



ANNUAL REPORT  
AND  
AUDITED  
ACCOUNTS  
2019-20



**NATIONAL INSTITUTE OF  
TECHNOLOGY SILCHAR**







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ACCOUNTS  
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**NATIONAL INSTITUTE OF TECHNOLOGY  
SILCHAR**



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# From The Director's Desk

It is extremely delightful for me to present the Annual Report of National Institute of Technology Silchar, Assam for the year 2019-2020. Since 1977, the Institute is progressing gracefully in the field of engineering education along with science and management studies.

The Institute has a current strength of 3920 students including UG, PG and research scholars including a good number of foreign students. It gives me immense pleasure to mention that in the National Institute Ranking Framework (NIRF) - 2020, NIT Silchar has been ranked 46<sup>th</sup> among all the Engineering Institutes and 94<sup>th</sup> among all universities. The Institute is ranked 9<sup>th</sup> among 31 NITs in the country and 2<sup>nd</sup> in the North Eastern Region after IIT Guwahati. We are placed in the rank band of 11-25 in ATAL Ranking of Institutions on Innovation Achievements (ARIIA) - 2020 in the category 'Institute of National Importance, Central Universities and CFTIs'. We received a total of 23 funded R&D projects (8 International including 4 SPARC projects). A total number of 54 R&D projects are currently running with a financial support of Rs. 22.26 crores. A total of 5 consultancy services are currently going on with a financial outlay of Rs. 1.49 crores. Five UG programs out of 6 and 13 PG programs out of 15 are either accredited or under the process of accreditation by National Board of Accreditation (NBA). We hope that the remaining programs will be accredited soon in near future. We have two NABL accredited laboratories, one in Mechanical Engineering and the other in Civil Engineering. This was possible because of



the unconditional support, cooperation and contribution of all stake holders specially faculty members, staff, students and alumni of NIT Silchar.

The Annual Report is prepared based on the various activities of the Institute during the reporting year of 2019-2020. I express my sincere gratitude to the Ministry of Education (MoE) (erstwhile MHRD) and the State Government of Assam for their whole hearted support and co-operation. I am specifically thankful to all the members of BOG, FC, BWC, Senate, faculty, staff, students and alumni of NIT Silchar for their commitment and contribution towards the growth of the institute and I firmly believe that our efforts in various dimensions; from revising curriculum to quality research, from accreditation to research collaboration, from governance to alumni interactions are towards achieving our vision to be known as one of the most preferred institute in the country.



**Prof. Sivaji Bandyopadhyay**  
Director, NIT Silchar

### **Mission:**

The mission of NIT Silchar is to train and transform young men and women into responsible engineers, technologists and scientists to motivate them to attain professional excellence and to inspire them to proactively engage themselves for the betterment of the society.

### **Vision:**

The vision of NIT Silchar is to establish a unique identity by developing quality human and knowledge resources in diverse areas of technology to meet local, national and global economic and social needs as well as the needs of human society at large in self-sustained manner.

### **Objectives**

- To impart the best technical education at both the Undergraduate/postgraduate level so as to train the students to be able to boldly face a world that is being transformed by scientific and technological advances.
- To engage in research work beneficial to Industry as well as society and disseminate the research findings.
- To provide knowledge based technological services to satisfy the needs of the industry as well as society
- To help in buiding national capabilities in developing technologies, opening up new vistas in education and research.
- To promote Institute-Industry interaction through sponsored research by sponsoring faculty to work in Industry for short terms and by inviting people from Industry to deliver lecture etc.
- To promote national integration and impart value based education.



# NIT SILCHAR AT A GLANCE

## RANK

<i>NIRF</i> Rank 2020	46 <sup>th</sup> (In Engineering) 9 <sup>th</sup> (Among NITS) 94 <sup>th</sup> (Overall)
Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020 Category 'Institute of National Importance, Central Universities and CFTIs'	11-25 <sup>th</sup>
<i>Dataquest</i> Top T-Schools in India 2020	16 <sup>th</sup> (Overall) 3 <sup>rd</sup> (In East Zone) 9 <sup>th</sup> (Top T-Schools (Government))
<i>India Today</i> Best College Ranking 2020	26 <sup>th</sup> (Among Govt. Engineering Colleges) 5 <sup>th</sup> In (East Zone)
<i>THE WEEK</i> Best Engineering Colleges all India 2020	32 <sup>nd</sup>

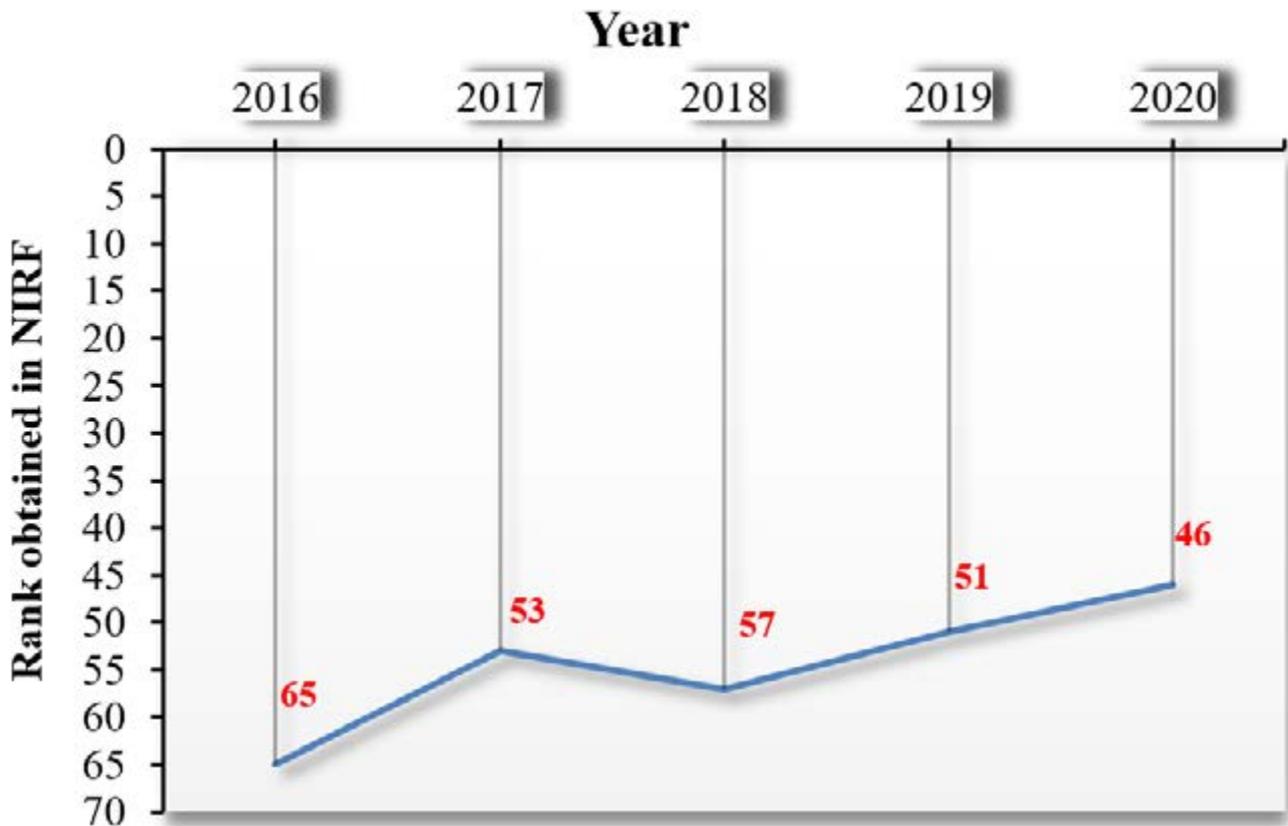


Fig:1 National Institutional Ranking Framework (NIRF-Engineering) of NIT Silchar

# DEPARTMENTS

B.Tech ■ M.Tech ◆ M.Sc ● MBA ● Ph.D ●

## Engineering

Civil Engineering	■	◆	●
Mechanical Engineering	■	◆	●
Electrical Engineering	■	◆	●
Electronics & Communication Engineering	■	◆	●
Computer Science & Engineering	■	◆	●
Electronics & Instrumentation Engineering	■	◆	●

## Science

Physics		●	●
Chemistry		●	●
Mathematics		●	●

## Humanities and Management

Humanities			●
Management Studies		●	●

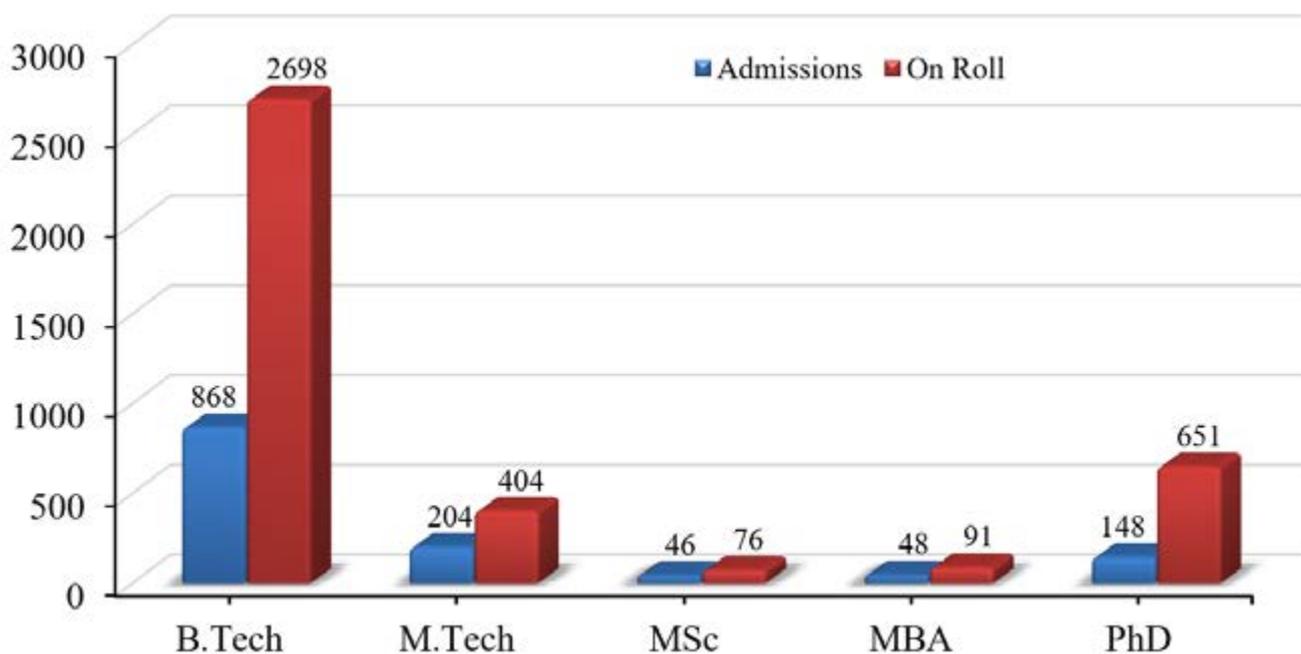


Fig:2 Student-admissions and On-Roll during 2019-20

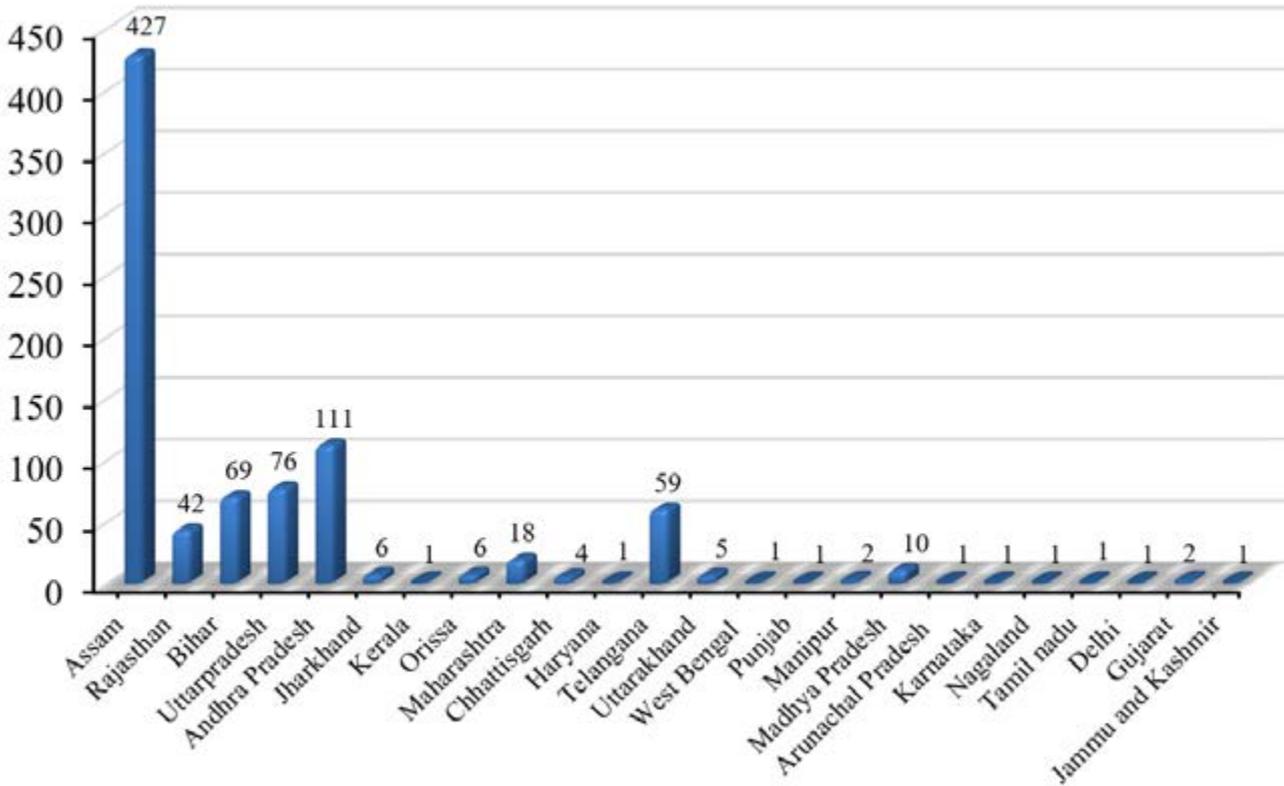


Fig:3 State-wise distribution of Indian students admitted in B.Tech course in 2019-20

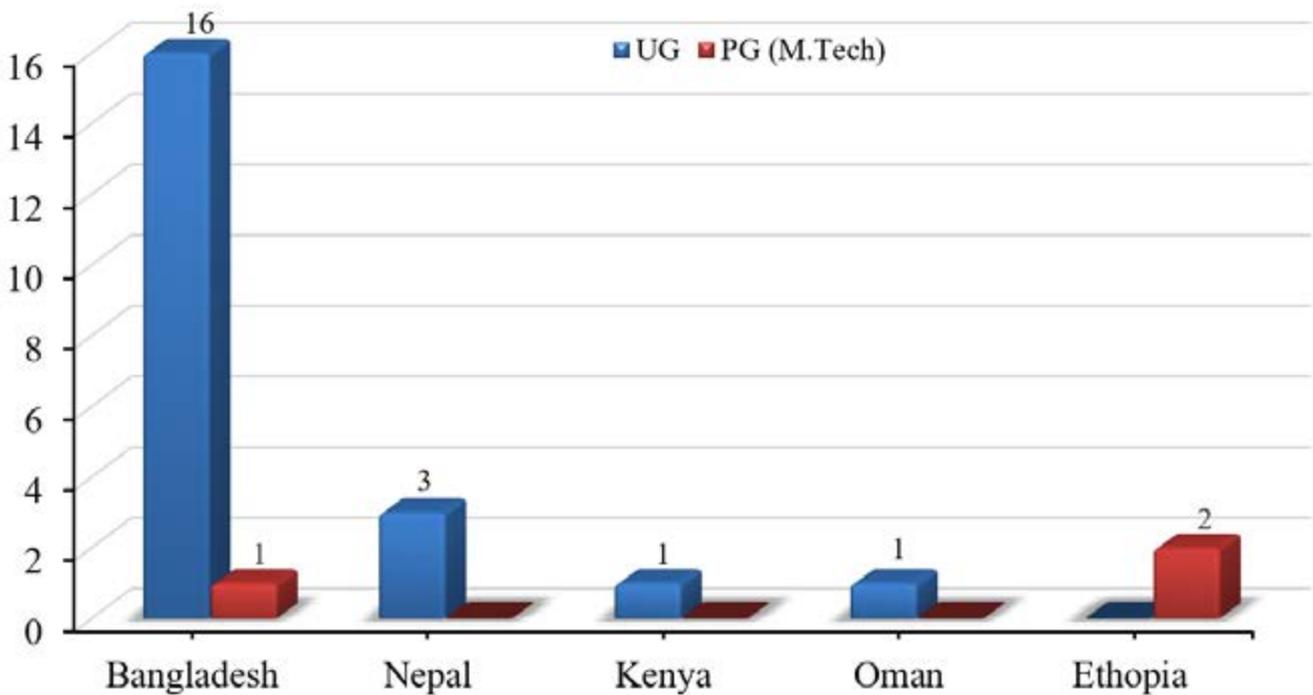


Fig:4 Foreign students admitted in 2019-20

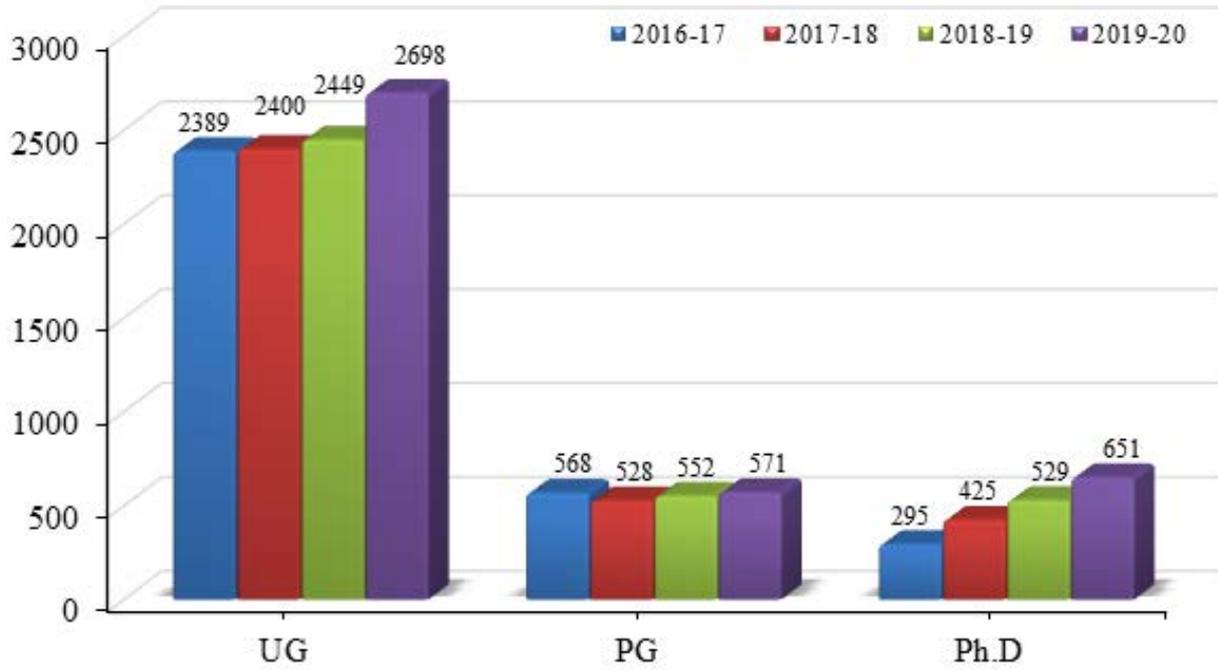


Fig:5 Growth in the enrolment of students (UG/PG/Ph.D) during the last four years i.e from 2016-2020.

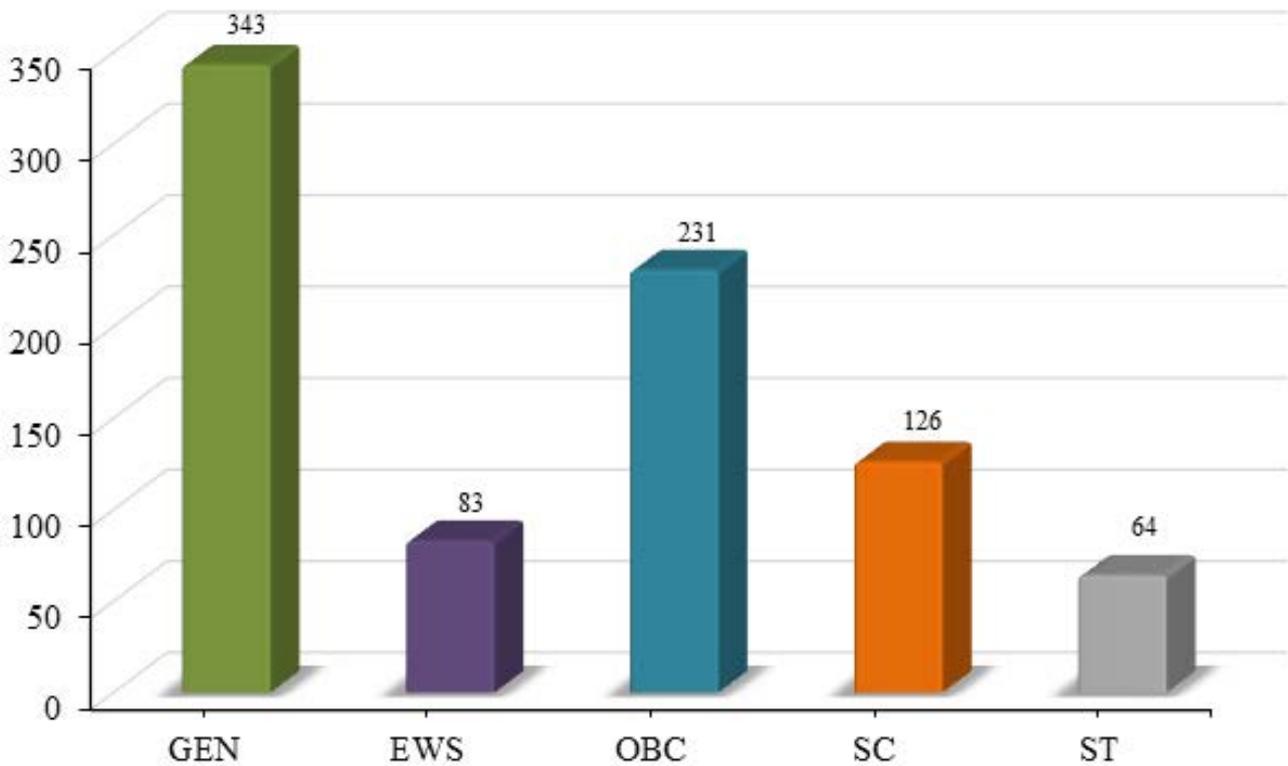


Fig:6 Category wise admission count of UG students in 2019-2020

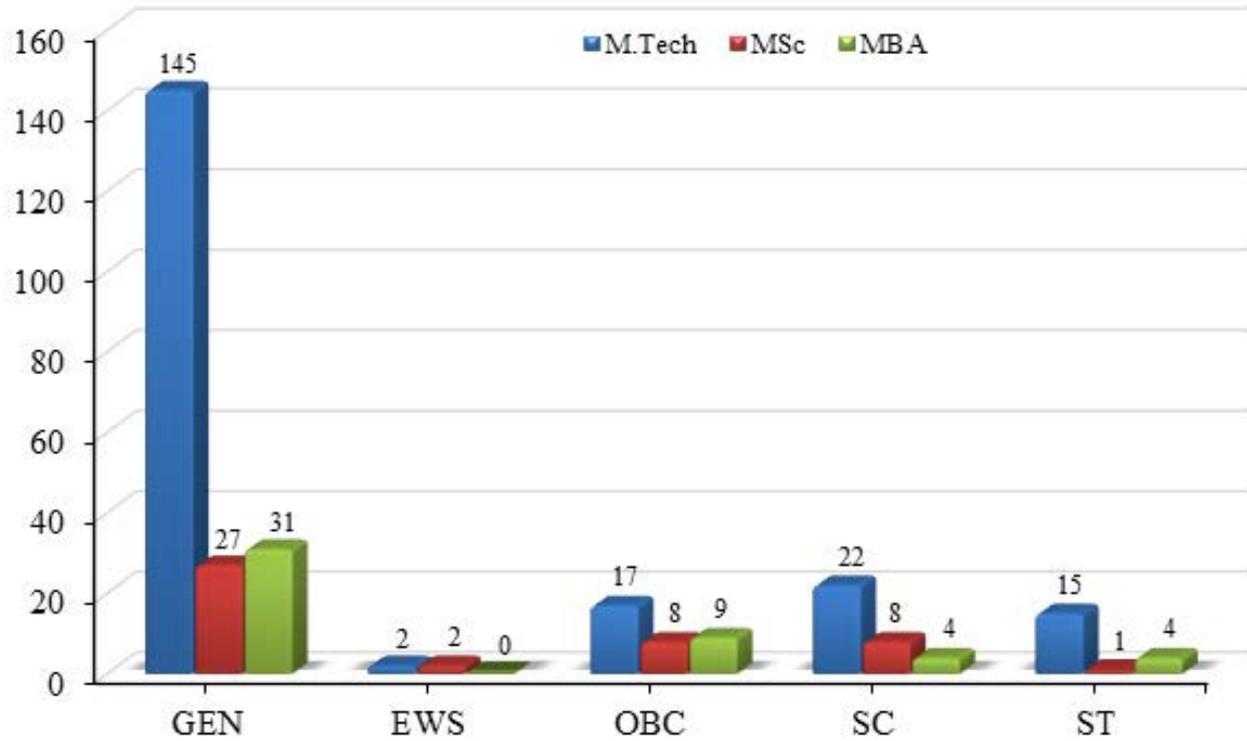


Fig:7 Categorywise admission count of PG students in 2019-2020

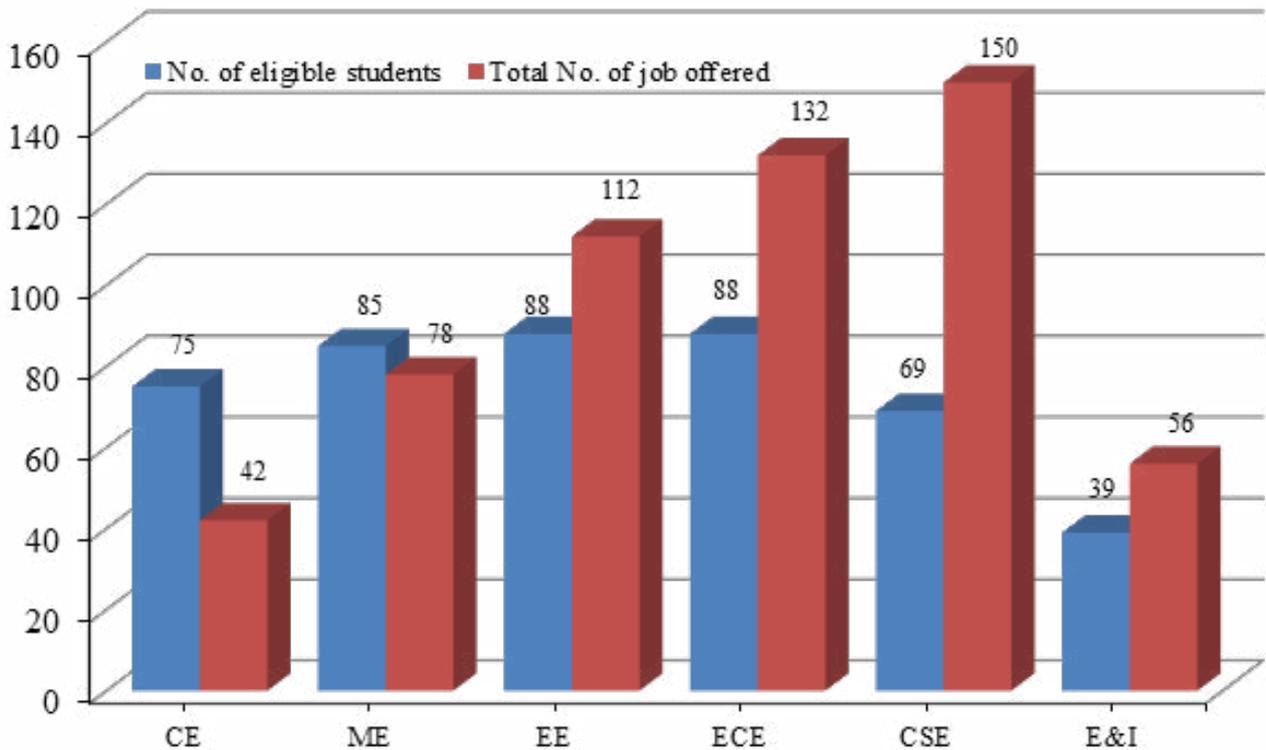


Fig:8 Placement statistics of B.Tech students in 2019-20

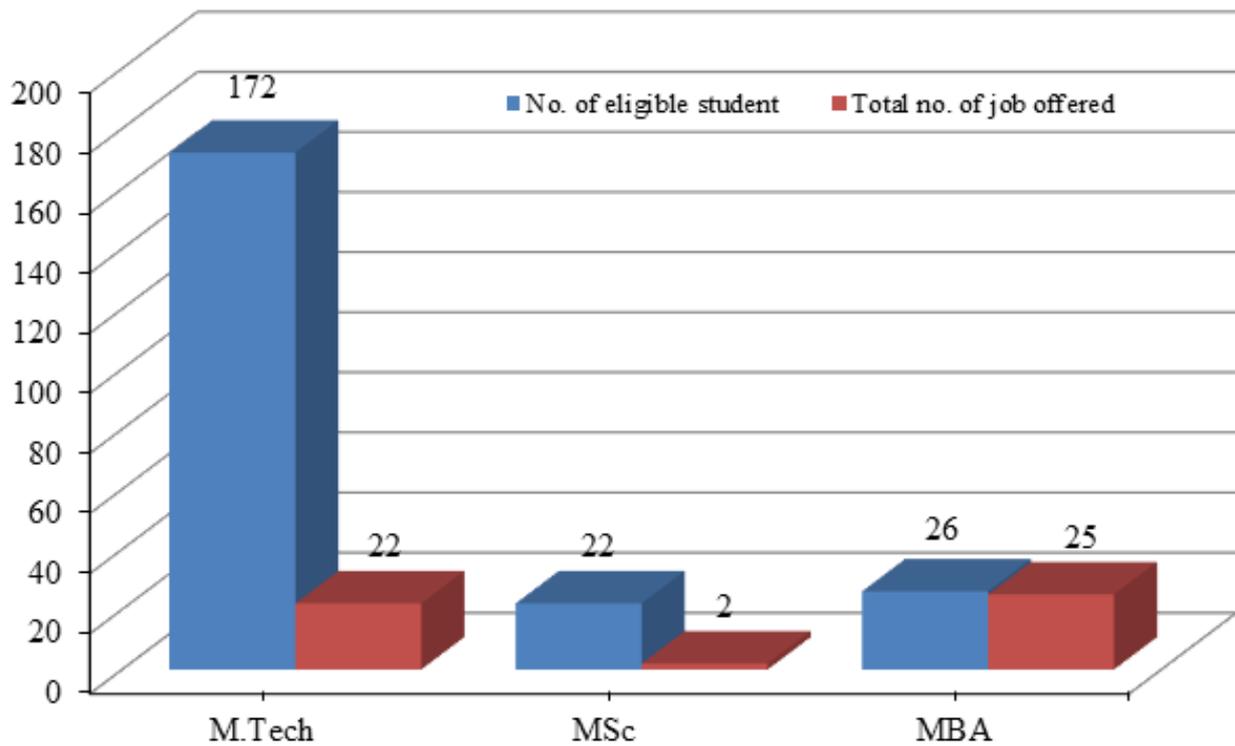


Fig:9 Placement statistics of PG students in 2019-20

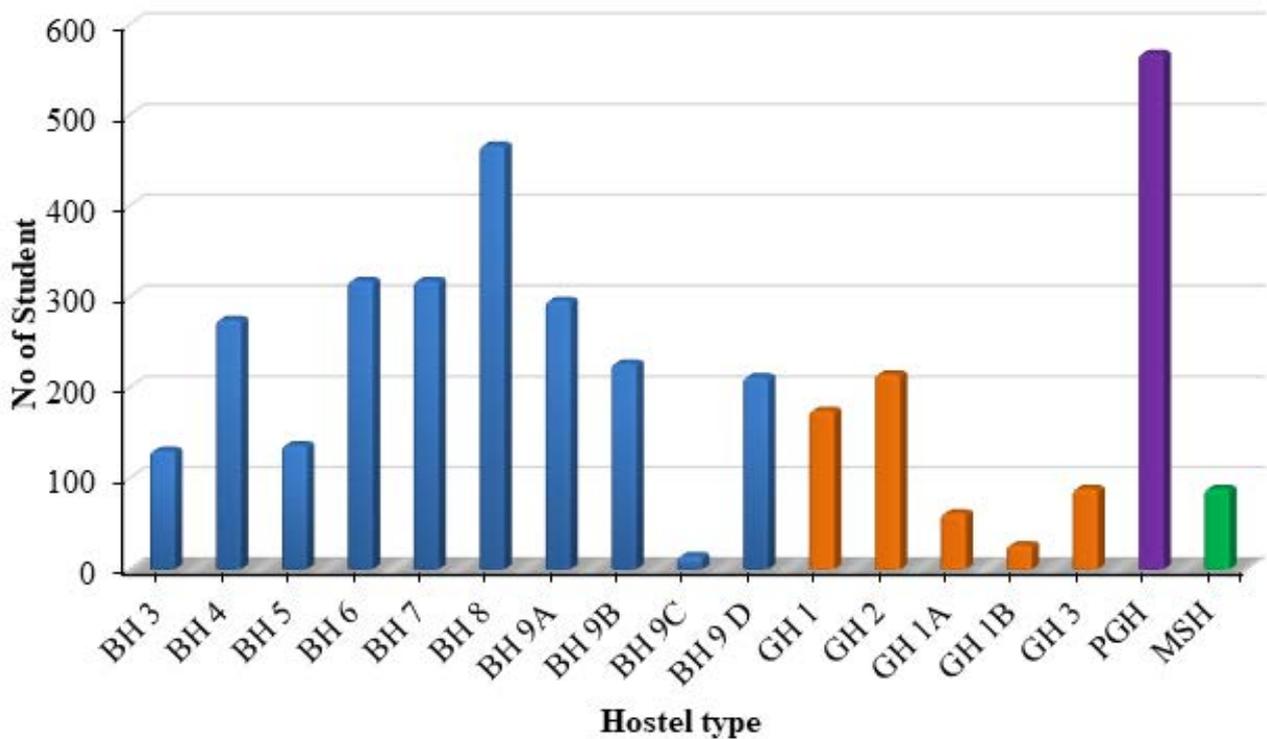


Fig:10 Number of students resided in hostel during 2019-20 (\*Note BH = Boys hostel; GH = Girls hostel; PGH = Post-Graduate hostel; MSH = Married scholar hostel; BH 1 & BH 2 are under renovation work)

## PUBLICATIONS

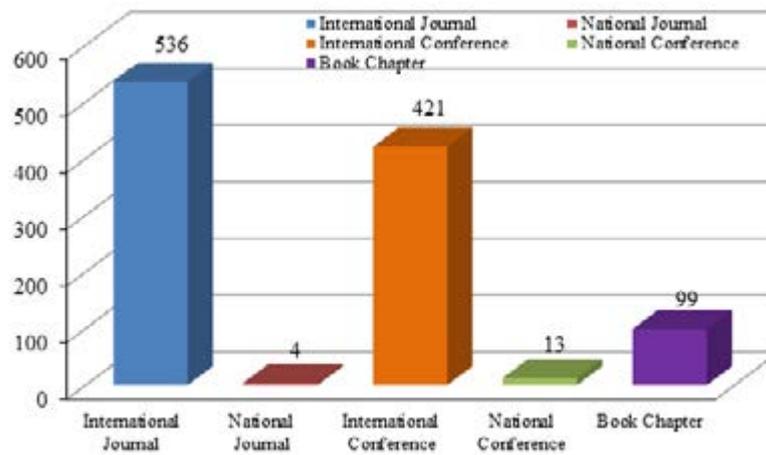


Fig:11 Publication details of NIT Silchar during 2019-20

## LIBRARY

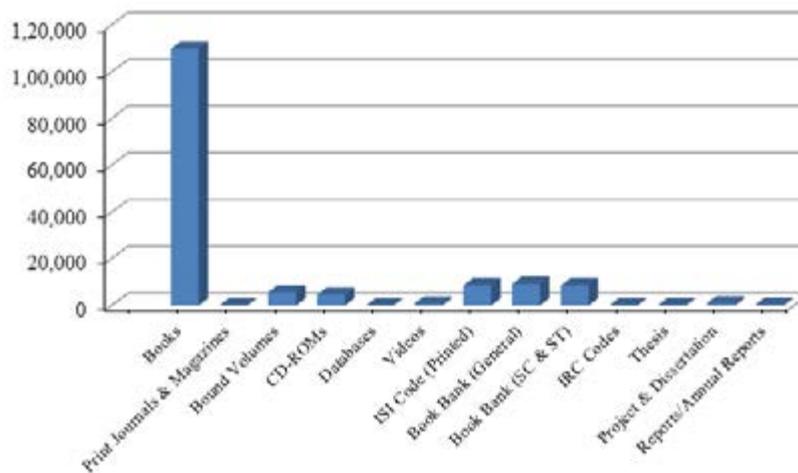


Fig:12 Library resource statistics during 2019-2020

## FACULTY/STAFFS

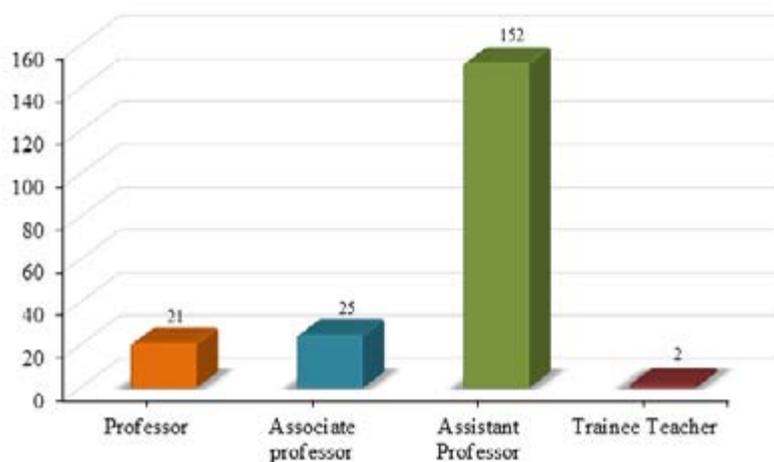


Fig:13 Faculty in position during 2019-20

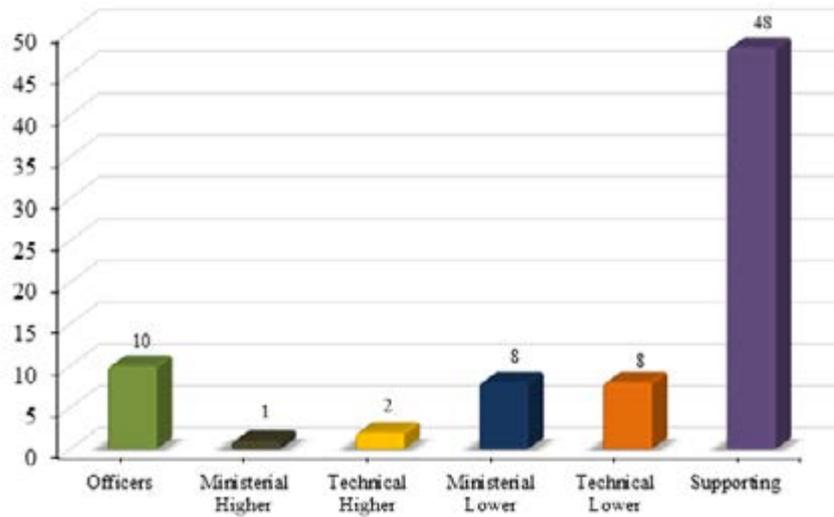


Fig:14 Non-teaching staff in position during 2019-20

## FINANCE

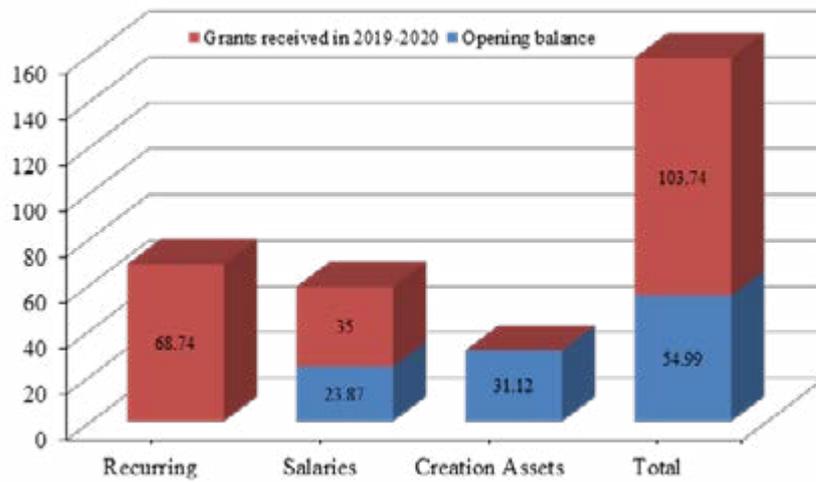


Fig:15 Total availability of fund during the year 2019-20 (In Crores)

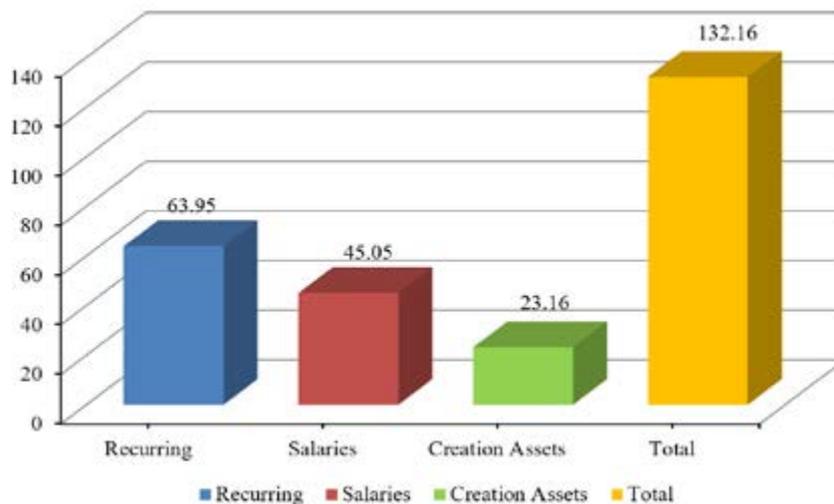


Fig:16 Total fund utilized during the year 2019-20 (In Crores)

# Introduction

## Historical Background

In the fifties, the Government of India decided to establish Regional Engineering Colleges (RECs) under the Quality Technical Education Policy – one each in every major state – with the prime objective of imparting quality technical education throughout the country and to foster national integration. These Regional Engineering Colleges were established as joint ventures of the Government of India and the respective State Governments. Assam is considered as the flag bearer of Northeast India and so in the year 1967, the 15<sup>th</sup> REC was officially established in Silchar. However, it took almost a decade for REC Silchar to start its academic programmes due to various constraints.

The first batch of students was admitted in 1977 in the BE program in 3 branches of Engineering namely, Civil Engineering, Mechanical Engineering, and Electrical Engineering. The total intake in the first batch was 60 students. The adequate infrastructure facilities consisted of only a part of a hostel, two Assam type buildings (for classes and administration), a workshop building, seven faculty quarters, and a few staff quarters when the College started its academic programs in November 1977. Initially, under the guidance of the then Principal Dr. H. R. Chablani, the classes started with only four full-time faculty members. The College started its academic program with affiliation from Gauhati University. The first batch of BE students was awarded degrees in the year 1982-83. Subsequently, two more branches, namely, Electronics and Communication Engineering and Computer Science and Engineering started functioning from the year 1983 and 1987 respectively. The affiliation was later shifted to Assam University in 1994.

On the basis of the report of the High Powered Joint Expert Committee of AICTE and UGC under the chairmanship of Prof. S. K. Joshi, Director General of Council for Scientific and Industrial Research (CSIR), Regional Engineering College Silchar has been transformed and upgraded to National Institute of Technology, Silchar with the status of Deemed University on 28<sup>th</sup> June 2002. The Institute has been taken over by the Government of India and subsequently made into a fully funded Central Government Autonomous Institution. This ensures a better financial status for NIT Silchar and will accelerate its growth ensuring that it becomes one of the premier technological institutes of not just the North East but the entire nation. The Institute has remodeled its curriculum and academic activities in line with that of the IITs. With its Deemed University status, the institute started awarding degrees from the year 2002 and the first convocation of the Institute was held on 16<sup>th</sup> February 2004. The Government of India declared the Institute as an Institute of National Importance by enacting the National Institutes of Technology Act 2007.

## Location

The Institute is situated at Silchar (latitude 24.50N, longitude 92.510E, at a height of 114.68m above MSL), at a distance of about eight kilometers to the south from the heart of the town on the Silchar–Hailakandi road in Cachar District of Assam. Silchar is well connected to the rest of the country via airways, railways, and roadways. The Institute boasts of state-of-the-art academia and research infrastructure, lecture theatres, laboratories, resource-centers, sports grounds, open-air theatre, hospital, food-courts and many more being embraced by the greenery, expansive tea gardens, and lakes.

## Campus

The campus of the Institute is spread over an area of 540 acres, set amidst a sprawling landscape of natural quietness, bordered by expansive tea gardens. It presents a spectacle of harmony in the form of modern architecture, natural beauty, and picturesque surroundings.

The campus area has been organized into three functional sectors:

- Hostel, amenities, and activity centers for students
- Academic blocks and administrative block
- Residential sectors for the staff

The instructional buildings are strategically located between the hostels and staff quarters to provide easy access.



# THE COUNCIL, BOG AND OTHER COMMITTEE

## The Council and its composition

Sl. No	Members	Position
1	The Minister in charge of the Ministry or Department of the Central Government having administrative control of the technical education	Chairman (ex-officio)
2	The Secretary to the Govt. of India in charge of the Ministry or Department of the Central Government having administrative control of the technical education	Vice-Chairman (ex-officio)
3	The Chairperson of every Board	Member (ex-officio)
4	The Director of every Institute	Member (ex-officio)
5	The Chairman, University Grant Commission	Member (ex-officio)
6	The Director-General, Council for Scientific & Industrial Research	Member (ex-officio)
7	Secretary, Department of Bio-Technology, Govt. of India	Member (ex-officio)
8	Secretary, Department of Atomic Energy, Govt. of India	Member (ex-officio)
9	Secretary, Department of Information Technology, Govt. of India	Member (ex-officio)
10	Secretary, Department of Space, Govt. of India	Member (ex-officio)
11	The Chairman, All India Council for Technical Education	Member (ex-officio)
12	Not less than three, but not more than five persons to be nominated by the Visitor, at least one of whom shall be a woman, having special knowledge or practical experience in respect of education, industry, science or technology	Member
13	Three Members of Parliament, of whom two shall be chosen by the House of People and one by the Council of States	Member
14	Two Secretaries to the State Govt. from amongst the Ministries or departments of that government dealing with technical education where the Institutes are located	Member (ex-officio)
15	The Financial Advisor, dealing with the Human Resource Development Ministry or Department of the Central Government	Member (ex-officio)
16	One officer not below the rank of Joint Secretary to the Govt. of India in the Ministry or Department of Central Government having administrative control of the technical education	Member-Secretary (ex-officio)

## Board of Governors

Name and Address	Position
Prof. Sivaji Bandyopadhyay, Director NIT Silchar	Chairperson (Officiating)
Shri Madan Mohan, ADG(HE), Dept. of Higher Education, MHRD, GOI, Shastri Bhawan, New Delhi-110 001	Member
Ms. Darshana M Dabral, JS & FA, Integrated Finance Division, Dept. of Higher Education, MHRD, GoI	Member
Prof. S. K. Kakoty, Professor, IIT Guwahati- 781039	Member

Name and Address	Position
Shri Basant Kumar Khetan, Pro-Chancellor, Kaziranga University	Member
Shri Abhijit Barooah, Managing Director, Premier Cryogenics Ltd., Mairam Dewan Path, Chandmari, Guwahati – 781 003	Member
Prof. F. A. Talukdar, Professor, Department of Electronics & Communication Engineering, NIT Silchar	Member
Dr. M. K. Bera, Assistant Professor, Department of Electronics & Instrumentation Engineering, NIT Silchar	Member
Prof. A. K. Barbhuiya, Registrar, NIT Silchar (up to 31.12.2019) Prof. Asim Roy, Registrar (i/c), NIT Silchar (from 01.01.2020)	Secretary

### Finance Committee

Name and Address	Position
Prof. Sivaji Bandyopadhyay, Director, NIT Silchar	Chairman (Acting)
Shri Madan Mohan, ADG(HE), Dept. of Higher Education, MHRD, GOI, Shastri Bhawan, New Delhi-110 001	Member
Ms. Darshana M Dabral, JS & FA, Integrated Finance Division, Dept. of Higher Education, MHRD, GOI, Shastri Bhawan, New Delhi-110001.	Member
Prof. S. K. Kakoty, Dean of Infrastructure, Planning and Management, IIT Guwahati- 781039	Member
Prof. F. A. Talukdar, Professor, Department of Electronics & Communication Engineering, NIT Silchar	Member
Prof. A. K. Barbhuiya, Registrar & Member Secretary, NIT Silchar (up to 31.12.2019) Prof. Asim Roy, Registrar (i/c) & Member Secretary, NIT Silchar (from 01.01.2020)	Member Secretary

### Building and Works Committee

Name and Address	Position
Prof. Sivaji Bandyopadhyay, Director NIT Silchar	Chairman
Director (NITs), Dept. of Higher Education, MHRD, GOI, Shastri Bhawan, New Delhi-110001.	Member
Shri D. K. Singh, Dy. Secretary (IFD), Dept. of Higher Education, MHRD, C-Wing, Shastri Bhawan, New Delhi-110 001.	Member
Dr. Parthajit Roy, Board Nominee, Civil Engineering Department, NIT Silchar	Member
Prof. A. I. Laskar, Dean (P&D), Civil Engineering Department, NIT Silchar	Member
Superintendent Engineer, PWD, Silchar Building Circle, Silchar 1	Member
Executive Engineer (Electrical), Office of Chief Engineer, PWD (Bldng), Assam	Member
Prof. A. K. Barbhuiya, Registrar & Member Secretary, NIT Silchar (up to 31.12.2019) Prof. Asim Roy, Registrar (i/c) & Member Secretary, NIT Silchar (from 01.01.2020)	Member Secretary

### The Senate

Name and Address	Position
Prof. Sivaji Bandyopadhyay, Director NIT Silchar	Chairman
Prof. Fazal A. Talukdar, Professor of ECE Deptt., NIT Silchar	Member

Name and Address	Position
Prof. K. M. Pandey, Professor of Mechanical Engineering Deptt., NIT Silchar	Member
Prof. Nidul Sinha, Professor of Electrical Engg. Deptt., NIT Silchar	Member
Prof. S. Baishya, Professor of ECE Deptt., NIT Silchar	Member
Prof. Gurudas Das, Professor of HSS Deptt., NIT Silchar	Member
Prof. A. K. Dey, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. P. Choudhury, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. S. Choudhury, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. R. D. Misra, Professor of Mechanical Engineering Deptt, NIT Silchar	Member
Prof. A. I. Laskar, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. D. Chakraborty, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. M. A. Ahmed, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. B. K. Roy, Professor of Electrical Engineering Deptt., NIT Silchar	Member
Prof. P. K. Patowari, Professor of Mechanical Engineering Deptt., NIT Silchar	Member
Prof. U. Kumar, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. Saurabh Choudhury, Professor of Electrical Engineering Deptt., NIT Silchar	Member
Prof. N. B. Dev Choudhury, Professor of Electrical Engineering Deptt., NIT Silchar	Member
Prof. Asim Roy, Professor of Physics Deptt., NIT Silchar	Member
Prof. A. K. Barbhuiya, Professor of Civil Engineering Deptt., NIT Silchar	Member
Prof. N. C. Shivaprakash, Professor, Instrumentation & Applied Physics Deptt., IISC Bangalore	Member
Prof. S. K. Deb, Professor, CE Deptt., IIT Guwahati	Member
Prof. (Mrs.) R. R. Dhamala, Professor, Political Science Deptt., Assam University, Silchar	Member
Prof. A. K. Barbhuiya, as Registrar & Secretary, Senate (up to 31.12.2019) Prof. Asim Roy, as Registrar (i/c) & Secretary, Senate (from 01.01.2020)	Secretary

### Internal Complaint Committee

Name	Department	Designation	Role in ICC
Dr. (Mrs.) Ujjwala Baruah	Computer Science and Engineering	Assistant Professor	Presiding Officer
Dr. Munmun Khanra	Electronics and Instrumentation Engineering	Assistant Professor	Member Secretary
Dr. (Mrs) Banani Basu	Electronics and Communication Engineering	Assistant Professor	Member
Dr. (Mrs) Nirmali Borthakur	Civil Engineering Department	Assistant Professor	Member
Prof. R. D. Mishra	Mechanical Engineering	Professor	Member
Smt. Krishnamati Sinha	Assistant Librarian		Member
Smt. Sanchita Acherjee	NGO		Member

**Deans**

Sl No.	Name	Department	Designation	Dean
1	Dr. Srimanta Baishya	Electronics and Communication Engineering	Professor	Academic
2	Dr. Rahul Dev Mishra	Mechanical Engineering	Professor	SW
3	Dr. Mokaddes Ali Ahmed	Civil Engineering	Professor	R&C
4	Dr. Aminul Islam Laskar	Civil Engineering	Professor	P&D
5	Dr. P. K. Patowari	Mechanical Engineering	Professor	FW
6	Dr. K. L. Baishnab	Electronics and Communication Engineering	Associate Professor	Alumni

**Associate Deans**

Sl No.	Name	Department	Designation	Assoc. Dean
1	Dr. Arup Kumar Goswami	Electrical Engineering	Associate Professor	Academic
2	Mr. Darpahari Das	Mechanical Engineering	Associate Professor	Academic
3	Dr. Sujit Nath	Mechanical Engineering	Assistant Professor	Academic
4	Dr. Prashanth J	Civil Engineering	Assistant Professor	P&D
5	Dr. Vara Laxmi M Prasad	Civil Engineering	Assistant Professor	P&D
6	Dr. Dulal Chandra Das	Electrical Engineering	Assistant Professor	P&D
7	Dr. Kaushik Guha	Electronics and Communication Engineering	Assistant Professor	SW
8	Dr. Wasim Arif	Electronics and Communication Engineering	Assistant Professor	SW
9	Dr. Pranjit Barman	Chemistry	Associate Professor	SW
10	Dr. Ranjit Nair	Physics	Assistant Professor	R&C
11	Mrs. Madhumita Paul	Electronics and Communication Engineering	Associate Professor	FW

**Head of the Departments**

Sl No.	Name	Department	Designation
1	Dr. Parthajit Roy	Civil Engineering	Associate Professor
2	Dr. Arup Bhattacharjee (Up to 03-07-2019) Dr. Samir Kumar Borgohain (From 04-07-2019)	Computer Science and Engineering	Assistant Professor
3	Dr. Nalin Behari Dev Choudhury	Electrical Engineering	Professor
4	Dr. Fazal Ahmed Talukdar	Electronics and Communication Engineering	Professor
5	Dr. S. H. Laskar	Electronics and Instrumentation Engineering	Associate Professor
6	Dr. Agnimitra Biwas	Mechanical Engineering	Assistant Professor
7	Dr. B. H. Shambharkar (Up to 13-08-2019) Dr. Sidhartha Shankar Dhar (From 14-08-2019)	Chemistry	Assistant Professor/ Associate Professor

SI No.	Name	Department	Designation
8	Dr. Mausumi Sen	Mathematics	Associate Professor
9	Dr. Asim Roy	Physics	Professor
10	Dr. N. Bhupendra Singh (Up to 18-08-2019) Dr. Reena Senasam (From 19-08-2019)	Humanities and Social Sciences	Associate Professor
11	Dr. Ashim Kumar Das	Management Studies	Assistant Professor

# EDUCATION SYSTEM

## Undergraduate (B.Tech)

### Admission Procedure

Admissions to the first semester of all Undergraduate courses are made on the basis of seats allocated by the Central Seat Allocation Board (CSAB) from the list of candidates selected by all India JEE (Main). Besides, a specified number of foreign nationals/ NRIs selected under the policy laid down by Govt. of India, are admitted directly to the 1st year of the courses.

### Academic Calendar

The academic session is divided into two semesters each of approximately 17 weeks duration, an Odd Semester (July-December), and an Even Semester (January-June). The JEE (Main) selected candidates take admission in the first semester and on successful completion of the semester register for the subsequent semester on the dates specified in the Academic Calendar. The Senate approves the Academic Calendar consisting of schedules of activities for a session inclusive of dates for registration, mid-semester, and end-semester examinations, inter-semester breaks, etc. well in advance of a session. The Academic Calendar usually provides a total of about 90 working days in each semester.

### Programme Structure

The duration of the programme leading to a B.Tech. Degree is four years. The curricula for the different degree programmes as proposed by the respective departments and recommended by the Departmental Undergraduate Programme Committee (DUPC) shall have the approval of the Senate. The departments would also prepare the syllabus of each subject containing the scope of studies and detailed instructions to be imparted which must have the approval of the Senate. All the subjects would have a lecture-tutorial-practical (laboratory/sessional) component (L-T-P) to indicate the contact hours. The tutorial (T) or practical/ Sessional (P) component may be absent in certain courses. Separate laboratory subjects (O-O-P) may exist in certain cases as decided by the Senate on the recommendation of the DUPC. All the subjects will have a credit count 'C'. Teaching of subjects will be reckoned in terms of credits.

One hour lecture or tutorial class is designated as 2 credits while a one-hour practical class is designated as one credit. In each of the first year/ second year, there shall be non-credit compulsory Extra Academic Activity (EAA). The Extra Academic Activity may be N.S.S., N.C.C., or any other physical education. The curriculum for B.Tech The programme includes compulsory Industrial training of 6-8 weeks duration after the 6<sup>th</sup> semester in any reputed industry, research organization, IIT's, and other reputed institutions which are assessed in the 7<sup>th</sup> Semester. The Project work will carry a total of 15-20 credits.

### Registration and Assessment

Students are registered in every semester irrespective of the number of credits they have earned at the end of every year. However, if a student fails to complete his/her courses in the stipulated first four years (8 semesters), the student is required to vacate the hostel and complete the remaining part of credits from outside.

- If a student fails in a course, he/she will have to repeat the course in the appropriate semester when the course is on offer. He/she may prefer to register that course and attend all classes and offer him/her for normal evaluation or the student may prefer to appear the mid-semester and end-semester examination and his/her internal evaluation would be carried forward from the semester where he/she was regularly registered.
- A student may change an elective course within the time-frame mentioned in the academic calendar. If a student fails in an elective course, he/she may change the elective when he/she re-registers for the elective in the appropriate semester.
- The duration of the UG programme is normally four years. However, academically weak students are permitted to complete the programme in six years from the date of first registration.
- A student is permitted to register for a few DD graded courses if the CPI of the student falls below 6.0 for improvement.

- e) If a student fails to clear a subject in the end semester examination, then he/she is permitted to clear the same in the re-examination normally

conducted within the first 15 days of the next semester. No reduction in grade is invoked if a student clears the subject in the re-examination.

## Postgraduate (M.Tech / M.Sc / MBA)

The M.Tech regulations provide the necessary guidelines for the two years of regular Postgraduate programme and three years part-time programme in Engg. Disciplines. Similarly, the M.Sc./MBA regulations provide guidelines for 2 years (4 semesters) M.Sc./MBA course.

### Admission Procedure

#### M.Tech

The courses leading to M.Tech degree are open to candidates who have obtained the requisite qualification with 60% marks or 6.5 CGPA in aggregate in the qualifying examination. Statutory relaxation in the eligibility criterion is provided to candidates belonging to SC/ST communities. Admission for the GATE qualified candidates is made through Common Admission Process called Central Counselling for M.Tech /M.Plan/M.Arch (CCMT). When GATE qualified candidates are not available, admission is done on the basis of merit as decided by the Institute.

#### M.Sc (Chemistry, Mathematics, Physics)

Admission to M.Sc. courses in Chemistry, Mathematics, and Physics is based on career marking, written test, and interview. Applicants must have secured at least 50% marks or a CPI of 5.5 in aggregate at B.Sc. level and preference is given to students having honours in the applied discipline. Statutory relaxation in the minimum eligibility criterion is provided to candidates belonging to SC/ST communities.

#### MBA

The minimum eligibility criterion for admission to MBA is a Bachelor degree in any branch of Engg. /Science/

Humanities etc. with 50% marks or 5.5 CGPA and valid CAT/MAT/ CMAT scores. Final selection is made on the basis of Group Discussion and Personal Interview conducted at the Institute.

### Programme Structure

Teaching for the courses is reckoned in credits. Due credit is given to lecture, tutorial (theory), and practical components for a given subject. Normally for M.Tech, the first two semesters have a theory and practical (laboratory) subjects while for M.Sc/ MBA, theory courses are taught in all the semesters.

The 3<sup>rd</sup> and 4<sup>th</sup> semester mostly constitute the project work for M.Tech While for M.Sc/MBA, the project work spans over the fourth semester only. MBA students undergo a compulsory summer internship after the second semester. Project work and Seminars are an essential part of the curricula. Class tests, assignments, tutorials, viva-voce, laboratory assignments, etc., are the constituent components of the continuous assessment process and a student must fulfill all these requirements as prescribed by the teacher/coordinator of the subject.

### Registration

Students in Postgraduate programmes register for the course at the beginning of each semester. These programmes do not have summer/re-examinations. Students securing 'F' grade in any course appear the exam in the following session. Attendance in all classes is compulsory and assessment and evaluation patterns are similar to an undergraduate course.

## Research Programme (Ph.D)

Students for admission to Ph.D Programme in Engg. Departments must satisfy one of the following criteria:

1. Master Degree in Engg. /Technology or equivalent in an appropriate area with a minimum CPI of 6.5 or equivalent (60% of marks).
2. Bachelor Degree in Engg. /Technology with an excellent academic record and with a CPI of at least 8 or equivalent (70% of marks).
3. Students for admission to the Ph.D Programme in Science Departments must have a Master degree in relevant discipline with a first-class or a minimum of 60% of marks or equivalent. Students for admission to the Ph.D Programme in Humanities and Social sciences (HSS) Departments must have a Master degree with a minimum of 55% marks or equivalent. The selection of candidates is made on the basis of an interview conducted by the department concerned.

# Academic Programmes

## Courses Offered

- i. A four-year B.Tech Programme in the following branches of Engineering and Technology, is offered during the period.
  - ❖ Civil Engineering
  - ❖ Mechanical Engineering
  - ❖ Electrical Engineering
  - ❖ Electronics & Communication Engineering
  - ❖ Computer Science & Engineering
  - ❖ Electronics & Instrumentation Engineering
- ii. A two- year M.Tech M.Sc & MBA programmes in the following branches of Engineering and Technology/ Science/ Management is offered during the period.

### **M.Tech (Under Civil Engg. Department)**

- ❖ Water Resources Engineering
- ❖ Geotechnical Engineering
- ❖ Transportation Engineering
- ❖ Structural Dynamics & Earthquake Engineering
- ❖ Structural Engineering

### **M.Tech (Under Electrical Engg. Department)**

- ❖ Power and Energy Systems Engineering
- ❖ Control & Industrial Automation

### **M.Tech (Under Mechanical Engg. Department)**

- ❖ Thermal Engineering
- ❖ Design & Manufacturing
- ❖ CAD-CAM & Automation
- ❖ Materials & Manufacturing Technology

### **M.Tech (Under Electronics & Communication Engg. Department)**

- ❖ Microelectronics & VLSI Design
- ❖ Communication & Signal Processing Engg
- ❖ **M.Tech** in Computer Science & Engg. (Under Computer Science & Engg. Department)
- ❖ **M.Tech** in Instrumentation Engg. (Under Electronics & Instrumentation Engg. Department)
- ❖ **M.Sc** in Applied Chemistry (Chemistry Department)
- ❖ **M.Sc** in Applied Physics (Under Physics Department)
- ❖ **M.Sc** in Mathematics (Under Mathematics Department)
- ❖ **MBA** (Under Management Studies Department)

## B.TECH ENROLLMENT

The following table shows the semester-wise, course wise enrolment with sex and caste breakup for the Year 2019-20.

Sem	Branch	Open (Breakup)		Open EWS (Breakup)		OBC (Break up)		SC (Break up)		ST (Breakup)		PH		Total Enrolment
		Boys	Girls	Boys	Girls	Girls	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
1 <sup>ST</sup> & 2 <sup>ND</sup>	CE	50	10	13	2	33	8	18	3	9	2	1 OPH 1 STPH	–	150
	ME	55	11	13	1	35	7	18	4	10	2	1 OPPH	–	157
	EE	50	12	14	2	34	7	20	4	9	3	1 OPH 1 OBPH	–	157
	ECE	53	12	14	2	34	7	19	5	10	2	2 OPH 1 OBPH	–	161
	CSE	57	14	13	2	34	7	19	4	8	3	3 OPH 1 OBPH	–	165
	E&I	26	5	6	1	18	4	10	2	4	1	1 OPH	–	78
	<b>Total</b>	<b>291</b>	<b>64</b>	<b>73</b>	<b>10</b>	<b>188</b>	<b>40</b>	<b>104</b>	<b>22</b>	<b>50</b>	<b>13</b>	<b>13</b>	<b>–</b>	<b>868</b>
3 <sup>RD</sup> & 4 <sup>TH</sup>	CE	39	10	NA		33	5	14	4	6	3	1 OPH 2 OBPH 1 SCPH	–	118
	ME	52	9	NA		33	6	15	3	8	2	–	–	128
	EE	38	7	NA		31	4	16	3	6	2	2 OPH 1 OBPH	–	110
	ECE	54	9	NA		30	5	16	2	7	2	2 OPH	–	127
	CSE	56	13	NA		31	5	13	3	8	2	1 OBPH	–	132
	E&I	22	3	NA		15	2	7	3	3	2	–	–	57
	<b>Total</b>	<b>261</b>	<b>51</b>	<b>NA</b>		<b>173</b>	<b>27</b>	<b>81</b>	<b>18</b>	<b>38</b>	<b>13</b>	<b>10</b>		<b>672</b>
5 <sup>TH</sup> & 6 <sup>TH</sup>	CE	47	2	NA		29	1	13	4	8	1	10PPH 2OBPH		108
	ME	50	2	NA		36	1	16	–	6	–	20PPH 10BPH	–	114
	EE	41	8	NA		29	4	14	1	7	–	10PPH	10PPH	106
	ECE	53	7	NA		34	2	14	2	8	1	–	–	121
	CSE	44	8	NA		27	2	13	–	3	3	10PPH	–	101
	E&I	24	2	NA		13	01	07	2	4	1	–	–	54
	<b>Total</b>	<b>259</b>	<b>29</b>	<b>NA</b>		<b>168</b>	<b>11</b>	<b>77</b>	<b>9</b>	<b>36</b>	<b>6</b>	<b>8</b>	<b>1</b>	<b>604</b>
7 <sup>TH</sup> & 8 <sup>TH</sup>	CE	38	4	NA		29	3	14	1	4	3	1 OPPH 1 OBPH 1 SCPH	–	99
	ME	41	4	NA		32	1	17	–	7	3	2 OPPH 2 OBPH	–	109
	EE	43	7	NA		27	2	14	0	6	3	2 OPPH	2 OBPH	106
	ECE	51	4	NA		26	3	14	3	4	–	1 SCPH	–	106
	CSE	37	8	NA		21	2	13	–	6	–	10PPH 1 OBPH	–	89
	E&I	16	4	NA		12	3	3	1	4	–	10PPH 10BPH	–	45
	<b>Total</b>	<b>226</b>	<b>31</b>	<b>73</b>	<b>10</b>	<b>147</b>	<b>14</b>	<b>75</b>	<b>5</b>	<b>31</b>	<b>9</b>	<b>14</b>	<b>2</b>	<b>554</b>
<b>Grand Total</b>	<b>1037</b>	<b>175</b>	<b>73</b>	<b>10</b>	<b>676</b>	<b>92</b>	<b>337</b>	<b>54</b>	<b>155</b>	<b>41</b>	<b>45</b>	<b>3</b>	<b>2698</b>	

CE= Civil Engineering, ME=Mechanical Engineering, EE= Electrical Engineering, ECE=Electronics & Communication Engineering, CSE= Computer Science & Engineering, E&I= Electronics & Instrumentation Engineering.

The following is a summary table of the number, B.Tech Students on the roll of NIT Silchar during 2019-20

Year	CE	ME	EE	ECE	CSE	EIE	TOTAL
1 <sup>ST</sup>	150	157	157	161	165	78	<b>868</b>
2 <sup>ND</sup>	118	128	110	127	132	57	<b>672</b>
3 <sup>RD</sup>	108	114	106	121	101	54	<b>604</b>
4 <sup>TH</sup>	99	109	106	106	89	45	<b>554</b>
<b>TOTAL</b>	<b>475</b>	<b>508</b>	<b>479</b>	<b>515</b>	<b>487</b>	<b>234</b>	<b>2698</b>

## PG ENROLLMENT (2019-20)

Sem	Branch	Open (Break up)		EWS (Break up)		SC (Break up)		ST (Break up)		OBC (Break up)		PH (Break up)		Foreign student		Sponsored		Total		Total
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
1 <sup>ST</sup>	CE	47	7	0	0	8	3	6	2	5	1	0	0	1	0	0	0	67	13	80
	ME	27	2	0	0	2	1	1	0	2	0	0	0	1	0	0	0	33	3	36
	EE	19	4	0	0	1	0	1	1	2	1	0	0	0	0	0	0	23	6	29
	ECE	12	5	2	0	2	2	1	2	5	0	0	0	0	0	0	0	22	9	31
	CSE	14	1	0	0	2	1	1	0	1	0	0	0	1	0	0	0	19	2	21
	E&I	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	7
	<b>Total</b>	<b>123</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>15</b>	<b>7</b>	<b>10</b>	<b>5</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>168</b>	<b>36</b>	<b>204</b>
3 <sup>RD</sup>	CE	36	7	0	0	11	3	2	1	21	0	0	0	0	0	3	5	73	16	89
	ME	23	1	0	0	4	1	3	1	12	0	0	0	0	0	0	0	42	3	45
	EE	11	3	0	0	2	0	2	0	5	0	0	0	0	0	2	1	22	4	26
	ECE	6	2	0	0	2	3	1	1	0	0	1	0	0	0	4	0	14	6	20
	CSE	6	2	0	0	3	0	1	0	1	0	0	0	0	0	2	0	13	2	15
	E&I	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	5
<b>Grand Total</b>	<b>209</b>	<b>37</b>	<b>2</b>	<b>0</b>	<b>37</b>	<b>14</b>	<b>19</b>	<b>8</b>	<b>55</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>337</b>	<b>67</b>	<b>404</b>	
1 <sup>ST</sup>	PHY	6	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	9	3	12
	CHEM	3	7	0	0	2	1	0	0	3	1	0	0	0	0	0	0	8	9	17
	MATHS	7	3	1	0	1	2	0	1	1	1	0	0	0	0	0	0	10	7	17
	<b>Total</b>	<b>16</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>19</b>	<b>46</b>
3 <sup>RD</sup>	PHY	6	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	8	2	10
	CHEM	4	4	0	0	0	1	2	0	0	1	0	0	0	0	0	0	6	6	12
	MATHS	3	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	5	3	8
<b>Grand Total</b>	<b>29</b>	<b>20</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>30</b>	<b>76</b>	
1 <sup>ST</sup>	MBA	9	22	0	0	3	1	3	1	7	2	0	0	0	0	0	0	22	26	48
3 <sup>RD</sup>	MBA	14	13	0	0	1	2	0	1	11	1	0	0	0	0	0	0	26	17	43
<b>Total</b>	<b>23</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>18</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>43</b>	<b>91</b>	
<b>Grand Total</b>	<b>261</b>	<b>92</b>	<b>4</b>	<b>0</b>	<b>48</b>	<b>22</b>	<b>25</b>	<b>11</b>	<b>78</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>431</b>	<b>140</b>	<b>571</b>	

# Admission Statistics B.Tech

## (a) Indian students admitted

The following table shows the state-wise and course-wise admission statistics with category break up for the year 2019-20

Name of state	Category	CE	CSE	EE	ECE	E&I	ME	Total
Assam	OP	37	37	39	40	19	40	212
	OBC	21	22	21	21	11	21	117
	SC	11	12	11	12	6	11	63
	ST	6	6	6	6	3	6	33
	OPPH	–	1	–	–	–	–	1
	STPH	1	–	–	–	–	–	1
Rajasthan	OP	1	4	5	2	2	3	17
	OBC	2	5	3	–	1	3	14
	SC	4	–	1	1	1	–	7
	ST	1	–	1	–	1	1	4
Bihar	OP	14	4	4	4	3	3	32
	OBC	10	4	9	3	5	1	32
	ST	–	–	1	–	–	–	1
	SC	–	1	–	1	1	1	4
UP	OP	8	6	12	7	2	9	44
	OBC	2	1	2	1	–	3	9
	SC	2	5	7	2	1	5	22
	OBPH	–	1	–	–	–	–	1
Andhra Pradesh	OP	7	13	9	16	3	10	58
	OBC	7	3	3	11	4	9	37
	SC	2	1	1	3	1	2	10
	ST	–	1	1	1	–	2	5
	OBPH	–	–	–	1	–	–	1
Jharkhand	OP	1	–	–	–	1	–	2
	SC	–	1	–	–	–	–	1
	OBC	–	–	–	1	–	1	2
	OPPH	–	–	–	1	–	–	1
Kerala	OBC	–	–	–	1	–	–	1
Orissa	OP	–	–	–	–	2	2	4
	OPPH	1	–	–	–	–	1	2
Maharashtra	OP	1	1	1	–	3	4	10
	OBC	1	2	–	–	–	–	3
	SC	–	–	–	3	–	–	3
	OPPH	–	1	1	–	–	–	2
Chhattisgarh	OP	–	1	–	–	1	–	2
	OBC	–	1	–	–	1	–	2
Haryana	SC	–	1	–	–	–	–	1

Name of state	Category	CE	CSE	EE	ECE	E&I	ME	Total
Telangana	OP	1	6	3	7	1	2	20
	OBC		1	3	3		4	11
	SC	1	1	3	2	2	1	10
	ST	3	3	2	5	1	2	16
	OBPH			1				1
Uttarakhand	OPPH					1		1
	OP		1			1	1	3
	SC			1			1	2
West Bengal	OPPH				1		1	
Punjab	ST						1	1
Manipur	SC	1					1	2
MP	OP	1	2	2			2	7
	OBC	1	1					2
	SC		1					1
Arunachal Pradesh	ST		1					1
Karnataka	OP				1			1
Nagaland	ST	1						1
Tamil Nadu	OP		1					1
Delhi	OBC		1					1
Gujarat	OP		1	1				2
J&K	ST			1				1
<b>Grand Total</b>		<b>149</b>	<b>155</b>	<b>155</b>	<b>157</b>	<b>78</b>	<b>153</b>	<b>847</b>

## (b) Foreign students admitted

Name of country	Category	CE	ME	EE	ECE	CSE	E&I	Total
Bangladesh	OP	1	4	1	3	7	–	16
Nepal	–	–	–	1	–	2	–	3
Oman	–	–	–	–	–	1	–	1
Kenya	–	–	–	–	1	–	–	1
<b>Grand Total</b>		<b>1</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>21</b>

## Course-Wise Admission statistics (B.Tech-1<sup>st</sup> Year)-2019-20

Sl.No.	Courses	Intake Capacity	Admitted	Remarks
1	Civil Engineering	152	150	The excess intake is due to foreign student
2	Computer Sc. & Engineering	156	165	
3	Electrical Engineering	157	157	
4	Electronics & Communication Engg.	157	161	
5	Electronics & Instrumentation Engg.	78	78	
6	Mechanical Engineering	156	157	
<b>Total</b>		<b>856</b>	<b>868</b>	

# Admission Statistics (M.Tech/M.Sc/MBA)

## Admission to M.Tech, M.Sc, and MBA

### (a) Indian Students Admitted

The following table shows the course-wise admission statistics with category break up for the year -2019-20

#### Admission Statistics (M. Tech Branch wise, M.Sc and MBA) for the year 2019-20

Programme	Specialization	General		EWS		SC		ST		OBC		PWD		Foreign Student		Sponsored		Total		Grand Total
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
M.Tech in Civil Engg.	WRE	4	1	0	0	3	0	1	0	0	0	0	0	0	0	0	0	8	1	9
	SD & EQE	3	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	5	2	7
	Transportation Engg.	16	3	0	0	3	0	0	2	1	0	0	0	0	0	0	0	20	5	25
	Geotechnical Engg.	10	1	0	0	1	1	2	0	1	0	0	0	0	0	0	0	14	2	16
	Structural Engg.	14	1	0	0	1	1	1	0	3	1	0	0	1	0	0	0	20	3	23
	<b>TOTAL</b>	<b>47</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>13</b>	<b>80</b>	
M.Tech in Mechanical Engg.	Thermal	14	2	0	0	1	0	0	0	2	0	0	0	1	0	0	0	18	2	20
	Design & Manuf.	11	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	13	0	13
	CAD-CAM & Auto.	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	MMT	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
	<b>TOTAL</b>	<b>27</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>3</b>	<b>36</b>
M.Tech in Electrical Engg.	Control & Indu. Auto.	9	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	10	1	11
	Power & Energy Sy. Engg.	10	3	0	0	1	0	1	1	1	1	0	0	0	0	0	0	13	5	18
	<b>TOTAL</b>	<b>19</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>6</b>	<b>29</b>
M.Tech in Electronics & Communication Engg.	Microelectronics & VLSI D	7	3	2	0	1	2	1	0	5	0	0	0	0	0	0	0	16	5	21
	CSP Engg.	5	2	0	0	1	0	0	2	0	0	0	0	0	0	0	0	6	4	10
	<b>TOTAL</b>	<b>12</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>9</b>	<b>31</b>
M.Tech in Computer Science. & Engg.	Computer Sc. & Engg.	14	1	0	0	2	1	1	0	1	0	0	0	1	0	0	0	19	2	21
	<b>TOTAL</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>2</b>	<b>21</b>
M.Tech in Electronics & Instrumentation Engg.	Instrumentation Engg.	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	7
	<b>TOTAL</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>7</b>
	<b>GRAND TOTAL</b>	<b>123</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>15</b>	<b>7</b>	<b>10</b>	<b>5</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>168</b>	<b>36</b>	<b>204</b>
M.Sc	Applied Chem.	3	7	0	0	2	1	0	0	3	1	0	0	0	0	0	0	8	9	17
	Mathematics	7	3	1	0	1	2	0	1	1	1	0	0	0	0	0	0	10	7	17
	Applied Phy.	6	1	1	0	1	1	0	0	1	1	0	0	0	0	0	0	9	3	12
	<b>Total</b>	<b>16</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>19</b>	<b>46</b>
Management Studies	MBA	9	22	0	0	3	1	3	1	7	2	0	0	0	0	0	0	22	26	48
	<b>GRAND TOTAL</b>	<b>148</b>	<b>55</b>	<b>4</b>	<b>0</b>	<b>22</b>	<b>12</b>	<b>13</b>	<b>7</b>	<b>27</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>81</b>	<b>298</b>

## (b) Foreign Students Admitted

The following table shows the admission statistics of foreign students for the year 2019-20.

Sl. No.	Courses (M.Tech)	Admitted
1.	Civil Engineering	1
2.	Mechanical Engineering	1
3.	Electrical Engineering	–
4.	Electronics & Communication Engineering	–
5.	Computer Sc. & Engineering	1
6.	Electronics & Instrumentation Engineering	–
<b>Total</b>		<b>3</b>

## M.Tech, M.Sc & MBA Intake Capacity & Admission

The following table shows course admission statistics of PG programmes (M.Tech, M.Sc. & MBA) for the year 2019-20.

