERING | 14650614EC211 | CHAITHYA G R<br>1) Institute Medal<br>2) 1986 Batch Gold Medal |
| 5 | ELECTRICAL & ELECTRONICS ENGINEERING | 14648114EE129 | MARATHE MAITREYEE SANJIV<br>1) Institute Medal<br>2) Prof. M.R. Shenoy Memorial Prize<br>3) Prof. K. M. Hebbar Gold Medal<br>4) 1986 Batch Gold Medal |
| 6 | INFORMATION TECHNOLOGY | 14625614IT252 | S S KARAN<br>1) Institute Medal |
| 7 | MECHANICAL ENGINEERING | 14603914ME130 | ISAC RAJAN M G RAJAN<br>1) Institute Medal<br>2) 1986 Batch Gold Medal<br>3) Prof. Shuichi Torii Gold Medal |
| 8 | METALLURGICAL & MATERIALS ENGINEERING | 14657314MT42 | VRISHANK R JAMBUR<br>1) Institute Medal<br>2) Karthik Alloys Gold Medal<br>3) Prof. H. V. Sudhaker Nayak Gold Medal<br>4) SMIORE Gold Medal<br>5) 1986 Batch Gold Medal |
| 9 | MINING ENGINEERING | 14606514MN17 | GANTA VENKAT SHIVA RAM CHOUDARY<br>1) Institute Medal<br>2) Hutti Gold Mines Medal |

## POST GRADUATES

| Sl.No. | Branch | Reg. No. | Name of the Student |
|---|---|---|---|
| 1 | Marine Structures | 16021416MS20F | SHERYL ELIZABETH MATHEW<br>1) Institute Medal |
| 2 | Remote Sensing & Geographic Information System | 16000216RS06F | BHAVYA N<br>1) Institute Medal |
| 3 | Water Resources Engineering & Management | 16021616WR01F | ARYA SAJEEV<br>1) Institute Medal |
| 4 | Chemical Plant Design | 16039116PD03F | KOONA PRABHU TEJA<br>1) Institute Medal |
| 5 | Industrial Biotechnology | 16036316IB16F | RAZEENA BEEVI A<br>1) Institute Medal |
| 6 | Industrial Pollution Control | 16034916PC09F | VURA CHAITANYA<br>1) Institute Medal |
| 7 | Construction Technology & Management | 16038316CM08F | MAHALAKSHMI G<br>1) Institute Medal |
| 8 | Environmental Engineering | 16026616EN05F | CHARUTHA BALARAMAN M V<br>1) Institute Medal |
| | | 16031316EN11F | KARTHIK RAJARAM<br>1) Institute Medal |
| 9 | Geotechnical Engineering | 16036016GT05F | KOTESHWARA MAHESH BHAT<br>1) Institute Medal |
| 10 | Structural Engineering | 16027216ST10F | HITHA TERESA ZACHARIAS<br>1) Institute Medal |
| 11 | Transportation Engineering | 16001316TS22F | SURABHI PRABHAKARAN K<br>1) Institute Medal |
| 12 | Computer Science & Engineering | 16045716CS05F | BIJAY DEV K M<br>1) Institute Medal |
| 13 | Computer Science & Engineering – Information Security | 16025516IS19F | RHEA BENNY<br>1) Institute Medal |
| 14 | Power & Energy Systems | 16023316PS11F | NEKKALAPU PRANEETH KUMAR<br>1) Institute Medal |
| 15 | Communication Engineering | 16011416CE23F | SRI SUBATHRA DEVI B<br>1) Institute Medal |
| 16 | VLSI Design | 16037616VL20F | SUDHARSHAN H<br>1) Institute Medal |
| 17 | Information Technology | 16046016IT12F | RAGHAVENDRA D R<br>1) Institute Medal |
| 18 | Computational Mathematics | 16045416CMA11F | SHIVANI DWIVEDI<br>1) Institute Medal |

| | | | |
|---|---|---|---|
| 19 | Design and Precision Engineering | 16011916DP05F | JITHU JACOB<br>1) Institute Medal |
| 20 | Manufacturing Engineering | 16007116MF02F | AKHIL K<br>1) Institute Medal |
| 21 | Mechatronics Engineering | 16006216MC14F | RAIKAR KIRTI VASANT<br>1) Institute Medal |
| 22 | Thermal Engineering | 16008616TH08F | ROZILA NAUSHEEN<br>1) Institute Medal<br>2) Dr. B. S. Samaga Award |
| 23 | Materials Engineering | 16034316ML20F | VISAKH M S<br>1) Institute Medal<br>2) Prof. K R Hebbar Gold Medal<br>3) Prof. K. L. Bhat & Prof. P. Prasad Rao Gold Medal |
| 24 | Nanotechnology | 16043316NT04F | PRAJWAL K<br>1) Institute Medal |
| 25 | Process Metallurgy | 16009916PM01F | AUGUSTINE SAMUEL ALBERTS<br>1) Institute Medal<br>2) Smt. Sarojini Pillay Gold Medal |

## Master of Computer Applications

| Sl.No. | Branch | Reg. No. | Name of the Student |
|---|---|---|---|
| 26 | Master of Computer Applications | 15206415CA18 | CHARUL VERMA<br>1) Institute Medal<br>2) Dr. Saroja R Hebbar Gold Medal |

## Master of Business Administration

| Sl.No. | Branch | Reg. No. | Name of the Student |
|---|---|---|---|
| 27 | Master of Business Administration | 16304516SM45 | VARALAXMI BHAT P<br>1) Institute Medal |

## Master of Science

| Sl.No. | Branch | Reg. No. | Name of the Student |
|---|---|---|---|
| 28 | Chemistry | 16403216CY24 | SUPRIYA S<br>1) Institute Medal<br>2) Prof. G. H. Kulkarni Gold Medal |
| 29 | Physics | 16400916PH09 | KAVYA K NAYAK<br>1) Institute Medal<br>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 CHEMICAL ENIGNEERING

**EXISTING SPECIALIZATION:**

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

### DEPARTMENT OF CIVIL ENGINEERING

**EXISTING SPECIALIZATION:**

(i) Construction Technology and Management
(ii) Environmental Engineering
(iii) Geology and Earth Sciences
(iv) Geotechnical Engineering
(v) Structural Engineering
(vi) Transportation Engineering
(vii) Engineering Geology and Groundwater

### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING:

**EXISTING SPECIALIZATION:**

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

**PROPOSED SPECILIZATION:**

Graph Theory, Graph Algorithms, Big Data Analytics

### DEPARTMENT OF CHEMISTRY

**EXISTING SPECIALIZATION:**

M.Sc. (Chemistry) General Chemistry Photocatalysis, Supercapacitors, Thermo-electrics, Materials for energy and environmental applications. Biotechnology, Environmental Engg., Transfer Operations, Industrial Biotechnology, Energy, Electrochemical Applications, Process Modeling and Simulation, Polymer & Nanocomposites, Catalysis & Reaction Engg. Synthetic Organic Chemistry. Catalysis. Aerobic oxidation.

**PROPOSED SPECIALIZATION:-**

Nano Technology, Bioenergy, Computational Fluid Dynamics (CFD), Multi Phase Flow

### 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

**EXISTING SPECIALIZATION:**

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

**EXISTING SPECIALIZATION :**

Affective Computing, Big Data Analytics, Cloud/Edge/Fog Computing, Cloud Security, Computer Networks, Cyber Security, Databases, Data Mining, Distributed Computing, Healthcare Informatics, High Performance Computing, Information

Retrieval, Information Security, Internet of Things, Natural Language Processing, Network Security, Semantic Web Technology, Social Multimedia/Social Network Analysis, Software Engineering, Web Services, Wireless Sensor Networks.

**PROPOSED SPECIALIZATION:**

Blockchain Technologies, Future Internet Architecture, Mobile Software Engineering, Deep Learning Applications.

## DEPARTMENT OF MATHEMATICAL AND COMPUTATIONAL SCIENCES

**EXISTING SPECIALIZATION:**

Computational Fluid Dynamics, Wireless Sensor Networks, Reliability Engineering, Graph Theory, Graph Algorithms, Computer Network Security, Real Analysis, Dynamical Systems, Fixed Point Theory, Image Processing, Differential Equations, Numerical Methods.

## 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

## SCHOOL OF MANAGEMENT

**EXISTING SPECIALIZATION:**

Management, Social Sciences and Humanities

**PROPOSED SPECILIZATION:**
Business Analytics

## DOCTORATES AWARDED

## DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS

**Doctorate awarded**

**Upto 31st March 2018:** 72

**During period 1st April 2018 to 31st March 2019: 07**

Dattatreya Mahajan, Study of spatial and Temporal Variability of droughts in the Krishna river basin in Maharastra, India, Dr. B.M.Dodamani

Beena Mary Jhon, Physical model studies on the effect of coastal vegetation on wave Attenuation and Run- up, Dr. Kiran G. Shirlal & Dr. Subba Rao

Minu, An Evaluation of atmospheric correction algorithms in the estimation of soil organic carbon from Hyperion image, Dr. Amba Shetty

Geetha Kuntoji, Prediction of wave transmission and damage level of Tandem break water using soft computing Techniques, Dr. Subba Rao & Dr. Manu

N. Amarnath Reddy, Classification of Indian coastal Tidal inlets and some aspects of morphology changes under cyclone event, Dr. Subba Rao & Dr. Jaykumar Salem (NIO, Goa).

Jagadeesh H.B., Physical Model studies on wave Propagation along approach channel and its effect on Harbor tranquility, Dr. Subba Rao

Superno Ghosh, An integrated modelling of Agro- Industrial landscape dynamics in India, Dr. Amba Shetty

## DEPARTMENTOFCHEMICALENGINEERING

### DETAILS OF PH.DS AWARDED

Ms. C. Vaisali "Development of novel refining techniques and enzymatic synthesis of antioxidant ester for improving the oxidative stability of sardine oil." 2018, Dr. Prasanna B.D., & Dr. I. Regupathi

Mr. Sivananth M. "Surfactant Assisted Aqueous Two Phase Extraction of Polyhydroxyalkanoate Copolymer from Cupriavidus necator", 2018, Dr. I. Regupathi

Ms. Charanyaa Sampath "Studies on the production of n-3 polyunsaturated fatty acid glyceride concentrate from Indian Sardine oil", 2018 , Dr. Prasanna B.D., & Dr. I. Regupathi

Mr. Abhinav K. Nair, "Synthesis and Characterization of TiO2 Based Nanomaterials and their Applications in Water Purification", 2018, Dr. P.E. Jagadeesh Babu

Mrs. Manjula P., "PVA Biocomposites with Reinforced Cellulose Microfibers from Agricultural Residues", 2018, Dr. G. Srinikethan, Dr. Vidya Shetty K.

Mr. Harsha Thaira, "Bioprocess Development and Optimization of Melanin from Pseudomonas stutzeri ", 2018, Dr. Keyur Raval

Ms. Anjana P.A., "A study on Multi doping effect on Ceria based material for soot oxidation activity", 2018, Dr. Hari Prasad Dasari

## DEPARTMENT OF CIVIL ENGINEERING

### During period 1st April 2018 to 31st March 2019:

Nimi Ann Vincent, Electrical resistivity studies on Geo-materials and construction materials, 2018, Dr. R. Shivashankar & Dr. K. N. Lokesh

Mr. Parameshwar Hiremath, Production and performance of reactive powder concrete at elevated temperatures 2018, Dr. Subhash C. Yaragal, Ph.D.

Mr. Rajendra Prabhu, Performance appraisal of eco-friendly mortars and concretes, 2018, Dr. Subhash C. Yaragal, Dr. Katta Venkataramana.

## DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

### DURING PERIOD 1ST APRIL 2018 TO 31st March 2019:-.

Girish G.N. "Automatic Segmentation of Infra-Retinal Cysts from Optical Coherence Tomography Scans", 2018 , Dr. Jeny Rajan

## DEPARTMENT OF CHEMISTRY

### DURING PERIOD 1ST APRIL 2018 TO 31st March 2019:- No. Awarded (including those for which viva has been successfully completed):-

M.C.S Nayak, "Fabrication and Characterization of Polyphenylsulfone-Based Membranes with Nanocomposite Additives for Water Purification Application", January, 2019. Prof. Arun M Isloor.

Vinayakumara D. R. "Synthesis and characterization of new heterocycle-based discotic mesogens for optoelectrnic applications", March 26, 2019. Prof. A. Vasudeva Adhikari.

Lolakshi Mahesh Kumar, "Pincer ligand-metal complexes for Organic Transformation reactions". October, 2018. Prof. B Ramachandra Bhat

Rasheeda Maqbool Ansari, "Synthesis, Characterization and Application of some Transition metal Complexes for Cross Coupling Reactions". October, 2018. Prof. B Ramachandra Bhat.

Srikala P, "DESIGN AND SYNTHESIS OF NEW COLORIMETRIC SENSORS FOR ENVIRONMENTAL POLLUTING HRAVY METAL IONS", June-2018. Prof. Darshak R Trivedi.

Sunil Kumar N, "DESIGN SYNTHESIS AND CHARACTERIZATION OF MOLECULAR ADDUCTS OF ACTIVE PHARMACEUTICAL INGREDIENT FOR IMPROVEMENT OF THEIR PHYSICAL PROPERTIES", July-2018. Prof. Darshak R Trivedi.

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

**UPTO 31ST MARCH 2018:- No. Awarded (including those for which viva has been successfully completed):-21**

**DURING PERIOD 1ST APRIL 2018 TO 31ST MARCH 2019:- No. Awarded (including those for which viva has been successfully completed):-10**

**(FOR PERIOD OF REPORT ONLY)**

Anu Shaju Areeckal "Early Diagnosis of Osteoporosis using Metacarpal Radiogrammetry and Texture Analysis", 13th March 2019, Dr. Sumam David S.

Jhnanesh Somayaji "Performance and Reliability Codesign of Drain Extended MOS devices for Advanced SoC Applications", 3rd October 2018, Dr. M. S. Bhat.

Sarwesh P. "Energy Efficient Network Architecture for Internet of things Applications", 1st October 2018, Dr. N. S. V. Shet.

Raghu J. "Track Stitching & Un-switching Algorithms for Multiple Target Tracking", 22nd September 2018, Dr. P. Srihari.

Shilpa Suresh "Nature Inspired Algorithms for Enhancement and Land-Cover Classification of Satellite Images", 19th September 2018, Dr. Shyam Lal.

Nagaraj Yamanakkanavar "Robust and efficient methods for segmentation of intima media thickness of the common carotid artery", 7th September 2018, Dr. A V Narasimhadhan.

Ranjan Kumar Mahapatra "Received Signal Strength based localization in Wireless Sensor Networks", 21st August 2018, Dr. N. S. V. Shet.

Asha C. S. "Video Tracking in RGB and Infrared Imagery" 7th August 2018, Dr. A V Narasimhadhan.

Goutham Simha G. D., "Design & Implementation of Modulation & Detection Strategies for SM-MIMO Systems", 11th June 2018, Dr. U Shripathi Acharya.

Simu Shreyas Ajitkumar "Segmentation and Feature Extraction of Hand Radiographs for Bone Age Assessment", 5th May 2018, Dr. Shyam Lal

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

**UPTO 31ST MARCH 2018:- 23**

**DURING PERIOD 1ST APRIL 2018 TO 31st March 2019:- No. Awarded: 07**

Deepthi Antony "Localisation of partial discharge Source in oil insulation using Acoustic emission technique: Non-iterative method, newton's Method and genetic algorithm" Dec 2018, Dr G S Punekar.

Raghavendra P. "Voltage Regulation in Smart Grids with Distributed Generation Systems, "April 2018, Dr Dattatraya N Gaonkar.

P Saravana Prakash "Investigations on Three-Phase Front-End AC-DC Converters for Power Quality Improvement" 2019, Dr R Kalpana.

Jayasankar V N Grid connection of wind solar hybrid renewable energy system with active power filter functionality, March 2019, Dr Vinatha U

M. Vijay "Neural Network Based Non-Linear Control Methods with Observer Design for Robotic Manipulators", October 2018, Dr. Debashisha Jena.

B Rajanarayan Prusty "Probabilistic Steady-State Analysis of Power Systems with Photovoltaic Generations", March 2019, Dr. Debashisha Jena

## DEPARTMENT OF INFORMATION TECHNOLOGY

**DURING PERIOD 1ST APRIL 2018 TO 31ST MARCH 2019: 1**

Raj Kumar Jaiswal, "Design and Performance Analysis of Position-Based Routing Protocol Using Location Prediction Techniques for Vanet" July 2018, Dr. Jaidhar C D

## DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES

During Period 1st April 2018 to 31st March 2019:- :- No. awarded (including those for

which viva has been successfully completed):-3

## DEPARTMENT OF MECHANICAL ENGINEERING.

### DETAILS OF PH.DS AWARDED

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

Durga prasad C, "Investigation On Elevated Temperature Adhesive Wear Behavior Of Microwave Fused Thermal Spray Tribaloy Composite Coatings", 2019, Dr. Sharnappa J & Dr. Ramesh M R.

Hargovind soni, "Analysis and Optimization of Wire Electro Discharge Machining of Ti50Ni50-Xcox (X=1, 5, 10) Shape Memory Alloys", 2018, Dr. Narendranath S and Dr. Ramesh M R

Kiran M. C, "Static Buckling And Free Vibration Analysis Of Skew Magneto-Electro-Elastic Plates", 2018, Dr. Subhaschandra Kattimani

Vinyas M, "Static Behaviour of Functionally Graded Magneto-Electro-Elastic Plates and Beams in Thermal and Hygrothermal Environment", 2018, Dr. Subhaschandra Kattimani

Avdooth Ashok Walnuj, "Investigation of Pool Boiling Heat Transfer from Rough Surface and Microchannel Geometry Under Variable Heat Supply", 2019, Dr. Sathyabhama A

Rashmi L Malghan, "Development of a Hybrid Neural Network Based Intelligent Decision Support SYstem with Reverse Mapping for CNC Machining", 2018, Dr.Shrikantha S Rao

Gurubasavaraju T. M, "Characterization of Magneto-rheological fluid monotube damper through experimental and computational analysis", 2018, Dr. Hemantha Kumar & Dr. Arun M

Nithin H S, "Investigations On High Temperature Corrosion And Erosion Behaviour Of Plasma Sprayed Co-Based Composite Coatings",2018, Dr. Vijay Desai & Dr. Ramesh M R

Mahantayya Mathapathi, "Studies On Elevated Temperature Tribological Behavior Of Fly Ash Based Plasma Spray Coatings", 2018, Dr. Ramesh M R & Dr. M R Doddamani

Veeresh Nayak C, "Development and Characterization of Metal Injection Moulded Components in Improving Resistance to High Temperature Wear and Oxidation", 2018, Dr. Ramesh M R & Dr. Vijay Desai

## DEPARTMENT OF MINING ENGINEERING

Raghuchandra Garimella, "Studies on seismic energy of ground vibrations due to blasting based on signal processing and electrical energy generation" December 2018, Prof. V.R.Sastry.

Ravindra-"Investigations on performance of a diesel engine operated with raw cardanol and kerosene blends" February 2019, Dr.M.Aruna and Dr. Harsha Vardhan.

## DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

Vignesh Nayak U., "Characterization of Select Nanofluid and Vegetable Oil Quenchants and Assessment of Heat Transfer during Quench Hardening of Steels", 2018, Supervisors: Dr. K. Narayan Prabhu.

Sudheer R. was awarded Ph.D. degree for his work on "Assessment of the effect of addition of nano particles on thermal energy storage parameters of phase change materials", 2018, Supervisors: Dr. K. Narayan Prabhu.

Arun Augustin was awarded Ph.D. degree for his work on "Microstructural, Mechanical and Anti-Microbial Characterization of Electrodeposited and DC Magnetron Sputter Deposited Copper Coatings on Aluminium", 2019, Supervisors: Dr. K. Rajendra Udupa & Dr. Udaya Bhat K.

Sachin Kumar B. was awarded Ph.D. degree for his work on "Physico-Chemical Characteristics and Application Potential of Advanced Nickel

Titanate and Nickel Cobaltite Nanofibers", 2019, Supervisors: Dr. S. Anandhan & Dr. Sreeram K Kalpathy, IITM.

Jayalakshmi M. was awarded Ph.D. degree for her work on "Effect of shot peening coverage on microstructure and mechanical properties of plasma nitrided AISI 316L stainless steel", 2019, Supervisors: Dr. Udaya Bhat K. & Dr. Ramachandra Bhat

## DEPARTMENT OF PHYSICS

DURING PERIOD 1ST APRIL 2017 TO 31st March 2018:- No. Awarded (including those for which viva has been successfully completed):- **09**

Akhila B Edathaze, Investigation of Properties, Corrosion and Bioactivity of Novel BaO added Phosphate Glasses and Glass Ceramic Coating on Biomedical Metallic Implant Materials, October 2018, Dr.H.D.Shashikala

Sibin K.P, ITO based Transparent and conducting films for space , solar energy and flexible electronic applications, August 2018, Dr. H.D.Shashikala & Dr. Harish C Barshilia

Kiran Pedanaboyina, Synthesis, Characterisation and Hydroxy Carbonated Apatite (HCA) Formation Studies on Sol-Gel Derived SiO2-CaO-P2O5, SiO2-CaO-Na2O-P2O5, SiO2-CaO-BaO-Na2O-P2O5 Glass Systems, February 2019, Dr. N.K.Udayashankar & Dr. H.D.Shashikala

Mrs. Veena E, Growth and characterization of spray deposited lead zinc sulphide thin films, 2018, Prof. Kasturi V. Bangera.

Santhosh T.C.M., Preparation and properties of cadmium-zinc chalcogenides for device applications, 2018, Prof. Kasturi V. Bangera B. Naveen Kumar Reddy, Growth and Characterization of DC Magnetron Sputtered Ni-Ti Intermetallic and near Equiatomic Thin Films, 2018, Prof. N. K. Udayashankar.

Martha Ramesh, Preparation characterization of metal oxide and silicon based nanostructures for energy application, 2018, Dr. H.S. Nagaraja

Manepali R Kiran. Investigation on Vanadly Phthalocyanine and Zinc Oxide based Hybrid Photodiodes, 2018. Prof. M.N. Satyanarayan & Prof. G. Umesh.

Brain Jeevan Fernandes, Electrical Switching Characteristics and Thermal Properties of Tellurium Chalcogenide Glassy Alloys, Prof. N. K. Udayashankar, 2019

## SCHOOL OF MANAGEMENT

DURING PERIOD 1ST APRIL 2018 TO 31st March 2019:- No. Awarded (including those for which viva has been successfully completed):- **9**

Usha Prabha Kamath, "An Empirical Study of the Brand Building of Engineering Institutions in Karnataka: A Strategic Framework", 07.09.2018, Dr. Sheena.

RAJESH N S, "Multiculturalism in Indo-Canadian Writing- A Study of Select Works", 23.02.2019, Dr. SHASHIKANTHA K.

PRIYANKA, "Exile, Identity and Resistance: Palestinian Realities in the Select Works of Sahar Khalifeh", 27.07.2018, Dr. SHASHIKANTHA K.

Vijayalakshmi N S, "Structural Diversity of Campus Environments in Higher Technical Institutes: A study on Undergraduate Students of Indian Institute of Technology and National Institute of Technology",09.04.2018, Prof. A. H. SEQUEIRA.

Massand Ajay Balrambhai, "An Empirical Investigation of Foreign Banks in India in Post Reform Period: Trends, Determinants, and Impact", 12.02.2019, Dr. Gopalakrishna B. V.

Anil Kumar Manchikatla, "An Empirical Analysis of Legal Insider Trading in India", 19.07.2018, Dr. Rajesh Acharya H.

Shamal S "A Study on Consumer Acceptance of Branded Fortified Foods & Beverages in India", 15.03.2019, Dr. Bijuna C. Mohan.

Shridev, "An Exploratory Analysis of Financial Distress and Default- A Study of Select Indian companies", 28.12.2018, Dr. Suprabha K. R.

Uttam Chakraborty, "Impact of Online Reviews on Consumer Based Brand Equity Dimensions and their effects on Purchase Intention of Electronic Products in India", 28.11.2018, Dr. Savita Bhat

# 10.0 HUMAN RESOURCES

## 10.1 STAFF POSITION

| Teaching Staff | Number |
|---|---|
| Professors | 77 |
| Associate Professors | 49 |
| Assistant Professors | 107 |
| Other staff, A.P.D. & System Manager | 02 |
| Contract Faculty | 14 |
| | **249** |

| Non-Teaching Staff | |
|---|---|
| Administrative Officers | 25 |
| Technical supporting staff | 45 |
| Non-technical supporting staff | 88 |
| | **158** |

## THE STAFF

### *(A) Administrative Staff*

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

K Uma Maheshwar Rao, Ph.D. from 21.07.2017

### *Dy. Director*

Ananthanarayana V S, from 29.10.2018

### *Dean (Academic)*

M B Saidutta, Ph.D. from 01.10.2017 onwards

### *Dean (Planning and Development)*

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

### *Dean (Faculty Welfare)*

A H Sequeira, Ph.D. from 15.03.2018

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

Prasad Krishna, Ph.D. till 31.8.2018
K Panduranga Vittal, Ph.D. from 1.9.2018

### Associate Dean (PG&R)

Vidya Shetty, Ph.D. from 24.10.2018

### *Associate Dean (UG)*

Ashwini Chaturvedi, Ph.D.
from 24.10.2018.

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

S M Hegde, Ph.D. till 14.10.2018
Jagannatha Nayak, from 15.10.2018

### *Dean (Research & Consultancy)*

Ananthanarayana, Ph.D. till 12.12.2018
U. Shripathi Acharya, from 13.12.2018

### *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. till 31.12.2018
Subba Rao, Ph.D. (Mangalore University),
G.S. Dwarakish, Ph.D. Anna University)
Mahesh A, Ph.D. (IIT Bombay) HOD till 11.3.2019
Kiran G. Shirlal, Ph.D. (NITK),
Amba Shetty, Ph.D. (NITK), HOD
from 12.03.2019
P.C. Deka, Ph.D. (I.I.T. Guwahati)

### *Associate Professors*

K Varija, Ph.D. (IISc. Bangalore)
B.M. Doddamani, Ph.D. (NITK)
H.Ramesh, Ph.D. (NITK)

### *Assistant Professors:*

K. Subrahmanya, Ph.D. NITK
Manu, (Ph.D. NITK)
Pruthviraj U., Ph.D. (NITK)
K. Vadivuchezhian, Ph.D. (IIT Madras)
Nasar T, Ph.D. (IIT, Madras)
Debabrata Karmakar, Ph.D., (IIT Kharagpur)

### *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)
Regupathi, Ph.D., (Anna University, Chennai)
P.E. Jagadeeshbabu, Ph.D. (Anna Univ. Chennai)

### *Assistant Professors:*

S. Gangamma, Ph.D. IIT, Bombay
Jitendra Pal S., Pursuing Ph.D. at IIT Delhi
Hari Prasad Dasari, Ph.D. (Korea Institute of Science and Technology, Korea)
Keyur Raval, Ph.D. (Aachen Den University)
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)

## *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)
Varghese George, Ph.D. (I.I.T. Bombay) HOD. till 21.04.2019
K. Swaminathan. Ph.D. (I.I.T. Bombay) from 22.04.2019
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)
Suresha S N, Ph.D. (NITK)
Arun Kumar Thalla (IIT Rourkee), Ph.D.

Bibuti Bhushan Das, Ph.D., (IIT Bombay)
Basavaraj Manu, Ph.D. (IIT, Bombay)

### *Assistant Professors:*

Prashanth M.H., Ph.D. at IISc
Raviraj H. Mulangi, M.E., Ph.D., IISC
Gangadhar Mahesh, Ph.D. (Hongkong)
A. S Balu, Ph.D. (IIT Madras)
C Rajasekaran, (IIT Madras)
C.P. Devatha, Ph.D. (IIT Roorkee)
A. Gowri, Ph.D. (IIT Madras) till 8.8.2018
Babloo Chaudhary (Contractual), Ph.D. Kyoto University, Japan
Adani Azhoni, Ph.D., (IIT, Delhi)

## *Department of Computer Engineering*

### *Professors:*

K. Chandrasekaran, Ph.D. (J.N.T.U.)
Shanthi Thilagam, Ph.D. (NITK) HOD till 6.1.2019
Annappa,Ph.D (NITK, Surathkal)

### *Associate Professors*

Vani M., M.Tech. (NITK, Surathkal)
Alwyn Roshan Pais, Ph.D. (NITK), HOD from 7.1.2019
Shashidhar G Koolagudi, Ph.D.(IIT Kharagpur)

### *Assistant Professors:*

Saumya A. Hegde, M.Tech. (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)
Manu Basavaraju, Ph.D. (IISC, Bangalore)
M Venkatesan, Ph.D. (VIT University, Vellore) - Contractual

## *Department of Chemistry*

### *Professors:*

A. Nityananda Shetty, Ph.D. (Mangalore Univ.)
A. Vasudeva Adhikari, Ph.D. (Karnataka Univ.)

A. Chitharanjan Hegde, Ph.D. (Mangalore Univ.)
B. Ramachandra Bhat, Ph.D. (Mangalore Univ.)
Krishna Bhat, Ph.D. (Mangalore Univ.) HOD till 10.8.2018
Arun Mohan Isloor, Ph.D. (Mangalore University) HOD from 11.8.2018

### 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)

## 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. Sripati Acharya, Ph.D., (I.I.Sc., Bangalore) HOD till 16.04.2018
Laxminidhi T., Ph.D. (IIT, Madras) HOD from 17.04.2018

### Associate Professors:

M. Ramesh Kini, Ph.D. NITK
Neelavar Shekar Shet, Ph.D. (NITK)
Ashwini Chathurvedi, Ph.D. (MUM Malaysia)

### Assistant Professors:

Rekha S., Ph.D.
Kalpana G. Bhat, M.Tech. Karnataka University
Aparna P., Ph.D. (NITK)
B. Nagavel, M.E., (Jadavpur University) Pursuing Ph.D. at IIT Kharagpur
Krishna Moorthy K., Ph.D. at IIT, Bombay
Deepu Vijayasenan, Ph.D. (EPFL, Swizerland)
Prashantha Kumar H, Ph.D. (NITK)
M R Arulalan, Ph.D. (IISC, Bangalore)
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)

## 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),
Gururaj S. Punekar, Ph.D. (IIT, Kharagpur)

### 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)
Venkatesa Perumal, Ph.D. (IIT Delhi), HOD from 29.05.2017
Dattatraya N. Goankar, Ph.D. (IIT, Roorkee)
Debashisha Jena, Ph.D. (NIT Rourkela)

### Assistant Professor :

Iddya Raghavendra Rao M.Tech. (Mangalore Univ.)
Nagendrappa H., Ph.D. (Canada)
Tukaram Moger, Ph.D. at IISC, Bangalore
Parthiban, Ph.D. (IIT, Roorkee)
Girisha Navada, M.Tech. (University of Calicut)
Karthikeyan, Ph.D. (NIT, Thiruchirapalli)
R Kalpana S, Ph.D. (IIT, New Delhi)
Sheron Figarado, Ph.D. (IISC, Bangalore)
Y Suresh, Ph.D. (NIT Rourkela)
Krishnan C M C, Ph.D. (Ghent University, Ghent, Belgium)
Yashawanth Kashyap, Ph.D. (IIT, Mandi) (Contractual)

## School of Management

### Professors

A.H. Sequeira, Ph.D., (Mysore University)
K.B.Kiran, Ph.D. (Mangalore Univ.) HOD till 04.9.2019

### Associate Professors:

Shashikantha K., Ph.D. (University of Hyderabad)

S. Pavan Kumar, Ph.D., (IIT Kharagpur) HOD from 04.09.2018.
Sheena, Ph.D., (University of Calicut)
Ritanjali Majhi on lien

### Assistant Professors:

Bijuna C. Mohan, Ph.D. (NITK, Surathkal)
Rashmi Uchil, Ph.D. (NITK, Surathkal)
Suprabha K. R, Ph.D., (VTU)
Rajesh Acharya H, Ph.D., (University of Hyderabad)
Gopalakrishna B V, Ph.D., (University of Mysore)
Dhishna P, Ph.D., (Pondichery Central Univ.)
Sreejith A, Ph.D. (IIT, New Delhi)
Savita Bhat, Ph.D. (IIT, Bombay)
Pradyot Ranjan Jena, Ph.D. (IIT Kanpur)

## Department of Information Technology

### Professors:

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

### 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)
Jaidhar C D, Ph.D. (NIT, Tiruchirapalli)
Nagamma Patil, Ph.D. (IIT, Roorkee)
Kiran M, Ph.D. (Contracutal)

## 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)

### Assistant Professors:

D. Pushparaj Shetty, Ph.D. (IIT Delhi)
Vivek Sinha, Ph.D (IIT, Bombay)
V. Murugan, Ph.D. (IIT, Madras)
Jidesh P., Ph.D. (NITK)
Satyanarayana Engu, Ph.D., (IIT Madras)
Vishwanath Kadaba Puttanna, Ph.D., (NITK)
Chandhini G, Ph.D. (IIT, Madras)
Kedarnath Senapati, Ph.D. (Contractual)
Bhawana Rudra, Ph.D. (Contractual)
Anand Kumar M, Ph.D. (Contractual)
Srinivasa Rao Kola, Ph.D. (IIT, Kharagpur)
A Senthil Thilak, Ph.D. (NIT, Tiruchirappalli)

## 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) HOD till 23.1.2019
Shrikantha, Ph.D. (NITK), HOD from 23.1.2019
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)
Srikanth Bontha, Ph.D. (Wright State)
Arun M, Ph.D. (University of Greenwich, London, UK)

### Assistant Professors

Vasudeva M., Ph.D. (I.I.T. Bombay)
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)
Sudhakar Jambagi, M.Tech. (Pursuing Ph.D. at IIT Kharagpur)
Ajay Kumar Yadav, Ph.D. (I.I.T. Kharagpur)
Anish S, Ph.D. (IIT, Madras)
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) (contractual)
Ranjith M, Ph.D. (Dong University, Korea)
Poornesh Kumar, Ph.D. contractual (Inha, University)
Saurabh Chandraker, Ph.D. contractual (NIT Rourkela)
Parthasarathy, Ph.D. (Karlsruhe Institute of Technology, Germany)

## Department of Mining Engineering

### Professors:

V. Rama Sastry, Ph.D. (B.H.U. Varanasi) till 19.3.2019
C.H. Suryanarayana Murthy, Ph.D. (IIT Kharagpur) HOD i/c 20.3.2019 to 26.3.2019
M. Govinda Raj, Ph.D. (Mangalore University).