Deptt.	Sanctioned strength including sponsored category	M.Tech. & M. Sc. Specialization	No. of students admitted
CE	25+5	M.Tech. in Water Resource Engg.	9
	25+5	M.Tech. in Structural Dynamics & Earthquake Engg.	7
	25+5	M.Tech in Transportation Engg.	25
	25+5	M.Tech. in Geotechnical Engg.	16
	25+5	M.Tech in Structural Engg.	23
ME	25+5	M.Tech. in Thermal Engg.	20
	25+5	M.Tech. in Design & Manufacturing	13
	13+2	M.Tech in CAD-CAM Automation	2
	12+2	M.Tech in Material & Manufacturing Technology	1
EE	25+5	M.Tech. in Power & Energy System Engg.	18
	25+5	Control & Industrial Automation	11
ECE	25+5	M.Tech. in Microelectronics & VLSI Design	21
	25+5	M.Tech in Communication & Signal Processing Engg.	10
CSE	25+5	M.Tech. in Computer Science & Engg.	21
E&I	13+2	Instrumentation Engg.	7
PHY	25+5	M.Sc in Applied Physics	12
CHEM	25+5	M.Sc in Applied Chemistry	17
MATH	25+5	M.Sc in Mathematics	17
MS	75	MBA	48
<b>Grand Total (M.Tech + M.Sc + MBA) = 204+46+48</b>			<b>298</b>

CE= Civil Engineering, ME= Mechanical Engineering, EE= Electrical Engineering, ECE= Electronics & Communication Engineering, CSE= Computer Science & Engineering, E&I= Electronics & Instrumentation Engineering, PHY= Physics, CHEM= Chemistry, MATH= Mathematics, MS=Management Studies.

The following is a summary of the total number of PG students on the roll of NIT Silchar during 2019-20

Courses	CE	ME	EE	ECE	CSE	E&I	PHY	CHY	MATHS	HSS	MBA	TOTAL
M.Tech	169	81	55	51	36	12						404
M.Sc							22	29	25			76
MBA											91	91
<b>Total</b>												<b>571</b>

## Students Strength

The following table shows the total student strength on the roll (course wise) of the year 2019-20 at NIT Silchar.

Courses	Departments	Total Students Strength (Course-Wise)	
UG (B.Tech)	Civil Engineering	475	
	Mechanical Engineering	508	
	Electrical Engineering	479	
	Electronics & Communication Engineering	515	
	Computer Science & Engineering	487	
	Electronics & Instrumentation Engineering	234	
M.Tech	Postgraduate Course (All Engineering Department)	404	
PG	M.Sc	Applied Chemistry/Applied Physics/Mathematics	76
	Management Studies	MBA	91
<b>GRAND TOTAL</b>		<b>3269</b>	

## Awards

The Institute offered the following awards during the period under consideration:

### A. UG MEDAL WINNERS

NAME	Remarks	Branch	Medal
<b>Chanchal Gupta</b>	<b>Overall Topper</b>	<b>ME</b>	<b>Gold</b>
Samujjal Aich	Branch Topper	CE	Silver
Anand Kumar	Branch Topper	EE	Silver
Dhanshree Maroti	Branch Topper	ECE	Silver
Rohan Deb	Branch Topper	CSE	Silver
TusharVatsa	Branch Topper	EIE	Silver

### B. PG MEDAL WINNERS

Name	Specialisation	Medal
Charla Venkatesh	Structural Dynamics & Earthquake Engineering (CE)	Silver
Rangish. A	Structural Engineering (CE)	Silver
Soumik sarkar	Transportation Engineering (CE)	Silver
Maitreyee Dutta	Control & Industrial Automation (EE)	Silver
Simita Das	Applied Chemistry	Silver

## C. SPONSORED AWARDS

(a) Sl.No.	Kalikrishna Mrinalini Krori Gold Medal	Department	Awardees
	Title of the Medal		
1.	Best B.Tech. Graduate on overall performance, (Instituted by Dr. K.D Krori, Guwahati)	Civil Engineering	Dixita Gulgulia

(b) Sl.No.	Saswata Purkayastha Memorial Gold Medal	Department	Awardees
	Title of the Medal		
1.	Best B.Tech. Graduate on overall performance, (Instituted by Shri Niharendu Purkayastha, Silchar )	Electronics & Communication Engineering	Anirban Roy

## EXAMINATION DETAILS

\* Even semester examinations were held in the month of May 2019 (Both UG & PG)

\* Odd semester examinations were held in the month of November 2019 (Both UG & PG)

### Statistics of the Results

#### a) End semester examination Held in May 2019

Programme	Branch & Course	No. of Students Appeared	Passed & Eligible For Degree	Failed/ Withheld	Percentage Passed	Remarks
B.Tech	Civil Engg.	113	108	5	95.58%	
	Mechanical Engg.	110	102	8	92.73%	
	Electrical Engg.	106	93	13	87.74%	
	Electronics & Comm. Engg.	112	108	4	96.43%	
	Computer Sc. & Engg.	97	94	3	96.91%	
	Electronics & Instrumentation Engg.	52	48	4	92.31%	
M.Tech	Civil Engg. (Water Resources Engg.)	18	18	–	100%	
	Civil Engg. (Structural Dynamics & Earthquake Engg.)	17	17	–	100%	
	Civil Engg.(Transportation Engg.)	14	14	–	100%	
	Civil Engg.(Structural Engg.)	17	17	–	100%	
	Civil Engg.(Geotechnical Engg.)	16	16	–	100%	
	Mech. Engg. (Thermal Engg.)	13	13	–	100%	
	Mech. Engg. (Materials & Manufacturing Technology)	07	07	–	100%	
	Mech. Engg.(Design & Manufacturing)	13	13	–	100%	
	Mech. Engg.(CAM-CAM & Automation)	06	06	–	100%	
	Electrical Engg. (Power & Energy system Engg.)	16	16	–	100%	
	Electrical Engg. (Control & Industrial Automation Engg.)	11	11	–	100%	
	Electronics & Comm. Engg. (Communication & Signal Process Engg.)	04	04	–	100%	
	Electronics & Comm. Engg. (Microelectronics & VLSI Design)	07	07	–	100%	
Computer Science & Engg.	16	16	–	100%		
Instrumentation Engg.	10	10	–	100%		

Programme	Branch & Course	No. of Students Appeared	Passed & Eligible For Degree	Failed/ Withheld	Percentage Passed	Remarks
M.Sc	Chemistry (Applied Chemistry)	09	09	–	100%	
	Physics (Applied Physics)	05	05	–	100%	
	Mathematics	05	05	–	100%	
MBA	Master of Business Administration(MBA)	33	33	–	100%	

**b) List of candidates qualified for the Degree of Bachelor of Technology after the 16<sup>th</sup> Convocation held in June 2018 and before the 17<sup>th</sup> Convocation held in November 2019**

Branch	Appeared	Passed
Civil Engg. (B.Tech)	02	02
Mechanical Engg. (B.Tech)	03	03
Electrical Engg. (B.Tech)	11	11
Electronics & Communication Engg. (B.Tech)	01	01
Computer Science & Engg. (B.Tech)	07	07
Electronics & Instrumentation Engg. (B.Tech)	02	02

# PLACEMENT STATISTICS OF NIT SILCHAR 2019-2020

Sl.	Name of Organization	Date of visit	CTC	CE	ME	EE	ECE	CSE	EI	MBA	M.Sc.	M. Tech.	Total	Remarks
1	L&T Infotech	26-29 Jul 19	5 LPA	0	6	5	7	14	6	-	-	-	43	
			6.5 LPA	0	0	0	1	4	0	-	-	-		
2	First American India	28-29 Jul 19	7LPA	-	-	0	2	0	0	-	-	CSE-1	2+1=3	
3	Goldman Sachs	29 Jul-01 Aug 19	23 LPA	0	0	0	0	2	1	-	-	-	6	
			PPO	-	-	-	-	3	-	-	-	-		
4	ZS Associates	31 Jul 19	8.93 LPA	-	1	1	3	1	0	-	-	-	6	
			Pool at Kolkata											
5	Tredence Analytics	3-5 Aug 19	6.5 LPA	0	3	2	6	0	0	-	-	-	11	
6	Capgemini	5-8 Aug 19	6.83 LPA	1	1	2	5	6	1	-	-	CSE-1	16+1=17	
7	NASDAQ Composite	PPO	13.44 LPA	-	-	-	-	1	-	-	-	-	1	
8	Quikr	7-10 Aug 19	9 LPA	-	-	0	0	2	1	-	-	-	3	
9	Amdocs	9-12 Aug 19	6.6 LPA	-	-	-	10	7	-	-	-	CSE-2	17+2=19	
10	ValueLabs	12 Aug 19	16.5 LPA(3 Yrs)	-	-	2	1	1	-	-	-	-	4	
			On line Interview											
11	OYO, Gurgaon	13-15 Aug 19	10.5 LPA	-	-	0	0	10	1	-	-	-	11	
12	Ittiam System (P) Ltd	PPO	10.9 LPA	-	-	-	1	-	-	-	-	-	1	
13	Shapoorji Pallonji Construction Ltd.	20-21 Aug 19	3.75 LPA	3	-	-	-	-	-	-	-	-	3	
14	SAP	21-23 Aug 19	26 LPA	0	0	0	1	9	0	-	-	-	10	
15	L&T ECC	PPO	6.27 LPA	5	0	0	0	0	0	0	0	0	25	
			1-3 Nov 19	6.27 LPA	6	11	1	0	0	2	-	-		
16	Affine Analytics	22-24 Aug 19	6 LPA	-	1	1	1	0	1	-	-	CSE-1	4+1=5	
17	Amazon	23-25 Aug 19	28.75 LPA	-	-	-	0	4	0	-	-	-	4	
18	Veritas Technologies, Pune	24-26 Aug 19	12.82 LPA	-	-	-	-	3	-	-	-	-	3	
19	Infosys	26 Aug 19	5 LPA	-	-	-	-	9	-	-	-	-	9	
20	Publicis Sapient	27-29 Aug 19	8.5 LPA	-	-	-	1	1	0	-	-	-	2	
21	Mathworks	27 Aug 19 1 x PPO	14.5 LPA	-	-	-	1	1	-	-	-	-	2	
22	Yodlee	PPO	8.7 LPA	-	-	-	-	1	-	-	-	-	1	
23	Book MyShow	28-30 Aug 19	10 LPA	-	-	-	1	3	-	-	-	-	4	
24	Oracle Financial Services	31 Aug-2 Sep 19	6.5 LPA	-	0	3	2	1	2	-	-	-	8	
25	Addverb Technologies	01 -04 Sep 19	10 LPA	-	0	1	0	0	1	-	-	-	2	
26	Nokia	3-5 Sep 19	7 LPA	-	-	1	3	8	2	-	-	-	14	
27	Jaro Group	4-6 Sep 19	Up to 12 LPA	0	0	0	0	0	0	0	-	0	0	
28	Tata Project	4-7 Sep 19	4.25 LPA	2	0	1	-	-	-	-	-	-	3	

Sl.	Name of Organization	Date of visit	CTC	CE	ME	EE	ECE	CSE	EI	MBA	M.Sc.	M. Tech.	Total	Remarks
29	Incture Technologies	4-7 Sep 19	8 LPA	-	1	2	3	1	2	-	-	-	9	
30	Samsung R & D, Bangalore	5 Sep 19	13 LPA	-	-	-	-	1	-	-	-	-	1	
31	Kreeti Technologies	9-11 Sep 19	4.8 LPA	0	0	1	0	0	0	-	-	-	1	Officially mail not yet received
32	Go-MMT	9-11 Sep 19	18 LPA	-	-	-	0	3	0	-	-	-	3	
33	Poncho Hospitality Pvt Ltd. (Box8), Bengaluru	9 Sep 19 (On-Line Interview)	10 LPA	-	-	-	-	1	-	-	-	-	1	
34	Wipro Ltd	10-13 Sep 19	6.5 LPA	1	-	7	10	2+1 PPO =3	3	-	-	-	24	
35	Reliance Jio Infocomm	13-14 Sep 19 29-31 Jan 20 (On-Line Interview)	5.32 LPA 4.2 LPA	-	-	-	11 3	8 2	- 2	-	-	-	32	
36	Virtusa	21-23 Sep 19	5 LPA	-	-	0	2	0	1	-	-	-	3	
37	Optum UHG	23-25 Sep 19	11.5 LPA	0	0	1	5	11	4	-	-	-	21	
38	IBM	23-26 Sep 19	7.5 LPA	-	-	6	5	3	2	-	-	-	16	
39	USEReady	25-28 Sep 19	6 LPA	1	-	3	2	2	0	-	-	-	8	
40	Samsung R & D	26-28 Sep 19	14 LPA	-	-	-	-	2	-	-	-	-	2	
41	CGI	29 Sep-02 Oct 19	7.12 LPA	1	1	3	6	1	2	-	-	-	14	
42	Sify Technologies	2-4 Oct 19	9 LPA	-	-	-	3	1	-	-	-	-	4	
43	BlogVault	9-11 Oct 19	9 LPA	-	-	-	1	0	-	-	-	-	1	
44	Betsol Software Pvt Ltd	16-18 Oct 19	4-6 LPA	-	-	-	0	0	0	-	-	-	0	
45	Medlife	17 -20 Oct 19	10 LPA	-	-	-	-	4	-	-	-	-	4	
46	Infosys	17 -20 Oct 19	3.6 LPA	16	18	12	4	-	4	-	-	CSE-2 Cad-1 M&M-1	54+4=58	
47	ABB India	18 Oct 20 Interview at Bangalore	6 LPA	-	-	1	-	-	1	-	-	-	2	
48	Samsung R&D Institute, Noida	23 -25 Oct 19	12 LPA	-	-	0	2	7	1	-	-	-	10	Officially mail not yet received
49	Decathlon sports India	30-31 Oct 19	3.75 LPA	1	1	0	1	0	0	HR-1	-	-	3+1=4	
50	eClerx, Mumbai	30 Oct 19 On line Interview	6 LPA	-	-	-	-	-	-	-	-	CSE-1	1	
51	BrahMos Aerospace	3-5 Nov 19	14.12 LPA	-	2	0	1	-	-	-	-	-	3	
52	Ericsson Global	6-9 Nov 19	6.5 LPA	-	-	-	1	1	5	-	-	-	7	
53	Tata Advance System Ltd.	12-13 Nov 19	3.99 LPA	-	4	-	-	-	-	-	-	-	4	Officially mail not yet received
54	Huawei Technologies, Bangalore	12-14 Nov 19	12.5 LPA	-	-	4	8	3	-	-	-	-	15	
55	Raam Group	13-15 Nov 19	4.8 LPA	0	0	2	0	0	0	0	0	0	2	

Sl.	Name of Organization	Date of visit	CTC	CE	ME	EE	ECE	CSE	EI	MBA	M.Sc.	M. Tech.	Total	Remarks
56	Microsoft GSMO	PPO	16 LPA	-	-	-	0	2	0	-	-	-	2	
57	Anglo-Eastern Ship Management (I) Pvt Ltd.	19-22 Nov 19	3.7 LPA	-	2	0	-	-	0	-	-	-	2	
58	L&T Heavy Engg.	19-20 Nov 19	6 LPA	-	1	3	-	-	0	-	-	-	4	
59	Kotak Life	21 Nov 19	3.5 LPA	-	-	-	-	-	-	Mktg-2	-	-	2	
		Pool at Assam university												
60	Bandhan Bank	22 Nov 19	4 LPA	-	-	-	-	-	-	Mktg,- Fin & HR-1	-	-	3+7=10	
		9 Jan 20	3.5 LPA	-	-	-	-	-	-	Fin-3 & Mktg-4	-	-		
		Pool at Assam university												
61	Barger paint	26 Nov 19	5.75 LPA	-	-	-	-	-	-	Mktg-1	-	-	1	
		On line Interview												
62	HDFC AMC Ltd	04 Dec 19	4.5 LPA	-	-	-	-	-	-	Fin-1	-	-	1	
63	Comviva,Gurgaon	4-5 Dec 19	6.6 LPA	-	-	-	2	-	-	-	-	-	2	
		On line Interview												
64	Renata Precision, Pune	6-7 Dec 19	4.5 LPA	-	2	0	0	0	0	-	-	-	2	
65	Saint Gobain, Chennai	9-12 Dec 19	6.3 LPA	0	0	0	0	0	0	0	0	0	0	
66	Potential & Concept Educations	6-8 Jan 20	3.6 - 7 LPA	1	1	0	1	0	0	0	2	-	3+2=5	
67	Epiroc Mining ,Pune	8-11 Jan 20	6.5 LPA-UG 7.25 LPA -PG	0	1	-	-	-	-	Mktg-1	-	-	1	
68	Invenio Business Solution	8-10 Jan 20	5 LPA	0	0	1	1	0	0	-	-	-	2	
69	Dalmia Cement	20-21 Jan 20	4.8 LPA	-	1	-	-	-	-	-	-	-	1	
70	Schindler India	23-24 Jan 2020	4.5 LPA	-	0	0	-	-	-	-	-	0	0	
71	Vedanta Ltd	23-25 Jan 20	7.95 LPA	-	-	4	-	-	4	-	-	-	8	
72	Maruti Suzuki	23-24 Jan 20	8.4 LPA	-	6	-	-	-	-	-	-	-	6	
		Pool at NIT Agartala												
73	Euthissa Care Technology Pvt. Ltd.	27 Jan 20	2.5 LPA	-	4	8	1	-	1	-	-	-	14	
		On line Interview												
74	Cognizant	29-31 Jan 20	10 LPA	-	-	-	-	3	-	-	-	-	9	
			6.6 LPA	-	1	3	2	-	-	-	-	-		
75	POSOCO	4 Feb 20	14 LPA	-	-	7	-	-	-	-	-	-	7	
		Interview at NERLDC, Shillong												
76	Tata Power	6-7 Feb 20	5.5 LPA	-	-	2	-	-	-	-	-	-	2	
77	Oracle GBU	11 Feb 20	PG-9.5 LPA UG-9 LPA	-	-	1	4	-	1	-	-	CSE-1	6+1=7	
		Pool at NIT Agartala												
78	Coffee Day Beverages	11-13 Feb 20	3 LPA	-	-	1	-	-	0	-	-	-	1	
79	North East Small Finance Bank, Guwahati	11 Feb 20	2 LPA	-	-	-	-	-	-	Fin-1	-	-	1	
		On line Interview												
80	Atkins India	17 Feb 20	4.5 LPA	-	2	-	-	-	-	-	-	-	2	
		On line Interview												

Sl.	Name of Organization	Date of visit	CTC	CE	ME	EE	ECE	CSE	EI	MBA	M.Sc.	M. Tech.	Total	Remarks
81	ITC Ltd.	17 Feb 20	4.3 LPA	-	-	-	-	-	-	Mktg-2	-	-	2	
		Interview at Guwahati												
82	KEC International	17-19 Feb 20	UG 4.75 LPA PG 5.25 LPA	3	-	5	2	-	-	-	-	PESE-4 CIA-1 CSP-1 GEO-1 TPT-2	10+9=19	
83	DXC Technology	17-19 Feb 20	5.5 LPA & 3.6 LPA	-	-	6	2	-	0	-	-	-	8	
84	Pinclick Property Mgmt. Pvt. Ltd, Bangalore	18 Feb 2020	PG-5.16 LPA UG-4.8 LPA	1	-	-	-	-	-	Mktg-1	-	-	1+1=2	
85	Sids Farm Pvt Ltd., Hyderabad	25 Feb 20	3.5 LPA	0	1	0	0	-	-	0	-	-	1	
		On line Interview												
86	Aarti Industries Ltd, Mumbai	7 Mar 20	5 LPA	-	-	-	-	-	3	-	-	-	3	
		On line Interview												
87	HPCL, Mumbai	6-8 Mar 20	14.8 LPA	-	4	1	-	-	1	-	-	-	6	Officially mail not yet received
88	Axis Bank	11 Mar 20	3.5	-	-	-	-	-	-	Fin-3 Mktg & HR-1	-	-	5	
		Interview at Guwahati												
89	Nucleus Software	27 Mar 20	6.5 LPA	-	-	1	-	-	0	-	-	-	1	
		On line Interview												
90	Go Speedy Go	2-5 Jun 20	4.12 LPA	-	1	-	-	-	-	-	-	-	1	
		On line Interview												
91	Oil India Ltd	8 Jun 20	10 LPA	-	1	1	3	-	-	-	-	-	5	
		On line Interview												
92	Zeus Numerix	19 Jun 20	3.9 LPA	-	-	-	0	-	1	-	-	-	1	
		On line Interview												
				<b>CE</b>	<b>ME</b>	<b>EE</b>	<b>ECE</b>	<b>CSE</b>	<b>EI</b>	<b>MBA</b>	<b>M.Sc.</b>	<b>M. Tech.</b>	<b>Total</b>	
	Total No of students			99	108	106	107	89	45	43	30	185	554	(B.Tech.)
	Total No of eligible students (CPI 6.5 & above)			75	85	88	88	*69	39	26	22	172	444	(B.Tech.)
	Total No. Of Job offers (till date)			42	78	112	132	150	56	25	2	20	570	
	Total No. Of Job Placed			41	60	75	85	*76	39	24	2	17	376	
	Average Job Placed on eligible (B.Tech- 84.68%)			54.7	70.6	84.1	95.5	110.14	100	92.31	9.09	9.88		
	Average Job Offer (B.Tech - 128.38 % )			56.0	91.8	125	150.00	213.04	138.46	96.15	9.09	11.62		
	Average Salary (B.Tech - 7.63 LPA)			4.72	5.87	6.40	7.41	10.64	7.16	3.92	3.6	5.48		
				LPA	LPA	LPA	LPA	LPA	LPA	LPA	LPA	LPA		
	Median Salary (B.Tech - 6.55 LPA)			4.78	5.50	6.27	6.6	9.00	6.83	4.40	3.6	6.15		
				LPA	LPA	LPA	LPA	LPA	LPA	LPA	LPA	LPA		
	Highest package			<b>B.Tech. - 28.75 LPA</b>				<b>M.Tech. - 9.5 LPA</b>				<b>MBA -7.25 LPA</b>		
	Average Package			<b>B.Tech. - 7.54 LPA</b>				<b>M.Tech.- 5.48 LPA</b>				<b>MBA -4.00 LPA</b>		

\*Below 6.5 pointer got placed.

# DEPARTMENTS

## 1. Name of the Department:

### Civil Engineering



The Department at a glance	
<b>Year of Establishment:</b>	1977
<b>Academic Programmes Offered:</b>	<ul style="list-style-type: none"> <li>• Bachelor of Technology (B.Tech)</li> <li>• Master of Technology (M.Tech)</li> <li>• Doctor of Philosophy (Ph.D)</li> </ul>
<b>Total Faculty Strength:</b>	33
	<ul style="list-style-type: none"> <li>• Professor: 8</li> <li>• Associate Professor: 2</li> <li>• Assistant Professor: 22</li> <li>• Trainee Teacher: 1</li> </ul>
<b>Total Student Strength:</b>	745
	<ul style="list-style-type: none"> <li>• B.Tech: 475</li> <li>• M.Tech: 169</li> <li>• Ph.D: 101</li> </ul>
<b>New Students Joined in 2019-2020:</b>	246
	<ul style="list-style-type: none"> <li>• B.Tech: 150</li> <li>• M.Tech: 80</li> <li>• Ph.D: 16</li> </ul>

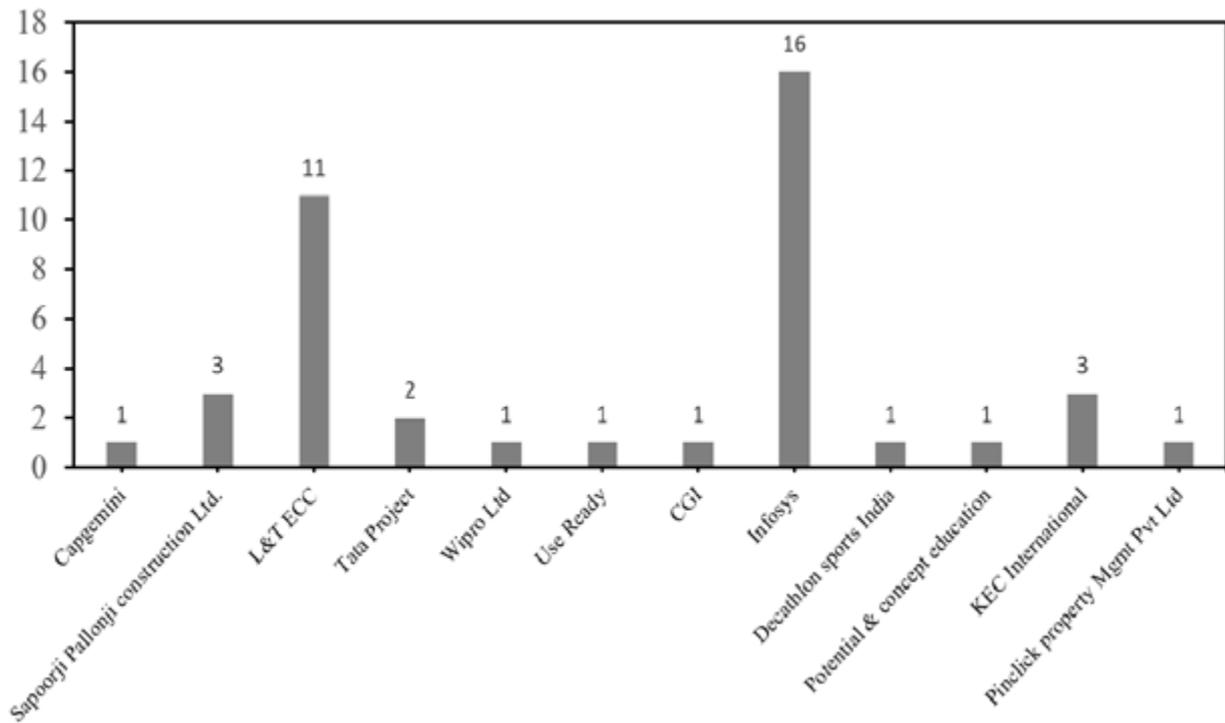


Fig: Placement statistics of the students in the Civil Engineering Department during 2019-2020

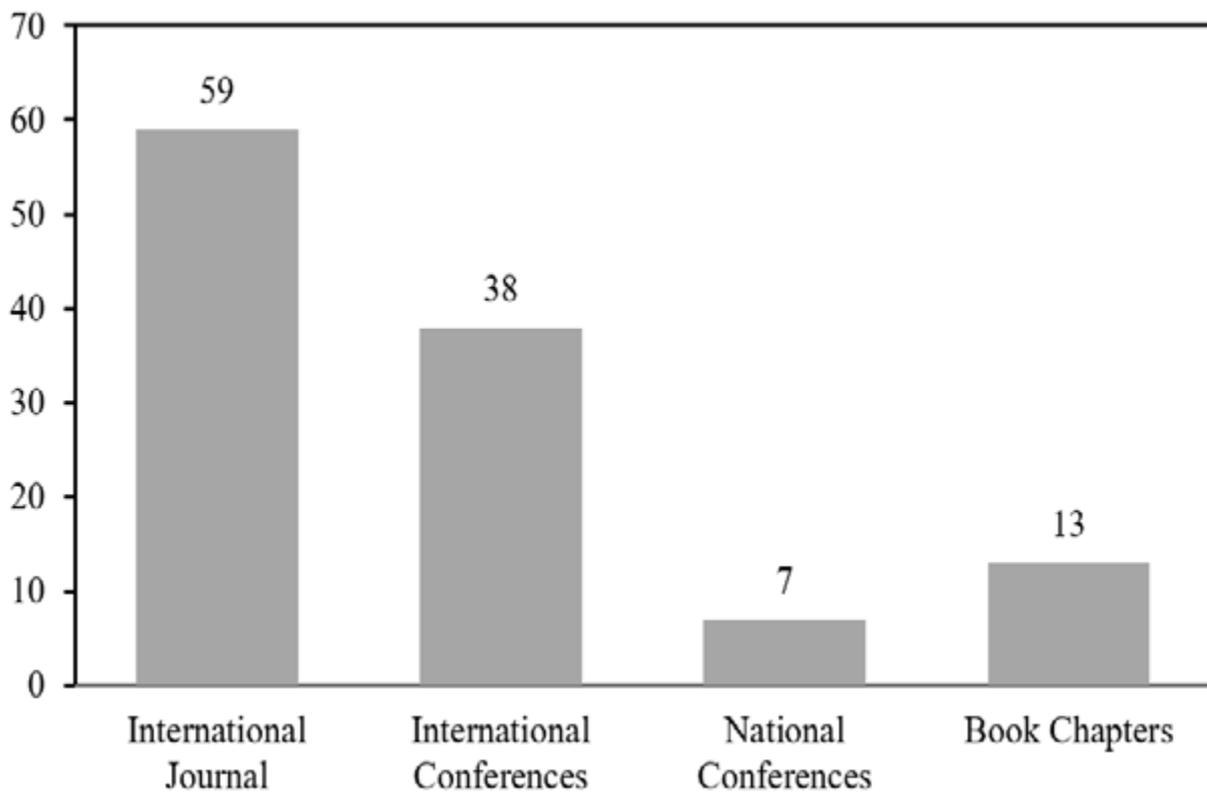


Fig: Publication details of Civil Engineering Department during 2019-2020

## 1.1 Academic Staff:

**HEAD:** Dr. Parthajit Roy, Associate Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Prof. Satyabrata Choudhury	Dr. P. Roy	Dr. N. Borthakur
Prof. A. K. Dey	Dr. T. Rahman	Mr. P. Das
Prof. P. Choudhury		Dr. P. Sultana
Prof. D. Chakraborty		Dr. A. Sil
Prof. A. I. Laskar		Dr. N. Ahir
Prof. M. Ali Ahmed		Dr. N. Debnath
Prof. A. K. Barbhuiya		Dr. D. K. Ghose
Prof. U. Kumar		Dr. D. Bhowmik
		Dr. M. Hussain
		Dr. M. L. V. Prasad
		Dr. B. S. Sil
		Dr. Kh. L. Singh
		Dr. S. Ghosh
		Dr. B. K. Roy
		Dr. Prashanth J.
		Dr. Subhrajit Dutta
		Dr. A. K. Das
		Dr. O. Baro
		Dr. S. Jena
		Dr. A. Kuity
		Dr. A. Sahu
		Dr. V. V. Kulkarni
		Miss. A. Alamyian (Trainee Teacher)

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

a) **By Student:**

**Mrinal Kanti Sen**, Ph.D. student, Queen Elizabeth Scholarship, Canada.

b) **By Faculty Member:**

1. **Dr. Subhrajit Dutta:**

- Indo-Finland mobility grant award, DST
- Associate and Guest Editor of ASCE, Practice Periodical on Structural Design and Construction, American Society of Civil Engineers
- Review Editor: Frontiers in Sustainable Cities, Section on Sustainable Infrastructures
- Guest Editor for ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering
- Guest Editor for Journal of Remote Sensing, MDPI

- Member of the Editorial Board for International Journal of Ocean Systems Management, Inder Science
- Member of the Editorial Board for Structural Integrity book series, Springer

## 2. Dr. M.L.V. Prasad

- Review Editor, International journal of civil engineering
- Iranian Journal of Science and Technology, Transactions of Civil Engineering

## 3. Dr. N. Debnath

- Received the Quarterly Franklin Membership award (Membership ID #AK65329) given by Editorial Board of London Journals Press (UK) 2020 for impactful research contribution

# 1.3 Seminars, Symposia, Short Term Courses, Workshops

## a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. B. K. Roy, Dr. Prashanth J. & Dr. M. L. V. Prasad	Hazard Mitigation of Onshore and Offshore Structures (HMOOS-2019)	TEQIP III	26-30 <sup>th</sup> April 2019
2	Dr. Susmita Ghosh, Dr. Prashanth J. & Dr. P. J. Roy	Integrated Soil Water Modelling (ISWM 2019)	TEQIP III	8-12 <sup>th</sup> April 2019
3	Dr. Dillip Kumar Ghose & Prof. U. Kumar	One week STTP on “Recent developments in water and Geoenvironmental Issues.”	TEQIP-III	5-9 <sup>th</sup> August 2019
4	Dr. Arjun Sil & Dr. Atanu Sahu	Two days training programme of Engineers on Earthquake Resistant Structures & Retrofitting Techniques	Assam state disaster management agency (ASDMA)	6-7 <sup>th</sup> December 2019

## b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Dr. Prashanth J.	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
2	Dr. Debjit Bhowmik	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
3	Dr. M. L. V. Prasad	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
4	Dr. Vihangraj Kulkarni	Online training course on Online Training on “Basics of Decentralized Wastewater Treatment and Local Reuse”	Centre for Science and Environment (CSE), New Delhi
5	Dr. Amit Kumar Das	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
6	Dr. Monowar Hussain	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
7	Dr. Olympa Baro	Two-day Short term course on “Quantification of Seismic Hazards and Mitigation of Induced Effects in NER” ISET Webinar “Earthquake Early Warning System: its relevance for India”	IIT Guwahati IIT Roorkee
8	Dr. Ambika Kuity	Five days workshop on “Transportation In Rural Areas”, 20-24th Jan 2020	NIT Silchar
9	Dr. Kh. Lakshman Singh	One week workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE-2019)”. 27-31 May 2019	NIT Silchar

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
10	Dr. Atanu Sahu	International Congress on Computational Mechanics and Simulation 2019 (ICCMS 2019), 11-13 December, 2019 Second ASCE India Conference on “Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies”, 02-04 March, 2020	IIT Mandi, India ASCE (India section)
11	Prof. M. Ali Ahmed	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
12	Miss. Anangsha Alammyan	Two-day Short term course on “Quantification of Seismic Hazards and Mitigation of Induced Effects in NER”	IIT Guwahati
13	Prof. A. K. Dey	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar
14	Dr. N. Debnath	One Week Workshop on “Curriculum Design and Implementation for Outcome Based Education (CuDIOBE 2019)”	NIT Silchar

### c) Participated as Resource Person

- Prof. A. K. Dey: 5 days workshop on Disaster Management and Risk Reduction Issues and Challenges, Civil Engineering Department, NIT Agartala, 13-17 May, 2019

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

- Geotechnical Engineering (GE)
- Structural Engineering (SE)
- Structural Dynamics and Earthquake Engineering (SDEE)
- Transportation Engineering (TE)
- Water Resources Engineering (WRE)
- Environmental Engineering (EE)

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
11	–	114

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Faculty name	Purpose/Linkage to an existing/new programme
1	Structural Engineering Laboratory	Prof. A. I. Laskar	To conduct UG and PG lab (Structural Engineering, Structural Dynamics and Earthquake Engineering) and to serve the PhD research, R&D and Consultancy.
2	Concrete Laboratory	Prof. A. I. Laskar & Dr. M. L. V. Prasad	To conduct UG and PG lab (Structural Engineering, Structural Dynamics and Earthquake Engineering) and to serve the PhD research, R&D and Consultancy.
3	Geotechnical Engineering Laboratory	Dr. M. Hussain	To conduct UG and PG lab (Geotechnical Engineering) and to serve the PhD research, R&D and Consultancy.
4	Soil Dynamics Laboratory	Prof. A. K. Dey	To conduct UG and PG lab (Geotechnical Engineering) and to serve the PhD research, R&D and Consultancy.
5	Centre for Testing and Consultancy (NABL accredited)	Prof. A. K. Dey	Advanced level research and consultancy

Sl. No.	Name of Lab/Workshop	Faculty name	Purpose/Linkage to an existing/new programme
6	PG Computation Lab	Dr. B. S. Sil	PG-Programs: Geotechnical Engineering (GE), Structural Engineering (SE), Structural Dynamics and Earthquake Engineering (SDEE), Transportation Engineering (TE), Water Resources Engineering (WRE). (NOTE: this lab also serves the needs for environmental engineering requirements).
7	Hydraulics Lab	Dr. D. K. Ghose & Dr. S. Ghosh	To conduct UG and PG lab for Hydraulic and Water resource Engineering, Also Serves as lab to perform PhD research
8	Water Resources Lab	Dr. D. K. Ghose	To conduct UG and PG lab for Hydraulic and Water resource Engineering, Also Serves as lab to perform PhD research
9	Highway Engineering Lab	Dr. Kh. L. Singh	To conduct UG and PG lab for Transportation Engineering, Also Serves as lab to perform PhD research
10	Modal Testing Lab (Sponsored by SERB, DST)	Dr. N. Debnath	Modal Testing Facility
11	Computational Geomechanics Laboratory	Dr. D. Bhowmik	PG and Ph.D. research with advance computational softwares in the field of Geomechanics/Geotechnical Engineering
12	RS Computational Laboratory	Dr. N. Debnath	Computational facility for the research scholars of the department of CE
13	Environmental Engineering Laboratory	Prof. U. Kumar & Dr. V. V. Kulkarni	The laboratory serves to felicitate UG students to perform environmental engineering laboratory experiments along with serving Master students from Water resource engineering for research activities. It also serves research scholars for their doctoral works.
14	UG Computational Laboratory	Dr. A. Sil	Computational facility for the UG students of the department of CE

**d) Ongoing/Completed Sponsored Research Project:**

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Effect of variations in input-excitation on the performance of limited-sensors based operational modal analysis.	Dr. N. Debnath	DST, SERB.	31.66 Lakhs	3 years (2016-19)
2	Topology optimization of complex structures and architected metamaterials – Computational design considering uncertainties	Dr. S. Dutta	DST International Cooperation (Bilateral) Division and Finland Scheme	1 Lakh (DST) + 8000 Euros (Academy of Finland)	2 years (April 2019 - Dec 2020)
3	Condition Assessment & Reliability of Existing Bridges.	Dr. A. Sil	DST, SERB.	19.09 Lakhs	3 years (2017-20)
4	Development of Site-Specific Design Response Spectrum [DRS] for the city of Silchar, Assam, India	Dr. A. Sil	STIS Scheme funded by Institute grant	2.8 Lakhs	
5	Development of Spatial Data Infrastructure (SDI) and its impact on climate change for Cachar district, Assam, India.	Dr. D. K. Ghose	DST (NSDL)	30 Lakh	2 years 2019-2021
6	STA NIT Silchar	Prof. M. A. Ahmed	NRRDA	-	2018-
7	A study on effects of sediment load on river bank erosion in the Barak River system.	Dr. B. S. Sil	DST	22.50 Lakh	2017-2020

## e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No. of Paper	Year
1	Dr. D. Bhowmik	International Journal of Geomechanics, ASCE	02	2020
2	Dr. D. Bhowmik	Journal of Materials in Civil Engineering, ASCE	01	2020
3	Dr. D. Bhowmik	Geotechnical and Geological Engineering, Springer	01 01	2019 2020
4	Dr. S. Dutta	ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering	05	2019-20
5	Dr. S. Dutta	Structures, Elsevier	06	2019-20
6	Dr. S. Dutta	Sustainable Cities and Society, Elsevier	01	2020
7	Dr. S. Dutta	Asian Journal of Civil Engineering, Springer	01	2020
8	Dr. S. Dutta	Structural and Multidisciplinary Optimization, Springer	01	2020
9	Dr. S. Dutta	ASCE Practice Periodical on Structural Design and Construction	01	2020
10	Dr. S. Dutta	Frattura ed Integrità Strutturale	01	2020
11	Dr. S. Dutta	Journal of the Institution of Engineers (India): Series A	02	2019
12	Dr. A. K. Das	International Journal of Geomechanics, ASCE	03 03	2019 2020
13	Dr. S. Jena	Canadian Journal of Civil Engineering	01	2020
14	Dr. M. Hussain	Construction & Building Materials	02	2020
15	Dr. M. Hussain	SN Applied Sciences	01	2020
16	Dr. M. Hussain	Bulletin of Engineering Geology and the Environment	01	2020
17	Dr. Kh. L. Singh	Materials Today: Proceeding, Elsevier	02	2020
18	Dr. A. Kuity	<ul style="list-style-type: none"> <li>Construction and Building Material</li> <li>International Journal of Pavement Engineering</li> </ul>	01 01	2019 2020
19	Dr. D. K. Ghose	<ul style="list-style-type: none"> <li>KSCE Journal</li> <li>ISH</li> <li>Patanika</li> <li>Water resources Management (Elsevier)</li> <li>IJST (Elsevier)</li> <li>KSCE Journal</li> <li>Journal of Hydrology</li> </ul>	05 01 02 01 01 02 01	2019 2019 2019 2019 2020 2020 2020
20	Dr. A. Sahu	Journal of Intelligent Material Systems & Structures (SAGE Publishing)	01	2020
21	Dr. B S Sil	<ul style="list-style-type: none"> <li>Water Resource Management</li> <li>International Journal of Civil Engineering</li> </ul>	01 01	2020 2020
22	Prof. M. Ali Ahmed	Benchmarking: an International Journal	01	2020
23	Dr. A. Sil	<ul style="list-style-type: none"> <li>Editorial Board Member of Advances in Geoscience</li> <li>Natural Hazard Review, ASCE-Journal</li> <li>Corrosion Engineering, Science and Technology, Taylor &amp; Fancies</li> <li>Geomatics, Natural Hazards and Risk, Taylor &amp; Fancies</li> <li>Journal of Earthquake Engineering, Taylor &amp; Fancies</li> <li>Advances in Structural Engineering, SAGE Publication</li> <li>Arabian Journal of Geosciences, Springer</li> <li>Mathematical Problems in Engineering, Hindawi Publication.</li> <li>Indian Concrete Journal (ICJ)</li> </ul>	01 01 01 01 01 01 01 01	2019 2019 2020 2019 2019 2019 2020 2020 2019
24	Dr. N. Debnath	<ul style="list-style-type: none"> <li>Advances in Mechanical Engineering</li> <li>Journal of Vibration and Control</li> <li>Journal of The Institution of Engineers (India): Series A (IEIA)</li> <li>Journal of Vibration and Control</li> </ul>	01 01 01 01	2019 2019 2019 2020

## f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Dr. V. V. Kulkarni	Chaired technical session and delivered an expert talk in an international conference “EPIC 2020” held during 2-3 march 2020 at Government Engineering College Banswara, Rajasthan
2	Dr. B. S. Sil	DOWN TO EARTH - 2019. 1st International Conference on Water Security and Sustainability, 13-14 December, SMIT Sikkim
3	Prof. A. K. Dey	Indian Geotechnical Conference 2019 - GeoINDUS organized by Indian Geotechnical Society, Surat Chapter and SVNIT Surat, 19-21 December 2019

## 1.5 Publications

## a) International Journal(s):

- Prashanth Janardhan and Narayana Harish (2019), “Numerical modelling of shelter effect of porous wind fences”, *Wind and Structures*, An International Journal, Vol. 29, No. 5, 313-321.
- Sukanta Das and Debjit Bhowmik (2020), Small-Strain Dynamic Behavior of Sand and Sand-Crumb Rubber Mixture for Different Sizes of Crumb Rubber Particle, *Journal of Materials in Civil Engineering*, ASCE, DOI: 10.1061/(ASCE)MT.1943-5533.0003425.
- Sukanta Das and Debjit Bhowmik (2020), Dynamic Behaviour of Sand-Crumbed Rubber Mixture at Low Strain Level, *Geotechnical and Geological Engineering*, Springer, DOI: 10.1007/s10706-020-01458-4.
- Nirmali Borthakur and Ashim Kanti Dey (2020), Evaluation of group capacity of micropile in soft clayey soil from experimental analysis using SVM based prediction model. *International Journal of Geomechanics*. DOI, 10.1061/(ASCE)GM.1943-5622.0001606
- Dutta S, Gandomi AH (2020), A bi-level data-driven modeling framework for high-dimensional structural optimization under uncertainty problems, *ASCE Journal of Structural Engineering*. doi: 10.1061/(ASCE)ST.1943-541X.0002795. (Accepted, In press)
- Sen MK, Dutta S (2020), An integrated GIS-BBN approach to quantify resilience of roadways network infrastructure system against flood hazard, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*. doi: 10.1061/AJRUA6.0001088. (Accepted, In press)
- Dutta S (2020), A sequential metamodel-based method for structural optimization under uncertainty, *Structures*, Elsevier, 26, 54-65.
- Das S, Dutta S, Putcha C, Majumdar S, Adak D (2020), A data-driven physics informed method for prognosis of infrastructure systems: Theory and application to crack prediction, *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*. 6(2), 04020013.
- Xiao M, Lu D, Breitkopf P, Raghavan B, Dutta S, Zhang W (2020), On-the-fly model reduction for large-scale structural topology optimization using Principal Components Analysis, *Structural and Multidisciplinary Optimization*, Springer, 62(1), 209-230.
- Xiao M, Lu D, Breitkopf P, Raghavan B, Zhang W, Dutta S (2020), Multi-grid reduced-order topology optimization, *Structural and Multidisciplinary Optimization*, Springer, 61(6), 1-23.
- Putcha C, Dutta S, Rodriguez J (2020), Risk priority number for bridge failures, *ASCE Practice Periodical on Structural Design and Construction*, 25(2), 04020010.
- Dutta S, Ghosh S (2019), Analysis and design of tensile membrane structures: Challenges and recommendations, *ASCE Practice Periodical on Structural Design and Construction*, 24(3), 04019009.
- Arjun Sil and Vanapalli Naveen Kumar (2020). “Does weather affect the growth rate of COVID-19, a study to comprehend transmission dynamics on human health.” *Journal of Safety Science and Resilience*, Elsevier Publication, (Accepted in Press). Volume 1, Issue 1, 2020, 3-11. doi. org/10.1016/j.jnlssr.2020.06.004.

14. Joydeep Das and Arjun Sil (2020). "Assessment of multi-hazards affecting service life of existing reinforced concrete (RC) bridges of Barak Valley Region, Assam, India." *Journal of Structural Integrity and Maintenance*, Taylor and Francies publication, (accepted in Press).
15. Arjun Sil and Vanapalli Naveen Kumar (2020). "Comprehensive Empirical Equation for Assessment of Atmospheric Corrosion Progression of Steel Considering Environmental Parameters". *Journal of Corrosion Science and Technology*, (Accepted in Press).
16. Joydeep Das and Arjun Sil (2020). "Condition assessment of superstructure component of reinforced concrete bridges through visual inspection in Assam, India." *Journal of Bridge Structures*, IOS Press, 16(1):39-57. DOI: 10.3233/BRS-200171
17. Vanapalli Naveen Kumar & Arjun Sil (2020) Assessment and spatial mapping of atmospheric corrosion amelioration using empirical equation considering environmental parameters, *Corrosion Engineering, Science and Technology*, 55:5, 400-410, DOI: 10.1080/1478422X.2020.1739191.
18. Dey, A., Miyani, G. & Sil, A. Reliability assessment of reinforced concrete (RC) bridges due to service loading. *Innovative Infrastructure Solutions* 4, 9 (2019). <https://doi.org/10.1007/s41062-018-0194-8>
19. Dey, A., Miyani, G. & Sil, A. Application of artificial neural network (ANN) for estimating reliable service life of reinforced concrete (RC) structure bookkeeping factors responsible for deterioration mechanism. *Soft Computing* 24, 2109-2123 (2020). <https://doi.org/10.1007/s00500-019-04042-y>
20. Dey, A., Miyani, G., & Sil, A. (2019). In-situ NDT investigation to estimate degraded quality of concrete on existing structure considering time-variant uncertainties. *Journal of Building Engineering*, 27, 1-12. <https://doi.org/10.1016/j.jobe.2019.101001>
21. Borah, MM., Dey, A., & Sil, A. (2019). Service life assessment of chloride affected bridge located in coastal region of India considering variation in the inherent structural parameters. *Structures*, 23, 191-203. <https://doi.org/10.1016/j.istruc.2019.09.020>
22. Sultana, P. & Dey, A. K. (2019). Estimation of Ultimate Bearing Capacity of Footings on Soft Clay from Plate Load Test Data Considering Variability. *Indian Geotechnical Journal*, Vol. 49(2), pp. 170-183, DOI: 10.1007/s40098-018-0311-9
23. Sayan Kumar Shaw and Arjun Sil (2020) "Experimental study on cyclic loading characteristics of fly ash as partial replacement of cement in beam-column joint", *Case studies in Construction Materials*, V.13, 2020, e00362. <https://doi.org/10.1016/j.cscm.2020.e00362>
24. Das, A. K. and Deb, K. (2019). "Response of Stone Column-Improved Ground under c-o Soil Embankment." *Soils and Foundations*, Elsevier, 59 (3), 617 - 632.
25. Singh, Kh. L. and Panda, D. (2019), " Study on Strength Characteristics Improvement of Polyethylene Modified Bituminous Concrete mixes" *Key Engineering Materials*, Vol. 803, pp 216-221, ISSN:1662-9795, doi:10.4028/www.scientific.net/KEM.803.216
26. Rajbongshi, P. Sharia, M and Singh, Kh. L. (2019). "Stress Characterization in Visco-Elastic Asphalt Mixes under Different Dynamic Loadings" *Jordan Journal of Civil Engineering*, Vol.13. No.4, 2019. pp 623-636.
27. Singh, Kh. L and Jamatia, M. (2020). "Study on Pavement Soil Subgrade Properties with Reinforced Fibres" *Indian Geotech Journal*, 50 (2):300-306. 2020. <http://doi.org/10.1007/s40098-020-00425-3>.
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- b) National Journal(s): NIL**
- c) International Conference(s):**
1. Narayana Harish and Prashanth Janardhan, (2019), “Support Vector Machine in Predicting Epoxy Glass Powder Mixed Cement Concrete”, International conference on Advanced Trends In Mechanical & Aerospace Engineering (ATMA-2019), 7-9th November 2019, Dayananda Sagar University, School of Engineering, Bengaluru, Karnataka, India.
  2. Sarkar P. P., Janardhan P., and Roy P. J., (2019), “Prediction of El Nino Southern Oscillation using Artificial Neural Networks”, 1st International Conference on Water Security and Sustainability (Down to Earth – 2019), 13-14th December 2019, Sikkim Manipal Institute of Technology, Sikkim, India.
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- Environmental Loads”, 2nd ASCE India Conference on “Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies” (CRSIDE2020), March 2-4, 2020, Hotel Novotel, Kolkata, India.
5. Sen MK, Dutta S, Kabir G (2020), A Decision-making Framework for Quantification of Housing Infrastructure Resilience against Flood Hazard, In Giannetti, B.F.; Almeida, C.M.V.B.; Agostinho, F. (editors): *Advances in Cleaner Production, Proceedings of the 9th International Workshop*, May 26, Melbourne, Australia.
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  7. Roy G, Choudhury S, Dutta S (2020), Probabilistic seismic hazard analysis of Silchar city considering spatial variability in earthquake magnitude and source-to-site distance. In 2nd ASCE India Conference on “Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies (CRSIDE2020)”, March 02-04, Kolkata, India.
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  9. Marbaniang AL, Dutta S, Ghosh S (2019), A comparative study on the optimisation-based form-finding of tensile membrane structures, In Joint International Conference, 60th IASS Annual Symposium - 8th Structural Membranes, Oct 7-10, Barcelona, Spain.
  10. Putcha C, Rodriguez J, Dutta S, Hebert L (2019), Risk priority number for construction failures, In 17th International Conference on Software Engineering Research and Practice (SERP '19), July 29 - Aug 1, Las Vegas, USA.
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  12. A Nath and S Ghosh, Dam break modelling of an earthen dam for flood forecasting, 24<sup>th</sup> ISH-Hydro 2019 International conference, vol-I, pp-1549-1558, ISBN:978-93-8935-484-3.
  13. Saha, S. and Das, A. K. (2020). “Stabilization of Rainfall Induced Slope Failure in Hilly Regions using Gabion Wall.” Second ASCE India Conference (CRSIDE 2020), March 2-4, 2020, Kolkata, India.
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- potential in scanty rainfall region: challenges and evaluation. In *Computational Intelligence in Sensor Networks* (pp. 335-352). Springer, Berlin, Heidelberg.
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  23. Samantaray, S., Sahoo, A. and Ghose, D.K., 2019, June. Assessment of Groundwater Potential Using Neural Network: A Case Study. In *International Conference on Intelligent Computing and Communication* (pp. 655-664). Springer, Singapore.
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  26. Samantaray, S., Sahoo, A. and Ghose, D.K., 2020. Infiltration Loss Affects Toward Groundwater Fluctuation Through CANFIS in Arid Watershed: A Case Study. In *Smart Intelligent Computing and Applications* (pp. 781-789). Springer, Singapore.
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  28. Sahoo, A., Samantaray, S., Bankuru, S. and Ghose, D.K., 2020. Prediction of Flood Using Adaptive Neuro-Fuzzy Inference Systems: A Case Study. In *Smart Intelligent Computing and Applications* (pp. 733-739). Springer, Singapore.
  29. Samantaray, S., Tripathy, O., Sahoo, A. and Ghose, D.K., 2020. Rainfall Forecasting Through ANN and SVM in Bolangir Watershed, India. In *Smart Intelligent Computing and Applications* (pp. 767-774). Springer, Singapore.
  30. Jena, S., Kar, M., and Bhuyan, P. K. (2019). "Investigating service performance of signalized intersections operating under mixed traffic condition." 98th TRB Annual Meeting of Transportation Research Board, Washington, D.C.
  31. Kar, M., Jena, S., Chakrabarty, A., and Bhuyan, P. K. (2019). "Modelling Service Quality Offered by Signalized Intersections from Automobile Users' Perspective." World Conference on Transport Research (WCTR), Mumbai, India.
  32. Wajahat Annayat, Ajay Gupta, Briti Sundar Sil and Kondepogu Ravi Prakash "Application of Artificial Neural Networks and Multiple Linear Regression for Rainfall-Runoff Modelling" International Conference on Informational System Design and Intelligent Application, 2019, 01-02 November, 2019, Lendi Institute Of Engineering and Technology, Andhra Pradesh , India.
  33. Wajahat Annayat and Briti Sundar Sil. "Predicting Meander Migration of the Barak River by Empirical and Time Sequence Methods "Down to Earth, 2019, 13-14 December, 2019, Sikkim Manipal Institute of Technology, Hyderabad, India.
  34. Wajahat Annayat and Briti Sundar Sil. "Evaluation of meandering characteristics of the Barak River using RS and GIS "Hydro 2019 , 18-20 December, 2019, University College of Engineering, Osmania University, Hyderabad, India.
  35. Shehnaj Ahmed Pathan and Briti Sundar Sil. "Simulation of Sediment Yield in Barak River Basin Using SWAT Model – A Case Study", Hydro 2019, 18-20 December, 2019, University College of Engineering, Osmania University, Hyderabad, India.
  36. Subhrajyoti Deb and Briti Sundar Sil, "Temperature trend analysis for the sub-tropical region of the Brahmaputra River basin in India" Hydro 2019, 18-20 December, 2019, University College of Engineering, Osmania University, Hyderabad, India.
  37. Kumar Ashwini and Briti Sundar Sil, "Prioritization of the sub-watersheds for the Barak River Basin based on Change in LULC" Hydro 2019 , 18-20 December, 2019, University College of Engineering, Osmania University, Hyderabad, India.

38. Shehnaj Ahmed Pathan and Briti Sundar Sil. "Soil Erosion Risk Assessment using SWAT model in the Barak River Basin in India", Second ASCE India Conference on "Challenges of Resilient and Sustainable Infrastructure Development in Emerging Economies" (CRSIDE2020), 02-04 March, 2020, Novotel Hotel, Kolkata, India.

**d) National Conference(s):**

1. Marbaniang AL, Dutta S, Ghosh S (2019), Tensile membrane structure: An overview, In National Conference on Futuristic Approaches in Civil Engineering (FACE-2019), Aug 30-31, Hyderabad, India.
2. Paul, A. and Hussain, M. (2019). "pH and electrical conductivity of cement treated peat." 7th Indian Young Geotechnical Engineers Conference, 15-16 March, NIT Silchar.
3. Baro O and Kumar A (2019) " A review on the seismic vulnerability of oil and gas pipelines in Guwahati city" Indian Geotechnical Conference IGC 2019, 19-21 December, SVNIT Surat.
4. Alammyan, A., Kothapalli, S. K., Sreedeeep, S., (2019) An Autonomous Program for Crack Length Calculation In An Unsaturated Soil In 1-D Column, Indian Geotechnical Conference, GeoNEst 2019 (SVNIT Surat)
5. Sarma, A., Choudhury, A., Sarma, K., Alammyan, A., (2019) Stability assessment of a soil slope in Meghalaya, North-Eastern India, Indian Geotechnical Conference, GeoNEst 2019 (SVNIT Surat)
6. Agarwal, N and Dey A. K. (2019) " A new technique to avoid tilting problems during liquefaction", Indian Geotechnical Conference, IGC 2019-GeoINDUS, SVNIT Surat, 19-21 December, Paper no. Th\_05\_103
7. Saha, A., Saha, K and Dey A. K. (2019) " Seismic site classification and site period determination of NIT Silchar using MASW", Indian Geotechnical Conference, IGC 2019- GeoINDUS, SVNIT Surat, 19-21 December, Paper no. Th\_06\_47

**e) Book/Chapter:**

1. Dutta S, Gandomi AH (2020), Surrogate model-driven evolutionary algorithms: Theory and applications, Evolution in Action – Past, Present, and Future, Wolfgang Banzhaf et al. (Eds.), Book series on Genetic and Evolutionary Computation, Springer Nature.

2. Dutta S, Gandomi AH (2019), Design of experiments for uncertainty quantification based on polynomial chaos expansion metamodels, Handbook of Probabilistic Models, Samui, P, et al. (Eds.), Elsevier.
3. Sil A., Vanapalli N.K., Kumari A., Gogoi P., Mojumder D. (2020) Experimental Comparative Study on Strength Parameters of Concrete Assimilating Glass Fibers of Fine Aggregate, Cement with Rubber and GGBS. In: Prashant A., Sachan A., Desai C. (eds) Advances in Computer Methods and Geomechanics. Lecture Notes in Civil Engineering, vol 55. Springer, Singapore. [https://doi.org/10.1007/978-981-15-0886-8\\_38](https://doi.org/10.1007/978-981-15-0886-8_38)
4. Das J., Sil A. (2020) Condition Assessment and Failure Probability of Existing Bridges in the Cachar District, Assam. In: Prashant A., Sachan A., Desai C. (eds) Advances in Computer Methods and Geomechanics. Lecture Notes in Civil Engineering, vol 55. Springer, Singapore. [https://doi.org/10.1007/978-981-15-0886-8\\_48](https://doi.org/10.1007/978-981-15-0886-8_48)
5. Dhar, S. and Hussain, M. (2018), "The Tensile Strength Behavior of Lime-Stabilized Soft Soil with Inclusion of Plastic Fiber" Ground Improvement Techniques and Geosynthetics, Lecture Notes in Civil Engineering 14, [https://doi.org/10.1007/978-981-13-0559-7\\_24](https://doi.org/10.1007/978-981-13-0559-7_24). [Springer]
6. Kumar A., Baro O. (2019) Indirect Estimation of Local Soil Response in Light of Past as well as Recent Earthquakes in the Shillong Plateau. In: Adimoolam B., Banerjee S. (eds) Soil Dynamics and Earthquake Geotechnical Engineering. Lecture Notes in Civil Engineering, vol 15. Springer, Singapore. [https://doi.org/10.1007/978-981-13-0562-7\\_8](https://doi.org/10.1007/978-981-13-0562-7_8)
7. Roy, A., Sahu, A. and Bandyopadhyay, D. (2020), "A novel sloshing damper for vibration control of short period structures" in 'Recent Advances in Computational Mechanics and Simulations, Saha, S. K. and Mukherjee, M. (Eds), Series Volume 103, Ed 1st, Springer.
8. Dutta M., Ahmed M.A. (2020) Review of Capacity Estimation at Unsignalized Intersections in the Indian Context. In: Dawn S., Balas V., Esposito A., Gope S. (eds) Intelligent Techniques and Applications in Science and Technology. ICIMSAT 2019. Learning and Analytics in Intelligent Systems, vol 12. Springer, Cham. [https://doi.org/10.1007/978-3-030-42363-6\\_66](https://doi.org/10.1007/978-3-030-42363-6_66)

9. Khanday S.A., Ahmed M.A. (2020) Modelling and Analysis of Mode Choice Behaviour for Work Trips in Srinagar. In: Dawn S., Balas V., Esposito A., Gope S. (eds) Intelligent Techniques and Applications in Science and Technology. ICIMSAT 2019. Learning and Analytics in Intelligent Systems, vol 12. Springer, Cham. [https://doi.org/10.1007/978-3-030-42363-6\\_9](https://doi.org/10.1007/978-3-030-42363-6_9)
10. Das D., Ahmed M.A., Deb S. (2020) Model for Estimating On-street Parking Demand in Urban CBD. In: Dawn S., Balas V., Esposito A., Gope S. (eds) Intelligent Techniques and Applications in Science and Technology. ICIMSAT 2019. Learning and Analytics in Intelligent Systems, vol 12. Springer, Cham. [https://doi.org/10.1007/978-3-030-42363-6\\_38](https://doi.org/10.1007/978-3-030-42363-6_38)
11. Shulanki Pal, Bijan Kumar Roy, Satyabrata Choudhury,(2020),Comparison of Effectiveness of TLCBDOverLCVAinVibrationControlofStructureUnder Non-stationary Earthquake, Recent Developments in Sustainable, Infrastructure,Springer,Pages 311-323
12. Manita Das and Ashim Kanti Dey (2019) State of Art on Load-Carrying Capacity and Settlements of Stone Columns pp 101 - 124, Recent Developments in Sustainable Infrastructure : Selected Proceedings of ICRDSI, 2019, [https://doi.org/10.1007/978-981-15-4577-1\\_9](https://doi.org/10.1007/978-981-15-4577-1_9)
13. Aakash Kumar, Nirmalendu Debnath (2020), Seismic Behaviour of a Typical Rail Bridge Using North-East India Specific Synthetic Ground Motions Under Multi-support Excitation, Recent Developments in Sustainable, Infrastructure, Springer, Pages 291-300.

## 1.6 Consultancy Services

Sl. No.	Faculty name	Name of the Scheme	Sponsoring Agency	Amount Earned
1	Prof. S. Choudhury	Proof checking of Bridges	Sikkim Govt,	3.3 lacs
2	Dr .D. K.Ghose	Proof checking of bridges Water potential survey detailing of canals outlet	RVNL SM Consultancy	15 lakhs 5 .5 lakhs
3	Prof. A. K. Dey, Dr. P. J. Roy, Prof. P. S. Choudhury, Prof. A. K. Barbhuiya	Study on Soil Erosion and Flood Problems in Barak Basin	Brahmaputra Board, Guwahati	96.78 Lakhs
4	Prof. A. K. Babhuiya, Dr. P. J. Roy	Concurrent Evaluation of FMP Schemes	WRE Department, Govt. of Assam	3.5 Lakhs
5	Prof. P. S. Choudhury, Dr. P. J. Roy, Mr. P. Das	Time Motion Study under MGNREGA	Panchayat and Rural Development, Guwahati, Assam	25 Lakhs

## 1.7 Major Equipment Acquired

- Steel Fabrication Bed Flume
- STARA 2140 (Thermo Fisher Scientific make Orion star A214
- FLOW 3D CFD Simulation Software
- Liquid Limit Apparatus (Digital)

## 1.8 Patent

Sl. No.	Details	Year
1	An intelligent and a self-learning fluid detection apparatus and a method thereof	Granted (2019) patent no- 313255
2	Method and systems for warning user regarding a water flooding type disaster	2019 (published)

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. S. Dutta	Visiting Scholar, Aalto University, Finland	Finland	December 2019
2	Dr. Dillip K. Ghose	International Conference on Computer Science and Computational Intelligence (ICCCSI 2019)	Universitas BINA Indonesia	2019
3	Prof. A. K. Dey	XVII ECSMGE-2019, Paper no. D-2-3-05, ISBN 978-9935-9436-1-3	Rekjavik, Iceland	September 1-6, 2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Specialization: Structural Engineering			
Scholar No.	Name of the Student	Name & Signature of the Supervisor	Title of the thesis
17-21-501	Pranay Rai	Dr. M. L. V. Prasad	Pushover Analysis of a Box-Girder Bridge
17-21-502	Aninda Pal	Prof. S. Choudhury	Dynamic Wind Analysis for 22 Story Building Using Computational Fluid Dynamics
17-21-503	Rangish A	Dr. Nirmalendu Debnath	Reliability Analysis of Cable Stayed Bridge for Serviceability subjected to Earthquake Excitations
17-21-505	Chaudhari Rahul Gopal	Dr. Nitesh A.	Seismic Vulnerability Assessment for Open Ground Storey RC Building with and without Infill Walls
17-21-506	Vivek Laishram	Dr. Nirmalendu Debnath	Comparative Studies on Seismic Performance between Conventional Shear Wall Moment Frame and Rocking Wall Moment Frame
17-21-507	Sadananda Angom	Dr. Nirmalendu Debnath	Post-Buckling Behaviour of Cold Formed Z Section Beam Using Finite Element (EE) Model
17-21-508	Suman Kalita	Dr. M. L. V. Prasad	Experimental Study of Geopolymer Concrete Using Industrial By-Products
17-21-509	Abhinandan Kashyap	Prof. S. Choudhury	Reliability of civil engineering systems using Bayesian inference
17-21-510	Imdad Ahmed Laskar	Prof. A.I. Laskar	Effect of Cold Joint on Rehabilitation of Beam Column Joint by Removal and Replacement Technique
17-21-511	Aditi Halder	Dr. Bijan Kumar Roy	Optimization of Seismic Response Control of Structure Using Compliant Liquid Column Damper and Shape Memory Alloy Liquid Column Damper in Uncertainty
17-21-512	Intakhab Alam	Mr. P. Das	Blast loading on Structures
17-21-514	Athul Nath M.K.	Mr. P. Das	Seismic Performance Assessment of Diagrid Structures
17-21-515	Satyaki Ghosh	Dr. Arjun Sil	Behaviour of Fly Ash Concrete in Beam Column Joint Under Cycle Loading
17-21-516	Chigurupati Ravi Teja	Dr. Nirmalendu Debnath	Parametric Study on Effects of a Circular Perforation on a LDSS Square Hollow Column
17-21-517	Md Tabrej Alam	Prof. S. Choudhury	Structural Topology Optimization for Multiple Loads
17-21-518	Banani Das	Dr. Prashanth J	Experimental Studies on Pervious Concrete with Plastic Waste
Specialization: WRE			
Scholar No.	Name of the Student	Name & Signature of the Supervisor	Title of the thesis
17-21-101	Vijay	Prof. U. Kumar	Application of the Statistical downscaling modelling and ArcGIS to simulate climate change in National Capital Region, Delhi

17-21-103	Md. Mirajul Islam	Prof. A. K. Barbhuiya	Protection of Scour at 180° Flume Bend by using Hockey Shape Spurs Dike
17-21-104	Tinkle Das	Dr. Briti Sundar Sil	Soil Erodibility measurement of the Barak River Bank using JET Apparatus
17-21-105	Dikshita Goswami	Prof. D. Chakraborty	Dam Break Analysis Using HEC-RAS
17-21-106	Arindam Bar	Prof. A. K. Barbhuiya	Effect of Kinetic Energy of Precipitation and Slope of Watershed on Soil Loss
17-21-107	Koustav Nath	Dr. Susmita Ghosh	Impact of Climate Change on Glacier Health at Bhutan-China Border Region Using Satellite Images
17-21-108	Juhi Dhuriya	Dr. Briti Sundar Sil	Uncertainty analysis of rainfall-runoff model using Monte Carlo Simulation technique for Var River Basin
17-21-110	Omkesh Tripathi	Dr. D. K. Ghose	Comparison of Geospatial Interpolation Techniques to Assess Spatial and Temporal Variation of Precipitation in Assam
17-21-111	Subhankar Das	Dr. P. J. Roy	Discharge Characteristic of Multi-Cycle Triangular Labyrinth Weir
17-21-112	Totan Sarker	Dr. Susmita Ghosh	Conjunctive use of ground and surface water for optimal cropping pattern
17-21-113	Shyam Babu Yadav	Dr. Prashanth J	Eco-Friendly Bio-Retention Tank
17-21-114	Nasim Aktar	Dr. P. J. Roy	Flow Over Sharp Crested Plan View Circular Arc From Weir
17-21-115	Rajendra Nath Paul	Dr. Prashanth J	Experimental and Numerical Modelling of Infiltration Rate
17-21-116	Bankuru Lakshmi S.Naidu	Dr. D. K. Ghose	Estimation of Groundwater Storage Changes in Bankura District, West Bengal
17-21-117	Mayank Chaudhary	Prof. P. S. Choudhury	Flow Propagation Modelling for River System Incorporation Ungauged Watersheds
17-21-118	Pavan Kumar Varshney	Prof. P. S. Choudhury	Planning and Operation of a Reservoir
17-21-119	Palavalasa Shiva Kumar	Prof. D. Chakraborty	Regional Flow Frequency Analysis for Lower Krishna River Basin, Andhra Pradesh, India
17-21-120	Sridharam Sriharsha	Prof. U. Kumar	Optimised Release Policy for Somasila Reservoir Using Cropwat

**Specialization: Structural Dynamics & Earthquake Engineering**

Scholar No.	Name of the Student	Name & Signature of the Supervisor	Title of the thesis
17-21-202	Misal Bharati Hanamant	Dr. Bijan Kumar Roy	Effect of URM infills on seismic fragility of RCC building
17-21-203	Tushar Kanti Das	Mr. P. Das	Effect of plan irregularity on the seismic performance of multi-storey RCC buildings
17-21-204	Rahul Kumar	Dr. Nitesh A.	Comparative liquefaction assessment of foundation soil of a flyover in Patna city
17-21-205	Nancy Nabam	Dr. Bijan Kumar Roy	Seismic response control of structure using tuned mass friction damper
17-21-206	Aditya Nath Sonkar	Dr. Bijan Kumar Roy	Response surface methodology based optimization of tuned mass damper under earthquake
17-21-207	Sitesh Mohapatra	Prof. S. Choudhury	Determination of beam depth for RC building with infill wall in UPBD method
17-21-208	Charla Venkatesh	Dr. Arjun Sil	Evaluation of seismic wave attenuation for the Kathmandu region, Nepal
17-21-209	Mayuri Borah	Prof. S. Choudhury	Performance of different structural systems of tall buildings

17-21-210	Nazeel Sabah	Dr. Arjun Sil	Forecasting of tsunami occurrences across various Tsunamigenic zones of the earth
17-21-211	Dhanjit Deka	Prof. Ashim K. Dey	Effect of MTLDs in reduction of vibration in a RCC building
17-21-212	Diptimoyee Phukan	Dr. Arjun Sil	Modelling of airblast load and assessment of performance on reinforced concrete structure
17-21-213	Saranika Das	Dr. Arjun Sil	Comparative seismic fragility study of railway concrete bridge piers considering with and without soil structure interaction effect
17-21-214	Aakash Kumar	Dr. Nirmalendu Debnath	Seismic behaviour of plate girder bridge subjected to multi support excitation with north-east India specific synthetic ground motions
17-21-215	Roshan Adhikari	Dr. M. L. V. Prasad	Seismic performance of box-girder bridge with single circular and double elliptical piers
17-21-216	Amarjeet Kumar	Dr. Nitesh A.	ANN method for assessment of TMD parameters to minimize transmissibility for RC buildings
17-21-217	Kamalesh Kumawat	Mr. P. Das	Effect of shear wall on performance of flat slab building
17-21-218	Abhishek Kumar Sinha	Dr. Bijan Kumar Roy	Seismic response of vibration control of structure using variable friction pendulum isolator

#### Specialization: Transportation Engineering

Scholar No.	Name of the Student	Name & Signature of the Supervisor	Title of the thesis
17-21-301	Suman Ganguly	Prof. M. A. Ahmed	Performance Evaluation and Enhancement of Undersigned T-Intersections under Mixed Traffic Condition Using Vissim
17-21-303	Soumik Sarkar	Prof. M. A. Ahmed	Determination of Service Quality of Bus Transit System Using Servqual Method Based on Users Perceptions and Expectations
17-21-304	Abishak Baidya	Dr. Kh. Lakshman Singh	Strength characterization of silica fume stabilized clay soil reinforced with polypropylene fiber
17-21-305	Maharshi Kalita	Dr. Kh. Lakshman Singh	Behaviour of soil subgrade stabilized with industrial by-products
17-21-307	Avijit Mandal	Prof. M.A. Ahmed	Estimation of the Pedestrian level of Service: A Case Study in Kolkata
17-21-309	G. K. Lyngdoh Nongbri	Dr. Kh. Lakshman Singh	Effects of silica fume with polyester fibre reinforced in concrete pavement
17-21-310	Neelabha Roy	Prof. M. A. Ahmed	Proactive Surrogate Safety Analysis in Unsignalized Intersection Using Vissim and SSAM
17-21-312	Gaurav Kumar	Dr. Kh. Lakshman Singh	Investigation on moisture susceptibility of fibre reinforced bituminous concrete
17-21-314	Sourav Barman	Dr. Kh. Lakshman Singh	Evaluation of Bituminous mixes using Fly Ash and Brick Dust as fillers
17-21-315	Debashis Ray Sarkar	Dr. Kh. Lakshman Singh	Estimation of Capacity and Level of Service at Uncontrolled T-Intersections using VISSIM
17-21-316	Sujeet Suman	Dr. Kh. Lakshman Singh	Performance of Asphalt concrete mix using elastomeric and plastomeric polymer
17-21-317	Mukesh Kumar Soni	Prof. M.A. Ahmed	Mode Shift Analysis of the Car User to Metro Rail in Indian Development City: A Case Study of Delhi Metro
17-21-318	Ashwani Bokadia	Prof. M.A. Ahmed	On-Street Night Car Parking Demand Estimation in Residential Area: A Case Study of Delhi
17-21-319	Yeddu Dhanunjaya	Dr. M. L. V. Prasad	Evaluation of Behaviour of Geopolymer Concrete in Rigid Pavement

Specialization: Geotechnical Engineering			
Scholar No.	Name of the Student	Name & Signature of the Supervisor	Title of the thesis
17-21-401	Nilanjana Banik	Dr. Debjit Bhowmik	Behaviour of Shallow Foundation on Geotextile Reinforced Liquefiable Soil
17-21-403	Ankit Sahu	Dr. Parbin Sultana	Soil Stabilization Using Microbially Induced Calcite Precipitation (MICP)
17-21-404	Gautam	Dr. Monowar Hussain	Application of Geosynthetic in Unpaved Road
17-21-405	Banchiva K Marak	Dr. N. Borthakur	Behavior of Square Footing on Cement Modified Fibre Reinforced Sand Layer Underlain by Soft Clayey Soil
17-21-406	Nishant Agarwal	Prof. Ashim K. Dey	Modification of Conventional Footing as a Remediation to Tilting Problem during Liquefaction
17-21-408	Sibam Das	Dr. N. Borthakur	Dynamic Response of Shallow Foundation with Steel Skirts
17-21-411	Sujoy Biswas	Prof. Ashim K. Dey	Determination of safe bearing capacity and settlement of shallow foundation using seismic velocities.
17-21-412	Nikhil Kumar	Dr. N. Borthakur	Study of Later Dynamic Load Behaviour on Pile Group Using Block Vibration Apparatus
17-21-413	Rajib Modak	Dr. Debjit Bhowmik	A comparative study of pile raft foundation with uniform and non-uniform pile lengths on soft clay
17-21-414	Vishnu G.	Dr. Debjit Bhowmik	Study of the behaviour of treated coir fibre reinforced soil
17-21-415	Sinjan Debnath	Dr. Parbin Sultana	Modelling of Geotechnical Problems Using Machine Learning Techniques
17-21-416	Yogendra Kumar	Prof. Ashim K. Dey	Study of an Embankment using Geofoam over Soft Clay
17-21-417	Punit Kumar Yadav	Dr. Monowar Hussain	Unconfined Compressive Strength Behaviour of Sodium Silicate and Alkali Activated Cement Stabilized Peat
17-21-418	Suvrajeet Pramanik	Dr. Debjit Bhowmik	Determination of safe bearing capacity and settlement of shallow foundation using seismic velocities.
17-21-419	Sudeepta Malakar	Dr. Parbin Sultana	Study of Bearing Capacity of Shallow Foundation on Bamboo Geotextile Reinforced Clayey Bed
17-21-421	Krishna Kant Thakur	Dr. Monowar Hussain	The strength behaviour of lime stabilized RHA blended clayey subgrade

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Parbin Sultana	Prof. A. K. Dey	Estimation of Soil Bearing Pressure at Serviceability limit State on Clayey soil Bed by Artificial Intelligence Techniques and Probabilistic method.
2	Manita Das	Prof. A. K. Dey	Enhancement of Bearing Capacity of Stone Columns Using Soil Cement Bed
3	Saikat Deb	Prof. M. Ali. Ahmed	Quality Assessment of City Bus Service based on Subjective and Objective Measures.
4	Umesh Kumar Das	Dr. P. J. Roy Dr. D. K. Ghose	Effects of hydrologic parameters on groundwater: A case study
5	Nirmali Borthakur	Prof. A. K. Dey	Vertical Load Carrying Capacity of Micro pile Groups in Soft Clayey Soil
6	Sanjib Singha	Prof. A. K. Dey	Clay Dampers for Reduction of Vibration Amplitudes

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
7	Joseph Tripura	Dr. P. Roy Prof. A. K. Barbhuiya	Data Driven Models for Real Time Flow Forecasting in a River System
8	Amit Kumar Dey	Prof. U. Kumar	- Removal of Congo Red & Reactive Red 195 Deys from Aqueous Solution using Treated Jute Fibre.
9	Piya Biswas	Prof. A. K. Barbhuiya	Study of River bank Erosion at Bends and its Countermeasures

**I. Name of the Department:****Mechanical Engineering****The Department at a glance****Year of Establishment: 1977****Academic Programmes Offered:**

- Bachelor of Technology (B.Tech)
- Master of Technology (M.Tech)
- Doctor of Philosophy (Ph.D.)

**Total Faculty Strength: 32**

- Professor: 5
- Associate Professor: 3
- Assistant Professor: 24

**Total Student Strength: 713**

- B.Tech: 508
- M.Tech: 81
- Ph.D.: 124

**New Students Joined in 2019-2020: 218**

- B.Tech: 157
- M.Tech: 36
- Ph.D.: 25

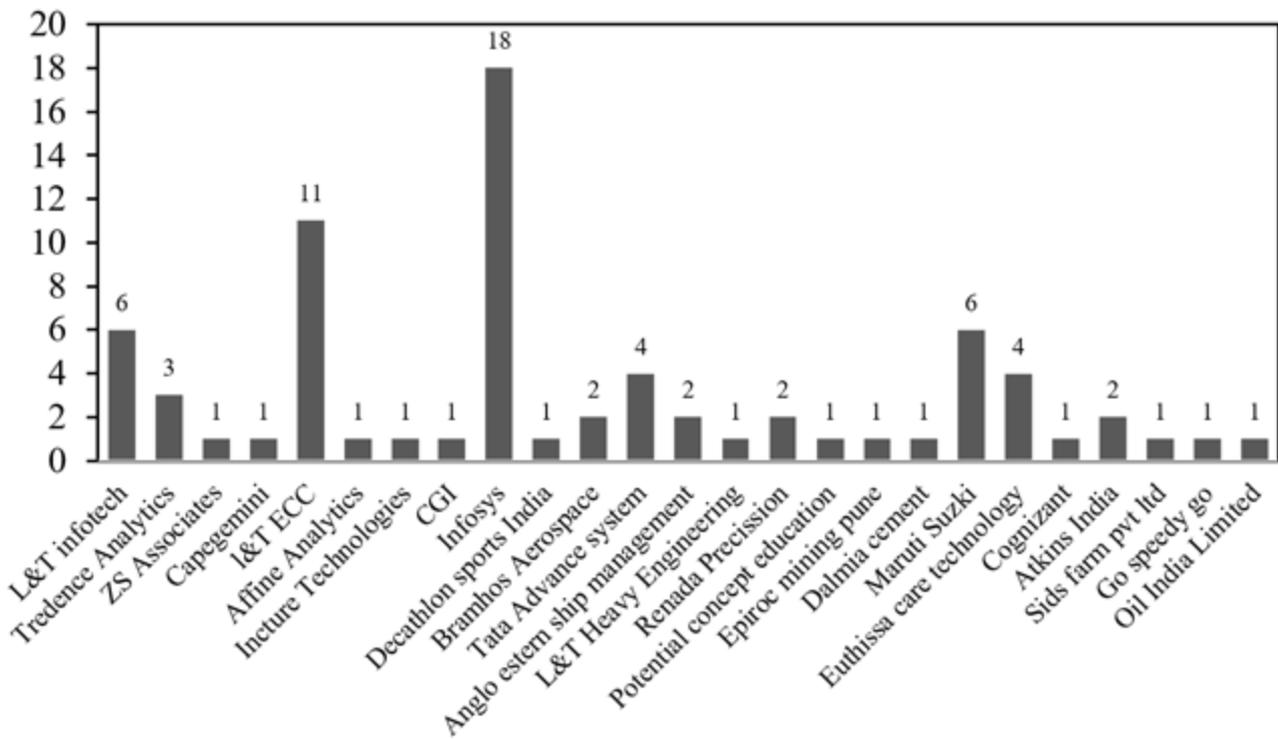


Fig: Placement statistics of student in the Mechanical Engineering Department during 2019-2020

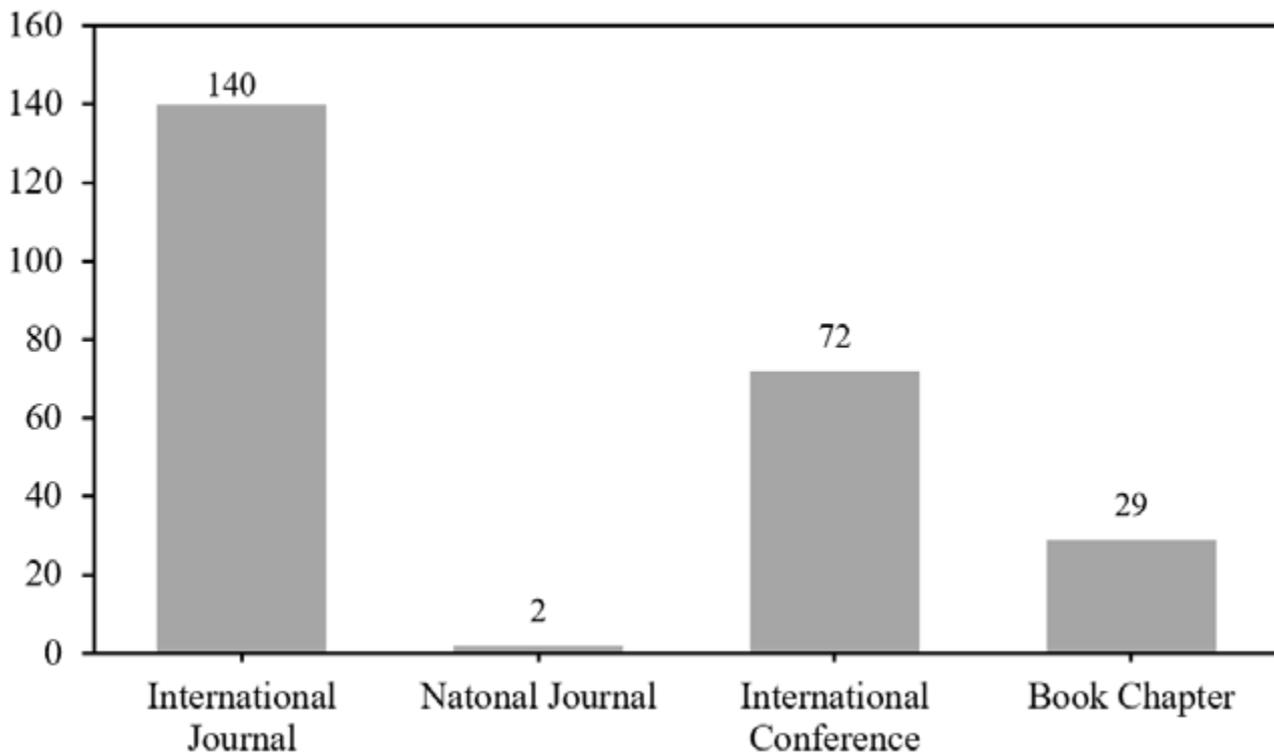


Fig: Publications details of Mechanical Engineering Department during 2019-2020.

## 1.1 Academic Staff:

**HEAD:** Dr. Agnimitra Biswas, Assistant Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Prof. R. Gupta (On deputation)	Dr. K. Chakraborty	Dr. L. Roy
Prof. K. M. Pandey	Dr. P. Choudhury	Mr. S. K. Pattanayak
Prof. R. D. Misra	Mr. D. H. Das	Dr. A. Biswas
Prof. P. K. Patowari		Dr. S. Debbarma
Prof. K.K. Sharma		Dr. S. Halder
		Dr. S. Bhowmik
		Dr. D. Bhanja
		Dr. S. Nath
		Dr. P. Deb. Roy
		Dr. S. Pati
		Dr. A. B. Deoghare
		Dr. Biplab Das
		Dr. S. Dey
		Dr. S. R. Maity
		Dr. P. R. Randive
		Dr. C. K. Sahoo
		Dr. A. Paul
		Dr. Bipul Das
		Dr. Y. Singh
		Dr. S. Sharma
		Dr. A. Bisoi
		Dr. R. N. Gupta
		Dr. S. Negi
		Dr. S. Kar

**Visiting Professor (If any):** Prof. A. Sarkar

## 1.2 Distinction Achieved

**a) By Student:**

1. Research Scholar **Kumari Ambe Verma** received the 1<sup>st</sup> Prize in International Conference on Innovation in Engineering Sciences, Management and Technology, Nagpur, Maharashtra, India (12-13 December 2019) for the best research paper.
2. M.Tech Scholar **Atul Pathak, Himanshu Singh and Sunil Kumar** received the 1st Prize in 3D Printing Olympiad 2.0, IEM & UEM Kolkata, India (09 November 2019) for the best research project.

**b) By Faculty Member:** NA

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

### a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1.	Dr. S. Dey	One day GATE CONCLAVE - The Guidance Seminar for prospective Graduate Aptitude Test in Engineering (GATE) Examination aspirants on 24th August, 2019 at NIT Silchar, India.	TEQIP III	24 August, 2019
2.	Dr. S. Dey	GIAN course on "Structural Dynamics, Aerodynamics and Vibration Control of Wind Turbines" scheduled on 16-20 April, 2019 at NIT Silchar, India.	GIAN	16-20 April, 2019
3.	Dr. S. Dey	Technical talk- Damage Assessment of structures using swarup based optimization technique from changes of vibrational response.	NITS	16th August 2019
4.	Dr. Bipul Das, Dr. Y. Singh	Workshop on Electronic Systems for Mechanical Automation & Robotic Technology	TEQIP III	20-24 May, 2019
5.	Dr. Bipul Das, Dr. A. Paul, Dr. Y. Singh, Dr. C. K. Sahoo	Educational Lectures on Industry Crossover & Interdisciplinary Research	TEQIP III	06-07 April, 2019
6.	Dr. Y. Singh, Dr. Bipul Das	One day workshop and awareness program on Intellectual Property Rights (IPR) for Innovators	TEQIP, IIC 2.0	07/02/2020

### b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Prof. K. M. Pandey	12th International Conference on Sustainable Energy & Environmental Protection (SEEP2019), 18-21 November 2019.	University of Sharjah, UAE
2	Prof. K. M. Pandey	5th International Conference on Green Materials and Environmental Engineering (GMEE2019), 27-29 December 2019.	Guangzhou, China
3	Prof. K. M. Pandey	First International Conference on Recent Advancement of Mechanical Engineering (ICRAME 2020), 7-9 February 2020.	National Institute of Technology Silchar, Assam, India
4	Dr. A. Biswas	ASME 2019 Gas Turbine India (GTIndia2019), December 5-6, 2019, Chennai, Tamil Nadu, India.	IIT Madras
5	Dr. S. Bhowmik	Invited talk on "Green Composites: An Insight into Development, Mechanical Properties and Characterization" International Symposium on Sustainable Polymers, 23rd - 25th August 2019.	IIT Guwahati, Assam, India.
6	Dr. S. Dey	Invited talk at Annual Symposium 2019 at Research & Development Establishment (Engineers), Pune under aegis of Defence Research and Development Organisation (DRDO), Ministry of Defence, Govt. of India held on August 8 - 9, 2019.	Defence Research and Development Organisation (DRDO), Ministry of Defence
7	Dr. S. Dey	Presented paper entitled "Radial basis function-based probabilistic dynamic stability of doubly curved shells" in The 64th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM-2019) - An International Meet, held on Dec 9-12, 2019 at Indian Institute of Technology Bhubaneswar, India.	Indian Institute of Technology Bhubaneswar, India.

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
8	Dr. Bipul Das	Indo-German Capacity Building Course in CST, March, 2020.	NTPC-NETRA, NOIDA
9	Dr. Abhishek Paul	Roof Top Solar Grid - Design, Erection, Commissioning and Maintainance (June-10th-14th, 2019).	ESCI, Hyderabad
10	Dr. Abhishek Paul	Industry Academia Conclave on Hydrogen and Fuel Cells (February 27th -28th 2020.	IISER Thiruvananthapuram
11	Dr. Bipul Das	One Week Faculty Development Program on Project Management, 03-07 February, 2020.	Assam Engineering College
12	Dr. Bipul Das	One week Faculty Development Program on Curriculum Design and Implementation for Outcome based Education, 27-31 May, 2019.	NIT Silchar
13	Dr. S. Sharma	One Day Workshop on "Intellectual Property Rights" Venue: Guest House Auditorium, 07/03/2020	NIT Silchar
14	Dr. S. Sharma	One Day Workshop on "एक दविसीय प्रशिक्षण एवं कार्यशाला", 11/02/2020	NIT Silchar
15	Dr. A. Bisoi	One Day Workshop on "एक दविसीय प्रशिक्षण एवं कार्यशाला", 11/02/2020	NIT Silchar
16	Dr A. Bisoi	One Day Workshop on "Intellectual Property Rights" Venue: Guest House Auditorium Date: 07/03/2020	NIT Silchar
17	Dr. S. Negi	Indo-German Capacity Building Course in CST, March, 2020.	NTPC-NETRA, NOIDA

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

- Thermal Engineering
- Design and Manufacturing
- Renewable Energy
- Hard Surface coating
- Arc based Additive Manufacturing
- Advanced Manufacturing Processes
- Composite Materials
- Materials Engineering

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
14	04	117

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Machine Element Laboratory	Research and development/Design and Manufacturing Specialization
2	Advanced Engine Research Lab	Research and development / Thermal Engineering Specialization
3	FRP Lab	Ph.D. and M.Tech project, UG Project
4	Fuel Research Lab	Research and development / Thermal Engineering Specialization

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
5	Machine Element Laboratory	Research and development/Design and Manufacturing Specialization
6	Machine Design Lab	Ph.D. and M.Tech project, UG project
7	Material Characterization Lab	Ph.D. and M.Tech project, UG project
8	Nanocomposite Materials Lab	Ph.D. and M.Tech project, UG project
9	Ocean Renewable Energy Lab	Research and Development/New programme
10	Ocean Simulation Lab	Research and Development/New programme
11	Uncertainty Quantification Lab	Ph.D. and M.Tech project, UG project
12	Vibration and Rotor dynamics	Dynamics Lab/ UG programme

**d) Ongoing/Completed Sponsored Research Project:**

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Centre for Advanced Manufacturing and Material Testing	Prof. P. K. Patowari, Dr. S. Bhowmik, Dr. S. Halder	DST-FIST	220	2015 -2020
2	Development and testing of combustion characteristics of nanoparticle embedded biodiesel in an open ECU based dual fuel diesel engine	Dr. Sumita Debbarma (PI)	SERB- DST	23.84	2019-2022
3	Bamboo bricks/laminates from BMFs (Bamboo Micron Fibres) for low-cost housing structures for North Eastern Himalayan region	Dr. Sudipta Halder, Dr. Biplab Das	NMHS	49.5	2018-2021
4	Jal Abhyaranya Campaign for Water Security in IHR" for North Cacher (Dema Hesao), Assam.	Dr. S. Halder (PI), Mr. S. K. Pattanayak (Co-PI)	NMHS	13.62	2019-2020
5	Spring Rejuvenation for Water Security in Himalaya	Dr. S. Halder (PI), Mr. S. K. Pattanayak (Co-PI)	NMHS	499.90	2020-2023
6	Enabling innovative multiple self-healing technology in fiber-reinforced composite with unaltered mechanical properties,	Dr. Sudipta Halder	SERB-DST	35.00	2019-2022
7	Experimental and Computational analysis of heat sink application for optimal performance by developing low-cost natural filler reinforced composite material	Dr. S. Bhowmik, Dr. Biplab Das	CPRI	22.63	2017-2019
8	Development and testing of hybrid solar photovoltaic thermal (PVT) air system for the composite environment of North-East India for tea drying applications	Dr. Biplab Das, Dr. A. Biswas	SERB	30.3	2018-2021
9	Design and development of a hybrid photovoltaic thermal (PVT) system for rural application	Dr. B. Das, Dr. A. Biswas, Dr. S Halder	DST	14.6	2017-2020
10	Design and development of a heat pipe embedded solar collector based latent heat storage system for domestic application	Dr. Biplab Das	SERB	27.21	2017-2020
11	Stochastic multi-scale failure analysis of composites (ongoing)	Dr. S. Dey, Dr. S. R. Maity, Dr. A. Chakraborty	AR&DB	11.55	2019-2021
12	Development and Testing of nano doped hybridized biodiesel as pilot fuel for hydrogen dual-fuel operation in CI engine.	Dr. A. Chakraborty, Dr. Biplab Das, Dr. S. Debbarma	DST	52.81	2019-2022

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
13	Design and Development of a High Speed Three Dimensional Printer with a Large Range of Micro Motion using a Scanning Projection Stereolithography Technique	Dr. Yogesh Singh	CSIR	27.30	2020-2023

#### e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Prof. K. M. Pandey	Acta Astronautica	3	2019-2020
2	Prof. K. M. Pandey	Heat Transfer - Asian Research	2	2019-2020
3	Prof. K. M. Pandey	Journal of Thermoplastic Composite Materials	1	2019-2020
4	Prof. K. M. Pandey	Applied Energy	3	2019-2020
5	Prof. K. M. Pandey	Combustion Science and Technology	1	2019-2020
6	Prof. K. M. Pandey	Journal of Zhejiang University SCIENCE A	1	2019-2020
7	Prof. K. M. Pandey	International Communications in Heat and Mass Transfer	1	2019-2020
8	Prof. K. M. Pandey	Aerospace Science and Technology	2	2019-2020
9	Prof. K. M. Pandey	Energy	3	2019-2020
10	Prof. K. M. Pandey	Applied Thermal Engineering	2	2019-2020
11	Prof. K. M. Pandey	Sustainable Computing: Informatics and Systems	1	2019-2020
12	Prof. K. M. Pandey	International Journal of Hydrogen Energy	2	2019-2020
13	Prof. K. M. Pandey	The Aeronautical Journal	1	2019-2020
14	Prof. K. M. Pandey	International Journal of Energy Research	1	2019-2020
15	Prof. K. M. Pandey	Renewable Energy	1	2019-2020
16	Prof. K. M. Pandey	Materials Today: Proceedings	4	2019-2020
17	Prof. K. M. Pandey	International Journal of Ambient Energy	1	2019-2020
18	Prof. K. M. Pandey	Nuclear Engineering and Technology	2	2019-2020
19	Prof. K. M. Pandey	Defence Technology	1	2019-2020
20	Prof. K. M. Pandey	Sustainable Cities and Society	1	2019-2020
21	Prof. K. M. Pandey	Materials Research Express	1	2019-2020
22	Prof. K. M. Pandey	Materials Science and Technology	1	2019-2020
23	Prof. P. K. Patowari	Materials and Manufacturing Processes, Taylor & Francis	8	2019-2020
24	Prof. P. K. Patowari	The International Journal of Advanced Manufacturing Technology	3	2019
25	Prof. P. K. Patowari	Advances in Materials Science and Engineering.	1	2019
26	Dr. L. Roy	Journal of Engineering Tribology	1	2019-2020
27	Dr. A. Biswas	Energy Conversion and Management	10	2019-20
28	Dr. A. Biswas	Applied Energy	12	2019-20
29	Dr. A. Biswas	Sustainable Energy Technologies and Assessments	6	2019-20
30	Dr. S. Debbarma	Energy Sources, Part A: Recovery, Utilization and Environmental Effects	1	2020
31	Dr. S. Halder	Polymer Composites	7	2019
32	Dr. S. Halder	Composite Part A	4	2019-2020
33	Dr. S. Halder	Journal of Composites	2	2019
34	Dr. S. Halder	Carbon	1	2019
35	Dr. S. Halder	Journal of Nanostructure in Chemistry	1	2020

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
36	Dr. S. Bhowmik	International Journal of Quality & Reliability Management	2	2019
37	Dr. S. Bhowmik	Silicon	6	2019-20
38	Dr. S. Bhowmik	Part C: Journal of Mechanical Engineering Science	1	2020
39	Dr. D. Bhanja	International Journal of Heat and Mass Transfer	2	2019
40	Dr. D. Bhanja	International Communications in Heat and Mass Transfer	1	2019
41	Dr. D. Bhanja	Applied Thermal Engineering	1	2019
42	Dr. D. Bhanja	Heat & Mass Transfer	4	2019-20
43	Dr. D. Bhanja	Structural and Multidisciplinary Optimization	2	2019
44	Dr. D. Bhanja	Heat Transfer Asian Research	2	2020
45	Dr. D. Bhanja	Journal of the Brazilian Society of Mechanical Sciences and Engineering	1	2020
46	Dr. S. Pati	International Journal of Numerical Methods for Heat and Fluid Flow	1	2019
47	Dr. S. Pati	Chemical Engineering & Processing: Process Intensification	1	2019
48	Dr. S. Pati	Journal of Thermal Science and Engineering Applications (ASME)	2	2019
49	Dr. S. Pati	ASME Journal of Heat Transfer	1	2019
50	Dr. S. Pati	Physica Scripta	5	2019-2020
51	Dr. S. Pati	Journal of the Institution of Engineers (India): Series C	10	2019-2020
52	Dr. S. Pati	International Journal of Heat and Mass Transfer	1	2020
53	Dr. S. Pati	Journal of Thermophysics and Heat Transfer	1	2020
54	Dr. S. Pati	Journal of Advanced Research in Fluid Mechanics and Thermal Sciences	1	2019
55	Dr. S. Pati	Journal of Applied Fluid Mechanics	1	2019
56	Dr. S. Dey	Composite Structures (Elsevier Publication)	3	2019-2020
57	Dr. S. Dey	Composites Part B: Engineering (Elsevier Publication)	2	2019-2020
58	Dr. S. Dey	Thin-walled structures (Elsevier Publication)	3	2019-2020
59	Dr. S. Dey	Defence Technology	1	2019-2020
60	Dr. S. Dey	Computer Methods in Applied Mechanics and Engineering (Elsevier Publication)	1	2019-2020
61	Dr. P. R. Randive	Ref.: Ms. No. JTAC-D-20-01689 Journal of Thermal Analysis and Calorimetry	1	2020
62	Dr. A. Paul	Energy, Energy and Environment, Journal of Cleaner Technologies	5	2019-2020
63	Dr. Bipul Das	Trends in Materials and Manufacturing Processes	1	2020
64	Dr. Bipul Das	Measurement	1	2020
65	Dr. Bipul Das	Experimental techniques	3	2019
66	Dr. A. Bisoi	Journal of Industrial Textiles, SAGE Publication	1	2020
67	Dr. R. N.Gupta	International Journal of Ambient Energy, Taylor & Francis	1	2020
68	Dr. R. N.Gupta	Materials Performance and Characterization, ASTM	1	2019
69	Dr. S. Negi	Rapid Prototyping Journal	1	2019
70	Dr. S. Negi	Computational Thermal Sciences	1	2020
71	Dr. S. Kar	Sādhanā	3	2019-20
72	Dr. S. Kar	Journal of Thermal Spray Technology	1	2019
73	Dr. S. Kar	IGI Global- Book chapter	1	2020

## f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Prof. K. M. Pandey	12th International Conference on Sustainable Energy & Environmental Protection (SEEP2019), 18-21 November 2019, University of Sharjah, UAE
2	Prof. K. M. Pandey	First International Conference on Recent Advancement of Mechanical Engineering (ICRAME 2020), 7-9 February 2020, National Institute of Technology Silchar, Assam, India.
3	Prof. R. D. Misra	International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2020), February 07-09, 2020, NIT Silchar, India
4	Prof. P. K. Patowari	International Conference on Precision, Meso, Micro & Nano Engineering [COPEN-11] December 12-14, 2019, IIT Indore, India
5	Prof. P. K. Patowari	International Conference on Recent Advancements in Mechanical Engineering (ICRAME 2020), February 07-09, 2020, NIT Silchar, India
6	Dr. S. Halder	International Conference on Recent Advancements in Mechanical Engineering 2020, NIT Silchar
7	Dr. Bipul Das	International Conference on Recent Advancement of Mechanical Engineering (ICRAME 2020), February 07-09, 2020, NIT Silchar, India
8	Dr. S. Dey	Chairing technical session in "All India Seminar on Scope and Opportunity of Small Hydro and Wind Power in North Eastern Region of India" organized by the Institution of Engineers (India) - Mizoram State Centre, Aizawl, Mizoram at NIT Mizoram during 02nd and 03rd August 2019.
9	Dr. S. Dey	Chair a Technical Session in The 64th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM-2019) - An International Meet, held on Dec 9-12, 2019 at Indian Institute of Technology Bhubaneswar, India.
10	Dr. S. Dey	Chairing technical session in International Conference on Recent Developments in Mechanical Engineering  ICRAME 2020 during 07-09 February 2020, NIT Silchar, India.
11	Dr. Bipul Das	Co-Chair, Technical Session, 1st International Conference on Recent Advancements in Mechanical Engineering, NIT Silchar, 07-09 February, 2020.
12	Dr. Bipul Das	Chair, Technical Session, 2nd International Conference on New Frontiers in Engineering Science & Technology, NIT Kurukshetra, 2019.
13	Dr. A. Bisoi	Co-Chair, Technical Session, 1st International Conference on Recent Advancements in Mechanical Engineering, NIT Silchar, 07-09 February, 2020.
14	Dr. R. N. Gupta	Co-Chair, Technical Session, 1st International Conference on Recent Advancements in Mechanical Engineering, NIT Silchar, 07-09 February, 2020.
15	Dr. S. Negi	Co-Chair, Technical Session, 1st International Conference on Recent Advancements in Mechanical Engineering, NIT Silchar, 07-09 February, 2020.

# 1.5 Publications

## a) International Journal(s):

1. Mishra, D.K., Bhowmik, S., Pandey, K.M. Polyethylene Glycol Based Form Stable Composite Phase Change Material: A Review (2020) *Journal of Physics: Conference Series*, 1455 (1), art. No. 012025 DOI: 10.1088/1742-6596/1455/1/012025.
2. Singh, A., Singh, Y., Pandey, K.M. A Review on Viscous Fingering Pattern Formation in Lifted Hele-Shaw Cell (2020) *Journal of Physics: Conference Series*, 1455 (1), art. No. 012022 DOI: 10.1088/1742-6596/1455/1/012022.
3. Das, N., Das, S., Mishra, D.K., Pandey, K.M. Analysis of deformation and mode shape in the landing gear of light Unmanned Aerial Vehicle (2020) *Journal of Physics: Conference Series*, 1455 (1), art. No. 012020 DOI: 10.1088/1742-6596/1455/1/012020.
4. Basak, R., Gohil, P.P., Dey, S., Pandey, K.M. A Review on Property Reforms for Fiber Matrix Composites through Various Surface Treatments of Fibers (2020) *Journal of Physics: Conference Series*, 1455 (1), art. No. 012026 DOI: 10.1088/1742-6596/1455/1/012026.
5. Sonowal, P., Das, S., Mishra, D.K., Pandey, K.M. Stress analysis of Landing gear of light Unmanned Aerial Vehicle (2020) *Journal of Physics: Conference Series*, 1455 (1), art. No. 012019 DOI: 10.1088/1742-6596/1455/1/012019.
6. Reddy, B.V.R., Maity, S.R., Pandey, K.M. Microstructure, Tribological Properties, and Hardness of Spray-Deposited and Warm-Rolled Al-Pb Alloys in Peripheral Regions (2020) *Powder Metallurgy and Metal Ceramics*, 58 (11-12), pp. 631-641. DOI: 10.1007/s11106-020-00119-8.
7. Debnath, P., Pandey, K.M. Numerical analysis of detonation combustion wave in pulse detonation combustor with modified ejector with gaseous and liquid fuel mixture (2020) *Journal of Thermal Analysis and Calorimetry*. DOI: 10.1007/s10973-020-09842-1.
8. Suneetha, L., Randive, P., Pandey, K.M. Implication of diamond shaped dual strut on combustion characteristics in a cavity-based scramjet combustor (2020) *International Journal of Hydrogen Energy*.
9. Kummitha, O.R., Pandey, K.M., Gupta, R. Numerical Study of Hydrogen-Fueled Scramjet Performance with Passive Techniques (2020) *Lecture Notes in Mechanical Engineering*, pp. 243-249. DOI: 10.1007/978-981-15-1201-8\_28.
10. Suneetha, L., Randive, P.R., Pandey, K.M. Numerical Investigation on the Influence of Turbulence Models on Prediction of Flow Characteristics of a Scramjet Combustor (2020) *Lecture Notes in Mechanical Engineering*, pp. 835-844. DOI: 10.1007/978-981-15-0124-1\_75.
11. Suneetha, L., Randive, P.R., Pandey, K.M. A Comparative Evaluation of Combustion Characteristics of Strut and Wall Injection Technique in a Cavity-Based Scramjet Combustor (2020) *Lecture Notes in Mechanical Engineering*, pp. 823-833. DOI: 10.1007/978-981-15-0124-1\_74.
12. Kumar, R.R., Pandey, K.M., Dey, S. Stochastic Free Vibration Analysis of Sandwich Plates: A Radial Basis Function Approach (2020) *Lecture Notes in Mechanical Engineering*, pp. 449-458. DOI: 10.1007/978-981-13-9008-1\_36.
13. Kumar, R.R., Vaishali, Pandey, K.M., Dey, S. Effect of skewness on random frequency responses of sandwich plates (2020) *Lecture Notes in Mechanical Engineering*, pp. 13-20. DOI: 10.1007/978-981-15-1189-9\_2.
14. Majumder, P., Pandey, K.M., Deshpande, N.V., Maity, S. Comparative Study of Stress Analysis for Three Bladed Underwater Vehicle Propellers with Two Different Composite Materials (2020) *Lecture Notes in Mechanical Engineering*, pp. 1601-1611. DOI: 10.1007/978-981-15-0124-1\_140.
15. Choubey, G., D, Y., Huang, W., Yan, L., Babazadeh, H., Pandey, K.M. Hydrogen fuel in scramjet engines - A brief review (2020) *International Journal of Hydrogen Energy*. DOI: 10.1016/j.ijhydene.2020.04.086.

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18. Kumar, R.R., Mukhopadhyay, T., Naskar, S., Pandey, K.M., Dey, S. Stochastic low-velocity impact analysis of sandwich plates including the effects of obliqueness and twist (2019) *Thin-Walled Structures*, 145, art. no. 106411. DOI: 10.1016/j.tws.2019.106411.
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20. Alam, N., Sharma, K.K., Pandey, K.M. Numerical investigation of flame propagation and performance of obstructed pulse detonation engine with variation of hydrogen and air (2019) *Journal of the Brazilian Society of Mechanical Sciences and Engineering*, 41 (11), art. No. 502. DOI: 10.1007/s40430-019-2024-0.
21. Ramana Reddy, B.V., Mittal, R., Maity, S.R., Pandey, K.M. Investigation on metallurgical, tribological, hardness properties of spray deposited and warm rolled Al-18Pb, Al-22Pb alloys (2019) *Journal of Materials Research and Technology*, 8 (6), pp. 5687-5697. DOI: 10.1016/j.jmrt.2019.09.036.
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23. Kumari, G., Khanna, S., Bhanawat, H., Pandey, K.M. Occupational health and safety of workers in pharmaceutical industries, Himachal Pradesh, India (2019) *International Journal of Innovative Technology and Exploring Engineering*, 8 (12), pp. 4166-4171. DOI: 10.35940/ijitee.L3659.1081219.
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25. Kumar, R.R., Pandey, K.M., Dey, S. Probabilistic assessment on buckling behavior of sandwich panel: - A radial basis function approach (2019) *Structural Engineering and Mechanics*, 71 (2), pp. 197-210. DOI: 10.12989/sem.2019.71.2.197.
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27. Suneetha, L., Randive, P., Pandey, K.M. Numerical investigation on mixing behavior of fuels inreacting and non-reacting flow condition of a cavity-strut based scramjet combustor (2019) *International Journal of Hydrogen Energy*, 44 (31), pp. 16718-16734. DOI: 10.1016/j.ijhydene.2019.04.262.
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40. Roy, Bidesh, Misra, R.D., Pandey, K.M., Sinha, A., and Deb, B., "Computational and Experimental Study of Swirl Flow within SI Engine with Modified Shrouded Intake Valve", *Progress in Computational Fluid Dynamics, An Int. J.*, 2019, Vol. 19, No. 2, pp. 123-136.
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54. Himanshu Prasad Ratauri, Subrata Kushari, S. Dey, Radial Basis function based first-ply failure analysis of composite spherical shells, *International Conference on Recent Developments in Mechanical Engineering| ICRAME 2020 during 07-09 February 2020, NIT Silchar, India.*
55. G. Chandan and C. K. Sahoo "Numerical Analysis on a Selection of Horn Material for the Design of Cylindrical Horn in Ultrasonic Machining", *International Conference on Recent Developments in Mechanical Engineering| ICRAME 2020 07-09 February 2020, NIT Silchar, India*
56. Md. Aslam and C. K. Sahoo" Study of the effect of welding current on heat transfer and melt pool

- geometry on mild steel specimen through Finite Element Analysis” International Conference on Recent Developments in Mechanical Engineering | ICRAME 2020 07-09 February 2020, NIT Silchar, India.
57. R. Choudhary, D. Singh, A. Kumar, C. K. Sahoo, Y. Singh ” Development and Workspace Study of a 4-PP Planar Parallel XY Positioning Stage using SMA actuators” International Conference on Recent Developments in Mechanical Engineering | ICRAME 2020 07-09 February 2020, NIT Silchar, India.
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  59. Vivek Kumar Mishra, Subrata Bhowmik, Abhishek Paul, Ajay Yadav, Rajsekhar Panua; Anfis Prediction of Performance And Exhaust Emission Characteristics Of CRDi Engine Fueled With Diesel-Butanol Strategies; International Conference on Recent Advancements in Mechanical Engineering( ICRAME 2020);07-09 February 2020, NIT Silchar, India
  60. Bipul Das, Manabendra Das, Ashish Meena, Mehdi Mehtab Mirad, Artificial intelligence based defect formation tendency prediction in friction stir welding, International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 2019), IIT Indore, 12-14 December, 2019.
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  64. Akhileshwar Singh, Yogesh Singh, Krishna Murari Pandey, Viscous fingering instabilities in radial Hele-Shaw cell: A review, Materials Today: Proceedings, January 2020.
  65. Deep Singh, Yogesh Singh, Manidipto Mukherjee, Behavior of NiTi based smart actuator for the development of planar parallel micro-motion stage, ICAME, VNIT Nagpur, India, Jan 2020.
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  68. Singh D., Choudhury R., Singh Y., Mukherjee M. (2020) Development and Workspace Analysis of Smart Actuation based Planar Parallel Robotic Motion Stage. 3rd International Conference on Advances in Mechanical Engineering (ICAME-2020), SRMIST, Chennai, India, February 2020.
  69. Vikas Sharma, Anand Parey, Abhimanyu Pratap Singh, Atanu Paul, Yogesh Singh (2020). Detection of fault in a bevel gearbox under varying speed conditions. International Conference on Recent Advancements in Mechanical Engineering (ICRAME-2020), NIT Silchar, Assam, India, February 2020.
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72. Ashutosh Padhan, Yogesh Singh (2020). Design and development of a xy positioning stage using shape memory alloy spring actuator. International Conference on Recent Advancements in Mechanical Engineering (ICRAME-2020), NIT Silchar, Assam, India, February 2020.

**d) National Conference(s):** NIL

**e) Book/Chapter:**

1. Das, S., Misra, R.D., and Das, B., "Sustainability Assessment of Biodiesel Production in India from Different Edible Oil Crops Using Emery Analysis", In Methanol and the Alternate Fuel Economy, Chapter 6, pp. 107-134; Ed.: A.K. Agarwal, A. Gautam, N. Sharma, A.P. Singh, Pub.: Springer, Singapore, 2019, Series ISSN 2522-8366 (Print), Series ISSN 2522-8374 (online); eBook: Energy, Environment, and Sustainability, ISBN 978-981-13-3286-9 (Print), ISBN 978-981-13-3287-6 (online); DOI: <https://doi.org/10.1007/978-981-13-3287-6>.
2. Amit Kumar Singh, Siddhartha Kar and Promod Kumar Patowari (2020) "Accuracy improvement and precision measurement on micro-EDM", In: Kibria G., Bhattacharyya B. (eds) Accuracy Enhancement Technologies for Micromachining Processes. Lecture Notes in Mechanical Engineering. Springer, Singapore. pp. 47-77. DOI: 10.1007/978-981-15-2117-1\_3.
3. Siddhartha Kar, Pallab Sarmah, Binoy Kumar Baroi and Promod Kumar Patowari (2020) "Drilling of micro holes in titanium using micro EDM: A parametric investigation", In: Biswal B. B., Sarkar B. K., Mahanta P. (eds) Advances in Mechanical Engineering. Lecture Notes in Mechanical Engineering. Springer, Singapore. pp. 589-600. DOI: [https://10.1007/978-981-15-0124-1\\_53](https://10.1007/978-981-15-0124-1_53).
4. Bappa Mondal, Sukumar Pati, Promod Kumar Patowari, Numerical analysis of mixing performance in microchannel with different ratio of outlet to inlet width, Techno Societal- 2018, Vol. 2, Chapter 26. Pages 257-266, Springer Nature Switzerland AG, (2020) DOI:10.1007/978-3-030-16962-6\_26.
5. Bappa Mondal, Sukumar Pati, Promod Kumar Patowari, Influence of confluence angle between inlets on the mixing performance of micromixer with obstacles, Techno Societal- 2018, Vol. 2, Chapter 28, Pages 275-283, Springer Nature Switzerland AG, (2020) DOI: 10.1007/978-3-030-16962-6\_28.
6. T. Debnath, K. K. Patra and P.K. Patowari, "Chapter 45: Gang Drilling of Square micro-Holes on Glass Using USM", Advances in Unconventional Machining and Composites, Springer Nature Singapore Pte Ltd, 2020, DOI: 10.1007/978-981-32-9471-4\_45.
7. Tapas Debnath and Promod Kumar Patowari, "Chapter 48: Drilling an array of square micro holes using micro-EDM", Advances in Mechanical Engineering, Springer Nature Singapore Pte Ltd, 2020, DOI: 10.1007/978-981-15-0124-1\_48.
8. Pallab Sarmah, Tapas Debnath, Promod Kumar Patowari, "Chapter 55: Fabrication of ultrathin sheet using wire-EDM", Springer Nature Switzerland AG Pte Ltd, 2020, DOI: 10.1007/978-3-030-16962-6\_55.
9. Rahul Ranjan, Siddhartha Kar and Promod Kumar Patowari (2020) "Parametric Optimization of Drilling on Titanium Grade-2 in Die-Sinking Electrical Discharge Machining", In: Pawar P., Ronge B., Balasubramaniam R., Vibhute A., Apte S. (eds) Techno-Societal 2018. Springer, Cham. pp. 551-559. DOI: 10.1007/978-3-030-16962-6\_56.
10. E. Tripathi, P. K. Patowari (2020) Design and Computational Analysis of Spiral Microchannel for Mixing of Fluids. In: Pawar P., Ronge B., Balasubramaniam R., Vibhute A., Apte S. (eds) Techno-Societal 2018. Springer, Cham, pp 305-313.
11. Pranjal Sarma, P. K. Patowari, Chapter 1: 'Alternate Soft Lithographic Approaches for Microfluidic device Fabrication Using PCM and EDM based tools, Advances in Science and Technology (Vol 1), Eds. Bharat Kakati and Dhiraj Bora, pp. 1-5, 2019, i-manager publications, ISBN 978-81-908910-9-7.
12. Siddhartha Kar and Promod Kumar Patowari (2019) "Parametric optimization of micro electrical discharge drilling on titanium", In: Shunmugam M., Kanthababu M. (Eds) Advances in Micro and Nano Manufacturing and Surface

- Engineering. Lecture Notes on Multidisciplinary Industrial Engineering. Springer, Singapore. pp. 201-210. DOI: 10.1007/978-981-32-9425-7\_17.
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  14. Sumita Debbarma, Biplab Das, Jagadish (2019), "Optimization of Performance and Emissions Parameters of a Biodiesel-Run Diesel Engine: An Integrated MCDM Approach", Advanced Multi-Criteria Decision Making for Addressing Complex Sustainability Issues, pp. 115-138. DOI: 10.4018/978-1-5225-8579-4.ch006.
  15. Surya Kanth, Sumita Debbarma, Jagadish, Biplab Das (2019) "Application of MCDM Technique for the Selection of Biodiesel Fuel Blend for Sustainable Motorization", Sustainability Modeling in Engineering, pp. 337-358.
  16. Chatterjee, B., and Bhowmik, S., 2019, Evolution of Material Selection in Commercial Aviation Industry - A Review, Sustainable Engineering Products and Manufacturing Technologies, 1st Edition, Elsevier, 199 - 218.
  17. Jagadish and Bhowmik, S., 2019, Parameters Optimization of FDM for the Quality of Prototypes Using an Integrated MCDM Approach, Additive Manufacturing Technologies From an Optimization Perspective, IGI Global, 199 - 220, DOI: 10.4018/978-1-5225-9167-2.ch010.
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  19. Debayan Dasgupta, Sujit Nath, Dipankar Bhanja, 2020. Linear Instability Analysis of Viscous Planar Liquid Sheet Sandwiched between Two Moving Gas Streams, Lecture notes in Mechanical Engineering; Advances in Mechanical Engineering, Springer, Singapore, (Scopus) pp- 41-50.
  20. Siddhant Mohapatra, Chanchal Gupta, Sujit Nath, Dipankar Bhanja, 2020. A Numerical Study on Microchannel Cooling for Photovoltaic Cells, Lecture notes in Mechanical Engineering; Advances in Mechanical Engineering, Springer, Singapore, pp- 1447-1455.
  21. Pradip Deb Roy, "Study of ocean wave flow around a vertically submerged rectangular plate in intermediate depth of water", Publisher Name: Apple Academic Press, CRC Press, Taylor & Francis, Book Name: Optimization Models in Mechanics and Mechatronics: Mathematical Modeling and Optimization of Complex Structures, Accepted.
  22. Emon Barua, Payel Deb, Sumit Das Lala, Ashish B. Deoghare, "Extraction of hydroxyapatite from bovine bone for sustainable development", Ch 10, P. S. Bains et al. (eds.), Biomaterials in Orthopaedics and Bone Regeneration, Design and Synthesis, Materials Horizons: From Nature to Nanomaterials, [https://doi.org/10.1007/978-981-13-9977-0\\_10](https://doi.org/10.1007/978-981-13-9977-0_10), Publisher: Springer.
  23. Payel Deb, Emon Barua, Sumit Das Lala, Ashish B. Deoghare, "Bioactivity and degradability study of the bone scaffold developed from Labeo rohita fish scale derived hydroxyapatite", Biodegradation, Pollutants and Bioremediation Principles, Publisher: Taylor & Francis / CRC Press. (Accepted).
  24. Advances in Structural Engineering and Rehabilitation, edited by S. Adhikari, B. Bhattacharjee, J. Bhattacharjee, Authors: P. K. Karsh, T. Mukhopadhyay, S. Dey, A stochastic investigation of effect of temperature on natural frequencies of functionally graded plates, Vol. 38, Springer, 2019.
  25. Handbook of Probabilistic Models, edited by Pijush Samui, Dieu Tien Bui, S. Chakraborty, Ravinesh C. Deo, Authors: R.R. Kumar, Tanmoy Mukhopadhyay, K.M. Pandey, S. Dey, Prediction capability of polynomial neural network for uncertain buckling behavior of sandwich plates, Chapter 5, pp. 131-140, 2020.
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27. Bipul Das, B Kakati, D Bora, Design of mixed mode dryer for spices for rural applications, Advances in Science and Technology, Vol. 1, Eds., I-Manage Publications, 2019.
28. S. Biswas, Y. Singh, M. Mukherjee, A Study on Optimization Techniques of Electro Discharge Machining, Materials Forming, Machining and Tribology book series (MFMT), Intelligent Manufacturing. pp 1-35. <https://doi.org/10.1007/978-3-030-50312-3>.
29. Alfa Bisoi, S. Bharti, A.K. Samantaray, R. Bhattacharyya, Sommerfeld Effect Characterization in Anisotropic non-ideal rotor system, Advances in Rotor Dynamics, Control, and Structural Health Monitoring, 10.1007/978-981-15-5693-7

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired

Sl. No.	Details	Year
1	Exhaust Gas analyser	2019-20
2	Hot compression Machine 60 Ton (Under NMHS Project)	2019-20
3	Metal Inert Gas welding machine	2019-20
4	Tungsten Insert Gas welding Machine	2019-20
5	Single Cylinder CI Engine with programable ECU	2019-20
6	Stir Casting Machine in Advanced Manufacturing Laboratory	2019-20
7	Vacuum Assisted Resin Transfer Moulding (Under DST Project)	2019-20
8	CNC Multi diode Pumped Micromachining System	2019-20

## 1.8 Patent

Sl. No.	Details	Year
1	Patent filed (Indian Patent: 201931024768): Development of wire fluctuation measuring device for Wire EDM, Tapas Debnath and Promod Kumar Patowari.	2019
2	Patent filed (Indian Patent: 201931040317): Development of nano electrical discharge machining (nEDM) system, Tapas Debnath, Inamul Hussain and Promod Kumar Patowari.	2019
3	Patent filed (Indian Patent: 201931023343): A System and Method For Multi Shell Wall Microcapsules, Sudipta Halder, KHG Krishna.	2019
4	Patent filed (Indian Patent: 201931045436) A method of grafting of graphitic nanoplatelets with bismaleimide and furfurylamine for Diels-Alder based self-healing of CFRP laminated composites, Sudipta Halder, Nazrul Islam Khan,	2019
5	Patent Granted (Indian Patent: 201631026538, Grant No. 341816: Decoration of CF with O-CNPs using Ultrasonically-assisted DC-EPD, Sudipta Halder, Ankush Nandi, Anirban Chakraborty, Subhankar Das, Partha Pratim Saikia, Ankit Sati,	2020
6	Patent filed (Indian Patent: E-12/29/2020/KOL, 2020) Reconfigurable positioning mechanism, Rutupurna Choudhury, Yogesh Singh.	2020
7	Patent filed (Indian Patent: E-12/28/2020/KOL, 2020);, Planar parallel manipulator using shape memory alloy actuator, Deep Singh, Rutupurna Choudhury, Yogesh Singh, Manidipto Mukherjee	2020

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Prof. K. M. Pandey	12th International Conference on Sustainable Energy & Environmental Protection (SEEP2019)	University of Sharjah, UAE	18-21 November 2019.
2	Prof. K. M. Pandey	5th International Conference on Green Materials and Environmental Engineering (GMEE2019)	Guangzhou, China	27-29 December 2019

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
3	Dr. S. Bhowmik	12th International Conference on Sustainable Energy & Environmental Protection (SEEP 2019)	University of Sharjah, UAE	18-21 November 2019
4	Dr. Biplob Das	DBT Overseas Associateship	Ulster University, UK	January- July 2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Nammi Govind Rao	Prof. K. M. Pandey, Dr. S. Pati	Numerical investigation of unsteady and steady natural convection heat transfer in a square porous enclosure with uniform and non-uniform heating
2	Sujeet Singh	Prof. K. M. Pandey, Dr. K. K. Sharma	Design and analysis of an off-grid solar/wind/battery based hybrid renewable energy system for variable load
3	Robin Singh	Prof. K. M. Pandey, Mr. D. H. Das	Computational studies on heat extraction from geothermal energy
4	Anushaka	Prof. K. M. Pandey, Dr. A. B. Deoghare	Computational Investigation of blood flow for Carotid Artery diseases
5	Mohite Vijaysinh R. Sujata	Prof. K. M. Pandey, Dr. A. B. Deoghare	Effect of turbulence on air-aerosol deposition in human airways
6	Ramdev Sah	Prof. K. M. Pandey, Dr. Agnimitra Biswas	Exergy and Energy Analysis of Micro Gas Turbine Integrated with Solar Based Compressed air energy Storage
7	Saumik Das	Prof. K. M. Pandey	Stress analysis of small UAV using FEM.
8	Ishwar Mazumder	Prof. K. M. Pandey, Dr. S. R. Maity	Investigation on Metallurgical, Tribological, Hardness Properties of Spray Deposited Rolled Aluminium and Lead Alloys
9	Ashish Mishra	Prof. R. D. Misra	Advanced Exegetic Analysis of Gas Turbine Integrated with Cooling Cycle
10	Biraj Chandra Dey	Prof. R. D. Misra	Experimental Evaluation of Performance and Emission Characteristics of CI Engine Fuelled with Microalgae Biodiesel Blends
11	Gaijinliu Gangmei	Prof. P. K. Patowari	Improvement of Strength to Weight ratio of a component by Selective Etching of Material using Photo Chemical Machining
12	Rajesh Sahoo	Prof. P. K. Patowari	Machinability study of titanium diamond using EDM on macro and micro domain
13	Evenmore Myllem	Prof. P. K. Patowari	Punching and Blanking of different materials using Electrical Discharge machining (EDM) and Ultrasonic machining (USM)
14	Ankita Sarmah	Prof. P. K. Patowari	Surface modification of aluminium 7075 substrate in EDM using powder metallurgy green compact tools (inconel 718 - aluminium)
15	Nikhil Bharat	Dr. K. Chakraborty	Study on machinability of EN 24 steel (817M40)
16	Vishal Mishra	Dr. K. Chakraborty	Study on machinability of nickel chromium case hardening steel (EN36c)
17	Yadav Nareandra Kumar Rajbahadur	Mr. S. K. Pattanayak	Development processing and characterization of biodegradable film form corn

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
18	Susheel Kumar	Mr. S.K. Pattanayak	Biodegradable plastic from yam: An eco-friendly prospective.
19	Somesh Kumar Mahato	Mr. S. K. Pattanayak	Experimental analysis of human skin-like materials for robotic finger.
20	Y. Kumar	Dr. A. Biswas	Experimental and Numerical Investigations of the Effect of Cavity Airfoil on the performance of H-Darrieus VAWT
21	Sumit Gupta	Dr. S. Debbarma, Dr. Biplab Das	Thermal Performance of PCM Assisted Heat Pipe Based Solar Energy Storage System
22	Lakshmi Nandan Borah	Dr. S. Halder, Dr. P. Choudhury	Investigation on cenosphere encapsulated phase change material coated with calcium silicate hydrate gel
23	Avinash Kumar	Dr. S. Halder	Mechanical Characterization of Functionalised TiO <sub>2</sub> Reinforced Hybrid GFRP Composites and Nanocomposite
24	Abir Saha	Dr. S. Bhowmik	Micromechanical Analysis of Pineapple Leaf filler fiber hybrid composite and comparative study with PALF reinforced composite.
25	Santosh Kumar	Dr. S. Bhowmik	Investigation of mechanical properties of natural fiber reinforced polymer composite materials: Application in Orthopaedic Implants and Bone grafting
26	Munjula Siva Kumar	Dr. S. Bhowmik	Influence of filler hybridization on thermo mechanical properties of hemp/silver epoxy composite
27	Krishna Kanhaiya	Dr. D. Bhanja	Modelling of Thermal Protective Clothing under Hot Steam Exposure
28	Virendra Kumar	Dr. S. Nath	Numerical Investigation for Optimal Thermal-Hydraulic Performance of FTHEs having Different Spatial Arrangement and Tube Diameter
29	Amit Kumar	Dr. P. Deb Roy	Numerical Investigation of Ocean Wave Characteristics at Intermediate Depth
30	Ajit Kumar	Dr. Sukumar Pati	Transport Characteristics in Wavy Channels with Linearly Varying Amplitude at the Entrance Region
31	Babar Pasha Mahammod	Dr. A.B. Deoghare & Prof. K.M. Pandey	Permeability and fluid induced wall shear stress of HA-PMMA bone tissue scaffolds: A micro-CT model.
32	Shaik Sadikbasha	Dr. A. B. Deoghare	In-silico analysis of hyperthermia treatments for hepatic tumors
33	Sameer Kumar Singh	Dr. A. B. Deoghare	Quantification of human subjective pain.
34	Md. Zishan Khan	Dr. S. R. Maity	Ultrasonic machining of grapheme composite
35	Kritesh Kumar Gupta (2019)	Dr. S. Dey	Mechanical behaviour of monolayer graphene – A molecular dynamics approach
36	Raju Prasad Saw (2019)	Dr. S. Dey	PSO based optimum microhardness of electroless Ni-P coating
37	Tanmoy Loha (2019)	Dr. S. Dey	Nonlocal elasticity effects on stochastic free vibration of rotating nano cantilever beam
38	Biren Kumar Behera	Dr. P. R. Randive	Numerical Investigation on Influence of Twin Jet on Thermo-hydraulic Transport Characteristics
39	Rahul Kumar	Dr. Y. Singh	To develop a currency recognition technique from feature extraction

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Pannalal Choudhury	Prof. K. M. Pandey, Dr. S. Halder	Enhancing Delamination Resistance of GFRP Laminates Using Graphene Nanofiller
2	Bhabani Pattanayak	Prof. R. D. Misra	Synthesis of deoxygenated biofuels and their experimental performance evaluation for CI Engine applications
3	Sanjay Kumar Gupta	Prof. R. D. Misra	Effect of micro/nanostructured nanocomposite coated surfaces on pool and flow boiling heat transfer performance
4	Wangikar Sandeep Sitaram	Prof. P. K. Patowari, Prof. R. D. Misra	Design and Development of Microchannel for Effective Mixing of Multifluids
5.	Chiranjib Bhowmik	Dr. S. Bhowmik, Dr. A. Ray (Jt. Supervisor)	Investigation of green energy source selection for sustainable planning
6	Ambarish Maji	Prof. P. K. Patowari, Dr. D. Bhanja	Computational Investigation for System Performance Enhancement of Heat Sink with Perforated Pin Fins
7	Subhankar Das	Dr. Sudipta Halder	Silanized carbon fillers and its damage mitigation capabilities for potential reinforcement in hybrid laminates
8	Asangnam Satyavrata Singh	Dr. Sudipta Halder	Synthesis and Characterization of Hybrid FRP Biocomposites Using Bamboo Fillers
9	Nazrul Islam Khan	Dr. Sudipta Halder	Thermo-reversible healing of graphitic nanofiller hybridized CFRP laminated composites
10	K Gopal Krishna Singh	Dr. Sudipta Halder	Synthesis of Novel PCM microcapsules and their characterization for efficient thermal management of electronic devices.
11	Sumit Das Lala	Dr. A. B. Deoghare	Development of bio-composite material from Cashewnut, Rubber and Walnut seed shells
12	Suman Debnath	Dr. B. Das, Dr. P. R. Randive	Performance Evaluation of Solar Air Collector with Plain and Wavy (Corrugated) Absorber Plate
13	Pradeep Kumar Karsh	Dr. S. Dey	Stochastic dynamic analysis of layered and graded structures
14	Ravi Ranjan Kumar	Dr. S. Dey	Surrogate based probabilistic performance assessment of sandwich plates

## 1. Name of the Department:

# Electrical Engineering



### The Department at a glance

**Year of Establishment: 1977**

**Academic Programmes Offered:**

- Bachelor of Technology (B.Tech)
- Master of Technology (M.Tech)
- Doctor of Philosophy (Ph.D.)

**Total Faculty Strength: 27**

- Professor: 4
- Associate Professor: 3
- Assistant Professor: 20

**Total Student Strength: 626**

- B.Tech: 479
- M.Tech: 55
- Ph.D.: 92

**New Students Joined in 2019-2020: 211**

- B.Tech: 157
- M.Tech: 29
- Ph.D.: 25

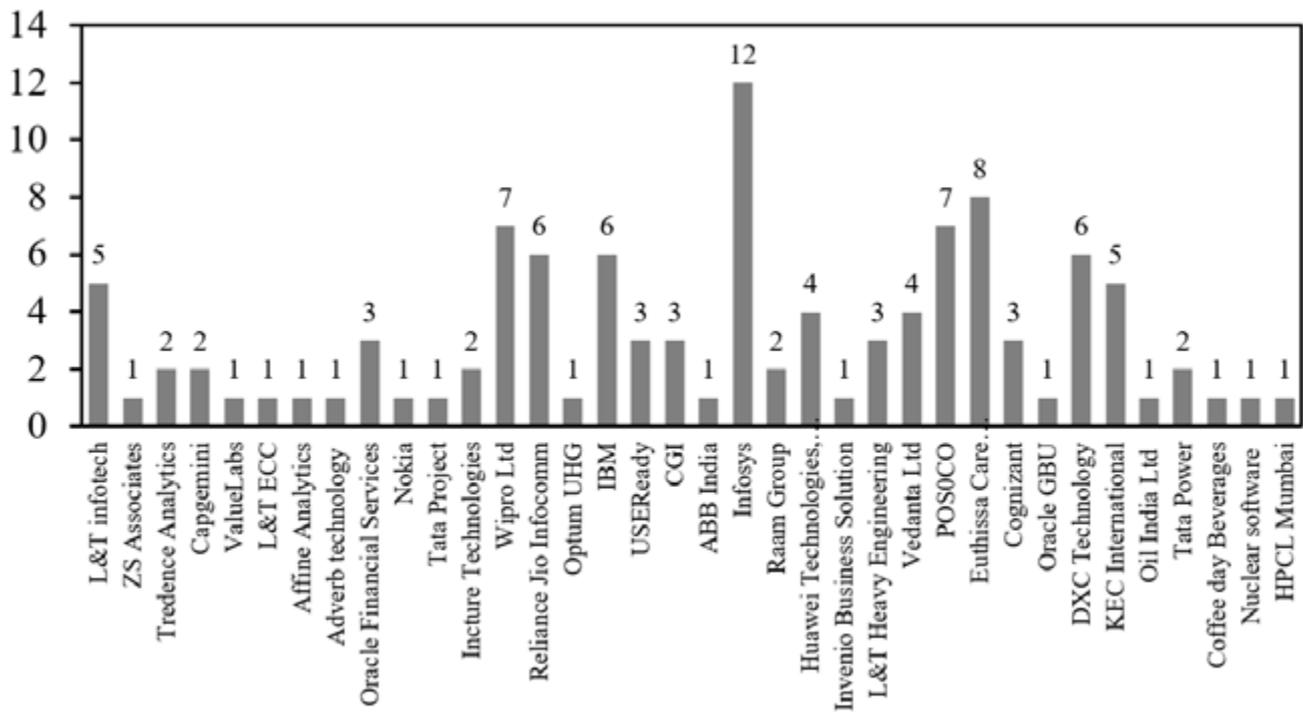


Fig: Placement statistics of students in the Electrical Engineering Department during 2019-2020

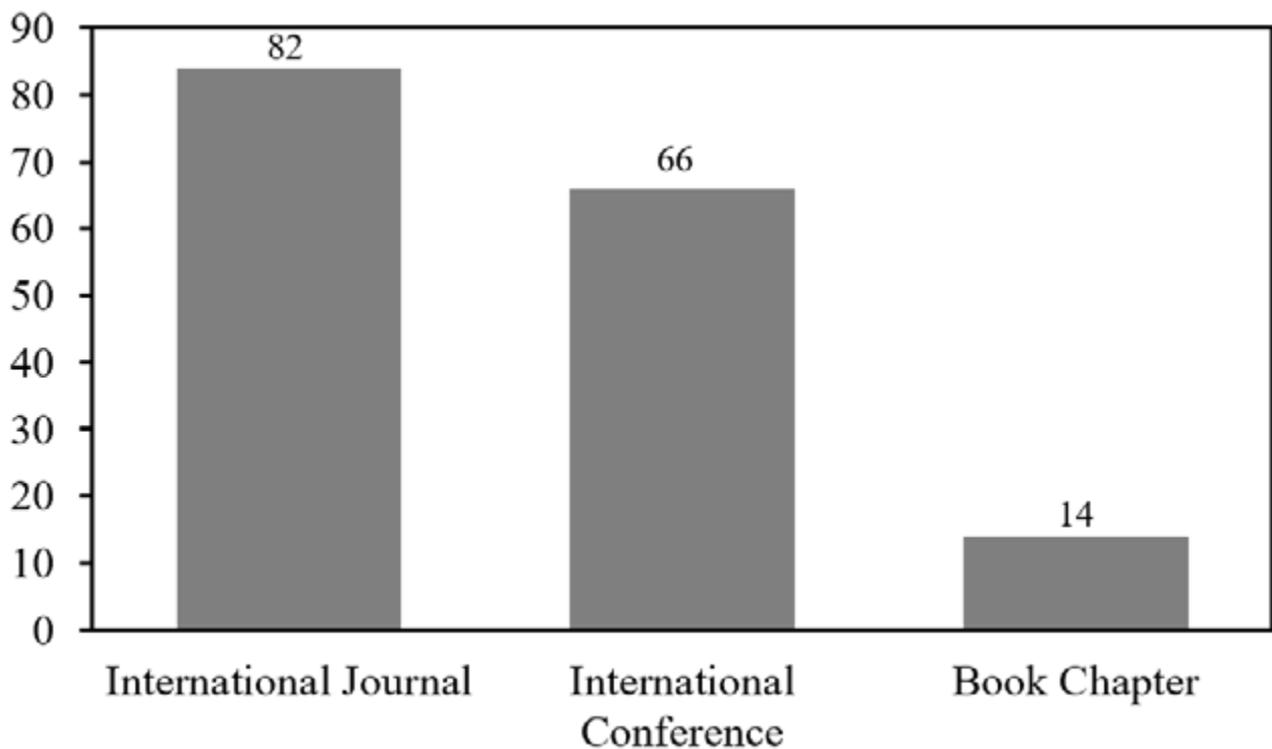


Fig: Publication details of Electrical Engineering Department during 2019-2020

## 1.1 Academic Staff:

**HEAD:** Prof. N. B. Dev Choudhury, Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Prof. Nidul Sinha	Dr. Lalit Chandra Saikia	Dr. Tanmoy Malakar
Prof. Binoy Krishna Roy	Dr. Jyoti Prakash Mishra	Dr. Dulal Chandra Das
Prof. N. B. Dev Choudhury	Dr. Arup Kumar Goswami	Dr. Chayan Bhattacharjee
Prof. Saurabh Chaudhury		Dr. Prasant Roy
		Dr. Prashant Kumar Tiwari
		Dr. Raj Kumar Biswas
		Dr. Rajeeb Dey
		Dr. Nirmala Soren
		Dr. Amretesh Kumar
		Dr. Tapan Pradhan
		Dr. D. Koteswara Raju
		Dr. Partha Kayal
		Dr. Avadth Pati
		Dr. Nabanita Adhikary
		Dr. Saheli Roy
		Dr. Jiwanjot Singh
		Dr. Asha Rani M. A.
		Dr. Sreejith.S
		Dr. Risha Mal
		Dr. Swapna Mansani

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

**a) By Student:**

1. A project titled “A Robust Sensorless Speed Computation Scheme for SCIG based WECS with Reduced Current Sensors”, submitted by the Ph.D. students **Mamata Debbarma** and **Pydi Bala Krishna** under the guidance of **Dr. Asha Rani M. A.** bagged the Best Project Award (among the Top 5 Best Project Proposals) in Anveshan 2.0, Student Research Convention held in NIT Silchar and will be funded by the institute.
2. A project titled “Smart Campus via Multipurpose Drone”, submitted by B. Tech EE VI Semester students **Rajesh Jarupula** and **Snadeep Bolla** got selected for funding under the UGRC scheme of NIT Silchar under the guidance of **Dr. Asha Rani M. A.** and **Dr. Wasim Arif.**
3. A project titled SMART EARLY WARNING SYSTEM FOR LANDSLIDE BASED ON IoT, submitted by Undergraduate students **Jai Prakash Kumar**, **Amarjeet Paswan**, **Sudhanshu Awasthi** under the guidance of **Dr. Olympa Baro** and **Dr. Risha Mal** got selected for funding under the UGRC scheme of NIT Silchar.
4. A project titled “Photovoltaic based sustainable controlled heating for tea processing”, submitted by the BTech students **Satyabrata Pradhan**, **Ankita Sen**, **K.Lamnganbi Singha**, **Akash Verma** under the guidance of **Dr. Amritesh Kumar** represented NIT SILCHAR at zonal level in Feb 2020 in Anveshan 2.0 held at Jadavpur University and even project shortlisted for central level.
5. **Dr. Jay Prakash Singh**, Ph.D. student of **Prof. B. K. Roy**, received Gold Medal as the “Best Doctoral Award of the Institute” from the NIT Silchar during the 2019 Convocation.

**b) By Faculty Member:** NA

## 1.3 SEMINARS, SYMPOSIA, SHORT TERM COURSES, WORKSHOPS

### a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. Rajeeb Dey, Prof. B. K. Roy, Prof. N. Sinha, Dr. T. Pradhan	Biomedical Instrumentation System for clinical diagnostic & research	Institute Funding	20 - 24 February 2020
2	Dr. L. C. Saikia, Dr. T. Malakar, Prof. N. B. D. Choudhury, Prof. B. K. Roy	Hands-on-Training on Real-Time Simulator (HRTS 2020)	TEQIP-III	5th -9th Feb 2020
3	Dr. N. Adhikary, Dr. A. Pati, Dr. R. K. Biswas, Dr. A. Kumar, Prof. B. K. Roy, Dr. P. Roy	Fractional Order Systems and Their Applications	TEQIP-III	16-20 August 2019
4	Dr. P. Kayal, Dr. S. Ray, Dr. A. Kumar, Dr. P. K. Tiwary	One Week Challenges in Operation and Control of Distributed Energy Resources	TEQIP-III	26th-30th July, 2019

### b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Dr. Avadh Pati	Curriculum Design and Implementation for Outcome-Based Education, (27-31 May 2019)	NIT, Silchar
2	Dr. Swapna Mansani	One Week Hands-on-Training on Real-Time Simulator (HRTS 2020) 5th -9th Feb 2020	NIT, Silchar
3	Dr. Sreejith.S	Hands-on-Training on Real-Time Simulator (HRTS 2020) from 5th -9th Feb 2020	NIT Silchar
4	Dr. Amritesh Kumar	Hands-on-Training on Real-Time Simulator (HRTS 2020) from 5th -9th Feb 2020	NIT Silchar
5	Dr. Tapan Pradhan	FDP on Curriculum Design and Implementation for Outcome-Based Education, (27-31 May 2019)	NIT, Silchar
6	Dr. Jiwanjot Singh	Hands-on-Training on Real-Time Simulator (HRTS 2020) from 5th -9th Feb 2020	NIT Silchar
7	Dr. Nabanita Adhikary	FDP on Curriculum Design and Implementation for Outcome-Based Education, (27-31 May 2019)	NIT Silchar
8	Dr. Asha Rani M. A.	Hands-on-Training on Real-Time Simulator (HRTS 2020) from 5th -9th Feb 2020	NIT Silchar
9	Dr. P. Roy	Curriculum Design and Implementation for Outcome-Based Education, (27-31 May 2019)	NIT, Silchar
10	Prof. N. B. Dev Choudhury	External Academic Peer review member for NIT Manipur on 04-03-2020	NIT, Manipur
11	Prof. N. B. Dev Choudhury	Examiner for the Ph.D. defence at NERIST on 13-08-2019	NERIST, Itanagar
12	Prof. N. B. Dev Choudhury	Participated in AMDOCS academia conclave at Pune during 12-13 Dec, 2019	AMDOCS, Pune
13	Prof. N. B. Dev Choudhury	Visited as Indian delegate for study in India programme under MHRD to Bhutan during 29 March to 2 April, 2019	Bhutan
14	Prof. N. B. Dev Choudhury	Delivered an expert lecture at Gauhati University on 06-05-2019	Gauhati University
15	Prof. N. B. Dev Choudhury	Visited to Industry of L T Diesel Generator manufacturing plant at Kathua, Jammu for testing of Diesel Generator set during 8-13 Jun, 2019	Kathua, Jammu

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
16	Prof. N. B. Dev Choudhury	Act as external examiner for MTech viva voce at NIT Kurukshetra during 22-24 Sept, 2019.	NIT, Kurukshetra
17	Prof. N. B. Dev Choudhury	Attended EVC meeting for AICTE at Hyderabad during 24-25 Sept, 2019.	Hyderabad

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

1. Power System Analysis and Optimization, Renewable Energy Sources
2. Nonconventional Energy, Application of soft computing techniques in control and Operation of non-conventional energy-based hybrid power system
3. Smart grid, Power Quality, Power system Reliability, Renewable energy sources
4. Cogeneration Management, Application of Big Data in Power system
5. Micro-grid, Renewable energy integration in competitive power markets, FACTS device Transmission system planning
6. Renewable energy system (Wind, SPV, Hybrid) Control; Microgrid Control (Power Quality and Management issues); Applications of Custom Power Devices; Electric Vehicles; Electric Drives control
7. Smart grid, Reliability of power system, cost allocation, Deregulated power System, use of artificial intelligence in power system, Economics of power System
8. Control Theory, Application of control in biomedical application Time-delay system and control, Robust Control
9. Control System, Nonlinear Control, adoptive control, Fractional order control
10. Low power VLSI, Image Processing, CNT & Nanowires Compound Semiconductors

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
12	2	86

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Biomedical Signal Processing and Control	To promote biomedical engineering with special emphasis to signal processing, sensors used and control. This lab is to expose the students with hands on learning experience for the elective course on biomedical engineering. This lab is also dedicated towards research of M.Tech and Ph.D. students.
2	Basic Electrical Engineering Lab (New)	This new lab is created for UG 1st year students to have general practical experiments in Electrical Engineering circuits under the curriculum.
3	Real time simulation Lab	This new lab is created for UG/PG/Ph.D. scholars for real time simulation of electrical system
4	Embedded Systems Lab	To create facility for embedded systems and applications, real time systems projects for M.Tech/ B.Tech students and to promote research in this field.
5	Applied Power Electronics and energy conversion Laboratory (APEEC)	To promote applied research on power electronics and energy conversion with special emphasis on Electric vehicle charging infrastructure, High gain/ high efficiency dc-dc converter, AC and DC microgrids and their interaction, Multilevel inverters and control strategies, Grid connected /Off grid renewable energy systems etc. This lab is dedicated towards research of M.Tech and Ph.D. students. This lab has state of the art equipment funded by NIT SILCHAR and SERB both.

## d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Investigation and development of robust control strategy for nonlinear bilateral teleoperation system with delayed communication: An experimental validation for rehabilitation of stroke patients	Dr. Rajeeb Dey Co-PI Dr. N. Adhikary	SPARC MHRD	67	2 years
2	Feasible Coordinated Controlled Grid connected Photovoltaic Source DC based Fast Charging Infrastructure for Electric Vehicle: Design, Development and Experimental Validation	PI- Dr. Amritesh Kumar Co-PI Dr. Avadh Pati	DST/SERB with MHRD	187	3
3	Development of Thermoelectric generator integrated Charcoal Stove	PI- Kritika Awasthi (BIT Sindri, Jharkhand) Co-PI Dr. Risha Mal	TEQIP Collaborative Research Scheme	3.86	2 years
4	Development of Battery Super-capacitor Hybrid Energy Storage System for Stand-alone Solar Photovoltaic Power System	PI: Dr. Munmun Khanra (E&I Dept., NIT Silchar) Co-PI: Dr. J. P. Mishra, EE Dept., NIT Silchar	DST, SEED Division	22.22	03 Years
5	Design and Development of Soft Interconnect for DC Microgrids using Power Electronics Interface for Improved Reliability of Power Supply	PI-Dr. Amritesh Kumar	SRG/SERB	30 Lakh	02 years
6	Inertia Emulation in a Microgrid	CO-PI- Prof. B. K. Roy	TEQIP-III, NPIU,	7.5	01
7	A better and robust secure communication using a highly complex and disordered hyperchaotic system	CO-PI- Prof. B. K. Roy	TEQIP-III, NPIU,	7.5	01
8	Multistability and hidden attractors in dynamical systems DST, Indo-Russian collaboration	CO-PI- Prof. B. K. Roy	DST, Indo-Russian	65.2	03
9	Identification of depressed persons with AI based classifier using EEG signals	Co-PI Prof. N. Sinha	NPIU TEQIP III	15.43	01

## e) Research Paper Reviewed

Sl. No	Faculty Name	Journal Name	No. of Paper	Year
1	Dr. D. C. Das	International Transactions on Electrical Energy Systems	07	2019-20
		IEEE Systems Journal	02	2019-20
		IEEE Access	02	2019-20
		International Journal of Sustainable Energy	04	2019-20
		SN Applied Sciences	02	2019-20
		Electric Power Systems Research	02	2019-20
2	Dr. L. C. Saikia	IEEE transaction on power systems	02	2019-20
		IET Renewable power generation	05	2019-20
		IET Generation, transmission and Distribution	04	2019-20
		International transactions on Electrical Energy systems (ITEES)	07	2019-20
		IEEE Access	01	2019-20
		IETE Journal	01	2019-20
		ISA transaction	01	2019-20
Applied Energy	01	2019-20		

Sl. No	Faculty Name	Journal Name	No. of Paper	Year
3	Dr. T. Malakar	IEEE Trans. On Industrial Informatics	02	2019-20
		Applied Energy, Elsevier	03	2019-20
		Applied Soft Computing, Elsevier	02	2019-20
		Electric Power Components and Systems, Taylor & Francis	03	2019-20
		Electrical Engineering, Springer	02	2019-20
		Journal of Computational and Applied Mathematics, Elsevier	02	2019-20
		Energy Conversion and Management, Elsevier	02	2019-20
4	Dr. Avadh Pati	IEEE Transaction on Industrial Electronics	02	2019-20
		ISA Transactions (Elsevier)	10	2019-20
		COMPEL	03	2019-20
		Journal of Engineering Research and Reports	01	2019-20
		Shock and Vibration	01	2019-20
5	Dr. N. Adhikary	Journal of the Franklin Institute	04	2019-20
		IET Control Theory & Applications	03	2019-20
6	Dr. Asha Rani M. A	IEEE Transactions on Industrial Electronics	02	2019-20
		IEEE Transactions on Sustainable Energy	01	2019-20
		IEEE ACCESS	01	2019-20
7	Dr. R. K. Biswas	Asian Journal of Control	03	2019-20
		Optimal Control Applications and Methods	01	2019-20
		Journal of Dynamic Systems, Measurement and Control	02	2019-20
8	Dr. Rajeeb Dey	Journal of Franklin Institute	05	2019-20
		Int Journal of System Science	02	2019-20
		Mathematical Problems in Engineering	01	2019-20
		IEE Access	02	2019-20
		International Journal of Fuzzy System	01	2019-20
		ISA Transaction	15	2019-20
9	Dr. D. Koteswara Raju	ISA Transaction	02	2019-20
		International Transactions on Electrical Energy Systems (ITEES)	02	2019-20
		IET GTD	01	2019-20
		Electric Power Components and Systems Journal	01	2019-20
		Transactions of the Institute of Measurement and Control	03	2019-20
10	Dr. Prasanta Roy	IEEE Transaction on Industrial Electronics	02	2019-20
		ISA Transactions (Elsevier)	10	2019-20
		IEEE Access	03	2019-20
		Cyber Physical Systems	01	2019-20
		Measurement and Control	01	2019-20
11	Dr. Chayan Bhattacharjee	IET Renewable Power Generation	02	2019-20
		Energy Conversion and Management	01	2019-20
12	Prof. N. B. Dev Choudhury	International transaction on electrical energy systems	07	2019-20
		Journal of Ambient Intelligence and Humanized computing	05	2019-20
		Wind Energy	02	2019-20
		IET GTD-	06	2019-20
		IET Measurement Science and technology	04	2019-20
		IEEE Transactions on Power system	01	2019-20

Sl. No	Faculty Name	Journal Name	No. of Paper	Year
13	Dr. Jiwanjot Singh	IEEE transaction of Power Electronics	01	2019-20
		International Journal of Emerging Electric Power System	01	2019-20
14	Dr. Risha Mal	IEEE PES Transaction	01	2019-20
		Elsevier SETA	01	2019-20
		Elsevier WAVE	01	2019-20
		IEEE Access	05	2019-20
15	Prof. B. K. Roy	IEEE-TCAS-II, TCAS-I, TED, TAC,	10	2019-20
		Elsevier-CSF, Optik, CNCS, PLA,	10	2019-20
		Springer-NODY, PJP, CSS, EPJST	10	2019-20
		AIP-Chaos,	02	2019-20
		Wiley-AJC, CTA,	02	2019-20
		T&F-JSS, IJC, CPB	05	2019-20
16	Prof. S. Chaudhury	IETE Journal of Research	01	2019-20
		TITR	01	2019-20
		CSSP Springer	02	2019-20
		ESWA Elsevier	01	2019-20
		IEEE TNano	01	2019-20
		IEEE Systems	01	2019-20
17	Dr. Arup Kumar Goswami	IEEE Transaction on Power Delivery	02	2019-20
		IEEE Transaction on Industry Applications	02	2019-20
		IEEE Access as Associate Editor handled	07	2019-20
		Journal of Energy Storage	02	2019-20
		Electric Power Systems Research	01	2019-20
18	Dr. Sreejith.S	IET Generation, Transmission & Distribution	02	2019-20
		Computers & Electrical Engineering, Elsevier	01	2019-20
		IEEE Access	01	2019-20
		Soft Computing, Springer	03	2019-20
		Sustainable Energy, Grids and Network, Elsevier	01	2019-20
		Computing, Springer	03	2019-20
		IETE Journal of Research	01	2019-20
		International Journal of Renewable Energy Research ISA Transactions, Elsevier	03 01	2019-20

**f) Chairing of the Technical Section**

Sl. No.	Faculty Name	Details
1	Dr. Rajeeb Dey	Tutorial-2A: Global Navigation Satellite Systems-I, Speaker: Biswas, Sanat K, IIIT Delhi 2020 Advances in Control & Optimization of Dynamical Systems, Feb. 16-19, 2020, Indian Institute of Technology Madras, India
2	Dr. Arup Kumar Goswami	Session Chair: 1 <sup>st</sup> IEEE International Conference on Energy, Systems, and Information Processing (ICESIP 2019), 04-06 July 2019, IEEE, IIITDM Kancheepuram.