### Associate Professor:

Harsha Vardhan, Ph.D. (Indian School of Mines Dhanbad)
M. Aruna, Ph.D. (University of Dhanbad)
K. Ramachander, Ph.D. (NITK) HOD from 27.3.2019
Anup Kumar Tripathi, Ph.D. (University of Kentucky Lexington , USA)

### Assistant Professor:

Ram Prasad Choudhary, Ph.D. (JNU, Jodhpur) on lien to JNU University from 24.11.2017
Bijay Mihir Kunar, Ph.D. (IIT, Kharagpur)

## Department Of Metallurgical & Materials Engineering

### Professors:

K. Rajendra Udupa, Ph.D. (I.I.Sc. Bangalore) retired on 30.10.2018
A.O. Surendranathan, Ph.D. (Mangalore University)
K. Narayana Prabhu, Ph.D. (Mangalore Univ.)
Jagannatha Nayak, Ph.D. (NITK)
Udaya Bhat, Ph.D. (I.I.Sc., Bangalore) HOD till 19.4.2018
Anandan Srinivasan, Ph.D. (I.I.T., Kharagpur) HOD from 20.4.2018

### Associate Professor:

Kumkum Banerjee, Ph.D. (IIT Kharagpur)

### Assistant Professors:

Shashi Bhushan Arya, Ph.D. (IIT, Bombay)
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)
Saumen Mandal, Ph.D. (IIT, Kanpur)
Sumanth Govindarajan (Contracutal)
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

### Assistant Professors:

Ajith K. Madam, Ph.D. (University of Hyderabad)
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)

## 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:

Sunil B M, Ph.D., till 24.01.2019
Arun Kumar Thalla, Ph.D. from 25.01.2019
Executive Engineer (Electrical) Sri. Mohammad Firoz Khaza.

### 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:

Lt. Col. N. K. Jha

### Associated NCC Officer Incharge (ANO):

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

### Professor Incharge (Security)

P Sam Johnson, Ph.D. till 14.06.2018
Rajesh Acharya From 15.06.2018

### Security Officer:

Manohar Karanth

### Chief Vigilance Officer:

K Rajendra Udupa, Ph.D. till 25.7.2018
A. Kandasamy, Ph.D. from 25.07.2018

### Central Public Information Officer (CPIO):

Soumen Karmakar, Asst.Registrar (Admin)

## OTHER SECTIONS

Career Development Centre.

### Chairman:

Vijay H Desai, Ph.D.

### Industry Institute Partnership Cell

### Faculty In-charge:

Prasanna B.D., Ph.D.

### SC/ST Cell

P E Jagadeesh Babu, Ph.D. till 14.06.2018.
Veershetty Gumpature, from 15.06.2018

### OBC Cell

P C Deka, Ph.D. till 12.11.2018
Annappa, Ph.D. from 13.11.2018

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

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

### SAS Officers:

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

### Librarian:

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

### Asst. Librarian

Anasuya Chakari, M.A. M.Lib.Sc. (Karnataka University)
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&TechnologyEntrepreneurs' Park

***Direct In-charge :-***

G Srinikethan, Ph.D. from 29.01.2018

### Centre for Continuing Education

***Chairman***

Shrikantha Rao, Ph.D. till 8.7.2018

Arun Mohan Isloor, Ph.D. 9.7.2018

### Dakshina Kannada Nirmithi Kendra

***Cordinator:***

***Project Director:***

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

## NON-ACADEMIC STAFF (NON-TEACHING) as on 31.3.2019

| Sl. No. | Name of the Posts | In Position as on 31-03-2019 |
|---|---|---|
| 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 | SAS Officer | 2 |
| 10 | Senior Scientific Officer | 1 |
| 11 | Medical Officer | 2 |
| 12 | Security Officer | 1 |
| 13 | Executive Engineer | 1 |
| 14 | Superintendent Grade II | 1 |
| 15 | Superintendent | 4 |
| 16 | Senior Secretary | 1 |
| 17 | Assistant (SG -1) | 5 |
| 18 | Senior Assistant | 25 |
| 19 | Junior Assistant | 12 |
| 20 | Stenographer (SG - II) | 3 |
| 21 | Senior Stenographer | 1 |
| 22 | Technical Officer | 8 |
| 23 | Assistant Engineer (SG-II) | 17 |
| 24 | Senior Technical Assistant | 6 |
| 25 | Assistant Engineer | 3 |
| 26 | Technical Assistant | 1 |
| 27 | Technical Assistant (SG-II) | 4 |
| 28 | Technicain (SG-II) | 10 |
| 29 | Senior Work Assistant | 3 |
| 30 | Techician | 2 |
| 31 | Work Assistant (SG II) | 1 |
| 32 | Senior Attendant | 5 |
| 33 | Attendant | 29 |
| | **Total** | **158** |

# 11.0 FACILITIES/AMENITIES

## 11.1 Hostels

The Institute reopened on 17-07-2018 as per Academic Calendar for the year 2018-2019. All students including foreign students are accommodated in hostels as per the following details:

Total number of boy's hostel = 11

Total number of girl's hostel = 05

Total number of Rooms for boys = 2618

Total number of rooms for girls = 790

There are 10 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 6 vegetarian messes and two non-veg 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.

| Sl. No. | Block | No. of Students | No. of Rooms usable | Total Capacity |
|---|---|---|---|---|
| 1 | I Block(Karavali) | 251 | 76 | 84 |
| 2 | II Block (Aravali) | 258 | 77 | 84 |
| 3 | III Block(Vindhya) | 257 | 127 | 132 |
| 4 | IV Block (Satpur) | 254 | 126 | 132 |
| 5 | V Block (Nilgiri) | 248 | 248 | 256 |
| 6 | PG Block (Pushpagiri) | 390 | 145 | 150 |
| 7 | VII Block (Sahyadri) | 360 | 155 | 162 |
| 8 | VIII Block (Trishul) | 242 | 156 | 162 |
| 9 | Mega Tower- I (Everest) | 497 | 503 | 504 |
| 10 | Mega Tower- II (Himalaya) | 494 | 502 | 504 |
| 11 | Mega Tower- III ( Kailash) | 501 | 503 | 504 |
| 12 | GH 1st Block | 51 | 33 | 34 |
| 13 | GH 3rd Block | 441 | 152 | 153 |
| 14 | GH 4th Block | 329 | 329 | 323 |
| 15 | GH 5th Block | 250 | 250 | 258 |
| 16 | MS Block | Not occupied | 26 | 13 quarters |
| | **Total** | **4823 (B-3752, G-1071)** | | |

**Total number of messes**

| Name of the Mess | Strenght |
|---|---|
| I Block Mess | 223 |
| II Block Mess | 322 |
| IV Block Mess (Non Veg-Out Source) | 571 |
| V Block Mess (Non Veg-Out Source) | 567 |
| PG Block Mess | 242 |
| VII Block Mess | 300 |
| VIII Block Mess (Out Source) | 572 |
| Mega Block Mess (Out Source) | 645 |
| GH I block Mess, Ground Floor (Out Source) | 483 |
| GH II block Mess, First Floor (Out Source) | 473 |

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 10 messes IV Block mess, V block mess, VIII block mess, Mega Hostel Mess and Girls hostel messes are managed by the contractors.

**Table 1 MESS BILL DETAILS FROM APRIL 2018 TO MARCH 2019**

| | | Month | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Mess | April 2018 | | July-August 2018 | | September 2018 | | October 2018 | |
| | | Per month | Per day | Per month | Per day | Per month | Per day | Per month | Per day |
| 1 | I BLOCK | 2575.00 | 99.04 | 3975.00 | 99.38 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 2 | II BLOCK | 2575.00 | 99.04 | 3975.00 | 99.38 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 3 | III BLOCK | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 4 | IV BLOCK N.V.)(OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 5 | V BLOCK (N V) (OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 6 | VII BLOCK | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 7 | VIII BLOCK (OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 8 | P.G BLOCK | 3466.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 9 | MEGA BLOCK (OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 10 | G.H BLOCK MESS I (OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |
| 11 | G.H BLOCK MESS II (OS) | 3268.00 | 99.03 | 4571.00 | 99.37 | 3012.00 | 100.40 | 3075.00 | 99.19 |

| Sl. No. | Mess | Month | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Nov.-Dec.2018 | | January 2019 | | February 2019 | | March 2019 | |
| | | Per month | Per day | Per month | Per day | Per month | Per day | Per month | Per day |
| 1 | I BLOCK | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 2 | II BLOCK | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 3 | IV BLOCK (N.V.)(OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 4 | V BLOCK (BI) (OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 5 | VII BLOCK (BII) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 6 | VIII BLOCK (OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 7 | P.G BLOCK | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 8 | MEGA BLOCK (OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 9 | G.H BLOCK MESS I (OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |
| 10 | G.H BLOCK MESS II (OS) | 3319.00 | 100.58 | 3834.00 | 100.89 | 2806.00 | 100.21 | 3127.00 | 100.87 |

## Crescendo Committee

Crescendo Committee is managed by a separate elected student's committee. The Crescendo has organized CRRESCNDO 2018-19 during February 22nd to 24th and March 23rd to 24th, 2019 in a grand manner.

## 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, Inter Department Tournament, Phoenix tournaments during September 2018-March 2019.

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 first time in NITK Hostel Administration to serve the well-being of all students. They have done various activities like NIT Conclave, Karavali Marathon, Passport Mela, Mentorship programs and much more.

## 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 ₹2,87,776/- 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 Charted 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.

The Bicycles stands constructed in 1st, 3rd, 4th Block, 7th, Mega Tower and Girls Block (Total 6 in No) at cost of about ₹20 Lakhs.

Recently, a committee room of 100 seating capacity has been furnished in NITK Hostel Office at the cost of ₹18,76,613/- to meet the all-round activity of Council of Wardens.

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

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

| | |
|---|---|
| Dr. Harsha Vardhan- | Warden (Finance) |
| Dr. S Pavan Kumar- | Warden, Karavali (I Hostel Block) |
| Dr. . Kartick Tarafder- | Warden, Aravali (II Hostel Block) |
| Dr. P. Jeyaraj- | Warden, Vindhya (III Hostel Block) |
| Dr. Ramesh M. R- | Warden, Satpur (IV Hostel Block) |
| Dr. Sharanappa Joladarashi- | Warden, Nilgiri (V Hostel Block) |
| Dr. Debabrata Karmakar- | Warden, Pushpagiri (PG Hostel Block ) |
| Dr. Saumen Mondal- | Warden, Sahyadri (VII Hostel Block) |
| Dr. V Murugan- | Warden, Trishul (VIII Hostel Block) |
| Dr. Raviraj H Mulangi- | Warden, Everest (Mega Tower I) |
| Dr. Ajay Kumar Yadav- | Warden, Everest (Mega Tower I) |
| Dr. Mrityunjay Doddamani- | Warden, Himalaya (Mega Tower II) |
| Dr. Mohammad Rizwanur Rahman- | Warden, Himalaya (Mega Tower II) |
| Dr. Darshak R Trivedi- | Warden, Kailash (Mega Tower III) |
| Dr. Shyam Lal- | Warden, Kailash (Mega Tower III) |
| Dr.(Mrs.) Suprabha K R.- | Warden, Girls Hostel I & V Block |
| Dr. (Mrs.) Savita Bhat- | Warden, Girls Hostel III Block |
| Dr. (Ms) Debashree Chakraborty - | Warden, Girls Hostel III Block |
| Dr. (Ms) Chandhini G- | Warden, Girls Hostel IV & MS Block |
| Dr. Paresh Chandra Deka - | Warden, Mess Quality Control |
| Dr. Debashisha Jena- | Warden, Out-reach & Extra Curricular Activities |

Prof. Dr. Karanam Uma Maheshwar Rao, Director is Ex-officio President of NITKS Hostels. He being the President for hostels will be giving guidance to the Council of Wardens time to time for the smooth administration and function of the hostel activities.

## 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 Shyam S Kamath (Dept of M A C S). CCC has the following permanent staff associated to it. One Systems Manager, One Senior Scientific Officer, One Assistant Engineer (SG1), Two Assistant Engineers (SG2), Two Assistant Engineers, 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 ₹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.

All bonafide Universitites of the nation are being given OFC based 1Gbps connectivity to NKN-PoP (National Knowledge Network Point of Presence) **under NME-ICT** (National Mission on Education through ICT). **This includes** University level institutions and NITK is one among them.On 26-08-2010, the network switches of NITK were reconfigured for commissioning the 1 Gbps line that has come to NITK Surathkal under this scheme. From 27-8-2010 onwards, this line is in use by the academic area and also the hostels. However, from 03-04-2012 onwards, this line has become a part of the **National Knowledge Network** which is designed to support advanced applications in areas such as Health, Education, Science & Technology, Grid Computing, Bio informatics, Agriculture, and Governance. For General purpose Internet access, the available bandwidth was inadequate for a community of about 7000+ heavy users including the faculty, students and staff. In order to meet the demands of the users, an additional bandwidth of 1 Gbps

is procured from BSNL at an annual cost of ₹82.46 lakhs.

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.

Data Centre is upgraded with the following equipments:

- 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.
- 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.
- Two Nos. of Sophos XG750 firewalls in HA mode with VPN facility.
- Campus Wi-Fi Controller - Ruckus SmartZone 100.

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 updations 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 Alumnii. 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 will be 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 and one 15 KVA online UPS systems procured later for providing backup power during the changeover. Two 15 KVA UPS systems provide the power backup to the CCC LAN. 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 ₹6.78 crores. The Phase 2 is completed at a total cost of ₹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 ₹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 100

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

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*

- Upgading the Academic Backbone to 10Gbps
- Expanding the Campus WiFi and Upgraded Core Network (Phase 2)
- Fine tuning the HPC Cluster
- Webservers Procurement and launching the New Website
- Email services (@nitk.ac.in) - identifying the solutions
- Upgrading the servers

### *Additions to the Building Infrastructure*

i. Expansion of the area of the Data Centre and relocation of Precision ACs for the Data Centre

ii. All UPS s moved to a single location to make the maintenance easier

iii. Re organisation of the First Floor Lab and Second Floor

iv. Reassessment and Improvement on the Power Backup and Air conditioning

### *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. Ignite 2018 held on October 5,6,7 in 2018
3. Dept of Chemical Engg organised a 5 day Short Term Training Programme (MS3MS) from 9-1-2019 to 12-1-2019 (Afternoons)
4. IEEE NITK 24 Hour Hardware Hackathon on 19th and 20th Jan 2019
5. Web Enthusiast Club – 24 Hour Hackathon to promote machine learning and development – Feb 2,3 2019
6. Smart India Hackathon Grand Finale March 2, 3, 4, 2019

## 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 1,35,000 including Book-Bank books, 8193 online e-Books subscribes 260 print journals for all the disciplines and access to 12045 online Journals. 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 |
| Timing: During working day, Weekend & Vacation | Mon. to Sat. 8.00 a.m. to 12.00 midnight Sun: 8.00 a.m. to 4.00 p.m. Vacation: 9.00 a.m. to 6.00 p.m. General holidays: 9.00 a.m. to 12. Noon |
| Number of library staff | 12 (Permanent Staff) 14 (Temporary Staff) |
| 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 1,35,000 books besides subscribing to around 260 National and International Print Journals and 12045 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 LIBSYS 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. LIBSYS Library Automation software was introduced in

October 1998. At present 12 terminals are on use for Students and Staff. To access the information, we are using Libsys Version 7. 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:**

a. 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.
b. 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 Roomis 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 ₹0.50 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 Servic
- Practical and Apprenticeship training for diploma and degree student of Library and Information Science
- eJournals access through Consortiums.

**9. Other Activities:**

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

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

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

d. 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.

e. 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.

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

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

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

## *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
Grandular 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
SACS

**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

***DEPARTMENT OF CHEMICAL ENGINEERING:-***

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

**Project Lab I & IA:** Refrigerated Centrifuge, Ultrasonic water Bath, Quartz Immersion well Reactor, Muffle furnace, Peristaltic pump, Ultrasonic Sonicator, Electro Spinning equipment, UV Ozone Cleaner, Continuous homogeniser.

**Project Lab II:** Bench Top Fermentor, Horizontal laminar flow work station, Gel document, spectro photo meter, Eppendorf centrifuge, Particle Size Analyser

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

**Project Lab III:** Deep Freezer, Freeze Dryer, 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, Auto clave, 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, Tangentail 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.

**DST - FIST LABORATORY:** Gel Documentation, Thermogravimetric Analyser, HPLC, LC –MS, ICP –OES, FPLC.

**FERMENTATION LAB :** Colony Counter, CO2 Incubator, Microwave Digestion System, Fermenter, 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 tifac, Spectrophotometer, Total organic carbon analyser, Graphite furnace and hydride generator, Ultrapure water generator, AAS, Electrophoresis, High Performance liquid Chromatograph, Gas chromotography-Mass spectrophotometer, Ion Chromotography, 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, Polymeraze 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 fliow/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 office 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:** Real time Polymerize chain reaction machine, kinetic plate reader, universal plate reader, deep freezer, cooling centrifuge, biosafety cabinet level II, CO2 incubator, hot air oven, Gel electrophoresis units, minivol samplers, microbial samplers

**DEPARTMENT OF CIVIL ENGINEERING:**

**Civil Engineering Material Testing Laboratory:-** 3000 kN Compression Testing Machines, Vibrating Tables, Concrete Flexure Testing Machine, Vee-Bee Test Apparatus, Rebound Hammer, Tile Testing Machine, Compaction Factor Test Apparatus, Los Angeles Abrasion Test set-up.

**Earthquake Engineering Laboratory:-** Accelerometers, Mini Shake Table to test Models of Beams & Buildings, Soil-Structure Interaction Study system. Computational facility for seismic response simulation and dynamic soil-structure interaction studies.

**Environmental Engg. Laboratory:-** UV Spectrophoto High Volume Air Sampler, Voltametry, Gas Chromatograph, HPLC, Ion selective electrode meter, Kjeldahl nitrogen distillation apparatus, Flame Photometer.

**Geotechnical Laboratory:-** Tri-axial loading facility, Rock cutting facility, Nuclear Density Gauge, Permeability Test apparatus, Compaction Test, Grain Size Distribution Equipments, Consolidation Tests, California Bearing Ratio Test.

**Transportation Engineering Laboratory:-** 50 kN and 20 kN Fatigue Testing Machines Gyratory Compactor

Immersion Wheel Tracking Device

Modified Marshall Test Setup

Pavement Core Drilling Device

Portable Pendulum Type Skid Resistance Tester Portable Axle Load Weighing Pads Portable Falling weight deflectometer & Ground Probing Radar (MHRD-TAT Project) Mini ROMDAS

Asphalt Mixers of Capacity 5 litre and 20 litre capacity Asphalt Theoretical Density Tester Wheel Rut Shaper and Wheel Rut Tester.

**Structures Laboratory:-** 2000 kN-Compression Testing Machine, In-situ Ion Migration Tester, Muffle Furnace, Column Testing Machine, Vibrating Tables, Loading Frames, RCPT Test Apparatus, Corrosion Monitoring Unit, Accelerated Curing Tank, Humidity and Temperature Controlled Chamber.

**Survey Stores:-** Total Station, Auto Levels, Theodolites, Dumpy Levels

**Advanced Asphalt Characterisation and Rheology Laboratory:-** Modular Compact Rheometer System

Capillary Viscometer System

Brookfield Rotational Viscometer

Deep Freezing Unit Rolling Thin Film Oven

**Computer Aided Design (CAD) Laboratory:-** 30 Computers, 2 No's 5KVA UPS Softwares

***DEPARTMENT OF COMPUTER SCIENCE ENGINEERING***

**SYSTEMS & NETWORKS LAB-** Computers – 48 No's.(16-Dell OptiPlex 9020M, 21-HP Elite desk 800G1, 06 -Dell Precision T1650 3-HP Prodesk 600G3MT, 01-Lenovo ThinkCentre 2016 purchased, 02- HP Pro Desk 600 G3 MT, 02- Dell OptiPlex 9010) Projector - 01 (EPSON EB-X24LCD DLP Projector) Printer – 01 (HP LaserJet 1020 plus) Scanner – 01 (HP Scan Jet G3110) LAN – 100 Mbps,Wi-Fi AP – 01 (RuckusR300)

**ALGORITHMS LAB-** Computers – 32 No's. (26- Dell OptiPlex 9010DT 06-HP Prodesk 600G3MT), Printer – 01 (Cannon LBP 2900B), LAN – 100 Mbps, Wi-Fi AP – 01 (RuckusR300).

**INTEL E-COMMERCE & MULTI-CORE LAB (M.TECH (CSE)-PROJECT LAB)-** Computers– 24 Nos. (02 – Lenovo Think Centre M90P, 16-Lenovo Think Centre M910T, 06- Dell OptiPlex 9010) Printer – 01 (HP LaserJet 1020 plus) LAN – 100 Mbps, Wi-Fi AP – 01 (RuckusR300).

**DISTRIBUTED & CLOUD COMPUTING LAB-** Computers – 08 Nos. (03 – Dell OptiPlex 9010DT, 03 - HP Elite desk 800G1 01 - Acer Variton System 01-Dell OptiPlex 9020MT), Printer – 01 (HP LaserJet 1010), LAN – 100 Mbps, Used for Ph.D. / Research Work.

**DATA INFORMATICS & ANALYTICS LAB-** Computers – 13 Nos. (07 – Dell OptiPlex 9010DT, 03 - Dell OptiPlex 9020MT, 03- Lenovo ThinkCentre M910T) Printer – 01 (HP LaserJet M1319f MFP), LAN – 100 Mbps, Wi-Fi AP – 01 (RuckusR300), Used for Ph.D. / Research Work.

**NETWORK ENGINEERING LAB-** Computers– 15 Nos. (10 – Dell OptiPlex 9020, 05 – Dell OptiPlex 9010DT ), Printer – 01 (HP LaserJet 1010), HP Scanjet G2410, LAN – 100 Mbps, Wi-Fi AP – 01 (RuckusR300), Used for Ph.D. / Research Work.

**ADVANCED COMPUTING LAB-** Computers– 55 Nos. (01 – Lenovo ThinkCentre M90P, 01 – Dell Precision T1650, 17 – Dell OptiPlex 9010DT, 09 - HP Elite desk 800G1 26-HP Prodesk 600G3MT), LAN – 100 Mbps, Wi-Fi – 01 (Ruckus R300), Projector - 01 HITACHI CP X4014WN, Printer HP LaserJet P1007.

**INFORMATION SECURITY LAB (M.Tech (CSE-IS) Project Lab) -** Computers – 35 Nos. (03 – Dell OptiPlex 9010DT, 01 – Lenovo Workstation S30, 01 – Lenovo Workstation D20, 01-Lenovo Workstation S20, 07 - Lenovo

Workstation P700, 04- Dell OptiPlex 9020, 02- Dell Precision Work Station 5820, 15- Lenovo ThinkCentre M910T, 01- Dell Precision T1650), Printer – 2 (1 Canon LBP 2900 , 01- HP laserjet MFP1005), Wi-Fi – 01 (Ruckus R300), LAN – 100 Mbps.

**INTERNET & WEB ENGINEERING LAB-** Computers – 39No's.( 34-HP Elitedesk 800G, 02- Dell Optiplex 9010, 02- HP Pro Desk 600 G3 MT, 01- Lenovo Think CentreM90P), Projector - 01 (EPSON X36 LCD Projector), Printer – 01 (HP LaserJet 1010), LAN – 100 Mbps, Wi-Fi AP – 01 (Ruckus R300).

**DIGITAL LAB-** Digital IC Trainer Kit Digital IC Tester and other accessories, LAN – 100 Mbps, Wi-Fi AP – 01 (Ruckus R300).

**IMAGE AND SPEECH PROCESSING LAB-** Computers –22 Nos. (19 – Lenovo ThinkStation, 02 - Dell Power Edge R720, 01-HP Elite Desk 705 GIMT), 01-Projector EPSON XII, Printer – 01 (HP LaserJet 1010), LAN – 100 Mbps.

**DATA CENTRE/IBM OPEN POWER LAB-** Server Class System (15 Nos.), 02- IBM P Series 9131/52A Open Power Systems, 01- Dell Power Edge T710, 01- Dell Power Edge T720, 02- Dell Power Edge R420, 02- IBM Xeon 236 Series, 03- Dell Power Edge T630, 01- Dell Power Edge T740, 01- BOSTON X86, 01- Dell Power Edge R730.

## *DEPARTMENT OF CHEMISTRY*

### Organic Materials Laboratory

UV-Vis, Fluorescence Spectrophotometer, MP apparatus, Soxhlet apparatus, Rotary Evaporator, Ice flaker, UV chamber, FTIR, CV, Deep Freezer, Balance, Oven, Zeta potential analyzer, Membrane fabricator etc.

## *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.

**Integrated Electronics Lab (Research Lab for Ph. D. Students):-** Workstations, 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, RF Tools – HFSS, CST Microwave Studio, Digital Source meter with Safety universal Test Lead kit

**Software:** Genesis Core Bundle License, Agilent VEE 8.5, ADS 10 User Licence, Optsim 5 User Licence

**VLSI Lab:-** Workstations , File Server, Cadence Design suite, Synopsys EDA Tools, Mentor Graphics Tools, Xilinx Tools, Tanner Tools

**DSP Lab:-** Dell OptiPlex 9020 x64-based PC(s) DSP Starter Kits and Evaluation modules, Texas Instruments TMS 320C6437, TMS 320C6713, TMS 320C6416, TMS320C5510, DM6446 Digital Video Evaluation Module, Beagle Board, MSP430, Code Development Tools for Texas Instruments, MATLAB 2019a (9.6.0) with various Toolboxes, Celoxica

DK Design Suite, ModelSim, XILINX ISE, System Generator, ChipScope and EDK, XILINX Vivado Design Suite, SDSoC, Xilinx EVM– Celoxica RC10, Virtex II, Virtex II Pro, Virtex V, Xilinx Xtreme DSP Development Kit, Xilinx Multimedia EVB, Xilinx Virtex IV Video Starter Kit, 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 3 & Nexys 4 Kits, Digilent Nexys Video Kit & accessories, Digilent Zybo ZynqTM-7000 Development Boards, Altera Bitec Cyclone III Development Kit, Altera Cyclone IV GX FPGA Development Kit, Stream Processor Evaluation Platform, STM32F407 Discovery Kits.

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

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

**R&D Lab (Research Lab for Ph. D. Students):** Workstations are setup with access to all design tools available in the department

**Centre for Excellence for Wireless Sensor Networks:-** Work stations, WSN Design kits, Qualnet SW, NETSIM SW, Sensors

**Stochastic Modeling Imaging and LEarning (SMILE) Lab:-** Workstations are setup with access to all design tools available in the department.

***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-** wind solar hybrid system capable of operating in grid connected and islanding mode of operation with charge controllers and Inverter. 1.2kW 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 -** athWorks 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 look 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, Lab VIEW software's and in house developed power system stability analysis package, MatSim.

**Electric Power Quality Laboratory-** Experiments based on Math Works 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.

***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:-** HP Compaq 8300 Elite MT PC -5, Dell Optiplex 9020 MT core i7- 4, Lenovo Workstation E-1225V5-1, Dell Optiplex 5050 - 3.

**Internet Technology Laboratory:-** HP Compaq 8300 Elite MT PC - 3, Dell 9010 DT-26761536 optiplex M-1, Dell Optiplex 9020 MT core i7- 4, HP Compaq Elite 800 G1 / i7-1, Dell Power Edge R730XD 2U Rack server-2, C-Netgear RN626X Ready NAS.

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

**Post Graduate Lab:– I:-** HP Compaq 8100 Elite MT PC-7, HP Compaq 8200 Elite MT PC-6, HP compaq Elite 8300 Microtower-1, HP EliteDesk 800 G1 TWR -5, Dell Optiplex 9020 MT core i7- 7, Dell Optiplex 5050 -10, Cameras: Dlink DCS 2103 CAMERADCS 2103-2.

**Post Graduate Lab – II:-** DesktHP Compaq 8200 Elite MT PC- 14, HP Compaq 8100 Elite MT PC-1, HP Compaq 8300 Elite MT PC -1, HP EliteDesk 800 G1 TWR -2, Dell Optiplex 9020 MT core i7-1, Dell Optiplex 5050, N Computing L300 Clients -2, Cameras: Dlink DCS 2103 CAMERADCS 2103-2.

**Project Laboratory:-** Dell Optiplex 5050-40, Memsic Classroom Kit-1, Memsic WSN Professional Kit-1, Cameras: Dlink DCS4602 VE (Vigilance Full HD Outdoor Vandal Proof POE) Dome Camera-2.

**Undergraduate Lab-I:** Dell Optiplex 5050–16, Lenovo Think M90(5498-PR1)-45, HP Compaq dc 7900 Convertible Minitower–1, HP Compaq 8200 Elite MT PC-2, HP Compaq 8100 Elite MT PC-6, Cameras: Dlink DCS 2103 CAMERADCS 2103-3, MIC Systems: KQ-SRS-1112 Infrared Sound Field Reinforcement System-1.

**Undergraduate Lab -II:-** Desktop:HP Compaq 8200 Elite MT PC-17, HP Compaq 8300 Elite MT PC-16, HP Compaq 8100 Elite MT PC-6, HP Elite Desk 800 G1 TWR -5, HP Compaq dc 7900-1, DELL Optiplex 9020-2, Lenovo Thinkcentre M90- 1, Workstations:Dell Precission T1700-3, Cameras: Dlink DCS4602 VE (Vigilance Full HD Outdoor Vandal Proof POE) Dome Camera.