## 1.5 Publication

### a) International Journal(s):

1. A. K. Barik, D. C. Das “Coordinated regulation of voltage and load frequency in demand response supported biorenewable cogeneration-based isolated hybrid microgrid with quasi-oppositional selfish herd optimisation”, *International Transactions on Electrical Energy Systems (ITEES)*, Wiley, Vol. 30, Iss. 1, pp. 1-22, 2019, Impact Factor-1.314
2. A. Latif, D. C. Das, A. K. Barik, S. Ranjan “Maiden co-ordinated load frequency control strategy for ST-AWEC-GEC-BDDG based independent three-area interconnected microgrid system with combined effect of diverse energy storage and DC link using BOA optimized PFOID controller”, *IET Renewable Power Generation*, Vol.13, Iss. 14, pp. 2634-2646, 2019, Impact Factor-3.605,
3. A. K. Barik, D. C. Das “Proficient load-frequency regulation of demand response supported biorenewable cogeneration based hybrid microgrids with quasi-oppositional selfish-herd optimization”, *IET Generation Transmission & Distribution*, Vol. 13, Iss. 13, pp. 2889-2898, 2019,
4. R. Dey, B. Bhattacharjee, Improved Delay-Range-Dependent Stability Condition for T–S Fuzzy Systems with Variable Delays using New Extended Affine Wirtinger Inequality, *International Journal of Fuzzy Systems*, (Accepted 2019, in press)
5. A. Nath, D. Deb, R. Dey, An augmented subcutaneous type 1 diabetic patient modelling and design of adaptive glucose control, *Journal of Process Control*, 2019, (Accepted, in press)
6. Rajkumar, S.M., Chakraborty, S., Dey, R. et al. Online Delay Estimation and Adaptive Compensation in Wireless Networked System: An Embedded Control Design. *Int. J. Control Autom. Syst.* (2019) doi:10.1007/s12555-018-0612-x.
7. Anirudh Nath, R. Dey, Robust observer based control for plasma glucose regulation in type 1 diabetes patient using attractive ellipsoid method, *IET System Biology*, Volume: 13 , Issue: 2 , 4 2019, 84 - 91
8. R.Dutta, R.Dey, B. Bhattacharjee, Further improved stability condition for T-S fuzzy time-varying delay systems via generalised inequality, *Int. J. Advanced Intelligence Paradigms*, Vol. 14, Nos. 3/4, pp. 310-327, - 2019
9. Rupak Datta, Rajeeb Dey, Baby Bhattacharya, Ramasamy Saravanakumar, Choon Ki Ahn, New double integral inequality with application to stability analysis for linear retarded systems, *IET Control Theory & Applications*, Volume 13, Issue 10, 02 July 2019, p. 1514 – 1524
10. Soumyabrata Das, T. Malakar, “An emission constraint capacitor placement and sizing problem using modified competitive swarm optimizer approach”, *International Journal of Ambient Energy*, Taylor & Francis, 2019. (<https://doi.org/10.1080/01430750.2019.1587723>)
11. R. Rajbongshi and L. C. Saikia, “Performance of coordinated interline power flow controller and power system stabilizer in combined multi area restructured ALFC and AVR system” in *International Transactions on Electrical Energy System*, Vol 2, no 5, pp. 1- 22, May 2019
12. N. Ram Babu and L. Chandra Saikia, “Automatic generation control of a solar thermal and dish-stirling solar thermal system integrated multi-area system incorporating accurate HVDC link model using crow search algorithm optimised FOPI Minus FODF controller,” in *IET Renewable Power Generation*, vol. 13, no. 12, pp. 2221-2231, 2019.
13. N. Ram Babu and L. Chandra Saikia, “AGC of a Multi-Area System Incorporating Accurate HVDC and Precise Wind Turbine Systems”, *International Transactions on Electrical Energy Systems*, Vol 30, No.4, pp1-18, April, 2019.
14. Naladi Ram Babu, Sanjeev Kumar Bhagat, Lalit Chandra Saikia, TirumalasettyChiranjeevi, “Application of hybrid crow-search with particle swarm optimization algorithm in AGC studies of multi-area systems,” in *Journal of Discrete Mathematical Sciences and Cryptography*, vol.23, no.2, pp.429-439, Feb 2020.
15. Sanjeev Kumar Bhagat, Naladi Ram Babu, Lalit Chandra Sakia, DhenuvakondaKoteswaraRaju, “Maiden Application of Meta-Heuristic Techniques

- with Optimized Integral minus Tilt-Derivative Controller for AGC of Multi-area Multi-Source System,” ICST Transactions on Scalable Information Systems, pp.1-9. 2019.
16. Avadh Pati and Richa Negi, “Super-Twisting Algorithm Based Integral Sliding Mode Control with Composite Nonlinear Feedback Control for Magnetic Levitation System,” *International Journal of Automation and Control*, Vol. 13 No. 6, pp. 717-734, 2019.
  17. Ksh. Robert Singh and Saurabh Chaudhury, “Classification of Rice Grain Using Wavelet Decomposition: A comparative study”. *Journal of Engineering Science and Technology*, 2020, vol-15(1), pp. 108-127 (ESCI+SCOPUS)
  18. Ksh. Robert Singh and Saurabh Chaudhury, “Adaptive threshold back propagation neural network for rice grain classification using variance and co-variance colour features”. *Journal of mechanics of continua and mathematical sciences*, 2019, vol-14(5), pp. 419-436 (ESCI)
  19. KR Singh, S Chaudhury, “A cascade network for the classification of rice grain based on single rice kernel”, *Complex & Intelligent Systems*, 1-14, 2020
  20. CK Pandey, A Singh, S Chaudhury, “ Effect of asymmetric gate–drain overlap on ambipolar behavior of double-gate TFET and its impact on HF performances”, *Applied Physics A* 126 (3), 1-12, 2020
  21. Singh, A., Chaudhury, S., Sharma, S.M. and Sarkar C.K., “Improved Drive Capability of Silicon Nano Tube Tunnel FET Using Halo Implantation,” in *Silicon 2020*, <https://doi.org/10.1007/s12633-019-00350-y>
  22. Avtar Singh, Chandan K. Pandey, Saurabh Chaudhury, Chandan K. Sarakar, “Design and analysis of High K Silicon Nano Tube Tunnel FET Device” ( in *IET Circuits, Devices & Systems*, Oct. 2019,.DOI: <https://doi.org/10.1049/iet-cds.2019.0230>
  23. Chandan K. Pandey, Debashish Dash, and Saurabh Chaudhury, “Approach to suppress ambipolar conduction in Tunnel FET using dielectric pocket,” *IET Micro & Nano Letters*, Vol. 14, No. 1, 2019 (DOI: 10.1049/mnl.2018.5276). (SCIE, Impact Factor: 0.841)
  24. Santoshkumar Hampannavar, Suresh Chavhan, Swapna Mansani and Uday Kumar RY, “Electric vehicle traffic pattern analysis and prediction in aggregation regions/parking lot zones to support V2 G Operation in smart grid: A cyber-physical system entity”. *International Journal of Emerging Electric Power Systems* (DeGruyter). 21 (1), 2020.
  25. Sadhan Gope, Arup Kumar Goswami, Prashant Tiwari, “Transmission Congestion Management with Integration of Wind Farm: A Possible Solution Methodology for Deregulated Power Market” *International Journal of Systems Assurance Engineering and Management (IJSA)*, Springer, 11, pages, 287–296, (2020).
  26. G. H. Reddy, Arup Kumar Goswami and Nalin B Dev Choudhury, “Fuzzy Reliability Assessment of Distribution System with Wind Farms and Plug-in Electric Vehicles” *International Journal of Electrical Power Components and Systems*, Vol. 47, Issue 19-20, 1791-1804, February 2020.
  27. Rituparna Mitra, Arup Kumar Goswami and Prashant Kumar Tiwari, “The Efficacy of Solar EV Duo: Way to Voltage Sag Mitigation”, *IET Generation, Transmission & Distribution*, Volume: 14, Issue: 1, pages 131 – 139, January 2020.
  28. Chinmaya Behera, Abhishek Banik, Jaydeep Nandi, Galiveeti Hemakumar Reddy, Pranju Chakrapani, and Arup Kumar Goswami,, “A probabilistic approach for assessment of financial loss due to equipment outage caused by voltage sag using cost matrix” *International Transactions on Electrical Energy Systems*, Wiley Publishers, Vol.30, Issue 3, 1-27, January 2020.
  29. Devaprasad Paul and Arup Kumar Goswami, “Copula based Bivariate Modelling of DGA and Break down voltage in High Voltage Transformer and Reactors” *IEEE Transactions on Dielectrics and Electrical Insulation*”, Volume: 26 , Issue: 6 , pp 1763 – 1770, Dec. 2019.
  30. Tirunagaru V. Sarathkumar, Abhishek Banik, Arup Kumar Goswami, Shiladitya Dey, Abhishek Chatterjee, Sagarika Rakshit, Sanjay Basumatary and Jayashri Saloi “Uncertainty borne balancing cost modelling for wind power forecasting”,

- Energy Sources, Part B: Economics, Planning, and Policy, Volume 14, 2019 - Issue 7-9 , Pages 291-303, November 2019.
31. Furquan Nadeem, Mohd A. Aftab, S.M.S. Hussain, Iqbal Ali, Prashant Kumar Tiwari, Arup Kumar Goswami, T. S. Ustun, "Virtual Power Plant Management in Smart Grids with XMPP based IEC 61850 communication", *Energies* 2019, 12(12), 2398, Impact Factor: 2.676, June 2019.
  32. Subhojit Dawn, Prashant Kumar Tiwari, Arup Kumar Goswami, "An Approach for Long Term Economic Operations of Competitive Power Market by Optimal Combined Scheduling of Wind Turbines and FACTS Controllers", *Energy (Elsevier)*, Volume 181, , Pages 709-723 Impact factor: 4.968, 15 August 2019.
  33. Subir Datta, J. P. Mishra and A. K. Roy, "Grid Connected DFIG Based Wind Energy Conversion System Using Nine Switch Converter", *Journal of Applied Research and Technology*, Vol. 17, 2019, Page No. 258-271,
  34. Subir Datta, J. P. Mishra and Anjan K. Roy, "Effectiveness of SGSC in a Grid Connected DFIG-WT System During Grid Voltage Disturbances", *International Journal of Power and Energy Systems*, Vol. 39, Issue No. 02, 2019, ISSN (Online): 1710-2243; ISSN (Hardcopy): 1078-3466; DOI: 10.2316/J.2019.203-0101 (ESCI and Scopus)
  35. S. Samanta, J. P. Mishra, and B. K. Roy, "AC Load Bus Frequency Control of a DC Microgrid based on DC Voltage Regulation using Inertia Emulation and Economic Power Management", *IET Generation Transmission & Distribution [IET/IEEE Xplore]* (SCI, IF- 3.229), 13 (22), 5117-5128 (2019), ISSN: 1751-8695 (Online) / 1751-8687 (Print).
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  37. T. Chiranjeevi, R.K. Biswas, "Closed-form solution of optimal control problem of a fractional order system," *Journal of King Saud University – Science (Elsevier)*, 31(4), 2019, 1042-1047
  38. Dipanwita Debnath, Nirmala Soren, Arun Dev Pandey, and Norman Hanif Barbhuiya, "Improved Grey Wolf assists MPPT Approach for Solar Photovoltaic System under Partially Shaded and Gradually Atmospheric Changing Condition" , *International Energy Journal (IEJ)*, Volume 20, Issue 1, March 2020.
  39. Gaur, Pushpa, Debashish Bhowmik, and Nirmala Soren. "Utilisation of plug-in electric vehicles for frequency regulation of multi-area thermal interconnected power system." *IET Energy Systems Integration* 1, no. 2 (2019): 88-96.
  40. Pushpa Gaur, Nirmala Soren, Debashish Bhowmik, "Load Frequency Control of Hybrid Power System Incorporating Vehicle-to-Grid Technology Considering AC Transmission Links", *Journal of Electrical Engineering & Technology*, doi.org/10.1007/s42835-019-00134-9 ,2019
  41. S. Roy, M. Sinha, and T. Pradhan, " Generation of 100-year-return value maps of maximum significant wave heights with automated threshold value estimation." *Spatial Information Research*, Springer, pp. 1-10, 2019.
  42. C. Bhattacharjee, B. K. Roy, "Supervisory Control Using Fuzzy Logic for fault ride-through capability of a hybrid system in grid supporting mode", *International Journal of Power and Energy Conversion*, Vol 10, iss 3, pp, 265-292, 2019
  43. P. P. Singh, B. K. Roy, A novel chaotic system without equilibria, with parachute and thumb shapes of Poincare map and its projective synchronization, *The European Physical Journal Special Topics*, 229, pp. 1265–1278, March 2020. <https://link.springer.com/article/10.1140/epjst/e2020-900259-0>
  44. P. P. Singh, B. K. Roy, Inter network synchronisation of complex dynamical networks by using smooth proportional integral SMC technique, *The European Physical Journal Special Topics*, Vol. 229, pp. 861–876, 2020, <https://link.springer.com/article/10.1140/epjst/e2020-900149-3>
  45. N. P. Mohanty, R. Dey, B. K. Roy, Switching Synchronisation of a 3-D Multi-state-time-delay Chaotic System Including Externally Added Memristor with Hidden Attractors and Multi-Scroll via Sliding Mode Control *The European Physical*

- Journal Special Topics, Vol. 29, pp.1231–1244, 2020 <https://link.springer.com/article/10.1140/epjst/e2020-900195-4>
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5. M. A. Asha Rani, Chakkarapani Manickam and Pranjit Barman, Book on *Renewable Materials and Green Technology Products: Environmental and Safety Aspects*, “GREEN ENERGY: RENEWABLE POWER GENERATION FROM SOLAR: Impact of Irradiation, Materials & Aging on Solar Power Generation, and Green Materials for Solar Power Extraction” - Chapter 5, 2020 (in production), Publisher: CRC Press of Taylor & Francis Group.
  6. Tripathy, Debasis, Amar Kumar Barik, Nalin Behari Dev Choudhury, and Binod Kumar Sahu. “Performance comparison of SMO-based fuzzy PID controller for load frequency control.” In *Advances in Intelligent systems and Computing book series (AISC, Vol. 817)*, pp. 879-892. Springer, Switzerland, 2019.
  7. Naladi Ram Babu, Lalit Chandra Saikia, Dhenuvakonda Koteswara Raju, Tirumalasetty Chiranjeevi, “Multi-area AGC System Incorporating GTPP and Coyote Optimized PI Minus DN Controller,” *Computing Algorithms with Applications in Engineering*, pp.349-360, March 2020
  8. Naladi Ram Babu, Lalit Chandra Saikia, Dhenuvakonda Koteswara Raju, Tirumalasetty Chiranjeevi, “Maiden Application of Hybrid Shuffled Frog-Leaping Algorithm with Pattern Search Algorithm in AGC Studies of a Multi-area System,” *Computing Algorithms with Applications in Engineering*, pp.335-348, 2020.
  9. Ksh. Robert Singh & Saurabh Chaudhury, “Texture analysis for rice grain classification using wavelet decomposition and back propagation neural network”. *Learning and Analytics in Intelligent Systems*, Marc 2020, Springer (book chapter), ISBN: 978-3-030-42362-9, vol-12, pp. 55-65
  10. Kushwaha P.K., Ray P., Bhattacharjee C. (2020) Comparative Analysis of Impacts on Voltage Stability for Electrical Loading Loading in IEEE-14 Bus System. In: Dawn S., Balas V., Esposito A., Gope S. (eds) *Intelligent Techniques and Applications in Science and Technology. ICIMSAT 2019. Learning and Analytics in Intelligent Systems*, vol 12. Springer, Cham. [https://doi.org/10.1007/978-3-030-42363-6\\_31](https://doi.org/10.1007/978-3-030-42363-6_31)
  11. N. P. Mohanty, R. Dey, B. K. Roy, Synchronization for Nonlinear Time-Delay Chaotic Diabetes Mellitus System via Sliding Mode Control, *Proceeding of International Conference on Innovation in Modern Science and Technology ICIMSAT 2019*, In book: *Intelligent Techniques and Applications in Science and Technology*, ol 12. Springer, Cham. pp 893-900, March 2020
  12. Sadasiva Behera, Mayur Barman, N. B. Dev Choudhury, Satyaki Biswas, “Application of Perturb and Observe Algorithm for MPPT Technique in Association with MP Controller for Reducing the THD of Grid Connected PV Systems”, *Applications in Science and Technology*, in *Learning and Analytics Intelligence Systems book series(LIAS, Vol 12)*, 2019.
  13. Debasis Tripathy, A. K. Barik, N. B. Dev Choudhury, B. K. Sahu, “Comparative Analysis of FACTS Coordinated Hybrid Power System with RFB for AGC Using GOA Based F-2DOF-PID Controller”, *Applications in Science and Technology*, in *Learning and Analytics Intelligence Systems book series(LIAS, Vol 12)*, 2019.
  14. Debasis Tripathy, A. K. Barik, N. B. Dev Choudhury, B. K. Sahu, “Performance Comparison of SMO-Based Fuzzy PID Controller for Load Frequency Control”, *Advances in Intelligent Systems and Computing book series(AISC, Vol 817)*, 2019.

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired:

Biomedical Signal Processing and Control Lab was set up with the following equipment

1. ECG cum Heart Rate Monitor
2. Respiration Rate Monitor
3. Electro – Myograph
4. Blood Pressure Measurement (Oscillometric)
5. Doppler Sonography
6. Ultrasonic TM Mode
7. eHealth Medical Development Platform for Arduino
8. Arbitrary Waveform Generator SMG5000 Series (SMG5250)
9. 500 MHz Oscilloscope
10. Digital Storage Oscilloscope (DSO) with 4 analogue channel
11. MSP-EXP430FR5739, Experimenter Board for MSP430FR57xx Microcontroller
12. TMS320C6748 DSP and Image Processing Board
13. Raspberry Pi 3 Model B , Display+ Keyboard+ Mouse
14. Nvidia Jetson TX2 Development Platform

### Real-Time Simulation Laboratory

1. Real time Simulator
2. Power quality analyser

### Power Electronics Laboratory

1. Microlab box
2. Single/three phase power analyzer
3. Voltage probes
4. Current Probes
5. 200 MHZ DSO
6. Soldering/desoldering station
7. DC Power Supply

### Other Items

1. 32 Channel Portable EEG Machine, EMOTIVE Make

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl.No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. Rajeeb Dey	ERASMUS+ faculty exchange programme	Aurel Vlaicu University, Arad, Romania	2 <sup>nd</sup> -7 <sup>th</sup> March 2020
2	Dr. L. C. Saikia	Soft computing for Problem solving 2019	Liverpool Hope University, UK	2 <sup>nd</sup> -4 <sup>th</sup> September 2019

Sl.No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
3	Dr. Partha Kayal	12th International Conference on Knowledge and Smart Technology	Amari Pattaya, Thailand	29 <sup>th</sup> January- 1 <sup>st</sup> February 2020
4	Dr. Nirmala Soren	International Conference on Automation, Computational and Technology Management (ICACTM),,	London, UK	23 <sup>rd</sup> -26 <sup>th</sup> April 2019
5	Prof. N. B. Dev Choudhury	Visited as Indian Deligate for Study in India Under MHRD to Bhutan.	Bhutan	29 <sup>th</sup> March-2 <sup>nd</sup> April 2019
		Visited as Indian Deligate for Study in India Under MHRD to Srilanka	Srilanka	17 <sup>th</sup> -19 <sup>th</sup> January 2020
		Academic visit to Thammasat University, Bangkok	Thailand	8-17 <sup>th</sup> July, 2019

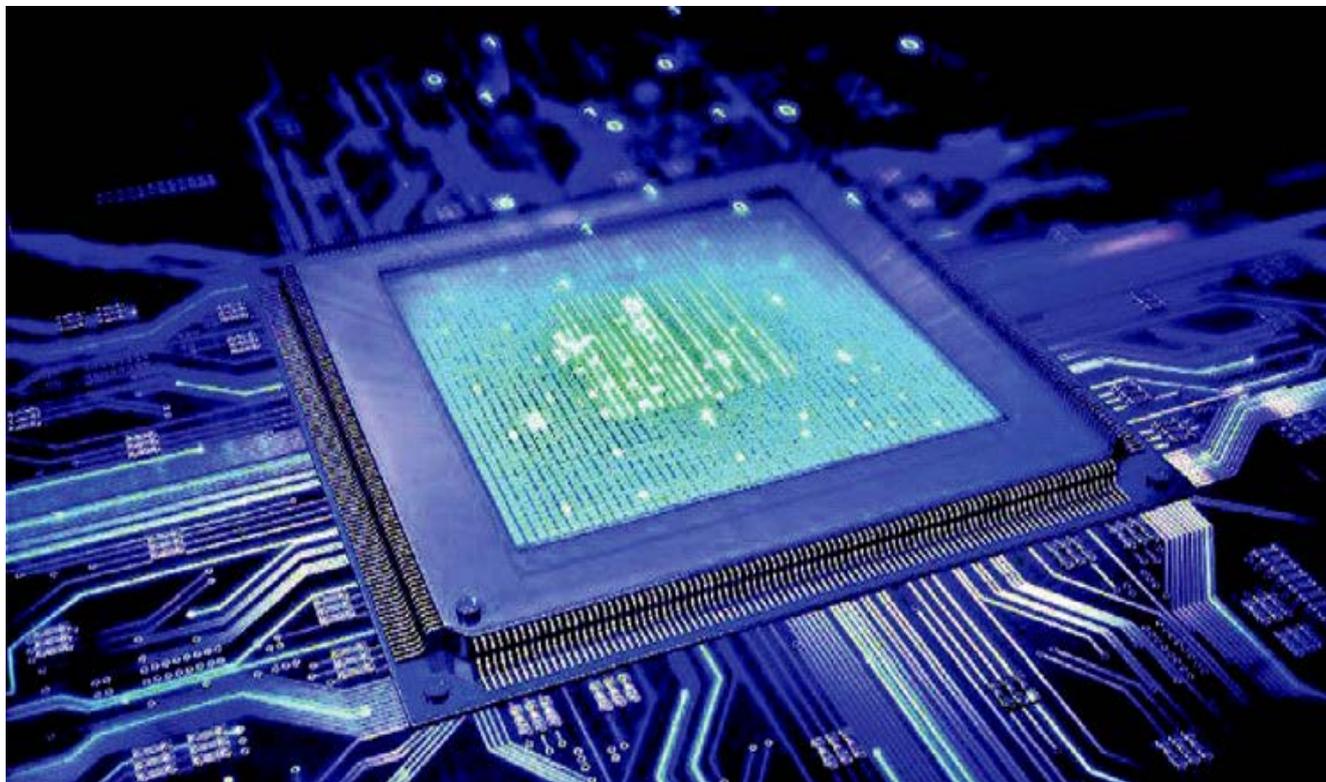
## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Ghoshika Das	Dr. D. C. Das	Demand Side Management for Active Power Control of organic Rankine cycle solar thermal system based Autonomous Hybrid Power System
2	Praveen Kumar	Dr. D. C. Das	Virtual Power Plant Supported Frequency Control of Hybrid Microgrid both in Isolated and Interconnected Mode
3	Devesh Kumar Sahu	Dr. Lalit C. Saikia	Control of Voltage and Frequency for Multi-Area Multi-Source System using SFLA Optimized Fractional Order Controller
4	Varun Narisetty	Dr. Lalit C. Saikia	Automatic Generation Control Of Multi-Area Multi-Source System Using Coyote Optimizer Algorithm Based PD-TID Cascade Controller
5	Siddhartha Ganguly	Dr. P. Roy	Design of Robust Tracking and Model following Controller based on Sliding Mode : An Experimental Validation with Magnetic Levitation System
6	Rahul Chakrabarty	Dr. P. Roy	Design of Controller based on Quantitative Feedback Theory
7	Mr. Abhishek Banik	Dr. Arup Kumar Goswami	Wind power uncertainty forecasting via Prediction Interval using recurrent neural networks.
8	Mr. Shiladity Dey	Dr. Arup Kumar Goswami	Causative fault classification and optimal placement of lighting arrester for minimizing the risk of failure in transmission systems
9	Mr. Sayan Mukherjee	Dr. J. P. Mishra	Power Quality Improvement using Transformerless Hybrid Series Active Filter in Three Phase Three Wire System
10	Ajnish Kumar Sharma	Dr. Nirmala Soren	Frequency control of isolated hybrid power system using Fire-fly optimized controller
11	Sophia Debberma	Dr. Nirmala Soren	Day-Ahead Demand Side Management using Particle Swarm Optimization Algorithm.
12	Divya Rashmi	Dr. N. B. Dev Choudhury, Dr. P. K. Tiwari	Profit Allocation of Distribution System considering Distributed Generation & FACTS devices
13	Rage Ravitheja	Dr. P. K. Tiwari	Optimal bidding strategy for wind-PSH based hybrid competitive power market
14	Dhruvagupt	Dr. P. K. Tiwari	Profit Maximization of Wind-HESS based System by Minimizing the Negative Imbalance Cost
15	Manoj Kumar Sahoo	Prof. N. Sinha	AGC of Multi-microgrid System Using Modern Heuristically Optimized Controllers
16	Uttam Barman	Dr. N. B. D Choudhury	Impact of FACTS devices TCSC and SVC on Transmission Lines
17	Pritam Das	Dr. N. B. D Choudhury	Study of the impact of grid connected wind farm on power system small signal stability

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
18	Rojita Chingakham	Dr. Chayan Bhattacharjee	Fuzzy logic control in G2V/V2G operations of BEVs
19	Gaurahari Kuanr	Prof. S. Choudhury	Recognition and Interpretation of Indian Sign Language using Image Processing and Computer Vision
20	Simi Ingti	Dr. R. K. Biswas	Studies on fractional order biquad filter
21	Kunal Hazarika	Prof. S. Choudhury	Design of Home Automation Systems using Bluetooth and Android Applications
22	Kunal Kanti Das	Prof. N Sinha, Dr. M. K. Bera	Fuzzy modelling & Fuzzy Sliding Mode Control of Rotary Inverted Pendulum
23	Sanchari Sarkar	Prof. B. K. Roy	Design of Distributed Model Predictive Controller for Quadruple Tank System
24	Maitreyee Dutta	Prof. B. K. Roy	Fractional-order systems, its stabilization cum synchronisation and its circuit simulation
25	Jit Koley	Prof. B. K. Roy	Robust Control Algorithm Design for Robotic Manipulator Using Sliding Mode Control
26	Anmol Assal	Prof. B. K. Roy	Adaptive Synchronisation of integer Order Chaotic/Hyperchaotic Systems
27	Dipak Prasad	Prof. B. K. Roy	Modeling and Analysis of Sino-atrial Node

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Anirudh Nath	Dr. Rajeeb Dey	Modeling and Control Strategy for blood glucose regulation of Type I diabetes patient
2	Avtar Singh	Prof. S. Chaudhury	Some Novel Nano-device structures with Gate Engineering for Improved Device Performances and Bio-sensing Applications)
3	Abdul Kayum Md. Khairuzzaman	Prof. S. Chaudhury	Multilevel Thresholding based Image Segmentation using some Meta-heuristic Algorithms
4	Rituparna Mitra	Dr. Arup Kumar Goswami	Some studies on voltage sag mitigation strategies based on installation of FACTS devices and renewable energy sources
5	Soumya Samanta	Prof. B.K.Roy, Dr. J.P. Mishra	Inertia Enhancement and Damping Improvement of a DC Microgrid
6	Vinod A	Dr. Nirmala Soren	Some studies on development of new parameters for solar PV models and MPPT based controllers for dynamic performance of hybrid DFIG-PV system
7	Dr. Debashish Dash	Dr. S. Chaudhury	Some Studies on Anatase and Cubic Titanium dioxide using DFT based approach
8	Mayur Barman	Dr. N. B. Dev Chaudhury	Some new Hybrid Approaches for Solving Power System Load Forecasting Problem During Anomalous load situation under diverse Influential Factors Utilising Support Vector Machines
9	Rajesh Panda	Dr. Prashant Kumar Tiwari	Risk Assessment Framework and Security Constrained Optimal bidding strategies for Renewable integrated Double Auctioned Competitive Power Markets
10	Patil Sandeep Ramsing	Prof. N. Sinha (co-supervisor)	Some studies on the development of intelligent algorithms for heart disease prediction
11	Pushpa Gaur	Dr. Nirmala Soren	Studies on Control of Hybrid Electrical System using Electric Vehicles and renewable Energy Source
12	Debashish Bhowmik	Prof. N. Sinha	Investigations on the estimation of contribution of individual generators in modern power system operation.

**I. Name of the Department:****Electronics & Communication Engineering****The Department at a glance****Year of Establishment: 1983****Academic Programmes Offered:**

- Bachelor of Technology (B.Tech)
- Master of Technology (M.Tech)
- Doctor of Philosophy (Ph.D.)

**Total Faculty Strength: 31**

- Professor: 2
- Associate Professor: 6
- Assistant Professor: 22
- Trainee Teacher: 1

**Total Student Strength: 661**

- B.Tech: 515
- M.Tech: 51
- Ph.D.: 95

**New Students Joined in 2019-2020: 215**

- B.Tech: 161
- M.Tech: 31
- Ph.D.: 23

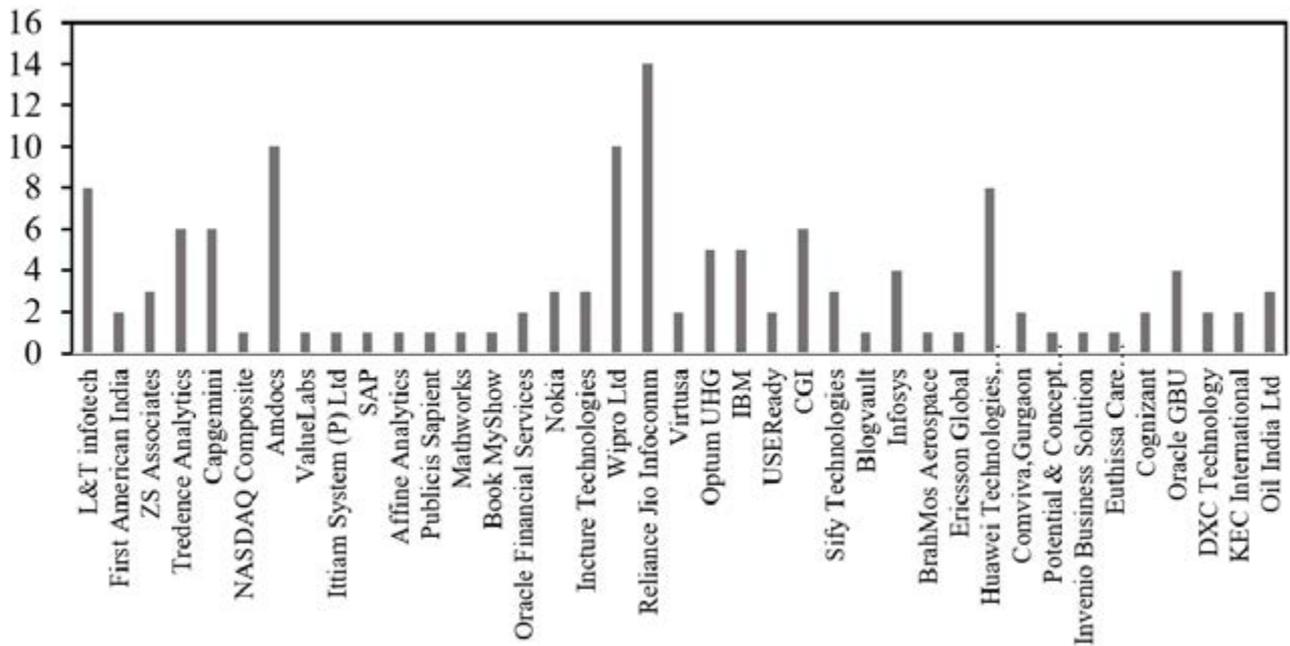


Fig: Placement statistics of students in the ECE Department during 2019-2020.

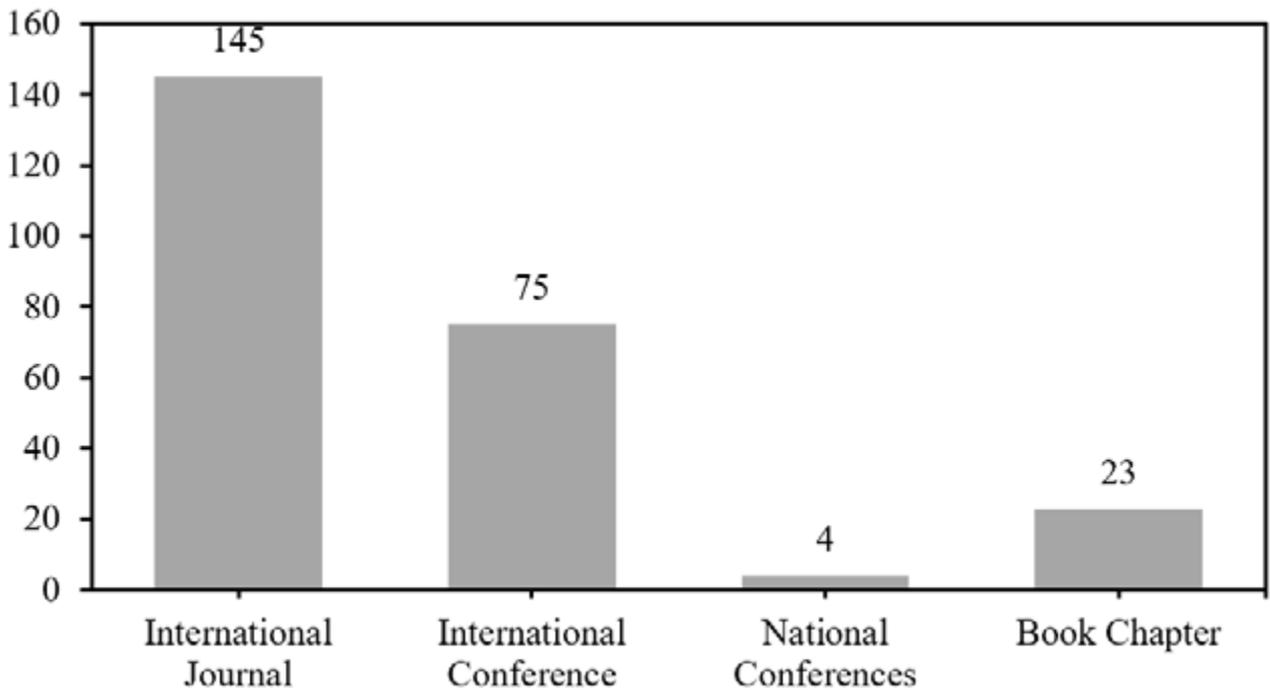


Fig: Publication details of ECE Departement during 2019-2020.

## 1.1 Academic Staff:

**HEAD:** Dr. Krishna Lal Baishnab, Associate Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor	Trainee Teacher
Prof. Fazal Ahmed Talukdar	Dr. Madhucchanda Choudhury	Dr. Wasim Arif	Mr. Anupal Dekka
Prof. Srimanta Baishya	Dr. Madhumita Paul	Dr. Koushik Guha	
	Dr. Prashanta Kumar Paul	Dr. Trupti Ranjan Lenka	
	Dr. Krishna Lal Baishnab	Dr. Ashraf Hossain	
	Dr. Rabul Hussain Laskar	Dr. Ram Kumar Karsh	
	Dr. (Mrs.) Brinda Bhowmick (Shome)	Dr. Ganesh Prasad	
		Dr. Taimoor Khan	
		Dr. Banani Basu	
		Dr. Susanta Kumar Tripathy	
		Dr. Arnab Nandi	
		Dr. Ujjal Chakraborty	
		Dr. Chandrajit Choudhury	
		Dr. Robin Khosla	
		Dr. Prabina Pattanayak	
		Dr. R. Murugan	
		Dr. Kavicharan Mummaneni	
		Dr. Pukhrambam Puspa Devi	
		Dr. Gaurav Singh Baghel	
		Dr. M. V. Swati	
		Dr. Tripti Goel	
		Dr. Devendra Singh Gurjar	
		Dr. Bijit Choudhuri	

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

a) **By Student:**

- Aditya Kumar Singh** (1814007), **Nishant Sharma** (1814041), **Soumya Sen** (1814010), **Tonmoy Baruah** (1814043), III Semester, Department of Electronics and Communication Engineering students participated zonal level Anveshan 2.0 project competition held in Jadavpur University Kolkata and presented the project titled "A COST-EFFECTIVE SYSTEM FOR EARLY STAGE PLANT DISEASE DIAGNOSIS USING SPECTRAL ANALYSIS".
- Tarun Singhania** received Foreign research Internship at School of Computer Science in the University of Nottingham Ningbo China.
- Utkarsh Bhatt** reaches top 400 smart solutions competition at IIM Calcutta

b) **By Faculty Member:**

- Dr. S.K. Tripathy**, Recipient of Slovak National Scholarship awarded by Slovak Republic
- Dr. T.R.Lenka**, Distinguished Faculty 2019 Award by NIT Silchar
- Dr. R. Khosla**, Alexander von Humboldt post-doctoral Research Fellow at Universität, Stuttgart, 70569, Germany from Aug 2019 to July 2021, ~2670 Euros p.m.

- **Dr. T. Khan**, Senior Member, URSI
- **Dr. Devendra Singh Gurjar** has received Alain Bensoussan Fellowship-2019 from the European Research Consortium for Informatics and Mathematics (ERCIM).

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

### a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. T. R. Lenka, Dr. S. K. Tripathy, Dr. M. Kavicharan	National Workshop on Modeling of Novel Nanoelectronic Devices and Circuits for ULSI Technology, 26-30 April 2019	DST-SERB	5 days
2	Dr. R. H. Laskar, Dr. R Murugan, Dr. Tripti Goel, Dr. R. K. Karsh	Computer Vision and Pattern Recognition using Machine Learning 22th to 26 <sup>th</sup> July 2019 (CVPRML-19)	TEQIP-III	5 days
3	Dr. R Murugan	Computational Intelligence, Robotics and Real-World Applications 12 <sup>th</sup> 16 <sup>th</sup> march 2020 (CIRRA 2020)	TEQIP-III	5 days
4	Dr. Koushik Guha	5 Days National Workshop on “MEMS Engineered Medicine: Breaking Barriers in Medical Diagnostics” at NIT Silchar, 12-16 April 2019	TEQIP-III	5 days
5	Dr. Koushik Guha	ANVESHAN-2020 Student Research Convention-NIT Silchar, 10-12 <sup>th</sup> January 2020	TEQIP-III	3 days
6	Dr. Taimoor Khan (Convener), Dr. G. S. Baghel, Dr. M. V. Swati (Coordinator)	One-week Workshop on “Recent Advancement in Microwave Engineering (RAME-2019)” at the Department of Electronics and Communication Engineering, NIT Silchar, April 1-5th, 2019	TEQIP III	5 days
7	Dr. Wasim Arif	Pedagogy: One Week Faculty Development Program on Curriculum Design And Implementation for Outcome Based Education (CuDIOBE-2019)	TEQIP III	5 days
8	Dr. Wasim Arif	NITS Hacks 3.0: Hackathon	TEQIP-III	2 days

### b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Dr. Arnab Nandi	Invited Speaker in National Workshop on Importance of Accreditation for Technical Education 31st July 1st August-2019.	Assam Science and Technology University, Guwahati
2	Dr. Arnab Nandi	Attended the International Conference on Digital Pedagogies, 1-2 April 2019	AICTE, New Delhi
3	Dr. Ashraf Hossain	Invited Talk as Resource Person in FIVE-DAY SHORT-TERM COURSE ON RECENT ADVANCEMENTS IN 5G WIRELESS COMMUNICATIONS: PHYSICAL AND HIGHER LAYER PERSPECTIVES in March 2020.	Barak Valley Engg. College, Karimganj, Assam
4	Dr. Banani Basu	Invited Speaker in Summer FDP from 01 - 05 July, 2019 on “Antenna Trends”	E&ICT Academy, IIT Guwahati and various remote centers
5	Dr. Banani Basu	Invited Speaker in Recent Advancement in Microwave Engineering (RAME-2019) from 1-5 April 2019 on “Metamaterials”	NIT Silchar
6	Dr. Brinda Bhowmick	ONE WEEK FACULTY DEVELOPMENT PROGRAM ON CURRICULUM DESIGN AND IMPLEMENTATION (CDI-2019) May 27-31, 2019	NIT Silchar and PMMM-NMTT DHE, Govt. of India

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
7	Dr. S. K. Tripathy	International Conference on Intelligent Computing and Control Systems 15th -19th May-2019 [ICICCS 2019]	Vaigai College of Engineering, Madurai, India.
8	Dr. S. K. Tripathy	Advanced Research in Applied Science and Engineering (RASECONF) 12th -14th July-2019	Vrije Universiteit Amsterdam
9	Dr. S. K. Tripathy	International Conference on Smart Materials for Sustainable Technology (SMST), Goa, India, Feb. 22-25, 2020	IIT (BHU)
10	Dr. T. R. Lenka	IEEE Invited Talk on "III-Nitride Nanowires for Solar Photovoltaics" at IEEE EDS Mini-Colloquium (MQ) at NIST, Berhampur on 28th Feb 2020.	NIST, Berhampur
11	Dr. T. R. Lenka	Invited Talk on "III-Nitride Nanowires for Solar Photovoltaics" at Parala Maharaj Engineering College (PMEC), Berhampur on 28th Feb 2020 under TEQIP-III.	Parala Maharaj Engineering College (PMEC), Berhampur
12	Dr. T. R. Lenka	Invited Talk on "GaN HEMT for High Power Electronics and RF Applications" in the Five Days Workshop on "Recent Trends in Microelectronics and VLSI Design" at Manipur Technical University, Imphal on 27th Aug 2019.	Manipur Technical University, Imphal
13	Dr. T. R. Lenka	IEEE Invited Talk on "GaN HEMT for High Power and High-Frequency Electronics" at Helen and John C. Hartmann Department of Electrical and Computer Engineering, New Jersey Institute of Technology, University Heights, Newark, NJ 07102, USA on July 25 2019.	New Jersey Institute of Technology, Newark, NJ, USA
14	Dr. T. R. Lenka	Invited Talk on "Compact Modeling of E-mode GaN HEMT" at Helen and John C. Hartmann Department of Electrical and Computer Engineering, New Jersey Institute of Technology, University Heights, Newark, NJ 07102, USA on June 24 2019.	New Jersey Institute of Technology, Newark, NJ, USA
15	Dr. T. R. Lenka	Invited Talk on "III-Nitride Nanowires for Solar Photovoltaics" at Helen and John C. Hartmann Department of Electrical and Computer Engineering, New Jersey Institute of Technology, University Heights, Newark, NJ 07102, USA on June 19 2019.	New Jersey Institute of Technology, Newark, NJ, USA
16	Dr. Prabina Pattanayak	Invited talk on "APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN WIRELESS COMMUNICATIONS", 23-27 February, 2020	EATM, BPUT, Bhubaneswar, India
17	Dr. Prabina Pattanayak	Attended an FDP "Theory & Applications of Machine Learning and Data Analytics Technique", 16-21 December, 2019	CVRCE, Bhubaneswar, India
18	Dr. R Murugan	Participated in Anveshan 2.0 Zonal Level project competition January -2020	Jadavpur University
19	Dr. R Murugan	Delivered a motivational talk on "Psychology of Specially Abled Students, physical barriers and responsibilities of Stakeholders", for physically challenged students on 22 August 2019.	Barak Valley Engg. College, Karimganj, Assam
20	Dr. Koushik Guha	2019 TechConnect World Innovation Conference & Expo, June 17-19, 2019 held in Boston, USA	Techconnect USA
21	Dr. Taimoor Khan	Regional Conference on Radio Science (RCRS 2020) under International Union of Radio Science (URSI) at IIT (BHU), Varanasi, India, during 12-14 February, 2020.	IIT(BHU) Varansai

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

- Medical Image Processing
- Wireless Sensor Networks
- 4G and 5G Communications
- Design of Antenna and Metamaterials Structure
- Soft Computing Techniques in Antenna Array Optimization, Wireless Communications
- Wireless Communications
- Microwave Engineering
- Microelectronics
- Nano Electronics

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
17	03	62

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Solar Cell Fabrication Lab	New Programme
2	Speech and Image processing Lab	Research
3	Nexgen Wireless Communication Laboratory	Research
4	Medical Imaging and Computer Vision lab	Research
5	SPARC Project Lab	New Lab
6	Wireless Research Lab	It is engaged in the research and learning dedicated towards the broad area of wireless communication and networking to offer a ubiquitous access to the wired and wireless resources. Our aim is to contribute towards the wireless networking problems that have a strong grounding in reality and to obtain a fundamental understanding of these problems, thereby providing a sound theory for the development of efficient systems.

### d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Design of Reconfigurable Defected Ground Structure Resonator for Wireless Application	Dr. Arnab Nandi	SERB, Gol	23.4	3.5 Years (Completed on 1 Sep 2019)
2	Impact of error control code (ECC) on characteristic distance for underwater wireless sensor network (UWSN) and study of energy outage duration for energy harvested UWSN using Markov model	Dr. Ashraf Hossain	SERB (MATRICS), DST	6.6	2020-2023
3	Visvesvaraya Young Faculty Research Fellowship	Dr. Brinda Bhowmick	MeitYGovt of India	37 lakhs	5 years

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
4	Effect of metal doped TiO <sub>2</sub> on photoanode and lead free organic-inorganic metal halide perovskite on photovoltaic performance of perovskite solar cell: experimental and theoretical approach	Dr. S. K. Tripathy	DST-SERB	42.38	3.5 years
5	High Pressure Phase Transitions, Electronic, Elastic and Optical Properties of Selected Defect Chalcopyrite Semiconductors for Optoelectronic Application	Dr. S. K. Tripathy	CSIR	11.42	3 years
6	Development of Low-Cost, High-Efficiency and High-Stability Perovskite/Silicon Tandem Solar Cell for Energy Harvesting	Dr. S. K. Tripathy (Co-PI)	ASEAN-India S&T Development Fund (AISTDF) of DST-SERB	31.94	2 Years
7	Development of Low-Cost, High-Stability and High-Efficiency Perovskite Solar Cell for Energy Harvesting: A Theoretical and Experimental Study	Dr. S. K. Tripathy (Co-PI)	CSIR-EMR-II	21.50	3 Years
8	Development of Low-Cost, High-Efficiency and High-Stability Perovskite/Silicon Tandem Solar Cell for Energy Harvesting	Dr. T. R. Lenka	ASEAN-India S&T Development Fund (AISTDF) of DST-SERB	31.94	2 Years
9	Development of Low-Cost, High-Stability and High-Efficiency Perovskite Solar Cell for Energy Harvesting: A Theoretical and Experimental Study	Dr. T. R. Lenka	CSIR-EMR-II	21.50	3 Years
10	Chips to System Design- Special Manpower Development Project (C2SD-SMDP) in IIT Madras cluster	Dr. K. L. Baishnab, Dr. Koushik Guha	MeitY, Govt. of India	97 Lakhs	5 years
11	Integration of organic ferroelectric and two-dimensional (2D) material for High Mobility Flexible Ferroelectric Field Effect Transistor and Negative Capacitance Field Effect Transistor Applications (Could not avail because of extra ordinary leave from Institute to pursue post-doctoral research fellowship in Universität, Stuttgart Germany. I need to submit the project proposal again after returning to India)	Dr. Robin Khosla	SERB Startup Research Grant (SRG)	30 Lakhs	2 years
12	Design and Development of Dielectric Resonator Based Electromagnetic Sensors for Efficient Harvesting of Renewable RF Ambient Energy in Smart City Applications	Dr. T. Khan	SPARC, MHRD, Govt. of India	49.59	2019-2021
13	Development of a Prototype of Disabled-Friendly Automatic Virtual Text-Entry Keyboard Interface System under Practical Environmental Conditions	Dr. R. H. Laskar, Dr. T. Khan	IMPRINT-2 Scheme, SERB, Govt of India	89.46	2018-2021

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
14	Development of EBG-Structured Printed Antennas for Ultrawideband Communication and Futuristic Modeling for Prediction of Performance Parameters using Computational Intelligence Techniques	Dr. T. Khan	Core Research Grant, SERB, Govt. of India	16.28	2017-2020
15	High Pressure Phase Transitions, Electronic, Elastic and Optical Properties of Selected Defect Chalcopyrite Semiconductors for Optoelectronic Application	Prof. F. A. Talukdar	CSIR	11.42 Lakhs	2019-2022
16	Hetero-Junction Tunnel FETs: Characterization, Modelling and Simulation of Electrical parameters	Prof. S. Baishya	CSIR	9,54,667	2017-2019
17	Visveswaraya PhD Scheme	Dr. K. L. Baishnab	MeitY	3,09,00,000/-	2018-2023
18	National Resource Center	Dr. W. Arif	DH, DoI	14,70,000/-	2018-2021
19	Development of National Disaster Spectrum (NDS) and Disaster Communication Backbone Architecture (DiCoBA) with prototype development	Dr. W. Arif (Co-PI)	MEITY	110.00 L	03
20	Start Up Centre	Dr. W. Arif	JOINTLY BY MHRD, DST	50.00 L	03
21	Innovation and Entrepreneurs hip Development Centre	Dr. W. Arif (Co-PI)	DST	50.00 L	05
22	PMMMNTT Innovations in Teaching learning	Dr. W. Arif	DHE	43.00	03
23	NRDC NITS IFC	Dr. W. Arif	NRDC	10.00	03
24	PMM-NMTT	Dr. W. Arif	DHE	14.50	01
25	HEMAN(Health Monitoring and Nous)	Dr. W. Arif	IEDC, DST	1.00	02

#### e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Dr. Ashraf Hossain	IEEE Transactions on Vehicular Technology	2	2019
2	Dr. Ashraf Hossain	Computers & Electrical Engineering of Elsevier	2	2019, 2020
3	Dr. Ashraf Hossain	IEEE Communications Letters	1	2019
4	Dr. Ashraf Hossain	Pervasive and Mobile Computing	1	2019
5	Dr. Ashraf Hossain	IEEE Sensors Journal	1	2020
6	Dr. Ashraf Hossain	International Journal of Electronics	2	2020
7	Dr. Brinda Bhowmick	IEEE Transction on Electron Devices, International Journal of Electronics, Silicon, Journal of Computational Electronics,	8	2019-2020
8	Dr. Devendra Singh Gurjar	IEEE Sensors Letters	02	2020
9	Dr. Devendra Singh Gurjar	IEEE Systems Journal	04	2019-2020
10	Dr. Devendra Singh Gurjar	IEEE Wireless Communications Letters	03	2019-2020
11	Dr. Devendra Singh Gurjar	IET Communications	05	2019-2020
12	Dr. S. K. Tripathy	The Journal of Physical Chemistry	02	2019

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
13	Dr. S. K. Tripathy	Optik – International Journal for Light and Electron Optics	01	2020
14	Dr. S. K. Tripathy	IEEE Access	01	2020
15	Dr. T. R. Lenka	International Journal of RF and Microwave Computer-Aided Engineering	1	2020
16	Dr. T. R. Lenka	Electronics Letters	1	2020
17	Dr. T. R. Lenka	IEEE Access	2	2019-2020
18	Dr. T. R. Lenka	Semiconductor Science and Technology	1	2020
19	Dr. T. R. Lenka	Journal of Materials Science: Materials in Electronics	1	2020
20	Dr. T. R. Lenka	Silicon	1	2020
21	Dr. T. R. Lenka	International Journal of Ambient Energy	1	2020
22	Dr. T. R. Lenka	IEEE Transactions on Microwave Theory and Techniques	1	2020
23	Dr. T. R. Lenka	Engineering Research Express	1	2020
24	Dr. T. R. Lenka	International Journal of RF and Microwave Computer-Aided Engineering	3	2019
25	Dr. T. R. Lenka	Journal of Computational Electronics	4	2019
26	Dr. T. R. Lenka	IEEE Transactions on Nanotechnology	1	2019
27	Dr. T. R. Lenka	Journal of Materials Science: Materials in Electronics	2	2019
28	Dr. T. R. Lenka	Shock and Vibration	1	2019
29	Dr. T. R. Lenka	Engineering Research Express	1	2019
30	Dr. T. R. Lenka	Journal of Physics: Condensed Matter	1	2019
31	Dr. T. R. Lenka	IEEE Nanotechnology Materials and Devices Conference (NMDC)	12	2019
32	Dr. T. R. Lenka	Electronics Letters	1	2019
33	Dr. T. R. Lenka	IEEE Transactions on Electron Devices	2	2019
34	Dr. T. R. Lenka	International Journal of Numerical Modelling: Electronic Networks, Devices and Fields	1	2019
35	Dr. Ujjal Chakraborty	IETE Journal of Research, Journal of Electromagnetic Waves and Applications, IEEE Access, SN applied Science, International Journal of RF and Microwave Computer-Aided Engineering	5	2019-2020
36	Dr. Prabina Pattanayak	Elsevier AEU	03	2019-2020
37	Dr. Prabina Pattanayak	International Journal of Electronics	03	2019-2020
38	Dr. Prabina Pattanayak	Springer Wireless Personal Communications	02	2020
39	Dr. Prabina Pattanayak	Springer Telecommunication Systems	02	2020
40	Dr. R. K. Karsh	The Journal of Supercomputing	01	2019
41	Dr. R. K. Karsh	Software: Practice and Experience	01	2019
42	Dr. R. K. Karsh	International Journal of Distributed Sensor Networks	01	2019
43	Dr. R. K. Karsh	Mathematical Problems in Engineering	01	2020
44	Dr. R. K. Karsh	Journal of Electronic Imaging	01	2020
45	Dr. R. Murugan	International Ophthalmology	4	2019 and 2020
46	Dr. R. Murugan	Biomedical Signal Processing and Control	1	2020
47	Dr. R. Murugan	Computer Biology and Medicine	1	2020
48	Dr. R. Murugan	Journal Biomedical and Health Informatics	1	2020

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
49	Dr. R. Murugan	CMC-Computers, Materials & Continua	1	2020
50	Dr. Koushik Guha	International Journal of Electronics Taylor & Francis	02	2019
51	Dr. Koushik Guha	International Journal of Numerical Modelling: Electronic Networks, Devices and Fields Wiley	01	2019
52	Dr. Koushik Guha	Jordanian Journal of Computers and Information Technology	01	2019
53	Dr. Koushik Guha	Engineering Science and Technology Journal	01	2019
54	Dr. Koushik Guha	Microelectronics Journal, Elsevier	01	2019
55	Dr. Koushik Guha	IEEE Access	05	2020
56	Dr. Robin Khosla	IEEE Transactions on Electron Devices	01	2019
57	Dr. Wasim Arif	International Journal of Communication Systems, WILEY	01	2019
58	Dr. Wasim Arif	ELSEVIER AEU, Ad-Hoc Sensor Network	01	2019
59	Dr. Wasim Arif	International Journal of Imaging Systems and Technology	01	2020
60	Dr. Wasim Arif	EURASIP Journal on Wireless Communications and Networking	01	2020

#### f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Dr. T. R. Lenka	IEEE Nanotechnology Materials and Devices Conference 2019 (IEEE NMDC 2019), 27-30 Oct 2019, Stockholm, Sweden.
2	Dr. Wasim Arif	Chair the panel discussion on Innovation, Incubation & Entrepreneurship (2019)
3	Dr. Wasim Arif	Joint Organizing Secretary, International Conference, ICRTEC-2019, NIT Silchar Chaired Session in International Conference, ICRTEC-2019

## 1.5 Publications

#### a) International Journal(s):

- Amiya Dey and Arnab Nandi, "Spatial Assessment of Array Antenna based Joint SDMA-TDMA Architecture for DS-CDMA Signals," AEUE - International Journal of Electronics and Communications (Elsevier), Vol. 113, January 2020. Impact Factor 2.853. DOI: 10.1016/j.aeue.2019.152949
- Remika Ngangbam, Ashraf Hossain, Alok Shukla, "Improved Low Energy Adaptive Clustering Hierarchy and its optimum Cluster Head selection", International Journal of Electronics, Taylor & Francis, vol. 107, pp. 390-402, 2020, DOI: 10.1080/00207217.2019.1661023
- Sunandita Debnath, Ashraf Hossain "Network Coverage in Interference Limited Wireless Sensor Networks", Wireless Personal Communications, Springer, vol. 109, pp. 139-153, 2019, DOI: 10.1007/s11277-019-06555-z.
- Rajeev Kumar, Ashraf Hossain, "Performance of Random Access Markov Modelling for Two-Way Buffer-Aided Relaying Networks with Wireless Assisted Links" Wireless Personal Communications, Springer, vol. 108, pp. 1995-2015, DOI: 10.1007/s11277-019-06505-9, 2019.
- Rajeev Kumar and Ashraf Hossain, "Survey on half- and full- duplex relay based cooperative communications and its potential challenges and open issues using Markov chains" IET Communications, vol. 13, pp. 1537-1550, 2019, DOI: 10.1049/iet-com.2018.5823.
- Shreya Dey, Ashraf Hossain, "Session-Key Establishment and Authentication in Smart Home Networks Using Public Key Cryptography" IEEE Sensors Letters, vol 3(4) 2019, DOI: 10.1109/LSENS.2019.2905020.

7. Sunandita Debnath, Ashraf Hossain, " Sensor Scheduling Schemes and Network Coverage in Dense Wireless Sensor Networks", *Journal of Information Science and Engineering*, Institute of Information Science, Academia Sinica, Taiwan, vol. 35, pp. 937-958, 2019.
8. Barnali Dey, Ashraf Hossain, R. Dey and R. Bera, " Integrated Blind Signal Separation and Neural Network Based Energy Detector Architecture", *Wireless Personal Communications*, Springer, vol 106 (4), 2019, pp. 2315-2333, doi.: 10.1007/s11277-018-6081-y.
9. Ritwik Haldar, Ashraf Hossain, Kirtan Gopal Panda, "Performance Evaluation of Low Power Wireless Sensor Node with Hybrid Energy Storage" *International Journal of Communication Systems*, Wiley, vol. 32 (2), 2019, pp. 1-18, DOI: 10.1002/dac.3847.
10. Ritwik Haldar, Ashraf Hossain, Kirtan Gopal Panda, "Estimation of event loss duration for energy harvested wireless body sensor node", *Telecommunication Systems*, Springer, vol 70 (2), 2019, pp. 231-244, doi: 10.1007/s11235-018-0491-8
11. Abhijyoti Ghosh and Banani Basu, "Triangular slotted ground plane: a key to realize high gain, cross- polarization free microstrip antenna with improved bandwidth," *Turkish Journal of Electrical Engineering & Computer Sciences*, Accepted for Publication. SCIE Indexed
12. Mahajan, B.K., Choudhuri, B., Goswami, D., Tiwari, A.K., Sarkar, M.B. and Mondal, A., 2020. Enhanced Photodetection with Crystalline Si Nanoclusters. *Journal of nanoscience and nanotechnology*, 20(4), pp.2344-2350., doi: 10.1166/jnn.2020.17176.
13. K.Vanlalawmpuia, B.Bhowmick,"Investigation of Interface Trap Charges and Temperature Variation in Heterostacked-TFET" accepted in *Indian Journal of Physics*, March 2020 (in press)
14. R Das, B Bhowmick, S Baishya,"Robustness to Ambipolarity and Improvement to HF FOMs of Dual Stacked Gate Dielectrics Underlap Heterojunction-TFETs" accepted in *Indian Journal of Physics*, Feb'2020( in press)
15. K. Vanlalawmpuia, B.bhowmick,"Optimization of a Hetero-structure Vertical Tunnel FET for enhanced Electrical Performance and effects of temperature variation on RF/linearity Parameters" *Silicon* (Springer), Feb 2020. doi10.1007/s12633-020-00411-7
16. R.Saha, B.Bhowmick, S.Baishya"Impact of Lateral Straggle on Linearity Performance in Gate Modulated (GM) TFET" in *Applied physics A,Material Science and Processing* Volume :126 / 1-4 / 2020, 2020.doi10.1007/s00339-020-3373-3
17. V Devi, B.Bhowmick, P Devi, "N+ Pocket Doped Vertical TFET Based Dielectric-Modulated Biosensor Considering Non-Ideal Hybridization Issue: A Simulation Study" *IEEE Transactions on Nano Technology*,vol.19, pp.156-162, Feb 2020,doi 10.1109/TNANO.2020.2969206
18. P.Ghosh, B,Bhowmick "Optimization of Ferroelectric SELBOX TFET and Ferroelectric SOI TFET" *ECS Journal of Solid State Science and Technology*, Volume 9, Number 2, IOP science, Jan 2020
19. B.Das, B.Bhowmick," Noise behavior of Ferro electric Tunnel FET," *Microelectronics journal*, Feb 2020, Vol.96. 2020 Doi.10.1016/j.mejo.2019.104677.
20. S. Choudhury, K L Baishnab, B.Bhomick,"An Evolutionary Algorithm based Optimized Double gate Hetero-material Tunnel FET," *Journal of Computational Electronics*,Nov. 2019 <https://doi.org/10.1007/s10825-019-01426-z>.
21. P.Ghosh, B.Bhowmick,"Analysis of Kink Reduction and reliability issues in Low-voltage Dual Tunnel Diode based SOI TFET," *Micro &Nano letters (IET)*, vol.15, Nov 2019 10.1049/mnl.2019.0427 in press.
22. P.Ghosh,B.Bhowmick,R. Goswami, "Optimization of Ferroelectric Tunnel Junction TFET in presence of temperature and its RF analysis," *Microelectronics journal*, vol.92, Sept' 2019.doi. org/10.1016/j.mejo.2019.104618
23. K Vanlalawmpuia, B.Bhowmick," Investigation of a Ge-source vertical TFET with delta-doped layer" accepted in *IEEE Transaction on Electron Devices*, Aug 2019 doi10.1109/TED.2019.2933313

24. P.Ghosh, B.Bhowmick, "Reduction of kink effect in SELBOX Tunnel FET and its RF/ Analog performance" *Journal of Computational Electronics*, July 2019. Doi:10.1007/s10825-019-01382-8
25. R.Goswami, B.Bhowmick "Comparative Analyses of Circular Gate TFET and Heterojunction TFET for Dielectric-Modulated Label-Free Biosensing" *IEEE Sensors Journal*, July 2019, Doi10.1109/JSEN.2019.2928182
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27. A Vinod, P. Kumar, B.Bhowmick, "Impact of Ferroelectric on the Electrical Characteristics of Silicon-Germanium based heterojunction Schottky Barrier FET" *International Journal of Electronics and Communications*, May 2019. Doi.10.1016/j.aeue.2019.05.030
28. P Kumar, B. Bhowmick, "Source-Drain Junction Engineering Schottky Barrier MOSFETs and their Mixed Mode application," *Silicon Journal*, April 2019. doi.10.1007/s12633-019-00170-0
29. R. Saha, B.Bhowmick, S.Baishya, "Impact of WFV on Electrical Parameters due to High-k/Metal Gate in SiGe Channel Tunnel FET" accepted in *Microelectronic Journal* in April 2019,
30. P.Goswami, B.Bhowmick, "Optimization of Electrical parameters of pocket doped SOI TFET with L shaped Gate," *Silicon Journal* in April 2019. DOI: 10.1007/s12633-019-00169-7
31. R.Saha, B.Bhowmick, S.Baishya, "Impact of Mole Fractions due to Work Function Variability (WFV) of Metal Gate on Electrical Parameters in strained SOI-FinFET" *Silicon* (Springer), April 2019. doi 10.1007/s12633-019-00163-z
32. V Devi, B.Bhowmick, P Devi, "Near-infrared optical sensor based on band-to-band tunnel FET" *Applied Physics A* (springer) , vol.125, April 2019. Doi10.1007/s00339-019-2636-3
33. P. Ghosh, B. Bhowmick, "Noise behaviour of p+ Si<sub>1-x</sub>Ge<sub>x</sub> layer SELBOX TFET" *Indian Journal of Physics*, (Springer) May 2019, doi10.1007/s12648-019-01485-9..
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37. D. S. Gurjar, H. H. Nguyen and H. D. Tuan, (2019) "Wireless information and power transfer for IoT applications in overlay cognitive radio networks," *IEEE Internet of Things Journal*, vol. 6, no. 2, pp. 3257 – 3270.
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45. I.S. Amiri, G. Palai, Jafar Al-Zubi, S.K. Tripathy, "Controlling of optical fiber bending losses through 'WARN' parameter and machine learning direction at three communication windows", *Optik* 194 (2019) 163054 (1-6).
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47. Iraj Sadegh Amiri, P. Yupapin, G. Palai and S.K. Tripathy, "A proposal to identify live cancer cell by naked eye: Realization of biomedical application using 1D photonic structure", *Optik* 183 (2019) 818-821.
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51. R. T. Velpula, B. Jain, H. Q. T. Bui, T. T. Pham, V. T. Le, H. D. Nguyen, T. R. Lenka, H. P. T. Nguyen, "Numerical investigation on the device performance of electron blocking layer free AllnN nanowire deep ultraviolet light-emitting diodes," *Optical Materials Express* Vol. 10, Issue 2, pp. 472-483 (2020), DOI: 10.1364/OME.380409. [IF: 2.673]
52. B. Jain, R.T. Velpula, T. H. Q. Bui, K. T. Nguyen, T. R. Lenka, H. P. T. Nguyen, "High Performance Electron Blocking Layer Free InGaN/GaN Nanowire White-Light-Emitting Diodes," *Optics Express* (OSA), Vol. 28, Issue 1, pp. 665-675 (2020), DOI:10.1364/OE.28.000665. [IF: 3.561]
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42. Daasari Surender, Taimoor Khan, and Fazal Ahmed Talukdar, "A Hexagonal-Shaped Microstrip Patch Antenna with Notch Included Partial Ground plane for RF Energy Harvesting Applications", Proc. of 7th International Conference on Signal Processing and Integrated Networks (SPIN 2020), Amity University, Noida, India, 27-28 February 2020.
43. Partha Pratim Shome and Taimoor Khan, "A Compact Design of Circular Ring-Shaped MMR Based Bandpass Filter for UWB Applications", Proc. of 2019 IEEE Asia Pacific Microwave Conference (APMC 2019) Singapore, December 10-13, 2019.
44. Partha Pratim Shome, Taimoor Khan, "Novel Design of Printed Antenna Integrated with Bandpass Filter for C-band Applications", Proc. of 2019 URSI-Asia Pacific Radio Science Conference (URSI AP-RASC 2019), New Delhi, India, 09-15 March 2019.
45. Saurabh Kumar and Taimoor Khan, "EBG-Loaded Dielectric Resonator Antenna for Triple Band-Notch Characteristics", Proc. of 2019 URSI-Asia Pacific Radio Science Conference (URSI AP-RASC 2019), New Delhi, India, 09-15 March 2019.
46. Saurabh Kumar and Taimoor Khan, "CPW-Fed UWB Flexible Antenna for GSM/WLAN/X-Band Applications", Proc. of Fifth International Conference on Signal Processing & Integrated Networks", SPIN 2018, Department of Electronics and Communication Engineering ASET, Amity University, Noida, Sec-125, Delhi-NCR, pp. 126-129, 22-23 Feb. 2018.
47. Modak S, Khan T, Laskar RH, "A Novel Configuration of Stepped Rectangular Printed Monopole Antenna for UWB Applications", In 2020 URSI Regional Conference on Radio Science (URSI-RCRS) 2020 Feb 12 (pp. 1-4). IEEE.
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- Applications”, In 2020 URSI Regional Conference on Radio Science (URSI-RCRS) 2020 Feb 12 (pp. 1-4). IEEE.
49. Deb SD, Choudhury C, Sharma M, Talukdar FA, Laskar RH, “Frontal Facial Expression Recognition using Parallel CNN Model”, In 2020 National Conference on Communications (NCC) 2020 Feb 21 (pp. 1-5). IEEE.
  50. Yadav, Kuldeep Singh, Joyeeta Singha, and Rabul Hussain Laskar, “Facial Expression Recognition using Facial Features Detection using the Fusion of Classifiers.” 2019 4th International Conference on Information Systems and Computer Networks (ISCON) GLA University, Mathura, UP, India. Nov 21-22, 2019, 978-1, 2019 IEEE 1
  51. Ahmed, M., Ahmed, R., Thakuria, A.J. and Laskar, R.H., “Eye Center Guided Constrained Local Model for Landmark Localization in Facial Image”, In 2019 9th Annual Information Technology, Electromechanical Engineering and Microelectronics Conference (IEMECON) (pp. 168-173). IEEE.
  52. Bisharad D, Laskar RH, “Music Genre Recognition Using Residual Neural Networks”, In TENCON 2019-2019 IEEE Region 10 Conference (TENCON) 2019 Oct 17 (pp. 2063-2068). IEEE.
  53. Yadav, Kuldeep Singh, Joyeeta Singha, and Rabul Hussain Laskar, “Facial Expression Recognition using Facial Features Detection using the Fusion of Classifiers: In a real-time scenario.” 2019 4th International Conference on Information Systems and Computer Networks (ISCON). IEEE, 2019.
  54. S. Das, K. Panda, D.Sen, W. Arif, “Minimizing Last- Minute Inter- Datacenter Backup with Risk-Awareness”, IEEE GLOBECOM 2019
  55. Sanjoy Debnath, W. Arif, D. Sen, S. Baishya, “Improved Self-adaptive Differential Evolution Based Throughput Maximization of Energy Harvesting Cognitive Radio Network”, 9th International Conference on Soft-Computing And Problem Solving (SocPros-2019)
  56. Deepak Kumar, Banani Talukdar, Wasim Arif, “Performance analysis of Prediction based Sensing in Energy Harvesting Cooperative CRN”, Second International Conference on Advanced Computational and Communication Paradigms (ICACCP-2019)
  57. Deepak Kumar, Banani Talukdar and W. Arif, “Impact of Weibull Distribution on Prediction Based Sensing in Energy Harvesting Cooperative CRN”, 6th IEEE International Conference on Signal Processing and Integrated Networks (SPIN 2019)
  58. Deepak Kumar, Banani Talukdar, Sanjoy Debnath, Wasim Arif, “Performance of Weibull Distribution Function on Prediction Based EH-CRN with Diverse Fusion”, International Conference in Recent Trends on Electronics & Computer Science ((ICRTECS-2019)
  59. Kaustuv Basak, Akhil Gangadharan, and Wasim Arif, “Optimal SU Allocation to Multi-PU LCC CR Networks Consisting of Multiple SUs Using Cooperative Resource Sharing and Capacity Theory”, International Conference on Computer Networks and Communication Technologies
  60. Neelkamal Semwal, Mrinmay Mukherjee, Chanchal Raj and Wasim Arif, “An IoT based smart E-Health care System”, International Conference in Recent Trends on Electronics & Computer Science ((ICRTECS-2019)
  61. Abinash Panda, Pukhrabam Puspa Devi, Gerd Keiser”, Realization of sucrose sensor using photonic waveguide: An application to biophotonics” Fiber Optics in Access Network, 2-4 September, 2019, Sarajevo, Bosnia.
  62. Bhanja CC, Laskar MA, Laskar RH, “Formants and Prosody-Based Automatic Tonal and Non-tonal Language Classification of North East Indian Languages”, In Smart Computing Paradigms: New Progresses and Challenges 2020 (pp. 169-179). Springer, Singapore.
  63. Shrayan Das, Kirtan Gopal Panda, Debarati Sen, Wasim Arif, (2020), “Maximizing Risk-aware Last-Minute Inter-Datacenter Backup with Progressive Disasters”, IEEE-ICC ‘20, Jun 7-11, Dublin , Ireland, pp. 1-6.
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65. Sanjoy Debnath, W. Arif, D. Sen, S. Baishya, (2019), “Improved Self-adaptive Differential Evolution Based Throughput Maximization of Energy Harvesting Cognitive Radio Network”, 9th International Conference on Soft-Computing And Problem Solving (SocPros-2019).
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  71. B. Talukdar, D. Kumar and W. Arif, “Analytical Modelling and Performance Evaluation of a Prediction based EH- Cooperative CRN under Erlang Distribution,” 2019 IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), GOA, India, 2019, pp. 1-6, doi: 10.1109/ANTS47819.2019.9118055.
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  73. Sanjoy Debnath, Dheeraj Kumar Ravi, Banani Talukdar, Amit Baran Dey, Srimanta Baishya, (Debarati Sen, Wasim Arif (2019), “Optimal Resource Allocation in Two Tier Heterogeneous Network”, 2019 IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), GOA, India, 2019,
  74. Semwal, Neelkamal, Mrinmay Mukherjee, Chanchal Raj, and Wasim Arif., (2019), “An IoT based smart e-health care system.” ICRTECS, proceedings in Journal of Information and Optimization Sciences, 40( 8) ,pp. 1787-1800.
  75. Kaustuv Basak, Akhil Gangadharan, and Wasim Arif., (2019). “Optimal SU Allocation to Multi-PU LCC CR Networks Consisting of Multiple SUs Using Cooperative Resource Sharing and Capacity Theory.” In International Conference on Computer Networks and Communication Technologies, pp. 973-989. Springer, Singapore, 2019.
- d) National Conference(s):**
1. D. Das, R. Pandey, S. Baishya and U. Chakraborty, “Impact of Temperature and Trap Charges on Heterojunction Tunnel FET,” 2020 National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTEA), Durgapur, India, 2020, pp. 1-5, doi: 10.1109/NCETSTEA48365.2020.9119953.
  2. K. Baruah, R. Pandey, U. Chakraborty and S. Baishya, “Optimization of Electrical Parameters in Dual Dielectric Spacer Overlapped DG Tunnel FET,” 2020 National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTEA), Durgapur, India, 2020, pp. 1-6, doi: 10.1109/NCETSTEA48365.2020.9119922.
  3. K. Biswas and U. Chakraborty, “Textile Multiple Input Multiple Output Antenna for X-Band and Ku-Band Uplink-downlink Applications,” 2020 National Conference on Emerging Trends on Sustainable Technology and Engineering Applications (NCETSTEA), Durgapur, India, 2020, pp. 1-4, doi: 10.1109/NCETSTEA48365.2020.9119936.
  4. Daasari Surender, Taimoor Khan, and Fazal Ahmed Talukdar, “A Pentagon-Shaped Microstrip Patch Antenna with Slotted Ground Plane for RF

Energy Harvesting”, Proc. of URSI RCRS 2020, IIT (BHU), Varanasi, India, 12-14 February, 2020.

**e) Book/Chapter:**

1. Remika Ngangbam, Ashraf Hossain, Alok Shukla, “Performance of Energy and Distance Based Modified Threshold for LEACH”, In: Singh P., Bhargava B., Paprzycki M., Kaushal N., Hong WC. (eds) Handbook of Wireless Sensor Networks: Issues and Challenges in Current Scenario’s, Advances in Intelligent Systems and Computing, vol 1132. Springer, Cham, pp. 52-66, 2020.
2. Ngangbam R., Hossain A., Shukla A. (2020) Lifetime Improvement for Hierarchical Routing with Distance and Energy Based Threshold. In: Hemanth D., Shakya S., Baig Z. (eds) Intelligent Data Communication Technologies and Internet of Things. ICICI 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 38. Springer
3. Choudhuri, Bijit, and Aniruddha Mondal. “Group III–Nitrides and Other Semiconductors for Terahertz Detector.” In Emerging Trends in Terahertz Solid-State Physics and Devices, Volume 1, pp. 189-203 ISBN: 978-981-15-3235-1 Springer, Singapore, 2020.
4. B.Bhowmick, “Design of a novel tunnel FET for low-power applications” as BOOK chapter 5 of IET Book VLSI and Post-CMOS Electronics. Volume 1: Design, modelling and simulation, 2019, Book DOI: 10.1049/PBCS073F Chapter DOI: 10.1049/PBCS073F
5. R. Singh, T. R. Lenka, D. K. Panda, R. T. Velpula, B. Jain, H. Q. T. Bui, H. P. T. Nguyen, “RF Performance of Ultra-wide bandgap HEMTs” Emerging Trends in Terahertz Solid-State Physics and Devices, Springer Nature, pp. 49-63, Mar 2020 DOI:10.1007/978-981-15-3235-1.
6. P. Das, T. R. Lenka, S. S. Mahato and A. K. Panda, “Chapter 4: Source/Drain, Gate and Channel Engineering in HEMTs,” Handbook for III-V High Electron Mobility Transistor Technologies, CRC Press, 2019. Chapter-4, pp.81-95, Hardback: 9781138625273, pub: 2019-05-31.
7. P. Das, T. R. Lenka, S. S. Mahato and A. K. Panda, “Polarization Effects in AlGaIn/GaN HEMTs,” Handbook for III-V High Electron Mobility Transistor Technologies, CRC Press, 2019, Chapter-8, pp. 211-225. Hardback: 9781138625273, pub: 2019-05-31.
8. D. K. Panda, G. Amarnath, T. R. Lenka, “Metal Oxide Semiconductor High Electron Mobility Transistors,” Handbook for III-V High Electron Mobility Transistor Technologies, CRC Press, 2019, Chapter 15, pp.391-400. Hardback: 9781138625273, pub: 2019-05-31.
9. K. Pavani, H. Mishra, R. K. Karsh, Multi-attached Network Topology with Different Routing Protocols and Stub Network Resolution in OSPF Routing, BOOK TITLE: Proceedings of the Third International Conference on Microelectronics, Computing and Communication Systems, Volume 556, ISBN 978-981-13-7091-5, YEAR 2019.
10. H. Mishra, R. K. Karsh, K. Pavani, Anomaly-Based Detection of System-Level Threats and Statistical Analysis, BOOK TITLE: Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, Volume 767, ISBN 978-981-13-9680-9, YEAR 2020.
11. U. Reddy, R. K. Karsh, Hash Code Based Image Authentication Using Rotation Invariant Local Phase Quantization, BOOK TITLE: Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, Volume 767, ISBN 978-981-13-9680-9, YEAR 2020.
12. D. Mahapatra, C. Choudhuri, R. K. Karsh, Handwritten Character Recognition Using KNN and SVM Based Classifier over Feature Vector from Autoencoder, BOOK TITLE: Machine Learning, Image Processing, Network Security and Data Sciences, Volume 1240, ISBN 978-981-15-6315-7, YEAR 2020.
13. M. Paul, R. K. Karsh, F. A. Talukdar, Image authentication using tensor decomposition and local features with geometric correction, BOOK TITLE: Machine Learning, Image Processing, Network Security and Data Sciences, Volume 1240, ISBN 978-981-15-6315-7, YEAR 2020.
14. Murugan, R, 2019, ‘A Cloud-based Patient Health Monitoring System using the Internet of Things’,

Handbook of Research on Cloud Computing and Big Data Applications in IoT, IGI Global Publishers. USA, pp. 11–25.

15. Murugan R., devi R.K., Albert A.J., Nayak D.K. (2020) An IOT Based Weather Monitoring System to Prevent and Alert Cauvery Delta District of Tamilnadu, India, Lecture Notes on Data Engineering and Communications Technologies, vol 31. Springer, Cham, pp.462-469.
16. Naveen Karunya, R Murugan, T Pearson, Kanaga Durga, Modern Embedded Computing, An Approach to Software Applications, Bonfring Publishers, 2019.
17. Murugan, R, 2019 Implementation of Deep Learning Neural Network for Retinal Image processing IGI Global publishers, USA, pp. 11–25.
18. Naveen Karunya, R Murugan, Prabhakara Rao, Electronic Devices and circuits, Spectrum Education Publishers, 2020
19. Reshmi Maity, N. P. Maity , K. Guha, Srinivasa Rao K. , Girija Sravani K. and S. Baishya (2020), “Three Dimensional Hexagonal Membrane Structure Study of MEMS Based Ultrasonic Transducer Using Finite Element Method Model”, In: Yang LJ., Haq A., Nagarajan L. (eds) Proceedings of ICDMC 2019. Lecture Notes in Mechanical Engineering. Springer, Singapore, DOI: [https://doi.org/10.1007/978-981-15-3631-1\\_19](https://doi.org/10.1007/978-981-15-3631-1_19).
20. Reshmi Maity, N. P. Maity , Shonkho Suvro, K. Guha, Srinivasa Rao K., Girija Sravani K. and S. Baishya (2020) , “Analytical Modeling and FEM Simulation of the Collapse Voltage of an Angular Ring Metallization-Based MEMS Ultrasonic Transducer”. In: Yang LJ., Haq A., Nagarajan L. (eds) Proceedings of ICDMC 2019. Lecture Notes in Mechanical Engineering. Springer, Singapore, DOI: <https://doi.org/10.1007/978-981-15-3631-118>.
21. Taimoor Khan, Nasimuddin and Yahia M.M. Antar, “Elements of Radio Frequency Energy Harvesting and Wireless Power Transfer Systems”, CRC Press, Taylor & Francis Group, Florida, USA, ISBN: 978-0-367-24678-5. (In Production) [Book]
22. S. Hoque, B. Talukdar and W. Arif, “Impact of Buffer size on Proactive Spectrum Handoff delay in Cognitive Radio Networks”, 5G and Beyond Sytems: PHY Layer Perspective, Springer, 2020.
23. B. Talukdar, S. Hoque and W. Arif, “Cooperative Spectrum Sensing in Energy Harvesting Cognitive Radio Networks under Diverse Distribution Models”, 5G and Beyond Sytems: PHY Layer Perspective, Springer, 2020.

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired: NIL

## 1.8 Patent

Sl. No.	Details	Year
1	R Murugan et al. 2019, “An aramid fiber reinforced abs composite material fabrication of unmanned aerial vehicle(UAV) using 3D printing technology”, Role: Inventor, Patent file No:201941005768	2019

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. Arnab Nandi	International Conference on Automation, Computational and Technology Management (ICACTM - 2019)	London, UK	24-26 April, 2019
2	Dr. Banani Basu	International Conference on Automation, Computational and Technology Management (ICACTM - 2019)	London, UK	24-26 April, 2019

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
3	Dr. Devendra Singh Gurjar	IEEE APWCS 2019	SUTD, Singapore.	28-30 August 2019
4	Dr. S. K. Tripathy	International Conference on Advanced Research in Applied Science and Engineering (RASECONF),	Amsterdam, Netherlands	7-16 July 2019
5	Dr. S. K. Tripathy	Slovak National Scholarship	Kosice, Slovak	1-30 Nov 2019
6	Dr. T. R. Lenka	Visiting Researcher in Helen and John C. Hartmann Department of Electrical and Computer Engineering, New Jersey Institute of Technology (NJIT), Newark, NJ, USA	USA	10 June- 10 Aug 2019
7	Dr. T. R. Lenka	IEEE Nanotechnology Materials and Devices Conference 2019 (IEEE NMDC 2019), Stockholm, Sweden.	Stockholm, Sweden.	27-30 Oct 2019
8	Dr. R. K. Karsh	IEEE International Conference on Automation, Computational and Technology Management (ICACTM)	London, UK	24-26 April 2019
9	Dr. Koushik Guha	2019 TechConnect World Innovation Conference & Expo, June 17-19, 2019 held in Boston, USA during June 27-29, 2019	Boston, USA	June 27-29, 2019
10	Dr. Robin Khosla	Alexander von Humboldt post-doctoral Research Fellowship	Stuttgart, Germany	Aug 2019 to Dec 2020
11	Dr. Taimoor Khan	For Ongoing International Collaborative SPARC Project Work	Queen's University Canada	September 16-October 03, 2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Shreya Dey	Dr. Ashraf Hossain	"Security and Authentication in Session-Key Establishment for Smart Home Networks"
2	Abhishek Kumar 17-24-110	Dr. S. K. Tripathy	Some studies on electronic, optical and thermal properties of ternary chalcopyrite semiconductors using machine learning
3	Aruna Soibam Chanu 17-24-109	Dr. T. R. Lenka	Numerical Simulation study of high efficiency lead free Perovskite Solar Cell, 2017-2019.
4	Kumar Saurav	Dr. Ujjal Chakraborty	SDRAM controller core using Wishbone Technology
5	Sagar Manohar Wankhede 17-24-111	Dr. R. K. Karsh (Co-Supervisor)	Image authentication using Image Hashing
6	Saurabh Kumar	Dr. Taimoor Khan	Design and Development of Triple Band EBG-Loaded UWB Antennas
7	Susmitha Kothapalli 17-24-102	Dr. Brinda Bhowmik	Optimization of Electrical Parameters of Gate Engineered Tunnel FET
8	Ravindra Kumar Maurya 17-24-101	Prof. S. Baishya	Analysis of Hetero Dielectric Dual Gate TFET and Low Dropout (LDO) Linear Regulator
9	Pankhi Hazarika 17-24-103	Dr. M. Choudhary	VLSI Architecture for SVM Machine

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
10	Ashish Kumar 17-24-105	Dr. P. K. Paul	VLSI architecture for clustering

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Mr. Abhijyoti Ghosh	Dr. Banani Basu	Design and Analysis of Some Polarization Purity Techniques of Rectangular Microstrip Antenna
2	Debashish Dash	Dr. S. K. Tripathy (Co-Supervisor)	Some Studies on Anatase and Cubic Titanium Dioxide using DFT based Approach
3	Ashim Jyoti Gogoi	Dr. K. L. Baishnab	Optimization of Throughput and Energy Consumption in Cognitive Radio Network
4	Abhishek Mazumder	Dr. K. L. Baishnab	Design and Development of Efficient and Secure Fog Computing assisted e-Healthcare Frameworks
5	Abhijit Ghose	Prof. F. A. Talukdar and Dr. Bananni Basu	Frequency Reconfigurable Antennas Printed on Different Substrates using Copper and Graphene-based Materials
6	Chuya China Bhanja 14-3-04-102	Dr. Rabul Hussain Laskar	Development of an Automatic Hierarchy-Based Spoken Language Identification System
7	Mohiul Islam 14-3-04-105	Dr. Rabul Hussain Laskar	Design and Development of Robust Imperceptible Watermarking Techniques for Copyright Protection of Digital Images
8	Songhita Misra 15-3-04-105	Dr. Rabul Hussain Laskar	Design and Development of a Virtual Text-Entry Interface System Based on Dynamic Hand Gestures
9	Suman Kunar Mitra	Dr. Brinda Bhowmik	Simulation and Optimization of Hetero Junction Schottky Barrier FET and RF/linearity Performances for Low Power applications
10	Rajeev Kumar	Dr. Ashraf Hossain	'Performance of Cooperative Relaying Communications Based on Markov Modelling and Green Technology Using Optimization Theory
11	Ritwik Halder	Dr. Ashraf Hossain	Performance Evaluation of Energy Harvested Wireless Sensor Network Systems Using Markov Model"
12	Ganesh Prasad	Dr. Ashraf Hossain	QoS-aware Green Communication Strategies for Optimal Utilization of Resources in Wireless Networks'
13	Sultan M Chowdhury	Dr. Ashraf Hossain	'Impact of Error Control Code on Characteristic Distance in Terrestrial and Underground Wireless Sensor Networks
14	Sunandita Debnath	Dr. Ashraf Hossain	Node Scheduling, Interference and Sensing Models and their Impact on Coverage in Wireless Sensor Networks
15	Abhigyan Gangoli	Dr. M. Chodhuary	Synthesis and characterization of quantum dots and their applications in solar cell

**I. Name of the Department:****Computer Science and Engineering****The Department at a glance****Year of Establishment: 1987****Academic Programmes Offered:**

- Bachelor of Technology (B.Tech)
- Master of Technology (M.Tech)
- Doctor of Philosophy (Ph.D.)