**Network Switch Room:** HP Compaq 8300 Elite MT PC-1, Lenovo Thinkcentre M90-3, HP Compaq 8200 Elite MT PC-1, Server: 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, NETGEAR READY NAS RN316/6BAY 4 TB Surveillance HDD,

***DEPARTMENT OF MATHEMATICAL & COMPUTATIONAL SCIENCES:-***

Ground Floor - 49 Intel i7 Desktop with 8 GB RAM with dual OS

1st Floor - 40 Intel i7 Desktop with 8 GB RAM with dual OS

22 Intel i7 Desktop with 3 GB RAM with Ubuntu

2nd Floor (Software Development center) - 30 Intel i7 Desktop with 8 GB RAM with dual OS

Project Lab (1st Floor) - 19 Intel i7 Desktop with 8 GB RAM with dual OS.

***DEPARTMENT OF MECHANICAL ENGINEERING***

**Advanced Dynamics Lab:** Experimental Modal Analysis, Forced Vibration Analysis, Tuned Impulse Hammer, Minishaker with controller, Modal Analysis Software.

**Wind tunnel laboratory:** subsonic wind tunnel, force balance.

**Advanced Manufacturig Laboratory:** 3-D Printing, Fused Deposition Modeling based 3-D Printer, Material Extrusion, Single Screw Extruder.

**Smart structures laboratory**: Free and focred vibration setup with controller, Impact hammer, Tri-axial acceleroeter, Electrodymnamic shaker, Analyzer, closed loop controller, force sensor, impedence head

**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.

**Turbomachinery Laboratory:** Low speed compressor cascade test facility, Low speed turbine cascade test facility, Centrifugal blower test rig.

**Polymer composites lab:** vartm facility

**Advanced fluid mechanics Lab:** Desiccant analysis test rig.

**Tribology Laboratory:** Metallurgical Sample Saw, High Temperature Tubular furnace, Ball mill, Disc Polishing Machine, Microscope, Pin on Disc Tribometer.

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

| | | |
|---|---|---|
| 1. | Pro Engineer CREO | 50 Users |
| 2. | Autocad | 50 Users |
| 3. | Ansys15.0 | 25 Users |
| 4. | AnsysV10.0 | 10 Users |
| 5. | MSCAdams | 50 Users |
| 6. | MSCatran | 50 Users |
| 7. | MSCastran | 50 Users |
| 8. | MSCMarc | 50 Users |
| 9. | MSCytran | 50 Users |
| 10. | CatiaP3 | 10 Users |
| 11. | CATIAnovia | 05 Users |
| 12. | CATIADelmi | 05 Users |
| 13. | CATIAPLMExpress | 05 Users |
| 14. | LMS AMESim (Multi-domain system Simulation) | 05 users |
| 15. | Unigraphics with Advanced Machining Module | 05 Users |
| 16. | Deform (Design Environment for Forming) | 01 User |
| 17. | AutodeskMoldflow | 25 Users |
| 18. | SimPACK (MBDSoftware) | 25 Users |
| 19. | 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 Protracter
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 sumulation software

**Solar Energy Laboratory:** Solar Air Heater, Pyranometer And Pyrheliometer

**Vehicle Dynamics Laboratory:** Damper Testing Machine, Quarter Car Suspension Test Rig.

**DEPARTMENT OF MINING ENGINEERING:-**

**Rock Mechanics Laboratory :-** Rock cutting machine, Compression testing machine, Schmidt hammer, Core drilling machine, Other rock testing facilities.

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

**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

**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

**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 Micoscope 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, Ultrsonicator, Ultrasound velocity meter, Thermal property analyser, DAGE bond tester

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

**Transmission Electron Micoscope 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, Spin 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 I:-** 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 10000C)
- 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

- **Nonlinear dynamics and Biophysics:-** None
- **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

## 11.5 WORKSHOPS

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

**List of Equipments:**

Lathe
Shearing machine
Drilling machine
Grinding machine

***DEPARTMENT OF CIVIL ENGINEERING***

**List of Equipments:**

A Lathe, A Shearing
Machine, Electrically, operated
Power Saw, and Welding,
Transformer

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

**List of Equipments:**

Electrical Department Workshop - Lathe, Drilling And Welding Machines Along With Work Bench And Other Machine Tool Facilities

***DEPARTMENT OF MECHANICAL ENGINEERING***

**Machine Shop - I:** Center Lathe, Heavy duty Center Lathe Geared head Center Lathe, Shaping machine, Universal Milling Machine, Heavy duty piller type drilling machine, Light duty piller type drilling machine, Pedestal grinding machine, Capston 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.

**DEPARTMENT OF CSE:**

**List of Equipments:**

- 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
- Dell-R740 - Dell Power Edge R740 Server with 192GB RAM FFSKLN2
- BOSTON X-86: Intel Xeon Phi x 200, 96 GB RAM, 2TB SATA HDD, Intel Parallel studio Professional Edition.

**DEPARTMENT OF CHEMICAL:**

**List of Equipments:**

- Projector, Hot air Oven, Density Kit with weighing balance
- Hot Wire Anemometer Liquid Probe with Data Acquisition Software
- Fume Hood

**DEPARTMENT OF METALLURGY:**

**List of Equipments:**

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 Quenchanct 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 Galvanostst Chassis along with accessories, Trinoculor Reflected Light Microscope with Digital Camera, Differential Scanning Calorimeter.

**DEPARTMENT OF MINING:**

**List of Equipments:**

Ground Vibration monitors, High speed video camera, CTM, GPR.

## 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

**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 with 3 Badminton courts and 4 TT tables with proper Lighting system, kept open for 15 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 as well as a Fiberglass Spring Board fixed at 1 Meter height is ready for use in this Institute. [New Sports complex having 3 wooden surface Badminton courts are also kept open for students use.]

**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*

**Staff quarters:** 197 numbers of Faculty and 176 numbers of Non-faculty staff quarters are available in the Campus.

# 12. STUDENT ACTIVITIES

## STUDENTS UNION

Election to the Students' Union of the Institute was held on 9.4.2018 and the following office bearers were elected:

Pratyush Kumar Giri – President

Nihal Shetty - General Secretary

Shraya Sapru - UG Girls Represtantive

Gorava Mahesh Babu – Joint Secretary

## GAMES AND SPORTS

## STUDENTS ACTIVITIES:

**Games & Sports:** 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) Tennis, 6) Table Tennis, 7) Throwball, and 8) Volleyball, in girls section. Special coaching camps are being held by engaging qualified coaches in Athletics, Aquatics, Basketball, Football, Handball, Hockey 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 to 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 attain 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, inter class, 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 and state 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. Institute is regularly organizing All India Inter NIT Sports every year in some or other games. This year All India Inter NIT Sports in Swimming, Weight Lifting, P:ower Lifting, Best Physique and Tennis were being organized at our Institute during 18th to 20th January, 2019. More than 300 students from other NITs (10 Men Power Sports teams, 8 Men Tennis teams, 4 Women Tennis teams, & 8 Swimming Men and Women teams) participated in this Inter NIT sports. Participants were being provided with free Boarding and Lodging facilities. During ÏNCIDENT" National level cultural Festival, DPES organized "Slam Dunk" South Zone Inter Collegiate Basketball and "Spin Shot" Inter Collegiate Throwball (Women) Tournament inviting teams from all over India. Recreation committee is conducting inter branch, inter year and inter class competitions in many games utilizing all facilities available in the DPES. Phoenix an intra mural sports competitions has been conducted in the even semester this year also.

Intra-Mural Competitions in Aquatics is conducted during the month of October, 2018 and Athletics in January, 2019 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.

## SPECIAL INITIATIVES:

### Enhancement of Infrastructural facilities:

Construction work of New Sports complex with provision for Fitness Gym, Squash courts, Table Tennis hall, Badminton Hall. Indoor games hall, Aerobic dance hall, Indoor Cricket pitches, Cricket pavilion, Athletic pavilion, Department office, Store room, Dressing/changing room for many outdoor games with locker facilities and required Bath room and Toilets, is taken over after completion and 3 wooden Badminton courts are made available for use from April, 2019. 4 TT Tables and One Billiards Table has been already provided. Process is on to procure required Fitness and sports equipments.

# 13. RESEARCH, DEVELOPMENT& CONSULTANCY PROJECTS

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

### *DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS*

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

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

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

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

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

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

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.

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

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

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

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

Open source GIS for remote health monitoring, NITK-KREC Endowment Fund, Pruthviraj U., 2019-21, 3.29 Lakhs

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

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

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 Lahs

Design and Development of Lightweight Portable Oil Skimmer, MRPL, Mangaluru, Pruthviraj U. (PI), K C Gangadharan, Mechanical Dept. (CoPI), 2019-21, 44.15 Lakhs

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

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

***DEPARTMENT CHEMICAL ENGINEERING***

Air pollution induced immune cell dysfunction: Implication in Viral infection.,(In collaboration with IISER, Bhopal, Principal investigator: Dr. Gangamma S. DST, Govt. of India. Rs 54 lakhs (2015-2018).

Biomass fuel burning smoke induced inflammation: Mechanism of biological pathways CSIR, New Delhi, Dr. Gangamma S., Rs 17 lakhs (2015-2018)

ASEAN-India collaborative research project (AISTDF Sanction Order No: IMRC/ AISTDF/R&D/P-7/2017) titled “Synthesis of β-cyclodextrin nickel ferrite nanoparticles for the removal of pharmaceutical compounds from aqueous systems”. (35.7 Lakhs) – Dr. Raj Mohan Balakrishnan.

Future Materials in Solid Oxide Fuel Cells and Electrolytes Sponsored by DST Inspire India Principal investigator: Dr. Hari Prasad Dasari ; Chemical Engg. at the cost of Rs. 35 Lakhs. (Period 28/04/2014 to 28/04/2019)

Development of Quaternary Ceria - Based Catalysts for soot oxidation Activity- Sponsored by KIST Korea Principal investigator: Dr. Hari Prasad Dasari; Chemical Engg. at the cost of Rs. 35 Lakhs. (Period 01/01/2017 to 01/01/2019)

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.35 Lakhs. (Period 30/03 /2017 to 30/03/2020)

Development and Demonstration of SOEC Technology for co-electrolysis of CO2 and H2O for production of syngas

Sponsored by DST IMPRINT II India. Principal investigator: Dr. Hari Prasad Dasari: Chemical Engg at the cost of 95 Lakhs.(Period 28/09/2018 to 28/09/2021)

Impact of maternal diabetes on pre-implantation embryo development: Non-invasive approach to assess embryo quality using oxygen consumption. (April 2017 to March 2020)

Development of a sustainable technology to produce oxalate depleted starch from Taro corms, PI: Dr. Prasanna B.D, Co-PI: Dr. Rungtiwa W (Mahidol university), Co-PI: Dr. E. Maribel Agoo (De La Salle University) (IMRC/ AISTDF/R&D/P-4/2017), Grant: Rs. 25.44 Lakhs, Period-2018-2021. Agency: AISTDF, SERB, Govt. Of India.

*In vitro* mass culture of *Steinernema jeffreyense,* a biocontrol agent against key insect pests, PI: Dr. Prasanna B.D, PI: Dr. Antoinette P. Malan, Grant: Rs. 27.6 Lakhs, Period - 2016-2019. Agency: Department of Science and Technology, (International Division), Govt. of India.

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; Chemical Engg. at the cost of Rs.49,78,800. (Period 26/03/2019 to 25/03/2022)

DST- FIST Level I project for Chemical Engineering Department 2014-2019 Rs.227 lakhs. DST FIST Implementation Team : Prof. M.B.Saidutta; Dr. Vidya Shetty K, Dr. Prasanna B D, Dr. I Regupathi, Dr. P E Jagadeeshbabu

### DEPARTMENT OF CIVIL ENGINEERING

Usage of Granulated Slag in Infrastructure and Construction Projects, Kirloskar Ferrous Industries Ltd., Koppal., B.M. Sunil and S. Shrihari, Completed, 7 lakhs

### DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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

Design of a modular FPGA accelerated Chip Multiprocessor Architecture Simulator - sponsored by DST, PI: Dr. Basavaraj Talawar, at the cost of 26.9 Lakhs, 2016-2019

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

Retinal cysts identification and quantification from low SNR optical coherence tomography scans using image processing techniques-sponsored by DST (SERB EMR grant) PI: Dr. Jeny Rajan, Co- PI: Dr. Shashidhar G Koolagudi and Dr. Abhishek Kothari at the cost of 33.5 lakhs(Approx), 2017-2019

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, 2017-2019.

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

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

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

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

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

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

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

### DEPARTMENT OF CHEMISTRY

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.

**DST - Inspire - Faculty Project:**

Principal investigator: Dr Beneesh P B; Starting Date – October 2013 - "Chemical fixation of carbon dioxide via transition metal catalyzed carboxylation reactions" – Rs.7 Lakhs per year.

## *DEPARTMENT ELECTRONICS AND COMMUNICATION ENGINEERING*

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).

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 2019).

Technical Education Quality Improvement Program (TEQIP-Phase III), (2017 to 2020).

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).

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).

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)

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).

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)

Development and Performance Evaluation of Efficient tracking Algorithms for phased array radars in the presence of electronic counter measures sponsored by SERB-DST, Govt. of India. Principal Investigator: **Dr. P. Srihari;** E&C Engg. at the cost of Rs. 13.1 lakhs. (2016 to 2019).

Sigma Delta Space Time Adaptive Processing Techniques for GMTI for ASEA Radar sponsored by DRDO, Principal Investigator: **Dr. P Srihari;** E&C Engg; 2018-2019.

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).

Automatic Multilingual Speaker Profiling & Forensics sponsored by SERB-DST, Govt. of India. Principal Investigator: **Dr. Deepu Vijayasenan;** E&C Engg. at the cost of Rs. 13.5 lakhs. (2017 to 2019).

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).

Building capacity in teaching and collaborative research in sensor systems for public utilities sponsored by RAE, under Newton Bhabha Programme & FICCI, UK. Principal

Investigator: **Prof. M. B. Saidutta;** Chemical Engg., **Prof. M. S. Bhat;** E&C Engg. and **Prof. K. P. Vittal;** E&E Engg. at the cost of Rs.75 Lakhs. (March 2016 to September 2018).

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 2019)

Study of Various Bias Estimation Techniques for Multi-sensor Multi-target Tracking sponsored by DRDO. Principal Investigator: Dr. Pathipati Srihari and Prof U. Shripathi Acharya at the cost of 10 lakhs. (2016-2019).

Development of cost effective Radiofrequency ablation system and magnetic hyperthermia equipment for thermal therapies of cancerous tumors funded by Science and Engineering Research Board (SERB). **Principal** Investigator Dr. Dr. Ajay Kumar Yadav, Dept. of Mechanical Engineering, Co. Investigators Prof U. Shripathi Acharya and Prof. Laxminidhi T. in association with KMC, Mangalore at the cost of Rs.45.94 lakhs (2019-2022)

## *DEPARTMENT ELECTRICAL AND ELECTRONICS ENGINEERING*

Grid Interfacing of Solar Power Generation: Design, Development, and Investigation on High-frequency Transformer Isolated DC-DC Soft-switching Resonant Power Converters Sponsored by SERB, DST, PI: Dr. Nagendrappa H., Rs.48.94 Lakhs, 2017-2020.

Adaptive MPPT of Grid- tied Photovoltaic System using Magnetically Coupled Impedance Source Inverters, Sponsored bySERB, DST, PI: Dr. D. Jena Co-PI: Dr. Nagendrapa H., Rs.24.36 Lakhs, 2017-2020.

Two Research scholarships to investigate in the areas of i. Sensing Techniques, ii. Super-efficient Motor Control, under "Visvesvarya PhD Scheme, Sponsored by GOI, MCIT, DEITY., Prof. Panduranga Vittal K. Rs.40 Lakhs, 2015 – 2020

"Voyager" - solar tracker automation, Sponsored by Raptor Design Technologies Pvt. Ltd. (company) Dr.B.Venkatesaperumal, Rs.2 lakhs, 2018.

Standalone Evaporative Air cooler - Pump flow and fan speed controller using solar energy Sponsored by Department of Science & Technology (DST) under the Scheme for Initiative to Promote Habitat Energy Efficiency (I-PHEE) PI: Dr.B. VenkatesaPerumalCo-PI:

1) Dr.A.Karthikeyan
2) Dr. M. Arun Rs.38.69 Lakhs, 2017-2019.

Solar water pumping system in off-grid mode with changeover to grid Sponsored by NITK Surathkal,Dr. B. Venkatesa Perumal & Dr. A. Karthikeyan, Rs.5.0 Lakhs, 2017-2018

Young Faculty Research Fellowship - 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 C. M. C, Rs.25 Lakhs, 2019-2024

Project sanctioned under Newton - Bhabha funding scheme of Royal Acdemy of Engineering, UK and FICCI-NKFH on "Building Capacity in Teaching and Collaborative Research in Sensor Systems for Public Utilities – i. Electric Distribution System & ii. Water Distribution System" UK Partnership institution: University of Bermingham Sponsored by Participating Collaborator for Application of Sensor Systems for Smart Distribution System, Dr.K.P.Vittal, Rs.40 Lakhs,2016-2018.

Two Research scholarships to investigate in the areas of i. Sensing Techniques, ii. Super-efficient Motor Control, under "Visvesvarya PhD Scheme, GOI, MCIT, and DEITY.PI: Prof. Panduranga Vittal K., Rs.50 Lakhs, and 2015 – 2020.

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), 2014-2018.

Investigation on the Operation & Control of Multiple Distributed Generation resources in a Microgrid (Phase-II) Sponsored by Ministry of Power, Govt. of India through Central Power Research Institute Bangalore (CPRI), Dr. Dattatraya N Gaonkar Dr. D. Jena (Co-PI Rs. 25 lakhs, July 2016 to March 2019.

High Altitude Wind Power Generator using Parafoil Kites Sponsored by CAMP81, PI: Dr. Y Kashyap, Rs.2.24 Lakhs, 2018- 19.

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, 87) Raja Sekaran.S. Rambal Ltd, Rs.355 Lakhs, 2017-2020.

## *DEPARTMENT OF INFORMATION TECHNOLOGY*

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

Special Project by NITK Surathkal: Academic Centric Student Information System, Principal Investigator: Prof. Ananthanarayana V.S. at the cost of Rs.53.68 Lakhs, 2017 – 2019

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

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

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.

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 MECHANICAL ENGINEERING*

Study the corrosion behavior of Wrought Mg Alloys processed by Severe Plastic Deformation for Naval Applications. Dr. Narendranath S, Naval Research Board (NRB/4003/PG/366), 22.8 Lakhs, 36 months

Experimental and Numerical Investigation of Effect of Leading edge Protuberances on the Performance of Wind Turbine Blade, Dr. Sathyabhama A, DST- SERB, 66 Lakhs, 36 months

Active Vibration Control Of Laminated Composite Sandwich Plates In Hygrotehrmal Environment Using 1-3 Piezoelectric Composites, Dr. Subhaschandra Kattimani, DST- SERB, 48.5 Lakhs, 36 months

Experimental characterization and numerical modelling of delamination growth in Fiber Reinforced Polymer laminated composites under cyclic loading, Dr. Subhaschandra Kattimani and Prof. S. M. Murigendrappa, DST- SERB, 28.5 Lakhs, 36 months

An experimental and theoretical investigationon Narrowthermal hysteresis of Cu-Ai-Be Based smaac11jator for vibration isolation, Prof. S. M. Murigendrappa, Dr. Subhaschandra Kattimani, DST- SERB, 16.8 Lakhs, 36 months

Understanding the Evolution of Residual Stress During Repair and Refurbishment of Gas Turbine Components via Laser Additive Manufacturing, Prof. G. Phanikumar (IITM), Dr. Srikanth Bontha, Uchchatar Avishkar Yojana (UAY), 66 Lakhs, 24 months

Experimental and Numerical Investigation on buckling and free vibration behavior of non uniformly heated polymer nano composite, Dr. P Jeyaraj, Dr. R Vasudevan (VIT University, ARDB-DRDO, 16 Lakhs, 24 months

Improvement in the properties of thermally sprayed Hydroxyapatite bio-ceramic coating reinforced with nanostructured materials, Dr. Sudhakar C. Jambagi, DST- SERB, 39 Lakhs, 36 months

Hydration induced yield variations in Polymer Electrolyte Membranes, Dr Poornesh Kumar K, DST-SERB, 50 Lakhs, 36 months

Interface characteristics of Membrane Electrode Assemblies, Dr Poornesh Kumar K, DST-INSPIRE 35 Lakhs, 60 months

Experimental Investigation On Pulsating Synthetic Jet Micromixers To Determine The Injection Dynamics Of Insulin In Hydrogels For Subcutaneous Drug Delivery, Dr. Arumuga Perumal D, DST-SERB, 32.67 Lakhs, 36 months

Investigations on the dynamic behaviour of bacterial helical flagellar filaments under axial flow, Dr. Ranjith M, DST-SERB, 21.46 Lakhs, 36 months

Switched Reluctance Traction motor and controller for two wheeler and three wheeler applications, Dr. K V Gangadharan, Dr. Venkatesh Perumal(EE), Dr. Navin Karanth, Dr. Jeyaraj P, Dr. Pruthviraj (Apmech), Dr. Y Suresh (EE), Dr. Krishnan C M C, DHI-Aditya Auto, 1700 Lakhs, 24 months

Virtual Lab Pase III, Dr. K V Gangadharan, Dr. Pruthviraj (Apmech), Dr. Mohith T (CS), NMEICT – MHRD, 100 Lakhs, 36 months

Virtual Lab Pase II, Dr. K V Gangadharan, Dr. Pruthviraj (Apmech), Dr. Mohith T (CS), NMEICT – MHRD, 500 Lakhs, 36 months

Development of cost effective Radiofrequency ablation system and magnetic hyperthermia equipment for thermal therapies of cancerous tumors, Dr. Ajay Kumar Yadav, Dr. PU Saxena, KMC Attavar, MAHE, Manipal.; Dr. B. Satish Rao, School of Life Sciences, MAHE, Manipal; Dr. U. Sripathi & Dr. Laxminidhi, Dept of E&C, NITK, SERB, DST, MHRD UNDER IMPRINT-2,46 Lakhs, 36 months

Development of a solar based humidifier/ dehumidifier linked with ground water, Dr. Ajay Kumar Yadav, Dr. Anish S, DST, NEW DELHI, 29 Lakhs, 36 months

Design of Magneto Rheological damper for Vehicular applications, Prof. C.Sujatha, IIT Madras, Dr. Hemantha Kumar, MHRD UNDER SPARC, GOI, 60.35 Lakhs, 24 months

Development of Cost Effective Magneto-Rheological (MR) Fluid Damper in Two wheelers and Four Wheelers Automobile to Improve Ride Comfort and Stability, Dr. Hemantha Kumar, Prof. C.Sujatha, IIT Madras, Prof. K.V. Gangadharan, Dr. Sharnappa J, Dr. Mohd.Rizwan Rahman, (Material and Metallurgy Engg), Dr. Sheron F. (IIT Goa), Dr. Sandesh S. Senior Manager, Ashok Leyland Ltd. Chennai, Mr. Rajasekharan, Scientific Advisor, Rambal Ltd. Chennai. Ministry of Road Transport and Highways and Minitry of Human Resource Development IMPRINT-1, 355 Lakhs, 36 months

Experimental Investigation of Passive, Semi-Active and Active Vibration Control of Composite Sandwich Structure, Dr. Sharnappa J, Dr. Hemantha Kumar, DST, SERB, GOI, 60 Lakhs, 36 months

Analytical and numerical investigations of mixed convection through wire mesh porous structure filled in a channel, Dr. N. Gnanasekaran, DST, SERB, 21 Lakhs, 36 months

### DEPARTMENT OF MINING ENGINEERING

Investigations into the reduction of phosphorous in iron ore using microwave technology for its suitability to the iron and steel industries sponsored by ERM group of companies. Principal investigator: Dr. Harsha Vardhan and Co-investigator Dr. M Aruna and Dr. Sreekant R.L. Rs.10,06,200/-

Development and characterizations of advanced solar cells sponsored by Karnataka Science and Technology Promotion Society, Bangalore. Principal investigator: Prof. Ch. S. N. Murthy and Co-investigator Dr. M. Aruna and Dr. Kartick Tarafder, Rs.30,00000/- (2017-2020).

Development of a Communition Process for Improving the Ball Mill Efficiency by Control of Selective Size Output Through Hydro-Squeezing sponsored by Karnataka State Mineral Cooperation Limited and Hutti Gold Mines Company Limited. Principal investigator: Principal investigator Dr. Harsha Vardhan and Co-investigator Prof. M Govinda Raj, Rs.9,70,000/-.

### DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

Corrosion and Impedance study of Ti-Nb alloy forms developed by PM techniques sponsored by DST-SERB, Principal Investigator: **Dr. S. B. Arya,** Dept. of Met & Matls. Engg. at the cost of Rs.18.81 lakhs (Period: 2015-17)

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)

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: **Dr. Udaya Bhat K. & Dr. M. R. Rahman,** Dept. of Met & Matls. Engg. at the cost of Rs.297 lakhs (Period: 2018)

Development of Antimicrobial Active Surfaces for Health Care Applications by KSTePS VGST, Principal Investigator: **Dr. Udaya Bhat K.,** Dept. of Met & Matls. Engg. at the cost of Rs.20 lakhs (05-10-2018)

### SCHOOL OF MANAGEMENT

A Study of Adaptation to Technological Innovation in Agriculture to Mitigate Climate Change Effects and its Impact on Rural farmers. Sponsored by Indian Council of Social Science Research (ICSSR). Principal investigator: **Dr. Pradyot Ranjan Jena;** School of Management. At the cost of Rs.8.6 lakh. (Period: June 2018 to May 2020.

Sustainability Reporting and Indian Companies: A Cross Sectional Study to Evaluate the Extent of GRI Compliance Principal investigator: **Dr. Suprabha K. R** at the cost of Rs.2.5 lakhs. (Period 1st April 2018 31st April, 2019)

Coffee Certification and Food Security with special reference to Gender sensitiveness in Araku valley, Andhra Pradesh. Sponsored by Institute for Environmental Economics and World Trade, Leibniz University of Hannover, Germany. Principal investigator: **Dr. Pradyot Ranjan Jena;** School of Management. At the cost of 5.8 lakh. (Period: June 2018 to March 2019).

Moving towards Climate Resilient Agriculture: Understanding the Factors Influencing Adoption in India and Japan. Sponsored by ICSSR-JSPS, Indo-Japan joint research project Principal investigator: **Dr. Pradyot Ranjan Jena;** School of Management. At the cost of 12lakh. (Period: February 2019 to January 2021).

## 13.2 PROPOSED PLAN FOR RESEARCH

### DEPARTMENT OF CHEMICAL ENGINEERING

**Proposed Plan of Research (In Next Year)**

Bio-sensing of plastic leachates and pathogens detection work.

Submitted proposals:

**New Labs/Equipment**

Establishment of Energy materials Laboratory

Establishment of PG Laboratories for M.Tech. programs.

Establishment of Energy material

Laboratory

**New areas of Research:-**

Soot Oxidation activity, Electrolyte material, SOFC, SOEC

## *DEPARTMENT OF CIVIL ENGINEERING*

**New Labs/Equipment:** Computer based,

**Target for Sponsored R&D projects New Areas of Research:-** Department of Biotechnology

**New Areas of Research:-** Environmental trade-offs in managing land and river interface

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

Cranfield University and Peking University

**New Labs / Equipment:** Environmental Geotechnology (EnGTE) Laboratory

**Target for Sponsored R&D projects New Areas of Research:-** MoEF; DST

**New Areas of Research:-** Effect of climate change on performance of landfill barriers

**Institutions / organizations for future collaboration:-** Kumamoto University and Kyoto University

## *DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING*

**New Labs/Equipment:-**

Signal Processing and Machine Learning Laboratory

Digital System Design Laboratory

PG & Research Laboratory

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

Project on Bio-Mechanics from IMPRINT

Hand-held Doppler signal analysis from Karnataka State Govt.

Projects from DRDO and LRDE.

**New Areas of Research:-**

Bio-Mechancis

## *DEPARTMENT OF INFORMATION TECHNOLOGY*

**Dr. Geetha V and Dr. Sowmya Kamath**

**New Labs/Equipment:**

NITK-RDL Joint IoT & Data Analytics Lab

**Equipment:** 40 Handson kits for performing hardware, sensor based and IoT projects (estimated price Rs.2,00,000)

HPE Sponsored High Performance Computing Lab.

**Equipment:** 6 High-end servers and 1 switch (of market price more than Rs.70,00,000) donated by HPE Bengaluru

**New Areas of Research:** Healthcare Informatics

**Institutions / organizations for future collaborations:** KPIT Bangalore, Dell R&D

**Dr. Bhawana Rudra**

**New Labs/Equipment:** Cyber Security and Machine Learning

**Target for Sponsored R&D projects:** 2

**New Areas of Research:** Cyber Security with Machine learning

**Institutions / organizations for future collaborations:** University of Texas, taylor

**Dr. Anand Kumar M**

**New Labs/Equipment:** Planning to develop NLP and Information Retrievel Lab

**Target for Sponsored R&D projects:** Applied two as Co-PI and planned to apply Startup grant.

**New Areas of Research:** Computer Vision and Multomodel Analysis

**Institutions / organizations for future collaborations:** University of Winnipeg (Canada), IIT-Bhuvaneswar, NIT-Warangal, NIT-Calicut, University of Hyderabad and Amrita Vishwa Vidyapeetham.

## *DEPARTMENT OF MECHANICAL ENGINEERING*

Dr. Narendranath S, Department of Science and Technology (DST), Tribocorrosion

Anish S, DST, Bio Medical Engineering

Shrikantha S Rao, DST, Neuro Signals Analysis for Healing, SDM Ayurvedic Hospital, Udupi

Prof. S. M. Murigendrappa, DST, Fatigue Analysis, IIT Bombay and IIT Madras

Dr. P Jeyaraj, DST, Acoustic Analysis of Biodegradable Composites

Dr. Subhaschandra Kattimani, ARDB, NRB, composite structures

Dr Poornesh Kumar K, DST, DAE, CPRI, Batteries and Fuel Cells, IIT-M and IISc

Dr. Sudhakar C. Jambagi , ARDB, NRB to develop anticorrosion and antifouling coatings

Dr.Arumuga Perumal D, DST, Nanofluidics, IIT Guwahati

Dr. Ranjith M, DST, Biofluidics, Dong-A University, Busan

Dr. Parthasarathy, ISRO, Cryogenic rocket engines

Dr. Parthasarathy, DST, High efficent, low polluting porous burners, IIST

Dr. Veershetty Gumtapure, DST/MNRE, Renewable energy utilization, IIT Madras and IIT Delhi

Dr.Somasekhara Rao Todeti, DST, Design Research, IISc Bangalore

Dr. Sharnappa Joladarashi, DST
Composites, Design and manufacturing I I T Madras

Dr. N. Gnanasekaran, DST, Inverse Bio-heat transfer, Federal University, Rio de Janeiro, Brazi

Dr. Ramesh M R, DST, Thermal Spray Coatings, IIT Roorkee

**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 systmes)
- 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 Chember
- Workstation with GPU
- Tungsten inert gas welding, Gas metal arc welding,Restance 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

## DEPARTMENT OF MINING ENGINEERING

Dr. M. Aruna - Communicated a project proposal entitled "Prediction of health risk in Indian surface mines based on health guidance caution zone (HGCZ)" to Ministry of Mines, GOI.

Dr. B. M. Kunar- Communicated a project proposal entitled "Application of Mini Unmanned Ariel Vehicle with Thermal Camera Integrated with GIS for Assessment and Monitoring of Coal Mine Fire. to SCCL, Telangana.

Dr. B. M. Kunar and Prof. Ch. S. N. Murthy- Communicated a project proposal entitled "Study on the emissions of load haul dumpers (LHD) using pongamia pinnata biodiesel blends in different forms. to Hutti Gold Mines, Karnataka.

## DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

**New Labs/Equipment:**

1. Surface Engineering Laboratory
2. Facility for assessment of health of quenchants
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.
2. Smart Materials
3. Data base on liquid Quenchants
4. Wetting/ dewetting of liquids
5. Hydrodynamic stability
6. 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

## DEPARTMENT OF CSE:

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

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.

## SCHOOL OF MANAGEMENT

### PROPOSED PLAN OF RESERCH (IN NEXT YEARS)

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

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

**New areas of Research:-** Introducing analytics in many functional areas of management namely, Human Resources, Marketing, Operations etc.

**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.

## MAJOR EQUIPMENT/FACILITIES

### DEPARTMENT OF CHEMICAL ENGINEERING

Projector, Hot air Oven, Density Kit with weighing balance

Hot Wire Anemometer Liquid Probe with Data Acquisition Software

Fume Hood

### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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

Dell-R740 - Dell Power Edge R740 Server with 192GB RAM FFSKLN2

BOSTON X-86: Intel Xeon Phi x 200, 96 GB RAM, 2TB SATA HDD, Intel Parallel studio Professional Edition.

### DEPARTMENT OF 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

**Linear Measurements:** Vernier Caliper, Vernier Depth Gauge,Vernier Height Gauge

**Micrometer:** External Micrometer, Internal Micrometer, Jaw Type Inside Micrometer, Caliper Type Inside Micrometer, Depth Micrometer, Bench Micrometer, Digital Micrometer, Telescopic Gauge

**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 Protracter,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

**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, Hydrogenfuelled 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), Planimeterset, 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, Wormgear, Bevelgear, 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 piller

type drilling machine, Light duty piller type drilling machine, Pedestal grinding machine, CapstonLathe

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, Shearingmachine, 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 focred vibration setup with controller, Impact hammer, Tri-axial accelerometer, Electrodymnamic shaker, Analyzer, closed loop controller, force sensor, impedence 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 MINING ENGINEERING*

Ground Vibration monitors, High speed Video Camera, CTM, GPR.

### *DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING*

- 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 Quenchanct 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 Galvanostst Chassis along with accessories
- Trinoculor Reflected Light Microscope with Digital Camera
- Differential Scanning Calorimeter

## 13.3 TECHNICAL PAPERS PUBLISHED IN REFERRED JOURNALS

| Sl. No. | DEPARTMENT | PUBLICATIONS | | | | |
|---|---|---|---|---|---|---|
| | | International Journal | National Journal | International Conference | National Conference | Total |
| 1. | Applied Mechanics & Hydraulics | 29 | 4 | 30 | 24 | **87** |
| 2. | Chemical Engineering | 39 | 2 | 34 | 13 | **78** |
| 3. | Chemistry | 46 | 0 | 34 | 9 | **89** |
| 4. | Civil Engineering | 25 | 3 | 19 | 9 | **56** |
| 5. | Computer Engineering | 48 | 0 | 66 | 01 | **115** |
| 6. | Electrical and Electronics Engineering | 36 | 1 | 44 | 6 | **87** |
| 7. | Electronics & Communication Engineering | 16 | 0 | 26 | 00 | **42** |
| 8. | School of Management | 20 | 02 | 19 | 02 | **43** |
| 9. | Information Technology | 11 | 0 | 40 | 0 | **51** |
| 10. | Mechanical Engineering | 144 | 0 | 117 | 04 | **265** |
| 11. | Metallurgical And Materials Engineering | 47 | 0 | 23 | 3 | **73** |
| 12. | Mining Engineering | 19 | 01 | 20 | 00 | **40** |
| 13. | Physics | 56 | 01 | 02 | 05 | **64** |
| | **Total** | **536** | **14** | **464** | **76** | **1090** |

***INTERNATIONAL JOURNAL :-***

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

1. Suman K., and Arkal Vittal Hegde SO-ANFIS hybrid approach for prediction of wave reflection coefficient for semicircular breakwater", Jnl. of ISH, published online on 1.10.2018, https://doi.org/10.1080/09715010.2018.1525688.
2. Geetha Kuntoji, Subba Rao and Manu, Prediction of Wave Transmission over Submerged Reef of Tandem breakwater using PSO-SVM and PSO-ANN techniques, ISH Journal of Hydraulic Engineering, Taylor & Francis Publication,pp.1-8, https://doi.org/10.1080/09715010.2018.1482796
3. 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), 2019, pp 118-126, (ISSN 0972-9984 (Print); ISSN 0973-7308 (Online))
4. Jay Arun Kaikade, Subba Rao, Jaffar Patel N., Providing infrastructure to facilitate RO-RO services and construction of a breakwater at Mandawa, International Journal of Scientific & Engineering Research, (IJSER) Volume 9, Issue 4, April 2018. pp. 112-118, ISSN: 2229-5518.
5. Amit Vijay Wazerkar, Arkal Vittal Hegde, Subba Rao, Wave transformation studies using Mike-21 and Excel-VBA programming, International Journal of Scientific & Engineering Research, (IJSER) Volume 9, Issue 4, April 2018. pp. 142-145, ISSN: 2229-5518
6. Anusha Jain, Subba Rao, Application of soft computing techniques in breakwater– A Review, International Journal of Scientific & Engineering Research, (IJSER) Volume 9, Issue 4, April 2018. pp. 78-82, ISSN: 2229-5518
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### DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

1. Mayur Jiyalal Prajapati, Robbi Vivek Vardhan, **Saumen Mandal,** 'Study of Structural, Compositional and Morphological properties of Lanthanum doped Barium Stannate through solution processing', National Conference on Emerging Trends in Science, Technology & Application of Electron Microscopy STAEM-2018 & 5th Annual Meeting of the Academy of Microscope Science & Technology(AMST), December 19 – 21, 2018 at Trivandrum jointly by CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Trivandrum and Academy of Microscope Science and Technology (AMST), India.
2. Chinmai Bhat, Vamsi Krishna Rentala, Phani Mylavarapu, **Kumkum Banarjee,** 'Laser Shock Peening (LSP) of Ti-6Al-4V Alloy and Residual Stress Measurements using XRD', National Conference on Processing of Materials (NCOPOM18), SEPT 19-21, 2018, NIT Karnataka, Surathkal.
3. Sharan Kumar Goudar, Das B B, **Arya S B,** "The significance of high volume GGBS on bond strength and microstructure properties of steel-concrete interface", National Conference on Advances in Sustainable Construction Materials (ASCM) 2019, NIT Warangal, 15-16 March 2019.

### SCHOOL OF MANGEMENT

1. Koudur, Shashikantha, "Languages and Hierarchy: Basel Mission in Nineteenth Century Coastal Karnataka", in a National Seminar on Changing Language Policies: Place and Role of English and Its Relation to Other Languages in India, on 7 March 2019 at Sahyadri Science College, Kuvempu University, Shimogga.
2. Rajesh Acharya H, Access to Modern Energy Services and Human Development: Has the Government Policies Paid-off ? Presented at the 19th annual conference of Association of Social Science Institutions (IASSI) at National Institute of Rural Development and Panchayat Raj (NIRD & PR) from 11-13 January 2019.

### DEPARTMENT OF PHYSICS

1. Study of the Effect of Annealing Parameters on the Perovskite Material (CH3NH3SnCl3) Using PL Spectra, 63rd DAE Solid-State Physics Symposium, Guru Jambeshwar University of Science & Technology, Haryana, Dec 18-22, 2018, Achyutha Kodibailu, M.N. Satyanarayan
2. All-electric spin control: A novel approach in semiconductor spintronics, 6th National Conference on Condensed Matter Physics and Applications, Sept 10, 2018 at Maipal University, Partha P Das
3. Connecting LQG and String Theory: From Quantum Geometry to the Nambu-Goto Action (invited talk), Seminar, Physics Department, BITS Hyderabad Aug 14, 2018, Deepak Vaid.
4. Connecting LQG and String Theory: From Quantum Geometry to the Nambu-Goto Action (invited talk), 30th meeting of the Indian Association for General Relativity and Gravitation (IAGRG), BITS Hyderabad Jan 3 - Jan 5, 2019, Deepak Vaid
5. Connecting LQG and String Theory: From Quantum Geometry to the Nambu-Goto Action (invited talk), XXIII DAE-BRNS High Energy Physics Symposium 2018, IIT Madras Dec 10 - Dec 14, 2018, Deepak Vaid.

# 14. TECHNICAL EVENTS

## *DEPARTMENT OF APPLIED MECHANICS AND HYDRAULICS*

### Books Chapters

1. Ramesh N., Hedge A.V. and Subba Rao, "Evaluation of Hydrodynamic Performance of Quarter Circular Breakwater Using Soft Computing Techniques" in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.23/ pp71-88, (https://doi.org/10.1007/978-981-13-3134-3_7 ) (31 Dcember2018)
2. Amaranatha Reddy N., Mendi V., Seelam J.K. and Subba Rao, "Non dimensional Methods to Classify the Tidal Inlets Along the Karnataka Coastline ,West Coast of India" in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.23/ pp 173-184, (https://doi.org/10.1007/978-981-13-3134-3_13) (31 December 2018)
3. Kuntoji G., Subba Rao and Manu, "Prediction of Wave Transmission over an Outer Submerged Reef of Tandem Breakwater Using RBF-Based Support Vector Regression Technique" in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.23/ pp559-570, https://doi.org/10.1007/978-981-13-3134-3_42 (31 December 2018).
4. Shirlal K.G., John B.M., Subba Rao, "Laboratory Investigations on the Effect of Fragmentation and Heterogeneity of Coastal Vegetation in wave height Attenuation" " in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.23/ pp 13-23 https://doi.org/10.1007/978-981-13-3134-3_2 (31 December 2018).
5. Ajay Bharagav Gedda, Manu & Subba Rao, "A Review on Stability of Caisson Breakwater" in the book titled "Water Resources and Environmental Engineering I" edited by M. Rathinasamy et al.(eds) Springer Nature Singapore Pte Ltd/ Vol.23/ pp 83-88 , https://doi.org/10.1007/978-981-13-2044-6_8(31 December 2018).
6. T. Nasar and S. A.Sannasiraj (2018), 'Experimental investigation on effect of submerged solid baffle in a barge carrying liquid sloshing tank' in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.22/ pp365-384.
7. Anoop. I. Shirkol and T. Nasar (2018) 'Coupled Boundary Element Method And Finite Element Method For Hydroelastic Analysis Of Floating Plate', in the book titled "Lecture Notes in Civil Engineering" edited by Murali K., Sriram V., Samad A., Saha N. (eds.) Springer, Singapore/ Vol.22/ pp81-102.
8. Sheba N. Rajan, D. Karmakar & Guedes Soares, C., (2018), Influence of damping on the oscillating water Column WEC integrated with breakwater. Advances of Renewable Energies Offshore - Guedes Soares (Ed.) Taylor & Francis Group, London, ISBN 978-1-138-58535-5, pp. 579-587.
9. Z. Gao, H.B. Bingham, D. Ingram, A. Kolios, D. Karmakar, T. Utsunomiya, I. Catipovic, G. Colicchio, J.M. Rodrigues, F. Adam, D.G. Karr, C. Fang, H-K Shin, J. Slätte, C. Ji, W. Sheng, P-F Liu and L. Stoev, (2018), Offshore Renewable Energy, Committee V.4, 20th International Ship and Offshore Structure Congress, Mirek Kaminski, Phillipe Rigo (Eds), IOS Press, The Netherlands, Vol-2, pp. 193-278.

10. V. Venkateshwarlu & D. Karmakar, (2019), Wave interaction with multiple submerged porous structures, Springer Nature Singapore Pvt Ltd., K. Murali et al. (eds.), Proceedings of the Fourth International Conference in Ocean Engineering, Lecture Notes in Civil Engineering, 23, pp. 265-279.

11. Praveen K.M. & D. Karmakar, (2019), Wave transformation due to floating elastic thick plate over changing bottom topography, Springer Nature Singapore Pvt Ltd., K. Murali et al. (eds.), Proceedings of the Fourth International Conference in Ocean Engineering, Lecture Notes in Civil Engineering, 23, pp. 417-430.

12. Akshay K. Kumawat, D. Karmakar & C. Guedes Soares, (2019), Wave energy conversion by multiple bottom-hinged surging WEC, Springer Nature Singapore Pvt Ltd., K. Murali et al. (eds.), Proceedings of the Fourth International Conference in Ocean Engineering, Lecture Notes in Civil Engineering, 23, pp. 913--929.

13. Akshay K. Kumawat, D. Karmakar & C. Guedes Soares, (2019), Numerical investigation of semi-submersible floating wind turbine combined with flap-type WECs, Springer Nature Singapore Pvt Ltd., K. Murali et al. (eds.), Proceedings of the Fourth International Conference in Ocean Engineering, Lecture Notes in Civil Engineering, 23, pp. 793-805.

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

1. Training programme in GMS & WMS software for students by M/s Aditi Infotech, Kanpur, 12-14, April 2018, Dr. Subrahmanya K.

2. Workshop on 'Curriuculum Workshop', 28th April 2018, Sponsored by NITK, Co-ordinator : Dr. Amba Shetty.

3. Workshop on 'Project based experiential learning for Engineering education', 4-8 Sept. 2018, TEQIP-III, Co-ordinator : Dr. Pruthviraj U.

4. Training programme in ENVI Software by M/s Geotech Geospatial Pvt. Ltd., Chennai for students, 3rd & 4th Oct. 2018, Dr. Amba Shetty.

5. One day Seminar on 'New Frontiers In ydraulics And Water Resources Engineering' on 28th December, 2018, Sponsored by NITK, Co-ordinators : Dr. Varija & Dr. A. Mahesha.

### *INDIAN VISITORS TO DEPARTMENT*

1. Prof. R. Nagarajan, Professor, IIT, Bombay, Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 20.04.2018.

2. Dr. K.Murali, Professor, Ocean Dept. IIT Madras, Visited as a expert for the one day workshop on 'Curriuculum', 28.04.2018.

3. Dr. K.P. Sudheer, Professor, Environment and Water Resources Engineering Division, IIT, Madras, Visited as a expert for the one day workshop on 'Curriuculum', 28.04.2018.

4. Dr. D. Nagesh Kumar, Profssor, Dept. of Civil Engg., IISc., Bengaluru., Visited as a expert for the one day workshop on 'Curriuculum', 28.04.2018.

5. Dr. S.A.Sanasiraj, Professor, Ocean Department, IIT Madras, Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 02.05.2018.

6. Dr. D. Nagesh Kumar, Profssor, Dept. of Civil Engg., IISc., Bengaluru., Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 15.06.2018.

7. Mrs. Arya Namboothiri, Lecturer in English in Dr. NSAM First Grade College, Nitte, Session on 'Team building' by Mrs. Arya Namboothiri, for the Induction Programme for 1st year B.Tech students, 26.07.2018.

8. Mr. H. Paul, Sr. Prof at TMAPAI Institute Manipal, Session on 'Personality Development' for the Induction Programme for 1st year B.Tech students, 26.07.2018.

9. Mr. Brijesh, VP at Infosys Technologies, Mangalore, Session on 'Personality Development' for the Induction Programme for 1st year B.Tech students, 26.07.2018.

10. Mr. Sanandana Dasa, Sr. Mentor at Basics Foundation and Secretary at ISKCON, Session on 'Personality Development' for the Induction Programme for 1st year B.Tech students, 26.07.2018.

11. Mr. Vineeth Kumar, Asst. Professor, Aloysius College, Mangaluru, Session on 'Save the Frogs' for the Induction Programme for 1st year B.Tech students, 28.07.2018

12. 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, 13.08.2018.

13. Dr. Manasa R. Behera, Dept. of Civil Enggg., IIT Bombay , Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 24.08.2018.

14. Ms. Benzita Roshal Ferrao, Psychologist, Mangaluru, Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 05.09.2018.

15. Mr. Vineeth Kumar, Asst. Professor, Aloysius College, Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 06.09.2018.

16. Mr. Ternikar Chirag Ragendra, CEO, Co-Founder Costomate, Maharastra, Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 07.09.2018.

17. Mr. Sammilan S Shetty, Founder Butterfly Patk, Belvai, Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 07.09.2018.

18. Mr. Vishal Rao, Proprietor, 1998 NITK Alumnus , Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 08.09.2018.

19. Mr. Sudheer Shetty, Prakruti Fruit Farm, Inna,Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 08.09.2018.

20. Mr. I. Chandrakantha Rao, Ex-CEO, Director, Jindal Ploy Films Ltd. Mangaluru, Given expert talk in TEQIP-III Sponsored five day Workshop on 'Project based experiential learning for Engineering education', 08.09.2018.

21. Dr. Prasad Bhaskaran, Professor & Head, Ocean Engineering & Naval Architecture, IIT Kharagpur, Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 05.10.2018.

22. Prof. T.V.Ramachandra, Professor, Dept. of Civil Engg., IISc. Bangalore, Visited for Viva-voce exam and delivered a expert talk on 'Lessons of unplanned urbanisation: Bengaluru, A dying city (with burning and frothing lakes), 22.10.2018.

23. Dr. Santosh G.Tampi, Professor, Dept. of Civil Engg., NIT Calicut, Key note speaker for the one seminar on New Frontiers In Hydraulics And Water Resources Engineering, 28th December, 2018, 28.12.2018

24. Dr. Y.S.Rao, Centre for Studies for Resources Engineering, IIT, Bombay, Expert lecture by topic 'SAR Interferometry for DEM' & 'Microwave Remote Sensing and its applications', 18 & 19.02.2019.

25. Dr. P.V.Rao, Senior Project Scientist, IISc., Bengaluru, Special lecture and hands session by the topic 'Pipe line & pumping system, transients in pipes, surge analysation and proection', 21 & 22. 02. 2019.

26. Dr. Prasad Bhaskaran, Professor & Head, Ocean Engineering & Naval Architecture, IIT Kharagpur, Visited for Viva-voce exam and Interaction with faculty and students of the Dept, 29.03.2019.

## *DEPARTMENT OF CHEMICAL ENGINEERING*

### BOOK CHAPTERS

1. Raj Mohan Balakrishnan, Uddandarao Priyanka, Ritu Raval and Keyur Raval Contributed a chapter in Biosensors in Environmental Application in a book named Biosensors Application (2018) Elsevier Publishers).

2. Ritu Raval, Keyur Raval, Microbes and Their Products as Sensors in Industrially Important Fermentations. Microbial Sensing in Fermentation, Editor: Prof. Satinder Kaur Brar, Wiley VCH, UK.

### PATENTS

1. Akhil Vijaya M P , Dr. Hari Prasad Dasari, Anjana P A "Solid Oxide Fuel Cell Anode Material as Soot Oxidation Catalyst", Indian Patent Office, Patent Application No: 201841028640, May 2018.

2. Chaitra Shenoy, Dr. Hari Prasad Dasari, Amturi Shourya" A Method and Composition for Soot Oxidation in a Diesel Particulate Filter", India Patent Office, Patent Application No: 201841046271, December 2018.

### Poster Presented :

1. Kishor Kumar M. J. and Jagannathan T. Kalathi, Sonochemical Preparation of LZO Dielectric Ink for Thin Film Capacitor, IUMRS - ICEM 2018 Aug 19 - 24 , 2018 , Daejeon DCC , South Korea.

2. Sukriti Mishra, Manasa, M., Suman Das and Hari Mahalingam, "Comparison of different Bismuth Oxyhalide photocatalysts for dye wastewater treatment under solar light", 6th IWA-RMTC 2018, The Maharaja Sajayirao University of Baroda, December 10-13, 2018.

### *STTPS (SHORT TERM TRAINING PROGRAMMES)/ SCHOOLS*

1. Short Term course on "Heterogeneous Catalysis for Chemical Engineering attended by Dr. Ashraf Ali at IIT Kharagpur- 10th-14th December 2018.

2. Short Term Training Programme on "Back to Basics" for Hindustan Unilever employees by Dr. Hari Mahalingam, Dr. B. Raj Mohan, Dr. P.E. JagadeeshBabu and Dr. T.K. Jagannathan at HUL Campus, Bombay, 26th March 2019.

3. Conduced short term training program on "Modelling & Simulation of Micro and Macro Multiphase System"-by Dr. B. Ashraf Ali and Dr. Chinta Sankar Rao, 08-12th, Jan 2019.

4. Attended short term course on "Concepts in Chemical Reaction Engineering" – Dr. B. Ashraf Ali, 18-22nd, June 2018.

### *SEMINARS (NATIONAL & INTERNATIONAL)*

1. Urban air pollution and health: A research summary, Talk delivered at School of Engineering, IIT Mandi, by Dr. Gangamma S.-11th February 2019.

2. Air pollution, inflammation and health: An Overview. Talk delivered at Department of Civil Engineering, IIT Delhi, by Dr. Gangamma S.-6th February 2019.

### WORKSHOPS

1. IIT Madras Organised workshop on "fundamentals of Molecular Simulations (FunMolSim2019)" on 5th March 2019 to 9th March 2019 attended by Dr. T.K. Jagannathan.

2. 13th WFCFD International Workshop on "Crystallization, Filteration & Drying" on 21st and 23rd February 2019, attend by Dr. Chinta Sankar Rao.

3. Attended a 5 day QIP workshop on "Fundamentals of Molecular Simulations (FunMolSim 2019)" held at IIT Kanpur in Chemical Engineering Department, March 5-9 10, 2019.

4. Gave research talk in TEQIP sponsored worshop on "Modeling, simulation and data analysis for experimental research MSDAER-2019" during 28 Jan - 1st Feb, 2019.

## GIAN COURSE

Bioremediation for Environmental Sustainability under GIAN Programme of MHRD, GoI-Foreign Faculty: Prof. Pedro J Alvarez, George R. Brown Professor of Civil and Environmental Engineering and Director, NSF ERC on Nanotechnology-Enabled Water Treatment (NEWT), Rice University, Houston, TX 77005, USA. Host Faculty: Prof. Vidya Shetty K, NITK Surathkal from 11th to 15th August 2018.

## FOREIGN VISITORS TO THE DEPARTMENT

1. Prof. Visvanathan from AIT Bangkok under ASEAN – India Collaborative Project (1- 4, August 2018).

2. Prof. Bui Xuan Thanh from Ho Chi Minh University of Technology, Vietnam under ASEAN – India Collaborative Project between 12 – 17 March 2019.

3. Dr. Rungtiwa Wangsagonsup from Mahidol University Kanchanaburi campus, Thailand visited the department during Nov-30 to Dec 05, 2018. This visit was part of ongoing collaborative research between Dr. Prasanna B.D and ASEAN counterpart under ASEAN-India Project ( IMRC/AISTDF/R&D/P-4/2017).

4. Dr. Esperanza Maribel and Dr. Jose Isagani from De La Salle University Phillipines visited the department during Nov-30 to Dec 05, 2018. This visit was part of ongoing collaborative research between Dr. Prasanna B.D and ASEAN counterpart under ASEAN-India Project ( IMRC/AISTDF/R&D/P-4/2017).

5. Mr. Pirakorn Nudol, Mr. Adisorn Ampun, Mr. Thanupong Nateelerdpaisan, Mr. Chayapon Gross from Mahidol University Kanchanaburi campus, Thailand, successfully completed one month internship (14th February to 15th March, 2019) under the guidance of Dr. Prasanna B. D, Associate Professor, Chemical Engineering Department. This student internship was part of MOU signed between NITK Surathkal & Mahidol University Kanchanaburi campus and ASEAN-India collaborative R&D program funded by DST, Govt. of India.

6. Prof. Pedro J Alvarez, George R. Brown Professor of Civil and Environmental Engineering and Director, NSF ERC on Nanotechnology-Enabled Water Treatment (NEWT), Rice University, Houston, TX 77005, USA Dr. Subrato chaterjee, Professor Dept. of Peadiatrics, Johns Hopkins University, School of Medicine, Baltmore, MD, visited on 14th October 2005.

## VISIT TO ABROAD (Faculty):-

1. Dr. Hari Mahalingam, Associate Professor, Chemical Engineering, attended 8th International Engineering Symposium(IES 2019) Kumamoto University, Japan, March 13-15, 2019

2. Dr. Raj Mohan B visited to AIT Bangkok under ASEAN – India Collaborative Project between 4 June 2018 – 13 June 2018

3. Dr. Raj Mohan B visited to Ho Chi Minh University of Technology, Vietnam under ASEAN – India Collaborative Project between 23 – 27 September 2018.

4. Anjana Anantharaman, Rahul M R, Sunaina Patil, Dr. Hari Prasad Dasari,

Uday Bhaskar Babu Gara, Harshini Dasari, "Synthesis, Characterization and Soot Oxidation Activity of Ceria Doped Gadolinium (Gd0.9Ce0.1O2)" International Conference on "Composite Materials Science and Technology" – ICCMST, April 2018. Bangkok, Thailand.

5. Dr. Prasanna B.D, Associate Professor, Chemical Engg. Department visited Mahidol University Kanchanaburi campus, Thailand during 29 to 5th May, 2018, to pursue his collaborative research project, which is being funded by SERB, under ASEAN-India Collaborative project under ASEAN-India Science, Technology & Innovation Cooperation.

6. Dr. Prasanna B.D, Associate Professor, Chemical Engg. Department visited De La Salle University Phillipines during 5th May to 10th May 2018, to pursue his collaborative research project, which is being funded by SERB, under ASEAN-India Collaborative project under ASEAN-India Science, Technology & Innovation Cooperation.

### TALK

1. Expert Talk on "Understanding the Rheology of Bulk Solids as a Complex Fluid" by Dr. Anurag Tripathi, Assistant Professor, Dept. of Chemical Engg., IIT Kharagpur, 20th February, 2019.

## *DEPARTMENT OF CIVIL ENGINEERING*

### Book Chapters

1. Instability of Composite Breakwater Subjected to Earthquake and Tsunami and Its Countermeasures (accepted). Geotechnics for Natural Disaster Mitigation and Management (Eds: Murali Krishna and Takeshi Katsumi), Springer book series: Developments in Geotechnical Engineering. Chaudhary, Babloo., Hazarika, H., Murakami, A. and Fujisawa, K.

2. Spatial Distribution of Strength - Comparison between Indian and Japanese Embankments Geotechnics for Natural Disaster Mitigation and Management (Eds: Murali Krishna and Takeshi Katsumi), Springer book series: Developments in Geotechnical Engineering, Nishimura, S., Imaide, K., Ueta, T., Hayashi, T., Inoue, K., Shibata, T. and Chaudhary, Babloo.

3. Experimental Investigation on Utilization of Waste Shredded Rubber Tire as a Replacement to Fine Aggregate in Concrete Sustainable Construction and Building Materials, ISBN: 978-981-13-3316-3, Book ID: 470623_1_En, 2018 (Springer Book) Parameshwar N. Hiremath, K. Jayakesh, Roshan Rai, N. Sujay Raghvendra and Subhash C. Yaragal

4. Strength Characteristics of Laterized Mortars Using Processed Laterite Sustainable Construction and Building Materials, ISBN: 978-981-13-3316-3, Book ID: 470623_1_En, 2018 (Springer Book) Basavana Gowda S.N., Rajasekaran C., Yaragal S.C

5. Recent Development in waste management, Springer, Singapore 2018, Anjali M S, Shrihari S, and Sunil B M.

### Foreign Visitors to Department

1. Prof. H Hazarika, Professor, Dept. of Civil Engineering, Kyushu University, Japan, To deliver expert lecture and interaction with faculty & students, 10/12/2018.

### Visit to Abroad (Faculty)

1. A. U. Ravi Shankar, Hanoi, Vietnam. Paper presentation at 11 ISLT Conference 2018, 26/09/2018- 28/09/2018.

2. A. U. Ravi Shankar Shanghai, China Paper presentation at International Conference 2018 27/05/2018-30/05/2018.

3. R. Shivashankar, Hanoi, Vietnam. Delivered 'Miura lecture' and presented Paper at 11 ISLT Conference 2018

26/09/2018- 28/09/2018.

4. B. R. Jayalekshmi, Hanoi, Vietnam. Paper presentation at 11 ISLT Conference 2018, 26/09/2018- 28/09/2018.

5. R. Shivashankar, Shanghai, China. Paper presentation at International Conference 2018, 27/05/2018-30/05/2018.

6. Sunil B.M. Kumamoto University, Japan, To attend and present paper in the 8th International Engineering Symposium, 13/3/2019 to 15/3/2019.

7. K.S. Babu Narayan, Kumamoto University, Japan. To attend and present paper in the 8th International Engineering Symposium 13/3/2019 to 15/3/2019.

## *DEPARTMENT OF COMPUTER SCIENCE ENGINEERING*

### Book Chapters: -

1. Basavaraj Talawar and Pramod Yelmewad, "GPU-Based Iterative Hill Climbing Algorithm to Solve Symmetric Traveling Salesman Problem", HPC and Big Data Convergence and Ecosystem Series, Eds. Grandinetti, L., Mortaheri, S.L., Shahbazian, R., Sterling, T., Voevodin, V., Book Series: Advances in Parallel Computing, IOS Press, Amsterdam, ISBN print: 978-1-61499-881-5, ISBN online: 978-1-61499-882-2, August 2018. Link: Online in IOS Press: http://ebooks.iospress.nl/volumearticle/49754.

## *STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS:*

Under TEQIP-III, NITK, Surathkal is the Mentor institute for Government Engineering College Jhalawar. CSE faculty Dr. P. Santhi Thilagam and Basavaraj Talawar visited the mentee institute, 11th Feb, 2019 - 15th Feb, 2019, organized and conducted the following STTPS and Seminars:

1. Seminar in Workshop on Efficient Academic and Research Practices. Title: eSAR preparation for NBA and Outcome Based Education. Speaker: Dr. P. Santhi Thilagam.

2. Seminar Title: GATE Lecture on Computer Science. In the seminar, the class solved previous GATE question paper problems. Tips on how to tackle and clear GATE exam were also given. Speaker: Dr. Basavaraj Talawar.

### WORKSHOPS:

A Workshop on "Women in Technology Summit- WiTS'18" was held during 21st to 23rd December, 2018. Shri Sheenam Ohrie, Vice President, Enterprise Data & Mobility Engineering, DELL Digital, Bengaluru, co-ordinator: Dr. Annappa B., Ms. Aparna Kanaktte, Technical Architecture, TCS Bangalore and Ms. Aditi Chalisgaonkar Software Engineer II (UX/UI Design), Walmart, Pittsburg were the resource person(s) of the event.

A Workshop on "New Frontiers in Cloud and Fog Computing for Big Data and Internet-of-Things IoT) Applications "was held during December 31, 2018 and January 1, 2019. Coordinators: Prof. G. Ram Mohana Reddy and Prof. K. Chandrasekaran. Dr. Rajkumar Buyya, Redmond Barry Distinguished Professor and Director of the Cloud Computing and Distributed Systems (CLOUDS) Laboratory, Melbourne University, Mr. Raghavan Subramanian, Associate Vice President, Head of Strategy and Innovation, InfosysIT, Infosys, Bangalore, Dr. Shridhar G Domanal, University of Surrey, U.K., Prof. K. Chandrasekaran, NITK-Surathkal and Prof. G. Ram Mohana Reddy, NITK- Surathkal were the resource person(s) of the event.

### FOREIGN VISITORS TO DEPARTMENT:

Ms. Aditi Chalisgaonkar Software Engineer II (UX/UI Design), Walmart, Pittsburg visited on 21st December 2018.

Dr. Rajkumar Buyya & Redmond Barry Distinguished Professor and Director of the

Cloud Computing and Distributed Systems (CLOUDS) Laboratory, Melbourne University visited on 31st December 2018.

Dr. Shridhar G Domanal, University of Surrey, U.K. visited on 31st December 2018.

## DEPARTMENT OF CHEMISTRY

### BOOKS EDITED:-

Advanced Nanomaterials For Membrane synthesis and its Applications, Edited by W.J Lau, A.F. Ismail, Arun M. Isloor & Amir Al Ahmed, Published by Elsevier, January 2019.