**Total Faculty Strength: 24**

- Professor: 1
- Associate Professor: 1
- Assistant Professor: 22

**Total Student Strength: 600**

- B.Tech: 487
- M.Tech: 36
- Ph.D.: 77

**New Students Joined in 2019-2020: 200**

- B.Tech: 165
- M.Tech: 21
- Ph.D.: 14

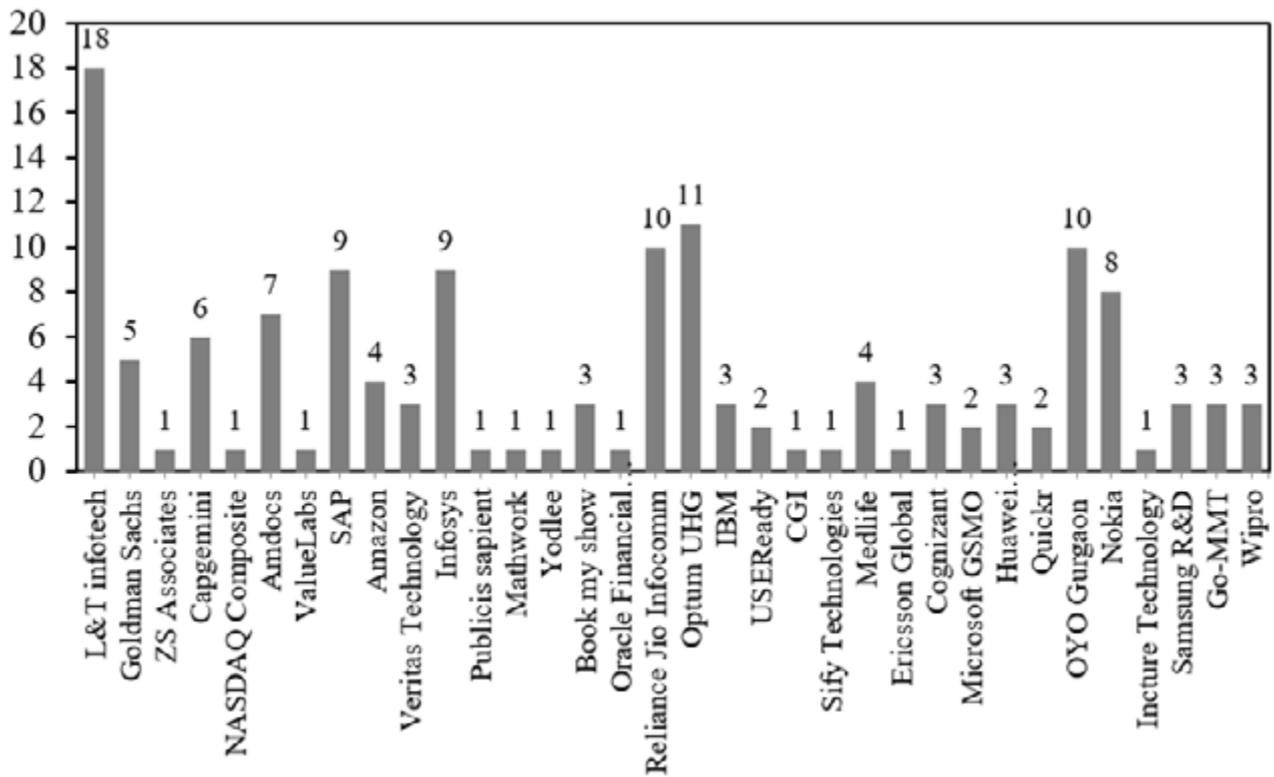


Fig: Placement statistics of the student in the CSE Department during 2019-2020.

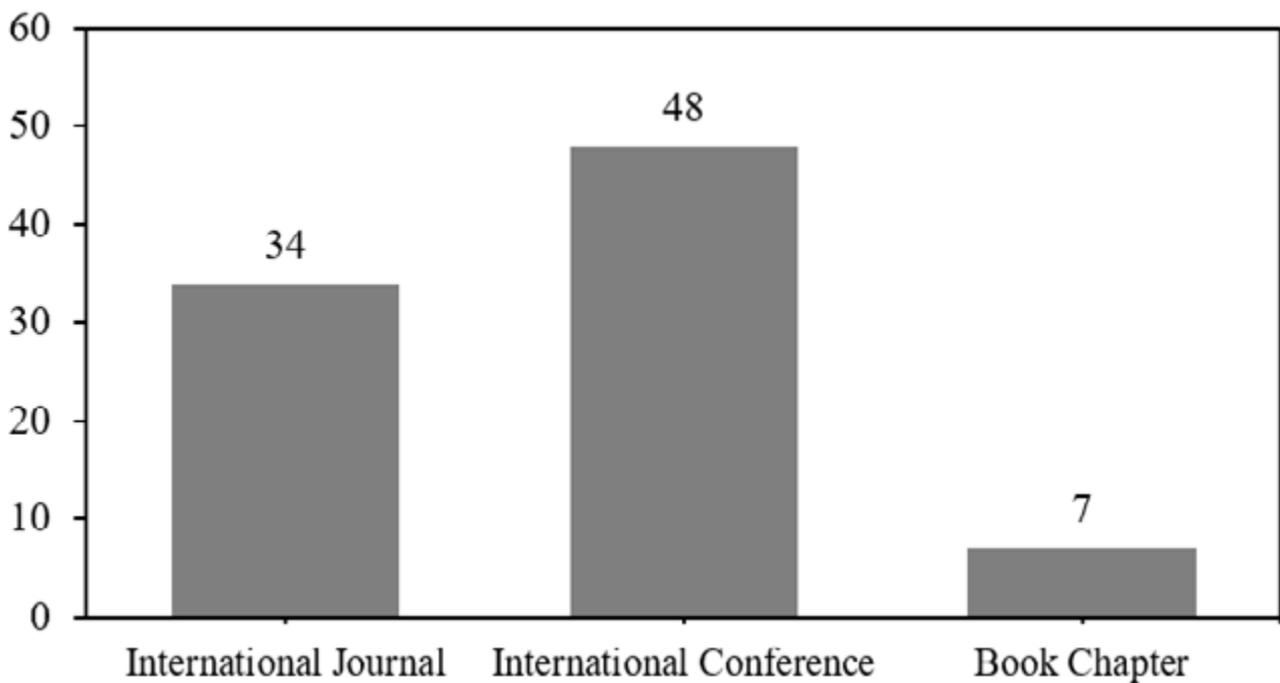


Fig: Publication details of CSE Departement during 2019-2020.

## 1.1 Academic Staff:

**HEAD:** Dr. Arup Bhattacharjee (Up to 03-07-2019)  
Dr. Samir Kumar Borgohain (From 04-07-2019)

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Prof. Sivaji Bandyopadhyay	Dr. Biswajit Purkayastha	Dr. Arup Bhattacharjee
		Dr. Ujwala Baruah
		Dr. Pinki Roy
		Dr. Samir Kumar Borgohain
		Mr. Prabhakar Sharma Neog
		Mr. Biswanath Dey
		Mr. Pantha Kanti Nath
		Dr. Saroj Kumar Biswas
		Dr. Dalton Meitei Thounaojam
		Dr. Badal Soni
		Dr. Ripon Patgiri
		Mr. Umakanta Majhi
		Dr. Shyamosree Pal
		Dr. Shyamapada Mukherjee
		Dr. Laiphrakpam Dolendro Singh
		Dr. Malaya Dutta Borah
		Dr. Anish Kumar Saha
		Dr. Thoudam Doren Singh
		Dr. Anupam Biswas
		Dr. Partha Pakray
		Dr. Suganya Devi K
		Dr. Naresh Babu M.

**Visiting Professor (If any):**

Prof. Dr. Josef van Genabith, Universität des Saarlandes, German

Duration: 2<sup>nd</sup> December 2019 - 13<sup>th</sup> December 2019

Course: Machine Translation

Participants: UG, PG, and PhD

## 1.2 Distinction Achieved

a) **By Student:**

- GATE 2020 results from qualified 23 numbers of UG CSE students All India Rank below 100 with Marks are **Mr. Navneet Gangwar** (Rank 39 with marks 75/100, **Mr. Samim Jahin** (Rank- 43 with marks 74.67/100).
- Loitongbam Sanayai Meetei** (Ph.D. Scholar), Scholar Id: 18-3-05-109, made a research visit to Universität des Saarlandes, Germany from 7<sup>th</sup> September 2019 to 29<sup>th</sup> November 2019 under SPARC Project Code P995.
- Ayushi Johari** (UG CSE Batch-2022), participated in NCBC, as the representative of Human Rights Law Network and won the Best Delegate award (1st prize).
- Deepjoy Dey** (UG CSE Batch-2022), participated in UNSC and won the High Commendation Award (2nd prize).

5. **Gautam Dee** (M.Tech CSE), **Vikrant Rajput** (M.Tech CSE) made a part of research project work at AMD India Pvt. Ltd, Hyderabad.

b) **By Faculty Member:** NA

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

a) **Conducted by Faculty Member**

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. Ripon Patgiri	International Conference On Big Data, Machine Learning, and Applications (BigDML 2019)	TEQIP, SERB, Registration	16-19 December 2019
2	Dr. L. Dolendro Singh and Dr. Naresh Babu M	One week Faculty Development Programme on Cyber Security	Institute	14/10/2019-19/10/2019.
3	Dr. Anupam Biswas, Dr. Malaya Dutta Borah, and Dr. Saroj Kumar Biswas	One Week Workshop On Data Analytics With Machine Learning Techniques (Damlt 2019)	TEQIP	29-July-2019 to 02-Aug-2019

b) **Participated by Faculty Member**

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Dr. S. K. Borgohain, Dr. D. M. Thounaojam, Dr. B. Soni, Dr. R. Patgiri, Dr. L. D. Singh, Dr. M. D. Borah, Dr. A. K. Saha, Dr. T. D. Singh, Dr. A. Biswas, Dr. P. Pakray, Dr. S. Devi K, Dr. N. Babu M.	One week FDP, "Cyber Security" from 14-19 December 2019.	Joint Organizing NIT Silchar and Shivaji University.
2	Prof. Sivaji Bandyopadhyay, Dr. B. Purkayastha, Dr. A. Bhattacharjee, Dr. U. Baruah, Dr. P. Roy, Dr. S. K. Borgohain, Mr. P. S. Neog, Mr. B. Dey, Mr. P. K. Nath, Dr. S. K. Biswas, Dr. D. M. Thounaojam, Dr. B. Soni, Dr. R. Patgiri, Mr. U. Majhi, Dr. S. Pal, Dr. S. Mukherjee, Dr. L. D. Singh, Dr. M. D. Borah, Dr. A. K. Saha, Dr. T. D. Singh, Dr. A. Biswas, Dr. P. Pakray, Dr. S. Devi K, Dr. N. Babu M.	International Conference on "Big Data, Machine Learning and Applications (BigDML 2019)" from 16-19 Dec 2019	Dept. of CSE. NIT Silchar.
3	Dr. Naresh Babu M.	TEQIP-KIT Sponsored Short Term Course on Advanced Topics in Cryptography 10-14 Feb .2020	IIT Kharagpur
4	Dr. Naresh Babu M.	Social Media Champions on 27 <sup>th</sup> December 2019	MHRD, New Delhi
5	Dr. Naresh Babu M.	Magnet Forensics Workshop 17 <sup>th</sup> Sept 2019	Cyint Technologies
6	Dr. Naresh Babu M.	MSAB Mobile Forensics Workshop 18 <sup>th</sup> Sept. 2019	Cyint Technologies
7	Dr. Naresh Babu M.	IEEE International Conference on Emerging Trends in Information Technology and Engineering during 24-25 Feb 2020	VIT University

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
8	Dr. Thoudam Doren Singh	One-week Workshop on “Data Analytics with Machine Learning Techniques” under TEQIP – III, NIT Silchar, 29th July’19 – 02nd August 2019	NIT Silchar and GUIST, Guwahati, Assam
9	Dr. Partha Pakray	ERP Implementation SPOC Meeting Workshop at NPIU Office, Delhi, 05 Sept 2019	NPIU, Delhi
10	Dr. Anupam Biswas, Dr. Malaya D Borah	Curriculum Design and Implementation and Outcome-based Education (CuDIOBE-2019), 27-31 May 2019	NIT Silchar
11	Dr. Malaya D Borah	TEQIP-III sponsored Five days workshop on “Deep Learning Techniques & Tools: An Academic and Industrial Approach” Organised by Dept. of CSE, National Institute of Technology (NIT) Silchar, 8-12 April 2019	NIT Silchar

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

Machine Intelligence, Artificial Intelligence, Natural Language Processing, Bran Waves Research, Artificial Immune Systems, Semantic Networks, Information Retrieval, Digital Geometry, Computational Geometry, Computer Network Communication, Quantum Computing, Mathematical Imaging And Image Analysis, ImageHashing, Shot Boundary Detection, Video Indexing, VLSI Physical Design Automation, FPGA Layout, Internet of things, sensor technology, Speech Processing, Cloud Computing.

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
04	01	70

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Medical Image Processing Lab	Medical research lab for UG, PG, and Ph.D. students
2	Soft Computing and Intelligent Information system Lab	Artificial Intelligence and machine learning Research lab

### d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Treatment of Class Imbalance Problem at Data Level	Co-PI: Dr. Saroj K. Biswas	NPIU (World Bank)	6.10	14 months
2	Optimal Solution Evaluation	Dr. Anupam Biswas	SERB	23,36,500	2019-2022
3	“An Application of Textual Entailment and Semantic Textual Similarity in Scientific Document Retrieval System” (Completed)	Dr. Partha Pakray	SERB-DST	18.31	3.6
4	“Textual Instructions to Virtual Actions” (Completed)	Dr. Partha Pakray	DAAD-DST	18.90	2
5	“A Computer-aided Recommendation Engine for the Health Diagnostic “(Ongoing)	Dr. Partha Pakray	ASEAN	11.33	2
6	Deep Summarization Evaluation (Ongoing)	Dr. Partha Pakray	DST-CNRS	31.06	3
7	Multimodal Machine Translation – Convergence of Multiple Modes of Input	Prof. Sivaji Bandyopadhyay, PI Dr. Thoudam Doren Singh, Co-PI	SPARC, MHRD, Govt of India	49,58,775.00	3 (2019-2021)

## e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Dr. Saroj K Biswas	IEEE Transactions on Neural Networks and Learning Systems	2	2019-20
2	Dr. L Dolendro Singh	Optics and Laser Technology	1	2019-20
3	Dr. L Dolendro Singh	IEEE Access	2	2019-20
4	Dr. L Dolendro Singh	IRBM	1	2019-20
5	Dr. L Dolendro Singh	Journal of Mathematics	1	2019-20
6	Dr. L Dolendro Singh	Optics and Lasers in Engineering	1	2019-20
7	Dr. L Dolendro Singh	IEEE Transactions on Knowledge and Data Engineering	1	2019-20
8	Dr. L Dolendro Singh	Journal of Information Security and Applications	1	2019-20
9	Dr. Naresh Babu M.	Arabian Journal for Science and Engineering	1	2019-20
10	Dr. Suganya Devi K	IEEE Access	3	2019-20
11	Dr. Suganya Devi K	Engineering applications in Artificial Intelligence	2	2019-20
12	Dr. Suganya Devi K	Super Computing	1	2019-20
13	Dr. Anupam Biswas	IEEE Transactions on Fuzzy Systems	1	2019-20
14	Dr. Anupam Biswas	Physica A: Statistical Mechanics and its Applications	1	2019-20
15	Dr. Badal Soni	Multimedia Systems	1	2019-20
16	Dr. Badal Soni	IET Image processing	1	2019-20
17	Dr. Badal Soni	International Journal of Computer Vision and Image Processing (IJCVIP)	1	2019-20
18	Dr. Partha Pakray	IEEE Access Journal	2	2019-20
19	Dr. Partha Pakray	Sādhanā – Springer	2	2019-20
20	Dr. Partha Pakray	Transactions on Asian and Low-Resource Language Information Processing (TALLIP)	3	2019-20
21	Dr. Partha Pakray	Heliyon	1	2019-20
22	Dr. Partha Pakray	Language Resources and Evaluation (LREV) Journal	1	2019-20
23	Dr. Anish K Saha	CSI Transactions on ICT	1	2019-20
24	Dr. Malaya D Borah	ACM Computing Surveys (June 2019)	1	2019-20
25	Dr. Malaya D Borah	International Journal of Agricultural and Environmental Information Systems (IJAEIS), IGI-Global	5	2019-20
26	Dr. Thoudam Doren Singh	ACM Transactions on Asian and Low-Resource Language Information Processing	1	2019-20

## f) Chairing of Technical Section

Sl. No.	Faculty Name	Details
1	Dr. Suganya Devi K	One Week Summer School On “Computer Vision and Pattern Recognition using Machine Learning (CVPRML-19), from 22.07.2019 to 26.07.2019. NIT, Silchar.
2	Dr. Suganya Devi K	One day Awareness Program on Anti Ragging and Women Harassment on 13.08.2019, Barak Valley Engineering College, Nirala, Karimganj-788701, Assam
3	Dr. Suganya Devi K	Two days National Level Workshop on “Impact of Artificial Intelligence and Deep Learning on future Applications”, from 09.10.2019 to 10.10.2019 KNCET, Tamil Nadu
4	Dr. Suganya Devi K	Two Days FDP on “Application of Tools and Techniques in Recent Research Perspectives” - from 08.01.2020 to 09.01.2020, SCT, Tamilnadu.
5	Dr. Suganya Devi K	One day Webinar Program on “Data Sciences” on 08.06.2020, Annai Teresa Engg. College, Tamil Nadu.

## 1.5 Publications

### a) International Journal(s):

1. Monali Bordoloi, S K Biswas, "Keyword Extraction using Supervised Cumulative TextRank", *Multimedia Tools and Applications*, Springer, Accepted (SCI journal, IF: 2.101)
2. Monali Bordoloi, S K Biswas, "Graph-Based Sentiment Analysis using Keyword Rank based Polarity Assignment", *Multimedia Tools and Applications*, Springer, Accepted (SCI journal, IF: 2.101)
3. Manomita Chakraborty, S K Biswas, Biswajit Purkayastha, "Rule Extraction from Neural Network trained using Deep Belief Network and Back Propagation", *Knowledge and Information Systems* Springer, Accepted (SCI journal, IF: 2.547)
4. Rajdeep Ghosh, Nidul Sinha, S K Biswas & Souvik Phadikar, "A modified grey wolf optimization based feature selection method from EEG for silent speech classification", *Journal of Information and Optimization Sciences* Taylor & Francis, Vol. 40 (2019), No. 8, pp. 1639–1652 (ESCI)
5. Manomita Chakraborty, Saroj K Biswas, Biswajit Purkayastha, "A Novel Ensembling Method to Boost Performance of Neural Networks", *Journal of Experimental & Theoretical Artificial Intelligence*, Taylor & Francis, Accepted: doi.org /10.1080/0952813X.2019.1610799 (SCI journal, IF: 2.111)
6. Debashree Devi, Saroj K Biswas, Biswajit Purakayastha, "Learning in presence of Class Imbalance and Class Overlapping by using One-class SVM and Undersampling Technique", *Connection Science*, vol. 38, no. 3, pp. 1-38, DOI: 10.1080/09540091.2018.1560394, Taylor & Francis, (SCI journal, IF: 0.933)
7. Manomita Chakraborty, Saroj K Biswas, Biswajit Purkayastha, "Rule Extraction from Neural Network using Input Data Ranges Recursively", *New Generation Computing*, vol. 37, no.1, pp. 67-96, Springer, (SCI journal, IF: 0.833)
8. Heisnam Rohen Singh, Saroj K Biswas, "Rule Extraction from Neuro-fuzzy System for Classification using Feature Weights", *International Journal of Fuzzy System Applications (IJFSA)*, vol. 9, no. 2, IGI Global, (SCOPUS indexed)
9. Arpita Banik, Zeba Shamsi and L Dolendro Singh, "An encryption scheme for securing multiple medical images" *Journal of Information Security and Applications*, Vol. 49, pp. 1-8, 2019, DOI: <https://doi.org/10.1016/j.jisa.2019.102398>.
10. Sasikumar Gurumoorthy, Naresh Babu M, Chandra Sekhar, Golla Sandhya Kumari (2019), "Epilepsy analysis using open source EDF tools for information science and data analytics", *International Journal of Communication Systems*, SCI Indexed
11. Satish K Satti, Suganya Devi K, Prasenjit Dhar, Srinivasan P (2019), "An Efficient Noise separation technique for Removal of Gaussian and Mixed Noises in monochrome and color Images", *International Journal of Innovative Technology and Exploring Engineering*, Vol.8(9), pp.588-601.
12. Satish K Satti, Suganya Devi K, Vishnu Murthy, Srinivasan P (2019), "Efficient Technique for removal of white and mixed noises in gray-scale images", *International Journal of Innovative engineering and Management Research*, Vol.8(9), pp.22-36.
13. Anji Reddy Vaka, Badal Soni, Sudheer Reddy K., "Breast cancer detection by leveraging Machine Learning", Accepted in Elsevier, *Information & Communications Technology Express*, 2020 <https://doi.org/10.1016/j.icte.2020.04.009>.
14. Badal Soni, Anji Reddy. V, Naresh Babu Muppalaneni, Candy Lalrempuii, "Image Forgery Detection using AKAZE Keypoint Feature Extraction and Trie Matching", Published in *International Journal of Innovative Technology and Exploring Engineering*, ISSN: 2278-3075 (Online) Volume-9 Issue-1, November 2019.
15. Badal Soni, Pradip K Das, D. Meitei Thounaojam, "Geometric transformation invariant block-based copy-move forgery detection using fast and efficient hybrid local features", published

- in Elsevier, Journal of Information Security and Applications, 2019, DOI: <https://doi.org/10.1016/j.jisa.2019.01.007>, Vol. 45, pp. 44-51.
16. Badal Soni, Angshuman Bora, Arpita Ghosh, and Anji Reddy, "RFSVM: A Novel Classification Technique for Breast Cancer Diagnosis", Published in 'International Journal of Innovative Technology and Exploring Engineering (IJITEE)', ISSN: 2278-3075 (Online), Volume-8 Issue-12, October 2019, Page No. 3295-330.
  17. AK Trivedi, DM Thounaojam, S Pal, "Non-Invertible cancellable fingerprint template for fingerprint biometric", Computers & Security, 90, 1016901, 2020.
  18. A Singh, DM Thounaojam, S Chakraborty, "A novel automatic shot boundary detection algorithm: robust to illumination and motion effect", Signal, Image and Video Processing, 1-9, 2019.
  19. S Chakraborty, DM Thounaojam, "A novel shot boundary detection system using hybrid optimization technique", Applied Intelligence, 49 (9), 3207-3220, 2019.
  20. D Thounaojam, T Khelchandra, T Jayshree, S Roy, K Singh, "Colour Histogram and Modified Multi-layer Perceptron Neural Network-based Video Shot Boundary Detection", Int. Arab J. Inf. Technol., 16 (4), 686-693, 2019.
  21. Sandeep Kumar Dash, Y. V. Sureshchandra, Yatharth Mishra, Partha Pakray, Ranjita Das, Alexander Gelbukh. "Multimodal Learning-Based Spatial Relation Identification", Computación y Sistemas - Journal, Vol. 24, No. 3, 2020, [Accepted, Scopus Indexed] (2020)
  22. Abdullah Khilji, Riyanka Manna, Sahinur Laskar, Partha Pakray, Dipankar Das, Sivaji Bandyopadhyay, Alexander Gelbukh. "Question Classification and Answer Extraction for Developing a Cooking QA System", Computación y Sistemas - Thematic Issue on Language & Knowledge Engineering (Guest editors: D. Pinto, B. Beltrán, A. Vázquez), Vol. 24, No. 2, 2020, [Scopus Indexed] (2020)
  23. Amarnath Pathak, Partha Pakray and Ranjita Das. "Context guided retrieval of math formulae from scientific documents", In: Journal of Information and Optimization Sciences, Volume 40, 2019 - Issue 8, Taylor & Francis [Web of Science] (2020)
  24. Amarnath Pathak, Ranjita Das, Partha Pakray and Alexander Gelbukh. "Extracting context of math formulae contained inside scientific documents", Computación y Sistemas - Thematic issue: Computational Linguistics, Vol. 23, No. 3, 2019, pp. 803-818 doi: 10.13053/CyS-23-3-3246. [Scopus Indexed] (2019)
  25. Sunita Warjri, Partha Pakray, Arnab Kumar Maji and Saralin Lyngdoh. "Identification of POS Tag for Khasi Language based on Hidden Markov Model POS Tagger", Computación y Sistemas - Thematic issue: Computational Linguistics, Vol. 23, No. 3, 2019, pp. 795-802 doi: 10.13053/CyS-23-3-3248 [Scopus Indexed] (2019)
  26. Sandeep Kumar Dash, Shantanu Acharya, Partha Pakray, Ranjita Das and Alexander Gelbukh, "Topic-Based Image Caption Generation", Arabian Journal for Science and Engineering, Online ISSN: 2191-4281, Publisher Name: Springer Berlin Heidelberg, pp 1-10, DOI: <https://doi.org/10.1007/s13369-019-04262-2>, SCIE Impact Factor 1.518. (2019)
  27. Sunita Warjri, Partha Pakray, Saralin Lyngdoh, Arnab Kumar Maji, "Khasi Language as dominant Part-Of-Speech (POS) ascendant in NLP", International Journal of Computational Intelligence & IoT, Vol. 1, No. 1, ISSN: 1556-5068, Pp. 109-115, 2018. (First online 20 Mar 2019) [SSRN indexed] (2019)
  28. Amarnath Pathak and Partha Pakray. "Binary Vector Transformation of Math Formula for Mathematical Information Retrieval", Journal of Intelligent & Fuzzy Systems, Vol 36, Issue 5, pp. 4685-4695, 2019, DOI: 10.3233/JIFS-179018, a JCR-THOMPSON journal with an impact factor of 1.426 (2019)
  29. Sandeep Kumar Dash, Saurav Saha, Partha Pakray and Alexander Gelbukh. "Generating Image Captions Through Multimodal Embedding", Journal of Intelligent and Fuzzy Systems, Vol 36, Issue 5, pp. 4787-4796, DOI: 10.3233/JIFS-179027, a JCR-THOMPSON journal with an impact factor of 1.426 (2019)

30. Goutam Majumder, Partha Pakray and David Eduardo Pinto Avendaño. "Measuring interpretability using a token to chunk multi aligner", *Journal of Intelligent and Fuzzy Systems*, Vol 36, Issue 5, pp. 4797-4808, DOI: 10.3233/JIFS-179028, a JCR-THOMPSON journal with an impact factor of 1.426 (2019)
31. Zakir Hussain, Malaya Dutta Borah, Abdul Hannan, "N-gram Based Machine Translation for English-Assamese: Two Languages with High Syntactical Dissimilarity", *International Journal of Engineering and Advanced Technology*, 2019, ISSN: 2249 – 8958, Vol 9, (2), pp. 2940-2949, December 2019, DOI: 10.35940/ijeat. B2320.129219.
32. Ripon Patgiri, SabuzimaNayak, Samir Kumar Borgohain, "rDBF: A r-Dimensional Bloom Filter for massive scale membership query", *Journal of Network and Computer Applications*, Volume 136,2019, Pages 100-113, <https://doi.org/10.1016/j.jnca.2019.03.004>.
33. Ripon Patgiri, Sabuzima Nayak, Samir Kumar Borgohain, "PassDB: A password database with strict privacy protocol using 3D Bloom filter", *Information Sciences*, Volume 539,2020,Pages 157-176, <https://doi.org/10.1016/j.ins.2020.05.135>.
34. Patgiri R., Nayak S. (2020), "Big Biomedical Data Engineering". In: Arabnia H., Daimi K., Stahlbock R., Soviany C., Heilig L., Brüssau K. (eds) *Principles of Data Science. Transactions on Computational Science and Computational Intelligence*. Springer, Cham. [https://doi.org/10.1007/978-3-030-43981-1\\_3](https://doi.org/10.1007/978-3-030-43981-1_3)
- b) National Journal(s): NIL**
- c) International Conference(s):**
1. Akhil Kumar Das, Saroj K Biswas, Ardhendu Mandal, Manomita Chakraborty, "A Neural Expert System to Identify Major Risk Factors of Breast Cancer", *IEEE International Conference for Innovation in Technology (INOCON 2020)*, IEEE Bangalore Section, NCET Bangalore, (Accepted)
  2. Arpita Nath Boruah, Saroj K Biswas, Sivaji Bandyopadhyay, "An Expert System for Identification of Major Risk Factors of Parkinson's Disease: B-TDS-PD", *IEEE India Council International Sub-Sections Conference (INDISCON-2020)* (Accepted)
  3. Debashree Devi, Saroj. K Biswas, Biswajit Purkayastha, "A Review on Solution to Class Imbalance problem: Undersampling Approaches", *IEEE International Conference on Computational Performance Evaluation (ComPE-2020)* (Accepted)
  4. Arpita Nath Boruah, Saroj K Biswas, Sivaji Bandyopadhyay, "An Expert System to Manage Parkinson Disease by Identifying Major Risk Factors: TD-Rules-PD", *IEEE International Conference on Computational Performance Evaluation (ComPE-2020)* (Accepted)
  5. Abhinaba Dattachaudhuri, Saroj K Biswas, Sunita Sarkar, Arpita Nath Boruah, Manomita Chakraborty and Biswajit Purkayastha, "Transparent Neural based Expert System for Credit Risk (TNESCR): An Automated Credit Risk Evaluation System", *IEEE International Conference on Computational Performance Evaluation (ComPE-2020)* (Accepted)
  6. Abhinaba Dattachaudhuri, Saroj K Biswas, "Transparent Decision Support System for Credit Risk Evaluation: An Automated Credit Approval System", *2020IEEEHYDCON* (Accepted)
  7. Arpita Nath Boruah, Saroj Kumar Biswas, Sivaji Bandyopadhyay, Sunita Sarkar, "A Balanced Expert System to Manage Parkinson Disease by Identifying Major Risk Factors: B-TESSM-PD", *INTERNATIONAL CONFERENCE ON ELECTRONIC SYSTEMS AND INTELLIGENT COMPUTING, ESIC2020*, Springer NIT Arunachal Pradesh (Accepted)
  8. Dolly Das, Saroj Biswas, Sivaji Bandyopadhyay, Sunita Sarkar, "Early Detection of Diabetic Retinopathy using Machine Learning Techniques: A Survey on Recent Trends and Techniques", *INTERNATIONAL CONFERENCE ON ELECTRONIC SYSTEMS AND INTELLIGENT COMPUTING, ESIC2020*, Springer NIT Arunachal Pradesh (Accepted)
  9. Rahul Barman, Saroj Kumar Biswas, Sunita Sarkar, Biswajit Purkayastha, Badal Soni, "Image processing using Case-Based Reasoning: A survey", *INTERNATIONAL CONFERENCE ON*

ELECTRONIC SYSTEMS AND INTELLIGENT COMPUTING, ESIC2020, Springer NIT Arunachal Pradesh (Accepted)

10. Manomita Chakraborty, Saroj Kr. Biswas, Biswajit Purkayastha, Data Mining Using Neural Networks in the form of Classification Rules: A Review, 4th International Conference on Computational Intelligence and Networks (CINE 2020), IEEE (Accepted)
11. Manomita Chakraborty, Saroj Kr. Biswas, Biswajit Purkayastha, "Performance Analysis of Recursive Rule Extraction Algorithms for Disease Prediction", 4th ICACIE 2019, Springer (Accepted)
12. Saroj Biswas, Rohit Upadhyay, Nipan Das, Dolly Das and Manomita Chakraborty, "An Intelligent System for Diagnosis of Diabetic Retinopathy", SocProS 2019, Liverpool Hope University UK (Accepted).
13. Monali Bordoloi, S. K. Biswas, "Machine Learning based Sentiment Analysis using Graph Based Approach", 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT), IEEE, 2019.
14. Debashree Devi, Saroj Kr. Biswas, Biswajit Purkayastha, "A cost-sensitive weighted Random Forest Technique for credit card fraud detection", 2019 International Conference on Computing, Communication and Networking Technologies, ICCCNT'19, Kanpur, India.
15. Sekar K, K. Suganya Devi, P. Srinivasan, T. Dheepa, B. Arpita and L. Dolendro Singh, "Joint Correlated Compressive Sensing based on Predictive Data Recovery in WSNs," 2020 International Conference on Emerging Trends in Information Technology and Engineering (ic-ETITE), Vellore, India, 2020, pp. 1-5. DOI: 10.1109/ic-ETITE47903.2020.181.
16. Sasikumar Gurumoorthy, Naresh Babu Muppalaneni, G. Chandra Sekhar, and G. Sandhya Kumari (2020), "Artificial Intelligence Systems and Expert Systems: An Overview of Recent Trends and Roles in Information Science and Data Analytics", Lecture Notes in Electrical Engineering, Springer, 1<sup>st</sup> International Conference on Data Science, Machine Learning and Applications, Hyderabad
17. Naresh Babu Muppalaneni (2020), "Handwritten Telugu Compound Character Prediction using Convolutional Neural Network," 2020 International Conference on Emerging Trends in Information Technology and Engineering (ic-ETITE), Vellore, India,
18. Satish Kumar Satti, Suganya Devi K, Vishnu Murthy, Srinivasan P (2019), "Efficient Technique for removal of white and mixed noises in gray-scale images", Elsevier-International Conference on Innovations in Science and Engineering (ICISE-2K19), August 31, 2019, pp.18
19. Sekar K, K. Suganya Devi, P. Srinivasan, T. Dheepa, B. Arpita and L. Dolendro singh, "Joint Correlated Compressive Sensing based on Predictive Data Recovery in WSNs," 2020 International Conference on Emerging Trends in Information Technology and Engineering (ic-ETITE), Vellore, India, 2020, pp. 1-5. DOI: 10.1109/ic-ETITE47903.2020.181.
20. Pantha Kanti Nath and Tamarapalli Venkatesh, "Lightpath routing and wavelength assignment for static demand in translucent optical networks". Photonic Network Communications 39, 103–119 (2020). DOI 10.1007/s11107-019-00878-4.
21. Anupam Biswas, Apoorv Singh and Sayandeep Roy, "Note Repositioning Algorithm for Musical Instruments in Indian Classical Music", in 24th International Symposium in Frontiers of Research on Speech and Music (FRSM 2019), 6-7 Jul. 2019, Kanpur, India.
22. Ranjeet Kumar, Anupam Biswas and Pinky Roy, "Melody Extraction from Polyphonic Music using Deep Neural Network: A Literature Survey", in 24th International Symposium in Frontiers of Research on Speech and Music (FRSM 2019), 6-7 Jul. 2019, Kanpur, India.
23. Badal Soni and Prachi Mathur "An Improved Image Dehazing Technique using CLAHE and Guided Filter", Accepted in IEEE 7th International Conference on Signal Processing & Integrated Networks, (SPIN) February 27-28, 2020 (Online).
24. Rajib Kumar Jha, Badal Soni, Sumit Kumar, Vivek S Verma, "Radon Transform and Dynamic Stochastic Resonance based Technique for Line Detection from Noisy Image", Published

- in 25th International Conference on Noise and Fluctuations (ICNF 2019), held in Neuchâtel (Switzerland), from June 18 to June 21, 2019.
25. B Soni, PK Das, DM Thounaojam, D Biswas, "Copy-Move Attack Detection from Digital Images: An Image Forensic Approach", Smart Computing Paradigms: New Progresses and Challenges, 69-76, 2020
  26. Manas Jyoti Gogoi, Amit Kumar Trivedi, Dalton Meitei Thounaojam, Aniruddha Bhattachajee, Rahul Debnath, Kaushik Borah, "Ring Partition-Based Fingerprint Indexing Algorithm", International Conference on Machine Intelligence and Signal Processing, 1-12, 2019
  27. Abdullah Faiz Ur Rahman Khilji, Sahinur Rahman Laskar, Partha Pakray et al. "HealFavor: Dataset and A Prototype System for Healthcare ChatBot", In The International Conference on Data Science, Artificial Intelligence and Business Analytics 2020, at Medan, Indonesia on July 16-17, 2020. (Accepted) [2020]
  28. Sahinur Rahman Laskar, Partha Pakray and Sivaji Bandyopadhyay, "Neural Machine Translation: Assamese Bengali", in the International Conference on Modeling, Simulation and Optimization (CoMSO 2020), Springer, National Institute of Technology Silchar, August 3-5, 2020 (Accepted) [2020]
  29. Morrel VL Nunsanga, Mika Lalngaihtuaha, Partha Pakray, L. Lolit Kumar Singh, "Part of Speech Tagging in Mizo Language: A preliminary study", In International Conference on Data Intelligence and Cognitive Informatics (ICDICI-2020) (Springer), 8-9 July 2020 SCAD College of Engineering and Technology, Tirunelveli, India. (Accepted)
  30. Sunita Warjri, Partha Pakray, Saralin A Lyngdoh, Arnab Kumar Maji, "Adopting Conditional Random Field (CRF) for Khasi Parts-of-Speech Tagging (KPOST)" In 3rd International Conference On Computing and Communication Systems, Springer. [2020] (ACCEPTED)
  31. Sahinur Laskar, Partha Pakray and Sivaji Bandyopadhyay, "NeuralMachine Translation for Low Resource Assamese-English", In 3rd International Conference On Computing and Communication Systems, Springer. [2020] (ACCEPTED)
  32. Pankaj Kundan Dadure, Partha Pakray and Sivaji Bandyopadhyay, "Efficient Assessment of Formula Representation in Embedded Vector", 3rd International Conference On Computing and Communication Systems, Springer. [2020] (ACCEPTED)
  33. Pankaj Kundan Dadure, Partha Pakray, Sivaji Bandyopadhyay, "An Empirical Analysis on Retrieval of Math Information from the Scientific Documents", International Conference on Communication and Intelligent System (ICIS-2019), booktitle "Communication and Intelligent Systems", isbn="978-981-15-3325-9 , Pp. 301-308, doi 10.1007/978-981-15-3325-9\_23, Department of Computer Science and Engineering, SKIT Jaipur. [2019]
  34. Sahinur Rahman Laskar, Rohit Pratap Singh, Partha Pakray, Sivaji Bandyopadhyay, "English to Hindi Multi-modal Neural Machine Translation and Hindi Image Captioning", Proceedings of the 6th Workshop on Asian Translation 2019, doi 10.18653/v1/D19-5205, publisher = "Association for Computational Linguistics", Pages 62-67 [2019]
  35. Sahinur Rahman Laskar, Abinash Dutta, Partha Pakray and Sivaji Bandyopadhyay, "Neural Machine Translation: English to Hindi", in the Proceedings of 3rd IEEE Conference on Information & Communication Technology, IIIT Allahabad, Dec 06-09, 2019, DOI: 10.1109/CICT48419.2019.9066238, [2019]
  36. Amika Achom, Ranjita Das, Partha pakray, Sriparna Saha. "Classification of Microarray Gene Expression Data using Weighted Grey Wolf Optimizer based Fuzzy Clustering", TENCON 2019, booktitle "TENCON 2019 - 2019 IEEE Region 10 Conference (TENCON)", Pp. 2705-2710, 17 - 20 October 2019 at Hotel Grand Hyatt, Bolgatty, Kochi, Kerala, India. [2019]
  37. Sahinur Rahman Laskar, Partha Pakray and Sivaji Bandyopadhyay "Neural Machine Translation: Hindi-Nepali", in the Proceedings of the Fourth Conference on Machine Translation (WMT), Publisher: Association for Computational Linguistics, doi 10.18653/v1/W19-5427, Volume 2: Shared Task Papers, pages 900-905, Florence, Italy, August 1-2, 2019. [2019] Top scorer: Nepali -> Hindi Translation in the WMT 2019 Track.

38. Pranita Baro, Malaya Dutta Borah and Sushanta Mukhopadhyay, "Empirical Analysis on the Effect of Image Compression and Denoising using different wavelets on Iris Recognition", International Conference on Computational Intelligence, Security & IoT (ICCISIoT) 2019, Springer CCIS Series (Scopus Indexed), National Institute of Technology, Agartala, India, December 13-14, 2019.
39. Pratima Sharma, Rajni Jindal, Malaya Dutta Borah, "Blockchain-based Integrity Protection System for Cloud Storage", 2019 The 4th Technology Innovation Management and Engineering Science International Conference (TIMES-iCON), Bangkok, Thailand, December 11-13, 2019.
40. Pratima Sharma, Rajni Jindal, Malaya Dutta Borah, "A Preventive Intrusion Detection Architecture Using Adaptive Blockchain Behavior", BigDML 2019, NIT Silchar, Assam, India, December 16-19, 2019. (Springer)
41. R. Patgiri, "HFil: A High Accuracy Bloom Filter", 2019 IEEE 21st International Conference on High Performance Computing and Communications; IEEE 17th International Conference on Smart City; IEEE 5th International Conference on Data Science and Systems (HPCC/SmartCity/DSS), Zhangjiajie, China, Aug 2019, pp. 2169-2174, doi: 10.1109/HPCC/SmartCity/DSS.2019.00300.
42. Patgiri R., Borgohain S.K., Nayak S. (2020), "ipBF: A Fast and Accurate IP Address Lookup Using 3D Bloom Filter". In: Abraham A., Cherukuri A., Melin P., Gandhi N. (eds) Intelligent Systems Design and Applications. ISDA 2018 2018. Advances in Intelligent Systems and Computing, vol 941. Springer, Cham. [https://doi.org/10.1007/978-3-030-16660-1\\_18](https://doi.org/10.1007/978-3-030-16660-1_18)
43. Patgiri R., Nayak S., Dev D., Borgohain S.K. (2020), "Dr. Hadoop Cures In-Memory Data Replication System". In: Elçi A., Sa P., Modi C., Olague G., Sahoo M., Bakshi S. (eds) Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, vol 767. Springer, Singapore. [https://doi.org/10.1007/978-981-13-9680-9\\_19](https://doi.org/10.1007/978-981-13-9680-9_19)
44. Jain D., Patgiri R., Nayak S. (2019), "In-Memory Big Graph: A Future Research Agenda". In: Abramowicz W., Corchuelo R. (eds) Business Information Systems. BIS 2019. Lecture Notes in Business Information Processing, vol 353. Springer, Cham. [https://doi.org/10.1007/978-3-030-20485-3\\_2](https://doi.org/10.1007/978-3-030-20485-3_2)
45. R. Patgiri, S. Nayak and S. K. Borgohain, "PassDB: A Password Database Using 3D Bloom Filter", 2019 IEEE 21st International Conference on High Performance Computing and Communications; IEEE 17th International Conference on Smart City; IEEE 5th International Conference on Data Science and Systems (HPCC/SmartCity/DSS), Zhangjiajie, China, 2019, pp. 1147-1154, doi: 10.1109/HPCC/SmartCity/DSS.2019.00162.
46. Loitongbam Sanayai Meetei, Ringki Das, Thoudam Doren Singh and Sivaji Bandyopadhyay, Automatic Extraction of Locations from News Articles using Domain Knowledge, International Conference On Big Data, Machine Learning and Applications (BigDML 2019), National Institute of Technology Silchar, December 16-19, 2019.
47. Meetei, Loitongbam Sanayai, Thoudam Doren Singh, and Sivaji Bandyopadhyay. "WAT2019: English-Hindi Translation on Hindi Visual Genome Dataset." Proceedings of the 6th Workshop on Asian Translation. 2019.
48. Datta, Prasun, and Shyamapada Mukherjee. "Routability-driven Placement for Mixed-size Designs using Design-hierarchy and Pin Information" 2019 International Conference on Automation, Computational and Technology Management (ICACTM). IEEE, 2019.
- d) National Conference(s):** NIL
- e) Book/Chapter:**
1. Kumar, Ranjeet, Anupam Biswas, and Pinki Roy, "Melody Extraction from Music: A Comprehensive Study. & quot"; In Applications of Machine Learning, pp. 141-155. Springer, Singapore, 2020.
  2. Ravi Kishore Devarapalli and Anupam Biswas, "Rumor Detection and Tracing its Source to Prevent Cyber-Crimes on Social Media", in "Intelligent data analytics for terror threat prediction: Architectures, methodologies, techniques and applications", Wiley-Scrivener publication, USA, 2020. (Accepted)

3. Anji Reddy.V and Badal Soni (2020), "Breast Cancer Identification and Diagnosis Techniques," In Machine Learning for Intelligent Decision Science Algorithms for Intelligent Systems, DOI: 10.1007/978-981-15-3689-2, Springer, Singapore.
4. Badal Soni, Das P.K., Thounaojam D.M., Biswas D. (2020), "Copy-Move Attack Detection from Digital Images: An Image Forensic Approach", Smart Computing Paradigms: New Progresses and Challenges. Advances in Intelligent Systems and Computing, vol 766. Springer, Singapore.
5. Malaya Dutta Borah, Vadithya Bharath Naik, Ripon Patgiri, Aditya Bhargav, Barneel Phukan, Shiva G M Basani, (2020) "Supply Chain Management in Agriculture using Blockchain and IOT", in Studies in Big Data: Advanced Applications of Blockchain Technology, Vol. 60, pp227-242, ISBN:978-981-13-8774-6, doi: [https://doi.org/10.1007/978-981-13-8775-3\\_11](https://doi.org/10.1007/978-981-13-8775-3_11), Springer.
6. Meetei L.S., Singh T.D., Bandyopadhyay S. (2019), "Extraction and Identification of Manipuri and Mizo Texts from Scene and Document Images.", In: Deka B., Maji P., Mitra S., Bhattacharyya D., Bora P., Pal S. (eds) Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science, vol 11941. Springer, Cham [SCOPUS]
7. Suganya Devi K, Book: "Problem Solving and Python Programming", VK Publishers, (2019)

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired: NIL

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. Saroj K. Biswas	9th International Conference On Soft Computing for Problem Solving (SocProS 2019)	Liverpool UK	30-08-2019 to 6-09-2019
2	Dr. Pinki Roy	Intelligent Systems Conference (IntelliSys) 2019	London UK	5-6 September 2019
3	Dr. Shyamapada Mukherjee	International Conference on Automation, Computational and Technology Management (ICACTM-2019)	London UK	24-26 April 2019
4	Dr. Thoudam Doren Singh.	SPARC Project Code: P995 as Co-Principal Investigator (Co-PI)	Universität des Saarlandes, Saarbrücken, Germany	01-06-2019 to 30-06-2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Abhijit Das (17-25-110)	Dr. Anupam Biswas	Rumor Source Identification on Social Networks
2	Biswal Amitabh Ajaya (18-25-101)	Dr. Malaya D Borah	Recommender System using Restricted Boltzmann Machine with Implicit feedback
3	Anwasha Das (18-2-5-102)	Dr. Thoudam Doren Singh	Study on Development of English to Bengali Neural Machine Translation Systems
4	Abhinaba Dattachaudhuri (18-)2-5-104	Dr. Saroj K Biswas	Transparent Rule Extraction From Neural Networks And Its Application In Banking Sector
5	Chengrang N Sangma (18-25-105)	Dr. Samir K. Borgohain	Tweaking the Linux kernel task scheduler (O(1) scheduler) as counter-measure against malicious process execution

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
6	Vikrant Rajput (18-25-106)	Dr. Partha Pakray	Multi-Input Neural Abstractive Text Summarization with Multi-Objective
7	Gautam Jee (18-25-107)	Mr. Umakant Majhi	System Utilization Analysis of SDN/Openflow Controllers (RYU Versus POX)
8	K Anand Singha (18-25-109)	Dr. Anish K Saha	Study and exploration of flow rule aggregation and creation scheme for avoiding overflow in SDN
9	Rahul Barman (18-25-110)	Dr. Biswajit Purkayastha	Case-based expert system for early detection of Diabetic Retinopathy
10	Anandamoy Bandyopadhyay (18-2-5-111)	Dr. Suganya Devi K	Unsupervised Anomaly Detection in Mammograms using Generative Modelling
11	Santosh Pal (18-25-113)	Dr. Dalton Meitei Th.	Robust Perceptual Image Hashing using Ring Partition and Colour Histogram
12	Aasawari Sahasrabuddhe (18-25-114)	Dr. L Dolendro Singh	Multiple Images Encryption using 3D scrambling and Hyper chaotic System
13	Ayush Kumar (18-25-115)	Dr. Badal Soni	Image copy-move forgery detection using Convolutional Neural Network
14	Santosh Rajak (18-25-116)	Dr. Ujwala Baruah	An Ensemble Method for Predicting Passenger Demand Using Taxi Dataset

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Heisnam Rohen Singh	Dr. Saroj K. Biswas	Design of Some Transparent Rule-Based Neuro-Fuzzy Systems for Decision Making
2	Ripan Patgiri	Dr. Samir K. Borgohain	Design and Development of a Multidimensional Membership Filter
3	Patil Sandeep Ramsing	Dr. Biswajit Purakayastha, Prof. Nidul Sinha	Some Studies on the Development of Intelligent Algorithms for Heart Disease Prediction with Reduced Features
4	Ujwala Baruah	Dr. R H Laskar, Dr. B Purkayastha	A study of the significance of different acoustic features and modeling techniques for the design of a text dependant speaker verification system

## 1. Name of the Department:

# Electronics and Instrumentation Engineering



### The Department at a glance

**Year of Establishment: 2008**

**Academic Programmes Offered:**

- Bachelor of Technology (B.Tech)
- Master of Technology (M.Tech)
- Doctor of Philosophy (Ph.D.)

**Total Faculty Strength: 15**

- Professor: 0
- Associate Professor: 1
- Assistant Professor: 14

**Total Student Strength: 284**

- B.Tech: 234
- M.Tech: 12
- Ph.D.: 38

**New Students Joined in 2019-2020: 91**

- B.Tech: 78
- M.Tech: 07
- Ph.D.: 06

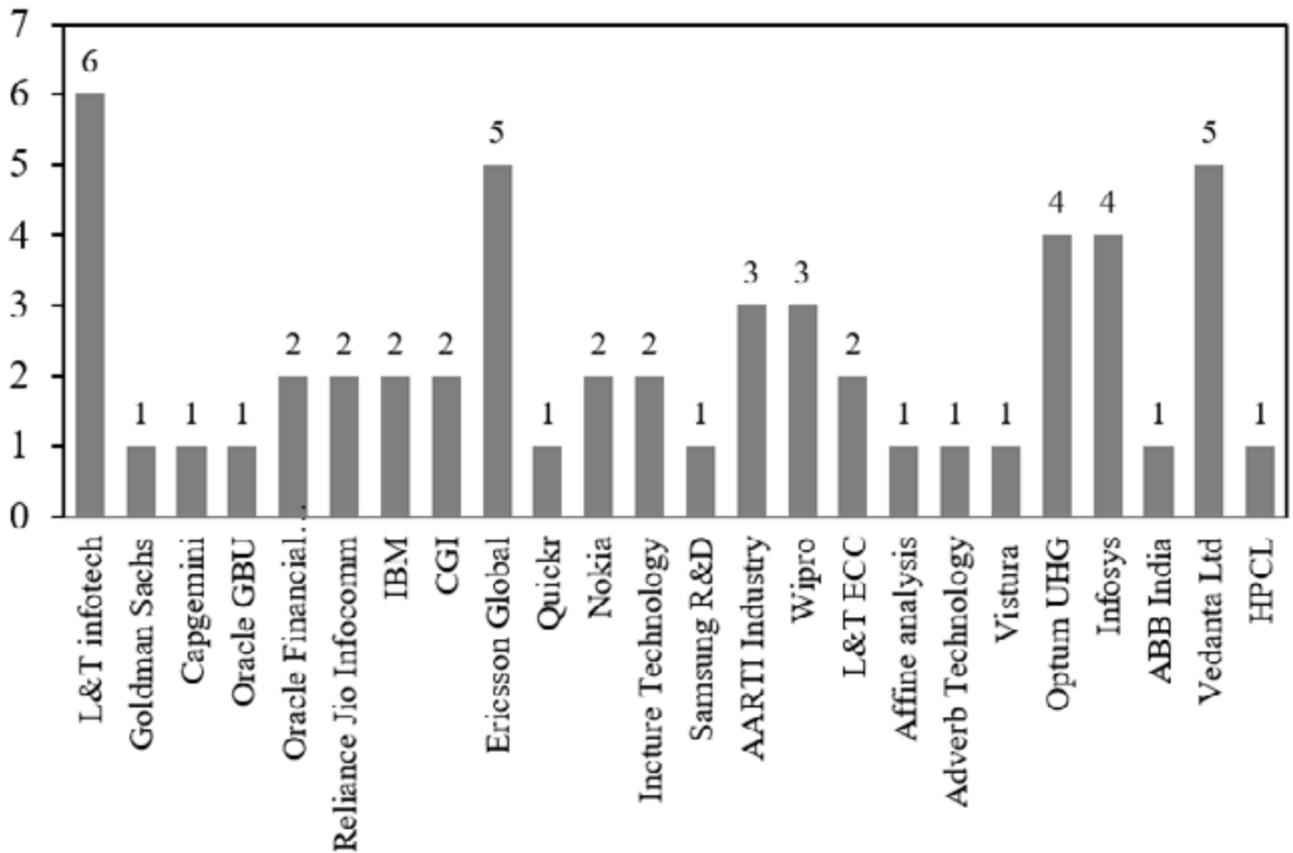


Fig: Placement statistics of the student in the E&I Department during 2019-2020.

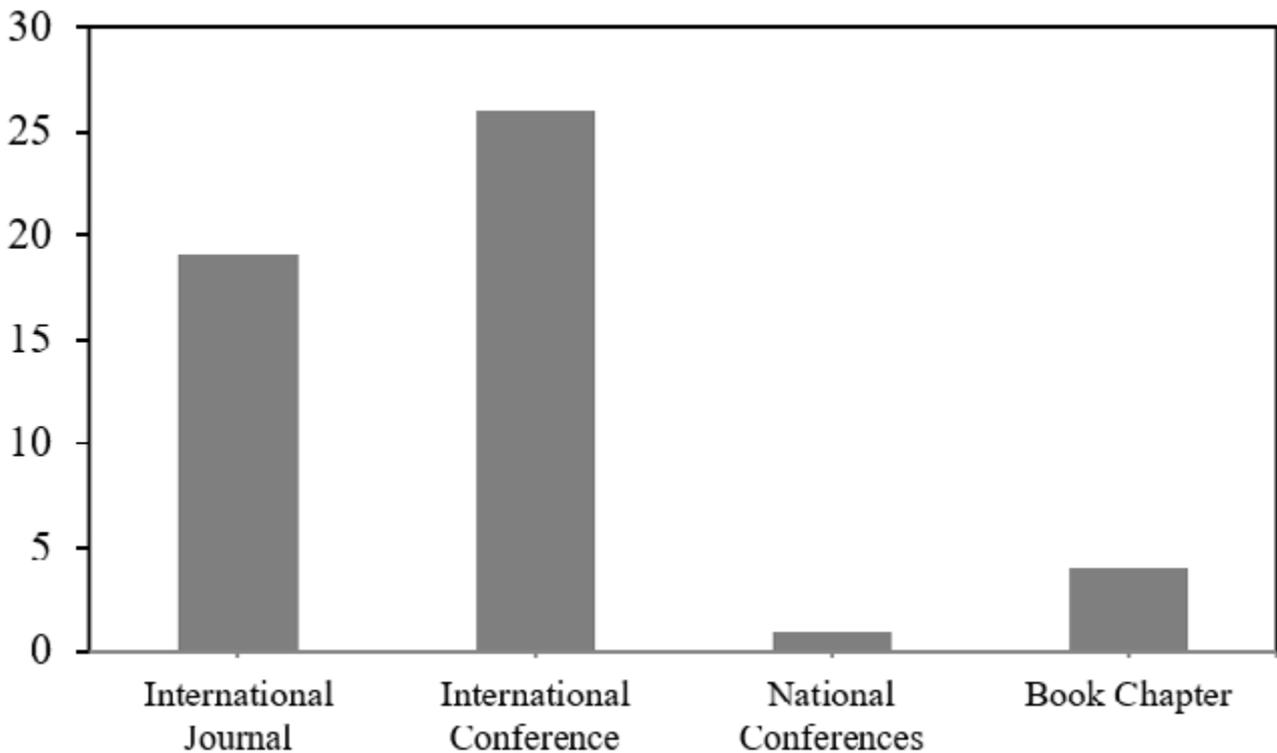


Fig: Publication details of E&I Department 2019-2020

## 1.1. Academic Staff:

HEAD: Dr. Shahedul Haque Laskar, Associate Professor

Name of Faculty members:

Professor	Associate Professor	Assistant Professor
	Dr. Shahedul Haque Laskar	Dr. Rajdeep Dasgupta
		Dr. Lalu Seban
		Dr. Jupitara Hazarika
		Dr. Sudarsan Sahoo
		Dr. Munmun Khanra
		Dr. Arun Kumar Sunaniya
		Dr. Manas Kumar Bera
		Dr. Ranjay Hazra
		Dr. Shivendra Kumar Pandey
		Dr. Koena Mukherjee
		Dr. Shankar K.
		Dr. Sudipta Chakraborty
		Dr. Anup Kumar Sharma
		Dr. Vipin Chandra Pal

Visiting Professor (If any): NIL

## 1.2 Distinction Achieved

a) **By Student:**

- **Tushar Vatsa** (Scholar ID: 15-1-6-032) of UG batch 2015-19 scored AIR 107 in GATE 2019 (Instrumentation Engineering). He is currently pursuing MS from Electrical and Computer Engineering at Carnegie Melon University (Pittsburg), USA.
- **Pravin S** (Scholar ID: 15-1-6-047) of UG batch 2015-19 scored AIR 79 in GATE 2019 (Instrumentation Engineering).
- **Uditya Bayan** (Scholar ID: 15-1-6-017) of UG batch 2015-19 scored AIR 171 in GATE 2019 (Instrumentation Engineering).
- **Raju Sharma** (Scholar ID: 15-1-6-062) of UG batch 2015-19 scored AIR 11 and AIR 441 in GATE 2020 and 2019 (Instrumentation Engineering) respectively.
- **Debasish Nath** (Scholar ID: 15-1-6-022) of UG batch 2015-19 is presently pursuing a Ph.D from the Centre of Biomedical Engg (CBME), IIT Delhi.
- **James Singh** (Scholar ID: 15-1-6-055) of UG batch 2015-19 is presently pursuing a Ph.D from IIT Guwahati.
- **C. Siddartha** (Scholar ID: 15-1-6-071) of UG batch 2015-19 scored 99.4 percentile in XAT 2020.
- **Saras Mani Mishra** (Scholar ID: 17-2-6-107) of PG batch 2017-19 is currently pursuing a Ph.D from IIT Guwahati.
- **Suraj Saha** (Scholar ID: 17-2-6-105) of PG batch 2017-19 is currently pursuing a Ph.D from IIT (ISM) Dhanbad.
- **Ravi Roushan** (Scholar D: 16-1-6-041) of UG batch 2016-20 scored AIR 249 in GATE 2020 (Instrumentation Engineering).
- **Ankit Kumar** (Scholar ID: 16-1-6-023) of UG batch 2016-20 scored AIR 361 in GATE 2020 (Instrumentation Engineering).

- **Vikash Kumar** (Scholar ID: 16-1-6-028) and **Shubham Anand** (Scholar ID: 16-1-6-020) scored AIR 438 in GATE 2020 (Instrumentation Engineering).
  - **Ammu Prameela Nandakumar** (Scholar ID:17-2-6-110) of PG batch 2017-19 under the joint supervision of **Dr. Lalu Seban** (NIT Silchar) and **Prof. M. V. Dhekane** and **Dr. Rajesh Joseph Abraham** (IIST Trivandrum) has won the best paper award in the Control Systems category for the paper “LQG Controller for Load Relief in the combined Rigid Body and Flexibility Model of a Launch Vehicle” at the International Conference on Intelligent Computing, Instrumentation and Control Technologies 2019, Kerala, July 05-06, 2019. The paper was jointly authored by **Ammu Prameela Nandakumar, M. V. Dhekane, Rajesh Joseph Abraham, and Dr. Lalu Seban.**
- b) By Faculty Member:**
- **Jupitara Hazarika** defended a PhD thesis titled “*Electroencephalographic analysis of neural modulation in action video game players*” on 20<sup>th</sup> May 2019.
  - **Dr. Shahedul Haque Laskar, Patent granted on** “A Rotating Magnetic Field-Based Ultra-Fast Measurement of Speed”, Patent no. 332662, Date of award 21/02/2020 by the Patent Office, Government of India.

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

### a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator(s)	Title	Funding Agency	Duration
1	Dr. M. K. Bera	Talk/ Tutorial On Reinforcement Learning For Control Engineering	TEQIP-III	21 – 22 January 2020
2	Dr. Shankar K.	One Day Workshop on “PDMA-India NPDP Boot Camp”	Jointly organized by IIT Madras, PDMA-INDIA, and Fhysics Business Consultant	15 <sup>th</sup> December 2019
3.	Dr. K. Mukherjee and Dr. L. Seban.	One week workshop in “Industrial Approach to Process Control and Automation”	TEQIP-III	22-26 August 2019.

### b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1.	Dr. S. H. Laskar	IEEE IECON 2019 held at Lisbon, Portugal during 14 <sup>th</sup> -18 <sup>th</sup> Oct 2019	IEEE Industrial Electronics Society (IES)
2.	Dr. S. Sahoo	FDP on Curriculum Design and Implementation for Outcome Based Education” (CuDIOBE-2019) held during 27 – 31 May 2019.	NIT Silchar
3	Dr. S. Sahoo	One-Week Hands-on training cum workshop on Biomedical Instrumentation held during 20 – 24 Feb. 2020.	NIT Silchar
4	Dr. R. Hazra	2 <sup>nd</sup> N-CRIPT Workshop Programme held on 15 <sup>th</sup> July 2019.	NUS Singapore
5	Dr. R. Hazra	FDP on Curriculum Design and Implementation for Outcome Based Education” (CuDIOBE-2019) held during 27 – 31 May 2019.	NIT Silchar
6	Dr. R. Hazra	IEEE TENCON 2019 held during 17 <sup>th</sup> -20 <sup>th</sup> October 2019.	IEEE Region 10, Kerala Section
7	Dr. R. Hazra	IEEE ANTS 2019 held during 16 <sup>th</sup> - 19 <sup>th</sup> December 2019.	IEEE COMSOC and BITS Goa
8	Dr. M. K. Bera	Sixth Indian Control Conference held during 18 <sup>th</sup> -20 <sup>th</sup> December 2019.	IIT, Hyderabad
9	Dr. M. K. Bera	IEEE TENCON 2019 held during 17 <sup>th</sup> -20 <sup>th</sup> October 2019.	IEEE Region 10, Kerala Section

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
10	Dr. S. K. Pandey	AICTE Sponsored Short Term Course on Two-dimensional Materials: Physics and Applications, 21-26 Sept. 2019.	IIT Madras
11	Dr. M. Khanra	FOS'20: Workshop on Fractional-order systems 15-19 Feb. 2020	IIT Kharagpur

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

- Measurements, Sensors, Instrumentation, and Biomedical Instrumentation & signal processing.
- Control Systems, Industrial Process Control, Power Electronics, and Energy Systems.
- Signal and Image Processing, Communication Systems, Electronics, and VLSI systems.

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
01	01	36

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Biomedical Instrumentation Lab	M. Tech and Ph.D. programme
2	Research Lab	Ph.D. programme, with a common research facility.
3	SERB-DST Sponsored Research Laboratory	<ul style="list-style-type: none"> <li>• To successfully execute the funded research project from SERB-DST, Govt. of India.</li> <li>• Useful for M.Tech. students to fabricate and characterize the nanoscale electronic devices for several applications.</li> </ul>

### d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Design and development of multi-bit phase-change memory devices for next-generation high-density nonvolatile memory applications	Dr. S. K. Pandey	SERB-DST, Govt. of India	44.77	3 years (2019-2022)
2	Development of battery supercapacitor hybrid energy storage for standalone solar photovoltaic power systems	Dr. M. Khanra	Department of Science & Technology, Govt. of India.	22.22	3.5 yrs. (2016-2020)

### e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Dr. S. H. Laskar	IEEE Sensors Journal	02	2019, 2020
2	Dr. R. Hazra	IET Signal Processing	1	2020
3		Computer Communications	1	2020
4		IEEE Signal Processing Letters	1	2020
5		KSII Transactions on Internet and Information Systems	2	2020
6		Journal of Electrical and Computer Engineering	1	2020
7		IET Communications	2	2019
8		Transactions on Emerging Telecommunication Technologies, Wiley	1	2019
9		IEEE Access	1	2019

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
10	Dr. M. K. Bera	Asian Journal of Control	1	2020
11		IET Control Theory and Applications	2	2019, 2020
12		Part I: Journal of System and Control Engineering	1	2019
13		IEEE Transactions on Industrial Electronics	1	2019
14	Dr. S. Sahoo	International journal of electrical and computer engineering	1	2020
15	Dr. V. C. Pal	TIMC SAGE Publication	3	2019
16	Dr. S. Chakraborty	ISA Transactions	2	2019, 2020
17	Dr. A. K. Sharma	Sensor Letters	1	2020
18	Dr. K. Mukherjee	IEEE ocean engineering	1	2020
19	Dr. M. Khanra	IEEE Trans. On Vehicular Technology	02	2019, 2020
20		IEEE Trans on Circuits and Systems II	01	2019
21		IEEE Trans on Industrial Electronics	01	2019
22		ISA Transactions	02	2019
23		Vehicles	01	2020
24		World Electric Vehicle Journal	02	2019
25		Applied Sciences	01	2019
26		IEEE/CAA Journal of Automatica Sinica	01	2019

#### f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Dr. M. K. Bera	Sixth Indian Control Conference held during 18 - 20 Dec. 2019, IIT Hyderabad
2	Dr. A. K. Sunaniya	ICRTECS-2019, ECE Deptt. NIT Silchar

## 1.5 Publications

#### a) International Journal(s):

1. S.H. Choudhury, A. Kumar, and **S. H. Laskar**, "Biometric Authentication through Unification of Finger Dorsal Biometric Traits," *Information Sciences*, 497, pp. 202-218, 2019.
2. P. Kant, **S. H. Laskar**, **J. Hazarika**, and R. Mahamune, "CWT Based Transfer Learning for Motor Imagery Classification for Brain-computer Interfaces," *J. Neurosci. Methods*, vol. 345, pp. 108886, Feb. 2020.
3. **V. C. Pal**, R. Negi, and I Mudgal, "Design of nonlinear anti-windup compensator for time-delayed systems based on triple Lyapunov Functional," *Transactions of the Institute of Measurement and Control*, 42(5), 997-1007, 2020.
4. **V. C. Pal**, R. Negi, and Q. Zhu, "Stabilization of Discrete-Time Delayed Systems in Presence of Actuator Saturation Based on Wirtinger Inequality," *Mathematical Problems in Engineering*, 2019.
5. P. Khuntia, and **R. Hazra**, "An efficient Deep reinforcement learning with extended Kalman filter for device-to-device communication underlying cellular network", *Transactions on Emerging Telecommunication Technologies*, Wiley, 2019. <https://onlinelibrary.wiley.com/doi/abs/10.1002/ett.3671>
6. P. Khuntia, and **R. Hazra**, "QOS aware channel and power allocation scheme for D2D enabled cellular networks", *Telecommunication Systems*, Springer, 2019. <https://link.springer.com/article/10.1007/s11235-019-00582-8>.
7. P. Khuntia, and **R. Hazra**, "An efficient reinforcement learning for device to device communication underlying cellular network," *IEIE Transactions on Smart Processing and Computing*, 9(1), pp. 75-84, 2020. <https://10.5573/IEIESPC.2020.9.1.075>

8. P. Khuntia, **R. Hazra**, and Peter H.J. Chong, "An efficient actor-critic reinforcement learning for device to device communication underlying sectorized cellular network," *International Journal of Communication Systems*, Wiley, 33:4315, 2020. <https://doi.org/10.1002/dac.4315>.
  9. **R. Hazra**, and A. Tyagi, "Bit error probability analysis of IR-UWB ED-OOK system using cooperative dual-hop DTF strategy," *Annals of Telecommunication*, Springer, 2020. <https://link.springer.com/article/10.1007/s12243-020-00764-5>.
  10. S. Biswas, and **R. Hazra**, "A new binary level set model using L0 regularizer for image segmentation," *Signal Processing, Elsevier*, vol. 174, 107603, 2020. <https://doi.org/10.1016/j.sigpro.2020.107603>.
  11. A. Mashud, and **M. K. Bera**, "Robust fault tolerant control scheme for descriptor systems using fixed control allocation", *European Journal of Control*, 2020, ISSN 0947-3580, <https://doi.org/10.1016/j.ejcon.2020.02.008>.
  12. **S. Chakraborty**, A. K. Naskar, and S. Ghosh, "Inverse plant model and frequency loop shaping-based PID controller design for processes with time-delay. *International Journal of Automation and Control*," 14(4), 399-422, 2020.
  13. R. Moudgollya, A. Midya, **A. K. Sunaniya**, and J. Chakraborty "Dynamic background modeling using intensity and orientation distribution of video sequence" *Multimedia Tools and Applications*, Springer Nature, 78(16), pp 22537-22554, ISSN: 1380-7501 (Print), 1573-7721 (Online), 2019.
  14. S. Das, **A. K. Sunaniya**, R. Maity, and N. P. Maity, "Efficient FPGA Implementation of Corrected Reversible Contrast Mapping Algorithm for Video Watermarking.", *Journal of Microprocessor and Microsystems*, p.103092, 2020.
  15. S. Das, **A. K. Sunaniya**, R. Maity, and N. P. Maity, "Parallel Hardware Implementation of Efficient Embedding Bit Rate Control Based Contrast Mapping Algorithm For Reversible Watermarking", *IEEE Access*, vol-8, pp-69072-69095, 2020.
  16. D. J. Bora, and **R. Dasgupta**, "Various skin impedance models based on physiological stratification", *IET Systems Biology*, 2020.
  17. P. Saha, S. Dey, and **M. Khanra**, "Modelling and State-of-charge estimation of supercapacitor considering leakage effect," *IEEE Trans. on Industrial Electronics*, vol. 67, Jan 2020.
  18. P. Saha, S. Dey, and **M. Khanra**, "Accurate estimation of State-of-charge of supercapacitor under uncertain leakage and open circuit voltage map," *Journal of Power Sources*, vol. 434, June 2019.
  19. S. Dey, and **M. Khanra**, "Cybersecurity of Plug-in Electric Vehicles: Cyber Attack Detection during Charging," *IEEE Transactions on Industrial Electronics*, Jan. 2020 (Published online).
- b) National Journal(s): NIL**
- c) International Conference(s): NIL**
1. S. S. Pattanayak, **S. H. Laskar**, and S. Sahoo, "Microwave Absorption Properties of Building Material Marble", *5th International Conference for Convergence in Technology (I2CT), IEEE Conference*, The Gateway Hotel, XION Complex, Wakad Road, Pune, India. Apr 06-08, 2019.
  2. S. S. Pattanayak, **S. H. Laskar**, and S. Sahoo, "Modelling Coconut Fiber Coir and Charcoal Powder Made Microwave Absorber over X-band Frequency", *5th International Conference for Convergence in Technology (I2CT), IEEE Conference*, The Gateway Hotel, XION Complex, Wakad Road, Pune, India. Apr 06-08, 2019.
  3. Md. A. Siddiqui, **S. H. Laskar**, and Md. N. Anwar, "A Simple Tuning Approach for PID Controller based on Direct Synthesis and Root-locus.", *3rd International Conference on Computing Methodologies and Communication (ICCMC)*, Surya Engineering College (SEC), Erode, India, May 11-13, 2019.
  4. S. S. Pattanayak, **S. H. Laskar**, and S. Sahoo, "Modelling Agricultural Residue based Microwave Absorber under X-band Frequency", *TENSYMP - The IEEE Region 10 Symposium*, Kolkata, 7-9th June, 2019.
  5. Md. A. Siddiqui, **S. H. Laskar**, Md. N. Anwar, and M. Naseem, "A Model-Free PI / PID Controller based on Direct Synthesis Approach to achieve Disturbance Rejection", *IECON 2019-45th Annual Conference of the IEEE Industrial Electronics Society*, Lisbon, Portugal, October 13-17, 2019.

6. D. Nath, M. J. Singh, **S. Sahoo**, and **J. Hazarika**, "Wavelet Based De-noising of EEG Signal Acquired from Tele-serial Addicted Persons," *2019 3rd International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE)*, NOIDA, India, 2019, pp. 265-269, doi: 10.1109/RDCAPE47089.2019.8979060.
7. **S. Chakraborty**, **V. C. Pal**, and **S. Sahoo**, "2DOF Robust PID Controller Design for Industrial Large Time-constant Plus Dead-Time Processes," *2020 International Conference on Contemporary Computing and Applications (IC3A)*, Lucknow, India, 2020, pp. 271-274, doi: 10.1109/IC3A48958.2020.233312.
8. **J. Hazarika**, "Analyzing the resting-state EEG of action video game players using Wavelet Transform." In *2019 3rd International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE)*, pp. 362-367. IEEE, October 2019.
9. S. S. Sarmah, and **R. Hazra**, "Interference management for D2D communication in mmWave 5G network: An Alternate Offer Bargaining Game theory," in *proceedings of IEEE International Conference on Signal Processing & Integrated Networks, SPIN*, Noida, India, 2020.
10. P. Khuntia, and **R. Hazra**, 'Device-to-Device Communication Assisted by Selective DTF Relay for MIMO Cooperative System,' in *proceedings of IEEE Malaysia International Conference on Communications (MICC)*, Kuala Lumpur, Malaysia, 2019.
11. P. Khuntia, **R. Hazra**, J. Akhtar, and A. Ravi, "Resource Sharing for energy harvesting based D2D communication underlying cellular network," in *Proceedings of IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Goa, India, 2019.
12. S. Biswas, **R. Hazra**, and S. Prasad, "A Region-based Level Set Formulation Using Machine Learning Approach in Medical Image Segmentation", in *proceedings of IEEE TENCON*, Kochi, Kerala, India, 2019.
13. S. S. Sarmah, and **R. Hazra**, "Interference mitigation methods for D2D communication in 5G network", in *proceedings of International Conference on Cognitive Informatics and Soft Computing*, Springer, Bangkok, 2019.
14. S. Biswas, and **R. Hazra**, "A novel level set method for medical image segmentation", in *proceedings of IEEE TENSYPMP*, Kolkata, India, 2019.
15. S. Ganguly, **M. K. Bera**, and P. Roy, "Robust Non-overshooting Tracking and Model Following Controller using Multi-variable Super-twisting Algorithm", *2019 Sixth Indian Control Conference (ICC)*, IIT Hyderabad, 18-20 December, 2019.
16. Gautham V S, and **M. K. Bera**, "Event-triggered Sliding Mode Control Based Trajectory Tracking of Robotic Manipulators in a Cyber-Robotic Space", in *proceedings of IEEE TENCON 2019*, Kochi, Kerala, 17-20 October 2019.
17. A. Mashud, and **M. K. Bera**, "A Multivariable Super Twisting Sliding Mode Control of Descriptor Systems", in *proceedings of IEEE TENCON 2019*, Kochi, Kerala, 17-20 October 2019.
18. A. Yesmin, and **M. K. Bera**, "Event-triggered Integral Sliding Mode Control", in *proceedings of IEEE TENCON 2019*, Kochi, Kerala, 17-20 October 2019.
19. A. P. Nandakumar, M. V. Dhekane, R. J. Abraham, and **L. Seban**, "LQG Controller for Load Relief in the combined Rigid Body and Flexibility Model of a Launch Vehicle", *International Conference on Intelligent Computing, Instrumentation and Control Technologies, IEEE*, 2019.
20. A. P. Nandakumar, **L. Seban**, R. J. Abraham, and M. V. Dhekane, "LQG Controller for Load Relief control of a Flexible Launch Vehicle", *IEEE Region 10 conference - TENCON*, Kerala, 2019.
21. R. Kumar, A. K. S. Pundir, R. K. Yadav, **A. K. Sharma**, and D. Singh, "An Experimental Perusal of Impedance Plethysmography for Biomedical Application," *International Conference on Recent Trends in Communication & Intelligent Systems*, Jun 8-9, 2019, Arya College of Engineering & IT, Kukas, Jaipur, Rajasthan, India.
22. **K. Mukherjee**, I. N. Kar, and R. K. P. Bhatt, "Ocean Waves: A disturbance observer-based approach for an Autonomous Underwater Vehicle," *IEEE Oceans*, Marseille, France, 17 -20 June, 2019.

23. S. Das, and **A. K. Sunaniya**, "A Study on Reversible Image Watermarking Using Xilinx System Generator", *Proc. In International Conference on Computational Intelligent in Pattern Recognition (Springer)*, IEST, Shibpur, Kolkata, 2019.
24. P. Saha, K. Roy, P. Nambisan, and **M. Khanra**, "Generalized self-discharge model for a series of supercapacitors," *IEEETENCON-2019*, Kochi, India, 17-20 Oct. 2019.
25. S. Dey, Y. Shi, **M. Khanra**, and K. Smith, "Safer batteries via active fault-tolerant control," *2019 American Control Conference (ACC)*, Philadelphia, USA, July, 2019.
26. P. Nambisan, S. Bansal, and **M. Khanra**, "Economic Performance of Solar Assisted Battery and Supercapacitor based E-Rickshaw," *IEEE International Conference on "Power Electronics, Smart Grid and Renewable Energy (PESGRE 2020)*," 2-4 Jan 2020.
- d) National Conference(s):**
1. Atul. K. Sharma, **Anup K. Sharma**, and R. Sharma, "Synthesis and Characterization of MWCNT/PANI Composite for Bio-sensing Application" has been presented in the *Bioengineering-2019 national conference at NIT Rourkela* held on 6-7 December 2019.
- e) Book/Chapter:**
1. **L. Seban**, and B. K. Roy. "Development of Parsimonious Orthonormal Basis Function Models Using Particle Swarm Optimisation." *Computational Intelligence: Theories, Applications, and Future Directions*-vol. 1., Springer, Singapore, pp. 553-563, 2019.
2. R. Kumar, A. K. S. Pundir, R. K. Yadav, **A. K. Sharma**, and D. Singh, "An Experimental Perusal of Impedance Plethysmography for Biomedical Application," *Recent Trends in Communication and Intelligent Systems*, Springer Singapore, 2020, **eBook ISBN:-** 978-981-15-0426-6.
3. S. Das, and **A. K. Sunaniya**, "A Study on Reversible Image Watermarking Using Xilinx System Generator," *In Computational Intelligence in Pattern Recognition*, pp. 219-235. Springer, Singapore, 2020.
4. B. Mali, and **S. H. Laskar**, "PLS-Based Multivariate Statistical Approach for Soft Sensor Development in WWTP," *In Shreesha C., Gudi R. (eds) Control Instrumentation Systems. Lecture Notes in Electrical Engineering*, vol 581. Springer, Singapore. Print ISBN: 978-981-13-9418-8, 2019.