OTHERS

Dr. Arun M. isloor has delivered more than 12 invited lectures on various occasions in different institutions during the period.

Dr. Arun M. Isloor is also member for the Committee constituted by Ministry of Panchayathraj, Govt. of Karnataka, to evaluate the operation & maintenance of RO drinking water plants across the Karnataka state.

Dr Arun M. Isloor is also external BOS & BOE member for 04 institutions.

A. Vasudeva Adhikari, Professor (HAG) of Chemistry Department, delivered an invited lecture, in Indian Council of Chemists 37th Annual National Conference, held at NITK, Surathkal, during Dec. 12-14, on "Dye-sensitized Solar Cells (DSSCs) for Light harvesting: Sensitization and Co-sensitization Studies".

Prof. A. Vasudeva Adhikari is working as Principal Coordinator, DK District Bioenergy Research, Information and Demonstration Centre, NITK since from its date of establishment, i.e. 22-12-2012. This has been funded by Karnataka State Bioenergy Development Board, Bangalore (GoK) with a budget of Rs. 25 lakhs.

External Senate Member of NIT Goa from October 2017 for three years.

### TECHNICAL EVENTS ORGANIZED

Principal Convener, 37th National Annual Conference of ICC (Indian Council of Chemists) with the theme "Recent Advances in Chemical and Biological Sciences", held at NITK, during December 12-14, 2018. About 250 participants from various places of India participated in five parallel sessions conducted during three days and presented their (poster/oral) research papers. Invited speakers also presented their research work.

### CONFERENCES

Chairman, 37th ICC Conference to be held at NITK, Sruathkal, December 12-14, 2018.

### BOOKS PUBLISHED

Y N Sudhakar, M Selvakumar and **D Krishna Bhat,** Biopolymer Electrolytes: Fundamentals and Applications in Energy Storage, Elsevier, Oxford, UK, ISBN: 9780128134474, 2018.

### SYMPOSIUM

Convened a Symposium on "Builidng Effective Academia-Industry Partnership (BEAP)" on December 13, 2019, as a part of 37th Annual National Conference of Indian Council of Chemists held at National Institute of Technology Karnataka (NITK) Surathkal, India during the period of 12th - 14th December, 2018.

### PATENTS

Method of N-formylating amines with a phosphonic anhydride, Amir Al-Ahmed and Arun M. Isloor, United States Patent 9862675, Granted on 10th January 2018.

Method for removing cationic dyes from an aqueous solution using an adsorbent, Amir Al-Ahmed and Arun M. Isloor, United States Patent US20170233265A1 , Granted on 14th August 2018.

### POSTERS PRESENTED:-

**Rasmi Bhaskaran P, Megha Murali and Dr. Beneesh P. Babu*** "Synthesis of Polysubstituted Pyrazole via Transient zwitterion based multicomponent Reactions"

ICMST-2018 International Conference Organized by IIST Trivandrum and MRSI, Trivandrum Chapter. October 10-13, 2018.

RASMI BHASKARAN P., Sandeep Naik, Vibhav Damodar & Dr Beneesh P B. "Palladium Catalysed Aerobic Oxidative Benzoxylation of Olefins through Biomimetic Approach" National Conference Organized by ICC-2018 at NITK, Surathkal. 12-12-2018.

**INVITED LECTURES:-**

Sustainable Synthetic Routes in Organic Chemistry - NSPC 2019 National Seminar- St. Michael's College, Cherthala, Kerala. February 21-22, 2019.

Organic Synthesis: An Unparalleled Art of Science - Seminar FOCUS 2018-19 - SN College, Kannur, Kerala. 16th February 2019.

**GUEST LECTURES DELIVERED**

Effect of Cosolvents in Protein solvation, Theoretical Chemistry Symposium 2019, BITS Pilani, from 13-02-2019 to 16-02-2019.

Effect of Hydrophobic and Hydrophilic on the potency of the inhibitors, ICEFN & SEM -2019, Kijmaon University, Uttarakhand, from 23-05-2019 to 26-05-2019.

**SHORT TERM COURSES/ CONFERENCES/ SEMINARS/ WORKSHOPS ORGANIZED/ EXPERT LECTURES**

Twinning activities with GEC Jhalawar Short Term Course 11-02-2019 13-02-2019 20 TEQI P-Ill.

**VISITS ABROAD**

United Kingdom for Oral Presentation for 6 days.

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

**STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS**

5 day STTP on Optimization Techniques for Signal Processing and Network Communication (OTSPNC-2018) - TEQIP III by Dr. Shyam Lal and Dr. Ashvini Chaturvedi with IIT Bombay, ISI, Kolkata, South Asian University, New Delhi and IIITDM, Kanchepuram, 14 – 18 June 2018. 5 day STTP on Algorithms and Architectures for High Efficient Video Processing Systems (AAHEVPS-2018) – TEQIP III by Dr. Aparna P. with IIT (BHU), Manipal Dot Net Pvt. Ltd., IIT Indore, IIT Kharagpur, CEDT, 20-24 August 2018.

3-Day Training Programme on End-to-End System Solutions for IoT Designs - NITK, Surathkal Newton Bhabha Fund Royal Academy of Engineering by Dr. M S Bhat with Mr. S Narasimhan M/S. Saroja Enterprises, Mysore, 29 September – 01 October 2018.

**WORKSHOPS**

One day workshop on Recent Trends in Photonics – NITK IEEE by Dr. Muralidhar Kulkarni and Dr. Prabu K. with Dr. T Srinivas, IISc., Bangalore Chair, IEEE Photonics Society Bangalore Chapter, 21st September 2018.

Expert Lecture / Workshop on Applications of E&T Engineering and implementation of various I.T. initiatives in Coal Industry by Dr. Laxminidhi with D.D. Shrikhande,Ex.G.M.(E&T)/ HOD, SECL, I.C.T. Consultant & Trainer, 05-06 October 2018.

2 day workshop on Mathematics and everything around Mathematics by Dr. Raghavendra Bobbi, Dr. M R Arulalan, Dr. Deepu Vijayasenan and Dr. A. V Narasimhadhan with Prof. Vittal Rao (Formerly, Chairman, Dept of Mathematics, Indian Institute of Science, Bangalore) and Dr. Ashok Rao (Formerly, Head, Networking Project, Centre for Electronics Design and Technology, Indian Institute of Science, Bangalore), 08-10 March 2019.

One day workshop on TTTC India - VLSI Test Workshop - Mangalore Session by Dr. M S Bhat with Prakash Narayanan, Sr. Technical Lead, Memger Group Technical Staff, TI India PVt. Ltd, Wilson Pradeep, Lead DFT Engineer, TI, Bangalore, Abhishek Chaudhary, Manager,

DFT Engineering at Rambus Bangalore, 30th March 2019.

## EXPERT TALKS

Expert Talk on Novel Strategies for Online Signature Verification using Dynamic Time Warping by Dr Suresh Sundaram, Associate Professor, IIT Guwahati, 7th August 2018.

Expert Lecture on Multi-objective Particle Swarm Optimization Algorithm with Applications by Prof. D. Nagesh Kumar, Chairman, Centre of Earth Sciences and Professor, Dept. of Civil Engg., IISc, Bangalore,, 19th September 2018.

Invited Lecture on Wide band gap semiconductors: status and promises by Prof. Digbijoy N. Nath, CeNSE, IISc, Bangalore, 3rd October 2018.

Expert Lecture on Primary Radar for Airborne Early Warning and Control (AEW&C) by Sri. D. Sesha Giri Scientist-G and Head, Radar-V division Electronics and Radar Development Establishment (LRDE), 22nd october 2018.

Expert Lecture on Development of Object Recognition Systems Using Invariant Feature Based Indexing by Dr. Navin Rajpal, Professor & Ex-Dean, University School of Information Communication & Technology, GGSIP University, 25th October 2018.

Talk on Trends in semiconductor technologies for computing and communication by Dr Kiran Puttegowda , Director, Inphi, USA, 29th January 2019.

## FOREIGN VISITORS TO DEPARTMENT

Dr Kiran Puttegowda, Director, Inphi, USA, visited on 29th January 2019.

## VISIT TO ABROAD (Faculty):-

Dr. Shyam Lal, Department of E&C Engg, visited University of Pavia, Italy to teach part of Satellite Data Processing Course, November 19-30, 2018.

Dr. Sumam David S., Department of E&C Engg, visited Technion, Israel Institute of Technology, Haifa for Academic and research interaction, May 06-24, 2018.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### BOOK CHAPTERS:-

1. Prusty, B. R., and Jena, D, "Probabilistic load flow in a transmission system integrated with photovoltaic generations" is published in *Applications of Computing, Automation and Wireless Systems in Electrical Engineering, Springer.* pp. 1-7.
2. Prusty, B. R., and Jena, D, "Uncertainty modeling steps for probabilistic steady state analysis" published in *Applications of Computing, Automation and Wireless Systems in Electrical Engineering, Springer,* pp.1-11.
3. Dr Y Kashyap, Published a book chapter titled "Book Title: "Advances in Solar Energy Research"; Publisher: Springer, Singapore; 2018; Chapter:. "Solar Radiation Assessment and Forecasting Using Satellite Data", Pages 45-71.

## BOOKS PUBLISHED:-

Dr. K. N. Shubhanga - Published a book titled "Power System Analysis-A Dynamic Perspective", with Pearson Education India.

## STTPS (SHORT TERM TRAINING PROGRAMMES)/SCHOOLS

STTP on A one-week Short Term Course (STC) on **'Power Converter Design'** Jointly with NITK-STEP – Experts from PantechProEdPvt. Limited', Chennai, 7-11 June 2018.

STTP on A Four weeks Short Term Course On 'IOT with Machine Learning and Artificial Intelligence' - Experts from Pantech Solutions, Chennai, 9th July – 3rd August 2018.

STTP on Design and Implementation of Active Power Line Conditioner - Expert Lecture – Dr Karuppanan, Assistant Professor (NIT Allahabad), 1-03-2019.

STTP on Research area in advanced electrical engineering - Expert Lecture –Dr.P. Seshanna, 11th October 2018, Sponsored by Dr.B.Venkatesaperumal.

STTP on Research on Smart Micro Grids - Expert Lecture - Prof. K S Swarup Professor (IIT Madras), 19th Dec 2018, Sponsored by Dr. G.S.Punekar.

## STC (SHORT TERM COURSE)

STC on "Five Days Short Term Course on "**Advanced Industrial Automation**" 21-25 June, 2018(5 days) Sponsored by **Dr. H. Nagendrappa**, Dr. B. Venkatesa Perumal Dr. Y. Suresh.

STC on "IOT with Machine learning and artificial Intelligence" 9th July – 3rd Aug 2018, Sponsored by Dr.B.Venkatesaperumal, Dr.H. Nagendrappa, Dr.Y.Suresh, Dr. C.M.C Krishna

STC on "Digital Control of Power Electronics" 29-10-2018 to 02-11-2018(5 days), Self – finance by Dr.P. Parthiban, Dr.A. Karthikeyan, Dr. R.Kalpana.

STC on Five Days Short Term Course on **'Real Time Simulation Of Electrical Systems'** 14-18 November, 2018 (5 days), Sponsored by **Dr. H. Nagendrappa,** Dr. B. Venkatesa Perumal, Dr. Y. Suresh, Dr. CMC Krishnan, Dr. A. Karthikeyan.

STC on "Power Converter Design" 17th -21st Dec-2018, Sponsored by Dr. B.Venkatesaperumal, Dr.H. Nagendrappa, Dr.Y. Suresh, Dr. P. Parthiban, Dr.A. Karthikeyan.

STC on "Women in Technology Summit" 21st - 23rd Dec. 2018, Women in Engineering (WIE)-Co Chair member, R Kalpana.

## CONFERENCES, SEMINARS (NATIONAL & INTERNATIONAL)

"Research Interaction/Technical discussion" with NSTL- DRDO Naval Research Board (NRB) Visakhapatnam, 1st & 2nd Nov. 2018.

**2018 IEEE International Conference on Power and Energy (PECon 2018) with Kuala Lumpur, Malaysia, 3-4 December 2018.**

## WORKSHOPS

"Intectual Property Rights (IPRs)" 15th Oct 2018, TEQIP-III, Dr. Y Kashyap.

"Solar inverters by SunGrow" 2nd Nov 2018, Sponsored by Dr.B.Venkatesaperumal.

"Energy & Environmental Problems Facing the Third World and Their Probable Solutions for Sustainable Developement" Lecture Talk by D P Kothari,13th Nov. 2018, Sponsored by R. Kalpana.

Recent Trends in the Power System Operation and Control", 11th-15th June, 2018, TEQIP-III, Co-coordinator by Dr. D. N. Gaonkar, Dr. Debashisha Jena and Dr. Tukaram Moger.

"Power System Analysis and Design - DigSilent Power Factory", 2nd - 6th July 2018, TEQIP, Co-coordinator by Dr. Tukaram Moger, Dr. D. N. Gaonkar, Dr. Debashisha Jena, Dr.B. Venkatesaperumal.

"Recent Developments in Soft Computing Techniques for Engineering Applications", 14-18 May 2018, TEQIP-III, Co-coordinator by, Dr. Debashisha Jena, Dr. Tukaram Moger.

D.Jena delivered a lecture on "Probabilistic Steady State Analysis of Power Systems Integrated with PV Generations" in 5 days workshop on "Recent challenges in integration and energy management of wind and solar PV generation under the paradigm of smart grid" at NIT Silchar 17-21 November 2018.

D.Jena delivered a lecture on "Design of Nonlinear Controllers for Variable Speed Variable Pitch Wind Turbine" in 5 days workshop on "Recent challenges in integration and energy management of wind and solar PV generation under the paradigm of smart grid" at NIT Silchar 17-21 November 2018.

## INDIAN VISITORS TO THE DEPARTMENT

Dr. Narasimharaju B. L., Associate Professor, Department of Electrical Engineering, NIT Warangal, "Guest Lecture and Interaction with students and faculty" 17/01/19.

Dr. Shathi Swarup,Professor Dept of Electrical Engineering, "Guest lecture and PhD thesis evaluation" 19th December 2018.

## DEPARTMENT OF INFORMATION TECHNOLOGY

### BOOK CHAPTERS:-

1. Sarswat A., and **Guddeti R.M.R.** (2019), "A Novel Hybrid Algorithm for Overlapping Community Detection in Social Network Using Community Forest Model and Nash Equilibrium". In: **Sa,** P.K., **Bakshi,** S., **Hatzilygeroudis,** I.K., **Sahoo,** M.N. (Eds.) Recent Findings in Intelligent Computing Techniques. Advances in Intelligent Systems and Computing, Vol. 707, pp. 491-500, Springer, Singapore.
2. Sebastian A.G., Singh S., Manikanta P.B.T., Ashwin T.S., **Reddy G.R.M.** (2019) Multimodal Group Activity State Detection for Classroom Response System Using Convolutional Neural Networks. In: Sa P., Bakshi S., Hatzilygeroudis I., Sahoo M. (Eds.) Recent Findings in Intelligent Computing Techniques. Advances in Intelligent Systems and Computing, Vol. 707, pp. 245-251, Springer, Singapore.
3. Sharma R., Ashwin T.S., **Guddeti R.M.R.** (2019) A Novel Real-Time Face Detection System Using Modified Affine Transformation and Haar Cascades. In: Sa P., Bakshi S., Hatzilygeroudis I., Sahoo M. (Eds.) Recent Findings in Intelligent Computing Techniques. Advances in Intelligent Systems and Computing, Vol. 707, pp. 193-204. Springer, Singapore.
4. Tripathi A., Manasa D.G., Rakshitha K., Ashwin T.S., **R M Reddy Guddeti** (2018) Role of Intensity of Emotions for Effective Personalized Video Recommendation: A Reinforcement Learning Approach. In: Sa P., Bakshi S., Hatzilygeroudis I., Sahoo M. (Eds.) Recent Findings in Intelligent Computing Techniques. Advances in Intelligent Systems and Computing, Vol. 709, pp. 507-517, Springer, Singapore.
5. Yousuff S., Chaudary S.K., Meghana N.P., Ashwin T.S., **R M R Guddeti** (2018) Zigbee-Based Wearable Device for Elderly Health Monitoring with Fall Detection. In: Sa P., Bakshi S., Hatzilygeroudis I., Sahoo M. (Eds.) Recent Findings in Intelligent Computing Techniques. Advances in Intelligent Systems/Computing, Vol. 708, pp. 69-76, Springer, Singapore.
6. **Dr. Bhawana Rudra,** Prashanth Chapter titled in the book titled "Energy Conservation for IoT Devices: Concepts, paradigms and solutions" Published by Springer proceedings- 2019.
7. **Dr. Bhawana Rudra,** chapter titled "Impact of Internet of Things in Smart Cities " in book titled " IoT Technologies in Smart-Cities - From Sensors to Big Data, Security and Trust" published by IET, 2019.
8. **Dr. Bhawana Rudra** Chapter Titled "Impact of BlockChain for Internet of Things Security" in the book titled "Cryptocurrencies and Blockchain Technologies and Applications" Wiley Publications, 2019.
9. **Dr. Bhawana Rudra,** Thanmayee, Chapter titled" Streamlining IPv6 functionality for Low Power Nodes," for the book, "IoT Architectures, Models, and Platforms for Smart City Applications.", IGI publishers, 2019.
10. Premjith B., Soman K.P., **Anand Kumar M.,** Jyothi Ratnam D. (2019) Embedding Linguistic Features in Word Embedding for Preposition Sense Disambiguation in English - Malayalam Machine Translation Context.Recent Advances in Computational Intelligence. Studies in Computational Intelligence, vol 823. Springer, Cham.
11. **Anand Kumar M,** A Comparative Analysis of Machine Comprehension using Deep Learning Models in Code-Mixed Hindi Language, Recent Advances in Computational Intelligence. Studies in Computational Intelligence, vol 823. Springer, Cham.

12. Remmiya devi, Anand Kumar M, Soman K P, Extraction of Named Entities from Social Media Text in Tamil Language using N-gram Embedding for Disaster Management, Springer Book Chapter - 2019.

## BOOKS PUBLISHED:

1. **Dr. Bhawana Rudra** Text book titled "Flexible Network Architectures security issues and Principles" Publisher: Taylor & Francis, Florida. May- 2018.

## 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:

**1. Prof. G. Ram Mohana Reddy reviewer for**

- IEEE Transactions on Parallel & Distributed Systems (2018-Till Date)
- IEEE Access: Multidisciplinary Open Access Journal (2018-Till Date)
- Elsevier Journal of Networks & Computer Apps (Jan. 2017-Till Date)
- Elsevier Journal of Information Sciences (Jan. 2018-Till Date)
- Elsevier Future Generation Computing Systs. (Jan. 2018-Till Date)
- Elsevier Journal of King Saud University - Computer and Information Sciences (April 2018-Till Date)
- Elsevier Journal of Engg. Science and Tech. (July 2018 - Till Date)
- Elsevier Cities: The International Journal of Urban Policy and Planning (January 2019 - Till Date)
- Springer Journal of 3D Research (2015 - Till Date)
- Springer Arabian Journal for Science & Engg (2016-Till Date)
- Springer Journal of Cluster Computing (2018-Till Date)
- Springer Journal of Artificial Intelligence Review (2018-Till Date)
- American Journal of Medical Imaging/Health Info. (2016- Till Date).
- Taylor & Francis Journal of IT & Politics (May 2018-Till Date).
- Taylor & Francis - IETE Journal of Research (July 2018-Till Date).
- Wiley Journal of Communication Systems (January 2019 - Till Date).

2. **Dr. Geetha V.,** reviewed papers of the International Conference on Artificial Intelligence and Data Engineering, to be held at NMAMIT, Nitte.

3. **Dr. Anand Kumar** - ELSEVIER JOURNAL REVIEWS -

- Ict Express
- Information Processing Management
- Computer And Information Sciences
- Computer And Electrical Engineering
- Future Generation Computer Systems

## STTPS (SHORT TERM TRAINING PROGRAMMES) / SCHOOLS

1. Five Days Short-Term Program on "IPv6 Networking Fundamentals " by Dr. Jaidhar CD, 27th - 31st August 2018.

2. Five Days Short-Term Program on "Data Mining Techniques and Cyber Security" by Dr. Jaidhar C D and Dr. Nagamma Patil, 4th to 8th September 2018.

## Seminars (National & International)

1. An International NLP Shared Task - Indian Native language identification(INLI) -2018 by Dr. Anand Kumar M Cojoined with FIRE2018 at DACIIT, Gandhi nagar.

## Workshops:

1. TEQIP-III Sponsored One day workshop on "High Performance Computing" by **Prof. Ananthanarayana V S and Mr. Dinesh Naik** with DellEMC, Bangalore, 6th April, 2018.
2. 2 days Seminar/ workshop "New Frontiers in Cloud and Fog Computing for Big Data and Internet-of-Things (IoT) Applications" by **Prof. G. Ram Mohana Reddy** & Prof. Chandrasekaran, 31st Dec. 2018 and 1st Jan. 2019.
3. One Day Workshop on "Document Typesetting and Preparation using LaTeX" by **Dr. Jaidhar C D and Dr. Nagamma Patil,** 31st October 2018.
4. TEQIP - III Sponsored 5 Days Workshop on "Computer Networks and Data Mining", by **Dr. Nagamma Patil,** 11th – 15th, February 2019 organised under Twinning Program between NITK Surathkal and Government Engineering College, Jhalawar.
5. TEQIP III sponsored One Week Workshop on "Predictive Analytics & its Applications" (PAA 2019) by **Dr. Sowmya Kamath & Dr. Geetha V,** 14-18, January 2019
6. Technology based Entrepreneurship Development Programme, sponsored by NSTEDB-DST and EDII-Ahmedabad by **Dr. Sowmya Kamath,** 29 Oct - 7 Dec, 2018.
7. One-day Workshop on *"High Performance Computing"* by **Dr. Sowmya Kamath** with HP Enterprise, Bangalore, 29 Oct 2018.
8. *"Entrepreneurship Development Programme EDP 2018",* sponsored by NSTEDB - DST, EDII-Ahmedabad and TEQIP III-NITK by **Dr. Sowmya Kamath,** 5-7 Oct & 27-28, 2018.
9. *"Entrepreneurship Awareness Camp"* by **Dr. Sowmya Kamath** for NITK Students, sponsored by DST-Delhi, EDII-Ahmedabad and TEQIP III-NITK , 30 Aug - 1 Sep, 2018.
10. **Dr. Sowmya Kamath,** Convener for the organization of Grand Finale of the Software Edition of Smart India Hackathon 2019, the World's Largest Hackathon, a national level event with the participation of more than 2,00,000 students across the country, March 2-3, 2019.
11. NITK Women's 24-hour Hackathon *"Athena" by* ***Dr. Sowmya Kamath,*** sponsored by NITK-STEP (3-4 November 2018).
12. One day workshop on "Experience the Power of HPC" by **Dr. Sowmya Kamath and Dr. Geetha V** with Hewlett Packard Enterprise(HPE), 9th March 2019.
13. One Day NITK-RDL Makeathon by **Dr. Sowmya Kamath and Dr. Geetha V** for the problem statement given by Research Design Lab Mangalore, 16th March 2019.
14. One Day NITK -RDL Workshop on "Internet of Things" by **Dr. Sowmya Kamath and Dr. Geetha V,** 22nd March 2019.

**Faculty development Programme:**

**Dr. Sowmya Kamath S.,** Faculty Development Programme on *"Innovation & Idea Generation (IGI 2018)",* sponsored by NSTEDB-DST and EDII-Ahmedabad (29 Oct - 2 Nov, 2018)

**VISIT TO ABROAD (FACULTY):-**

- **Prof. Ananthanarayana V. S.** attended one week program on Building World Class Universities at Nanyang Business School, Nanyang Technological University, Singapore from 3 - 8, December 2018.
- **Prof. G. Ram Mohana Reddy** participated in the Leadership for Academicians Program (LEAP) at NTU Singapore during 18-23 March 2019.

***DEPARTMENT OF MECHANICAL ENGINEERING***

**BOOKSPUBLISHED :-**

1. Veeresh Nayak C,M R Ramesh, Vijay Desai, Sudip Kumar Samanta, Manjunath Patel G.C Optimization of Metal Injection Moulded Process using Taguchi, Grey relational and Principal Component Analysis" book title "Materials Forming, Machining and Post Processing Springer International Publishing, Cham-Switzerland 2018 ISBN: 9780735416383, Published year: 2018
2. Prashantha B., Anish S. A computational study on the stenosis circularity for a severe stenosed idealized artery, 2019, Lecture Notes in Mechanical Engineering, pp313-320, DOI 10.1007/978-981-13-1903-7_36.
3. Kadam A.R., Hindasageri V., Kumar G.N. Estimation of heat transfer coefficient and reference temperature in jet impingement using solution to inverse heat conduction problem, 2019, Lecture Notes in Mechanical Engineering, pp31-37,DOI 10.1007/978-981-13-1903-7_5.
4. Ademane V.G., Hindasageri V., Kadoli R. A numerical study on heat transfer characteristics of two-dimensional film cooling, 2019, Lecture Notes in Mechanical Engineering, pp613-619,DOI 10.1007/978-981-13-1903-7_70.
5. Gajanan Anne, S. Ramesh, Goutham Kumar, Sandeep Sahu, M. R. Ramesh, H. Shivananda Nayaka, and 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, https://doi.org/10.1007/978-3-030-05789-3_50, SpringerLink

## PATENTS:

- Anish S, Swirl Generator for Human Arterial Network, App. No. 201841010102; Dated 20/03/2018, Filed, 2018.
- Anish S, Dual fence with tapered trailing edge for turbine /compressor blade passage, App. No. 201841003526; Dated 30/01/2018, Filed.
- Sathyabhama A, A PASSIVE LEADING EDGE MICRO PROTUBERANCE STRIP, App. No.201741035860, Filed, 2017.
- Gangadharan K V, A Nerve Trimming Kit 2.01741E+11, Filed, 2017.
- Gangadharan K V, Multi Material Structure with Controllable Multi Directional Property, 2.01741E+11, Filed, 2018.
- Gangadharan K V, Automated Illizarov Apparatus, 2.01641E+11, Filed, 2017.
- Gangadharan K V, Variable stiffness MRE spring device, C.000602, Filing, 2018.
- Gangadharan K V, MRE Torsional Isolator, C.000657, Filing, 2019.

## POSTERS PRESENTED

- Dr. Narendranath S, Influence of ECAP Processing Routes on Microstructure Mechanical Properties and Corrosion Behavior of AZ80 Mg alloy, 3rd International Conference on Optoelectronic and Nano Materials for Advanced Technology (IcONMAT-2019) Cochin University of Science and Technology, Kochi, Kerala. 2nd-5th January-2019, Received Best Poster Award.
- Dr. N. Gnanasekaran and Dr. Arun M, Estimation of location of cancer tumor using Random Forest and Convolutional Neural Network, 14th Indo-Australian Biotechnology Conference 2018 at ACTREC-TMC, Navi Mumbai, INDIA , October 22-23, 2018.

## STTPS (SHORT TERM TRAINING PROGRAMMES)/ SCHOOLS

- Dr. N. Gnansekaran, Dr. Srikanth Bontha, Dr. Sudhakar Jambagi, Dr. Somasekhara

Rao Todeti, 5 day National Workshop on "Frontiers in Design, Manufacturing and Energy Sustainability", September 3-7, 2018. 5 days.

- Dr T. Somasekhara Rao, Dr. Srikanth Bontha, Dr. Sharnappa J, Dr.Navin Karanth, Dr. S M Kulkarni, Five day National Design innovation workshop and Interface (DIWI 2018), 19-23, Nov 2018, 5 days.
- Dr. Gnanasekaran, Prof. Santhosh George and Dr. Jidesh Workshop on Inverse Problems and Applications, 09-13, July 2018, 5 days.

## CONFERENCES

- Dr Kumar G N, 25th National Conference on IC engines and Combustion, 15-17, Dec 2017, 3 days.
- Dr Somasekhara Rao Todeti, 9th International conference on material processing and characterization, 08-10 Mar-2019, 3 days.
- G C Mohan Kumar, Dr. M. R. Doddamani, 2nd International Conference on Polymer Composites, 15-16 Dec 2018, 2 days.
- T P Ashok Babu and Vasudev M, 5th National Conference on Refrigeration and Air Conditioning, 24-26th May 2018, 3 days.

## WORKSHOPS:

S M Kulkarni, Navin Karanth P., Srikanth Bontha, Sharnappa Joladarashi, Somasekhara Rao Todeti, Design Innovation Workshop and Interface (DIWI-2018), NITK, November 19 & 24th, 2018, Design Innovation Center, IISc.

## 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.

## FOREIGN VISITORS TO DEPARTMENT

- Prof. Nikhil Gupta, GIAN workshop, New York University, USA, 10-14 December 2018
- Prof. Flavio D. Marques, GIAN workshop, Sao Caelos School of Engineering, USP, Brazil, 12-16, Nov 2018

## VISIT TO ABROAD (Faculty)

- Dr. K V Gangadharan, LEAP 2018, University of Michigan USA, 10 days.
- Dr. K V Gangadharan, External Examinar, National University of Science and Technology, Oman, 3 days.
- Dr. K V Gangadharan, Research interaction, Sultan Qaboos University, Oman, 1 day.
- Dr. K V Gangadharan, External Examinar, Glasgow Caledonian University-Caledonian College of Engineering, Oman, 4 days.

## *DEPARTMENT OF MINING ENGINEERING*

### STTPS/ /schools/conferences. seminars/ workshop etc

1. Prof. Ch S N Murthy and Prof. M Govinda Raj, organized a workshop on 'Recent Advances in Reliability Engineering, and Maintenance Management (RAREMM), Under TEQIP-III, 01-03 Nov, 2018.
2. Prof. M Govinda Raj and Dr. Anup Kumar Tripathi organized lecture serioes/ workshop on "Concepts of Operations Analysis and Geo-mechanics for Improved Production and Safety (COAGIPS)" Under Institute Fund, 11-13 Feb, 2019.

### Foreign Visitors to Department

Prof. Yoginder P. Chugh, Visiting, Professor Department of Mining and Mineral Resources Engineering, Southern Illinois University, Carbondale, USA, visited during 11-13 Feb, 2019.

### Visit to ABROAD(Faculty)

1. Dr. K. R. Ram Chandar visited University of Illinois at Chicago from 24-05-2018 to 15-01-2019 for Post Doctorate.

## *DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING*

### STTPs/Schools/Conferences/Seminars/ Workshops, etc:

National Conference on Processing of Materials (NCOPOM18), September 19-21, 2018.
Dr. A. O. Surendranathan – Chairman,
Dr. Anandhan Srinivasan – Organizing Secretary, Dr. Saumen Mandal – Treasurer

### Foreign Visitors to Department:

Dr. Sang – Joon Cho, Park System, Suwon, South Korea, 26-07-2018.

Dr. Ganapathi Prabhu Sai Balasubramanian, PhD (Rensselaer Polytechnic Institute, Troy, New York), 13-08-2018.

### Visit to Abroad (Faculty):

Dr. Udaya Bhat K. attended Conference on Innovative Material Science Nanotechnology at Valencia, Spain during 9 to 11 July 2018.

Dr. Kumkum Banerjee attended International Conference on Processing & Manufacturing of Advanced MATERIALS, July 09-13, 2018, Cité des Sciences et de'lindustrie, Paris, France. (Invited Talk -'Thermomechanical Physical Simulation: A Reliable Route for Weld Heat Affected Zone Assessment and Product Development in Steel').

## *DEPARTMENT OF PHYSICS*

### STTPs/Schools/Conferences/Seminars/ Workshops, etc:

Workshop:- PTTS2018 Sponsored by Infosys Science Foundation 21-05-2018 to 11-06-2018.