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired

- Machine Fault Simulator
- NI Virtual Bench and Accessories
- Integral type compression proving ring with pads
- USRP 2920 and 2921
- Electrochemical Workstation (Model- CIMPS pro), M/S Zahner Elektrik GmbH & Co, Germany
- Network Analyser
- Q bot 2
- Climate Chamber

## 1.8 Patent

Sl. No.	Details	Year
1	S. H. Laskar, S. J. Arif, "A Rotating Magnetic Field-Based Ultra-Fast Measurement of Speed", Patent no. 332662, Date of award 21/02/2020 by the Patent Office, Government of India.	2020
2	Patent filed by S. H. Laskar on "An Instrument For Measurement Of Seismic Vibrations And Foreshocks For The Prediction of Earthquakes", Application No. 201911053683A, Date of filing: 24/12/2019	2019

## 1.9 Visits To Abroad

Sl.No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. R. Hazra	2 <sup>nd</sup> N-CRiPT Workshop Programme	NUS Singapore	15 <sup>th</sup> July 2019
2	Dr. K. Mukherjee	IEEE Oceans	Marseille, France	17- 20 June 2019
3	Dr. M. Khanra	American Control Conference (ACC)	Philadelphia, USA	10-12 July 2019
4	Dr. S. H. Laskar	IEEE International Conference, IECON 2019	Lisbon, Portugal	13 - 19 Oct 2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Diptanu Debnath	Dr. M. Khanra and Dr. L. Seban	Optimal Fast Charging of Lithium-Ion Batteries
2	Vivek Raj	Dr. J. Hazarika and Dr. R. Hazra	EEG based recognition of task-induced neuronal activity using machine learning algorithms.
3	Kuldeep Kushwah	Dr. S. Sahoo and Dr. A.K. Sunaniya	Health monitoring of wind turbine blades through vibration and acoustic emission signals using machine learning techniques.
4	Pratik Padole	Dr. S. H. Laskar and Dr. R. Dasgupta	Vibration testing and analysis of wind turbine blades for fault detection using DAS based on VI
5	Sanjeev Ranjan	Dr. K. Mukherjee and Dr. M. K. Bera	Quadrotor Modelling and Control
6	Anirban Nanda	Dr. M. K. Bera and Dr. A. Pati	Robust Tracking Control of a Differential Drive Mobile Robot

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Jupitara Hazarika	Dr. R. Dasgupta	Electroencephalographic analysis of neural modulation in action video game players

## I. Name of the Department:

# Mathematics



The Department at a glance	
<b>Year of Establishment:</b>	1977
<b>Academic Programmes Offered:</b>	<ul style="list-style-type: none"> <li>• Master of Science (M.Sc.)</li> <li>• Doctor of Philosophy (Ph.D.)</li> </ul>
<b>Total Faculty Strength:</b>	12 <ul style="list-style-type: none"> <li>• Professor: 0</li> <li>• Associate Professor: 04</li> <li>• Assistant Professor: 08</li> </ul>
<b>Total Student Strength:</b>	56 <ul style="list-style-type: none"> <li>• M.Sc.:25</li> <li>• Ph.D.: 31</li> </ul>
<b>New Students Joined in 2019-2020:</b>	25 <ul style="list-style-type: none"> <li>• M.Sc.:17</li> <li>• Ph.D.: 08</li> </ul>

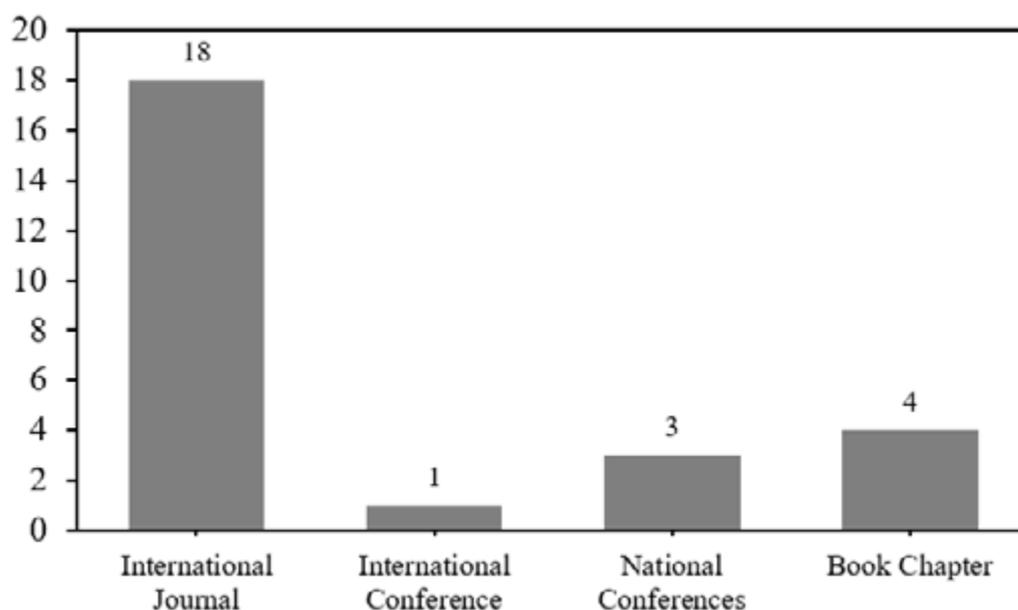


Fig: Publication details of the Maths Department in 2019-2020

## 1.1 Academic Staff:

HEAD: Dr. Mausumi Sen, Associate Professor

Name of Faculty members:

Professor	Associate Professor	Assistant Professor
NIL	Mr. Bijan Nath	Dr. Ganti Ramesh
	Dr. Pijus Kanti De	Dr. Kedar Nath Das
	Dr. Santanu Roy	Dr. Praveen Kumar Gupta
	Dr. Mausumi Sen	Dr. Md. Maqbul
		Dr. Pankaj Biswas
		Dr. Juthika Mahanta
		Dr. Subrata Bera
		Dr. Balla Hema Sundar Raju

Visiting Professor (If any): NIL

## 1.2 Distinction Achieved

a) By Student:

1. **Mr. Biplab Dhar**, Ph.D. Scholar received the best paper presentation award for the paper entitled "Numerical solution of tumor-immune model with targeted chemotherapy by multi-step differential transformation method" in the 1<sup>st</sup> International Conference on Innovation in Modern Science and Technology, held at Siliguri Institute of Technology, Sikkim on September 20-21, 2019.

b) By Faculty Member:

1. **Dr. Kedar Nath Das** Awarded "Slovak National Scholarship, Slovakia", during 31 Oct.-30 Nov. 2019.
2. **Dr. Praveen Kumar Gupta**, Assistant Professor received the best paper presentation award for the paper entitled "Numerical solution of tumor-immune model including small molecule drug by multi-step differential transformation method" in the 13<sup>th</sup> International Conference on Computing, Engineering and Information Technology, held at Bangkok, Thailand on September 28-29, 2019.

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

### a) Conducted by Faculty Member

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. Ganti Ramesh, Dr. Mausumi Sen, Dr. Santanu Roy, Mr. Bijan Nath	Curriculum Design and Implementation	TEQIP-III	May 20-24, 2019 (One Week)

### b) Participated by Faculty Member

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Dr. Pankaj Biswas	International Conference on Sustainable Computing in Science, Technology, and Management (SUSCOM-2020), January 20 - 22, 2020	Amity University Rajasthan

## 1.4 Research Development

### a) Ph.D. Programme (Specializations):

- Fuzzy set theory and its application, Fuzzy optimization, Fuzzy topology.
- Inverse eigenvalue problem, Fractional integral equations.
- Operations Research, Supply Chain Management, Elastodynamics.
- Evolutionary Optimization, Multi and Many objective Optimization with real-life applications, Networking Optimization.
- Mathematical Modelling, Ordinary Differential Equation, Fractional Calculus, Application of ODEs in epidemiology.
- Applications of Semigroup Theory of Bounded Linear Operators to Differential Equations.
- Almost Periodicity of Solutions of Differential Equations.
- Spectral Element Methods for partial differential equations, Computational Fluid Dynamics, Micro-nano Fluidics Modelling, Numerical methods to PDE, application to heat transfer.

### b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
01	01	27

### c) Research Lab/ Workshop:

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	Fuzzy Computational Lab	Research work
2	Numerical Computational Lab	For high-performance computing
3	Computational Lab for Microfluidics and Nanofluidics	High-Performance Computation in CFD

### d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	A study on measure theoretical approach to convergence of sequences in probabilistic normed spaces.	Dr. Mausumi Sen	SERB-DST, Govt. of India	15.3552	2015-2018 (03 Years)
2	Numerical study on electrokinetic flow through polyelectrolyte coated canonical nanopore	Dr. Subrata Bera	SERB-DST, Govt. of India	25.4714	2017-2020 (03 Years)

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
3	Spectral element methods for elliptic and parabolic interface problems on parallel computers.	Dr. Pankaj Biswas (Co-Investigator)	NBHM	13.59	2015-2018 (03 Years)

#### e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1.	Dr. Praveen Kumar Gupta	Chaos, Solitons & Fractals	02	2020
2.	Dr. Praveen Kumar Gupta	Chinese Journal of Physics	01	2020
3.	Dr. Praveen Kumar Gupta	Journal of Computational and Applied Mathematics	01	2020
4.	Dr. Praveen Kumar Gupta	Physica Scripta	01	2020
5.	Dr. Praveen Kumar Gupta	Open Physics	02	2020
6.	Dr. Subrata Bera	International Journal of Thermal Sciences	01	2019

#### f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Dr. Kedar Nath Das	Chaired a session on 'Nature-Inspired Algorithms and Application' in the International Conference 'Soft Computing for Problem Solving (SocProS 2019)' held at Liverpool Hope University, Liverpool, UK, during Sept. 2-4, 2019.

## 1.5 Publications

#### a) International Journal(s):

- Prabhujit Mahapatra, Kedar Nath Das, Santanu Roy, R Kumar and N. Dey (2020) A Novel Multi-Objective Competitive Swarm Optimization Algorithm, International Journal of Applied Metaheuristic Computing 11 (4) 6.
- Munmun Nath and Santanu Roy (2019) Some Results on Lacunary Ideal limit Point and Cluster Points of the Sequences of Fuzzy Real Numbers, International Journal of New Innovations in Engineering and Technology, Volume 11 Issue 4 September 2019, ISSN: 2319-6319.
- Sangita Saha, Ayan Esi and Santanu Roy (2020) Some New Classes of Multiplier Ideal Convergent Triple Sequence Spaces of Fuzzy Numbers defined by Orlicz Functions, Palestine Journal of Mathematics, Vol. 9(1) (2020) pp.174-186.
- Santanu Roy, Sangeeta Saha and Binod Chandra Tripathy (2020) Some Results on p-distance and Sequence of Complex Uncertain Variables, Commun. Korean Math. Soc. 0 (0), No. 0, pp. 1-0 <https://doi.org/10.4134/CKMS.c200026>.
- Mausumi Sen, Dipankar Saha and Ravi P. Agarwal (2019) A Darbo fixed point theory approach towards the existence of a functional integral equation in a Banach algebra, Appl Math & Computation, 358, 111-118.
- Mausumi Sen and Mikail Et (2020) Lacunary Statistical and Lacunary Strongly Convergence of Generalized Difference Sequences in Intuitionistic Fuzzy Normed Linear Spaces, Bol. Soc. Paran. Mat., 38(1),117-129.
- Dhiman Dutta, Mausumi Sen and Biplab Singha (2020) Multi-item multi-objective fixed charged solid transportation problem with type-2 fuzzy variables, Proyecciones (Antofagasta), 39, 621-637.
- Biplab Singha, Mausumi Sen, and Nidul Sinha(2020) Modified distance measure on hesitant fuzzy sets and its application in multi-criteria decision making problem, OPSEARCH, **57**, 584-602.
- Nimai Sarkar, Mausumi Sen and Dipankar Saha (2020) Solution of non-linear Fredholm integral equation involving constant delay by BEM with piecewise linear approximation, Journal of Interdisciplinary Mathematics, 23(2), 537-544, DOI: 10.1080/09720502.2020.1731965.

10. Adane Abebaw Gessesse, Rajashree Mishra, Mitali Madhumita Acharya, Kedar Nath Das (2020). Genetic algorithm-based fuzzy programming approach for multi-objective linear fractional stochastic transportation problem involving four-parameter Burr distribution, *International Journal of System Assurance Engineering and Management*, Vol. 11 (1), pp. 93-109.
  11. Praveen Kumar Gupta, Ajoy Dutta (2019) Numerical solution with analysis of HIV/AIDS dynamics model with effect of fussion and cure rate, *Numerical Algebra, Control and Optimization*, Volume 9, Issue 4, pp. 393-399, December 2019.
  12. Biplab Dhar, Praveen Kumar Gupta (2019) Numerical solution of Tumor-immune model including small molecule drug by multi-step differential transform method, *International Journal of Advanced Trends in Computer Science and Technology*, Volume 8, No. 5, pp. 1802-1807, October 2019.
  13. Md. Maqbul and A. Raheem (2020), Time-discretization schema for a semilinear pseudo-parabolic equation with integral conditions, *Applied Numerical Mathematics*, Vol. 148, pp. 18-27.
  14. Juthika Mahanta and Subhasis Panda (2020) Fuzzy Expert System for Prediction of Prostate Cancer, *New Mathematics and Natural Computation*, World Scientific, DOI: 10.1142/S1793005720500106.
  15. B. Hema Sundar Raju (2019) Analysis of forced convection from a horizontal flat plate for liquid Metals, *International Journal of Ambient Energy*, Taylor and Francis, doi: 10.1080/01430750.2019.1614986.
  16. Dipjyoti Nath and B. Hema Sundar Raju (2019) Effect of isoflux thermal boundary condition on mixed convective heat transfer from a sphere for liquid metals, *International Journal of Ambient Energy*, Taylor and Francis, doi.org/10.1080/01430750.2019.1636881.
  17. G. B. Chandra Mouli, Kotha Gangadhar, and B. Hema Sundar Raju (2019) On spectral relaxation approach for Soret and Dufour effects on Sutterby fluid past a stretching sheet, *International Journal of Ambient Energy*, doi.org/10.1080/01430750.2019.1653976.
  18. Pankaj Biswas, Pravir Dutt, S. Ghorai, and N. Kiskore Kumar (2019) Space-Time Coupled Least-Squares Spectral Element Methods for Parabolic Problems, *International Journal for Computational Methods in Engineering Science and Mechanics*, 20, pp 358-371.
- b) National Journal(s):**
1. Binod Chandra Tripathy, Mausumi Sen and Soumitra Nath (2019) On Generalized Difference Ideal Convergence in Generalized Probabilistic  $n$ -normed Spaces, *Proc. Natl. Acad. Sci., India, Sect. A Phys. Sci.* <https://doi.org/10.1007/s40010-019-00644-1>
- c) International Conference(s):**
1. Raghav Prasad Parouha and Kedar Nath Das, An upgraded differential evolution via a memory-based mechanism for economic dispatch, *Proceedings of the International Conference SocProS 2019, at Liverpool Hope University, UK, Proceeding of Springer AISC series, April 2020*, pp. 65-73.
  2. S Saha, Pankaj Biswas, Sujit Nath, Bifurcation phenomena for incompressible laminar flow in expansion channel to study Coanda effect, *1st International Conference on Innovation in Modern Science and Technology, September 20<sup>th</sup> -21<sup>st</sup>, 2019, Siliguri Institute of Technology, Siliguri, Darjeeling, West Bengal, India.* [https://doi.org/10.1007/978-3-030-42363-6\\_80](https://doi.org/10.1007/978-3-030-42363-6_80).
  3. S Saha, Pankaj Biswas, Sujit Nath, A Survey On Spectral Element Solver Nek5000, *International Conference on Computational Sciences-Modelling, Computing, and Soft Computing (CSMCS 2020), March 26-29, 2020, Department of Mathematics National Institute of Technology Calicut, Kozhikode, Kerala - 673601.*
- d) National Conference(s):** NIL
- e) Book/Chapter:**
1. Ajoy Dutta, Asish Adak, and Praveen Kumar Gupta (2020) Analysis of Fractional-Order Deterministic HIV/AIDS Model during Drug Therapy Treatment. In: Das K., Bansal J., Deep K., Nagar A., Pathipooranam P., Naidu R. (eds) *Soft Computing for Problem Solving. Advances in Intelligent Systems and Computing*, Vol 1048, Springer,

Singapore. [https://doi.org/10.1007/978-981-15-0035-0\\_1](https://doi.org/10.1007/978-981-15-0035-0_1) (Accepted, December 2018).

2. Biplab Dhar and Praveen Kumar Gupta (2020) Numerical Solution of Tumor-Immune Model with Targeted Chemotherapy by Multi-Step Differential Transformation Method. In: Dawn S., Balas V., Esposito A., Gope S. (eds) Intelligent Techniques and Applications in Science and Technology, ICIMSAT 2019, Learning and Analytics in Intelligent Systems, Vol 12, Springer, Cham. [https://doi.org/10.1007/978-3-030-42363-6\\_47](https://doi.org/10.1007/978-3-030-42363-6_47) (Accepted, September 2019).
3. Subrata Bera and Somnath Bhattacharyya (2020) Numerical Study on Electrokinetic Flow-Through Periodically Modulated Soft Nanochannel. In: Castillo O., Jana D., Giri D., Ahmed A. (eds) Recent Advances in Intelligent Information Systems and Applied Mathematics. ICITAM 2019. Studies in Computational Intelligence, vol 863. Springer, Cham. [https://doi.org/10.1007/978-3-030-34152-7\\_29](https://doi.org/10.1007/978-3-030-34152-7_29)
4. Subrata Bera and Somnath Bhattacharyya (2020) Solute Transport and Mixing Efficiency on Electrokinetic Flow in a Heterogeneous Microchannel. In: Bhattacharyya S., Kumar J., Ghoshal K. (eds) Mathematical Modeling and Computational Tools. ICACM 2018. Springer Proceedings in Mathematics & Statistics, vol 320. Springer, Singapore. [https://doi.org/10.1007/978-981-15-3615-1\\_2](https://doi.org/10.1007/978-981-15-3615-1_2).

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired: NIL

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. Kedar Nath Das	Slovak National Scholarship Program	Bratislava, Slovakia	31 Oct.-30 Nov. 2019
2	Dr. Kedar Nath Das	International Conference on 'Soft Computing for Problem Solving (SofProS 2019)'	Liverpool Hope University, Liverpool, UK	01-05 Sept. 2019
3	Dr. Kedar Nath Das	International Conference on "Advanced Research in Applied Science and Engineering (raseconf 2019)"	Amsterdam, Netherlands	12-14 July 2019
4	Dr. Praveen Kumar Gupta	13th International Conference on Computing, Engineering and Information Technology (ICCEIT 2019)	Bangkok, Thailand	September 28-29, 2019

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Afsana Zannat Ahmed (NIT Silchar)	Dr. Kedar Nath Das	Cancer Chemotherapy Drug Schedule Designing by Complete Elitist GA
2	Prantik Dey (Sikkim Manipal Institute of Technology)	Dr. Kedar Nath Das	Solving Minimum Leveling Spanning Tree using GA
3	Ms. Yogita	Dr. Praveen Kumar Gupta	A mathematical study on Hepatitis C
4	Lokendra Singh	Dr. Pankaj Biswas	Numerical simulations of Newtonian ow through a suddenly contracted rectangular channel with two different types of baffle plates
5	Apoorva Mahesh Munje	Dr. Juthika Mahanta	Distance and similarity measures in Intuitionistic fuzzy sets
6	Thejangule Zaphu	Dr. Juthika Mahanta	Prediction of Prostate Cancer using Fuzzy Expert System

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
7	Abhinaw Yadav	Dr. Subrata Bera	Mathematical Study on Electroosmotic ow in cylindrical microchannel
8	Manish Das	Dr. Subrata Bera	A Mathematical Study on Electroosmotic ow in rectangular nanochannel
9	Sakshi Gupta	Dr. Balla Hema Sundar Raju	Descritization of incompressible Navier-Stokes equations for flow past a circular cylinder using fourth-order compact scheme with pseudo time iteration technique

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Ajoy Dutta	Dr. Praveen Kumar Gupta	A study on mathematical modelling of HIV/AIDS dynamics with transmission and treatment through stability analysis and homotopy analysis method

## 1. Name of the Department:

# Physics



The Department at a glance	
<b>Year of Establishment:</b>	1977
<b>Academic Programmes Offered:</b>	<ul style="list-style-type: none"> <li>• Master of Science (M.Sc.)</li> <li>• Doctor of Philosophy (Ph.D.)</li> </ul>
<b>Total Faculty Strength:</b>	08
	<ul style="list-style-type: none"> <li>• Professor: 01</li> <li>• Associate Professor: 0</li> <li>• Assistant Professor: 07</li> </ul>
<b>Total Student Strength:</b>	37
	<ul style="list-style-type: none"> <li>• M.Sc.: 22</li> <li>• Ph.D.: 15</li> </ul>
<b>New Students Joined in 2019-2020:</b>	15
	<ul style="list-style-type: none"> <li>• M.Sc.: 12</li> <li>• Ph.D.: 03</li> </ul>

## 1.1 Academic Staff:

**HEAD:** Prof. Asim Roy, Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Dr. Asim Roy		Dr. Subrat Kumar Barik
		Dr. Avijith Chowdhury
		Dr. Ranjith G.Nair
		Dr. Rupak Dutta
		Dr. Saumya R.Mohapatra
		Dr. Subhasis Panda
		Dr. P. Srinivasan

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

**a) By Student:**

- (i) **Ms. Pujita N.** and **Mr. Nikhil S. K.**, Research Scholars, Department of Physics received the best project award in the institute level Anveshan 2.0 held on January 10-12, 2020.
- (ii) **Ms. Pujita N.** and **Mr. Nikhil S. K.**, Research Scholars, Department of Physics received the best project award(2<sup>nd</sup> Position) in the East Zonal level Anveshan 2020 organized by Jadavpur University in association with the Association of Indian Universities held on February 12-13, 2020.
- (iii) **Mr. Koustab Kashyap Gogoi**, Research Scholar, Department of Physics received the best poster award in the institute level Anveshan 2.0 held on January 10-12, 2020.

**b) By Faculty Member:**

- (i) Technical Committee Member, ICNMS 2020 held during January 17-20, 2020 at the University of Washington, Seattle, WA, USA.
- (ii) Reviewer, National Fund for Scientific and Technological Development (FONDECYT), Government of Chile.

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

**a) Conducted by Faculty Member**

Sl. No.	Name(s) of the Coordinator	Title	Funding Agency	Duration
1	Dr. Ranjith G. Nair	Anveshan 2.0	TEQIP-III	10-12 January 2020

**b) Participated by Faculty Member:** NIL

## 1.4 Research Development

**a) Ph.D. Programme (Specializations):**

- Condensed Matter Physics (Experimental)
- Condensed Matter Physics (Theoretical)
- High Energy Physics
- Resistive Memory Device

- Multi Ferroics
- Solid State Ionics
- Solar Photovoltaics
- Solar Photocatalysis

**b) Ph.D. Produced/Ongoing (in number):**

Completed	Submitted	Ongoing
00	00	17

**c) Research Lab/ Workshop:**

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1	B. Tech Lab	.UG
2	Physic Lab I	PG
3	Physic Lab II	PG
4	Physic Lab III	PG
5	Micro Science and Nano Physics	To Conduct advanced level research on materials science and devices.
6	Solar Energy Materials Research and Testing Laboratory (SMaRT Lab) (Dr. Ranjith G. Nair)	PG and Ph.D. program
7	Organic Electronics and Sensor Laboratory (Dr. Avijit Chowdhury)	PG and Ph.D. program
8	Computational Condensed matter lab (Dr. S. Panda)	PG and Ph.D. program
11	Multifunctional Materials Laboratory (Dr. S.K. Barik)	PG and Ph.D. programme
12	Liquid Crystal Laboratory	PG and Ph.D. program
13	DST-FIST Lab I & II	PG and Ph.D. program

**d) Ongoing/Completed Sponsored Research Project:**

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Fabrication and Testing of Tandem Layered Quantum Dot Sensitized Solar Cell with Elevated Absorption	Dr. Ranjith G. Nair (PI) Dr. Avijit Chowdhry (Co-PI)	DST	25.14	27/12/2016 to 26/12/2019
2	Nanostructured Metal Oxides Immobilized Ionic Liquids as Green Catalysts for Selective Organic Transformations	Dr. S. S. Dhar (PI) Dr. Avijit Chowdhry (Co-PI)	DST-SERB	28.64	3 years

**e) Research Paper Reviewed**

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Dr. Avijit Chowdhury	Nanotechnology (IOP Science)	02	2020
		Current Applied Physics (Elsevier)	01	2020
		Materials Research Express (IOP Science)	01	2019
		Applied Materials and Interfaces (ACS)	01	2020
2	Dr. R. G. Nair	Journal of Alloys and Compounds (Elsevier)	01	2020
3	Dr. P. Srinivasan	Chemical Data collections	01	2020
		Journal of Crystal Growth	01	2019
4	Dr. Subrat K. Barik	Applied Physics A	01	2019
		Modern Physics Letters B	01	2019
		Materials Chemistry and Physics	01	2020
		Modern Physics Letters B	01	2020
		Indian Journal of Physics	01	2020

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
5.	Dr. S. R. Mohapatra	Applied Physics Letters	01	2020
		Journal of Materials Science	01	2020
		Physica scripta (IOP)	01	2019

#### f) Chairing of the Technical Section

Sl. No.	Faculty Name	Details
1	Dr. P. Srinivasan	Resource person for Three days NBA awareness programme at Kongunadu College of Engineering & Technology, Tamilnadu during 4.12.2019, 5.12.2019

## 1.5 Publications

### a) International Journal(s):

- Ujjal Das<sup>1</sup>, Snigdha Bhattacharjee<sup>1</sup>, Pranab Kumar Sarkar<sup>2</sup> and Asim Roy (2016) A multi-level bipolar memristive device based on visible light sensing MoS<sub>2</sub> thin film, Material Research Express, Vol.6, No.7.
- N. Rajeev, Rupak Dutta, and Suman Kumbhakar, Implication of RD( ) anomalies on semileptonic decays of b and  $\Omega_b$  baryons, Phys. Rev. D 100, 035015, 2019
- Rupak Dutta, Model-independent analysis of new physics effects on Bc (Ds,Ds)  $\mu^+\mu^-$  decay observables, Phys. Rev. D 100, 075025, 2019
- Rupak Dutta, Predictions of Bc (D,D) decay observables in the standard model and beyond, J. Phys. G: Nucl. Part. Phys. 46, 2019, 035008
- Koustav Kashyap Gogoi and Avijit Chowdhury\*, Performance Improvement of Organic Resistive Memories by Exploiting Synergistic Layered Nano-hybrid Dispersed Polymer Composites, Journal of Applied Physics 127, 2020, 065501. (Selected for Editor's Pick).
- Koustav Kashyap Gogoi and Avijit Chowdhury\*, Performance Enhancement of Solution-Processed Organic Memories by Exploiting Synergistic Organic-Inorganic Hybrid Composites, The Journal of Physical Chemistry C 124 (2020) 1108-1120.
- Rakesh Chandra Das, Koustav Kashyap Gogoi, Nipom Sekhar Das, and Avijit Chowdhury\*, "Optimization of Quantum Yield of Highly Luminescent Graphene Oxide Quantum Dots and Their Application in Resistive Memory Devices", Semiconductor Science and Technology 34, 2019, 125016.
- Koustav Kashyap Gogoi, Rajdeep Das, Tanmoy Paul, Sharmistha Ghosh, Avijit Chowdhury\*, "Tuning of Bipolar Resistive Switching and Memory Characteristics of Cadmium Sulphide Nanorods Embedded in PMMA Matrix", Materials Research Express 6, 2019, 115107.
- Koustav Kashyap Gogoi and Avijit Chowdhury\*, "Electric Field Induced Tunable Memristive Characteristics of Exfoliated Graphene Oxide Embedded Polymer Nanocomposites", Journal of Applied Physics, 126, 2019, 025501
- Koustav Kashyap Gogoi, Nipom Sekhar Das, Avijit Chowdhury\*, Tuning of electrical hysteresis in PMMA/GOs/PMMA multi-stacked devices, Materials Research Express 6, 2019, 085108.
- Anupriya Nyayban, Subhasis Panda, Avijit Chowdhury, B. Indrajit Sharma, First principle studies of rubidium lead halides towards photovoltaic application, Materials Today Communications, Volume 24, 2020, 101190.
- Manjula G Nair, Saumya R Mohapatra, Marie-Rose Garda, Bindu Patanair, Allisson Saiter-Fourcin, and Sabu Thomas, Role of protic ionic liquid concentration in proton-conducting polymer electrolytes for improved electrical and thermal properties, Mater. Res. Express 7 (2020) 064005.
- S. Ahmed, S.K.Barik, and S. Hajra, Investigation of electric, dielectric, and magnetic properties of Li<sup>+2</sup> and Mo<sup>+6</sup> co-doped BiFeO<sub>3</sub>, Applied Physics A 125 (2019) 303.
- S. Nath, S.K. Barik, and R.N.P. Choudhary, Relaxation mechanism, conductivity, and magnetoelectric property studies in

- (NdLi) $_{1/2}$ (Fe $_{2/3}$ Mo $_{1/3}$ )O $_3$  multiferroic, Indian Journal of Physics 93 (8) (2019) 1001-1007.
15. S.K. Barik, S. Ahmed, and N. Kumar, Structural, thermal, electrical and magnetic features of a new lead-free electronic material: (SbLi) $_{1/2}$ (Fe $_{2/3}$ W $_{1/3}$ )O $_3$ , Materials Chemistry and Physics 241 (2020) 122393.
  16. S.K. Barik and A R Atique Ulla, Relaxation mechanism and conductivity studies of lead-free ceramics: Fe $_{1/2}$ (NaLi) $_{1/4}$ TiO $_3$ , Modern Physics Letters B 33 (2020) 2050081.
  17. S.K. Barik, Structural and electrical features of lead-free ferroelectric: Li $_{1/2}$ Bi $_{1/2}$ TiO $_3$ , Indian Journal of Physics (<https://doi.org/10.1007/s12648-019-01672-8>, 2020)
  18. Abinash Das, Ranjith G Nair, Effect of aspect ratio on photocatalytic performance of hexagonal ZnO Nanorods, Journal of Alloys and Compounds 817, 153277
  19. Abinash Das, Riu Riu Wary, Ranjith G Nair, Mn-doped ZnO: Role of morphological evolution on enhanced photocatalytic performance, Energy Reports, 6 (2020) 737-741.
  20. Abinash Das, SK Nikhil, Ranjith G Nair, Influence of surface morphology on photocatalytic performance of zinc oxide: a review, 19 (2019) 100353.
  21. v.suganthi, P.Srinivasan, Studies on the electrospun composite Picric acid PVA nanofibers, Materials Today: Proceedings (Elsevier), article in press
  22. Jesby George, a.K.Thomas, D.Sajan, S.Sathiyamoorthi, P.Srinivasan, Nithin joy, Reji Philip, Experimental and DFT/TD-DFT approach on photo physical and NLO properties of 2,6 bis (4-chlorobenzylidene)cyclohexanone, Optical Materials, Vol.100, 2020. (Elsevier)
  23. J.Balaji, P.Srinivasan, S.Prabhu, Merin George, D. Sajan, Growth and dielectric studies of toluidine tartrate single crystals:A novel organic NLO material, Journal of Molecular Structure, Vol.1207, 2020, <https://doi.org/10.1016/j.molstruc.2020.127750> (Elsevier)
  24. S.R.Chalana, V.S.Kavitha, P.Srinivasan, S.Rafi Ahmed, Gargi Tiwari, V.P.Mahadevan Pillai, Influence of argon pressure on the crystalline phase formation of RF sputtered zinc sulfide thin films, Materials Today Proceedings, InPress, <https://doi.org/10.1016/j.matpr.2020.05.347>.
  25. Satish Kumar Satti, **Suganya Devi K**, Prasenjit Dhar, Srinivasan P(2019), 'An Efficient Noise separation technique for Removal of Gaussian and Mixed Noises in monochrome and color Images', International Journal of Innovative Technology and Exploring engineering, Vol.8(9), pp.588-601.
  26. Satish Kumar Satti, **Suganya Devi K**, Vishnu Murthy, Srinivasan P(2019), 'Efficient Technique for removal of white and mixed noises in gray-scale images', International journal of Innovative engineering and Management Research, Vol.8(9), pp.22-36.
- b) National Journal(s): NIL**
- c) International Conference(s):**
1. Rupak Dutta, N. Rajeev, Signature of Lepton Flavor Universality Violation in Bs Ds Semileptonic Decays, International conference on flavor physics and CP violation, Springer Proc.Phys. 234 (2019) 489-493.
  2. Prashanta Pathak, Rajesh Deb, Saumya R Mohapatra, Electrical bistability in MoS $_2$  nano-sheets doped polymeric nanocomposite films, Materials Today: Proceedings 24 (2020) 2295-2301.
  3. R Deb, M G Nair, S Halder, A L Sharma, S R Mohapatra, Liquid-phase exfoliation of MoS $_2$  nano-sheets and observation of resistive switching memory in MoS $_2$  Nanosheets-PVDF-HFP composite films, Materials Today: Proceedings 18, (2019) 5447-5453.
  4. Abinash Das, Manoj Hazarika, Ranjith G Nair, Synthesis and characterization of ZnO nanoflowers as an efficient solar photocatalyst, AIP Conference Proceedings, 2100 (2019)(1) 020096.
  5. Abinash Das, Moumita Patra, Manoj Hazarika, Ranjith G Nair, ZnO-In $_2$ O $_3$  nanocomposite: An efficient solar photocatalyst, AIP Conference Proceeding, 2100 (2019) (1) 020033.
  6. Abinash Das, Riu Riu Wary, Ranjith G Nair, Magnesium doped zinc oxide as an efficient solar photocatalyst, AIP Conference Proceedings, 2115 (2019) (1) 030103.

7. Abinash Das, Riu Riu Wary, SK Nikhil, Ranjith G. Nair, Cu doped ZnO as an efficient visible active photocatalyst, AIP Conference Proceeding, 2162 (2019) (1) 020120.
8. SK Nikhil, Ranjith G Nair, Role of alcohol solvents on physico-chemical characteristics and photocatalytic performance of titania, AIP Conference Proceeding, 2162 (2019) (1) 020092.
9. Pujita Ningthoukhongjam, Ranjith G Nair, Tuning the photocatalytic performance of Degussa P25 through phase ratio optimization, AIP Conference Proceedings, 2162 (2019) (1) 020032.

**d) National Conference(s):**

1. N. Rajeev and Rupak Dutta, Probing new physics in Bs (K,K) and B  $\pi$  decays, 23rd DAE-BRNS High Energy Physics Symposium.

**e) Book/Chapter:**

1. Solid-Polymer-Electrolyte-Based Atomic Switches, Tohru Tsuruoka, Karthik Krishnan, Saumya R Mohapatra, Shouming Wu, Masakazu Aono, Book. Atomic Switches, 139-159 (2020) Springer, ISBN : 978-3-030-34874-8 (DOI: 10.1007/978-3-030-34875-5\_8).

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired

1. UV-NIR-DRS (Carry 5000, Agilent), Under DST-FIST

## 1.8 Patent

Sl. No.	Details	Year
1.	Online Payment System and method (File no. 201931025522 dated: 27/06/2019)	2019
2.	Image-based system for detecting plant diseases (file no. 201931046059 dated: 13/11/2019)	2019

## 1.9 Visits To Abroad: NIL

## 1.10 M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Mr. Tridiv Rabha	Prof. Asim Roy	"Enhanced Luminescence in All-inorganic Rubidium Lead Iodide Perovskite through Halide Mixing"
2	Rakesh Chandra Das	Dr. Avijit Chowdhury	Synthesis of Highly Luminescent Graphene Oxide Quantum Dots and its Application in Resistive Switching Memory Devices
3	K. Basavaraj	Dr. S. Panda	Ab-initio study of structural Phase transition in TiO <sub>2</sub>
4	Manoj Hazarika	Dr. Ranjith G. Nair	Design, Fabrication, and Testing of a Continuous Photocatalytic Reactor
5	Prashanta Phatak	Dr. S. R. Mohapatra	Electrical bistability in MoS <sub>2</sub> nanosheets doped polymeric nanocomposite films

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Mr.S.Sathiyamoorthi (viva date: 2.12.2019) from Anna University	Dr. P. Srinivasan	Investigations on the Synthesis, Growth, and Characterization of Cyclohexanone derivative crystals for optical applications

## 1. Name of the Department:

**Chemistry**

The Department at a glance	
<b>Year of Establishment:</b>	1977
<b>Academic Programmes Offered:</b>	<ul style="list-style-type: none"> <li>• Master of Science (M.Sc.)</li> <li>• Doctor of Philosophy (Ph.D.)</li> </ul>
<b>Total Faculty Strength:</b>	08 <ul style="list-style-type: none"> <li>• Professor: 0</li> <li>• Associate Professor: 03</li> <li>• Assistant Professor: 05</li> </ul>
<b>Total Student Strength:</b>	58 <ul style="list-style-type: none"> <li>• M.Sc.: 29</li> <li>• Ph.D.: 29</li> </ul>
<b>New Students Joined in 2019-2020:</b>	25 <ul style="list-style-type: none"> <li>• MSc: 17</li> <li>• Ph.D.: 08</li> </ul>

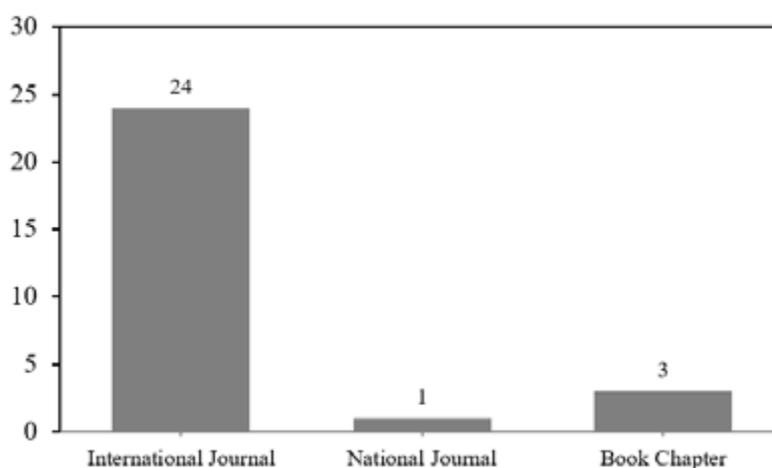


Fig: Publication details of chemistry Department in 2019-2020

## 1.1 Academic Staff:

**HEAD:** Dr. B.H. Shambharkar (up to 13-08-2019)  
Dr. Sidhartha Shankar Dhar (from 14-08-2019)

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
NIL	Dr. Siddhartha S. Dhar	Dr. Ruma Rano
	Dr. Md. Ahmaruzzaman	Dr. Baban H Shambharkar
	Dr. Pranjit Barman	Dr. Lalthazuala Rokhum
		Dr. N. Shaemningwar Moyon
		Dr. Biswa Nath Ghosh

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

- By Student: NA
- By Faculty Member: NA

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

- Conducted by Faculty Member: NIL
- Participated by Faculty Member: NIL

## 1.4 Research Development

- Ph.D. Programme (Specializations):**
  - Synthesis of nanocatalysts and their application in chemical transformations
  - Energy and Environment
  - Green Synthesis, Organo-Sulfur compounds, Schiff Base, Metal Complexes, Organic Synthesis
  - Synthesis of nano-composites for environmental remediation
  - Synthesis and applications of transition metal complexes of nitrogen-based heterocyclic ligands

## b) Ph.D. Produced/Ongoing (in number):

Completed	Submitted	Ongoing
NIL	2	21

## c) Research Lab/ Workshop: NIL

## d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in Rupees	Duration
1	Nanostructured Metal Oxides Immobilized Ionic Liquids as Green Catalysts for Selective Organic Transformations	Dr. S. S. Dhar	DST, SERB.	28,64,430/-	3-years (2018-21)
2	Metal complexes of new chiral Schiff bases: Design, structure, elucidation, reactivity, and synthetic applications, sponsored by DST-SERB.	Dr. Pranjit Barman	DST, SERB	35,00,448/-	3-years (2016-19)
3	Spectrofluorimetric Studies on Representative Nitrogen-Heterocyclic Drugs And Their Interaction with DNA-Nucleotides	Dr. N. S. Moyon	DST, SERB.	33.09 Lakhs	3-years (2017-20)

## e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
1	Dr. S. S. Dhar	New Journal of Chemistry	3	2019-20
		Catalysis Science and Technology	1	
		Environmental Science and Pollution Research	1	
		Colloids and Surfaces A: Physicochemical and Engineering Aspects	1	
		Environmental Chemistry Letters	1	
		IEEE Transactions on Nanotechnology	1	
		Journal of Alloys and Compounds	1	
		Applied Organometallic Chemistry	1	
		International Journal of Environmental Analytical Chemistry	1	
		Journal of Physics and Chemistry of Solids	1	
		Materials Chemistry and Physics	1	
		ChemCatChem	1	
		Green Chemistry Letters and Reviews	1	
Journal of Photochemistry & Photobiology, B: Biology	1			
2	Dr. Md. Ahmaruzzaman	Talanta	01	2019
		Colloids and Surfaces A: Physicochemical and Engineering Aspects	01	2019
		Journal of Molecular Structure	01	2019
		International Journal of Environmental Analytical Chemistry	01	2019
		ChemistrySelect	01	2019
		Journal of Environmental Management	01	2019
		Journal of Composites Materials	01	2019
		Petroleum Science and Technology	01	2019
		Toxicological and Environmental Chemistry	01	2019
		Journal of Environmental Chemical Engineering	01	2019
		Environmental Science and Pollution Research	01	2020
		ACS Omega	01	2020
		Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	01	2020
Journal of Hazardous Materials	01	2020		
Ceramics International	02	2020		

Sl. No.	Faculty Name	Journal Name	No of Paper	Year
3	Dr. Pranjit Barman	New Journal of Chemistry.	1	2019-20
		Polyhedron.	2	
		Advanced Synthesis and Catalysis.	1	
		Journal of Molecular Structure.	2	
		Chemistry Select	2	
4	Dr. B. H. Shambharkar	Journal of Physics and Chemistry of Solids	01	2019
		Separation and Purification Technology	01	2019
		Inorganic and Nano-Metal Chemistry	3	2019-20
		RSC Advances	1	2020
		Advances in Natural Sciences: Nanoscience and Nanotechnology	6	2019-20
5	Dr. L. Rokhum	Energy Sources, Part A: Recovery, Utilization and Environmental Effects	5	2019-20
		Industrial Crops and Products	1	2020
		Current Organic Synthesis	1	2020
		Brazilian Journal of Chemical Engineering	1	2020
		Current Pharmaceutical Biotechnology	2	2019
		Energy & Fuels	1	2019
		Catalysis Letters	2	2019
		New Journal of Chemistry	1	2019
		Green Chemistry	3	2019
		Artificial Cells, Nanomedicine, and Biotechnology	1	2019
6	Dr. B. N. Ghosh	ACS Omega	1	2019

Chairing of Technical Section: NIL

## 1.5 Publications

### a) International Journal(s):

- Mehgali Devi, Bishal Das, Monjur Barbhuiya, Bishal Bhuyan, Siddhartha S Dhar, S Vadivel (2019), Fabrication of nanostructured NiO/WO<sub>3</sub> with graphitic carbon nitride for visible light-driven photocatalytic hydroxylation of benzene and metronidazole degradation, *New Journal of Chemistry*, 43, 14616-14624.
- Bappi Paul, S. Vadivel, Nishant Yadav, Siddhartha Sankar Dhar (2019), Room temperature catalytic reduction of nitrobenzene to azoxybenzene over one pot synthe-sised reduced graphene oxide decorated with Ag/ZnO nanocomposite, *Catalysis Communications*, 124, 71-75.
- Bappi Paul, Sachin Sharma, Debraj D. Purkayastha, Siddhartha S. Dhar, Rajaram Bal (2019), Facile synthesis of size-controlled Ag supported on WO<sub>3</sub> nanorods and their application as nov-el and active catalyst in oxidant-free dehydrogenation of benzyl alcohols, *Catalysis Communications*, Article 105804.
- Arijita Paul and Siddhartha S Dhar (2020), Construction of hierarchical MnMoO<sub>4</sub>/NiFe<sub>2</sub>O<sub>4</sub> nanocomposite: Highly efficient visible-light-driven photocatalyst in the degradation of different polluting dyes in aqueous medium, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 585, 124090.
- Krishna Ch. Das and Siddhartha S Dhar (2020), Remarkable catalytic degradation of malachite green by zinc supported on hydroxyapatite encapsulated magnesium ferrite (Zn/HAP/MgFe<sub>2</sub>O<sub>4</sub>) magnetic novel nanocomposite. *Journal of Materials Science*, 55 (11), 45092-4606 (Springer).
- Krishna Ch Das, Bishal Das, and Siddhartha S Dhar (2020), Effective catalytic degradation of organic dyes by nickel supported on hydroxyapatite encapsulated cobalt ferrite (Ni/HAP/CoFe<sub>2</sub>O<sub>4</sub>) magnetic novel nanocomposite, *Water, Air and Soil Pollution*, 231 (2), 43.

7. Krishna Ch Das and Siddhartha S Dhar (2020), Rapid catalytic degradation of malachite green by MgFe<sub>2</sub>O<sub>4</sub> nanoparticles in presence of H<sub>2</sub>O<sub>2</sub>, J Alloys, and Compounds, 828, 154462.
8. Dipyaman Mohanta and Md. Ahmaruzzaman (2020), Biogenic synthesis of SnO<sub>2</sub> quantum dots encapsulated carbon nanoflakes: An efficient integrated photocatalytic adsorbent for the removal of bisphenol A from aqueous solution, Journal of Alloys and Compounds, 828, 154093.
9. Dipyaman Mohanta and Md. Ahmaruzzaman (2019), Environmentally benign fabrication of SnO<sub>2</sub>-CNT nanohybrids and their multifunctional efficiency as an adsorbent, catalyst, and antimicrobial agent for water decontamination, Scientific Reports, 9, 12935.
10. Sauvik Raha and M. Ahmaruzzaman (2020), Facile fabrication of g-C<sub>3</sub>N<sub>4</sub> supported Fe<sub>3</sub>O<sub>4</sub> nanoparticles/ZnO nanorods: A superlative visible light-responsive architecture for express degradation of pantoprazole, Chemical Engineering Journal, 387, 123766.
11. Sukayna Hazarika and Pranjit Barman (2019), Ultrasound-Assisted Solvent/Metal-Free Synthesis of 3-Sulfenylindoles Employing TBATB-Grafted MCM-48 as a suitable Heterogeneous Catalyst, Chemistry Select, 4 (24), 7082-7089 (European Chemical Societies Publishing)
12. Subir Kr Maiti, Mukul Kalita, Anmol Singh, Jahnabi Deka and Pranjit Barman (2020), Investigation of DNA binding and Bioactivities of Thioether containing Schiff base Copper (II), Cobalt (II) and Palladium (II) complexes: Synthesis, characterization, Spectrochemical study, Viscosity measurement. Polyhedron, 184, 114559.
13. Subir Kr Maiti, Aditi Bora, Pranjit Barman, Asit K. Chandra and Bidisha Baidya (2020), Binuclear chiral Ni(II) complex of tridentate OON chiral Schiff base ligand, 1-((E)-(((1S,2R)-2-hydroxy-2,3-dihydro-1H-inden-1-yl)imino)methyl)naphthalen-2-ol, Journal of Coordination Chemistry, 73, 67-86 (Taylor & Francis).
14. Arpita Paul Chowdhury and Baban H. Shambharkar (2019), Synthesis and characterization of BiOCl-CoWO<sub>4</sub> nanocomposites with improved photocatalytic activity, International Journal of Applied Ceramic Technology, 17 (3), 1467-1478, <https://doi.org/10.1111/ijac.13366>.
15. Ikbal B Laskar, C Vanlalveni, Rajat Gupta, Sushovan Chatterjee, and Lalthazuala Rokhum (2020), Taming waste: Waste Mangifera indica peel as a sustainable catalyst for biodiesel production at room temperature. Renewable Energy (Elsevier) (Accepted).
16. Kalyani Rajkumari, Ikbal B Laskar, Anupama Kumari, Bandita Kalita, Lalthazuala Rokhum (2020), Highly selective tetrahydropyranlation/dehydropyranlation of alcohols using phenolsulfonic acid-formaldehyde resin catalyst under solvent-free condition. React and Funct Polym., 149, 104519.
17. Kalyani Rajkumari and Lalthazuala Rokhum (2020), A sustainable protocol for the production of biodiesel by transesterification of soybean oil using banana trunk ash as a heterogeneous catalyst. Biomass Convers Bior., 1-10.
18. Bishwajit Changmai, Putla Sudarsanam, and Lalthazuala Rokhum\* (2019), Biodiesel production using a renewable mesoporous solid catalyst. Ind Crops Prod., 145, 111911, <https://doi.org/10.1016/j.indcrop.2019.111911>. Impact Factor 4.1 (Accepted)
19. Ikbal Bahar Laskar, Lalthazuala Rokhum,\* Rajat Gupta, and Sushovan Chatterjee\* (2019), Zinc oxide supported silver nanoparticles as a heterogeneous catalyst for the production of biodiesel from palm oil. Environ Prog Sustain Energy, 39 (3), e13369, [doi.org/10.1002/ep.13369](https://doi.org/10.1002/ep.13369).
20. Putla Sudarsanam, Tuerxun Duolikun, P. Suresh Babu, Lalthazuala Rokhum, and Mohd Rafie Johan (2019), Recent developments in selective catalytic conversion of lignin into aromatics and their derivatives. Biomass Convers Bior., <https://doi.org/10.1007/s13399-019-00530-1>.
21. Diparjun Das, Kalyani Rajkumari, and Lalthazuala Rokhum (2019). Polymer-bound Triphenylphosphine and 4,4 -Dinitroazobenzene as a Coupling Reagents for Chromatography-Free Esterification Reaction. Curr Org Synth., <https://doi.org/10.2174/1570179416666190919152424>. (Accepted) (Selected as EDITOR'S CHOICE).
22. Bishwajit Changmai, Gunindra Pathak, and Lalthazuala Rokhum (2019), Heterogeneous

system in organic synthesis: A Review. Mini-Rev Org Chem. (Accepted)

23. Biswa Nath Ghosh (2019), Synthesis and Structure of New Trimethylplatinum(IV) Iodide Complexes of 2,2'-Bipyridine Ligands, *Zeitschrift für anorganische und analytische Chemie* (Wiley), 645, 1085-1091.
  24. Biswa Nath Ghosh, Rakesh Puttreddy, and Kari Rissanen (2020), Synthesis and structural characterization of new transition metal complexes of a highly luminescent amino-terpyridine ligand, *Polyhedron*, 177, 114304.
- b) National Journal(s):**
1. P. Kasar and Md. Ahmaruzzaman (2019), Studies on catalytic co-pyrolysis of bakelite and refineries residual fuel oil using ZSM-5 catalyst to produce lighter fuel oil, *JSIR Vol. 78(07)*, 426-430
- c) International Conference(s):** NIL
- d) Natinaol Conference(s):** NIL
- e) Book/Chapter:**
1. M. A. Asha Rani, M. Chakkarapani, and Pranjit Barman, *Green Energy: Renewable Power Generation from Solar. Renewable Materials and Green Technology Products: Environmental and Safety Aspects*, CRC Press, Taylor, and Francis Group. **Hard: ISBN: 9781771889278, E-Book ISBN: 9781003055471.**
  2. Avinash P. Ingle, Aayushi Biswas, Chhange Vanlalveni, Ralte Lalfakzuala, Indarchand Gupta, Pramod Ingle, Lalthazuala Rokhum and Mahendra Rai (2019), Biogenic synthesis of nanoparticles and their role in the management of plant pathogenic fungi. Book entitled "Microbial Nanotechnology" edited by Prof. Mahendra Rai and Prof. Patrycja Golinska to be published by CRC Press (Taylor & Francis Group), USA.
  3. N. S. Moyon, I.R. Singh, M.A. Rohman, P. Baruah, V.K. Sonu, S. Mitra (2019), 'Application of luminol as solvatochromic probe and fluorescent biomarker for heterogeneous media', In: *Advances in Chemistry Research*, VOL. 54, Nova Science Publisher, Inc., New York, pp. 177-245.

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired

- UV-VISIBLE SPECTROPHOTOMETER, MODEL -UV PLUS
- Muffle Furnace

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. L. Rokhum	Advances in Functional Materials, International Conference.	George Washington University in Washington DC, USA.	July 22-24, 2019.

## 1.10 M.Tech. / M.Sc. (Thesis/Project)

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
1	Rajarshi Acharyaa	Dr. S. S. Dhar	Preparation and characterization of MoO <sub>3</sub> bonded imidazolium sulfonic acid chloride as photocatalyst for degradation of Rhodamine B under solar light irradiation
2	Ipsita Ghosh	Dr. Md. Ahmaruzzaman	Synthesis of low-cost ZnO-Fe <sub>3</sub> O <sub>4</sub> -C <sub>3</sub> N <sub>4</sub> nanocatalyst for rapid and effective photocatalytic degradation of pharmaceutical drug Pentaprazole
3	Simita Das	Dr. P. Barman	Study of the Synthesis and Characterization of Schiff base metal complexes and their DNA binding

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis/Project
4	Sourav Sutradhar	Dr. Ruma Rano	Processing and Characterization of Magnetic and Non-Magnetic Components of Fly Ash for their Potential Application
5	Pinku Phukan	Dr. B. H. Shambharkar	Synthesis and characterization of BiOCl-CoWO <sub>4</sub> nanocomposites and investigation of their photocatalytic activity
6	Bhabesh Baro	Dr. N. S. Moyon	Effect of metal ions on the binding of luminol with bovine serum albumin by fluorescence spectroscopic method
7	Abhinav Jain	Dr. B. N. Ghosh	Terpyridine Based Fluorescent Chemosensor for Detection of Biologically Important Zinc Ion
8	Anant Kumar Meher	Dr. L. Rokhum	Solvent-Free synthesis of fuel additive solketal using silica coated magnetic nano particle Fe <sub>2</sub> O <sub>3</sub> functionalized with sulphuric acid
9	Prince Thapar	Dr. L. Rokhum	Synthesis of Dihydropyrimidines by using heterogeneous catalyst in biginelli reaction

## 1.11 Ph.D. Thesis: NIL

## 1. Name of the Department:

# Humanities & Social Sciences



The Department at a glance	
<b>Year of Establishment:</b>	1977
<b>Academic Programmes Offered:</b>	<ul style="list-style-type: none"> <li>• Doctor of Philosophy (Ph.D.)</li> </ul>
<b>Total Faculty Strength:</b>	04
	<ul style="list-style-type: none"> <li>• Professor: 01</li> <li>• Associate Professor: 02</li> <li>• Assistant Professor: 01</li> </ul>
<b>Total Student Strength:</b>	33
	<ul style="list-style-type: none"> <li>• Ph.D.: 33</li> </ul>
<b>New Students Joined in 2019-2020:</b>	12
	<ul style="list-style-type: none"> <li>• Ph.D.: 12</li> </ul>

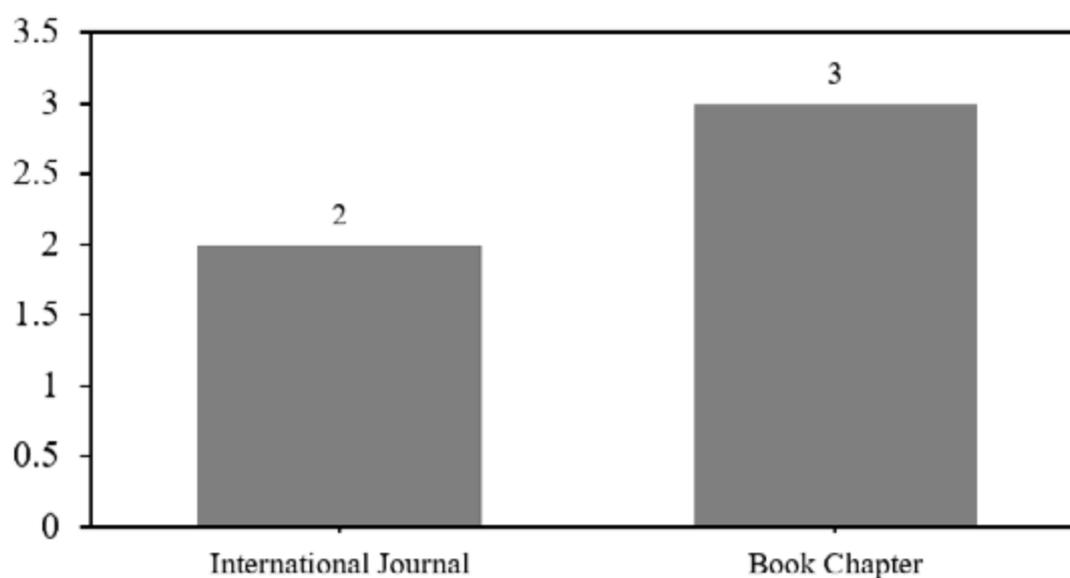


Fig: Publication details of the Humanities Department in 2019-2020.

## 1.1 Academic Staff:

**HEAD:** Dr. N. Bhupendra Singh (up to 18-08-2019)  
Dr. Reena Senasam (from 19-08-2019)

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
Prof. Gurudas Das	Dr. N. B. Singh Dr. Reena Sanasam	Dr. Avishek Ray

**Visiting Professor (If any):** NIL

## 1.2 Distinction Achieved

- a) **By Student:** NA
- b) **By Faculty Member:** NA
- Avishek Ray has been awarded Seed Funding for Visiting Professorship at Mahidol University, Thailand during June-July 2019. He has delivered an invited lecture at the Department of English, the University of Hyderabad on 25 Jul 2019.

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

- a) **Conducted by Faculty Member:** NIL
- b) **Participated by Faculty Member**

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
1	Prof. Gurudas Das	Made a presentation on "Gap Analysis in Infrastructure at LCSs in Assam" in a Workshop on "Facilitating India's Act East Policy: Gap Analysis in Infrastructure at Land Customs Stations in the North Eastern Region of India" held during 15-16 June, 2019	Indian Council for Research on International Economic Relations (ICRIER), New Delhi

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
2	Prof. Gurudas Das	Presented a paper entitled “ Cross-Border Trade and Development in India’s North East” in a Seminar on “25 Years of the WTO and India: A Retrospective” held during 5-6 September, 2019	Engineering Export Promotion Council (EEPC) and Exim Bank, New Delhi
3	Prof. Gurudas Das	Made a presentation on “Structure of Academic Writing” in a Workshop on “Academic Writing” held on September 12, 2019	Department of Economics, Assam University
4	Prof. Gurudas Das	Presented a paper entitled ““Predicaments of Being the Borderland: Integration, Identity and Development” in a 2-day National Seminar on “Imagining South East Asia from Bengal and India’s Northeast: Methodological Explorations” held during Sept, 19-20, 2019	Department of Political Science, Calcutta University
5	Dr. Avishek Ray	National Conference on <i>Aspects of Inequality in India</i> , 20-21 February 2020	Institute of Development Studies Kolkata (IDSK)
6	Dr. Avishek Ray	<i>Art Education Summit 2019</i> , 18-21 Dec 2019	Art1st, Indira Gandhi National Centre for the Arts (IGNCA) & Central Board of Secondary Education (CBSE)
7	Dr. Avishek Ray	International Workshop on <i>Living in the Age of Convergences - Affect, Affordance, Agency</i> , 9 -10 December 2019	National University of Singapore
8	Dr. Avishek Ray	Goethe Society of India’s International Conference on <i>The Universal &amp; the Particular: Contemporary Perspectives on an Old Dispute</i> , 14-16 Nov 2019	Jawaharlal Nehru University (JNU), India
9	Dr. Avishek Ray	International Conference on <i>Destruction/Re-Construction: Interdisciplinary Perspectives on Cultural Heritage in Conflict</i> , 30 September-3 Oct 2019	Arab-German Young Academy (AGYA) in collaboration with the Orient Institut Beirut (OIB), Beirut, Lebanon,
10	Dr. Avishek Ray	International Conference on <i>Us and Them: Diasporas for Others in the Indian Ocean</i> , 16-17 September 2019	Centre for Interdisciplinary Area Studies, Martin-Luther University, Halle (Saale), Germany,
11	Dr. Avishek Ray	International Workshop on <i>Cinema and the City</i> , 12-13 September 2019	Centre for Modern Oriental Studies (Zentrum Moderner Orient (ZMO), Berlin, Germany
12	Dr. Avishek Ray	AAS-in-Asia Conference on <i>Asia on the Rise?</i> , 1-4 July 2019	Association for Asian Studies & Thammasat University, Bangkok, Thailand
13	Dr. Avishek Ray	2019 Penn State Global Asias Summer Institute on <i>Digital Asias</i> , 3-7 June 2019	Penn State University, State College (PA), USA
14	Dr. Avishek Ray	International Workshop on <i>Mediated Campaigns and Unmediated Politics in Millennial India</i> , 27 April 2019	Centre de Sciences Humaines (CSH) & Indraprastha Institute of Information Technology Delhi (IIIT-Delhi)
15	Dr. Avishek Ray	National Seminar on <i>The Topography of Bhakti: Social Reform Watersheds in Indian Intellectual History</i> , 22-24 April 2019	Indian Institute of Advanced Study (IIAS), Shimla
16	Dr. Reena Sanasam	Presented a paper entitled: <i>Human Identity in the Age of Technology: A Study of Select American Science Fiction</i> at the Two Day International Conference on Interdisciplinary Studies: Redefining Boundaries of Humanities, Science and Social Sciences, 22-23 November 2019	English Literary Circle, Manipur, and the Manipur University Students’ Union

Sl. No.	Name of Faculty	Details of the Program	Organizing Institute
17	Dr. Reena Sanasam	<i>Presented a paper entitled: A Study of Lai Haraoba as a Cultural and Historical Text of the Meiteis of Manipur at the Two Day International Conference on Interdisciplinarity: Intersections of literature and History for Social and Cultural Change, 19-20<sup>th</sup> October 2019</i>	Department of Humanities and Social Sciences, NIT, Meghalaya
18	Dr. Reena Sanasam	Presented a paper entitled: <i>Literature and Ecocriticism: Towards Understanding the Relevance of Interdisciplinary Studies</i> at the Two Day International Conference on Interdisciplinary Studies: Redefining Boundaries of Humanities, Science and Social Sciences, 22-23 November 2019	English Literary Circle, Manipur, and the Manipur University Students' Union

## 1.4 Research Development

a) Ph.D. Programme (Specializations): NIL

b) Ph.D. Produced/Ongoing (In number):

Completed	Submitted	Ongoing
1	1	18

c) Research Lab/ Workshop: NIL

d) Ongoing/Completed Sponsored Research Project:

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1	Scheme for Promotion of Academic & Research Collaboration (SPARC) Project: <i>Digital Expression of the Self(ie): Photographic Performativity in Contemporary India</i>	Dr. Avishek Ray	MHRD	~ 60 Lakhs	2 years: 2019-21

e) Research Paper Reviewed

Sl. No.	Faculty Name	Journal Name	No. of Paper	Year
1	Dr. Avishek Ray	Journal of Postcolonial Writing	1	2020

f) Chairing of the Technical Section

Sl. No	Faculty Name	Details
1	Prof. Gurudas Das	Chaired an academic session on September 20, 2019 in a 2-day National Seminar on "Imagining South East Asia from Bengal and India's Northeast: Methodological Explorations" organized by the Department of Political Science, Calcutta University, Kolkata
2	Dr. Avishek Ray	Chaired an academic session at the International Conference on <i>Us and Them: Diasporas for Others in the Indian Ocean</i> , 16-17 September 2019
3	Dr. Reena Sanasam	Chaired a technical session at the Two Day International Conference on Interdisciplinarity: Intersections of literature and History for Social and Cultural Change during 19-20 <sup>th</sup> October 2019, organised by the Department of Humanities and Social Sciences, NIT, Meghalaya

## 1.5 Publication

### a) International Journal(s):

1. Avishek Ray, 'Of Nomadology: A Requiem for India(n-ness)', in *Crossings: Journal of Migration and Culture*, Vol. 10: 2 (2019), pp. 281-291
2. Avishek Ray, 'Vicissitudes of Reading the Mahabharata as History: Problems Concerning Historicism and Textualism' in *Journal of Literary Studies*, Vol. 35: 3 (2019), pp. 1-19
3. Das Gurudas and C Joshua Thomas (eds), *BCIM Economic Cooperation: Interplay of Geo-economics and Geo-politics*, Routledge, London, and New York.
2. Das, Gurudas, and Ujjwal Paul, 2019, "Is BCIM beneficial for India?", in Das Gurudas and C Joshua Thomas (eds), *BCIM Economic Cooperation: Interplay of Geo-economics and Geo-politics*, Routledge, London, and New York.
3. Das, Gurudas, 2019, "OBOR architecture and BCIM-EC: an interplay of geo-economics and geo-politics", in Das Gurudas and C Joshua Thomas (eds), *BCIM Economic Cooperation: Interplay of Geo-economics and Geo-politics*, Routledge, London, and New York

### b) National Journal(s): NIL

### c) International Conference(s): NIL

### d) National Conference(s): NIL

### e) Book/Chapter:

1. Das, Gurudas, Tanuj Mathur, Ujjwal Paul, and Subodh Chandra Das, 2019, "BCIM: What should be the basis for sub-regional

## 1.6 Consultancy Services

Sl. No.	Name of the Scheme	Sponsoring Agency	Amount Earned
Prof. Gurudas Das		RIS	
Prof. Gurudas Das		ICRIER	

## 1.7 Major Equipment Acquired: NIL

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl.No.	Name of the Faculty	Name of the Conference/ Programme	Place	Date
1	Dr. Avishek Ray	Seed Funding for Visiting Professorship, Mahidol University, Thailand	Thailand	June-July 2019
2	Dr. Avishek Ray	2019 Penn State Global Asias Summer Institute on <i>Digital Asias</i>	USA	June 2019
3	Dr. Avishek Ray	International Workshop on <i>Living in the Age of Convergences - Affect, Affordance, Agency</i>	Singapore	December 2019
4	Dr. Avishek Ray	International Conference on <i>Destruction/Re-Construction: Interdisciplinary Perspectives on Cultural Heritage in Conflict</i>	Lebanon	Sep-Oct 2019
5	Dr. Avishek Ray	2 International events: (1) workshop on <i>Cinema and the City</i> & (2) Conference on <i>Us and Them: Diasporas for Others in the Indian Ocean</i>	Germany	September 2019

## 1.10 M.Tech / M.Sc. (Thesis/Project): NIL

## 1.11 Ph.D. Thesis

Sl. No.	Name of the Scholar	Name of the Supervisor	Title of the Thesis
1	Subodh Chandra Das (Awarded in Feb, 2020)	Prof. Gurudas Das	Governance and Development: A Case Study of Panchayati Raj Institution in Southern Assam

## I. NAME OF THE DEPARTMENT:

# Management Studies



### The Department at a glance

**Year of Establishment: 2012**

#### Academic Programmes Offered:

- Master of Business Administration (MBA)
- Doctor of Philosophy (Ph.D.)

#### Total Faculty Strength: 06

- Professor: 0
- Associate Professor: 0
- Assistant Professor: 06

#### Total Student Strength: 107

- MBA: 91
- Ph.D.: 16

#### New Students Joined in 2019-2020: 56

- MBA: 48
- Ph.D.: 08

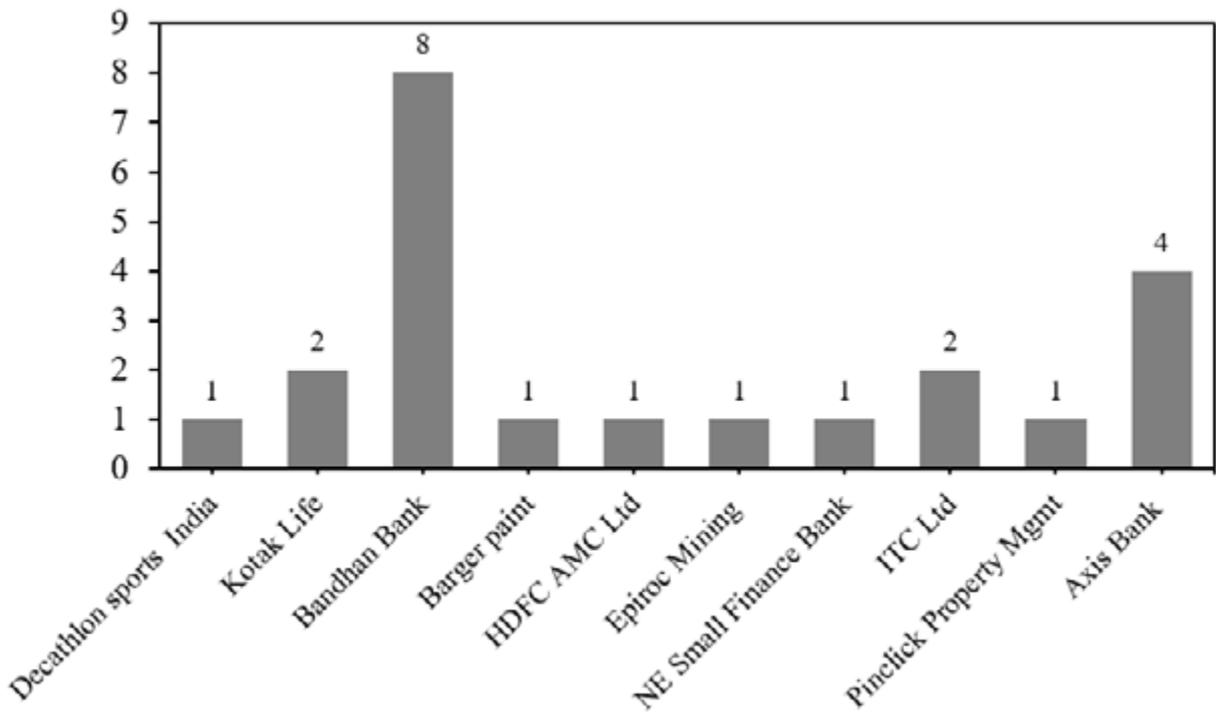


Fig: Placement statistics of MBA Department in 2019-2020

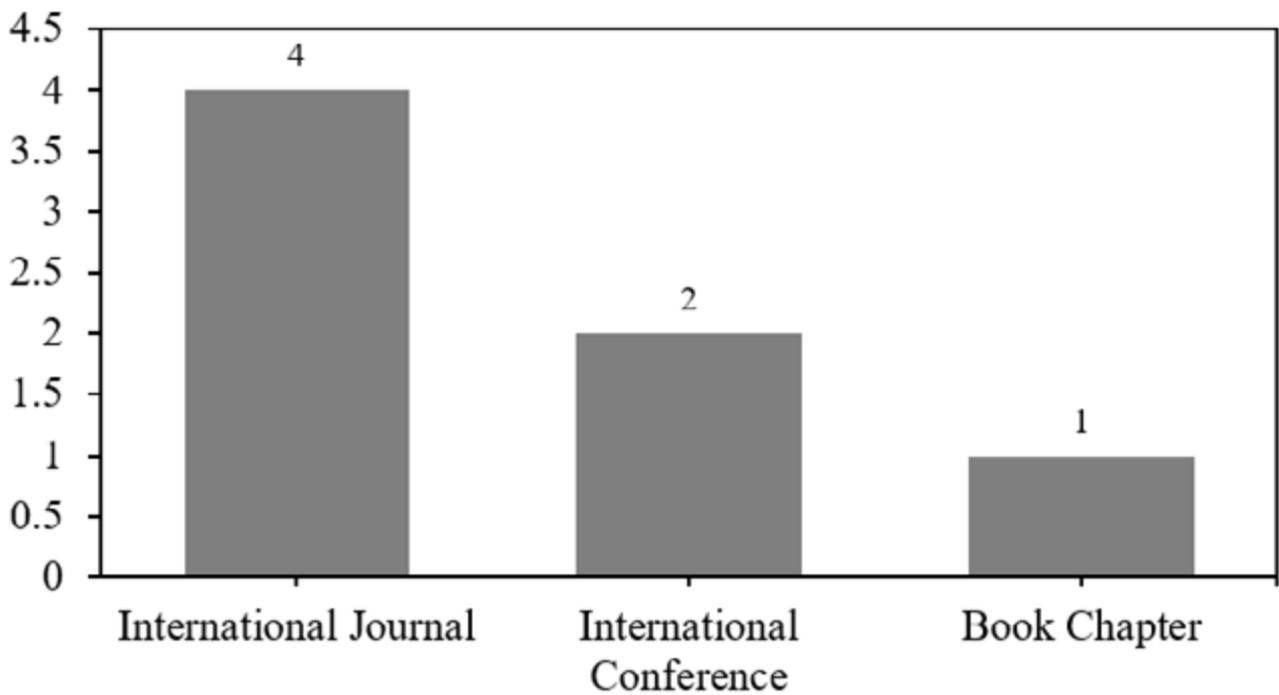


Fig: Publication details of the MBA Department in 2019-2020.

## 1.1 Academic Staff

**HEAD:** Dr. Ashim Kumar Das, Assistant Professor

**Name of Faculty members:**

Professor	Associate Professor	Assistant Professor
		Dr. Ashim Kumar Das
		Dr. Soma Panja
		Dr. Binoti Patro
		Dr. Saurabh Verma
		Dr. Rama Koteswara Rao Kondasani
		Dr. Tanaya Nayak
NIL	NIL	

**Visiting Professor (If any):**

1. Prof. (Dr.) Rajat Baishya, Retd. Professor, Department of Management Studies, Indian Institute of Technology Delhi.
2. CA Anil Jain, Chartered Accountant.

## 1.2 Distinction Achieved

a) **By Student:** NIL

b) **By Faculty Member:**

1. Dr. Soma Panja has received appreciation from the Indian Institute of Technology Bombay.

## 1.3 Seminars, Symposia, Short Term Courses, Workshops

a) **Conducted by Faculty Member:** NIL

b) **Participated by Faculty Member:**

Sl. No	Name(s) of the Coordinator	Title	Funding Agency	Duration
1.	Institute's Innovation Council of MHRD's Innovation Cell, AICTE held at Indian Institute of Science Education and Research, Kolkata, West Bengal	Pre-Incubations & Incubation Management	Innovation Cell, MHRD, Govt. of India	6 <sup>th</sup> -7 <sup>th</sup> March 2020.

## 1.4 Research Development

a) **Ph.D. Programme (Specializations):**

- Finance and Accounting
- Marketing Management
- Human Resource and Organisation Behaviour
- Entrepreneurship and Small Business Management
- Intellectual Property Rights

b) **Ph.D. Produced/Ongoing (in number):**

Completed	Submitted	Ongoing
NIL	NIL	16

**c) Research Lab/ Workshop:**

Sl. No.	Name of Lab/Workshop	Purpose/Linkage to an existing/new programme
1.	Research & Analysis Laboratory	To conduct research and data analysis lab for PG students and support doctoral research, R&D, and consultancy.

**d) Ongoing/Completed Sponsored Research Project:**

Sl. No.	Project Title	Principal Investigator(s)	Funding Agency	Cost in lakhs	Duration
1.	Innovation and Entrepreneurship Development Centre (IEDC)	Dr. Ashim Kumar Das	DST, Govt of India	50 lakhs	5 years.

**e) Research Paper Reviewed:**

Sl.No.	Name of the Faculty Member	Journal Name	No of Paper	Year
1.	Dr. Binoti Pato	Journal of Clinical Epidemiology and Global Health	01	Mar 2020
2.	Dr. Binoti Pato	Journal of Clinical Epidemiology and Global Health	01	Nov 2019
3.	Dr. Rama Koteswara Rao Kondasani	International Journal of Contemporary Management	01	Dec 2019
4.	Dr. Rama Koteswara Rao Kondasani	International Journal of Health Planning and Management	01	Mar 2020
5.	Dr. Tanaya Nayak	Journal of Asia Business Studies	01	Jan 2020

**f) Chairing of Technical Session:**

Sl. No.	Faculty Name	Details
1.	Dr. Rama Koteswara Rao Kondasani	Corporate Governance for the National Conference on Rethinking on Techno-Commercial Techniques and Ideas on 21st February 2020 by Supreme Knowledge Foundation Group of Institutions (SKFGI) Hooghly, West Bengal.

## 1.5 Publications

**a) International Journal(s):**

- Panja, S. (2019). Behavioural Dimension in Portfolio Optimization: An Analytical Exposition, Journal of Information and Optimization Sciences, Vol. 40 (8), 1653-1663.
- Verma, S. (2019). An Empirical Analysis of the Determinants of Phubbing Behaviour in India: The Millennials Perspective, International Journal of Innovative Technology & Exploring Engineering (IJITEE), Vol. 8 (12S), 806-812.
- Das, A.K. (2019). Insurance for MSME Development in Indian Context, International Journal of Innovative Technology and Exploring Engineering (IJITEE), Vol.8 (12S), 819-823.
- Das, A.K. (2019). Role of Insurance in the Development of India's Micro, Small and Medium Enterprises (MSMEs), Journal of International Business, Economics and Entrepreneurship, Vol. 4 (2), 60-65.

**b) International Conference(s):**

- Roy, P. & Patro, B. (2019). Financial Inclusion: A Holistic Approach. Seventh PAN-IIM World Management Conference (WMC) hosted by the Indian Institute of Management Rohtak.
- Patro, B. & Chatterjee, A. (2019). Education Sector - The new Gold Mine for Business-Focused Data Analytics: A Case study of Assam. ICORDS 2019. International Conference on Operations Research and Decision Sciences held at IIM Visakhapatnam

**c) Book/Chapter:**

- Verma, S. (2020). Green Perception and Sustainable Development: A Case Study of Silchar, Multidisciplinary Approach towards Sustainable Development. Pp. 285- 302. Bookwell Publishers, Delhi. ISBN 978-93-86578-49-5.

## 1.6 Consultancy Services: NIL

## 1.7 Major Equipment Acquired: NIL

## 1.8 Patent: NIL

## 1.9 Visits To Abroad

Sl. No.	Name of the Faculty Member	Name of the Conference/ Programme	Place	Date
1.	Dr. Ashim Kumar Das	International Conference on Advances in Technology, Management and Sciences (IATMS, 2019)	American University of Dubai, Dubai UAE	October 30 – 31, 2019
2.	Dr. Saurabh Verma	International Conference on Advances in Technology, Management and Sciences (IATMS, 2019)	American University of Dubai, Dubai UAE	October 30 – 31, 2019

## 1.10 MBA (Thesis/Project)

Sl. No.	Name Of The Student	Name of the Supervisor	Title Of The Project
1	Sukanya Sarkar	Dr. Saurabh Verma	A Study On Determining The Factors Affecting Customer Intentions Regarding Online Hotel Booking
2	Rubu Gogoi	Dr. Saurabh Verma	Determinants Influencing Consumer Buying Intentions Regarding SUVs In Guwahati
3	Jayabrata Dhar	Dr. Binoti Patro	Strategic And Financial Similarities And Dissimilarities Of The Banks During Pre-Merger Period And Their Impact On Post-Merger Performance Of The Merged Entity
4	Sotodru Dey	Dr. Rama Koteswara Rao Kondasani	Ecotourism In Nameri National Park: A Study Of The Relationship Between Tourists Perceived Value, Satisfaction And Loyalty
5	Hridkamal Biswas	Dr. Soma Panja	A Study On Financial And Comparative Analysis Of Selected Pharmaceutical Companies Of India
6	Abhishek Chatterjee	Dr. Saurabh Verma	The Impact Of Digital Nudging Techniques On Consumer's Attitude Regarding E-Advertisements On Facebook
7	Padmakshi Bhattacharjee	Dr. Saurabh Verma	A Study On Factors Affecting Consumers Perception Regarding E- Pharmacy
8	Juthika Acharjee	Dr. Binoti Patro	The Mediating Role Of Organizational Commitment On The Nexus Of Big-Five Personality Traits & Job Satisfaction
9	Sonika Sarda	Dr. Binoti Patro	Financial Performance Of Companies Pre And Post Merger: Evidence From India
10	Sneha Bhattacharjee	Dr. Saurabh Verma	The Impact Of Talent Management Components On Job Satisfaction: A Study On Banking Industry
11	Roit Kurmi	Dr. Rama Koteswara Rao Kondasani	A Study On The Factors That Influence Customer's Buying Decision For Areca Leaf Plate In Silchar.
12	Arumalla Pooja	Dr. Binoti Patro	The Impact Of Emotional Intelligence On Team Performance: A Case Of Indian IT Industry
13	Prasenjit Choudhury	Dr. Soma Panja	A Study On Impact Of FDI On Performance Of Automobile Companies Listed In BSE
14	Shikha Agarwal	Dr. Binoti Patro	A Study On Whether Stock Prices Are Driven More By Market Sentiment Than Fundamental With Special Reference To Indian Oil & Gas Industry

Sl. No.	Name Of The Student	Name of the Supervisor	Title Of The Project
15	Arpita Dey	Dr. Binoti Patro	The Impact Of HR Analytics On Recruitment And Selection In IT Sector
16	Nabadeep Borah	Dr. Rama Koteswara Rao Kondasani	Factors Influencing The Intention To Use Mobile Payment Apps
17	Bhargab Gogoi	Dr. Rama Koteswara Rao Kondasani	Psychological Pricing- A Study On The Factors Impacting Consumer Satisfaction
18	Palash Jyoti Borah	Dr. Binoti Patro	Impact Of Workplace Flexibility On The Wellbeing Of Employees With Special Reference To Reliance Jio Infocomm Ltd, Sibsagar
19	Jahidul Islam	Dr. Binoti Patro	Effectiveness Of Training And Development: A Case Study On National Institute Of Rural Development And Panchayati Raj – North Eastern Regional Centre(Nirdpr-Nerc) Guwahati, Assam
20	Uddipan Bharadwaj Bhuyan	Dr. Rama Koteswara Rao Kondasani	Unleashing The Potential Of Litchi Market: A Case Of Tezpur
21	Arundhati Atreya	Mr. Saurav Dey	A Study On The Factors Affecting Consumer Buying Intentions Towards Herbal Cosmetic Products In Silchar, Assam
22	Bishal Paul	Dr. Soma Panja	A Study On Financial And Comparative Analysis Of Selected Pharmaceutical Companies Of India
23	Swapneel Bora	Mr. Saurav Dey	A Study On Factors Affecting Consumer Intention Towards Purchase Of Electric Two-Wheeler With Special Reference To Guwahati City
24	Bishal Sinha	Dr. Soma Panja	A Study On The Performance Of NIFTY Derivatives And Relationship Between Open Interest And Futures Price
25	Sayantani Ghosh	Dr. Saurabh Verma	An Assessment Of The Factors Influencing Attitude Towards Entrepreneurship: A Study On The Students Of NIT Silchar
26	Lakhyajit Kalita	Mr. Saurav Dey	Customer Perception On E-Service Quality And Its Relationship With Customer Satisfaction: A Study On UPI Service Quality With Reference To Lakhimpur, Assam
27	Samiran Das	Mr. Saurav Dey	Study On Factors Affecting Purchase Decision Of Apparels On Online Shopping Consumers Of Silchar, Assam
28	Pradipta Nath	Mr. Saurav Dey	Comparative Study Of Service Quality - A Study Conducted In Select Govt. And Private Hospitals Operating In Silchar
29	Anshu Shailesh	Mr. Saurav Dey	A Study On Factors Affecting Customer Satisfaction Towards Patanjali Product In Patna City
30	Spoorthy Keyan Punna	Dr. Saurabh Verma	A Study On Determining The Factors Affecting Millennial Consumers Perception Regarding Over-The-Top Video Services
31	Subhankar De	Dr. Soma Panja	Analysis Of Microfinance Delivery Models Under Bank Credit Linkage In India.
32	Vivek Kumar Goswami	Dr. Soma Panja	Technical Analysis In Selected Indian FMCG Stocks Listed In BSE
33	Pawan Kumar Yadav	Dr. Soma Panja	Working Capital Management Of The Manufacturing Sectors In India: A Study On The, Maruti Suzuki, Ultra Tech Cement And JSW Steel
34	Tutu Moni Kashyap	Mr. Saurav Dey	The Role Of Rural Marketers In Promoting Tourism In Majuli
35	Tanima Mitra	Dr. Saurabh Verma	A Study On The Role Of Quality Of Work Life In Job Satisfaction Of Academicians Of Top 5 NITS Of North East India

Sl. No.	Name Of The Student	Name of the Supervisor	Title Of The Project
36	Rohit Suklabaidya	Dr. Binoti Patro	A Study On Relationship Between Competency Mapping And HR Deliverables In PSUs
37	Ziree Ziree Daimary	Dr. Soma Panja	Financial Performance Analysis Of India's Automobile, Fmcg, And Textile Sector Using Altman Z-Score Model Of Bankruptcy
38	Purnima Sharma	Dr. Ashim Kumar Das	A Study On Student-Based Brand Equity Of Teachers Of Ramanuj Gupta Junior College, Silchar
39	Antara Saha	Dr. Binoti Patro	A Study On Impact Of Career Plateau On Employees' Job Performance Of Private Sector Banks, Silchar
40	Archita Tarat	Dr. Soma Panja	A Study On-Time Weighted Portfolio Optimization
41	Shankhasubhra Bhattacharjee	Dr. Ashim Kumar Das	A Study On Factors Influencing Brand Image Of NIT Silchar
42	Debopriya Paul	Dr. Tanaya Nayak	Mental Health And Academic Performance: A Study On The Students Of NIT Silchar.
43	Anup Kar	Dr. Soma Panja	A Study On The Performance Of Selected Mutual Fund Schemes In India

## 1.11 Ph.D. Thesis: NIL

## 1.12 Social Outreach Activities

### Under Management Society, Department of Management Studies

Sl. No.	Name of the Event/Activity	Date
1	Guest Talk by Mr. Ketan Patel, Jalinga Tea Estate, Assam	7 <sup>th</sup> February 2020
2	Installation of dustbins at NIT Silchar campus in collaboration with Lions Club, Silchar Central	28 <sup>th</sup> January 2020
3	Drawing Competition at Borakhai High School on Swatch Bharat Mission.	26 <sup>th</sup> January 2020
4	Hunger Relief Camp in collaboration with Lions Club Silchar Central	10 <sup>th</sup> December 2019
5	Guest Talk by Mr. Biswajit Paul, Entrepreneur	8 <sup>th</sup> November 2019
6	Foundation Day of DOMS along with plantation drive in collaboration with Eco Club NIT Silchar and Guest Talk by Mr. Syed Mohsin Raja, Indian Institute of Entrepreneurship, Guwahati.	21 <sup>st</sup> August 2019
7	Annual General Meeting of Management Society along with cultural program Bosonte Bohag	8 <sup>th</sup> April 2019

# ACADEMIC CENTRES & CELLS

## CENTRAL COMPUTER CENTRE



### 1. Head /Faculty In Charge:

Dr. Saroj Kumar Biswas Assistant Professor-Grade-I & Faculty In Charge (Computer)

Dr. Ranjay Hazra Assistant Professor-Grade-I & Faculty In Charge (Networks)

### 2. Staff:

Officer	Technical Staff	Attendant
(i) Mr. Kumar Mithilesh, Senior Tech. Officer.	(i) Abhishek Palit (contractual), (ii) Rupak Ranjan Deb (contractual),	(i) Ms. Champabati Balmiki.
(ii) Mr. Manash Protim Mahanta, Tech. Officer	(iii) Nazmul Haque Laskar (contractual), (iv) Abinash Bhar (contractual).	

### 3. A Brief Introduction and Activities of CCC:

The Institute computing facility is maintained by the Central Computer Centre (CCC) which includes high-end servers and Intel Core-i5 and i7 based Personal Computers. The CCC comprises of two computer labs equipped with around 218 computers.

The state-of-art IT Infrastructure is deployed in the year 2013 and the whole Institute including the various departments, Students' Hostels, Administrative Building, Guest House, Library, Residential Quarters, Health

Centre, Estate Engg. Branch, SAC Building, NITS Café, are connected by a campus-wide LAN and Wi-Fi facility using high-speed Fibre Optic cables (1 Gbps). The LAN, Wi-Fi is managed by High-Level Switches, controllers, and Servers. The Switches are connected by Fibre Optic Cables to Switches located in different academic departments, students' hostels of the Institute. The Institute has a dedicated 1 Gbps leased line under the National Mission on Education through Information and Communication Technology (NME-ICT)/ National Knowledge Network (NKN), which provides 24x7 Internet Connectivity to serve the internet needs of Institution. So as a whole the institute is having three different internet service providers:

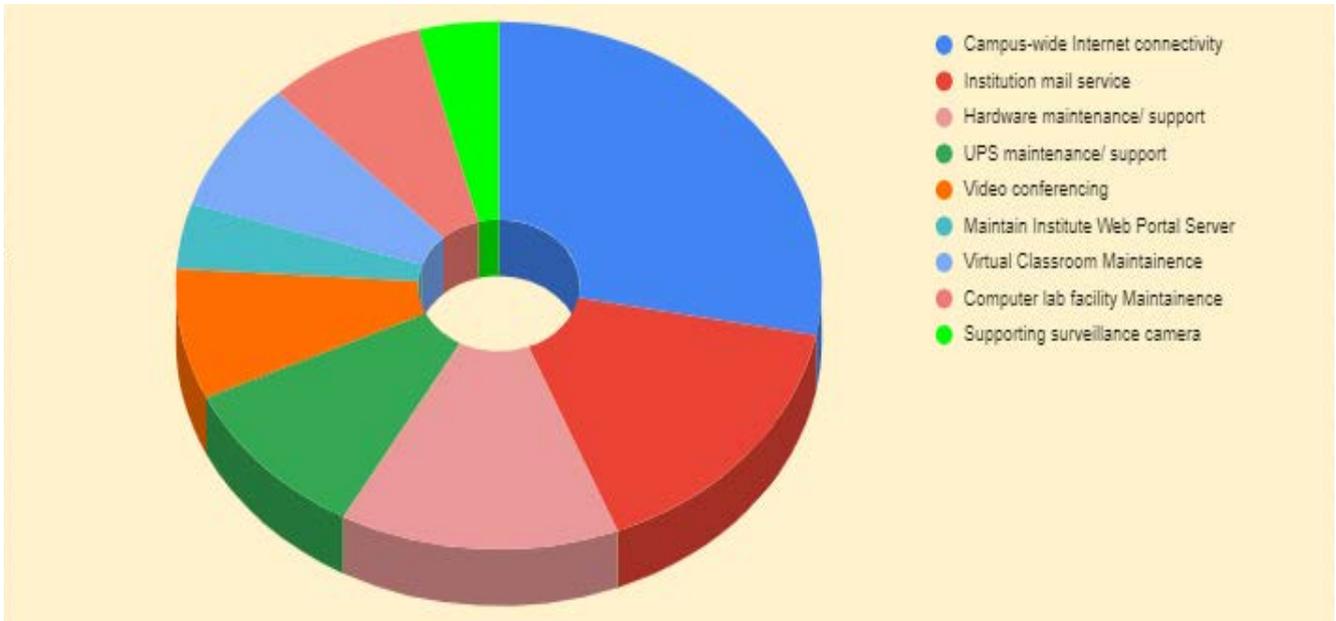
1. 1 GBPS high-speed PGCIL line caters to admin, academic, and quarters.
2. 1 GBPS high-speed NKN line caters to all student hostels.
3. 16 Mbps leased line from Bharat Sanchar Nigam Ltd. (BSNL), dedicated to DNS service and for backup purposes/

Currently, Wi-Fi connectivity is available at Guest House, Administrative Building, Lecture Hall Complex, all Residential Quarters, Health Centre, Estate Engg. Branch, SAC Building, NITS Café, Sports Complex as well as the departments. Network expansion still continues and work is going on for making the campus Wi-Fi by deploying more access points. CCC takes all possible steps in its capacity to make the network accessible round-the-clock. Efforts are conducted to improve the reliability of meeting the expectations of the end-users.

## 4. Facilities provided by the Central Computer Centre :

1. Campus-wide Internet connectivity: Providing / maintaining internet facility around campus through LAN and Wi-Fi on a required basis.
2. Institution mail service: Creating and looking after personal Institute mail of all employees and students. Institute e-mail Ids are served to all, under nits.ac.in domain. The center manages institute email accounts of faculties, students, and other staff members. Recently the center procured a G-Suite license free of cost and right now the institute email ID is running on top of a robust and highly available G-Suite service.
3. Hardware maintenance/ support: On the required basis, rectifying computer hardware issues over academic areas.
4. UPS maintenance/ support: Based on the requirement, providing UPS backup to active network components.
5. Institution web portal: The institute website is hosted in one of the servers of the central computer center and the center has to maintain the hosting server.
6. Video conferencing: CCC is equipped with the arrangement for supporting video conferences with MHRD, Rastrapati Bhawan, and live lecture series with other institutions, virtual sessions.
7. Virtual classroom: Through this virtual classroom, it is possible to interchange technical sessions/ discussions with other institutions. Around the year virtual classroom is used as a venue for many events (online/offline) such as conferences, workshops, GIAN courses, seminars, defense examination, etc.
8. Computer lab facility: Two labs are operated and maintained under the center
  - A) Training and Placement (T&P) Cell's activities,
  - B) Lab for common online examinations.
9. Supporting surveillance camera: Providing support on network and configurations for IP Cameras around the campus.
10. The center manages all the online meetings and provides Google to meet solutions to all the faculties and staff to run online classes/meetings smoothly.

## 5. Central Computer center at a glance



a) The Virtual Class Room; b) Online Meeting Conducted; c) The Lab Setup

# CENTRAL LIBRARY



## 1. Introduction

The Central Library is an integral part of the academic and research activities of NIT Silchar. It was set up in the year 1977 and it is one of the best technical libraries in North East India. It has been growing and expanding in the aspect of collection both in print and digital form since its inception and provides services to the academic fraternity of NIT Silchar to meet their teaching, research, and consulting training, and learning requirements. The range of services offered by the library is comparable to the best libraries in the eastern zone of India. During the year 2019-20, as a new development in the Dr. A P J Abdul Kalam Learning Resource Centre, Conference Room and Language Lab has been made ready for the users

**The key officers of the Central Library are:**

**Chairman**

Prof. S. Baishya, Ph.D.

**Faculty Advisor (Library)**

Prof. A. Roy, M.Sc. Ph.D.

**Assistant Librarian**

Ms. Krishnamati Singha, BSc, MLISc, MBA (HRM)

## 2. Collection Development

Collection building is one of the important functions of the library, which supports the academic and research activities of the students, faculty, staff, and other users. Collections of the central library are consist of printed books, CDs, printed journals, e-journals/databases, e-books, theses, dissertation, reports, standards, and other reading materials covering the areas of science, engineering, technology, humanities, social sciences, and management. The following table presents the collections of the library for the year 2019-20.

The total collection of the library as on 31st March 2020 stands as follows:

Sl.No.	Name of Resources	As on 31 <sup>st</sup> March 2016	As on 31 <sup>st</sup> March 2017	As on 31 <sup>st</sup> March 2018	As on 31 <sup>st</sup> March 2019	As on 31 <sup>st</sup> March 2020
1	Books	94319	96683	98959	1,05,883	1,09,990
2	Print Journals & Magazines	99	114	105	92	94
3	Bound Volumes	5468	5468	5468	5468	5768
4	CD-ROMs	4274	4297	4393	4612	4711
5	Databases	17	14	21	17	17
6	Videos	909	909	909	909	909
7	ISI Code (Printed)	8627	8627	8627	8627	8627
8	Book Bank (General)	9235	9235	9235	9235	9235
9	Book Bank (SC & ST)	8180	8180	8336	8336	8617
10	IRC Codes	152	152	152	152	152
11	Thesis	70	92	123	202	258
12	Project & Dissertation	365	425	474	699	1057
13	Reports/Annual Reports	399	423	449	488	500

A need-based collection of knowledge resources are developed keeping in mind the objectives and activities of the Institute.

### Printed Journals / Magazines

During the year Library reviewed the printed journals/ magazines and stopped subscribing 7 printed journals that were not utilized by the users and are now available on open access. All total of 94 printed journals & magazines were subscribed during the year 2019-20.

### Digital Resources: E-resource/database and e-book

Apart from the 13 databases provided by E-ShodhSindhu, NIT Silchar has renewed 17 databases/e-journals like ASTM, ACI, BIS Standard, IEEE/ IEL level 2, EBSCO-Business Source Elite, Emerald, Elsevier Science Direct (7 subjects collection), Indiatat.com, LNCS, Royal Society of Chemistry, SIAM (17 e-journals), Sage-EMS, Springer, Taylor & Francis and Wiley Engineering collection, and also has added IOP and EPW Research Foundation as new resources.

Further, NIT Silchar also procured the Research tools like Scopus and also purchased similarity check software like Turn-it-in.

In addition to the database/e-journals, Library also gets access to e-books from the major publishers like Elsevier, Springer, Pearson, Oxford University Press, Tata McGraw Hill, and Cambridge, purchased by NIT Silchar, World eBook library provided by NDL and South Asia Archive provided by e-ShodhSindhu. In 2019-20, Library has also purchased e-books from Sage E-Vidya and Sage Business cases for Management Department.

### Usage Statistics of Electronic Resources

Major electronic resources have shown a significant increase in use patterns. The most popular full-text databases are ACM, ASCE, ASME, Elsevier' Science Direct, IEEE/IEL – level 2, Springer Link, etc. Comparative data of the last four calendar years is given below:

#### Uses Statistics from 2016 to 2019

Sl. No.	Source	Year-wise download statistics			
		2016	2017	2018	2019
1	ACM	2090	1362	1678	4198
2	AIP		3403	3178	3088
3	ASCE	5902	11400	14617	3536
4	ASME	2762	2104	2162	1567
5	AMS	2230	2838	3740	1603

Sl. No.	Source	Year-wise download statistics			
		2016	2017	2018	2019
6	APS	455	1026	990	1299
7	Elsevier Science Direct	143521	179704	180469	214016
8	Emerald	3022	3888	5985	7571
9	IEEE- IEL level 2	40,314	94487	91306	55070
10	LNCS	12752	30400	32673	41,034
11	SIAM	229	280	317	348
12	Springer Link	17477	22142	22524	29548
13	Taylor & Francis	5714	7634	7828	11898
14	Wiley Journals	5424	5517	9361	9483

### 3. Budgetary Details

Central Library received a projected allocation of 5 crores under Plan-Head during the financial year 2019-20. Out of the allocation of Plan funds Rs. 29, 62,178.00 has been utilized for the purchase of books and Rs. 2,85,54,281.00 has been utilized for renewal as well as the subscription of database/e-journals and the purchase of e-books. The comparative statement of detailed expenditure incurred on books, journals, newspaper, binding, etc. for the year 2015-16 to 2019-20 is given below:

#### Details expenditure:

Year	Books	e-Books and archive of e-Journals	Printed Journals/ Magazine	Online Database/ e-Journals	Contingency/ DOC	Newspaper
2015-16	20,63,132.00	—	1,94,533.00	2,49,63,597.00	1,33,980.00	20,072.00
2016-17	17,05,851.00	70,558.00	—	—	32,295.00 & Rs. 3,51,475.00 for AMC of equipment	—
2017-18	25,74,764.00	1,03,55,883.00 (TEQIP III) 87,72,895.00 (Institute Fund)	2,80,098.00	4,33,65,076.52	1,51,343.00	—
2018-19	45,80,623.00	84,20,372.00	1,99,640.00	2,62,09,858.00	2,09,826.00	3,350.00
2019-20	29,62,178.00	5,04,498.00	—	2,85,54,281.00	1,72,163.00	15976.00

### 4. Membership

The Library memberships are provided to all students, staff, and faculties. The following table reflects the growth of library users:

Sl. No.	Members	2015-16	2016-17	2017-18	2018-19	2019-20
1.	BTech	2340	2458	2460	2510	2788
2.	MTech	394	423	430	425	407
3.	MBA	101	97	83	59	81
4.	MSc	42	35	39	55	63
5.	Ph.D.	263	284	516	695	782
6.	Academic Staff (Teaching)	165 (including Contractual)	166 (including Contractual)	181	197	205
7.	Non-Academic	130	108	59	55	76
<b>Total</b>		<b>3475</b>	<b>3631</b>	<b>3768</b>	<b>3996</b>	<b>4402</b>

## 5. Library Services

### Circulation service

The book circulation service is kept open for 48 hours a week. The Library issued 25845 numbers of books during the year 2019-20.

### Resource Sharing

The library maintains excellent relations with libraries like the Central Library of Assam University, and other local college libraries in Southern Assam and also with DELNET for the exchange of books, journals, photocopies, etc for the mutual benefit of the users. Library provides resource sharing service through inter-library loan and document delivery services. The library has a core membership of E-ShodhSindhu, and NDL.

### Book Bank facilities

The library maintains a book bank facility to help students belonging to Scheduled Castes, Scheduled Tribes, Physically Challenged, and economically weaker sections of the society. The book bank mainly consists of the prescribed textbooks for undergraduate courses and loans up to 5 to 7 books each to these students for a full semester and sometimes more depending on availability. During 2019-20, around 500 students availed this facility and borrowed 4850 books from this collection.

### Lib 2.0 SERVICES

Library users can get the latest updates/happenings in the library through our library blog at <http://library-nitsilchar.blogspot.com/> and get connected through our Facebook page at <https://www.facebook.com/Bharat-Ratna-Dr-A-P-J-Abdul-Kalam-Learning-Resource-Centre-NIT-Silchar-104491118036811>. Central Library has created a web portal for e-resource management, which provides web-based access to its electronics journals, e-books, and databases. It has set up a digital library & e-learning portal for the NIT, Silchar community. The library is a part of the institute-wide network and has adequate computing infrastructure to cater to the needs of the users.

### Web OPAC (Search Library Catalogue)

The entire Library collection including books, journals, CDs, etc. can be searched through the web-enabled Online Public Access Catalogue (OPAC). Users can access the OPAC to find out the real-time availability of library materials from their computer terminals from the library of institute website or the URL is: <http://10.30.30.66:8001>

## 6. Library Orientation & Training

### Library Orientation for fresher / user's education

The library has taken key initiatives for the 'user's education programme' to inform, educate, and train users about various resources and services of the library. In addition to that library organizes orientation programmes for the benefit of library users.

## 7. Manpower Development

The library has a small team of talented and dedicated staff to perform their duties and responsibilities with dignity and honesty. In addition to their regular jobs, most of them are involved in various academic activities like attending workshops, presenting papers in various journals, seminars, and conferences, etc.

### Conference / Meeting Attended

- **Mrs. Krishnamati Singha** participated in the NDLI-UNESCO International Symposium on Knowledge Engineering for Digital Library Design (KEDL 2019) in IIT Delhi from 9<sup>th</sup> to 11<sup>th</sup> December 2019
- **Mrs. Krishnamati Singha** attended the "The International Conference on Next Generation Libraries-2019 (NGL-2019) on New Trends & Technologies, Collaboration & Community Engagement,

Future Librarianship, Library Spaces & Services from December 12-14, 2019 at the National Institute of Technology, Rourkela, India.

**Paper Published**

- **Singha, Krishnamati & Satpathy, K.C.**, “Waste elimination and management: A mantra for effective space management in libraries with a practical approach of Central Library NIT, SILCHAR” ed. Gunjal, Bhojaraju [et.al] (New Delhi: ESS ESS Publications), 2020: 414-428. (ISBN 9789387698338).
- **Parabhoi, Lambodara & Dey, Swarnika**, Open access repositories: A Global perspective with a special emphasis on India and China, Library Herald, Vol. 57 (3), September 2019: 342-352. (DOI: 10.5958/0976-2469.2019.00020.4)
- **Parabhoi, Lambodara; Bhattacharjee, Hrituparna; Dey, Swarnika** Library and Information Science Research in East and North-East India, July 2019, Lambert Academic Publishing, (ISBN: 9786139446643).

# CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING C-DAC, SILCHAR

The 11<sup>th</sup> centre of C-DAC, the premier R&D institution of the Ministry of Electronics & Information Technology, was set up in NIT, Silchar in 2014. This centre runs independently by C-DAC as the nodal agency for the proliferation of C-DAC technologies, and capacity building in the North East.

It has jointly carried out several programs with NIT, Silchar, viz.,

- (1) Project proposal “Development of an affordable screening system for retinal pathology through retinal fundus image” with ECE Department submitted to IMPRINT-II
- (2) Project proposal “Prime Factorization of a large integer using Repronta Arithmetic” with the ECE Department submitted to SERB.
- (3) Project proposal “Development of flood prediction system with Big data analytics and IoT in Cachar district” with CSE and Civil Engineering Dept. prepared for submission to MietY
- (4) C-DAC offered Summer Internship program for 2 months for the students of NIT Silchar. 18 students from NIT Silchar participated.
- (5) CDAC also offers 4 months Cybershikshaa training program for women engineering graduates. 15 students from different NE states including 5 students from NIT Silchar successfully completed the first batch of the course completed in Jan 2020.

Besides these, C-DAC implements e-Governance projects for governments of NE states, notable among them being

- (1) Deployment of DVDMS (Drug & Vaccine Distribution Management System) in the NE states
- (2) Deployment of NERS (National Emergency Response System) in the NE states
- (3) Deployment of eHRMIS (Online Human Resource Management and Information System) in NE states.

Other notable projects deployed by CDAC in NE states are:

- (1) Arts and Crafts portal for North East artisans
- (2) Mobile app for North East artisans
- (3) Forest Fire Detection in India’s North-East states. CDAC Silchar is also a certifying agency for 8 NE states for PMGDISHA evaluations.

Till March 2020, more than 512770 candidates were proctored.



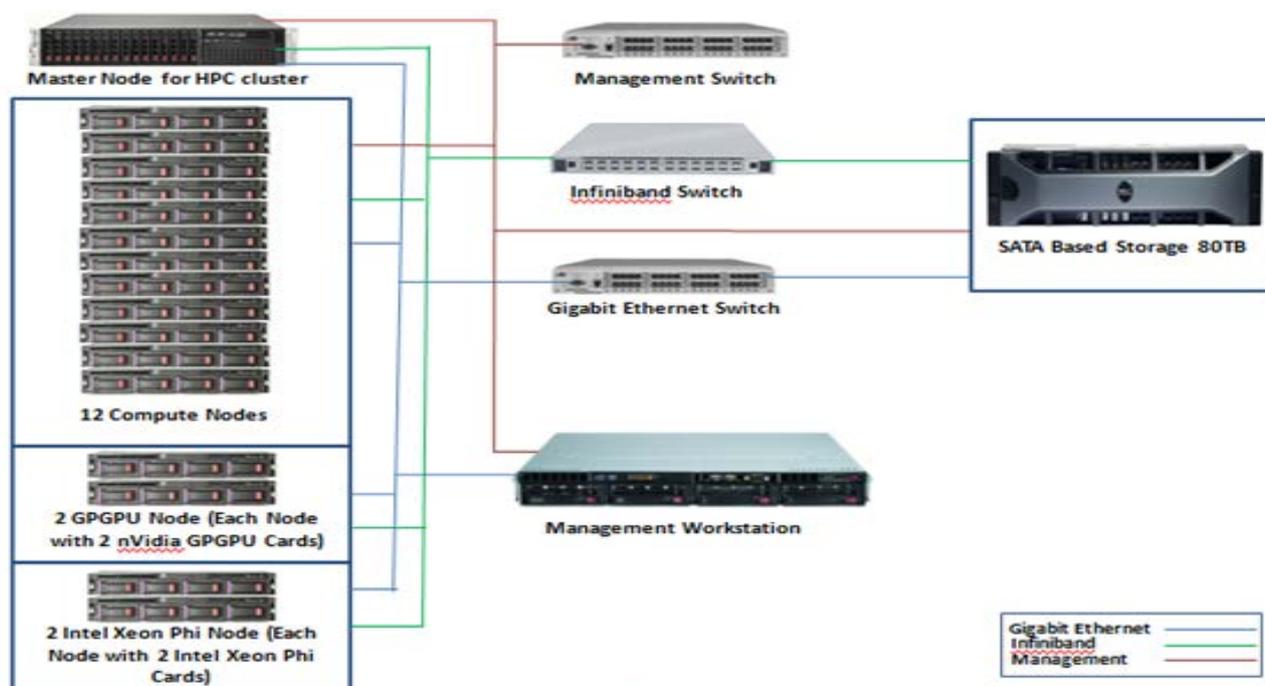
*Cybershikshaa Course*

# SUPERCOMPUTING CENTRE

NITS Supercomputing Centre, *The Centre of Excellence in High-Performance Computing (HPC)* was established on 05<sup>th</sup> April 2014 at NIT Silchar in technical collaboration with C-DAC, Pune by signing MoU. It was built with x86\_64-bit Intel Ivy Bridge processing and Accelerators (Intel Xeon Phi and NVIDIA Kepler Co-processing) technologies with a computing power of 15 Tera Flops. The HPC Centre comprises of one master node, sixteen compute nodes with NVIDIA GPU, Intel Xeon Phi Accelerators, and 84 TB storage capacity connected by a storage node, management node, and InfiniBand of 56 Gbps connectivity. It has been used on high priority by the UG/PG/Ph.D. scholars of NIT Silchar and other institutes of North East India in the area of Computational Science and Engineering Research and also highly acknowledged through high impact research publications. The project was proposed by Dr. T. R. Lenka, Coordinator, HPC entitled **“Capability building through Internship Scheme for UG/PG/Ph.D. Research students of recognized universities/institutes in North-Eastern India for strengthening research and development using HPC Technologies”** were approved by C-DAC North East Steering Committee for 2 Years (2016-2017). It covered an internship of 50 students from North East Technical Institutions with a stipend of Rs. 5000 per month for two months during their summer internship at C-DAC, Pune. The UG students of NIT Silchar are regularly undergoing summer internship on HPC Technologies at C-DAC, Pune since 2014 as per MoU signed.



## Architecture of NITS Supercomputer



## INSTITUTE INNOVATION COUNCIL (IIC)

Under the MHRD Innovation Cell (MIC) Institute Innovation Council (IIC) is established with the purpose of systematically fostering the culture of Innovation and support entrepreneurial activities among the students of the institute.

### Major focus of IIC

- To create a vibrant innovation ecosystem in the institute.
- To create a Start-up supporting Mechanism within the academic framework.
- Prepare institute for Atal-Ranking of Institutions on Innovation Achievements Framework.
- Establish an inclusive Ecosystem for Scouting Ideas and Pre-incubation of Ideas.
- Develop better Cognitive Ability for Technology Students.

### Functions of IICs

- To conduct various innovation and entrepreneurship-related activities prescribed by Central MIC in a time-bound fashion.
- Identify and reward innovations and share success stories.
- Organize periodic workshops/ seminars/ interactions with entrepreneurs, investors, professionals, and create a mentor pool for student innovators.
- Network with peers and national entrepreneurship development organizations.
- Create an Institution's Innovation portal to highlight innovative projects carried out by the institution's faculty and students.

- Organize Hackathons, idea competition, mini-challenges, etc. with the involvement of industries.

Under the IIC there are a) Start-Up Centre, b) E-Cell, c) Innovation Lab

## Startup Centre

NIT Silchar has established a Startup Centre to provide an inclusive platform to the young student entrepreneurs with state of art infrastructure facilities to culture their idea and grow. The centre hosts some early student startups and provides them with required facilities such as the Internet, Electricity, Seminar Hall, Desk for thinking, and developing their products. The laboratory and other technical resources available in various departments are made available to the startups according to their requirement. Presently there are 04 student startups and 02 local entrepreneurs working under the startup centre. There are few early startups who are offered co-space in the startup centre.

## E-Cell

Entrepreneurship Cell (E-Cell) NIT Silchar is established with an aim to act as a link between the students and their entrepreneurial aspirations. It functions to bridge the gap which comes in the path of success for a budding entrepreneur by equipping him/her with the relevant skill-set required to excel in the market.

E-Cell NIT Silchar has organized numerous events, competitions, real-time pitching simulations, Business-plan models, and market-trade analysis scenarios to name a few. E-Cell focuses to create the right eco-system of entrepreneurial activities in the institute. As part of the activities, E-cell promotes peer collaboration with other E Cells from IITs/NITs/Universities and Incubation Centres.

Some of the notable events and competitions which E-Cell NIT Silchar organized successfully during 2019-2020:

### 1. Empresaario:

E-Cell Nit Silchar organized Empresaario which is an entrepreneurial completion where the aspiring entrepreneurial minds of the institute demonstrate their skills and ability in creating value addition to products and managerial skills through various events. The purpose of the event is to equip the students with best practices and keep them aware of the know-hows of industrial management and strategy making. Under Empresaario the following events are organized;



- **Pitch Please:**

A real-time simulation event for the entrepreneurial minds wherein students pitches their mind-boggling ideas in front of the judgment panel along with the audience. This event was aimed at targeting and honing the influencing aspect required in any Entrepreneur which is needed in times of presenting their ideas before others.

- **If I Were the CEO:**

An online event where the participants were asked to step into the shoes of the CEO of a leading multinational company in order to provide a real, applicable solution to the specific problem being faced by that company/startup. This event required solving of some of the unique as well as original questions which appears before the CEO.

- **Plantastic:**

A two-stage event where part 1 comprised of a quiz consisting of questions from the trending concepts of market, business, economics etc. The participants who cleared part 1 were able to participate in part 2. Here they had to design a fully-functional Business-model about a specific issue but in less than 24 hours.

- **Bech Ke Dikhao:**

An event full of fun and frolic where the participants had to sell virtually useless products such as torn clothes, used bottles, broken umbrella, etc. It required thinking out of the box approach so as to convince the audience to buy that particular product (virtually). The participation was huge and people were very enthusiastic about the uniqueness and the fun aspect of this event.

## 2. Interaction Video:

An interaction video was shot by the team of E-Cell NITS inside the campus itself. The host asked various simple yet not-much-thought-about questions to the students of various disciplines and programmes of our college. It was really amazing to see the responses of the students and their opinions about the various issues happening around the world of business, trade, and startups.

## 3. Orientation:

E-Cell NITS conducted its orientation programme for the freshmen of our campus to make them aware of the existence of E-Cell NITS and its achievements in the past. It highlighted the students about the need of building startups, having an entrepreneurial bent of mind, various aspects of taking risks, learning, and growing in the process. The session was witnessed by a hugely enthusiastic audience and they also got many of their doubts cleared in the session.

## 4. Orientation Quiz:

The orientation was followed by a two-round Quiz comprising questions related to various aspects of business, startups, trending terms of the industry market, and some general knowledge. It was heartily accepted by the students and they participated wholeheartedly in the Quiz.

## 5. Srijan 1.0 – Event Report

The National Innovation and Entrepreneurship Summit, named as Srijan 1.0, in association with Institute Innovation Cell 2.0 and E-Cell NIT Silchar, was one of the biggest entrepreneurship summits witnessed in the North-east region.

Srijan 1.0 aims to bring an inclusive ecosystem for entrepreneurship activities among students and develop managerial aspects among them. We wholeheartedly intend to spread the spirit of entrepreneurship and motivate and educate people about the same.

The proceedings began with on a high note with the Inauguration and a guest lecture by Mr. Vivek Podder on the 8th of November. The main events started on the 9<sup>th</sup> of December, with the flagship pitching competition and a detailed Stock Market workshop.

A wonder-filled guest lecture by Mr. Arijit Bhattacharjee was the highlight of the day. The day ended with Business Quiz by quizmaster Mr. Abhra Das and a warmth-filled bonfire chat night.

The last day witnessed more competitions like IPL Auction and Business Model Canvas competition followed by a guest lecture by Dr. Sabyasachi Mukhopadhyay followed by Mr. Pranjal Konwar.

NIT Silchar inked an **MOU** with **Assam Startup -The NEST** to develop the entrepreneurial environment in the institute. The event ended on a fun-filled note by Stand-up comedy act by Mr. Kishore Dayani and Networking Dinner.



*Some glimpses of Srijan 1.0*

## 6. Success Story :

As part of the IIC events, we organized the Success Story program where prominent successful entrepreneurs from the local region are invited to interact with the students and share their practical experience to equip the young minds with ideas and methods to develop a sustainable startup. It also helps them to create a peer network for growth and benefits.

We have organized two Success Story programs in the reporting year:

**SS 1.0: Mr. Supratim Bhattacharya**, Pratyaksha Agrotech Pvt. Ltd. Who is a local entrepreneur who is very successful in his venture of tissue culture mainly of banana, potato, and some medicinal plants at Silchar. He has been able to receive venture funds from both private and Government organizations for scaling up and growth. The firm is growing very well and is supplying cultured tissue of various plants in different parts of the country.

**SS 2.0: Raushan Farhan**, an alumnus of NIT Silchar and IIM Shillong was invited to interact with the enthusiast students. Roshan Farhan made it to the list of The Economic Times Young Leaders 2019. He is the first alumni from the institute to make it to the final list of 46 corporate executives who were declared winners in the seventh edition of the Young Leaders Programme. The ET Young Leaders is India's largest and definitive platform for emerging business leaders to fast-track their careers. The latest edition of the programme saw nearly 26,000 working professionals competing for a spot in the coveted ranking of India's future leaders. Roshan Farhan was a student from B. Tech, Computer Science Class of 2012, and had been a member of the founding team of the institute's AIESEC chapter, which also happened to be the first AIESEC chapter in entire northeast India.



*Weekly Events: E-Cell organized weekly events with various interaction, training*

## Smart India Hackathon (SIH-2020):

With a grand success of winning two Gold medals in SIH-2019, in SIH 2020, there are 11 teams (08 in the Software section and 03 in the hardware section) who have submitted their solution proposal for various problems as raised by Government and industrial organization



*SIH 2019 winner's certificate*

NIT Silchar has conducted Internal Hackathon for SIH 2020 on 15-16 February 2020.

32 teams from the Institute registered for the event in Hardware and Software category. In final scrutiny, 08 software teams and 03 hardware teams were selected and recommended to compete in the SIH 2020.

Out of 08 software teams, 04 teams got shortlisted by MHRD's MIC for the Grand finale of the Software edition of Smart India Hackathon 2020.



*Internal Hackathon for SIH-2020*

# Hackathon: NITS Hacks 3.0

Throughout the academic calendar, various societies such as IEEE ComSoc, IEEE EDS SBC, ISTE, AMSE, Robotics Club, Coding Club, ML Club, etc. organizes various technical weeks with diverse technical round covering multiple domains of STEM. They also organized technical hackathons within the institute.

However, IIC in association with TEQIP-III have organized some National level Hackathons in the reporting year.

1. NIT Silchar has conducted its 3rd version of the national level Hackathon named NITS: HACKS 3.0 during 1-2 February 2020 where more than 25 teams comprising of more than 100 students across the country have participated in the event with their ideas. This year the theme was Emergency Communication Technology. NIT Silchar has bagged the first prize in the competition.
2. In collaboration with ASSAM STARTUP HUB NEST, a MeitY TIDE 2.0 Techathon- X1 was organised at NIT Silchar where 16 Teams from various universities in NER have participated. It was a hardware cum software Hackathon where participants have to develop a product prototype to address some pressing problems in NE. A team that has devised a hardware spectacle for the drivers to avoid accidents that occurred due to the doziness of the drivers.

## Anveshan

With the aim to promote and foster a spirit of research and inquiry in the youth of the nation the Association of Indian Universities (AIU) initiated its annual Student Research Convention called Anveshan. For the event, AIU invites original project proposals from the students all over the country. The event held in three stages: Institutional, Zonal, and National.

As part of the institutional level of this year's iteration of Anveshan, NIT Silchar was organising its own research convention, Anveshan 2.0 NIT Silchar. This was the second institute level Anveshan being organised in NIT Silchar. The aim was to identify the students of the institute with innovative research ideas that tackle current problems of the nation and give them a platform to present their ideas to experts and to their peers. The 3-day event was held from 10<sup>th</sup> to 12<sup>th</sup> January 2020 in the Guest House Auditorium at NIT Silchar.

The student community of NIT Silchar had been invited to submit original project proposals as individuals or as groups. Shortlisted projects were asked to present their proposals in front of a panel of experts. A total of 271 students were participated in the event. These students collectively presented 75 project proposals. These projects include 31 proposals submitted from all levels i.e. UG/PG as part of Anveshan 2.0 and 44 proposals submitted entirely from B.Tech students as part of the Undergraduate Research Council (UGRC). 21 of the Anveshan proposals and 21 UGRC proposals were presented as oral presentations. 10 of the Anveshan 2.0 proposals and 23 UGRC proposals were presented as poster presentations, with posters being presented in the New Administrative Building. Additionally, there were 197 Ph.D. students of NIT Silchar who presented their Ph.D. research as posters in the poster presentation session.

These presentations were judged by a panel of 3 external experts. The project presentations were judged based on various criteria such as skill, creativity, etc. The best five proposals were move on to present their ideas at the Zonal level and potentially to the National level.

The external experts had been invited from three of the most prestigious institutes of the country.

**Prof. N. C. Shivaprakash** is the Chief Research Scientist at the Department of Instrumentation and Applied Physics at IISc Bangalore. His fields of interest include Electronic Instrumentation, Analytical Instrumentation, Embedded systems, and Development of a high-pressure DTA and its applications, etc. He has published and presented **over 150 papers** in reputed International and National journals and conferences. He is a Fellow and member of several professional bodies including the senior membership of IEEE (USA), Fellow of Institution of Electronics and Telecommunication Engineers, Fellow of Institution of Engineering and Technology, Fellow of

Instrument Society of India. He has been serving as a Chairman/member of Governing councils, Senate and academic councils of Universities and Institutions.

**Dr. S. Raghavan Professor** (H.A.G.) in Electronics and Communication Engineering Department, National Institute of Technology (N.I.T.), Trichy has around 40 years of teaching and research experience. His interest includes Microwave Integrated Circuits, RF MEMS, BioMEMS, Metamaterial and Microwave Engineering. A proud research scholar of Prof. Bharathi Bhat and Prof. S K Koul, CARE, IIT Delhi, has established state of the art Microwave Integrated Circuit and Microwave Laboratory in N.I.T., Trichy with the help of Govt. of India funding. Short time visiting Fellow at California State University, North Ridge, USA. Awarded to conduct Tutorial in APPEC 2010, Beijing, China. Organizing Chair of 'Indian Antenna Week 2014', Chandigarh. Invited to be a session chair in PIERS 2013 symposium Taipei, Taiwan.

**Prof. Amit. Roy. Chowdhury** is a professor in the Department of Aerospace Engg & Applied Mechanics. His area of specialization includes Finite Element Method, Solid Mechanics, Biomechanics The internal experts are Prof. Sivaji Bandyopadhyay, the esteemed Director of NIT Silchar, and Prof. A. I. Laskar, Professor at the Department of Civil Engineering at NIT Silchar. He has also been serving as a professor of Applied Mechanics in the Bengal Engineering & Science University, Shibpur, Howrah since 19-11-2012. He served as a Visiting Assistant Professor at the State University of New York (SUNY), Brooklyn, New York, the USA from 2008 to 2009. He was also a Senior Engineer at Research Engineers Ltd. from 1996 to 1997.

This event inspired the students to further cultivate their creativity and ideas through research.



## SAE BAJA

Team **TWARAN** of NIT Silchar has been participating in all India **SAE Baja** 2020 competition organized by Mahindra and Mahindra Group at NETRIP Indore. This year our team has secured 61st position in the virtual round held in Chandigarh where 287 institutes have participated. The team **TWARAN**, NIT Silchar has performed very well in the final round receiving accolades from other institutions. It is worthy to note that two of the team members from **TWARAN**, NIT Silchar received a placement offer from the Mahindra & Mahindra group.



# INSTITUTE-INDUSTRY PARTNERSHIP CELL (IIPC)

To keep up with the increasing demand of Industry Ready Professionals and establish the Institute as a research-oriented centre of excellence, NIT Silchar thrives hard to establish Institute-Industry Collaboration. The Institute. Industry collaborations have been executed in various modes, such as Testing, Consultancy Project, and Joint Research Project, etc. Various MoUs are signed for a fruitful Institute-Industry Collaboration. One audit course titled "Off-Highway Vehicle" is developing in collaboration with NASSCOM and TATA Technologies.

# UNDERGRADUATE RESEARCH COUNCIL (UGRC)

UGRC is constituted with one member from each Department ( Dr. Arup Goswami, Dr. Ranjay Hazra, Dr. Koushik Guha, Dr. Malaya Dutta Borah, Dr. Susmita Ghosh, Dr. Sukumar Pati ) and Coordinated by Dr. Brinda Bhowmick. The advisor of the Committee is Padmasree Ajay Ray and Chairperson is Director of NIT Silchar.

This council basically considers the attendance issues of the undergraduate students, counseling of students who got backlogs, Summer Internship calls at NIT Silchar, and call for proposal of the Research projects. UGRC helps to motivate the UG students to solve real-world problems and to pursue research activities. This year 43 undergraduate research proposals were received from the UG students and approved to get financial support of maximum Twenty five thousand rupees. The broad area of the research proposals was decided by UGRC members and are listed below:

1. Crop disease solution
2. Lithium ION battery
3. Solar cell
4. Landslide detection
5. Medical image processing
6. Analysis of Impurity of water
7. Tea leaf processing etc.

These project proposals were presented in front of External experts during Anveshan.

UGRC has called for Satyendra Nath Bose Summer Internship Programme at NIT Silchar for the very first time during May to June 2020. During the COVID period many Internal and external students are performing online Summer Internship projects under the faculties of various Departments.

# INDOVATION

## Activities Promoted Through Indovation Lab

### 1. Participation in BAJA competition SAE India 2020.

**Title:** Design and Development of All Terrain vehicle for BAJA SAE 2020

**Mentor:** Dr. Bipul Das, Assistant Professor, Department of Mechanical Engineering.

**Student Members:** Soumyadeep Paul, Vikas Lamba, Saikat Sutradhar, Nishant Kumar Gupta, Rohan Chiring, Dupal Jit Das, Tanaz Ahmed, Priyam Bharadwaj, Vivek Seal, Sanju Paul, Amit Kumar, Prachi Triptahi, Gyan

Prakash, Atanu Paul, Shivang Pandey, Arpit Kumar, Gituraj Saikia, Ashutosh Shukla, Shubham Joshi, Rituraj Choudhury, Abhimanyu Pratap Singh, Hrishav Dey, Nihal Surolia, Vishwash Singh.

A four-wheeler ATV was fabricated by team members consisting of 3rd and 4th-year students of various departments. The event was organized in the month of January 2020 at Indore. In the competition, more than 50 teams have participated in the track events of SAE Baja 2020. A virtual round was also conducted at Chitkara University at Indore. The team secured a rank of 27th position.

2. **One Day Awareness Program “On Intellectual Property Rights for Innovators”** was organized on 7th March 2020

The program has been coordinated by Dr. Yogesh Singh and Dr. Bipul Das, Assistant Professor, Department of Mechanical Engineering.

The invited outside speaker was Mr. Sandeep Aggarwal, Director, and Cofounder, Adastra IP, New Delhi.

In the Awareness Program a total of 42 in-house participants have participated.

3. **Outreach Programme “Assam Start-Up” to promote entrepreneurship awareness** in NIT Silchar District Industries & Commerce Centre, Cachar, Silchar, was organized in March-April 19 at Start-Up Centre, NIT Silchar. Chief Operating Officer Mr. Pranjal Konwarhad delivered an expert talk on this activity.

The event was Co-ordinated by Dr. Wasim Arif Assistant Professor, Department ECE.

4. **“My Story”** event was held on dt 25.09.2019 at 3.00 PM at Start-Up Centre, NIT Silchar, in association with IEDC and IEEE ComSoc. The event is a part of innovation and Entrepreneurship activities in the institute under institute innovation Cell (IIC-2.0).

Mr. Supatim Roy Choudhary, Founder of Pratyaksha Agrotech Pvt. Ltd and is a local innovator cum Entrepreneur who shared his success story. The event was Co-ordinated by Dr. Wasim Arif Assistant Professor, Department ECE, and Dr. Ashish Deoghare Assistant Professor, Department of Mechanical Engineering.

5. **A machine learning model for psychological stress indication**

Team Members: Sunny Ujlan, Dr. Ashish B. Deoghare, ME Deptt. NIT Silchar

A model based on the concepts of machine learning and heart rate variability, data of which was collected from the electrocardiogram, is developed to indicate the stress plot of individuals on the electrocardiogram plot when a person sits on a chair stationary during the data collection. This will help in the early identification and intervention of mental disorders developed due to being in a continued state of stress.

6. **Mechanical characterization of silicon, boron and nitrogen-doped graphene with single vacancy defects**

Team Members: Dhruvil Purohit, Dr. Ashish B. Deoghare, ME Deptt. NIT Silchar

Graphene has a wide range of applications in nanocomposites, nano transistors, nano sensors, nano electronics and Micro/Nano electromechanical systems (M/NEMS) due to its unique properties. The dopant atoms namely silicon, boron, and nitrogen are proved to be efficient in improving the semiconducting and electrical properties of graphene and thus its performance in nanoelectronics and nanodevices. But these dopant atoms also disrupt the ideal carbon atoms sp<sup>2</sup> hybridization in graphene that can deteriorate its extraordinary mechanical properties. Along with these dopant atoms, there are inherent unavoidable defects generated in graphene that may majorly affect its mechanical properties. Therefore in the present work, Molecular dynamics simulations have been used to study the effects of different dopants atoms with varying doping and defect concentrations, on the mechanical properties of a monolayer graphene.

7. **Modeling of Differential Electromagnetic Transducer of Implantable Middle Ear Hearing Devices**

Team Members: Chayad Barbhuiya, Dr. Ashish B. Deoghare, ME Deptt. NIT Silchar

Modeling of Differential Electromagnetic Transducer (DET) used in implantable middle ear hearing devices with similar frequency characteristics of those of a normal middle ear is done. The electromagnetic force

and torque to be induced on passing current are determined using finite element analysis. In addition, to find the frequency vibration characteristics of the membrane and various stresses induced in the membrane, a dynamic analysis simulation is performed.

**8. Fabrication of Aluminum-based hybrid metal matrix composite and their Tribological study for brake disc application**

Team Members: V. S. S. Venkatesh, Dr. Ashish B. Deoghare, ME Deptt. NIT Silchar

Automobile brake discs are repeatedly undergone wear when it is exposed to adverse conditions like high-temperature environments and snow areas. Present brake discs are made up of High chromium steel and Cast iron which are undergone cracks during its functionality. The present study investigates the suitability of Aluminium Hybrid Matrix Composites reinforced with ceramic particles like Silicon carbide, Aluminium oxide, and Boron carbide, and kaoline clay which improves the Tribological performance of the brake disc against the commercially available brake pad material at different loads and sliding distances. Pin on disc wear test is to be performed to analyze the wear loss and wear volume. SEM and wear track surface morphology to be done to identify the wear mechanism on the interface surfaces. The results which are comparing with existing material to find the improved life of the brake disc material.

**9. Publication details**

International Journal: 05

International Conference:07

# STUDENTS' ACTIVITIES

Students' activities come under the preview of Dean (SW). The office of the Dean (SW) consists of the following members:

DEAN (SW)		
Name	Qualification	Period
Prof. R. D. Misra	Ph.D.	1 <sup>st</sup> May 2018 onwards
ASSOCIATE Deans (SW)		
Name	Qualification	period
Dr. Wasim Arif	Ph.D.	9 <sup>th</sup> January 2018 onwards
Dr. Koushik Guha	Ph.D.	27 <sup>th</sup> August 2018 onwards
Dr. Pranjit Barman	Ph.D.	21 <sup>st</sup> January 2020 onwards

## Scholarship/Assistantship Awarded to the students during 2019-20:

The students, of this Institute, are awarded various types of scholarships from various schemes of Central Govt., State Governments, PSUs, Charitable Trusts/ Organizations. During this period under review no. of students received scholarship/stipend from various sources.

Sl. No.	NAME OF THE SCHOLARSHIP	Name of the State	Amount of Scholarship awarded in 2019-20 (RS)	No. of students received the Scholarship	Remarks
1	Govt. Of Andhra Pradesh&Telengana	Andhra Pradesh	143140.00	02	
2	Govt. Of Bihar	Bihar	455000.00	7	
3	Govt. of Madhya Pradesh	Madhyapradesh	56666.00	2	
4	Central Sector Scholarship	Govt. of India	1844500.00	58	
5	Maharashtra	Maharashtra	78740.00	01	
6	Swami Dayanand	All India	32500.00	02	
<b>Total- 2610546.00</b>				<b>72</b>	

Apart from the aforesaid Scholarships, there are many scholarship schemes which follow DBT System under which the students get directly benefited through scholarship amount.

Moreover, many parents (guardians) of our students also avail reimbursement of educational expenditure from their employers like – BSNL, Railways, & other Govt. / PSUs on our recommendations.

**Assistantships (M.Tech / Ph.D.):** Students admitted in the M.Tech & Ph. D programme in the institute are awarded Assistantship as per the norms of MHRD and Institute. To be eligible for this Assistantship, a student must have cleared GATE/NET/UGC exams & must be a regular non-sponsored student.

Railway concession service is also provided to students of NIT Silchar from the Dean (SW) Office.

NIT Silchar encourages its students for sports and other activities as well. Students are involved in NCC/NSS/ Gyansagar and various other co-curricular activities. They also have a student union body, known as “Gymkhana Union Body”

## STUDENTS' GYMKHANA

In pursuit of excellence and giving life a meaningful direction, the Students' Union body “Gymkhana” of NIT Silchar works towards profound personality development of NIT students by infusing in them a spirit

of constructive co-operation, leadership qualities, and organizational capabilities. This is being achieved by involving them in a wide spectrum of Sports & Games as well as Social & Cultural and Technological activities throughout the year.

The year 2019-2020 was also full of activities and achievements and students have made the Institute proud by maintaining high standards of organizational and leadership qualities.

#### LIST OF GYMKHANA OFFICE BEARERS 2019-20

Sl. No.	Name	Portfolio	Contact No.
1	Ashish Ranjan	Vice President	9523134927
2	Dupal Jit Das	GS (Gymkhana)	7086444411
3	Siddhartha Singh	GS (Technical)	9639895844
4	Sarvagya Saxena	GS (Cultural)	9760670577
5	Ashish Kumar Thakur	GS (Sports)	7999828640
6	Bhargav Bharati	Secretary, Eco Club	8638986095
7	B Mukesh Goud	Secretary, Kabaddi& Kho Kho	8133933523
8	Yash Banthia	Secretary, Cricket	8133023176
9	Sohail Sajid Alam	Secretary, Indoor Games	9706442354
10	Kaustav Sen	Secretary, Football	8876064619
11	Koustobh Ronveer Borah	Secretary, Tennis	8486054592
12	Shubham Joshi	Secretary, Athletics & Gymnasium	9079605799
13	Aman Kumar	Secretary, Trekking, Mountaineering & Skating	8757709814
14	Swastik Jena	Secretary, Basketball, Volleyball & Handball	9957778103
15	Tushar Agarwal	Secretary, Photography Club	8005029412
16	Swaraj Bhattacharjee	Secretary, Dramatic Club	7086813629
17	Rishab Surana	Secretary, Dance Club	7086397900
18	Aveek Sharma	Secretary, Music Club	9101269843
19	Arnab Das	Secretary, Literary, Publication, and Fine Arts	7002887692
20	Arumalla Pooja	PG/Ph.D. Representative	9493687485
	Lokavarapu Rama Krishna	PG/Ph.D. Representative	8096712393
21	K Lamnganbi Singha	Girls Representative	9365065604
22	Mayurakshi Chanda	Girls Representative	9435537377

#### LIST OF FACULTY ADVISORS OF GYMKHANA UNION BODY 2019-20

Sl. No.	Name	Portfolio	Contact No.	Faculty Advisor
1	Ashish Ranjan	Vice President	9523134927	Dr. Pranjit Barman
2	Dupal Jit Das	GS (Gymkhana)	7086444411	Dr. Biplab Das
3	Siddhartha Singh	GS (Technical)	9639895844	Dr. D. C. Das
4	Sarvagya Saxena	GS (Cultural)	9760670577	Dr. Mausumi Sen
5	Ashish Kumar Thakur	GS (Sports)	7999828640	Dr. Ramesh Ganti
6	Bhargav Bharati	Secretary, Eco Club	8638986095	Dr. Malaya Dutta Borah
7	B Mukesh Goud	Secretary, Kabaddi& Kho Kho	8133933523	Dr. SimanchalKar
8	Yash Banthia	Secretary, Cricket	8133023176	Dr. Abhishek Paul
9	Sohail Sajid Alam	Secretary, Indoor Games	9706442354	Dr. K. N. Das
10	Kaustav Sen	Secretary, Football	8876064619	Dr. Shivendra Pandey
11	Koustobh Ronveer Borah	Secretary, Tennis	8486054592	Dr. Lalu Seban

Sl. No.	Name	Portfolio	Contact No.	Faculty Advisor
12	Shubham Joshi	Secretary, Athletics & Gymnasium	9079605799	Dr. Shankar.K
13	Aman Kumar	Secretary, Trekking, Mountaineering & Skating	8757709814	Dr. L. Dolendro Singh
14	Swastik Jena	Secretary, Basketball, Volleyball & Handball	9957778103	Mr. UmakantaMajhi
15	Tushar Agarwal	Secretary, Photography Club	8005029412	Dr. Debojit Bhowmik
16	Swaraj Bhattacharjee	Secretary, Dramatic Club	7086813629	Dr. Bipul Das
17	Rishab Surana	Secretary, Dance Club	7086397900	Dr. Jupitara Hazarika
18	Aveek Sharma	Secretary, Music Club	9101269843	Dr. Prashanta Roy
19	Arnab Das	Secretary, Literary, Publication and Fine Arts	7002887692	Dr. K. Suganya Devi
20	Arumalla Pooja	PG/Ph.D. Representative	9493687485	Dr. K. L. Singh
	Lokavarapu Rama Krishna	PG/Ph.D. Representative	8096712393	
21	K Lamnganbi Singha	Girls Representative	9365065604	Dr. Alfa Bisoi
22	Mayurakshi Chanda	Girls Representative	9435537377	

### Information regarding the students' activities (Gymkhana) under Office of the Dean (SW) during 2019-20 Session

#### i. GYMKHANA HELP DESK

At the start of the academic year 2019-20, a help desk was set up by the Gymkhana Union Body to assist the new students and their accompanying parents with the admission procedure and hostel allotment.

#### ii. ORIENTATION PROGRAM

An orientation programme for the newly admitted UG, PG, and Ph.D. students was held on Wednesday, 24th July, The new students were acquainted with the Administration, the HoDs of various departments, and with the Gymkhana Students' Union Body.

#### iii. HINDI DIWAS

14<sup>th</sup> September 2019 saw the celebration of Hindi Diwas in accordance with MHRD guidelines. A cultural program and literary competitions were held in the presence of distinguished guests and personalities associated with the Hindi Language.

#### iv. ALUMNI MEET

The 10<sup>th</sup> Alumni Meet was held on the Institute campus on the 9<sup>th</sup> and 10<sup>th</sup> of November, 2019 for the batch of 1990-94. Various interaction sessions and get-togethers were organized for the students to meet and learn from the alumni that were present. A cultural program and dinner concluded what was a brilliant event.

#### v. INDEPENDENCE DAY 2019

On 15<sup>th</sup> August 2019, NIT Silchar celebrated the 73<sup>rd</sup> Independence Day of India. It started with the hoisting of the Indian National Flag along with a rendition of the National Anthem. It was followed by the Inter-Hostel Parade competition and cultural programs that showcased themes of Patriotism and Unity.

#### vi. RABINDRANATH TAGORE MEMORIAL DAY

On 7<sup>th</sup> August 2019, NIT Silchar celebrated Rabindranath Tagore Memorial Day in honor of the great poet. There was a cultural program by the students of NIT Silchar and literary competitions such as poetry writing, elocution, etc were held to encourage the spirit of literature.

#### vii. GENERAL FRESHMEN WELCOME PROGRAM

On 7<sup>th</sup> September 2019, The Gymkhana Students' Union Body held a Freshmen Social event for the new batches of UG and PG respectively. The program consisted of various dances, musical performances, dramas, and the very popular Mr. & Ms. Freshers' competitions.

**viii. TECNOESIS 20**

1st to 3rd February 2020 saw the celebration of Tecnoesis, the annual techno-management fest of NIT Silchar. The theme of this year's edition was "A Saga of Intergalactic Ventures". The event had many modules that were organized by the students themselves. Many distinguished guests and personalities in the field of technology and innovation made their presence felt and interacted with the students. Last but not the least, a cultural program then constituted the conclusion of the fest.

**ix. EKTA DAUD**

There were three Ekta Daud marathons held last year on 31st October, 15th August 2019, and on 26<sup>th</sup> January 2020, on the occasion of the 73<sup>rd</sup> Independence Day of India, Rashtriya Ekta Diwas; annual commemoration of the birthday of the Iron Man of India – Sardar Vallabhai Patel and the 71<sup>st</sup> Republic Day of India, respectively. The run saw a humongous number of participants from the faculty and student communities, who were to run along a predetermined route through the campus. The camaraderie and unity shared by the participants truly made it an Ekta Daud.

**x. REPUBLIC DAY '20**

On 26<sup>th</sup> January 2020, NIT Silchar celebrated the 71<sup>st</sup> Republic Day of India. The day started with the hoisting of the tricolour along with a rendition of the National Anthem. What followed was a cultural jhanki with themes of harmony and unity, and the Inter-Hostel parade competitions which saw students representing their hostels with great enthusiasm.

**xi. BLOOD DONATION CAMP**

Blood donation camps were held on 15<sup>th</sup> August 2019 and 26<sup>th</sup> January 2020 after the Independence Day and Republic Day event celebrations respectively. The students and faculties donated blood to the SMC blood bank with the novel thought that it will save lives whenever needed. The Institute has received 8<sup>th</sup> position in the category of voluntary Blood Donation in Assam for the year 2018-19 on World AIDS day 2019 along with a prize money of Rs.10000.00.

**xii. Ek Bharat Sreshtha Bharat**

As per the Govt. of India campaign Ek Bharath Sresshtha Bharat (EBSB), NIT Silchar constituted the EBSB club comprising of students and faculty members in the month of January 2020 and a month-wise activity calendar has been designed. Based on the activity calendar many events were organized between January 2020 to March 2020, a few of the events are listed below:

1. 02 songs have been identified from the paired state Rajasthan, viz. **Dharti Dhoranri** and **Baisara Beera**, sang by the eminent Assamese Singers Mr. Papon and Ms Kalpana Patowary have been circulated among the stakeholders of NIT Silchar. The weblink of the songs has also been uploaded in the official website of the Institute.
2. Friendly Football match between students of Assam and paired state Rajasthan.
3. Debate and Easy writing Competition etc.
4. Swachhata Pledge in Rajasthani language along with Hindi & English.
5. Fashion Show portraying the Assamese- Rajasthani culture.
6. Eminent Folk Singer Mr. Mame Khan was invited to present a cultural evening showcasing the rich cultural heritage of the state of Rajasthan on 16<sup>th</sup> February 2020 during the annual cultural festival of NIT Silchar, Incandescence 2020. His mesmerizing performance was immensely enjoyed by the students, teaching and non-teaching staff of the Institute.

**xiii. INCANDESCENCE '20**

13<sup>th</sup> to 16<sup>th</sup> February 2020 hosted Incandescence 2020 in NIT Silchar. The premier cultural fest of the region had a multitude of events ranging from quizzes and debates to full-blown rock concerts. Many distinguished guests and artists from around the world came here to entertain the crowds.

**xiv. JANMASHTAMI**

On 24<sup>th</sup> of August 2019, NIT Silchar celebrated Janmashtami with the pomp and joy of Lord Krishna's birthday. A dahihandi competition between the various hostels was also organized.

**xv. DURGA PUJA**

On Friday, 4 October Tuesday, 8 October 2019, NIT Silchar celebrated Durga Puja. The festivities centered around the campus Pandal which saw a huge footfall from the faculty and student communities.

**xvi. DIWALI**

On Sunday, 27 October 2019, NIT Silchar celebrated Diwali in its various hostels which hosted pandals and puja ceremonies. In the evening, people gathered in the football field to burst crackers and enjoy the spirit of Diwali.

**xvii. Swachhta Pakhwada**

23<sup>rd</sup> January 2020 saw the organization of Swachhta Pakhwada in the college. It consisted of a cleanliness drive, a pledge taking ceremony, a visit to a nearby school, and a small cultural program in the evening

**xviii. Self Defence Workshop for Women**

On 9<sup>th</sup> - 10<sup>th</sup> November 2019, a self-defense workshop was hosted for the women of the institute. They were instructed on basic self-defense tactics by a renowned martial-arts practitioner.

**xviii. AIINIT**

National Institute of Technology, Silchar bagged the opportunity to organise the ALL INDIA INTER NIT SPORTS TOURNAMENT, for Table Tennis and Yoga, for the academic year 2019-20. The Tournament was scheduled from 11<sup>th</sup> of October'19 to 13<sup>th</sup> of October'19

**xix. Srijan 1.0**

NIT Silchar organised the first-ever E-summit with the name "SRIJAN" (meaning Creation/Innovation). From the 8<sup>th</sup>-10<sup>th</sup> of November 2019.

**xx. Spicmacay**

NIT Silchar was blessed to get an opportunity to organise "SPICMACAY" from the 4<sup>th</sup> - 6<sup>th</sup> of November 2019. Apart from all the above-mentioned programmes NIT Silchar also celebrated many other events, e.g. World Environment Day 2019, International Day of Yoga 2019, etc.

# INFRASTRUCTURE AND AMENITIES

## Estate - An overview:

### 1. Historical Background

In the late fifties, the Government of India decided to establish Regional Engineering College under the Quality Technical Education Policy - one each in every major state - with the prime objective of imparting quality technical education throughout the country and to foster national integration. These Regional Engineering Colleges were established as a joint venture of the Government of India and the respective State Government. Assam is a major state in the North-East of India and the 15th REC was officially established in Silchar in 1967. Though 14 other RECs started functioning within 1967, it took about another decade for REC, Silchar to start its academic programmes due to various constraints.

The college started functioning in 1967 from a camp office in Shillong (the then Capital of Assam) with Dr. S. K. Baruah as Principal and Prof. B. R. Seth, the then Vice-Chancellor of Dibrugarh University as Chairman of the Board of Governors. Subsequently, an area of about 540 acres of land was acquired by the Govt. Of Assam, on the outskirts of Silchar town. This land was part of Borakhai Tea Estate.

The first batch of students was admitted in 1977 in the B.E programmes in 3 branches of engineering viz. Civil Engineering, Mechanical Engineering, and Electrical Engineering. The total intake in the first batch was 60 students. The meager infrastructural facilities consisted of only a part of a hostel, two seven faculty quarters, and a few quarters for Grade-IV staff of the college when the college started its academic programme in November, 1977. Initially, the classes started with only 4 full-time teachers and with Dr. H. R. Chablani as Principal. The college started its academic programme with affiliation to Gauhati University. The affiliation was later shifted to Assam University in 1994. The first batch of B.E students was awarded their degrees in the year 1982-83. Subsequently, two more branches viz (i) Electronics and Telecommunication Engineering and (ii) Computer Science and Engineering started functioning from the year 1983 and 1987 respectively. On the basis of the report of the High Powered Joint Expert Committee of AICTE and UGC under the chairmanship of Prof. S. K. Joshi, Director General of Council for Scientific and Industrial Research (CSIR), Regional Engineering College Silchar has been transformed and upgraded to National Institute of Technology, Silchar with a Deemed University status with effect from 28.06.2002. The Institute has been subsequently made into a fully funded Government of India Institution. This ensures a better financial status for NIT Silchar which will accelerate its growth and ensure that it becomes one of the premier technological institutes of not just the North-East but also of the entire nation. The Institute has remodeled its curriculum and academic activities in line with that of IITs. With its Deemed University status, the Institute started awarding degrees from the year 2002 and the first convocation of the Institute is being organization today to award degrees to all those students who qualified for the degree after its transformation into an NIT.

### 2. Location

The Institute is situated at Silchar, the headquarters of the district of Cachar in Assam. The location of the Institute is at a distance of about eight kilometers to the south of the town of Silchar on the Silchar-Hailakandi road. Cachar is the southernmost district of Assam bordering Mizoram on the south, Manipur on the east and Tripura, and Meghalaya on the west.

### 3. Campus

The campus of the Institute is spread over an area of 540 acres. It presents a spectacle of harmony in modern architecture, natural beauty, and picturesque surroundings. The campus area has been organization in three functional sectors, viz.

- (a) Hostel for students.
- (b) Instructional Buildings and Administrative Block.
- (c) Residential sectors for the staff.

The instructional buildings have been so located that these are fairly near to both the hostels and the staff quarters. There is a full-fledged branch of State Bank of India, a Post Office in the campus. The students & staff and also the villagers surrounding the campus get the facility of the SBI & Post Office. The Institute has its own Health Care Centre with a full-time Senior Medical Officer to attend to the emergency medical needs of the students, staff and their families. Patients suffering from a serious illness, requiring intensive care, are referred to the Silchar Medical College & Hospital, which is only about two kilometers from the campus. The Institute has an ambulance facility for shifting the patient to the nearby hospital. An adequately equipped canteen is there near the instructional zone and mini-market complex which will provide facilities to the students and the staff during and beyond the working hours. There is a well-equipped gymkhana and sports complex attached with an auditorium which is utilized by students for an activity like gymnasium, indoor games, and similar other pursuits.

#### 4. Services

- (a) Housekeeping of the campus (Except Hostel) : Departmentally
- (b) Housekeeping of the Hostels: Out sourced
- (c) Security Management of the campus: Out sourced
- (d) Maintenance of Civil & Electrical: Departmentally

#### 5. Staff Structure

##### (A) Administrative:

Sl. No.	Staff / Officers	Designation	Remarks
1	Dr. A. I. Laskar	Dean (P&D)	Regular
2	Dr. Prashanth J.	Associate Dean (P&D)	Regular
3	Dr. Lakshmi Vara Prasad. M	Associate Dean (P&D)	Regular
4	Dr. Dulal Chandra Das	Associate Dean (P&D)	Regular
5	Mr. Sikumar Chauhan	Assistant Engineer (E) & Estate (i/c)	Regular
6	Mr. Dhruvajyoti Chakraborty	Assistant Engineer (C)	Contractual
7	Mr. Bapon Sinha	Junior Engineer (E)	Contractual
8	Mr. Tapan Kumar Roy	Junior Engineer (E)	Contractual

##### (B) Supporting:

Sl. No.	Staff/Officers	Designation	Remarks
1	Mr. Debabrata Barman	Sr. Assistant	Regular
2	Mr. Subasish Barman	Technician	Regular
3	Mr. Ashok Kurmi	Technician	Regular
4	Mr. Monoj Gopal Deb	Attendant SG-II	Regular

##### Infrastructure details

Sl. No.	Name of building	Area (Sqm)
<b>Academic / Administrative / Lab / Workshop</b>		
1	New Administrative building	8846.36
2	Expansion of classroom	6974.00
3	Mechanical Workshop building	2588.00
4	Mechanical Department	1895.00

Sl. No.	Name of building	Area (Sqm)
5	Civil Engg. Dept	2799.00
6	Electrical Engg. Dept.	1647.00
7	ETE building	1137.00
8	Central Store / Estate Branch	800.00
9	Library building (old)	975.60
10	Vertical Expansion Dispensary building	189.00
11	Old Administrative building	800.00
12	Classroom Expansion Pt. II	2800.00
13	Expansion of Physics Dept (ground floor)	470.00
14	Expansion of Physics Dept (first floor)	164.00
15	Expansion of Chemistry Dept (first floor)	470.00
16	Expansion of Chemistry Dept (ground floor)	164.00
17	CSE & ETE building (G+2)	7935.70
18	Humanities Dept (first floor)	105.00
19	Mathematics Dept (ground & first floor)	195.00
20	Training & placement dept (second floor)	386.00
21	Kendriya Vidyalaya	4642.70
22	New Library building	7987.77
23	Guest House (old)	216.00
24	Guest House (new)	4079.17
25	Post Office	118.57
26	Earthquake Engineering Laboratory	2734.00
27	Production Engineering Lab under Mech. Engg. Dept.	5361.00
28	New Academic building	7935.70
29	KID-NITS School	152.64
30	NABL building	790.56
31	Expansion of Electrical Engg. Dept	1152.41
	<b>Sub Total (A) -</b>	<b>76511.18</b>
<b>Residential area hostels + faculty + staff quarters</b>		
1	Director's Bungalow	195.00
2	Professor quarters 7 units	1169.00
3	Asst. Prof. quarters 6 units	868.00
4	Type-D quarters 12 units	1344.00
5	Type-C quarters 8 units	480.00
6	Type-A quarters 12 units	540.00
7	Lecturer's quarters 15 units	1200.00
8	Teachers' Flat 12 units	590.00
9	Grade-III quarters 56 units	3600.00
10	Grade-IV quarters 30 units	1350.00
11	Type-VI(EL) Prof. qtrs. 12 units (old)	2466.00
12	Type-VI(EL) Prof. qtrs. 12 units (new)	2466.00
13	Type-V(E) Asst Prof. qtrs. 21 units (old)	2787.00
14	Type-V(E) Asst Prof. qtrs. 21 units (new)	2787.00

Sl. No.	Name of building	Area (Sqm)
15	Type-IV(E) Lecturer qtrs. 30 units (old)	2556.40
16	Type-IV(E) Lecturer qtrs. 30 units (new)	2556.40
17	Type-III - 100 units	9923.04
18	KendriyalaVidyalaya qtrs.	1183.38
19	Boys Hostel No.1 (170 capacity)	3600.00
20	Boys Hostel No.2 (135 capacity)	2620.00
21	Boys Hostel No.3 (135 capacity)	2620.00
22	Boys Hostel No.4 (275 capacity)	5030.00
23	Boys Hostel No.5 (142 capacity)	2894.00
24	Boys Hostel No.6 (300 capacity)	7950.00
25	Boys Hostel No.7 (300 capacity)	7950.00
26	Boys Hostel No.8 (500 capacity)	20654.52
27	Boys Hostel No.9 (1000 capacity)	23560.00
28	Girls Hostel No.1 (185 capacity)	2114.00
29	Girls Hostel No.2 (212 capacity)	3303.00
30	Girls Hostel No.3 (104 capacity)	3303.00
31	300 capacity P.G Hostel & 100 capacity Married Scholar Hostel	12060.00
<b>Sub Total (B) -</b>		<b>135719.74</b>
<b>Sports facility &amp; common facilities</b>		
1	Dispensary building	156.00
2	NIT Café	416.00
3	Students Activity Centre	1145.00
4	Post Office	118.57
5	Eat-Out Dhaba	970.91
6	Sports Complex (Indoor & outdoor)	58823.41
<b>Sub Total (C) -</b>		<b>61629.89</b>
<b>Grand Total (A+B+C) =</b>		<b>273860.81</b>

## VEHICLE MANAGEMENT

The Institute at present provides the following vehicles for various purposes as tabled below:

Sl. No.	Vehicle Registration No.	Type of Vehicle	Purpose
01	AS11B-7736	Indigo	T & P, Gust transportation
02	AS11CC-0712	Traveller	T & P, Student Transportation
03	AS11E-2416	Maruti omne	For official work as well as the transportation of students and staff on a requirement basis.
04	AS11E-5501	SX4	Director car
05	Newly launched, the registration process is going on.	Ambulance (Force)	Transportation of patient (student as well as a staff of NIT Silchar)
06	AS11CC-9409	Ambulance (Winger)	Transportation of patient (student as well as a staff of NIT Silchar)
07	AS11B-2701	Tractor	Engaged in the estate for heavy material transportation
08	AS11B-0930	Bus	Student Transportation
09	AS11B-2703	Bus	Student Transportation

## BOARD OF HOSTEL MANAGEMENT

Name	Designation	Qualification (e.g., B. Tech., M. Tech., Ph.D.)
Prof. R. D. Misra	Chairman	Ph.D.
Dr. Wasim Arif	Vice-Chairman	Ph.D.
Dr. Koushik Guha	Secretary	Ph.D.
All Asso. Wardens of Hostels	Members	

## HOSTELS

NIT Silchar is a residential campus. It provides hostel accommodation for students. Separate hostel accommodation is available for girl students. Apart from that, family accommodation is also provided to the married Ph.D. scholars. It is mandatory for all the students to stay in the hostels. However, under special and extraordinary cases a student may be permitted to live with his/her parents or local guardian at Silchar. Students permitted to stay outside hostels are exempted from payment of mess charges, electricity, and water charges under hostels fees but they will have to pay the hostel establishment charges. The name, full address, office and residence telephone number, designation, and willingness of local guardian have to be furnished at the time of admission. Room allotment in the hostels is done in such a way that students from different regions of the country freely stay with each other, depicting national integration.

The Institute has **16 nos.** of hostels for the students inside the campus. 10 for the boys (UG/PG separate), 5 for the girl students (UG/PG), and one for family accommodation to the married Ph. D Scholars. Hostels' capacity varies from hostel to hostel. The available capacity of boys' hostels all together (UG/PG) is approximately 4000, the available capacity of girls' hostel (UG/PG) is approximately 650 and the available capacity of Married Scholar Hostel is 106 flats.

### List of Asso. Wardens of Hostel

WARDENS				period	
Hostel No.	Name	Designation	Department	from	to
1	Dr. Pankaj Kumar Biswas	Ph.D.	Mathematics	04/09/2017	01/11/2019
	Dr. Ram Kumar Karsh	Ph.D.	ECE	10/11/2019	Till Date
2	Dr. Ram Kumar Karsh (I/c)	Ph.D.	ECE	24/08/2018	Till Date
3	Dr. D. K. Ghose	Ph.D.	Civil	11/09/2017	09/09/2019
	Dr. Gaurav Singh Baghel	Ph.D.	ECE	26/09/2019	Till date
4	Dr. R. Hazra	Ph.D.	ECE	05/09/2017	05/09/2019
	Dr. Lalu Seban	Ph.D.	E&I	20/09/2019	Till date
5	Dr. N. Ahir	Ph.D.	Civil	01/09/2017	31/08/2019
	Dr. Taimoor Khan	Ph.D.	ECE	10/10/2019	Till Date
6	Dr. M. Lakshmi Vara Prasad	Ph.D.	Civil	20/08/2018	Till Date
7	Dr. P.K. Gupta	Ph.D.	Mathematics	05/09/2017	20/09/2019
	Dr. Saurabh Verma	Ph.D.	Management	21/09/2019	Till Date
8	Dr. Prashanth J.	Ph.D.	Civil	20/09/2018	Till Date
	Dr. Debjit Bhowmik	Ph.D.	Civil	-/08/2019	Till Date
9A	Dr. Shyamapada Mukherjee	Ph.D.	CSE	20/07/2018	Till Date
9B	Dr. P. Randive	Ph.D.	Mechanical	08/04/2019	Till Date
9C	Dr. Bijan Kumar Roy	Ph.D.	Civil	-/01/2020	Till Date
9D	Dr. Rajeeb Dey	Ph.D.	Electrical	25/07/2019	Till date
GH-1	Dr. Sumita Debbarma	Ph.D.	Mechanical	31/08/2018	16/04/2019
	Dr. Nabanita Adhikary	Ph.D.	Electrical	22/04/2019	Till Date
GH-2	Dr. Munmun Khanra	Ph.D.	E&I	23/05/2017	23/05/2019
	Dr. Saheli Ray	Ph.D.	Electrical	24/05/2019	Till Date
GH-3	Dr. Malaya Dutta Borah	Ph.D.	CSE	20/08/2018	Till Date

WARDENS				period	
Hostel No.	Name	Designation	Department	from	to
GH-1A	Dr. Jupitara Hazarika	Ph.D.	E&I	18/07/2019	Till Date
GH-1B	Dr. Nirmali Borthakur	Ph.D.	Civil	17/07/2019	Till Date
PGH	Dr. Ujjal Chakraborty	Ph.D.	ECE	05/11/2018	Till Date
	Dr. Bipul Das	Ph.D.	Mechanical	13/08/2019	Till Date
MSH	Dr. S. K. Tripathy	Ph.D.	ECE	12/03/2019	Till Date

**Following are the list of facilities available in the Hostels:**

1. Chair, Table, Bed, Wardrobe, and Fan provided in each room
2. 24- Hour Reading Room facility.
3. Guest room and Seek room in each hostel.
4. Round the clock water supply and power supply.
5. Water cooler cum Purifier.
6. Solar panels are installed in all hostels for hot water.
7. Diesel generator (centrally) available in case failure of power supply.
8. LAN/ Internet
9. Wi-Fi connection
10. Inverter.
11. TV Hall with LED TV& DTH Cable connection facility in each hostel.
12. Newspaper and Magazine.
13. Photocopier (Xerox) in each hostel.
14. Ambulance service round the clock.
15. The coffee house was provided.
16. An indoor game like Table Tennis, carom, chess provided.
17. Hygienic kitchen with modern cooking Equipment provided.
18. Hygienic Dining hall with dining Table/chair provided
19. Fire Extinguisher provided.
20. Family accommodation and self-cooking facility in Married scholar hostel and foreign students hostel
21. Separate vehicle parking facility in a married scholar hostel.
22. Bi-cycle stand provided in most of the hostels
23. Badminton court with lighting arrangement available (Only BH-1 & GH- 2).