PTTS2018 Dr. Ajith K M

### Expert Lecture:-

Many Body on Optical Properties of Graphene by Prof. Subhasis Ghosh, School of Physical Science Jawaharlal Nehru University, New Delhi 02-05-2018 Expert Lecture, Dr. M. N. Satyanarayan.

### Expert Lecture:-

First Principles Calculations: The glue that binds materials, models and mechanism 02-05-2018, Expert Lecture, Dr. M. N. Satyanarayan.

### Expert Lecture:-

Research Opportunities in High Energy Astrophysics and Cosmology by Dr. Kazayuki Furunchi & Dr. Debhijoy Bhattacharya, Manipal Center of Natural Sciences (MCNS) Manipal Academy of Higher Education (MAHE) 31-08-2018, Expert Lecture. Dr. Deepak Vaid.

### Expert Lecture:-

The Rise of Wide Bandgap Semiconductor by Dr. Digbijoy N Nath (IISc Bangalore), 18-09-2019. Expert Lecture, Dr. Partha Pratim Das.

### One Day Workshop:-

Minisymposium on Modern Spintronic Materials, Speakers: Prof. Jagadeesh S Moodera MIT USA, Prof. Peter M Oppeneer Angstrom Laboratory Sweden, Prof. Manjunatha Pattabi Mangalore University India, 11-01-2019, Expert Lecture. Dr. Kartick Tarafder.

### Expert Lecture:-

Strong Correlated Electron Systems: Adventures in emergence by Dr. N. S. Vidhyahiraja Associate Professor Theoritical Science Unit JNCASR, Jakkur Bangalore, 27-02-2019, Expert Lecture, Dr. H. S. Nagaraja.

## SCHOOL OF MANAGEMENT

### BOOK CHAPTERS:-

Goutam D and Gopalakrishna BV

(2018) "Examining the mediating roles of e-satisfaction, e-trust and E-commitment on cognitive loyalty development", Marketing Mix- New Trend of 21st Century (Web of Science) Accepted.

Goutam D and Gopalakrishna BV (2018) "Will you Trust the Faceless? Exploration of Antecedents and Consequences of E-Trust in E-commerce Environment", Marketing Mix – New Trends in 21st Century (Web of Science) Accepted.

Goutam D and Gopalakrishna BV (2018) "Website Recommendation: Antecedents of Emotional Satisfaction and Repurchase Intention among Working Adults Online Shoppers", Marketing Mix – New Trends in 21st Century (Web of Science) Accepted.

## BOOKS PUBLISHED :-

**Pradyot Ranjan Jena** (2018). Impact of Economic Growth and Trade Liberalization on Air Pollution. LAP LAMBERT Academic Publishing.

## STTPS (SHORT TERM TRAINING PROGRAMMES)/ SCHOOLS

Continuing Education Programme on" Computational Intelligence and statistical based data analytics : Application to business management, engineering and Medical sciences by Dr. Ritanjali Majhi, 3rd to 7th December 2018.

## WORKSHOPS

A six days' workshop on "Spreadsheet Modelling for the HR Managers" It was held in two phases. First phase was held during September 1st to 3rd, 2018 and the second phase was conducted during November 2nd to 4th, 2018, conducted in collaboration with center for system design and center for continuing education, NITK Surathkal by Dr. S. Pavan Kumar was the resource person.

## FACULTY DEVELOPMENT PROGRAMME

3 days Enterpreneurship Awareness Camp by TEQIP, STEP.

6 days Faculty Development Program on Idea Generation and Innovation, EDII, STEP.

6 days Enterpreneurship Development Program sponsored by NSTEDB, EDII under STEP.

12 days Technology Based Enterpreneurship Development Program sponsored by NSTEDB, EDII under STEP.

FDP on Advance Research Tools and Techniques, 10-15 December, 2018, Banarsidas Chandiwala Institute of Professional Studies, New Delhi.

## GIAN COURSE

GIAN course on Environmental Economics and Sustainable Development: Theory and Methodology for Valuation, conducted during 19 – 23, November 2018.

## FOREIGN VISITORS TO DEPARTMENT

Prof Laurence Larghi from HEIG-VD, Switzerland, Professor, visited Indian Leg of International Summer University Program 2019, on February 8th 2019 to February 22nd 2019.

Prof Zysman Eytan from HEIG-VD, Switzerland, Professor, visited Indian Leg of International Summer University Program 2019, on February 8th 2019 to February 22nd 2019.

## CONSULTANCY PROJECTS

### *DEPARTMENT OF MINING ENGINEERING*

1. Scientific study for OB dump stability and pit slope stability in JVR , OC-11, The Singareni Collieries Company Ltd, Kothagudem, April 2018. Amount: Rs.3,54000/-. Coordinator: Prof. V.R. Sastry.
2. Ground vibration monitoring at a stone quarry, Department of Mines & Geology, Uttara Kannada District, Karwar April 2018, Amount Rs.94,400/. Coordinator: Prof. V.R. Sastry.
3. Scientific study for blast vibration and air over pressure within 500m of surface structures belonging to SCCL at SRP–OC, Srirampur Area. The Singareni Collieries Company Ltd,, Kothagudem, Telangana State, May 2018, Amount Rs.3,54,000/-. Coordinator: Prof. V.R.

Sastry.

4. Study of the impact of ground vibrations caused due to blasting in stone quarry of Sri.Mahesh Hegde, Pilli village, Karkala taluk, Udupi District, July 2018, Amount Rs.94,400/-. Coordinator: Prof. V.R. Sastry.
5. Stability of slope below property of Abdulla V. M & nimidha noushad house, Anchal, Idukki District, Kerala, August 2018, Amount Rs.1,18,000/-. Coordinator: Prof. V.R. Sastry.
6. Slope stability study at BBH mines, Mineral Enterprises Ltd. Chitradurga, September 2018, Amount Rs.4,72,000/. Coordinator: Prof. V.R. Sastry.
7. Scientific study of blasting studies in "My Home Palkur Lime stone Mine", Yankandla Lime stone Mine, Banganapalli, Andhra Pradesh, September 2018, Amount Rs. 3,83,500/-. Coordinators: Prof. V.R. Sastry & Dr. K. Ram Chandar.
8. Study of ground vibrations due to blasting in stone quarry, Tankakejakaru, Bantwal Taluk, Department of Mines & Geology, Mallikatte, Mangalore, October 2018, Amount Rs.1,18,000/- Coordinator: Prof. V.R. Sastry.
9. Scientific study of the effect of blasting operations in Jayanthipuram Lime Stone Mines M/s Ramco Cements Pvt. Ltd. Andhra Pradesh, Ocotober 2018, Amount Rs.3,24,500/-. Coordinator: Prof. V.R. Sastry.
10. Study of ground vibrations caused due to blasting in stone quarry, Akathekara, Royal Sand and Gravels Pvt. Ltd. Palakkad District, Kerala, November 2018, Amount Rs.1,18,000/- Coordinator: Prof. V.R. Sastry.
11. Scientific study for slope and dump stability at Bellampalli OC-II extention project at Bellampalli area and KKOC project of Mandamarri area, The Singareni Collieries Company Ltd, Kothagudem, Telangana, December 2018, Amount Rs.6,37,200/-. Coordinator: Prof. V.R. Sastry & Dr. K. Ram Chandar.
12. Study of impact of ground vibrations caused due to blasting in stone quarrey of Vijaya Granites, Ananthady Village, Dakshina Kannada District, Karnataka, December 2018, Amount Rs.1,18,000/. Coordinator: Prof. V.R. Sastry.
13. Scientific study for the stability of dumps at Kharigura OCP, Bellampalli Area, The Singareni Collieries Company Ltd, Kothagudem, Telangana, January 2019, Amount Rs.3,42,200/-. Coordinator: Prof. V.R. Sastry.
14. Ground vibration study in stone quarry high grip granites , Mallapuram Dist. Kerala, March 2019, Amount Rs.1,18,000/-. Coordinator: Prof. V.R. Sastry.

## *DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING*

SubrayHegde, Pavan R. Sondar, Preetish Crimson D'Silva, Sanjay Chawla, 'Failure of Cooling Tower Pump Shaft, MRPL, Rs.3,89,400 (on going).

Subray Hegde, 'Failure of Cooling Pump Impeller', MRPL, Rs.4,54,300 (on going).

Subray Hegde, Rakshan Kumar & Preetish D'Silva 'Cracking of fractionator Column', MRPL, Rs.3,65,800 (on going).

## 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

Development and Characterizatoin of Advance Solar cell VGST, Dr. Ch. S N Murthy, Dr. M Aruna & Dr. Kartick Tarafder, Dec. 2017-Dec-2020. 30 Lakhs

# 15. HUMAN RESOURCE DEVELOPMENT

## 15.1 TRAINING STATUS

### *DEPARTMENT OF APPLIED MECHANICS & HDRAULICS*

Dr. Amba Shetty has undergone a day training on Google Earth Engine applications for Remote Sensing faculty organized by Google on 15th March, 19. In Bangalore.

### *DEPARTMENT OF CHEMICAL ENGINEERING*

1. Dr. Prasanna B.D, Associate Professor, Chemical Engg. Department, attended a National Workshop on Industry Institute Interaction for Indian Innovation held at Engineering Staff College of India Hyderabad on 3.11.2018.

2. Dr. Raj Mohan B. attended the training programme on "Basic Training on Chemical, Biological, Radiological and Nuclear (CBRN) Emergency Management for Sea Port Emergency Handlers" during 11th to 15th February 2019 at NMPT, Mangaluru

### *DEPARTMENT OF INFORMATION TECHNOLOGY*

Prof. Ananthanarayana V S. Attended Empowered Expert Committee Meeting (EEC) at New Delhi on 24th April 2018.

Prof. Ananthanarayana V S. attended two week Leadership for Academicians Program (LEAP) - a MHRD, GoI initiative from 19th November - 30th November 2018 at IIT Kanpur.

Prof. G. Ram Mohana Reddy attended two week Leadership for Academicians Program (LEAP) from 25th Feb - 8th March 2019 at IIT Bombay.

Prof. G. Ram Mohana Reddy attended Professional Development Training Programme at Indian Institute of Management, Indore from 27th Jan - 2nd Feb. 2019.

### *PLACEMENT OF STAFF FOR ACADEMIC EXCELLENCE*

### *DEPARTMENT OF CHEMICAL ENGINEERING*

1. Prof. Vidya Shetty K conferred with Prof. Satish Dhawan Young Engineer State Award for the Year 2017 instituted by Government of Karnataka in recognition of her contributions in the field of Engineering Sciences. She received this state award on 6th August 2018 from the Honourable Chief Minister of Karnataka in the presence of Bharath Ratna Prof. C.N.R Rao and IISc Director Prof. Anurag Kumar.

2. Prof. Vidya Shetty K conferred with "The Institute of Engineers (India) Mangalore Local Centre Young Engineer Award" for the Year 2018. The awards was presented during the Engineers Day Celebration by The Institute of Engineers (India) Mangalore Local Centre, Kodagu, D.K and Udupi Engineers' Association and Institute of Valuers, Mangalore Branch to commemorate the Birth Anniversary of Bharat Ratna Sir M Visweswaraya held on 15th September 2018 at Karnataka Polytechnic Auditorium, Mangalore.

3. Prof Vidya Shetty K received Distinguished Aluminous Award from MSRIT Bangalore on 18th August 2019 during the Alumni Meet.

4. Sonali Shetty, Rahul Agrawal, Prajwl H.C., Vidya Shetty receive Best Paer award for their paper on "Catalytic Application of Copper Oxide Nanoparticles Synthesized using *Tectona Grandis. Linn f.* Leaf Extract in the Reduction of 4-Nitrophenol to 4-Aminophenol" at the International conference on Nano science and engineering applications (ICONSEA-2018) held at center for nanoscience and technology, Jawaharlal Nehru Technological University,

Hyderabad, Telangana, India. October 4th to 6th 2018.

## DEPARTMENT OF CIVIL ENGINEERING

Prof. Subhash C. Yaragal, Member of the Technical Committee for the 7th International Colloquium on Performance, Protection & Strengthening of Structures Under Extreme Loading & Events, September 16-17th, 2019, Whistler, BC, Canada.

Prof. Subhash C. Yaragal, Board of Studies Member (UG) for Faulty of Engineering, Christ University, Bangalore, for the years 2018-19, 2019-2020.

Prof. Subhash C. Yaragal, Expert Committee Member (UG) for Faulty of Engineering, Christ University Bangalore, for research project evaluation of faculty members, funded through the university, for the years 2018-19, 2019-2020.

Prof. Subhash C. Yaragal, Served as Subject Expert for evaluation of two doctoral theses of Anna University.

Prof. Subhash C. Yaragal, Two Ph D Theses evaluated for Anna University.

Prof. Subhash C. Yaragal, One Ph D thesis evaluated for VTU Belgaum.

Prof. Subhash C. Yaragal, Technical Manuscripts reviewed for Journal of Construction and Building Materials, Journal of Structural Fire Engineering, Advances in Concrete Construction, , Computers and Concrete.

Prof. Sunil B.M., Reviewed research papers/ manuscripts - Soils and Foundations; Cement and Concrete Composites.

## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Dr. Sumam David, Department of E&C Engg., attended India Rankings 2018 under NIRF at Vigyan Bhavan, New Delhi, 03-04 April 2018.

Dr. M Shankaranarayana Bhat, Department of E&C Engg., attended the FICCI-Higher Education Summit held in Vigyan Bhavan New Delhi during 30th October – 1st November 2018.

Dr. Ashvini Chaturvedi, Department of E&C Engg., participated Institutes meeting of Centralized Counselling for MSc at NIT transit house New Delhi, 2nd February 2019.

Dr. Ashvini Chaturvedi, Department of E&C Engg., visited Govt. Engg. College, Jhalawar, Rajasthan to participate in twinning activities during 16-21, April 2018.

Dr. Ashvini Chaturvedi, Department of E&C Engg., visited Govt. Engg. College, Jhalawar, Rajasthan to participate in Mentoring/ Twinning System – TEQIP-III during 09-16, February 2019.

Dr. Krishnamoorthy K., Department of E&C Engg., visited Govt. Engg. College, Jhalawar, Rajasthan to participate in Mentoring/ Twinning System – TEQIP-III during 09-16, February 2019.

Dr. Deepu Vijayasenan, Department of E&C Engg., Invited talk on Winter School on Speech & Audio Processing (WiSSAP – 2019) at college of Engineering Trivandrum (CET) Kerala, during 27 -29 January 2019.

Dr. Prabu K., Department of E&C Engg., visited Govt. Engg. College, Jhalawar, Rajasthan to participate in Mentoring/Twinning System – TEQIP-III during 09-16, February 2019.

Dr. Sandeep Kumar, Department of E&C Engg., visited Govt. Engg. College, Jhalawar, Rajasthan to participate in Mentoring/ Twinning System – TEQIP-III during 09-16, February 2019.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

1. Dr. Nagendrappa H. “Faculty-in- Charge of Electrical works of NITK Surathkal.”
2. G S Punekar “PhD Thesis evaluation of VTU Belgaum at MSRIT Bangalore “

3. G S Punekar "PhD Thesis evaluation of VTU Belgaum at AIT Bangalore. "
4. Dr.K.P.Vittal "Member of Academic Council, NIE- Mysore"
5. Dr. Tukaram Moger "Faculty-in-Charge of Institute Guest House, NITK Surathkal."

## *DEPARTMENT INFORMATION TECHNOLOGY*

**Prof. Ananthanarayana V. S**

- Appointed as Deputy Director of NITK from 29th October 2018.
- Chairman of the committee constituted to facilitate proper management of the entire recruitment process in Career Development Centre, 2019.
- Transformation Taskforce in charge for IT Transformation, 2019.
- Member of NIRF 2019 Core committee.
- Chairman of Institute level committee for delegation of powers to various functionaries, 2019.
- Advisory committee member for SIH, 2019
- Advisory committee member for Incident 2019
- Advisory committee member for Convocation 2018.
- Chairman for Institute MIS, 2019

**Dr. Geetha V**

- Member of Internal COmplaint Committee (ICC)
- Member of Technical Committee of SMART INDIA HACKATHON 2019.

## *DEPARTMENT OF MINING ENGINEERING*

Prof. VR Sastry, appointed as Vice Chancellor of Dr Babasaheb Ambedkar Technological University, Maharashtra.

## *DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING*

**Dr. A. O. Surendranathan**

1) **21-7-2018:** Received the Life Time Achievement Award from the International Organisation on Scientific Research & Development
2) **8-12-2018:** Awarded a certificate of appreciation in recognition of the dedicated services to the NITK English Medium School as Secretary3) 19-12-2018: Selected biographical profile for listing on: www.asianbiographies.in

## SCHOOL OF MANAGEMENT

Suprabha K. R, Institute Innovation Cell, MHRD.Convenor of Smart India Hackathon, IIC, MHRD

# 16. STUDENTS PLACEMENTS

## Placement Details Highlights

### Highlights

The year 2018-19 has been a very successful year for Career Development Centre. We had reasonably very high percentage of Placements and Training slots.

### Main Objectives:

To 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 5th, 6th and 7th Semester vacations. The compulsory training for B.Tech. Mining Engg. Students during the 5th and 6th 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 270 Companies visited NITK Surathkal for Campus Recruitment/Internship.
- 68 Companies visited NITKfor Placement process for the first time.
- 945students were placed – 631B.Techs, 207M.Techs, 75 MCAs, 20 MBAs, 7 MSc (Chemistry) and 5 MSc (Physics)

**PLACEMENT RECORD FOR 2018-19**

| Program | % placed |
|---|---|
| B.Tech | 92 |
| M.Tech | 53 |
| MCA | 90 |
| MBA | 61 |
| MSc(PHY+CHEM) | 27 |

**BRANCHWISE UG PLACEMENTS 2018-2019 (as on 30-06-2019)**

| Branch | Total Eligible Students | Placed |
|---|---|---|
| CIVIL | 73 | 54 |
| CHEMICAL | 39 | 36 |
| COMPUTER | 102 | 102 |
| E & C | 95 | 88 |
| E & E | 87 | 80 |
| IT | 97 | 96 |
| MECHANICAL | 128 | 118 |
| METALLURGY | 30 | 25 |
| MINING | 34 | 32 |
| **Total** | **685** | **631** |

## TRAINING SLOTS FOR THE ACADEMIC YEAR 2018-19

| Sl. No. | Branch | No. of Slots |
|---|---|---|
| 01 | Chemical Engineering | 27 |
| 02 | Civil Engineering | 48 |
| 03 | Computer Engineering | 120 |
| 04 | Electronics & Communication Engineering | 48 |
| 05 | Electrical & Electronics Engineering | 73 |
| 06 | Information Technology | 74 |
| 07 | Mechanical Engineering | 120 |
| 08 | Metallurgical & Material Engineering | 51 |
| 09 | Mining Engineering | 48 |
| | **Total Number of Students** | **609** |

| | |
|---|---|
| **Number of Companies : 152** | **Number of Training Slots : 609** |

# 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 (MOUs)

### Alumni Relationship Building Activities

1. The Alumni Association provided a 100 seat MSDC at the ground floor of CCC with an investment of over Rs 60 lakhs. This is to support Placement and Training Department employment tests.
2. 4000 fruit bearing plants were planted in last three years. Presently maintaining this same. This has Improved campus health in terms of greenery and bird population.
3. Presently celebrating Second Saturday of every January as Sports day and Following Sunday NITK Karavali Marathon has been scheduled. The marathon program has become a full marathon "NITK-KARAVALI Marathon."
4. Financial support to student projects by granting part or full project costs in the area of cutting-edge technology and /funding innovative project has innovative ideas up to Rs 3 lakhs.
5. This year one Inter disciplinary Project of Smart Irrigation has been funded(Rs 2.84 lakhs.)
6. Alumni Guest Lecture Series is organised by initiating 24 Guest Lectures in a year
7. Student Soft Loans are disbursed (upto Rs. 3 lakhs this year)
8. Career-Development Mentorship Program (CAMP) has been conducted in following areas:

   Early start – preparation on career aspiration from 2nd Sem

   Use the tenure, resources and activities in campus

   Advantage of extensive global Alumni network

   Following 4 tracks-based students' aspirations

   Higher Studies – MS abroad and MBA in India

   Corporate Placement – IT and Core Engineering

   Government Services – Civil Service, Defense and State

   Entrepreneurship and Startups

### List of MOUS:-

1. 5th April 2018, 5 Years, Universita Degli Studi di Pavia, Italy, Student exchange, Collaborative research.
2. 19th April 2018, 3 Years, Arya Technocrats, Belagavi, Collaborative research

3. 19th April 2018, 3 years Wadhwani operating Foundation, Las Altos, California, USA Entrepreneurship Development - Institutional Association MOU
4. 30th May 2018 (3Years), Eaton Technologies Pvt. Ltd, Additive Manufacturing Research and development
5. 13th August 2018, (36 Months), SimLife Electric Private Ltd Bangalore, Solar Inverters
6. 10th August 2018, (60 Months), Aum Techno Spray, Bangalore, Manufacturing of Engineering Components
7. 15th November 2018, (3Years), IIT Bombay, Faculty exchange/ Student exchange/Joint Research
8. 3rd December 2018, (4 Years), Kanchanaburi Campus, Mahidol University Thailand, Collaborative Research
9. 17th November, 2018, 3 Years, National Institute of Disaster Management, New Delhi, Research & Development, Capacity building & Documentation activities for mainstreaming disaster risk reduction in several areas
10. 14th December 2018, 5 Years, National Law School of India University Bengaluru Technical Support for IPR Cyber Law & Forensics and other related areas, Research R&D, Workshop & Training Programs
11. 30th January 2019, 5 years, KIOCL Limited Mangalore, Understanding to explore collaboration, exchange of knowledge and cooperation on the basis of mutual benefit to the both organization
12. 21st February, 2019, 5 Years, Human Resocia Co. Ltd NITK and Human will collaborate on effort to create employment opportunities in Japan for graduates from the NITK Herein after referred to as the " GNITK Project . Both NITK and Human shall ensure to make this Japanese employment opportunity the best human resource development opportunities.
13. 15th March 2019, 3 Years, Department of Nanoscience & Engineering/ BK21PLUS Nano Convergence Project Group of INJE University , Republic of Korea, Exchange of Faculty/Exchange of Research Scholars and Students/ Exchange of information and materials in those fields which are of interest to both parties /Activities such as collaborative research , Lectures, and Symposiums etc/ Joint Cultural Programmes
14. 20th March, 2019, 3 Years, Institute of Radio Frequency and optoelectronics Integrated Circuits plus State Key Lab of Bioelectronics, South East University Exchange of FAculty/Exchange of Research Scholars and Students/ Exchange of information and materials in those fields which are of interest to both parties /Activities such as collaborative research, Lectures, and Symposiums etc/ Joint Cultural Programme.

## Student Exchange Program:

| | Organization/ Institute | Nature of Visit | Students Details |
|---|---|---|---|
| Foreign Student Visit to NITK | ECAM, Lyon, France | One semester Study | Ms. Chloe Genot |
| | Mahidol University, Kanchanaburi Campus | Internship | Mr. Pirakorn Nudol, Mr. Adisorn Ampun, Mr. Thanupong Nateelerdpaisan, Mr. Chayapon Gross |
| | Inje University South Korea | Research Interaction | Mr. W. A Chamindra |
| NITK Student Visit to universities under MOUs | ECAM, Lyon, France | Internship | Mr. N Balachandra Mallya Mr. T Abhishek Rajaram |

## 17.3 Innovations & Technology Transfer

### DEPARTMENT OF CHEMICAL ENGINEERING

### INNOVATIONS:-

1. Details of Innovation:- Method, System and Apparatus for Arsenic Removal from Water using Functionalized Melanin, Raj Mohan B, Vishnu M, Keyur Raval, Applied for Indian Patent: Number: 201841047554, Date of filing: 15/12/2018.

### DEPARTMENT OF COMPUTER ENGINEERING

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.

## 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 were awarded TCES who's family income is below 6 lakhs. 23 students from second, 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 final 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.

SC-ST Cell coordinated Ambedkar Jayanthi in Institute on April 14th 2019, Prof. V. Shanmugam, Professor and HoD of Economics Maharaja's College University of Mysore was Chief Guest for the function.

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 7th to 31st August 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 focuses 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.

### Peer Mentoring for 1st year B.Tech students

This programme was conducted with support of TEQIP-III under Equity Action Plan (EAP) during even semester (Jan-April 2019) after mid-semester examination.

**Aim of the program:** Improving grasp of fundamentals in topics of technical relevance along with acquisition of non-cognitive skills among 1st year B.Tech. students

**Preamble:** Students joining NITK for the B.Tech. program are drawn from a wide range of socioeconomic backgrounds. They also possess a wide range of linguistic backgrounds with many students having studied up to class X in the vernacular medium. Thus, many students require a helping hand to cope with the high level of instruction in NITK offered primarily in the English language. Additionally, facilitating acquisition of non-cognitive skills would be a very useful exercise. This will help students hailing from unprivileged backgrounds to overcome diffidence and acquire leadership qualities. The peer mentoring program has been designed to improve the academic standards and develop leadership qualities among students.

In the present system of a single teacher addressing a large class room (often with more than a hundred students), it is evident that granting personal attention to individual students is not possible. To bridge the disconnect, it was proposed to provide supplementary inputs to needy first year students through the mechanism of peer mentoring in which committed senior students with caring attitude provide a helping hand and guidance to students in need of academic and other supplementary inputs. The mentors will work in close coordination with / will be supported by the respective faculty advisers and course instructors. The mentors will be responsible for providing supplementary inputs, solving additional problems, suggesting additional laboratory/ simulation experiments and share their insight into the technical topic with the 1st year students. They will also be encouraged to provide emotional counselling to 1st year students in case of need and inform authorities if they observe a student undergoing extreme emotional/ academic/ personal stress. They will also be encouraged to undertake group projects. Thus, it is hoped that a strong peer mentoring group which takes some responsibility for the academic, emotional and physical will being of their juniors will be created at NITK as a result of this exercise.

**Mentoring group:** Mentors were selected by the respective departments from the pool of second year, third year, final year B.Tech and M.Sc/ M. Tech students.

### 17.6 NSS (National Service Scheme)

The first event for the academic year was the orientation and induction programme of the new volunteers who joined NSS this year

and was held on 8-9-18. Dr. Victor Vas, NSS Officer of Pompei College was the chief guest for this event.

The next event was Swachta Pakhwada from 15th September onwards, where the volunteers went to clean the beach, visited the adopted village and had a swachchata awareness rally amongst the villagers, a workshop on clean and green India was organized along with the poster making and essay writing competition.

NSS day celebration held on 22nd September due to clash of exams on 24th. A seminar was organized by chief guest, Dr. Radhe B.K., a specialist of Community Medicine, Srinivas Hospital Mangalore on sanitation and cleanliness.

On 2nd October; as part Gandhiji's centenary celebration a cleaning drive across the NITK surrounding was held and the Chairman, BOG and Director himself took the lead of the event and swachta pledge was administered.

The next event that we held was the newspaper collection drive held on 6th and 7th October for the charity mission.

Unity Day was celebrated 31st October. Along with the Unity pledge taking ceremony followed by the Garlanding of the photo of Sardar Vallavbhai Patel; there was a unity run within the campus.

NSS volunteers enthusiastically took part in a beach cleanup drive organized by the Indian Coast Guard to create awareness about the International Coastal Cleanup Drive on 15th September 2018. The event started at 7:00 am with an address by the chief guest, Prof. Karanam Uma Maheshwar Rao, Director, NITK Surathkal who emphasized on the need of a Swachh Bharat and a Swachh Campus. He made everyone realize that a clean India is our duty and encouraged everyone to make cleanliness a habit. His address was followed by an address from SS Dasila, DIG, Commander, Indian Coast Guard who told us about the cleanup drive, its importance and thanked everyone for turning up for the event. Then everyone was given a garbage bag and gloves and NSS volunteers along with Indian coast guard officers collected all the non-biodegradable materials from the entire stretch of the beach. The event ended at around 9:30 am and the commander, Indian Coast Guards thanked everyone for their efforts.

The Annual NSS camp lasted for a total of 7 days from 1st to 7th of December. The inauguration of the camp was done by Dr. Rajmohan Rao, Ex Prinicpal, Govinda Dasa College, Surathkal and Dr. K.V. Rao, Director, Training, Pilikula Nisarga Dhama, Mangalore. This was followed by a talk by Shri Ananta Dutta, Senior Manager, BASF Ltd. Mangalore in the afternoon.

Developmental works done in the Science center includes the cleaning of heritage village, digging of rain water harvesting pits, Pot and sapling making in the Botanical Nursery etc.

The eminent resource persons who conducted the academic sessions were Dr. Manoj Louis emphasizing on team building and life skills development, Mr. Yathis Baikampady on the role of youth in the community, Smt. Rameela Shekhar on stress management, plant diversity in Western Ghats and was given by Sri Ramakrishna Marati, Smt. Vineetha Rai K. on waste management and Dr. Arvind Bhat K.G.

Annual Blood Donation Camp 2019 was organized on 16th March.2019 at NITK premises. Government Wenlock District hospital Mangalore, District Hospital Udupi and KMC Hospital Mangalore were the three hospitals who took part in the Blood donation camp. As a part of the blood donation camp volunteers of NSS NITK made a photo booth where donors had a chance to make a memory, Posters about Blood donation were put around the mess. Table fans were borrowed from various students and put

around the mess to beat the heat. "The Red Bucket Store", a start up in NITK provided coupons worth 10% off on their products for the first200 donors. The donors were given the certificates right after the donation, they are provided with button badges as a token of appreciation from NSS-NITK. More than 500 donors turned up to donate blood out of which 430 units of blood were collected which is the highest ever in Annual Blood Donation Camp in NITK.

This concludes the events that were held by the NSS NITK unit in the academic year 2018-2019.

## 17.7 RIGHT TO INFORMATION ACT (RTI 2005)

### 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.

### 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. Right to Information Cell was established as per the MHRD letter No. F.19- 31/2005-TS-III dated 20.09.2005.

Suo-Moto disclosures are uploaded on the NITK website under RTI section.

These disclosures are mandatory and are crucial to ensure transparency and accountability. This would reduce the load of RTI Applications which are freely available to citizens. 73 RTI Applications were received during the year 2018-19 (from 01.04.2018to 31.03.2019). As per the report of Transparency Audit of Disclosures u/s 4 of the Right to Information Act by the Public Authorities, National Institute of Technology Karnataka, Surathkal has gained 'A' Grade.

## 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 1st 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 ACHIEVEMNTS**

- 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)

NITK has been consistently identified as one of the top performers in implementing the TEQIP project. Based on the good performance in TEQIP-I & TEQIP-II and on the merit & strength of our Institutional Development Proposal (IDP) for TEQIP-III, our Institute has been selected to participate in TEQIP-III with a total outlay of Rs. 700 lakhs.

**TEQIP-III commenced with effect from 01-04-2017.** Our Institute has been designated as Mentor Institute for Government Engineering College, Jhalawar, Rajasthan. A Memorandum of Understanding (MoU) with MHRD and agreement between NITK and Mentee Institute GEC Jhalawar have been signed on 7th July 2017.

Action Plan for the quarter April - June 2019 has been sent to NPIU covering various academic activities envisaged under the project. Adherence to action plan is very much essential, since the action plan with the budgetary requirement will be uploaded into PFMS (public Finance Management System) by NPIU.

**Procurement**

Budget allocated by NPIU for procurement of goods/equipments is Rs.350/- lakhs. Goods, software and learning resources worth Rs.310/- lakhs has been approved by the Director for initiating the procurement activity. Accordingly procurement activities initiated and till date a sum of Rs. 1,21,99,217/- has been spent on this. Procurement of other equipment/software is under progress.

**Academic Activities:**

**Twinning activities** are under progress. A team of 19 Faculty Members from the Departments of Mechanical Engineering, E&C Engineering, E&E Engineering, Information Technology, and Department of Chemistry have visited GEC Jhalawar during 11th -16th February 2019 under Twinning activities. During this visit they had interacted with the Faculty members, students, technical staff etc. and discussed about the improvement of total system. NITK faculty members conducted classes for GEC J students supporting their curriculum. Department-wise faculty teams organized and conducted research interactions with GEC Jhalawar faculties with a view to understand their future research directions and needed support. The NITK team also visited the Central Library, to review and suggest improvement in the facilities and infrastructure of the Central Library. They also visited various Laboratories and suggested for the improvement of the same.

Following workshops have been organized by our faculty members for the benefit of faculties, research scholars and other students of GEC:

1. Two days Workshop on "Efficient Academic and Research Practices" on Feb.11 and 12, 2019. Some topics covered were Lectures on eSAR preparation" and "Outcome Based Education" by Dr. P. Santhi Thilagam of Dept. of C.S. & Engg., Writing research proposals, thesis writing, journal paper preparation by Dr. Gnanasekaran S and Dr. Basavaraj

Talawar; Building institutions of excellence Dr. Madhusudhan Acharya Chairman BoG GEC J; Good Governance in Engineering Institutions: Expectations Challenges by Dr. K K Appu Kuttan.

2. Design, Optimization and computational approaches for Mechanical Systems on Feb.11 to 15 2019 for the benefit of students and faculty of GEC Jhalawar.

4. Five Days workshop on "Networking and Data Mining" by Dr. Jaidhar C.D. and Dr. Nagamma Patil of Dept. of I. T. from 11 - 15 February 2019.

### Improving students learning

About 25 students availed the benefit of TEQIP III funds for undergoing internship in industry. A sum of Rs. 1,55,682/- has been spent on this purpose.

To support final year UG students to take up GATE examination financial support for reimbursement the **GATE examination fee** has been circulated to all the departments. In order to improve the participation and performance of our students in GATE-2019, a training was organized and following are the details:

Totally about 120 students participated from both final year and third year.

Training consisted of 62 hours of face-to-face teaching in core subjects, 50 online module tests and 12 comprehensive test.

Participants were also provided with printed material consisting of previous year question papers and solutions.

This training was conducted by 'Engineers Academy' Jaipur and was coordinated by Prof. S.M. Kulkarni., GATE Coordinator of TEQIP Office.

A brief summary of results collected from GATE-2019 participants is furnished below:

Totally 163 students appeared for examination and 159 have qualified.

The rankings range from 30-41 thousand, with 10 students standing within 200, 18 within 400 and 24 within 500 ranks.

To encourage, all 163 students have been reimbursed GATE 2019 registration fee with a sum of Rs. 2,01,000/- as per the TEQIP Mandate under the improve in students learning clause.

A student learning assessment (SLA) programme has been conducted successfully during 11-03-2019 - 13-03-2019 as per the guidelines issued by NPIU. 317 Students, 78 faculty members and 2 Heads of Departments of Electrical and Communication Engineering and Department of Information Technology have participated in this programme. Dr. Pushparaj Shetty, Department of MACS was the coordinator for this SLA programme. Dr. Pushparaj Shetty, Dr. Jaidhar C.D. and Dr. Nagamma Patil have participated in the Orientation workshop on SLA Survey held at NPIU, New Delhi. A total of Rs. 1,39,373/- has been spent under this activity.

### Graduate employability:

A training programme on "Six Sigma" has been conducted on 20-03-2019. Finishing School programme for the benefit of UG and PG students on 09-03-2019, 10-03-2019, 16-03-2019 and on 17-03-2019 have been organized by Career Development Cell. Start-up activities are conducted by STEP-NITK under the Directorship of Prof. G. Srinikethan. A workshop on Entrepreneurship Awareness Camp and one Entrepreneurship Development Programme were organized under start-up activity.

'A pedagogy training for prospective teachers' for the benefit of Ph.D students had been conducted and about 38 research scholars have participated in this programme.

A 'Student Employability Skill Test' of engineering students has been conducted in January 2019 by NPIU empanelled firm M/s. Aspiring Minds Assessment Pvt. Ltd. Gurgaon

as required in the Project Implementation Plan.

### Faculty/Staff Development and motivation:

In addition to the financial support to attend Training Programmes/Conferences/ Seminars/Workshops within India, Faculty members have been informed about the support for Patent Filing, Publication of Research Papers subject to adjustment out of Rs. 50,000/- provided for support to each faculty members.

Under above facility five faculty members have been supported for the publication of their research papers (SCOPUS Indexed journals) and Rs. 2,29,867/- has been spent on this. Financial support to 11 faculty development programmes have been given and about 20 faculty members availed financial support individually to attend various conference/ workshops/seminars within India. One non-teaching staff has been supported to attend a conference.

A Pedagogy training programme for the newly joined faculty members had been organized at an expenditure of Rs. 58,555/-

### Research and Development:

TEQIP-III provides for enhancement of Research and Development and innovation among the students of UG, PG, and Ph.D scholars. Students are also permitted to attend training, seminar, conference in other Institutions/Industries within India. Accordingly financial support up to Rs. 18,000/- per student has been extended and accordingly about 67 students have availed this facility so far and availed financial support up to Rs. 3,57,030/- .

### Financial Report:

Financial accounts for the year 2017-18 has been audited by AG empanelled statutorily auditor as required by NPIU and report submitted. Accounts for the financial year 2018-19 is ready for audit. All the reports related to financial transactions are being sent regularly to NPIU from time to time.

Following is a brief details of expenditure incurred under various activities up to 31-03-2019:

| Description of activity Rs. | | Amount spent | Total under Activity |
|---|---|---|---|
| Procurement | Procurement Goods | 72,52,350 | 1,21,99,217 |
| | Software | 49,46,867 | |
| Academic Processes | Graduate Employability | 4,82,220 | 1,11,16,781.00 |
| | Assistantship | 2,09,549 | |
| | Research & Development | 11,79,775 | |
| | Improve Student Learning | 40,64,811 | |
| | Faculty/Staff Development and Motivation | 30,71,584 | |
| | Industry Institute Interaction | 2,03,126 | |
| | Management Capacity Enhancement | 43,037 | |
| | Meetings | 6,81,031 | |
| | Mentoring/ Twinning System | 11,81,648 | |
| Operating Cost | Travel expenses | 3,92,344 | 27,01,805.00 |
| | Office Expenses | 1,50,212 | |
| | Salary to Staff | 20,96,709 | |
| | Operation & Maintenance | 21,240 | |
| | Auditing | 41,300 | |
| **Total** | | **2,60,17,803** | **2,60,17,803** |

# 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 (P & D), Dean (R&C) & Director.

IIP Cell is mainly involved in handling of Testing and Consultancy works of all the departments and arranging endowment lectures. Since Dec 2018, IIP cell was entrusted with the management of IPR activities of the institute.

The Institute Revenue Generation through Testing and Consultancy has been improving substantially. The total revenue generated through Testing & Consultancy works for the year 2018-19 is Rs. 1.58 (One Crores fifty eight Lakhs). In 2018-19, NITK has filed 7 full patent applications as the sole applicant and 2 provisional patent applications as co-applicant with JSW Steels, Bellari. Altogether 9 applications have been filed.

## 18.2 INDUSTRY INSTITUTE COLLABORATION

### DEPARTMENT OF APPLIED MECHANICS & HYDRAULICS

Design and Development of Lightweight Portable Oil Skimmer, MRPL, Mangaluru, Pruthviraj U. (PI), K C Gangadharan, Mechanical Dept. (CoPI), 2019-21, 44.15 Lakhs

### DEPARTMENT OF CIVIL ENGINEERING

Kirloskar Ferrous Industries Ltd., Koppal, Industrial waste utilisation 2014-2018

### DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

OMPL Mangalore "A part time student registered for M.Tech Research which will result in collaborative research. "Aug 2018 to Jan 2020

### 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 MINING ENGINEERING

Mining Engineering Department, N.I.T.K and J.S.W, Ballari have entered into an MOU for undertaking collaborative research. Two numbers of our research scholars are working for their Ph.D on live projects. Two numbers of patents have been filed jointly by J.S.W and N.I.T.K entitled:

### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

#### INDUSTRY COLLABORATIONS

Name of the industry:-

Texas Instruments India Ltd., DRDO LRDE, ANRC, Boeing

Nature of Collaboration (academic, research, training etc):- Academic and Research.

Period/Duration:- April 2018 to March 2019

### DEPARTMENT OF INFORMATION TECHNOLOGY

Dr. GEETHA V

Name of Industry: Research Design Lab, Mangalore

Nature of Collaboration: NITK-RDL Letter of Intent with Dept of IT, NITK Surathkal

Period/Duration: 2019 to 2021

Dr. SOWMYA KAMATH S

- Name of Industry: KPIT, Bengaluru
  Nature of Collaboration: Research and Consultancy,
  Period/Duration: May 2018 to date

- Name of Industry: Dell R&D, Bengaluru

  Nature of Collaboration: Research and Consultancy

  Period/Duration: July 2018 to date

- Name of Industry: HP Enterprise, Bengaluru

  Nature of Collaboration: Research and Consultancy, University Relations

  Period/Duration: Sept 2018 to date

- Name of Industry: RDL Technologies, Mangaluru

  Nature of Collaboration: Research and Consultancy

  Period/Duration: Oct 2018 to date

## Outreach Actvities

| Details of Technology Transfer | Name of the faculty involved |
|---|---|
| Delivered an Expert Lecture on "Social Networks Analysis: Some Case Studies", Bapatla Engineering College, Bapatla, Guntur District, A.P., India, July 28, 2018 | Prof. G. Ram Mohana Reddy |
| Delivered a talk on MAT Lab in Workshop "Digital Image Processing" to students and faculties JNN College of Engineering, Shimoga, Karnataka 28th October, 2018 | Dr. Kiran M |
| Delivered one day talk on "Network Simulator" with hands on session to students and faculties. SDM College of Engineering and Technology, Dharwad , Karnataka, 23rd Nov. 2018 | Dr. Kiran M |
| One Week research Interaction and faculty-student workshop under TEQIP Twinning Program GEC Jalawar, Rajasthan 11th to 16th February 2019 | Dr. Kiran M |
| Delivered a talk on "Blockchain Technologies" for students and faculties. Sahyadri Engineering College, Adyar, Mangalore, Karnataka, 26th Feb. 2019 Dr. Kiran M | Dr. Kiran M |
| Delivered an Invited talk in "3 Day Workshop on Conventional Machine Learning to Deep Learning for Speech, Image and Text Processing" Sponsored and organized by IEEE Signal Processing Society - Madras Chapter during August - 16th - 18th 2018 at SSN College of Engineering, Chennai | Dr. Anand Kumar M |
| Delivered the Expert Talk in the International Conference on Recent Trends in Engineering and Technology (iCORETech-2018) on December 18th, 2018 at LBS College of Engineering, Kasaragod | Dr. Anand Kumar M |

## DEPARTMENT OF MECHANICAL ENGINEERING

### INDUSTRY COLLABORATIONS

- IFB Goa, Industry sponsored research, Dr. Hemanth Kumar, Dr. Jeyaraj P, Dr. Sharanappa, Dr. K V Gangadharan
- NMPT, Industrial Consutancy, Dr. Bijuna (SOM), Dr. K V Gangadharan.

- MRPL, Industrial Consutancy, Dr. K V Gangadharan, Dr. Pruthviraj (app Mech)
- NMPT, Industrial Consutancy, Dr. Pruthviraj (AppMech), Dr. Sheena(SOM), Dr. K V Gangadharan
- Wonderla Kochin, Industrial Consutancy, Dr. K V Gangadharan
- Wonderla Bangalore, Industrial Consutancy, Dr. K V Gangadharan
- Wonderla Hydrabad, Industrial Consutancy, Dr. K V Gangadharan
- MRPL, Management Training Program, Dr. Sheena (SOM) Dr. K V Gangadharan
- OMPL, Industrial Consutancy, Dr. Ranjith and Dr. K V Gangadharan
- Clasic Fussion, Industrial Consutancy, Dr. Bijuna (SOM), Dr. K V Gangadharan,
- Hi Tech Batteries, Industrial Consutancy, 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 sponsered research, Dr. Hemantha Kumar, Prof. K.V.Gangadharan, Dr. Sharnappa J, Dr. Mohd.Rizwan Rahman (Material and Metallurgy Engg),
- Ashok Leyland Ltd. Chennai, Industry sponsered 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

Foundry & Forging Division, Hindustan Aeronautics Limited Bangalore Internship May to June 2018

Hindalco Industries Ltd., MP Internship May to June 2018

Saint Gobain India Pvt. Ltd., Chennai Internship May to June 2018 Visakhapatnam Steel Plant, Visakhapatnam Internship May to June 2018

JSW Steel Limited, Ballari, Internship, May to June 2018

Saint Gobain India Pvt. Ltd., Chennai PG Project May to June 2019

Peekay Steel Castings (P) Ltd., Internship, May to June 2019

Bharat Fritz Werner Ltd., Bangalore Internship, May to June 2018

SKF India Ltd., Pune Internship, May to June 2018

Kerala State Rubber Co-operative Ltd., Kottayam Internship, May to June 2018

BRG Iron & Steel Co (P) Ltd. Internship, May to June 2018

**School of Management:**

Wadhawani Foundation 2018-2020.

## Details of Patent applications filed by NITK in Indian Patent office for the year 2018-2019

| S.No. | Financial Year | Inventors | Title of patent application | Application No. | Date of filing |
|---|---|---|---|---|---|
| 1. | 2018-19 | Dr. Vasudeva Madav, Saikat Dutta, Akhil Mohan | Method, system and apparatus for upgrading tyre pyrolysis oil | 2018 4101 8816 | 19-05-2018 |
| 2. | 2018-19 | Dr. Hariprasad Dasari, Akhil Vijay, Anjana P A | Solid oxide fuel cell anode material as soot oxidation catalyst | 2018 4102 8640 | 30-07-2018 |
| 3. | 2018-19 | Dr. Saumen Mandal et al. | Method and System for Fabricating A Porous Ceramic Structure Using Combustible pore Former | 2018 4103 3533 | 06-09-2018 |
| 4. | 2018-19 | Dr. Hari Prasad Dasari, Chaitra S. Shenoy, Atmuri Shourya | A Method and Composition for Soot Oxidation in a Diesel Particulate Filter | 2018 4104 6271 | 07.12.2018 |
| 5. | 2018-19 | J Saikrishna Goud Dr. R Kalpana | Method and Device for Life Estimation Of Li-Ion Battery | 2018 4104 7090 | 12.12.2018 |
| 6. | 2018-19 | Dr. Raj Mohan Balakrishnan Dr. Keyur Raval Vishnu M | Method, System and Apparatus for Arsenic Removal from Water using Functionalized Melanin | 2018 4104 7554 | 15.12.2018 |
| 7. | 2018-19 | Harish.H, Dr. Marutiram Kaza, Dr. Harsha Vardhan, Dr. M. Govinda Raj, Abhishek Sinha, Arindam Roy Chaoudhary, Chaitanya | System for material beneficiation involving hydro-squeeze classifier assisted grinding ball mill | Temp/ E-1/ 51796/ 2018- MUM | 15.12.2018 |
| 8. | 2018-19 | Bharath Kumar S, Dr. Marutiram Kaza, Dr. Harsha Vardhan, Dr. M. Govinda Raj, Arindam Roy Chaoudhary, Chaitanya | Material handling system for screening or feeding materials with high screening and energy efficiency | Temp/ E-1/ 53448/ 2018- MUM | 24.12.2018 |
| 9. | 2018-19 | Raghul A Dr. Udaya Bhat K Sridhar Balaram | Method and System for Fabricating a Structure Using Additive Manufacturing Wastes of C300 Maraging Steel | 2019 4100 9001 | 08.03.2019 |

# 19. SIGNIFICANT ACHIEVEMENTS

## 19.01 Notable Achievements

### DEPARTMENT OF CIVIL ENGINEERING

Best Research Publication Award 2018, Vision Group, Government of Karnataka, Department of IT, BT and Science & Technology, Prof. Subhash C. Yaragal

### DEPARTMENT OF APPLIED MECHANICS & HYDRAULICS

#### Organized events

1. Training programme in GMS & WMS software for students by M/s Aditi Infotech, Kanpur, 12-14, April 2018, Dr. Subrahmanya K.
2. Workshop on 'Curriuculum Workshop', 28th April 2018, Sponsored by NITK, Co-ordinator : Dr. Amba Shetty
3. Workshop on 'Project based experiential learning for Engineering education', 4-8 Sept. 2018, TEQIP-III, Co-ordinator : Dr. Pruthviraj U.
4. Training programme in ENVI Software by M/s Geotech Geospatial Pvt. Ltd., Chennai for students, 3rd & 4th Oct. 2018, Dr. Amba Shetty
5. One day Seminar on 'New Frontiers In Hydraulics And Water Resources Engineerin' on 28th December, 2018, Sponsored by NITK, Co-ordinators : Dr. K.Varija & Dr. A. Mahesha

#### AWARDS AND RECOGNITIONS

1. Athul Krishna K.R., V. Venkateswarlu & D. Karmakar, (2018), Wave reflection and transmission characteristics due to a piston type porous wave energy converter, Best Poster Award in Ocean Engineering at NFiCE-2018, IIT Bombay, 30th November – 1st December, 2018.
2. I. Balaji, S. Jayakumar & D. Karmakar, (2018), Impacts on breakwater due to cyclone induced waves at east coast of India, Best Paper Award in Ocean Engineering at NFiCE-2018, IIT Bombay, 30th November – 1st December, 2018.
3. THE INSTITUTION PRIZE (Donated by Col G N Bajpai) has been awarded to the research paper titled "Wave Reflection and Loss Characteristics of an Emerged Quarter Circle Breakwater with Varying Seaside Perforations" published in the Journal of the Institution of Engineers (India) Series A, Volume 98, 2017. The award consists of a certificate, and a trophy was presented at the Prize Distribution Ceremony of the 33rd Indian Engineering Congress held at Hotel Ananta, Kodiyat Road, Udaipur, Rajasthan, December 21, 2018
4. Sandesh Upadhyaya K., Subba Rao, and Manu (2019), "Historical data analysis of wind speeds from ERA-interim dataset and CMIP5 models for Arabian Sea", International Conference on Climate Change Impacts, Vulnerabilities, and Adaptation: Emphasis on India and Neighbourhood - CCIVA, during 26 February -02 March, 2019 organized by Centre for Ocean, Rivers, Atmosphere and Land Sciences (CORAL) of Indian Institute of Technology, Kharagpur and has been honoured with Third prize for oral presentation in technical session TS01.

### DEPARTMENT OF CHEMICAL ENGINEERING

#### Achievements during 1st April 2018 to 31st March 2019

Telangana Academy of sciences admits Dr. Hari Prasad Dasari as "Associate Fellow "for the contribution to science and Technology – April 2018

Imprint project accepted with a budget of 95.5 Lakhs.

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### Achievements during 1st April 2018 to 31st March 2019

### GATE 2019 Ranks:

| | | |
|---|---|---|
| Ashika Nayak (15EC107) | – | 106 |
| Ojjapally Sriman (15EC136) | – | 158 |
| Shriganesh N (15EC240) | – | 219 |
| Hitesh S (15EC121) | – | 625 |
| Vibhore Jain (15EC249) | – | 925 |

NITK IEEE Student branch won the Best IEEE Branch award under IEEE Mangalore Sub-section for the year 2018

Samarth B. Final Year BTech (E&C) and chairman, NITK IEEE Student branch won the IEEE Bangalore Outstanding Student Volunteer 2018 award

Best paper award for the paper titled "A Three-Stage Operational Transconductance Amplifier for Delta Sigma Modulator" by Aparna T, Sreenivasulu Polineni and M. S. Bhat in the IEEE International Conference on Distributed Computing, VLSI, Electrical Circuits and Robotics (DISCOVER 2018), 13-14 Aug. 2018.

## DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

- Prof. Annappa of the Department of Computer Science & Engineering delivered the keynote address during 5th International Conference on Information System Design and Intelligent Applications (INDIA) at Mauritius during 19th – 21st July 2018.
- Prof. Annappa of the Department of Computer Science & Engineering received Best paper award for the research paper titled "Automatic Text-Independent Kannnada Dialect Identification System", presented by him during 5th International Conference on Information System Design and Intelligent Applications (INDIA) at Mauritius during 19th–21st July 2018, This paper was jointly authored by Dr. Shashidhar G K, Nagaratna B. Chittaragi, Asavari Limaye, N. T Chandana.
- Visvesvaraya Young Faculty Research Fellowship for Dr. Basavaraj Talawar
- IBM Faculty Award, 2019 for Dr. Basavaraj Talawar
- IBM Shared University Research Grant, 2019 for Dr. Basavaraj Talawar
- Dr. M. Venkatesan received Best Alumni Academic Research Award for the year 2018 From Priyadharshini Engg College, vaniyambadi, Vellore, Tamilnadu

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### Achievements during 1st April 2018 to 31st March 2019

- Dr.K.P.Vittal - Executive Committee member, IEEE PES India Council Chapter, 2018-19.
- Dr.K.P.Vittal - Chairman, Institute of Engineers, Mangalore Chapter, 2016-18.
- Dr.G S Punekar - Industry collaborative research work though M.Tech by research (part time)completed successfully work pertinent to the industry (OMPL) titled: Concerning short circuit faults in a captive power plant: A study
- Dr.G S Punekar - Invited talk at Green Room, Eden Aquatic Club, Nanthoor, organized by The Institute of Marine Engineers (India) Karnataka Chapter, Mangalore-575005. Titled: The Spectacular Lightning: Some technical aspects.
- Dr.G S Punekar - Invited talk 18th January 2018, KIOCL Ltd (KudrekukhIron Ore Co. Ltd.)Panambur Mangalore; in their premises on the topic: Electrical Safety.
- Dr. B.Venkatesaperumal - Participated FDP organized by Wadhwani Foundation – 13th June to 21st June 2018

- Dr. B.Venkatesaperumal - Member of Department curriculum committee for Electrical Engineering Department, Manipal Institute of Technology.
- Dr. B.Venkatesaperumal - Board of Studies member @ K.S.Rangasamy College of Technology,Tiruchengode
- Dr. B.Venkatesaperumal - Editorial Board member -International Journal of Engineering Science and Management
- 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.
- R Kalpana – Recipent of IETE Best Research Award in IETE Seminar on Advances in Smart Hardware Technologies (ASH-Tech 2018), Indore, India
- R Kalpana – POSOCO PPSA 2019 AWARD IN MASTER CATEGORY Khimavath Sai Chethana "Power quality improvements in AC Mains fed AC-DC rectifierusing DC current injection technique"
- Dr. A. Karthikeyan – Elevated as IEEE Senior Member
- Debashisha Jena – The project idea of "Nap of the Earth/Valley Flying using auto pilot due to GPS signal corruption in hilly areas/high rise buildings" secured First Prize DEFEXPO18 by Ministry of Defense dated 13-04-2018.
- Debashisha Jena – Best Thesis award for "Probabilistic Steady-State Analysis of Power Systems with Photovoltaic Generations" by POSOCO Power System Awards (PPSA) – 2019 Foundation for Innovation & Technology Transfer (FITT), IIT Delhi during 21-01-2019.
- Debashisha Jena –Best paper award for the paper "Uncertainty Modeling Steps for Probabilistic Steady State Analysis" presented in the conference of 2018 MARC International Conference organized by HMRITM, New Delhi. Dated: 20-07-2018.

## DEPARTMENT OF INFORMATION TECHNOLOGY

### ACHIEVEMENTS DURING 1ST APRIL 2018 TO 31ST MARCH 2019

1. **Prof. G. Ram Mohana Reddy,** Department of IT awarded IEEE CCEM 2019 Best Research Project Proposal on "Multi-Modal Students' Behavior Analysis in Computer-Enabled Laboratories using Students' Non-Verbal Cues" (Cash Prize of Rs. 10,000) March 2019.
2. **Prof. G. Ram Mohana Reddy,** Department of IT awarded AMD Best Research Project Award for M.Tech Thesis on "IoT based Real-Time Context Aware Multi-Modal Students' Affective Analysis in Classroom Response System" (Cash prize of Rs. 25,000) July 2018.
3. **Dr. Geetha V,** Department of IT awarded the Young Faculty Research Fellowship under Visweswaraya PhD Scheme for Electronics & IT during December 2018.
4. **Dr. Nagamma Patil,** Department of IT awarded the RGS/F-VGST Grant from Dept. of Science and Technology, Govt. of Karnataka During September 2018.
5. **Dr. Sowmya Kamath,** Department of IT elevated to IEEE Senior Member Grade, during November 2018.
6. **Dr. Sowmya Kamath,** awarded AMD India Best Student Project 2018 Prize for the B.Tech project "Out-of-Context Object Identification for Image Enhancement" (Cash prize of Rs. 25,000)
7. **Dr. Sowmya Kamath,** successfully organised the Grand Finale of the Software Edition of Smart India Hackathon 2019 (The World's Largest Hackathon) at NITK Surathkal, a national level event with participation from more than 2,00,000 participants across the country (March 2-3, 2019)

8. **Dr. Sowmya Kamath,** Convener for NITK Innovation Council, 2018.
9. **Dr. Sowmya Kamath,** Coordinated NITK Women's 24-hour Hackathon "Athena", sponsored by NITK-STEP (3-4 Nov 2018)
10. **Dr. Anand Kumar M,** of the Department of IT was received the first prize in the International Shared task " Multilingual Author Profiling on SMS – MAPonSMS " conducted by NLP Group, CUI Lahore, co-located with Forum for Information Retrieval Evaluation (FIRE'18), 6th-9th December 2018, DAIICT, Gandhinagar, India.

## DEPARTMENT OF MINING ENGINEERING

**Dr. B.M. Kunar** of the Department of Mining Engineering was selected as a reviewer of the Journal of Safety Science (Elsevier).

## DEPARTMENT OF METALLURGICAL & MATERIALS ENGINEERING

### Students Achievements:

1. **Robbi Vivek Vardhan,** Research Scholar - Best Paper Award for the paper titled 'Development of low cost antifouling tungsten oxide (WO3) coatings on glass and steel substrates via spray pyrolysis' at the "International Conference on Surface Engineering" held at IISc Bangalore during 9th – 11th August 2018.

2. **Venkata Aditya Kumar Sairigapu,** B.Tech. 6th Semester - All INDIA INTER NIT CRICKET RUNNER UP.

3. **Yukti Gupte,** B.Tech. 6th Sem. - Convener - MACD, NITK.

4. **Divya Ramavath,** B.Tech. 6th Sem. –

i) Internship coordinator of Metallurgy and material science engineering branch at NITK.

ii) Business development and Marketing internship at SMC sports foundation Hyderabad.

iii) Marketing internship at Edvizo Hyderabad.

5. **Sai Sushil,** B.Tech. 6th Sem. –

i) MMEA Badminton - 1st place

ii) MMEA Table tennis - 2nd place

6. **Kshitij Bhandari,** B.Tech. 6th Sem. – Swiggy Campus CEO 2019, EY Finance Intern 2018 December.

7. **Shaurya Seth,** B.Tech. 6th Sem. –

i) Got selected for paper presentation in Kumamoto University, Japan under International Engineering Symposium Program (IES 2019) held in March (13/03-15/03)

ii) Got selected for spring internship program (SIP 2019) held in Kumamoto University, Japan in March.

iii) Became a Technical Head and Sig Head for the technical club IE in April 2019.

8) Akhilesh Kamble, B.Tech. 6th Sem. – Intern at Bell Helicopters, Textron India

9) Omkar Barwade, B.Tech. 6th Sem. –

i) Successfully presented a research paper at Kumamoto University, Japan in March 2019.

ii) Won 2nd Best Poster Presentation Award at NCOPOM'18

10) Mayur Jiyalal Prajapati, Sanjay Kumar, Atul Singh, Prathviraj Panaje, Vijay Sai, Kamalanathan D., Ranjith Kumar I., Sagar Patil - M.Tech, IV Sem Students - Player of the Tournament and Volleyball Champions in PG Tournament.

11) **Vibin Wilson,** M.Tech. IV Sem. (ME) –

i) Runner's up in Cricket, Inter-NIT tournament

ii) 2nd Prize in Chess PG tournament

12. **Karthik V Venkitesh,** II Sem. M.Tech. (ME)-

a) 2nd prize in industrial problem-solving competition organised by Dept. of MME, NITK.

b) 2nd prize IN badminton, inter MMEA 2018-19, NITK

c) 1st prize in football , Freshers cup 2018-19, NITK

d) 1st Prize in football at inter MMEA 2018-19, NITK

13. **Vivek Gopi,** II Sem. M.Tech. (ME) –

a) 2nd prize in industrial problem solving competition organised by Dept of MME, NITK

b) 2nd prize in cricket, inter MMEA 2018-19

14. **Jishnu Remesh,** II Sem. M.Tech. (ME) –

2nd prize in industrial problem solving competition organised by Dept of MME, NITK.

15. **M. Dileep,** II Sem. M.Tech. (ME) –

2nd prize in cricket, inter MMEA 2018-19

16. **J. Murali,** II Sem. M.Tech. (ME) – 2nd prize in cricket, inter MMEA 2018-19

17. **Koteshwar Rao,** II Sem. M.Tech. (ME) – 2nd prize in cricket, inter MMEA 2018-19

18. **D Sai Pavan Rakesh,** II Sem. M.Tech. (ME) – 2nd prize in cricket, inter MMEA 2018-19

19. **Vicky U M,** II Sem. M.Tech. (ME) – 2nd prize in cricket, inter MMEA 2018-19

20. **Darshan,** II Sem. M.Tech. (ME) – 2nd prize in cricket, inter MMEA 2018-19

21. **Manjunatha,** II Sem. M.Tech. (ME) – 1st prize in table tennis in the inter year department sports organised by Dept of MME, NITK.

22. **Rahul Chandrasheker,** II Sem. M.Tech. (PM)

i) 1st prize in football, Freshers cup 2018-19, NITK

ii) 1st prize in football, flood light tournament 2018-19, NITK

iii) 1st prize in football, coliseum 2018-19, NITK

iv) 1st prize in football intera MMEA football 2018-19, NITK

v) 2nd prize in football, inter year football tournament 2018-19, NITK

23. **Sreejith,** II Sem. M.Tech. (PM) –

i) 1st prize in football, Freshers cup 2018-19, NITK

ii) 1st prize in football, coliseum 2018-19, NITK

iii) 1st prize in football intera MMEA football 2018-19, NITK

iv) 2ndprize in football, inter year football tournament 2018-19, NITK

24. **Jithin P,** II Sem. M.Tech. (PM) – 1st prize in football intera MMEA football 2018-19, NITK.

25. **Shamil K M,** II Sem. M.Tech. (PM) –

i) 1st prize in football, Freshers cup 2018-19, NITK

ii) 1st prize in football, flood light tournament 2018-19, NITK

iii) 1st prize in football, coliseum 2018-19, NITK

iv) 1st prize in football intera MMEA football 2018-19, NITK

v) 2nd prize in football, inter year football tournament 2018-19, NITK

vi) 2nd prize in cricket , inter MMEA 2018-19, NITK

26. **Karthik Shinde,** II Sem. M.Tech. (PM) – 1st prize in table tennis, inter MMEA 2018-19, NITK

27. **Aju Ajmal,** II Sem M.Tech Nano Technology

i) 1st prize in football, Freshers cup 2018-19, NITK

ii) 1st prize in football, coliseum 2018-19, NITK

iii) 1st prize in football intera MMEA football 2018-19, NITK

iv) 2nd prize in football, inter year football tournament 2018-19, NITK

## DEPARTMENT OF PHYSICS

### Achievements

Dr. Deepak Vaid, Played the lead role in designing and implementing new cirriculum for introductory B. Tech physics course PH110, which is a core 1st year course.

## DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

### Special talk from Institute/Industries/ R&D

1. **Dr. Bharat B. Panigrahi,** Dept. of Materials Science & Metallurgical Engineering, IIT, Hyderabad

   Topic: High Entropy Alloys, An Emerging New Material: Challenges and Scopes, 06-04-2018.
2. Dr. Ganapathi Prabhu Sai Balasubramanian, PhD (Rensselaer Polytechnic Institute, Troy, New York), Topic: Investigation of key materials issues in nanoelectronics based on quantum dots structures in epi-GexSi(1-x)/Si(001)", 13-08-2018
3. Dr. Sang – Joon Cho, Park System, Suwon, South Korea, Topic: Recent Advances on Park AFM Technology and its applications in Materials Science, Chemistry Biology, Physics & Electronics", 26-07-2018
4. Dr. J. Sankar, Associate Professor, Dept. of Chemistry & Dean (R&D), Indian Institute of Science Education and Research, Bhopal, Topic: Bio-inspired Materials for Photovoltaic Applications: The case of Tetrapyrroles, 30-10-2018
5. Dr. Sushil Mishra, IIT Bombay, talk on his research, 29-01-2019
6. Dr. B. N. Karkera, Futuristic Gravity – Transportation Around Earth for Environmental – Protection in Mega Scale, 15-02-2019.
7. Dr. Devadas Bhat, our alumni, "Development of magnesium – based alloys for bio-medical applications" 22-03-2019.

## SCHOOL OF MANAGEMENT

### International Summer University 2019

Indian Leg of International Summer University Program 2019 was organized by 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 8th February to 22nd February 2019.

Dr. Sheena from SoM, NITK and Dr. S Pavan Kumar, Head SoM had supervised the event & Dr. Pandurgana Vittal K, Dean (AAIR), NITK was presiding over the function. Apart from 18 students from all above two universities Prof. Zysman Eytan from HEIGVD Switzerland also took part in summer university 2019.

## DEPARTMENT OF PHYSICS

### Addition(s) to Building Infrastructure

Vth Floor Science Block

## DEPARTMENT OF PHYSICAL EDUCATION & SPORTS

### Achievements

Institute teams formed, trained and coached were allowed to participate in different Taluk, District, State and National level Inter University level tournaments/ Competitions.

1. Dasara Tournaments: Basketball(Men) District: Winners, Badminton(Men & Women) District Runners-up, Table Tennis (Men) District: runners-up.
2. DK District Basketball Association conducted James Neighsmith Intercollegiate Basketball Tournament: Institute Men Basketball team was Runners-Up.

B S A Kumar Inter Collegiate Basketball Tournament Conducted by Yenepoya University: Institute Men Basketball Team were Runners-Up.

4. All India Inter NIT Sports in Swimming(Men & Women), Tennis(Men & Women), Weight Lifting(Men), power Lifting(Men) and Best Physique, (Men) have been organized by our Institute: Our Institute Tennis (Men): Winners, Women: Runners-Up, Weight Lifting( Men): Team Championship Runners-Up, Best Physique(Men) Team Championship Runners-Up, Swimming (Men) were Team Championship Winners, Swimming (Women) Team Championship Runners-Up and Swimming overall championship winners. Sandeep Kumar of II MTech won One each Gold medal in Weight Lifting, Power Lifting and Best Physique competitions. Other results of All India Inter NIT Tournaments held at other NITs:, Inter NIT Sports held at VNIT Nagpur, Badminton (Women)- II Runners-Up, Table Tennis (Women): Winners. All India Inter NIT Sports held at NIT Trichy: Basketball(Men) Runners-Up, Cricket(Men) Runners-Up and Volleyball(Men) ii Runners-Up. Inter NIT Sports held at NIT Agartala, Institute Chess (Men) – Winners, Hockey (Men) Runners-Up and Handball(Men) Winners. Inter NIT Athletics held at NIT Warangal, our team won One Silver and 5 Bronze medals.
5. 3 District open Tennis tournament held at Bramhavar, Institute team won I and II place in Singles and I place in doubles. 3 District Udupi Cup Tennis tournament Institute team won II place in singles and First place in Doubles.
6. South Zone Inter University Chess tournament held at Manipal Academy of Higher Education Institute Chess team won IV place and for the first time qualified to play All India Inter Zonal Inter University chess tournament. Chess team participated in All India Inter University Inter Zonal chess tournament held at CC University Meerut and placed 12th in overall. Sharan Rao of I BTech Won First place in All India International Masters Chess tournament held at Ahmadabad. Institute team players won First and second place in 5 District Nethaji cup Chess tournament held at Parkala,
7. Revels cup, All India Inter Engineering collegiate Swimming competitions held at Manipal, Institute of Technology, our Institute won 2 gold, 3 silver and 19 bronze medals. Volleyball (Women) team were Runners-Up.
8. Adrenalin, Inter Professional collegiate Sports held at Father Muller Medical college, Table Tennis(Men) and Chess teams were Champions.
9. Spin Shock Inter Collegiate Throwball tournament is won by NITK team.
10. Ragam Basketball tournament conducted by NIT Calicut: Institute Men team were Winners and Women team were Runners-Up.
11. Spree Inter collegiate Basketball tournament conducted by BITS Goa: Institute Basketball(Men) team were Runners-Up.

# 20. ASSOCIATED CENTERS

## 20.1. NITK - SCIENCE AND TECHNOLOGY ENTREPRENEURS PARK (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 50 incubatees (physical incubation), 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 150, 400, 500, 650, 1250 sq.ft (Total 10 Nos) to accommodate 10 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. G. Srinikethan,** Professor, Dept. of Chemical Engg. NITK manages day to day activities as Director i/c. NITK-STEP And a Core Advisory Group of NITK-STEP was constituted with the following Faculty members of NITK:

i) Prof. N. Lakshman Nandagiri, Dept. of Applied Mechanics

ii) Venkatesh Perumal, Ph.D., Dept. of E&E Engg.

iii) Ashwini Chaturvedi, Ph.D., Dept. of E&C Engg.

iv) Jeny Rajan, Ph.D., Dept. of Computer Engg.

v) Hariprasad Dasari, Ph.D., Dept. of Chemical Engg.

vi) K.V Gangadharan, Ph.D., Dept. Of Mechanical Engg.

vii) Sumam David, Ph.D., Dept. of E&C Engg.

**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. Sulokam Technologies Pvt.Ltd
9. Penzigo Technology Solutions Pvt.Ltd (Startup company)

   Some faculty members of NITK are in the process of their company registration and they have already approached NITK-Step.

## Entrepreneurial Activities...

NITK has a entrepreneurial club named Entrepreneurship Cell. This is a student club with Dr. Suprabha K. R as a faculty advisor. E-Cell plays a pivotal role in encouraging budding entrepreneurs turn their raw ideas to a stable firm. Being the only business exclusive club in the college, E-Cell extends its roots to a plethora of business management facets, not limiting to entrepreneurship. There are three special interest groups Marketing, Finance and Economics encompassing highly passionate individuals eager to explore deeper into these subject areas. Knowledge sharing and enhancing sessions is a norm of the club through Knowledge Exchange Programs(KEP) conducted by members of E-Cell for their fellow compatriots of the club as well as outside of it.

Several activities namely student level competitions like 'enterprise', B-Plan competition, Special Interest Groups related to business etc are conducted. In addition, a flagship event namely E-Summit (which is a mega event of E-Cell) is conducted every year under the club, where-in various competitions, workshops etc would be conducted. In

addition, various start-ups pitch their plan to the Venture capitalists in this E-Summit.

### E-Summit:

E-summit is a flagship event organized by E-cell NITK. With its goal to invigorate an entrepreneurial spirit among the next generation of entrepreneurs, E-Cell NITK organizes E-Summit, a multi-faceted entrepreneurship oriented event, once a year during the month of March. One of the main objectives of E-Summit is to develop and foster the spirit of entrepreneurship amongst participants coming in from all over the country; it provides them an understanding of the startup ecosystem and promotes an entrepreneurial culture among them. The maiden edition held in the year 2016-17, received an enthusiastic response from the students and had 11+ start-ups and 10+ renowned speakers coming in. The most recent edition was held on 12th and 13th January 2019 witnessing a footfall of around 500.

### NIT Conclave on Entrepreneurship:

NIT Conclave is a pan - NIT event that brings together the brightest minds from NITs across the country to deliberate over problems in their society and surrounding and develop a strategy with their creativity and problem solving thought process. It is a powerful platform, witnessing the best minds of the country who come together to scale high and go beyond the corridors of competition and become the examples of genuinely responsible youth of the country who strive to carry forward the light of knowledge and wisdom.

The 8th edition of NIT Conclave was hosted by NITK Surathkal from 25 January 2019 to 27 January 2019 with Dr.Suprabha K. R as the faculty advisor and Prof. Jagannath Nayak as mentor for the program.

### Entrepreneurship and IPR Course in Curriculum:

At present, there is a course on entrepreneurship and IPR as an open elective in the fourth 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 Wadhwani Foundation:

The Institute has an MOU with Wadhwani Foundation in handholding in entrepreneurship area in terms of courses and E-Cell activities. Two faculty members have been trained under this MOU.

i. Empower students with entrepreneurial traits and build leadership capabilities leading to success in entrepreneurship or superior job opportunities through:
ii. Mainstreaming (make courses credit-bearing) entrepreneurship education on campus through curricular and Practicum activities and programs.
iii. Support aspiring graduates who start meaningful ventures by connecting them to mentors, experts, service providers and learning mechanisms.

### NITK Women's Hackathon "Athena"

This hackathon was conducted exclusively for girl students of NITK continuously for 24 hours on November 3-4, 2018 with Dr. Sowmya Kamath and Dr. Suprabha K. R as Co-ordinators for the event. The theme of this hackathon was 'Self for Society and Women Entrepreneurship'.

### BRIC Idea Exposition 2019

An Idea exposition competition was conducted for students of Dakshina Kannada region in association with BIRAC, Government of India and Center of System Design on March 18-19, 2019. Mentors in the field of legal issues, business incubation, technology etc were

invited. The theme of the Ideathon was related to health care. The participants comprised of both engineering and medical students of the region.

### Alumni Association:

Alumni Association also provides training programs for the first year B-Tech programs in the area of entrepreneurship. Practicing entrepreneurs in different walks of life come and take session and inspire the students.

### Institute Innovation Council:

MHRD, Government of India has established MHRD's Innovation Cell (MIC) to systematically foster the culture of innovation amongst all Higher Education Institutions (HEIs). In this regard, MIC has encouraged the creation of IIC. The major focus of IIC is to create a vibrant local innovation ecosystem and have start-up supporting mechanism. It also enables in establishing function ecosystem for scouting ideas and pre-incubation of ideas. The President of IIC is Prof. G. Srinikethan and Coordinators: Dr. Sowmya Kamath S and Dr. Suprabha K R.

Under the Institute Innovaton Cell, the grand finale of Smart India Hackathon 2019 (SlH 2019) was organized on the campus of with Prof. Srinikethan as Chairman and Dr. Sowmya Kamath and Dr. Suprabha K. R as coordinators during March 2-3, 2019 hosting about 250 participants from different parts of the country, along with their mentors. These participants competed non-stop for 36 hrs under the direction of MHRD appointed judges on problem statements set by Industry organisations and central/state ministries. The event was inaugurated nationally by Honorable Minister of HRD-GoI, Shri Prakash Javadekar. Honorable Prime Minister of India, Shri Narendra Modi, connected with all the nodal centers on 2nd March 2019 for live interaction with the participants during the course of the event. In addition to SIH 2019, following were conducted under IIC:

1. India First Leadership Talk by Shri. Anand Mahindra, Chairman, Mahindra Group, 8th January 2019.
2. India First Leadership Series on "IPR for Students and Faculty Members" Date: 10th January, 2019
3. One day Workshop on Intellectual Property Rights (Januray 13th, 2019)
4. India First Leadership Series on "Planning for Career" by Dr. Anand Deshpande, Founder, Chairman & Managing Director Persistent Systems Ltd. Idea Competition:

### MOU with NLSIU and MRPL

At present, NITK and NITK-STEP are already having MoU with ONGC-MRPL for supporting entrepreneurship program. The National Law School of India University (NLSIU), Bengaluru has joined for legal support to file patents.

### Start-up cell:

Start-up cell of the Institute is already working on creating interest on innovation and trying to seed more potential entrepreneurs in the Institute. In addition, the faculty and students of the Institute have been allowed to set up companies by the management of NITK and NITK-STEP will facilitate their incubation. In this line, faculty members have already started registering their companies in NITK-STEP.

### TEQIP sponsored training program:

TEQIP also sponsors faculty members to attend training programs related to entrepreneurship, time to time.

### ISRO Incubation Center:

A proposal to launch Space Technology Incubation Center is in process. TIC concept is conceived with one selected major academic institute taking the lead role in a particular region and providing opportunities for final year graduate, post–graduate and research scholars. The research outcome of these students will be translated into a Proof of Concept or prototype through industries tied up with the S-TIC through ISRO. The qualification and validation of these products

will be carried out in the labs of ISRO. Once qualified, there will be a buy back agreement of this product for future programmes of ISRO thereby eliminating the marketing effort.

### List of Student Start-ups:

More than 50 start-ups have been started in NITK, of which around 12 start-ups are after the year 2015. The following table gives the list of start-ups of the students of NITK.

| Sl. No. | Company Name | Name of the Student |
|---|---|---|
| 1 | Practo | Shashank and Abhinav Lal |
| 2 | Meritnation | Pavan Chauhan |
| 3 | PinkVilla | Nandini Shenoy |
| 4 | Delhivery | Sahil Barua |
| 5 | Nestaway | Deepak Dhar, Jitendra Jagadev, AmarendraSahu, SmruthiParida |
| 6 | Simplilearn | Krishna Kumar |
| 7 | Taxi for Sure | Aprameya and Raghunandan |
| 8 | BHive | Shesh Rao, MonappaBayavanda |
| 9 | DriveU | Rahm Sastry |
| 10 | Chai Point | Sandesh C |
| 11 | Travelyaari | Arjun Rao |
| 12 | Revoure | Megha Singh |
| 13 | Cybrhome | Shubham Badal |
| 14 | Winkl | Thakur Rahul Singh, Nikhil Kumar |
| 15 | KrazyBee | Madhusudhan E |
| 16 | Evantosaur | Tejovanth N |
| 17 | SaveMonk | Rakshith Gowda |
| 18 | Trashin | Chandrashekar Bhat M |
| 19 | PrepLift | Mukesh Jaiswal |
| 20 | Perpule | Abhinav Pathak and Yogesh Ghaturle |
| 21 | Nexiot | Suniel K G |
| 22 | Sunglass.io | Nitin Bantwal Rao |
| 23 | TeliPortMe | Vineet Devaiah |
| 24 | DevKraft Technologies | Karan Thakral |
| 25 | CohortPlus | Karan Thakral |
| 26 | EduGorilla | Rohit Manglik |
| 27 | Glynk.com | Niranjan Sukumaran |
| 28 | Frulix Virtual reality Platform | Rajat Mann |
| 29 | CohortPlus | Srinivasan Narayan |
| 30 | Zero Height Technologies | Smruti Ranjan Parida |
| 31 | Zwayam Digital | Shreyas Tonse |
| 32 | Rhapsody Labs and Piktor Imaging | NeeleshSoni and Gaurav Raj |
| 33 | Maximiner Analytics and GMCV Technologies | Vikram Nayak |
| 34 | Unwrap India | Suhas Kamath Parkal |
| 35 | TezMinds | Nitin Gupta |
| 36 | UniAway | Mahesh Pappu |
| 37 | UniAway | Pavan Ghatala |
| 38 | Srikanth Narayanam | AnekTechnovations |
| 39 | Bharat Kapoor | A.T. Kearney PERLabs |
| 40 | WHEELS ON ROLL | Amartya Gupta/ Jeshventh TK Raja/ Pratyush Kumar GIRI / Piyush Bansal |
| 41 | ABHI | Abhinav M/ Aswanth PP/ Abhijith S |
| 42 | WAYFOO | Gautam D C/ Sabari Ram/ Amit W/ Mohammed Amen |
| 43 | AUTOCUARADOR | G Dilip /G Bharath K/ Rakesh naga Sai |
| 44 | SOMETHING FISHY | Neil K Martis/Nikhil/ HarivarshKotian |
| 45 | SHOPSCAPE | Sanjay P/ Pavan / Sachin |
| 46 | PRINT ACHU | Viivek K/ Manmohan M |
| 47 | ORBAL CAPITAL MANAGEMENT | Ashish Ongari/ Rajesh Rao |
| 48 | CHANGE PAY | Dhyvik G J/ Madhukar K/ Chetan J/ Harishi H/ Salman Shah |
| 49 | ADROKART | Vikas Meena/ AnamikSarvaiya/ Kevin Thomas/ RishetKuber |

## 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. IPR Facilitation Centre:

a. Setting up of IP facilitation Center:

b. National Conference on IPR:

c. Short Term Training Program on IP management: Here, the Institute would conduct short term Training Program for 3 weeks to the emerging enterpreneurs, nearby engineering college students and faculty members. The aim of the course is to train the trainers and attract more people towards the area of IPR in order to protect their intellectual capital. The program also aims at strengthening the knowledge in the area of IPR to MSMEs, entrepreneurs and academicians in particular

An IP facilitation Center would be established. The Center is proposed to assist MSMEs of Karnataka and Southern states of India and prospective enterpreneurs in the entire IP management as a potential for business. The Institute has envisaged assisting academicians and research scholars in all institutions and universities of the region.

The Centre aims at catering to IP services and management of MSMEs of Southern states of India. The prospective entrepreneurs and prospective student and faculty start-ups, start-ups supported by companies like ONGC-MRPL can also take the benefit form the centre. The Center aims at guiding the MSMEs and prospective enterpreneurs, student start-ups, companies established by faculty members in the use and management of IP tools.

a. To identify the IP needs of MSME/ prospective enterpreneurs.
b. To hand hold MSME for identifying Intellectual Property in their day to day business and leverage it for Business Excellences
c. Capacity building to help MSMEs protect their ideas & innovations as well as business strategies.
d. To assist the beneficiaries in filing applications with national / international agencies and execution of other documents concerning to licensing technology transfer agreements etc.
e. To Provide Services such as IP Protection, IP Awareness & Training, Counseling & Advisory Services.
f. To create a delivery mechanism for comprehensive awareness & training in IPR to all stake holders of IP in the corresponding states.
g. Help MSMEs to avoid infringement of the relevant rights of others through their operation and protect their own rights.
h. To generate prior art and freedom to operate search reports for the use of MSME clusters.

IP Facilitation Centre of NITK will be able to handhold and manage the IP tools for the MSMEs and enterpreneurs of Southern states of India. NITK which is an Institute of National Importance is able to interact with industries because of the excellent research facility and other technical capabilities of the faculty member.

The project envisages the following:

a. Setting up infrastructure for patentability search reports for Patents, Trademarks, Copyrights, Design, and Geographical Indications & Integrated Circuits

b. Establish close linkages with national / regional patent offices and other national and international agencies involved in IPR issues.

c. Sensitising people for patenting of ideas / process/ products by conducting awareness campaigns.

d. To establish industry- institute linkages and be a facilitator for commercialisation of technologies.

e. To provide techno-legal advisory services

f. To facilitate the linkage between government agencies and MSMEs in terms of financial support for IP management.

3. Enterpreneurship 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 enterpreneurs. 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 PROGRAM CONDUCTED:**

| Financial Year | Name of Program | Program Start Date | Program End Date | Program Duration (in Days) | Total No. of Participants |
|---|---|---|---|---|---|
| 2018-19 | EAC | 30-08-2018 | 01-09-2018 | 3 | 97 |
| 2018-19 | EDP | 05-10-2018 | 01-11-2018 | 28 | 100 |
| 2018-19 | TEDP 1 | 05-11-2018 | 14-12-2018 | 40 | 78 |
| 2018-19 | FDP | 22-10-2018 | 26-10-2018 | 5 | 35 |
| 2018-19 | NITK Women's Hackathon 2018 "Athena" | 3-11-2018 | 4-11-2018 | 2 | 50 |
| 2018-19 | Smart India Hackathon 2019 | 1-3-2019 | 4-3-2019 | 4 | 250 |
| 2018-19 | BRIC Idea Exposition | 16-3-2018 | 17-3-2018 | 2 | 55 |
| 2018-19 | TEDP 2 | 10-04-2019 | 10-05-2019 | 30 | 24 |

## 20.2 CENTRE FOR CONTINUING EDUCATION (C.C.E)

| Sl. No. | Title of the Course | Duration | Organized through | Name of the Course Coordinators | No. of Participants attended | Course Intended for |
|---|---|---|---|---|---|---|
| 1 | Water Supply and Rain Water Harvesting | 30-07-2018 to 03-08-2018 | Department of Civil Engineering, NITK | Dr. B. Manu, Ph.D. | 11 | The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara. |
| 2 | One day Workshop on 'PICO/NANO/ MICRO-Satellite (PNM-Sat) | 07-08-2018 | Department of E&C, NITK | Invited Resource person: Dr.Sharan Asundi, Faculty Member at Department of Aerospace Science Engineering at Tuskegee University (TU) | 145 | Faculty and Students of NITK, sponsored by NITK, Surathkal. |
| 3 | Spreadsheet Modeling for H.R. Managers | 01-09-2018 to 03-09-2018 & 02-11-2018 to 04-11-2018 | Centre for System Design, NITK | S. Pavan Kumar, Ph.D. School of Management | 23 | H.R. Managers deputed from KCT Business School, Kumaraguru College of Technology, Coimbatore. |
| 4 | Digital Controller for Power Electronics Applications | 29-10-2018 to 02-11-2018 | Dept. of E&E, NITK | P. Parthibhan,Ph.D. A.Karthikeyan, Ph.D. & R. Kalpana, Ph.D. | 20 | Faculty of Engineering & Diploma Institutions, Industry Personnel & Students of Ph.D PG/UG |
| 5 | Low Cost Housing and Rural Roads | 07-01-2019 to 11-01-2019 | Dept. of Civil Engineering, NITK | B. B. Das, Ph.D. and Raviraj H.M, Ph.D | 09 | The Practicing Engineers deputed from various Karnataka Government Departments sponsored by Engineering Staff College, K.R.Sagara. |

## 20.3 Research & Development Centre For Clay Roofing Tiles, Bricks And Other Ceramic Products.

### 1 ACTIVITIES :

- Received many enquiries for renting the machinery for interlocking pavement and wall blocks. Attempts are on to sign MOU for the same.
- Talks are underway to strike understanding with granite quarry owners to transfer technology of making masonry soil blocks with quarry dust.
- The M.O.U. with M/s Integrated Blocks & Bricks, Mangalore for "Utilization of the production facility of R & D Centre for the manufacture of various cement based / concrete building products" completed successfully.
- One Ph.D work on "Strength of concrete subjected to high temperature" which is a part of BRNS Project is completed successfully using the furnace available.

### Technology is available for transfer for the following products:

| Sl. No. | Product Details | Technology Status |
|---|---|---|
| 1. | Bricks | Ready |
| 2. | Hollow Blocks | Ready |
| 3. | Cavity Bricks | Ready |
| 4. | Hollow Roof Block | Ready |
| 5. | Roof Tiles | Ready |
| 6. | Decorative Tiles | Ready |
| 7. | Pavement Block | Ready |
| 8. | Interlock Wall Block | Ready |

### 3. Facilities at R & D Centre:

| | |
|---|---|
| 1. Muffle Furnace | 16. Planetary Mixers |
| 2. Pot Mill Racks | 17. Hydraulic Press |
| 3. Jaw Crusher | 18. Mixing Tank with Scrap Blunger |
| 4. Electronic Balance | 19. Roto Pump |
| 5. Moisture Meter | 20. Pilot Level Kiln |
| 6. Sieve Shaker | 21. Hydraulically Operated Concrete Block Making machine with Triple Vibrator |
| 7. Weighing Balance | 22. Ram and Mould |
| 8. Ball Mills | 23. 10/7 CFT Concrete Mixer |
| 9. Discharge Tank with Agitator | 24. Wheel Borrows |
| 10. Pilot Level Kiln | 25. Hand Operated Concrete Block Making Machine With Moulds |
| 11. Ferro Filter | 26. Hydraulic Block Cutting Machine |
| 12. Filter Press | 27. Vibrating Earth Rammer |
| 13. Diaphragm Pump | 28. Soil Block Interlock wall Block making Machine |
| 14. De-Airing Pug Mill | 29. Screener |
| 15. Granulator / Pulveriser | 30. Pulveriser |

## 4. Services Offered:

1. Technology development and transfer
2. Hands on training for entrepreneurs.
3. Providing processing facilities on rental basis to existing industrialists and new entrepreneurs.
4. Research and consultancy in establishing similar kind of facilities using different kinds of waste.
5. Undertake manufacture and supply of Bulk orders on custom designed corporate gifts, made from eco-friendly materials.
6. Manufacture & Sale of building products made from industrial wastes and conventional materials.

# 21.0 FINANCE AND ACCOUNTS

## The Financial status 2018-19

Ministry of Human Resource Development, New Delhi.

**Sanctioned Grant:**

Non-Recurring Expenditure : 5413.50 (in lakhs)

Recurring Expenditure : 15067.01 (in lakhs)

| Year | Plan (Rs. In Lakhs) | Non Plan (In Lakhs) | Total |
|---|---|---|---|
| 2015-16 | 5902.37 | 6716.61 | 12618.98 |
| 2016-17 | 6100.00 | 8260.00 | 14360.00 |
| 2017-18 | 5413.50 | 15067.04 | 20480.54 |

## BALANCE SHEET AS AT 31-03-2019

(AMOUNT - Rs.)

| PARTICULARS | SCH. NO. | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|
| **SOURCE OF FUNDS :** | | | |
| CORPUS/CAPITAL FUND | 1 | 19,48,68,495 | 14,82,04,729 |
| DESIGNATED/ EARMARKED/ ENDOWMENT FUNDS | 2 | 3,04,12,16,651 | 2,69,88,42,621 |
| CURRENT LIABILITIES AND PROVISIONS | 3 | 5,26,79,23,971 | 4,75,01,12,006 |
| TEQIP PROJECT - PHASE III | 25 | 1,23,48,932 | 49,59,882 |
| **TOTAL** | | **8,51,63,58,049** | **7,60,21,19,237** |
| **APPLICATION OF FUNDS :** | | | |
| FIXED ASSETS | 4 | | |
| Tangible Assets | 4(A)+(D- ii) | 3,54,33,01,719 | 3,19,02,32,964 |
| Intangible Assets | 4(c) | 82,81,801 | 89,35,789 |
| Capital Works-In-Progress | 4(B) | 67,72,34,141 | 95,56,22,215 |
| INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS | 5 | | |
| Long Term | | 3,00,21,75,678 | 2,46,02,87,920 |
| Short Term | | - | - |
| INVESTMENTS - OTHERS | 6 | - | - |
| CURRENT ASSETS | 7 | 1,75,15,749 | 25,64,40,625 |
| LOANS, ADVANCES & DEPOSITES | 8 | 65,55,00,029 | 72,56,39,843 |
| TEQIP PROJECT - PHASE III | 25 | 1,23,48,932 | 49,59,882 |
| **TOTAL** | | **8,51,63,58,049** | **7,60,21,19,237** |
| SIGNIFICANT ACCOUNTING POLICIES | 23 | | |
| CONTINGENT LIABILITIES & NOTES ON ACCOUNTS | 24 | | |

## PROVISIONAL INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.03.2019

(AMOUNT - Rs.)

| PARTICULARS | SC. NO. | CURRENT YEAR | PREVIOUS YEAR |
|---|---|---|---|
| **INCOME:** | | | |
| ACADEMIC RECEIPTS | 9 | - | - |
| GRANTS/SUBSIDIES | 10 | - | - |
| INCOME FROM INVESTMENTS | 11 | 6,52,431 | 11,84,215 |
| INTEREST EARNED | 12 | - | - |
| OTHER INCOME | 13 | - | - |
| OTHER RESEARCH PROJECTS | - | - | 5,83,76,125 |
| PRIOR PERIOD INCOME | 14 | 18,23,02,443 | 19,25,94,790 |
| **TOTAL (A)** | | **18,29,54,874** | **25,21,55,130** |
| **EXPENDITURE:** | | | |
| STAFF PAYMENTS & BENEFITS | 15 | 16,16,621 | 28,34,627 |
| ACADEMIC EXPENSES | 16 | - | - |
| ADMINISTRATIVE & GENERAL EXPENSES | 17 | - | - |
| TRANSPORTATION EXPENSES | 18 | 2,11,63,264 | 1,89,10,504 |
| REPAIRS & MAINTENACE | 19 | - | - |
| FINANCE COST | 20 | 38,800 | - |
| DEPRECIATION | 4 | - | 31,83,66,208 |
| OTHER EXPENSES | 21 | - | 1,20,00,000 |
| PRIOR PERIOD EXPENSES | 22 | - | - |
| **TOTAL (B)** | | **2,28,18,685** | **35,21,11,339** |
| **BALANCE:** | | | |
| EXCESS OF EXPENDITURE OVER INCOME | (A-B) | (16,01,36,189) | 9,99,56,209 |
| SIGNIFICANT ACCOUNTING POLICIES | 23 | | |
| CONTINGENT LIABILITIES & NOTES ON ACCOUNTS | 24 | | |

## RECEIPTS & PAYMENTS FOR THE YEAR ENDED 31-03-2019

| RECEIPTS | | Current Year | Previous Year | PAYMENTS | | Current Year | Previous Year |
|---|---|---|---|---|---|---|---|
| **Opening Balances:** | | | | **Expenses:** | | | |
| (a) Cash in hand | | 1,829 | 885 | (a) Establishment Expenses | 1,54,25,47,895 | | 1,15,88,20,547 |
| (b) Bank Balances: | | | | (b) Administrative Expenses | 0 | 1,54,25,47,895 | 67,80,23,308 |
| (i) In current accounts | | 69,28,016 | 6,42,61,157 | | | | |
| (ii) Savings acconts | | 12,85,18,729 | 1,77,55,054 | Payments Against Earmarked/ Endowment Funds | | 5,24,82,215 | 8,15,71,630 |
| Grants Received: | | | | Payments Against Sponsored Projects/Schmes | | 18,72,75,396 | 17,44,61,918 |
| (a) From Govt. of India | | | | | | | |
| Capital Grant | 51,51,00,000 | | | Investments Made | | 1,80,69,31,412 | 1,17,83,74,898 |
| Revenue Grant | 1,98,89,56,000 | 2,50,40,56,000 | 2,20,70,00,000 | Out of Earmarked/Endowment Fund | | | |
| (b) From State Governement | | - | - | Out of Own Fund | | | |
| Academic Receipts | | 34,23,37,932 | 40,59,38,815 | Expenditure on Fixed Assets & | | 42,53,38,582 | 1,04,27,39,367 |
| | | | | Capital Work - in - progress: | | | |
| Receipts Against Earmarked/ Endowment Funds | | 52,30,19,639 | 54,07,13,640 | Deposits & Advances | | 1,24,42,39,336 | 1,63,57,22,257 |
| | | | | Payments made against | | | |
| Receipts Against Sponsored Projects/Schmes/Plan | | 24,32,16,813 | 67,72,38,346 | Funds for various projects: | | 2,19,73,77,031 | 1,96,32,96,124 |
| | | | | Any Other Payments : | | 75,49,76,453 | 1,03,01,59,783 |
| Income on Investments. | | 1,07,66,669 | 2,14,17,820 | Closing Balances: | | | |
| Interest Receved : | | 6,52,431 | 65,39,656 | (a) Cash in hand | | 7,178 | 1,829 |
| Deposits & Advances | | 1,08,17,49,347 | 1,63,87,31,272 | (b) Bank Balances: | | | |
| Investments Encashed/matured | | 81,22,86,679 | 74,78,98,827 | (i) In current accounts | | 6,98,91,862 | 69,28,016 |
| Any other receipts: | | 2,67,13,78,479 | 2,75,11,22,933 | (ii) Savings accounts | | 4,38,36,079 | 12,85,18,729 |
| | | | | (iii) HEFA accounts | | 9,125 | 11,37,44,244 |
| **TOTAL** | | **8,32,49,12,564** | **9,07,86,18,407** | **TOTAL** | | **8,32,49,12,564** | **9,07,86,18,407** |