**Following are the list of services available in the hostels:**

1. Security service
2. CCTV Surveillance
3. Cleaning / House Keeping service
4. Food & catering service
5. Laundry services
6. Maintenance of civil, electrical, plumbing & sanitary services.
7. Maintenance of Aqua guard & cooling cum purifier service.
8. Managerial service provided for general maintenance
9. Vehicle service provided for attending classes.

# INSTITUTE HEALTH CENTRE



- The Institute Health centre is located within the campus, it is located amidst the hostel/residential zone and the academic zone.
- The NITS Health centre provides primary health care round the clock on all days.
- NITS Health centre has casualty, Pharmacy, OPD facilities, 24 hours fully equipped ambulance, and a clinical laboratory working from 09:00 a.m. to 07:00 p.m.

## PEOPLE

**Chairman, Health Centre Committee:** Prof. Srimanta Baishya, ECE Department

**Medical Officer:** Dr. Banibrata Chakraborty; Dr. Arindam Nath

**Medical Officer (Ayurveda):** Dr. A. R. Laskar, B.A.M.S

**Dental Surgeon:** Dr. Suman Debnath , B.D.S

**Visiting Consultant:** Dr. (Major) Sandhya. R (Gynaecology)

**Staff Nurse:** Mrs. Shila Nath; Miss. Abida Sultana; Mrs. Moni Akura

**Pharmacist:** Mr. Samanta Das; Mr. Sanjit Banik

## FACILITIES

The Emergency services are available 24/7, 365 days a year. All kinds of medical emergencies are managed effectively with the infrastructure and facilities.

## MEDICAL EQUIPMENT

1. ECG
2. Physiotherapy Instruments.
3. Nebulizer
4. Autoclave.

## PHYSIOTHERAPY CLINIC

- Treatment for various musculoskeletal disorders, including post-operative cases, sports injuries, stroke, cerebral palsy.
- Pain management and Rehabilitation for sports injuries with corrective and conditioning exercises.

## DENTAL CLINIC



*The Health Centre has the facility to handle dental services such as scaling, filling, and extraction of a tooth.*

## AMBULANCE



**24 x 7 (on all days)**

Two ambulances are stationed at the institute Health centre. The ambulance is fully equipped with an oxygen cylinder, lifesaving drugs, first aid kit bag. The ambulance is provided with a Trained Emergency Medical Technician (a Paramedical Staff who will be able to operate all the instruments installed in the ambulance), who is capable to deliver pre-hospital care to stabilize the patient and transport the patient to any impaneled hospital will first aid care.

## CLINICAL LABORATORY

**9:00 a.m. to 7:00 p.m. (all days)**

The clinical laboratory is fully functional with the latest equipment and reagents. Samples of blood, urine, mucous, stool, etc., are obtained from the patients referred to the clinical laboratory by the Medical Officers of Institute for the prescribed tests. The results of the tests are reported to the doctor on the same day by the lab technician. All the tests listed under the CGHS scheme are carried out for the students and eligible employees. Testing and waste management are followed as per NABL standards.



*Clinical facilities available in NIT Silchar*

## PHARMACY

The pharmacy inside the institute hospital is fully functional with various range of regular and emergency medicines.

## AWARENESS UPDATE

During the outbreak of **COVID-19 pandemic**, various protective measures and awareness programme has been introduced as per guidelines. Some of the key points are:-

1. Safe use of alcohol-based hand sanitizers.
2. Social Distancing.
3. Usage of a face mask.
4. Healthy diet.
5. Proper washing of hands.
6. Seek advice and help from Medical officers during an emergency.
7. Avoid stress and maintain good mental health.
8. Avoid gathering and eliminate the spread of infection.

# KENDRIYA VIDYALAYA NIT SILCHAR

The 7<sup>th</sup> Academic Session for the year 2019-20 commenced from 1<sup>st</sup> April 2019. The Total Enrolment position of Students during the year was 887 with a very healthy gender distribution of 465 boys and 422 girls. A total of 119 new students were admitted in the Vidyalaya in the year 2019-20 with 84 of them in class I and 35 in other classes. In 2019-20, a total of 75 students appeared in CBSE Class-X Board Examination and 23 students appeared in Class-XII Board Examination. Out of these, 97.34% of students qualified Class X and 100% of students qualified Class XII examination. In Class-X, the highest percentage of marks was 95.16% scored by Ahmadullah Laskar. Similarly, the highest percentage of marks in Class XII was 96.4 % scored by Arunangshu Roy.

Various games and sports activities are regularly organized and conducted as an integral part of the school curriculum in the Vidyalaya. Under the Sports category, the Vidyalaya stood 1<sup>st</sup> position out of 29 Vidyalaya at KVS Regional Sports Meet, and also Vidyalaya has seen all-time high participation in the KVS Regional and National Sports Meets where 84 students participated in the KVS Silchar Region Regional Sports Meet. Out of

these 84 students, where 58 students got medals (35 students got 1<sup>st</sup> position, 16 students got 2<sup>nd</sup> position, and 7 students 3<sup>rd</sup> position at Regional Level Sports Meet 2019. 25 students got selected for the KVS National Level Sports Meet in various events like Chess, Rope skipping, and Athletics. The students of the Vidyalaya very actively participated in Silverzone International Olympiad 2019-20 conducted in Mathematics, Science, English, and Computer Subjects. A good number of students got Gold, Silver, and Bronze Medals in each of these subjects. In addition, two students namely Shivangi Verma Class XII & Dakshayani Sharma Class VIII got selected for the 2<sup>nd</sup> level to compete for the top slots in Science Olympiad. In the year 2019, several students from our Vidyalaya participated in KVS Cluster Level Social Science Exhibition out of which 3 students were selected to compete at the Regional Level of the Social Science Exhibition at K.V. No. 1 Silchar. A major event for the Vidyalaya was the 47<sup>th</sup> Jawaharlal Nehru National Science Mathematics and Environment Exhibition for Children 2019-20 in which a large number of students from our Vidyalaya took a very active part in the Regional Level program of the event and demonstrated their innovative ideas and concepts under various themes of the event through properly designed scientific models and exhibits. 4 (Four) students from the Vidyalaya were selected in different themes for the KVS National Level program of the event that was organized at Ahmedabad at the month of November 2019. The students are Ansh Dahiya, Class VII (B), Aman Goswami Class VIII (A), Siddhartha Bhattacharjee & Dipit Patowari Class XI (Sc.) at Ahmedabad. Apart from students, teachers also brought laurels for the Vidyalaya. Our 5 (five) teachers namely Mrs. Anita Meena, PGT (Hindi), Mrs. Manmita Barman, PGT (English), Mr. Jitendra Kr. Verma & Ms. Seetal Sharma TGT (S.St.) and Ms. Marream Zuberi TGT (English) were awarded the prestigious KVS Golden Certificate for the year 2018 for their hard work and full dedication put to their work-place.

Another great achievement of the Vidyalaya was that repetitively in the year 2019-20, K.V. NIT Silchar was awarded the Green School or “Harit Vidyalaya Award-2019” 3<sup>rd</sup> position out of 29 Vidyalayas presently working under KVS Silchar Region.

During the session 2019-20, this Vidyalaya hosted many Regional Level programs like:

1. 31<sup>st</sup> KVS Regional Level Youth Parliament - 2019 held on 23.08.2019 for KVS Silchar Region in which 282 students from five different KVs participated.
2. 47<sup>th</sup> Jawaharlal Nehru National Science Mathematics and Environment Exhibition for Children 2019-20 (KVS Silchar Regional Level) held on 28.09.2019 in which 184 students from 28 Vidyalaya participated.
3. Regarding the Staff details, a total of 7 (seven) permanent teachers joined the Vidyalaya in the year 2019. Out of them, 5 (five) teachers joined as TGTs and the rest 2 (two) teachers joined as PRTs in the year 2019. 2 (two) of the teachers are transferred out from the Vidyalaya in the year 2019.
4. The Vidyalaya has got a state-of-the-art infrastructure that is well equipped with various facilities including 3 well-furnished Science Labs, 3 E-class Room, a Digital Language Lab., a Yoga Room, Games Room, Music Room, Dance Room, Work Education Room, Art Room, Medical Room, CMP Resource Room, 2 Computer Labs, 1 Mathematics Lab, 1 Junior Science lab, 1 huge library with a very good stock of books. Clean and well-maintained bathrooms are situated in all corners of the building. The Vidyalaya has got a well-furnished building protected with strong boundary walls all around and a beautiful garden in the front.

A group of highly qualified teachers is engaged in devoted work round the corner for the all-round development of the students in the Vidyalaya. This School is running with a proper plan guided by KVS Regional Office, Silchar to achieve all the targets.

## KIDS-NITS

NIT Silchar has a school for the kids of the campus as well as nearby areas that runs three classes viz. Nursery, KG 1 and KG. Apart from celebrating Independence Day, Republic Day, Teachers’ Day, and Children’s Day, the school has also organized Drawing and Sports Competition among the kids. The parents-teacher meet has been organized. The school has also organized Health Check-up for the school kids in NITS Health Centre.

## **SPORTS COMPLEX & GYM**

The Sports Complex, NIT Silchar has training facilities for all the students and staff of this Institute. It has excellent infrastructure facilities for both outdoor and indoor games and sports. The outdoor games include Football, Cricket, Tennis, Basketball (concrete) and Tennis. A flood-Light facility is provided to all the outdoor games. The Indoor Games Complex (IGC) provides the following facilities:

Volleyball, Kabaddi, Kho-Kho, Basket Ball (concrete) and Tennis with Flood Light facility, Chess, Caroms, Yoga room, Shuttle badminton with concrete flooring, Table Tennis, Weightlifting and 08, 16, & 21 stations multi-Gyms, Vibration belt, Rowing Machine, 0505 Treadmills, Bench for Incline & Decline, Twisting machine, Iron weight plates, Rubber weight plates, Iron Rod Dumbbells etc. It has separate rooms for changing with attached bathroom and toilets. All the clubs of the institute such as the literary club, photography club, Dramatic club, Gyansagar club, and Music club are there in the sports complex. It has the New Auditorium with 5000 seating capacity and a big stage.

## **GUEST HOUSE**

The Institute Guest House, flanked by green lawns and colorful horticulture remains a pleasant haven for the Institute Guests, whether from academia or alumni or parents of the students. The state-of-the-art Guest House with all modern infrastructures is one of its kind in the North East. Some renowned personalities of the Nation in the likes of Former President of India and Bharat Ratna recipient Late Shri A.P.J. Abdul Kalam and Hon'ble Minister of Railways, Shri Suresh Prabhakar Prabhu are eminent guests who stayed in the Guest House during their visit to Silchar.

## **POST OFFICE**

The Institute has a sub-Post Office within the campus. The Sub Post Office has facilities like registration, money order, and speed post. The post office functions from 9.30 AM to 5.30 PM. Students and staff and people from the surrounding villages take advantage of the facilities of this Post Office.

## **BANK AND ATMS**

A fully computerized full-fledged core-banking branch of State bank of India with an ATM facility operates in this campus. The students, staff, and people of the villages surrounding the campus avail the facilities of the Bank. There is one ATM of Punjab National Bank in the campus.

## **SHOPPING COMPLEX**

There is one Shopping Complex inside the campus for tea, snacks, books, etc. Almost all the household items required by both the students and faculties are available here.

## **CAFETERIA**

A full-fledged Canteen, named NITS Café, is in operation catering quality foods to students, staff, and visitors.

# RESEARCH & CONSULTANCY

Research and Consultancy (R & C) is one of the most vital activities of the Institute since its inception. The Institute encourages R & C works that synchronizes with the global technical advancements, with special emphasis on the development of the North-eastern region. The synergy of R & C facilities along with the diverse expertise of the faculties and dedicated students, the Institute is touching new heights of Innovation in terms of research. The Research & Promotion Cell (RPC) / Under-Graduate Research Council (UGRC) / Anvesan further help to identify the young budding student researchers (UG/PG) and provide a unique platform to promote their innovative ideas. The academic curricula of all the disciplines are designed according to the current Industry needs and an initiative is taken to establish a research park comprising of different pioneers of the Industry through MoUs.

## RESEARCH DEVELOPMENT:

### Ph.D. Programme (specializations):

- (i) Civil Engineering
- (ii) Mechanical Engineering
- (iii) Electrical Engineering
- (iv) Electronics & Communication Engineering
- (v) Computer Science and Engineering
- (vi) Electronics and Instrumentation Engineering
- (vii) Humanities and Social Sciences
- (viii) Mathematics
- (ix) Chemistry
- (x) Physics
- (xi) Management Studies

### a. Ph.D. Produced/ Ongoing (in number):

Completed	Submitted	Ongoing
53	43	651

### b. Sponsored Research Project:

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
1	Standardization of Measurement Protocol for overall Heat Transfer Co Efficient (U-Value) for Building Materials & Components for Indian Subcontinent	Dr. Biplab Das, Department of Mechanical Engineering	Rs. 16,99,500/-	22-03-2018	Department of Science & Technology
2	The Third Generation's Inheritance of the Memory of Partition(1947): A Comparative Study Across Spatial Axes	Dr. Avishek Ray, Department of Humanities & Social Sciences	Rs. 2,00,000/-	29-03-2017	Indian Council of Social Science Research
3	Fabrication and Testing of Tandem Layered Quantum Dot Sensitized Solar Cell with Elevated Absorption	Dr. Ranjith G. Nair, Department of Physics	Rs. 25,13,390/-	08-12-2016	Science and Engineering Research Board

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
4	Condition Assessment & Reliability of Existing Bridges (Indian Railway & Others) in North East India due to earthquake and deterioration hazards	Dr. Arjun Sil, Department of Civil Engineering	Rs. 19,09,600/-	04-02-2017	Science and Engineering Research Board
5	Numeric Study on Electrokinetic Flow-through Polyelectrolyte coated Nanopore	Dr. Subrata Bera, Department of Mathematics	Rs. 25,47,140/-	16-02-2017	Science and Engineering Research Board
6	Effect of metal-doped TiO <sub>2</sub> on photoanode and lead-free organic-inorganic metal halide perovskite on photovoltaic performance of petovskite solar cell: experimental and theoretical approach	Dr. S. K.Tripathy, Department of Electronics & Communication Engineering	Rs. 42,38,585/-	22-03-2017	Science and Engineering Research Board
7	Design and Development of Heat Pipe Embedded solar collector based latent heat storage system for domestic application	Dr. Biplab Das, Department of Mechanical Engineering	Rs. 27,21,000/-	09-03-2017	Science and Engineering Research Board
8	A study on Effects of Sediment Load on riverbank erosion in the Barak River System	Dr. Briti Sundar Sil, Department of Civil Engineering	Rs. 22,44,460/-	03-07-2017	Science and Engineering Research Board
9	Spectroflurimetric Studies on Representative Nitrogen Heterocyclic Drugs and Their Interation with DNA Nucleotides	Dr. N. S. Moyon, Department of Chemistry.	Rs. 33,09,000/-	06-07-2017	Science and Engineering Research Board
10	Metal Complexes of New Chiral Schiff Bases: Design, Structure Elucidation, Reactivity and Synthetic Applications	Dr. Pranjit Barman, Department of Chemistry	Rs. 35,04,600/-	02-03-2016	Science and Engineering Research Board
11	Nano Structured Metal Oxides Immobilized Ionic Liquids as Green Catalysts for selective Organic Transformations	Dr. S. S. Dhar, Department of Chemistry	Rs. 28,64,430/-	12-03-2018	Science and Engineering Research Board
12	Centre for Advanced Manufacturing and Material Testing	Head, Department of Mechanical Engineering	Rs. 2,10,00,000/-	20-08-2015	Department of Science & Technology under FIST
13	Design and development of a hybrid photo voltaic (PVT) system for rural applications	Dr. Biplab Das, Department of Mechanical Engineering	Rs. 14,17,800/-	17-01-2017	Department of Science & Technology
14	Development of Battery Supercapacitor Hybrid Energy Storage System for Stand-alone Solar Photovoltaic Power System	Dr. Munmun Khanra, Department of Electronics & Instrumentation Engineering	Rs. 22,21,816/-	28-11-2016	Department of Science & Technology
15	Experimental and Computational Analysis of Heat Sink Application for optimal performance by developing low cost natural filler reinforced composite material	Dr. Sumit Bhowmik, Department of Mechanical Engineering	Rs. 22,63,000/-	04-08-2017	Central Power Research Institute

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
16	Bamboo Bricks/Laminates From BMFs for low cost housing structures for NE Himalayan Region	Dr. Sudipta Halder, Department of Mechanical Engineering	Rs. 44,91,000/-	31-03-2017	National Mission of Himalayan Studies
17	Hetero-Junction Tunnel FETs: Characterization Modelling and Simulation of Electrical Parameters	Prof. S. Baishya, Department of Electronics & Communication Engineering	Rs. 9,54,667/-	16-05-2017	Council of Scientific and Industrial Research
18	Development of National Disaster Spectrum (NDS) and Disaster Communication Backbone Architecture (DiCoBA) with Prototype Development	Prof. S. Baishya, Department of Electronics & Communication Engineering	Rs. 11,00,000/-	30-09-2015	DeitY
19	Development of EBG Structured Printed Antennas for Ultrawide Band Communication and Futuristic Modelling for prediction of performance Parameters using Computational Techniques	Dr. Taimoor Khan, Department of Electronics & Communication Engineering	Rs. 16,27,560/-	27-12-2016	Science and Engineering Research Board
20	Design of Reconfigurable Defected Ground Structure Resonator for Wireless Application	Dr. Arnab Nandi, Department of Electronics & Communication Engineering	Rs. 23,40,000/-	08-07-2015	Science and Engineering Research Board
21	Development & Testing of hybrid solar photovoltaic thermal (PVT) Air system for the composite environment of Northeast India for tea drying applications	Dr. Biplab Das, Department of Mechanical Engineering	Rs. 30,02,560/-	10-03-2018	Science and Engineering Research Board
22	An Application of Textual Entailment and Semantic Textual Similarity in Scientific Document Retrieval System	Dr. Partha Pakray, Department of Computer Science & Engineering	Rs. 10,59,448/-	01-11-2018	Science and Engineering Research Board
23	Stochastic multi-scale failure analysis of composites	Dr. Sudip Dey, Department of Mechanical Engineering	Rs. 11,55,000/-	26-06-2018	Aeronautics R & D Board
24	Department of Physics, NIT Silchar under FIST Project	Head, Department of Physics	Rs. 1,18,00,000/-	16-12-2016	Department of Science & Technology under FIST
25	Development of a prototype of disabled -friendly automatic virtual text-entry keyboard interface system under practical environmental conditions	Dr. R. H. Laskar, Department of Electronics & Communication Engineering Co-PI: Dr. Taimoor Khan, Department of Electronics & Communication Engineering	Rs. 89,45,420/-	24-12-2018	SERB -IMPRINT-2

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
26	Deep Summarization Evaluation	PI: Dr. Partha Pakray, Department of Computer Science & Engineering PI (French): Dr. Benoit Favre, Associate Professor, Dept. of informatique et interactions, Aix-Marseille University, France. Co-PI: Prof. Sivaji Bandyopadhyay Co-PI (France): Prof. Pr. Thierry Artieres, Dept. EcoleCentrale Marseille, Aix-Marseille University, France.	Rs. 35,53,777/-	20-03-2019	DST-INRIA / CNRS
27	Digital Expression of the Self (ie): Photographic Performativity in Contemporary India.  Project Code: P405	Indian PI: Dr. Avishek Ray, National Institute of Technology Silchar. Indian Co-PIs: Prof. Usha Raman, University of Hyderabad. International PI: Dr. Ethiraj Gabriel Dattatreyan, Goldsmiths, University of London. International Co-PI: Dr. Martin Webb, Goldsmiths, University of London.	Rs. 59,88,555/-	18-03-2019	SPARC
28	Multimodal Machine Translation- convergence of multiple modes of input.  Project code: P995	Indian PI: Prof. Sivaji Bandyopadhyay, NIT Silchar. Indian Co-PI: Dr. Thoudam Doren Singh, NIT Silchar. International PI: Prof. Josef van Genabith (University Des Saarlandes). International Co-PI: Dr. Cristina España I Bonet (University Des Saarlandes).	Rs. 49,58,775/-	18-03-2019	SPARC
29	Design and Development of Dielectric Resonator Based Electromagnetic Sensors for Efficient Harvesting of Renewable RF Ambient Energy in Smart City Applications  Project Code: P266	Indian PI: Dr. Taimoor Khan, NIT Silchar. Indian Co-PI: Prof. Asok De (Delhi Technological University) International PI: Prof. Yahia M. M. Antar (Queen's University) International Co-PI: Prof. Al P. Freundorfer (Queen's University)	Rs. 49,58,775/-	18-03-2019	SPARC
30	Investigation and development of robust control strayegy for nonlinear bilateral teleoperation system with delayed communication: An expertimental validation for rehabilitation of stroke patients Project Code: P1087.	Indian PI: Dr. Rajeeb Dey, NIT Silchar. Indian Co-PI: Dr. Nabanita Adhikary, NIT Silchar. International PI: Prof. Jason Gu (Dalhousie University) International Co-PI: Prof. Mo E1 Hawary (Dalhousie University)	Rs. 67,12,451/-	18-03-2019	SPARC

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
31	Topology Optimization of Complex Structures and Architected Metamaterials :: computational Design considering Uncertainties (TOCSAM)	Dr. Subhrajit Dutta, Department of Civil Engineering	Rs. 100000/-	17-07-2019	Department of Science & Technology (International Bilateral Cooperation Division)
32	Enabling innovative multiple self-healing technology in fiber-reinforced composite with unaltered mechanical properties	Dr. Sudipta Halder, Department of Mechanical Engineering	Rs. 3611080/-	21-05-2019	Science and Engineering Research Board
33	Leveraging Machine Learning and Soft Computing Techniques to Investigate the Raag Formation in Indian Classical Music	Dr. Anupam Biswas, Department of Computer Science and Engineering	Rs. 2468400/-	12-06-2019	Science and Engineering Research Board
34	Design and development of multi-bit phase change memory devices for next generation high density non-volatile memory applications	Dr. Shivendra Kumar Pandey, Department of Electronics & Instrumentation Engineering	Rs. 4477340/-	18-03-2019	Science and Engineering Research Board
35	Development of Spatial Data Infrastructure (SDI) and its impact on climate change for Cachar district, Assam, India	Dr. Dilip Ghose, Department of Civil Engineering	Rs. 2760000/-	12-12-2019	Department of Science & Technology
36	High Pressure phase Transition Electronics Elastic and Optical Properties of Selected Defect Chalcopyrite Semiconductors for optoelectronics application	Dr. S. K. Tripathy Department of Electronics and Communication Engineering	Rs. 10,70,000/-	17-07-2019	CSIR
37	A Computer-aided Recommendation Engine for the Health Diagnostic	PI: Dr. Partha Pakray, Department of Computer Science and Engineering. Co-PI: Prof. Sivaji Bandyopadhyay, Department of Computer Science and Engineering.	Rs. 1133000/-	10-09-2019	ASEAN
38	Development of Low-Cost, High-Efficiency and High-Stability Perovskite / Silicon Tandem Solar Cell for Energy Harvesting	PI: Dr. T. R. Lenka, Department of Electronics & Communication Engineering. Co-PI: Dr. S. K. Tripathy, Department of Electronics & Communication Engineering	Rs. 3194000/-	10-09-2019	ASEAN
39	Feasible Coordinated Controlled Grid-connected Photovoltaic Sourced DC based Fast Charging Infrastructure for Electric Vehicle Design, Development and Experimental Validation	Dr. Amritesh Kumar, Department of Electrical Engineering	Rs. 18945180/-	27-12-2019	SERB IMPRINT-2
40	JalAbhyaranya Campaign for Water Security in IHR	Dr. Sudipta Halder, Department of Mechanical Engineering	Rs. 1362400/-	23-08-2019	National Mission on Himalayan Studies

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
41	Development and Testing of Nano doped hybridized- diesel as pilot fuel operation in a stationary CI engine	Dr. Abhishek Paul, Department of Mechanical Engineering	Rs. 3197000/-	13-09-2019	Department of Science & Technology
42	Development and testing of combustion characteristics of nanoparticle embedded biodiesel in an open ECU based dual fuel diesel engine	Dr. Sumita Debbarma, Department of Mechanical Engineering	Rs. 2302200/-	19-12-2019	Science and Engineering Research Board
43	Optimal Solution Evaluation	Dr. Anupam Biswas, Department of Computer Science and Engineering	Rs. 2336500/-	29-10-2019	Science and Engineering Research Board
44	Design and development of soft interconnect for DC Microgrids using power electronics interface for improved reliability of power supply	Dr. Amritesh Kumar, Department of Electrical Engineering	Rs. 2908400/-	23-12-2019	Science and Engineering Research Board
45	Development of Low-Cost, High-Stability and High-Efficiency Perovskite Solar Cell for Energy Harvesting: A Theoretical and Experimental Study	Dr. T. R. Lenka, Department of Electronics and Communication Engineering	Rs. 2012500/-	12-02-2019	CSIR
46	Design and Development of a High-Speed Three Dimensional Pinter with a Large Range of Micro Motion using Scanning Stereo-lithography Technique	Dr. Yogesh Singh, Department of Mechanical Engineering	Rs. 27,30,000/-	02-12-2019	CSIR
47	Impact of error control code (ECC) on characteristic distance for underwater wireless sensor network (UWSN) and study of energy outage duration for energy harvested Uwsn using Markov model	Dr. Ashraf Hossain, Department of Electronics and Communication Engineering	Rs. 6,60,000/-	11-02-2020	Science and Engineering Research Board
48	Multi stability and hidden attractors in dynamical system	Co- PI: Prof B. K. Roy Department of Electrical Engineering	Rs. 66,32,556/-	29-05-2019	Department of Science & Technology (International Bilateral Cooperation Division)
49	Unravelling the problems, and supportive factors and their impact on the development of Rural Woman Entrepreneurs- A State Level Comparative Study	Co-PI: Dr. Mansi Rastogi, NIT Silchar	Rs. 15,17,400/-	20-03-2019	Indian Council of Social Science Research
50	Utilizing hazardous heavy metal (HM) sludge through fired brick production	Co-PI: Dr. Ajay Bhatt, Department of Civil Engineering	Rs. 18,28,000/-	18-06-2019	National Project Implementation Unit

## Developmental Project:

Sl. NO.	Name of the Project	Project Coordinator	Total Amount Sanctioned in Rupees	Date of Sanctioning the grant	Name of the Funding Agency
1.	Visvesvaraya Ph.D. Scheme for Electronics and IT at National Institute of Technology Silchar	Dr. K. L. Baishnab, Department of Electronics & Communication Engineering	Rs. 30,990,000/-	10-09-2015	Ministry of Communication & Information Technology
2.	Special Manpower Development Programme for CHIPS to System Design (SMDP-C2SD)	Dr. K. L. Baishnab, Department of Electronics & Communication Engineering	Rs. 997,200,000/-	15-12-2014	DeitY
3.	Innovation and Entrepreneurship Development Centre (IEDC) at NIT Silchar	Dr. Ashim Kumar Das, Department of Management Studies	Rs. 13,30,000/-	10-03-2016	Department of Science & Technology
4.	Unnat Bharat Abhiyan	Dr. Arup Kumar Goswami, Department of Electrical Engineering	Rs. 1,75,000/-	22-09-2015	MHRD

# STAFF POSITION

## i. Chief Academic & Executive Officer (Position as on 31.03.20)

Position	Name
Director	Prof. Sivaji Bandyopadhyay

## ii. Administrative Staff : (Position as on 31.03.20)

Name of the post	Sanctioned Strength	Staff in Position
Registrar	1	0
Deputy Registrar	3	1
Assistant Registrar	6	4
Librarian	1	0
Deputy Librarian	1	0
Assistant Librarian	1	1
SAS Officer	2	1
Sr. Technical Officer	1	1
Technical Officer	2	1
Executive Engineer	1	0
Engineer	2	0
Sr. Medical Officer	1	0
Medical Officer	2	1
Hindi Officer	1	0
Security Officer	2	0

## iii. Academic Staff: (Position as on 31.03.20)

Name of the post	Sanctioned Strength	Staff in Position
Professor		21
Associate Professor	282	25
Assistant Professor		152
Trainee Teachers		2

## iv. Faculty Position as on 31.03.20 (Department -wise break up)

Sl. No	Department	Professor	Associate Professor	Assistant Professor	Trainee Teacher	Total
1	Civil Engineering	8	2	22	1	33
2	Mechanical Engineering	5	3	24	0	32
3	Electrical Engineering	4	3	20	0	27
4	Electronics and Communication Engineering	2	6	22	1	31
5	Computer Science and Engineering	0	1	22	0	23
6	Electronics and Instrumentation Engineering	0	1	14	0	15
7	Mathematics	0	4	8	0	12
8	Physics	1	0	7	0	8
9	Chemistry	0	3	6	0	9
10	Humanities and Social Sciences	1	2	1	0	4
11	Management Studies	0	0	6	0	6

## v. Ministerial Higher Staff (as on 31.03.2020)

Name of the post	Sanctioned Strength	Staff in Position
Superintendent /Accountant /Secretary / Jr. Hindi Translator	10	0
Sr. Superintendent /Sr. Accountant /Sr. Secretary	8	1
Superintendent (SG - II) /Accountant (SG - II) /Secretary (SG - II)	5	0

## vi. Technical Higher Staff (as on 31.03.2020)

Name of the post	Sanctioned Strength	Staff in Position
Technical Assistant/ Junior Engineer /SAS Assistant	38	1
Sr. Technical Assistant/ Assistant Engineer /Sr. SAS Assistant	28	1
Technical Assistant (SG - II) / Assistant Engineer (SG - II) /SAS Assistant (SG - II)	13	0

## vii. Ministerial Lower Staff (as on 31.03.2020)

Name of the post	Sanctioned Strength	Staff in Position
Junior Assistant / Hindi Typist	21	4
Senior Assistant / Stenographer	16	1
Assistant (SG - II) / Sr. Stenographer	11	3

## viii. Technical Lower Staff (as on 31.03.2020)

Name of the post	Sanctioned Strength	Staff in Position
Technician / Works Assistant / Laboratory Assistant	38	3
Sr. Technician / Sr. Works Assistant / Sr. Laboratory Assistant	28	1
Technician (SG - II) / Works Assistant (SG - II) / Laboratory Assistant (SG - II)	19	4

## ix. Supporting Staff (as on 31.03.2020)

Name of the post	Sanctioned Strength	Staff in Position
Attendant / Mali	41	48

## x. Fresh Appointments Teaching (From 01.04.19 to 31.3.20)

Sl. No.	Name	Designation	Department	Date of Joining
1	Dr. Jiwanjot Singh	Assistant Professor Grade - II	Electrical Engineering	3-Jul-2019
2	Dr. Naresh Babu Muppalaneni	Assistant Professor Grade - II	Computer Science and Engineering	9-Jul-2019
3	Dr. Sumitra Sharma	Assistant Professor Grade - II	Mechanical Engineering	9-Jul-2019
4	Dr. Alfa Bisoi	Assistant Professor Grade - II	Mechanical Engineering	10-Jul-2019
5	Dr. Rajeev Nayan Gupta	Assistant Professor Grade - II	Mechanical Engineering	11-Jul-2019
6	Dr. Sushant Negi	Assistant Professor Grade - II	Mechanical Engineering	12-Jul-2019
7	Dr. Sudipta Chakraborty	Assistant Professor Grade - II	Electronics and Instrumentation Engineering	12-Jul-2019
8	Dr. Shankar K.	Assistant Professor Grade - II	Electronics And Instrumentation Engineering	12-Jul-2019
9	Dr. Asha Rani M.A.	Assistant Professor Grade - II	Electrical Engineering	12-Jul-2019
10	Dr. Sreejith S.	Assistant Professor Grade - II	Electrical Engineering	12-Jul-2019
11	Dr. Olympa Baro	Assistant Professor Grade - II	Civil Engineering	15-Jul-2019
12	Dr. Suprava Jena	Assistant Professor Grade - II	Civil Engineering	15-Jul-2019

Sl. No.	Name	Designation	Department	Date of Joining
13	Dr. Ambika Kuity	Assistant Professor Grade - II	Civil Engineering	15-Jul-2019
14	Dr. Bijit Choudhuri	Assistant Professor Grade - II	Electronics and Communication Engineering	17-Jul-2019
15	Dr. Anup Kumar Sharma	Assistant Professor Grade - II	Electronics And Instrumentation Engineering	19-Jul-2019
16	Dr. Risha Mal	Assistant Professor Grade - II	Electrical Engineering	22-Jul-2019
17	Dr. Vipin Chandra Pal	Assistant Professor Grade - II	Electronics And Instrumentation Engineering	23-Jul-2019
18	Dr. Swapna M.	Assistant Professor Grade - II	Electrical Engineering	29-Jul-2019
19	Dr. Atanu Sahu	Assistant Professor Grade - II	Civil Engineering	16-Aug-2019
20	Dr. Kulkarni Vihangraj Vijaykumar	Assistant Professor Grade - II	Civil Engineering	13-Sep-2019
21	Dr. Rama Koteswara Rao Kondasani	Assistant Professor Grade - II	Management Studies	06-Dec-2019
22	Dr. Tanaya Nayak	Assistant Professor Grade - II	Management Studies	11-Dec-2019
23	Dr. Bimalendu Adhikari	Assistant Professor Grade - II	Chemistry	16-Dec-2019
24	Dr. Simanchal Kar	Assistant Professor Grade - II	Mechanical Engineering	10-Jan-2020

#### xi. Fresh Appointments Non-Teaching (During 2019 - 2020)

Sl. No.	Name	Designation	Date of Joining
1	Mr. Subhradeep Dhar	Assistant Registrar	02-Dec-2019
2	Mr. Roopjyoti Deb	Assistant Registrar	06-Dec-2019
3	Mr. Manash Pratim Mahanta	Technical Officer	27-Feb-2020

#### xii. Appointments of Teaching (Contractual) (During 2019 - 2020)

Sl. No.	Name	Designation	Department
1	Dr. Ratna Nath	Temporary Faculty	12-Feb-2020

#### xiii. Retirement / Resignation (From 01.04.19 to 31.3.20)

Sl. No.	Name	Designation	Date of Retirement /Resignation
1	Ms. Shikha Chakraborty	Assistant (SG - I)	31-May-19
2	Mr. Phani Bhusan Nath	Technician (SG - I)	31-Aug-19
3	Mr. Binoy Roy	Attendant (SG - II)	31-Oct-19
4	Mr. Ratish Ch. Das	Attendant (SG - II)	30-Sep-19
5	Mr. Mohan Lal Verma	Attendant (SG - II)	31-Jul-19
6	Mr. Nantu Ram Das	Attendant (SG - II)	30-Sep-19
7	Mr. Ranu Deb	Attendant (SG - II)	31-Dec-19
8	Mr. Gauranga Paul	Attendant (SG - II)	30-Apr-19
9	Ms. Maicha Naga	Senior Attendant	31-Jan-20

#### xiv. Death In Harness (From 01.04.19 to 31.3.20): NIL

#### xv. Voluntary Retirement Scheme (From 01.04.19 to 31.3.20): NIL

# TEQIP-III

## Introduction to TEQIP-III

Technical Education Quality Improvement Programme (TEQIP) is a World Bank and MHRD funded project for the technical Institutions for improving the quality of Engineering Education in existing institutions with special consideration for the Low Income States and Special Category States (SCS) and support to strengthen few affiliated technical universities to improve their policy, academic, and management practices.

TEQIP seeks to enhance quality and equity in participating engineering education institutions and improve the efficiency of the engineering education system in focus states. The Project supports two components:

- **Component - 1:** Improving quality and equity in engineering institutions in focus states
  - **Sub-component 1.1:** Institutional Development for Participating Institutions An estimated 90 Engineering Education institutions meeting (progressively) the enabling mechanisms and based on the quality of Institutional Development Proposals (IDPs), will be selected.
  - **Sub-component 1.2:** Widening Impact through ATUs in focus states An estimated 8 ATUs meeting the enabling mechanisms will be selected with matching contribution equal to project allocation.
  - **Sub-component 1.3:** Twinning Arrangements to Build Capacity and Improve Performance of Participating Institutions and ATUs

Institutions (already participated in TEQIP-I and/or II)/ATUs will be selected on a competitive basis based on pre-defined eligibility criteria. The evaluation will be based on the quality of IDPs. The proposal should include establishing a mentoring system for twinning arrangements to build the capacity and improvement in the performance of institution/ATUs participating under sub-component 1.1/1.2 respectively.

- **Component - 2:** System-Level initiatives to strengthen sector governance and performance
  - This component will support MHRD and key apex bodies in engineering education, including AICTE and NBA, to strengthen the overall system of engineering education.

NIT Silchar has successfully completed Phase I and Phase II of the TEQIP project. Presently NIT Silchar is under TEQIP phase III, Sub - Component 1.3. Under Twinning arrangements, NIT Silchar is selected as Mentor Institute for Guwahati University Institute of Science Technology (GUIST), Guwahati.

## TEQIP-III: Project Scope

Only the Government and Government aided AICTE approved Engineering institutions/Engineering faculty/Engineering Teaching Department/Constituent Institutions of Universities/Deemed to be Universities and new centrally funded institutions in SCS will be the part of the project. An estimated 200 Government and Government funded Engineering institutions including Affiliating Technical Universities (ATUs) will be selected under different sub-components in one or two cycles.

## TEQIP-III: Project Objectives

The Project will focus on the following objectives:

- Improving quality and equity in engineering institutions in focus states viz. 7 Low Income States (LIS), eight states in the North-East of India, three Hill states viz. Himachal Pradesh, Jammu & Kashmir, Uttarakhand and Andaman and Nicobar Islands (a union territory (UT))
- System-level initiatives to strengthen sector governance and performance which include widening the scope of Affiliating Technical Universities (ATUs) to improve their policy, academic and management practices towards affiliated institutions, and

- Twinning Arrangements to Build Capacity and Improve Performance of institutions and ATUs participating in focus states.

**Name of TEQIP-III Officials, NIT Silchar:**

Name	Position	Email
Prof. Sivaji Bandyopadhyay	Director, NIT Silchar & Institute Project Director, TEQIP-III	director@nits.ac.in
Dr. Sukumar Pati	Coordinator TEQIP-III	sukumarpati@gmail.com
Dr. Rajdeep Dasgupta	Nodal Officer (Academic) TEQIP-III	rdg.nits@gmail.com
Mr. Pulak Nath	Nodal Officer (Finance) TEQIP-III	Pu_nth@yahoo.com
Dr. Wasim Arif	Nodal Officer (Procurement) TEQIP-III	arif.ece.nits@gmail.com
Dr. Wasim Arif	Coordinator, Startup	arif.ece.nits@gmail.com
Dr. Arnab Nandi	Coordinator NBA Accreditation	dr.arnab.nandi@gmail.com
Prof. Srimanta Baishya	Coordinator Induction Program	s.baishya@yahoo.co.in
Dr. Bipul Das	Coordinator Twinning	bipul@mech.nits.ac.in
Dr. Partha Pakray	Nodal Officer (MIS)	parthapakray@gmail.com
Mr. Rajat Kumar Rabidas	Finance Assistant & PFMS Operator	rajat.rabidas@gmail.com
Mr. Salam Uddin Ahmed	MIS Operator	salamahmed806@gmail.com

**TEQIP-III: NIT Silchar Fund Allocation under****Sub- Component 1.3****Total Fund Allocation = 770 lacs.****Indicative Category-wise Funding for Key Activities of NIT Silchar under Subcomponent 1.3**

Sl. No	Key activities	Category of Expenditure (Head of expenditure)	Description	% of the share	Percentage (%)	Cost (Rs. in lacs)
1	Procurement of Goods (equipment, furniture, books LRs, software, and minor items) and civil works for improvement in teaching, training, and learning facilities	Procurement	Books and LRs	15	Up to 50%	385
			Equipment	15		
			Furniture	5		
			Services	10		
			Civil Works	5		
2	Improvement in Teaching, Learning and Research competence' <ul style="list-style-type: none"> <li>▪ Improve student learning</li> <li>▪ Student employability</li> <li>▪ Increasing faculty productivity and motivation</li> <li>▪ Establishing a twinning system</li> <li>○ Twining arrangements with institutions under Subcomponent 1.1 to build capacity and improved performance</li> <li>○ Individual institutional mentors</li> </ul>	Academic	Improve student learning	10	At least 40%	308
			Student employability	10		
			Increasing faculty productivity and motivation	10		
			Establishing a twinning system	10		
			Establishing a twinning system	10		
3	Incremental Operating Cost	IOC			Up to 10%	77
<b>TOTAL</b>						<b>770</b>

## Outside Conferences/seminars/workshops attended by Faculty. (April 19 – Mar 20)

Sl	Name	Deptt	Topic	Date	Venue / Place
1	Dr. Anupam Biswas	CSE	Note repositioning algorithm for musical instruments in Indian classical music	06-07 July 2019	Jadavpur University
2	Dr. Ripon Patgiri	CSE	acBF: A high Accuracy membership filter using rDBF	05-07 Sept,2019	IIIT, Bangalore
3	Dr. Jupitara Hazarika	EIE	Wavelet-based Denoising of EEG signal acquired from tele serial addicted persons	10-11 Oct 19	Noida, India
4	Dr. Manas Kumar Bera	EIE	Event triggered sliding mode control based trajectory tracking of robotic manipulators in a cyber-robotic space	17-20 Oct 2019	Kochi, Kerala
5	Dr. Ranjay Hazra	EIE	A region-based level set formulation using machine learning approach in medical image segmentation	17-20 Oct 2019	Kochi, Kerala
6	Dr. Olympa Baro	CE	Quantification of seismic hazard and mitigation of induced effect.	08-09 Nov 19	IIT Guwahati
7	Dr. Gaurav Singh Baghel	ECE	Output system of a 42/84 GHz 0.5 mw, dual regime gyrotron	21-23 Nov 19	NIT Patna
8	Dr. Sukumar Pati	ME	Numerical study of thermo hydraulic characteristics for forced connective flow through wavy channel	29 Nov – 01 Dec 19	NIT Trichy
9	Dr. Pitambar R. Randive	ME	Numerical investigation on the effect of magnetic field and natural convection heat transfer from a pair of embedded cylinders within a porous enclosure	29 Nov – 01 Dec 19	NIT Trichy
10	Dr. Trupti Ranjan Lenka	ECE	Comparative numerical simulation study of lead based and lead free perovskite solar cells	19-21 Dec 19	Bhubaneswar
11	Dr. Wasim Arif	ECE	Analytical Modelling and Performance Evaluation of a prediction based EH- Cooperative CRN under Erlang distribution	16-19 Dec 19	Goa
12	Dr. Shyamapada Mukherjee	CSE	Spoken Language recognition using CNN	19-21 Dec 19	IIIT Bhubaneswar
13	Dr. Manas Kumar Bera	EIE	Robust Non overshooting tracking & model following controller using multi variable super twisting algorithm	18-20 Dec 19	IIT Hyderabad
14	Dr. Ranjay Hazra	EIE	Resource sharing energy harvesting based D2D communication underlying cellular network	16-19 Dec 19	Goa Campus
15	Dr. Atanu Sahu	CE	A novel sloshing damper for vibration control of short period structures	11-13 Dec 19	Mandi, HP
16	Ms. Ananghsa Alammyan	CE	An Autonomous program for crack length determination in an unsaturated soil in 1-D column	19-21 Dec 19	SVNIT Surat
17	Dr. Pankaj Biswas	Mathematics	Bifurcation phenomena for incompressible laminar flow in expansion channel to study Coanda effect	20-22 Jan 20	Jaipur
18	Dr. Kedar Nath Das	Mathematics	An Elitist GA for maximum independent set Problem: A sustainable technology	22-25 Feb 20	Goa

**Outside Conferences/seminar/workshops attended by Students. (April 19–Mar 20)**

Sl. no	Name of Student	Scholar No	Designation	Dept.	Date	Venue	Title of presentation
1	Raju Prasad Saw	17-2-2-206	M. Tech	ME	02-04 May 19	NIT Warangal	Optimizing microhardness of electroless Ni-P coated copper substrate using PSO
2	Furquan Nadeem	18-3-3-121	Ph.D.	EE	30-31 Mar 19	VIT Vellore	Review of smart and innovative energy storage systems
3	Inamul Hussain	15-3-3-110	Ph.D.	EE	03-05 Apr 19	Chennai	A new 4-2 compressor for VLSI Circuits and systems
4	Aditya Roy	18-3-2-132	Ph.D.	ME	02-04 May 19	NIT Warangal	Comparative study of various defects in monolayer grapheme using molecular dynamics simulation
5	Prashanta Pathak	17-49-106	M.Sc.	Physics	29-30 Apr 19	Kanya Kumari	Electrical bistability in MoS <sub>2</sub> Nano Sheet doped polymeric nanocomposite films
6	Sandeep Samantary	17-3-01-139	Ph.D.	CE	07-08 June 19	Bangalore	Assessment of groundwater potential using neural network
7	Nipom Sekhar Das	18-3-24-104	Ph.D.	Physics	12-14 June 19	Kerala	Studies on electrical characteristics of organic in organic heterostructure
8	Soumya Sundar Pattanayak	16-3-06-103	Ph.D.	EIE	07-09 June 19	Kolkata	Modelling agricultural residue based microwave absorber under X based frequency
9	Abdul Latif	16-3-03-101	Ph.D.	EE	07-09 June 19	Kolkata	Virtual Power plant enabled coordinated frequency control of a grid connected independent hybrid microspic using fireflu algorithm
10	Abdul Latif	16-3-03-101	Ph.D.	EE	07-09 June 19	Kolkata	Coordinated frequency support of solar field wind based hybrid microgrid system using WOA optimizer single controller
11	Soumen Biswas	17-3-06-103	Ph.D.	EIE	07-09 June 19	Kolkata	A novel level set method for medical image segmentation
12	Durga Mibang	17-3-01-119	Ph.D.	CE	11-13 July 19	Odisha	Performance based design of duat system
13	Shulanki Pal	15-3-01-113	Ph.D.	CE	11-13 Jul 19	Odisha	Comparision of effectiveness of TLCBD over LCVA in vibration control of structure under non stational earthquake
14	Sudhanshu Ranjan	15-3-03-116	Ph.D.	EE	07-09 Jun 19	Kolkata	Dynamic frequency analysis of hybrid micro grid through electric water heater under demand response scheme

Sl. no	Name of Student	Scholar No	Designation	Dept.	Date	Venue	Title of presentation
15	Sandeep Samantaray	17-3-01-139	Ph.D.	CE	05-07 Jul 19	Goa	Prediction of sedimentation in an arid watershed using BPNN and ANFIS
16	Ranjeet Kumar	19-3-05-110	Ph.D.	CSE	06-07 Jul 19	Kanpur	Melody extraction from polyphonic music using DNN Aliterature survey
17	Vaishali	18-3-02-115	Ph.D.	ME	02-05 Jul 19	IISC Bangalore	Effect of thickness on stochastic natural frequency of functionally graded spherical shells
18	Biswajit Roy	17-3-02-119	Ph.D.	ME	11-13 July 19	IIT Madras	Steady state behaviour of hydrodynamic journal bearing including random surface roughness
19	Ariful Mashud	17-3-06-108	Ph.D.	EIE	17-20 Sept, 2019	Kochi	A multivariable super twisting sliding mode control of descriptor systems
20	Nalini Prasad Mohanty	15-3-03-101	Ph.D.	EE	20-21 Sep, 2019	SIT	Synchronization for nonlinear time delay chaotic diabetes mellitus system via sliding mode control
21	Debasis Tripathy	15-3-03-102	Ph.D.	EE	20-21 Sep, 2019	SIT	Comparative analysis of facts coordinated hybrid power system with RFB for AGC using GOA based F 2DOF PID Controller
22	Debasis Tripathy	15-3-03-102	Ph.D.	EE	06-07 Sep, 2019	Gurugram	Comparative performance assesment of several fractional order two degree freedom controllers tuned using GOA for LFC
23	Puja Ghosh	17-3-04-107	Ph.D.	ECE	17-20 Oct, 2019	Kochi	The Impact of donor/Acceptor types of Interface traps on Fe DS SBTFT characteristics
24	Pawann Kumar Kushwaha	18-3-03-103	Ph.D.	EE	20-21 Sep, 2019	SIT	Comparative analysis of impacts on voltage stability for electrical loading in IEEE 14 Bus system
25	Manish Dutta	16-3-01-104	Ph.D.	CE	20-21 Sep 19	SIT	Review of capacity estimation at unsignalized intersections in the indian context
26	Antareep Kumar Sarma	16-1-1-070	B.Tech	CE	19-21 Dec 19	SVNIT	stability assesment of a soil slope in meghalaya, north eastern India
27	Durgesh Kumar Mishra	17-3-02-126	Ph.D.	ME	10-11 Oct 19	Gurgaon	Analysis on development of beeswax as phase change material for thermal energy storage
28	Yagnyasene Sen Gupta	17-3-05-111	Ph.D.	CSE	20-21 Sept 19	West Bengal	A study on smart cities using blockchain

Sl. no	Name of Student	Scholar No	Designation	Dept.	Date	Venue	Title of presentation
29	Nikimoni Das	18-22-213	M.Tech	ME	21-22 Sept 19	Goa	Analysis of deformation and mode shape in the landing gear of light unmanned aerial vehicle
30	Mausri Bhuyan	17-3-03-105	Ph.D.	EE	20-21 Sept 19	West Bengal	Sine cosine algorithm based automatic load frequency control of hybrid microgrid with demand side management
31	Rutupurna Choudhury	18-2-02-118	Ph.D.	ME	10-11 Jan 20	Nagpur	Kinematic dynamic and stiffness analysis of an asymmetric 2PRP PPR planar parallel manipulator
32	Deep Singh	19-3-02-117	Ph.D.	ME	10-11 Jan 20	Nagpur	Behaviour of NiTi based smart actuator for the development of planar parallel micro motion stage
33	Rajeev Das	18-3-22-110	Ph.D.	Maths	18-24 Sept 19	West Bengal	Green vehicle routing problem A critical survey
34	Sandip Saha	18-3-22-105	Ph.D.	Maths	18-24 Sept 19	West Bengal	Numerical modelling of bifurcation and leakage of blood flow in mitral valve to predict heart malfunctioning
35	Manash Protim Boruah	17-3-02-110	Ph.D.	ME	28-31 Dec 19	IIT Roorkee	Conjugate mixed connection heat transfer in a backward facing step channel
36	N. Rambabu	17-3-03-103	Ph.D.	EE	13-15 Dec 19	Gujarat	Maiden application of coyote optimizer algorithm with TIDN controller in Aac of a multi-area
37	Subhasis Chakravarty	18-3-02-116	Ph.D.	ME	29 Nov- 01 Dec 19	NIT Tiruchi	Numerical analysis on the influence of jet inclination on the combustion characteristics of a scramjet combustor
38	Mr. Jasti Sateesh	17-3-04-108	Ph.D.	ECE	13-15 Dec 19	Gujarat	Design & analysis novel structure for replication of reabsorption function for artificial kidney applications
39	Bhaskar Ranjan Tamuli	17-3-02-109	Ph.D.	ME	28-31 Dec 19	IIT Roorkee	Effect of discrete heating in melting of phase change material : A Numerical study
40	Partha Pratim Sarkar	18-03-01-104	Ph.D.	CE	13-14 Dec 19	Sikkim	Prediction of El nino southern oscillation using ANNs
41	Dhrijit Kumar Deka	18-3-02-106	Ph.D.	ME	28-31 Dec 19	IIT Roorkee	Natural convection heat transfer in a square cavity with porous block of different aspect ratio

Sl. no	Name of Student	Scholar No	Designation	Dept.	Date	Venue	Title of presenattion
42	Praveen Kumar Nambisan T M	18-3-06-101	Ph.D.	EIE	02-04 Jan 20	Kerala	Economic performance of solar assisted battery & supercapacitor based E Rickshaw
43	Navadeep Ranjan Nath	16-1-2-047	B .Tech	ME	28-31 Dec 19	IIT Roorkee	Thermophoretic effects on micro particle transport.
44	Vaishali	18-3-02-115	Ph.D.	ME	11-13 Dec 19	IIT Mandi	Support vector model based thermal uncertainty on stochastic natural frequency of functionally graded cylindrical shells
45	Angkan Bania	18-2-02-211	M .Tech	ME	07-09 Nov 19	Bengaluru	Optimization of ultrasonic machining parameters on micro hole drilling of graphene reinforced epoxy nano composite using EDAS method
46	Rajdeep Paul	17-3-02-120	Ph.D.	ME	07-09 Nov 19	Bengaluru	The effect of filler treatment on the frictional performance of coir dust reinforced polymeric composite
47	Abinash Sahoo	18-3-01-112	Ph.D.	CE	01-02 Nov 19	AP	Prediction of sedimentation in a watershed using RNN and SVM
48	Subhankar Jana	18-3-22-112	Ph.D.	Maths	16-18 Jul 19	Tripura	On regular fuzzy boundary
49	Utkarsh Singh	16-1-5-049	B. Tech	CSE	18-21 Dec 19	IIITM K	Foreign accent classification using deep neural nets
50	Sumit Kumar Mehta	17-3-02-115	Ph.D.	ME	28-31 Dec 19	IIT Roorkee	Thermo hydraulic analysis for forced convective flow through partially filled metallic porous wavy channel considering dispersion effect
51	Ankur Jain	15-03-03-112	Ph.D.	EE	08-09 Nov 19	MIT Manipal	Motion estimation of autonomous vehicle in naisy surroundings
52	Subhrajyoti Deb	15-3-01-112	Ph.D.	CE	18-20 Dec 19	Hyderabad	Temperature trend analysis for the sub-tropical region of the brahmaputra river basin in India
53	Pranita Baro	19-3-05-114	Ph.D.	CSE	13-14 Dec 19	NIT Agartala	Empirical analysis on the effect of image compression and senoising using different wavelts on iris recognition
54	Sahinur Rahman Laskar	19-3-05-104	Ph.D.	CSE	06-08 Dec 19	IIIT Allahabad	Neural machine translation : English to Hindi
55	Sneha Raichel Jimmy	18-21-108	M. Tech	CE	01-02 Nov 19	AP	Prophecy of vunoff in a vivev basin using various neural networks

Sl. no	Name of Student	Scholar No	Designation	Dept.	Date	Venue	Title of presentation
56	Apurba Nath	17-3-01-129	Ph.D.	CE	18-20 Dec 19	Hyderabad	Dam break modelling of an earthen dam for flood forecasting
57	V.S.S. Venkatesh	18-3-02-105	Ph.D.	ME	20-21 Dec 19	SVIT	Effect of controllable parameters on the tribological behavior of ceramic particulate reinforced aluminium metal matrix composites : A review
58	Habiba Afrooz	17-3-01-109	Ph.D.	CE	18-20 Dec 19	Hyderabad	Study of local scour at 180 bend and its protection using porcupines

#### In House workshops organized under the aegis of TEQIP-III at NIT Silchar in 2019-2020

Sl No	Date	Topic	Deptt.	Coordinator	Prog. Type
1	01-05 April 2019	Recent Advancement in Microwave engineering (RAME-2019)	ECE	Dr. Gaurav Singh Baghel	Workshop
2	13-17 April 2019	MEMS Engineered Medicine Breaking Barriers in Medical Diagnostics	ECE	Dr. Koushik Guha	Workshop
3	26-30 April 2019	Modelling of Novel Nano electronic Devices and Circuits for ULSI Technology	ECE	Dr. T. R. Lenka	Workshop
4	08-10 Apr 2019	Integrated Soil & water Modeling	CE	Dr. Susmita Ghosh, Dr. P. J. Roy, Dr. Prashant J	Workshop
5	18-22 April 2019	Hazard Mitigation of Onshore and Offshore Structures	CE	Dr. Bijan Kumar Roy, Dr. Prasanth J, Dr. M. L. V. Prasad	Workshop
6	06-07 April 2019	ELIXIR	ME	Dr. Bipul Das, Dr. A. Paul, Dr. Y. Singh, Dr. C. Kumar Sahoo	Industrial Lectures
7	08-12 Apr 2019	Deep Learning Techniques & Tools: An academic & Industrial Approach	CSE	Dr. Pinki Roy, Dr. Partha Pakray, Dr. Ripon Patgiri	Workshop
8	20-24 May 2019	eSMART- 2019	ME	Dr. Yogesh Singh, Dr. Bipul Das, Dr. S. K. Pandey	Workshop
9	20-24 May 2019	Curriculum Design & Implementation	Maths & ECE	Dr. Subrata Bera, Dr. W. Arif, Dr. S. Roy, Dr. B. Nath, Dr. M. Sen, Dr. G. Ramesh	FDP
10	26-30 July 2019	Challenges in Operation & Control of Distributed Energy Resources	EE	Dr. Partha Kayal, Dr. Saheli Roy, Dr. A Kumar, Dr. P. K. Tiwari	STTP
11	22-26 July 2019	Data Analytics with Machine Learning Techniques	CSE	Dr. S. K. Biswas, Dr. Malaya Dutta Borah, Dr. Anupam Biswas	Workshop
12	22-26 July 2019	CVPRML-2019	ECE	Dr. R. Hussain Laskar, Dr. R. Kumar Karsh, Dr. T. Goyel	Workshop
13	05-09 Aug 2019	Recent Development in water and Geo- environmental issues	CE	Dr. D. K. Ghose	Workshop
14	16-20 Aug 2019	FOSTA-2019	EE	Dr. N. Adhikary, Dr. Avadh Pati, Dr. A. kumar, Prof. B. K. Roy, Dr. R. K. Biswas	STTP
15	22-26 Aug 2019	IAPCA-2019	EIE	Dr. Lalu Seban, Dr. Koena Mukherjee	Workshop
16	31 Jul- 02 Aug 2019	Debate Competition	Institute	Dr. A. Ray	Induction Program

Sl No	Date	Topic	Deptt.	Coordinator	Prog. Type
17	14-19 Oct 2019	Cyber Security	CSE	Dr. Naresh Babu M, Dr. L. Dolendro Singh	FDP
18	14-16 Feb 2020	ICRAME-2020	ME	Dr. A. Biswas	International Conference
19	01-05 April 2019	Recent Advancement in Microwave engineering (RAME-2019)	ECE	Dr. Gaurav Singh Baghel	Workshop
20	13-17 April 2019	MEMS Engineered Medicine Breaking Barriers in Medical Diagnostics	ECE	Dr. Koushik Guha	Workshop

# AWARDS AND ACHIEVEMENTS

- NIT Silchar has secured 46<sup>th</sup> position amongst all the engineering universities in India as per NIRF 2019 data. It is also the 9<sup>th</sup> amongst all the NITs as per the same ranking, with a score of 48.66.
- NIT Silchar has secured 16<sup>th</sup> position in Top T-Schools (Overall) India Survey 2020 and secured 3<sup>rd</sup> position in East zone.
- NIT Silchar has secured 26<sup>th</sup> position in India Today-MDRA Best College ranking (2020) and secured 5<sup>th</sup> position in the East zone.
- NIT Silchar has secured 32<sup>nd</sup> position in THE WEEK Best Engineering Colleges India 2020.
- NIT Silchar has secured rank in the band of 11-25 in Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020 (Category 'Institute of National Importance, Central Universities and CFTIs').

Below is a comprehensive list of the awards and achievements of the NITS student fraternity, 2019-20.

## ***Achievement of Students of NIT Silchar in Sports, Cultural and Technical activities during 2019-20.***

Sl No.	Name of the Students with Branch	Name of the Event	Position	Date & Place
a.	Ridon Prasad Kakoti (CE)	All India Inter NIT Tournament (Table Tennis Doubles)	2 <sup>nd</sup> Position	11 <sup>th</sup> - 13 <sup>th</sup> Oct. 2019 at NIT Silchar
b.	Golam Zoheb Hasan (ECE)			
a.	Lamnganbi Khuman (EE)	All India Inter NIT Tournament (Table Tennis)	2 <sup>nd</sup> Position	11 <sup>th</sup> - 13 <sup>th</sup> Oct. 2019 at NIT Silchar
b.	Akanksha Kedia (EE)			
c.	Roseleen Borah			
d.	Vartika Varshney (CSE)			
a.	Lamnganbi Khuman (EE)	All India Inter NIT Tournament (Table Tennis Doubles)	2 <sup>nd</sup> Position	11 <sup>th</sup> - 13 <sup>th</sup> Oct. 2019 at NIT Silchar
b.	Akanksha Kedia (EE)			
a.	Khumcham Sonam Devi (CSE)	All India Inter NIT Tournament (Yoga)	3 <sup>rd</sup> Position	11 <sup>th</sup> - 13 <sup>th</sup> Oct. 2019 at NIT Silchar
b.	Akta Singh (MSc Physics)			
c.	Ashapriya Borgohain (EE)			
d.	Purobi Sorong (EE)			
e.	Kangkana Moran (EE)			
a.	Priya Nath (EE)	All India Inter NIT Tournament (Chess)	3 <sup>rd</sup> Position	17 <sup>th</sup> - 19 <sup>th</sup> Oct. 2019 at MNIT Jaipur
b.	Debanjana Purkayastha (ME)			
c.	Radhika Malik (MSc Maths)			
d.	Anupama Deb (EIE)			
a.	Aditya Soni (CSE)	All India Inter NIT Tournament (Lawn Tennis)	2 <sup>nd</sup> Position	17 <sup>th</sup> - 19 <sup>th</sup> Oct. 2019 at MNIT Jaipur
b.	Koustobh Ronveer Borah (CE)			
c.	Snehal Nayan (ECE)			
d.	Palash Jyoti Borah (MBA)			
a.	Sagar Talukdar (CE)	All India Inter NIT Tournament (Body Building)	1 <sup>st</sup> Position (55-60 KG)	17 <sup>th</sup> - 19 <sup>th</sup> Oct. 2019 at MNIT Jaipur
a.	Sangepuleelasaikiran (ME)	All India Inter NIT Tournament (Body Building)	3 <sup>rd</sup> Position (65-70 KG)	17 <sup>th</sup> - 19 <sup>th</sup> Oct. 2019 at MNIT Jaipur
a.	Ayushi Johari (CSE)	Model United Nations	Best Delegate High Commendation High Commendation	31 <sup>st</sup> Oct - 2 <sup>nd</sup> Nov 2019 at St. Anthony's College, Shillong
b.	Jishnu K. Hazarika (CE)			
c.	Deepjoy Dey (CSE)			
a.	Arnab Das (CSE)	North-Eastern Regional Inter College Invitation Quiz(NERICIQ)	2 <sup>nd</sup> Prize	9 <sup>th</sup> Nov - 10 <sup>th</sup> Nov 2019, RajibBhavan, Silchar.
b.	Jishnu Kashyap Hazarika (CE)			
a.	Yash Sarwaswa	Impromptu- Spring Fest 2020	2 <sup>nd</sup> Prize	24 <sup>th</sup> January - 26 <sup>th</sup> January 2020 IIT Kharagpur

# GLIMPSES OF ANNUAL ACTIVITIES



*Honourable Education Minister Shir Ramesh Pokhriyal Nishank Inaugurating Solar Power Plant and Girls Hostel 2020*



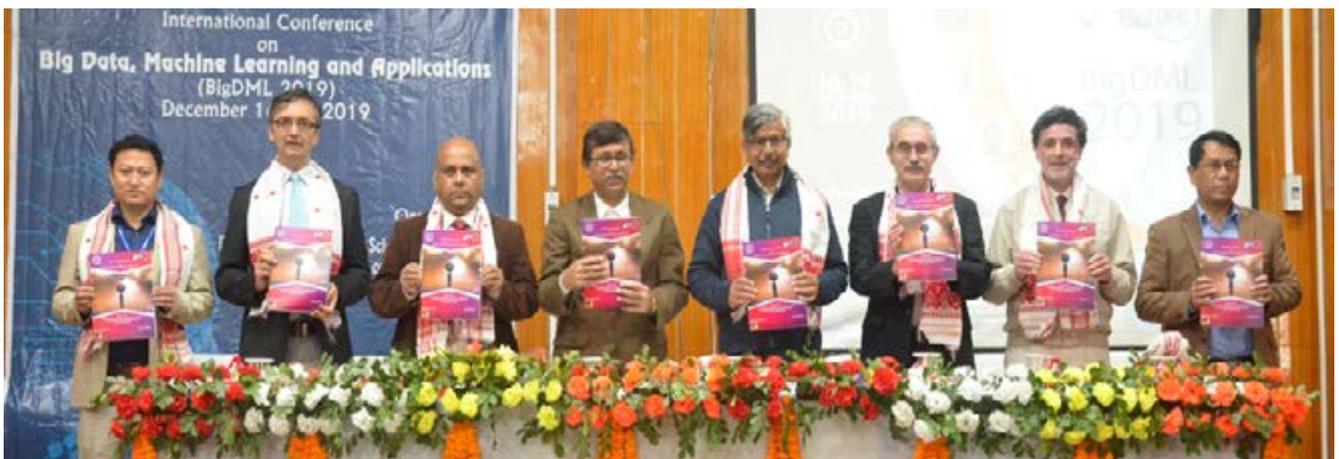
*Republic Day Celebration 2020*



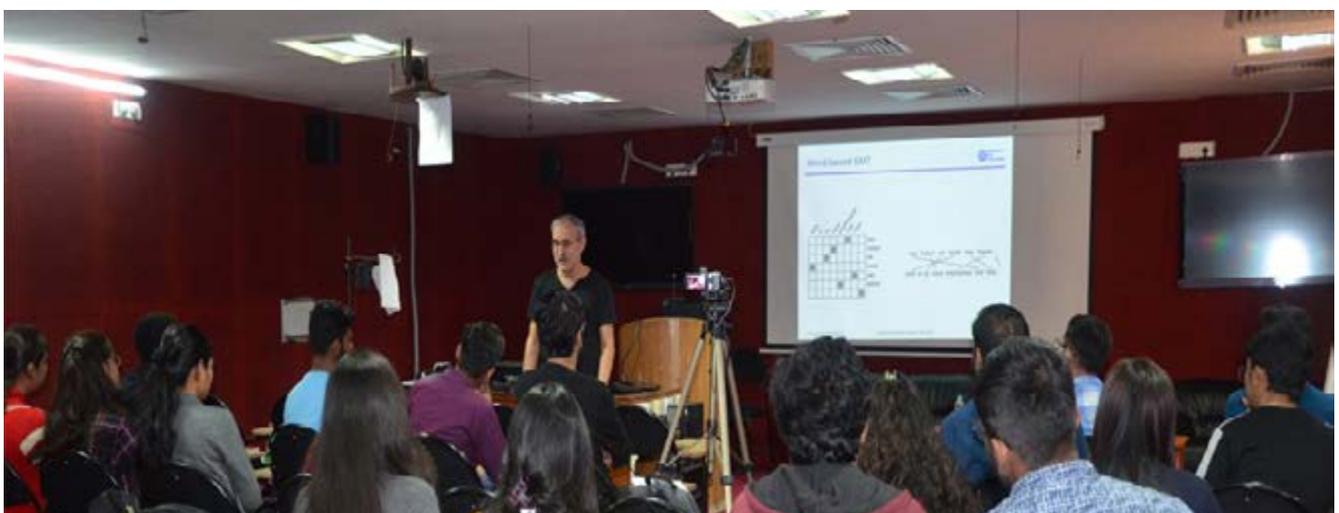
*BigDML 2019 Event*



*Institute Library*



*Conference proceedings of BigDML 2019*



*Technical Session conducted by Foreign Faculty*



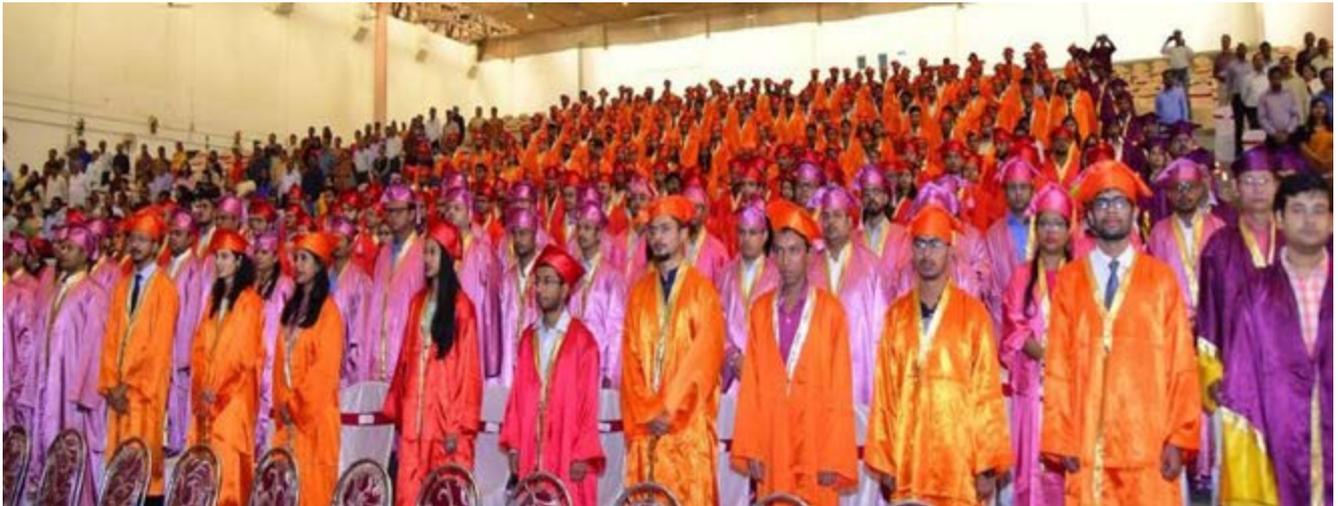
*Entrance of NIT Silchar*



*Inter-Hostel Volleyball Tournament*



*Cycle Rally during Swachhata Hi Seva Celebration*



*Convocation 2019*



*Bihu Celebration in NIT Silchar*



*Guest House of NIT Silchar*



*International Day of Yoga 2019*



*Induction Program 2019*



*Fit India Movement 2019*



*Independence day 2019*



*Inside view of Guest house Auditorium*



*Gandhi Global Solar Yatra (GGSY) 2019*



*Inauguration of Cloth Donation Programme 2019*



*Swachhta Pakhwada 2019*



*Cloth Donation*



*All India Inter NIT Tournament 2019*



All India Inter NIT Tournament



Anveshan 2.0 (2020)



Anveshan 2.0 (2020)

# Flowers in the Campus



# Birds in the Campus



# Corporate Social Responsibility



**GYANSAGAR**  
**A Step Towards Positive Change**  
**Social Wing of NIT Silchar**



Gyansagar is a social service wing of NIT Silchar, volunteered by the students of the institute which is encouraged and approved by Prof. Sivaji Bandyopadhyay, Director, NIT Silchar. For the last many years, Gyansagar has put its effort towards the development of society. The development is in terms of general education, IT education, health awareness, job-opportunity awareness, exploring the inherent qualities of kids in villages, etc.

Gyansagar was started in the year 2009 by a group of students led by Mr. Aditya Choudhary, an electrical engineering 2012 pass out student from NIT Silchar. Since then, it has taken huge leaps to become a social organization which benefits the nearby villages and communities near NIT Silchar. It had been headed by the dynamic leadership of Prof. (Dr) A. K. Sil, Professor, Department of Chemistry, NIT Silchar, since its establishment.

The various activities of Gyansagar are being carried out smoothly due to the consistent effort of the chief student coordinators Mr. Nitish Rajpurohit and Mr. Mukesh Swarup. We have now more than 150 registered student volunteers. Undoubtedly, the wholehearted support of the student community of NIT Silchar is highly appreciated.

## Activities organized:

Gyansagar aims at creating a difference in the lives of children and people of nearby villages through quality education, awareness programs, and courses that bring them at par with the national level of education. The major activities are listed below.

Various Events conducted under Gyansagar:

1. NIT CIT - Certification in Information Technology
2. NIT CEA - Certification in Electrical Appliances
3. Cloth Donation
4. Teaching Programmes in various nearby schools - Borakhai High School, Valley School etc.
5. Health Camp & Awareness Campaign on Menstrual Health.
6. Science Exhibition.

Some details about NIT CIT, Cloth Donation, Health Camp, and Teaching programmers are given below:

### **Cloth Donation:**

Like every year, last year also on 3<sup>rd</sup> November 2019, Gyansagar conducted a Cloth donation camp. In this event student volunteers of Gyansagar, NIT Silchar have visited nearby poor villages like Fakeertilla, Borakhai, Ghumgoor Kuarpar. About 3000 numbers of clothes donated by students, faculty, and staff members of NIT Silchar were collected, washed, and segregated into various segments like kids, men, ladies. It is just a service to the poorest of the poor people. The *happiness reflected among the villages was greatly realized.*



*Inauguration of Cloth Donation Programme by Director, NIT Silchar*



**Teaching programme:**

The teaching programme was conducted on weekends to help the meritorious students who are financially weak to carry on their education and come out with flying colours in their high school. They were also trained for competitive examinations like JEE and NEET in these competitive timings. We provided career counseling during the sessions in Borakhai high school, K.V. NIT, and several others. We gathered students from nearby villages who couldn't afford to get quality education and gave them the basic education required to take forward their lives in a better way. We also organized workshops regarding menstrual hygiene

**Ek Prayas:**

Ek Prayas was a new beginning by Gyansagar to help poor students get regular free coaching all over the week and support their skills and further nourish them. Ek Prayas saw attraction from over 100 students



*Classes conducted by student volunteers of Gyansagar under EkPrayas*

## HEALTH CAMP:

“It is health that is real wealth and not pieces of gold and silver.”

Inspired by these words of Father of Nation Mahatma Gandhi, and staying true to its mission of improving the lives of the underprivileged section of society, GYANSAGAR NIT Silchar organised a Health Camp, under the patronage of Director, NIT Silchar Prof. Sivaji Bandyopadhyay and the support of Faculty coordinator Dr. S. S. Dhar and Faculty co-coordinator Dr. Avijit Chowdhury, for the people of nearby villages and NIT Silchar fraternity at SAC building from 10:30 am onwards on the auspicious occasion of 71st Republic Day.

Free health camp with a free medical diagnosis, consultancy, medical tests, and free medicines was set up with a sacred aim to bring awareness amongst the deprived population of the country who have no access to basic healthcare services. It proved to be extremely helpful for the destitute who earn a meager income and cannot afford expensive healthcare services.

With this objective, young minds of Gyansagar stepped into nearby villages to make the villagers aware of the same. The publicity of the event was conducted on three days from 23rd to 25th of January in the nearby villages like Borakhai, Purani Lane, Chai Bagan, Fakirtilla, Ghungoor, Modhutilla, and Babutilla with the efforts of 15-20 volunteers daily.

More than 200 people came forward for the health checkup from nearby villages and the NIT Silchar fraternity comprising of around 85% adults and 15% children. Various physical conditions including malnutrition, jaundice, and skin disorders were examined along with pathological tests such as blood group test, Bilirubin test, Protein test, Albumin test, SGOT test, SGPT test, Blood Sugar, Blood Pressure, and Typhoid tests.

The Health Camp lasted till 4:00 pm in the evening and was organised successfully by the efforts of more than 60 volunteer members of Gyansagar NIT Silchar, who worked tirelessly all day long.

Gyansagar had the privilege of having Dr. Banibrata Chakraborty, Dr. Arindam Nath, Dr. A. R. Laskar, Major Dr. Sandhya R. (gynecologist) and Dr Parvej Haidar Choudhury with us to support in this noble cause. We appreciate with gratitude the services and support provided by Mr. Sanjit banik (Pharmacist) and Ms. Abida sultana (Staff nurse) from NIT Silchar Health Centre.

It was a great opportunity for the students of NIT SILCHAR fraternity to come up and be a part of this noble cause. Health camp has been one of most prominent initiatives of Gyansagar in the year 2019-20. It was greatly appreciated by people and our Honorable Director. Under this Gyansagar provides free general health check up by Doctors for poor people around campus. Volunteers also instruct them about health and healthy life and how we can manage this in our own ways. While at the same time Girls volunteers spread awareness between village women about sanitation and menstrual problems by giving some tips about how to handle it.





*Some photos from Health Camp 2020 organized by Gyansagar*

## **Report of activities carried out under Unnat Bharat Abhiyan (UBA) during April 19-March 20**

The Institute has adopted 05 (five) villages under the national project Unnat Bharat Abhiyan. The villages are Madhutilla, Babutilla, Fakirtilla, Ghungoor and Barakhai. In the 1 year 2019-2020, the Institute carried out lots of work for the development of the villages. The Institute distributed cloth bags to the villagers under the 'Plastic Free Village Campaign' and also participated in making the villages plastic free by collecting plastic carry bags from each household. The institute also provided expert lectures to the villagers as well as to the village students about the harmful effect of different types of pollution under the 'Swachhata hi Seva Campaign', organized several gram shava to discuss their problems and tried to give solutions and also taught the village students how to make lamp under the 'Student Solar Ambassador Workshop'.





*Some photographs from activities carried out under UBA*

# Annual Accounts

for the financial year 2019-20



**National Institute of Technology  
Silchar**



SPEED POST

भारतीय लेखा तथा लेखा-परीक्षा विभाग  
महा निदेशक, लेखा-परीक्षा का कार्यालय,  
केन्द्रीय, कोलकाता

INDIAN AUDIT AND ACCOUNTS DEPARTMENT  
OFFICE OF THE DIRECTOR GENERAL OF AUDIT,  
CENTRAL, KOLKATA.

CONFIDENTIAL

No: OA II (AB)/AR/2019-20/NITS/315

Date: 15.03.2021

A copy of the Separate Audit Report, alongwith Annexure, on the accounts of the **National Institute of Technology, Silchar, Assam**, for the financial year 2019-20, is forwarded to the **Director, National Institute of Technology, Silchar, Assam-788010**, for information and necessary action.

Arrangement may please be made for preparation of Hindi Version of the Separate Audit Report, with Annexure, at your end, and sending the same directly to the Ministry.

It may please be ensured that the Audited Accounts and the Separate Audit Report, along with Annexure, are placed before the apex body, for consideration and adoption, before the same are sent to the Government for being placed in the Parliament.

Two copies of the printed Annual Report, for the financial year 2019-20 (both English and Hindi Version), containing the Audited Accounts and the Separate Audit Report, along with Annexure, as laid before the Parliament, may please be forwarded to this Office, for necessary action at this end.

Encl.: As stated

Dy. Director (Inspection)

जि. आई. प्रेस बिल्डिंग, 8 किरण शंकर राय रोड (1म मंजिल), कोलकाता-700001  
Govt. of India Press Building, 8, Kiran Sankar Roy Road, Kolkata- 700001  
Phone : 2254-0221, (Gram: ACCOUNTCENT) POST BOX: 2699, Fax No.: 033 22135377



भारतीय लेखा तथा लेखा-परीक्षा विभाग  
महा निदेशक, लेखा-परीक्षा का कार्यालय,  
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SPEED POST  
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To  
The Secretary,  
Ministry of Education,  
Department of Higher Education,  
Shastri Bhawan, New Delhi,  
New Delhi - 110001

**Subject:** Separate Audit Report on the accounts of the National Institute of Technology, Silchar, Assam, for the financial year 2019-20

Sir,

I am to forward herewith the Separate Audit Report, in the prescribed format, on the accounts of the National Institute of Technology, Silchar, Assam, for the financial year 2019-20. A copy of the annual accounts of the organisation, for the financial year 2019-20, is also enclosed.

- Two copies of the Separate Audit Report (both English and Hindi Version), as presented before the Parliament, may please be forwarded to this office, for necessary action at this end.
- The dates of laying of the audited accounts and the Separate Audit Report, for the financial years 2018-19 and 2019-20, on the Tables of both the Houses of Parliament, may also please be communicated to this office.

Yours faithfully,

  
(Deepak Narain)  
Director General of Audit  
Central: Kolkata

Encl.: As stated

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**Separate Audit Report of the Comptroller & Auditor General of India on the Accounts of the National Institute of Technology, Silchar, Assam, for the financial year ended 31 March 2020.**

We have audited the attached Balance Sheet of the National Institute of Technology, Silchar, Assam, as at 31 March 2020, the Income and Expenditure Account and Receipts and Payments Account for the year ended on that date, under Section-19(2) of the Comptroller and Auditor General's (Duties, Power and Conditions of Service) Act, 1971, read with Section 22(2) of the National Institute of Technology Act, 2007. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller and Auditor General of India (CAG) on the accounting treatment only, with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms etc. Audit observations on financial transactions, in regard to compliance with extant Laws, Rules & Regulations (i.e Propriety and Regularity aspects) and efficiency-cum-performance aspects etc, if any, are reported through Inspection Reports/CAG's Audit Reports separately.

3. We have conducted our audit in accordance with the Auditing Standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

4. Based on our audit, we report that:

- i. We have obtained all the information and explanations, which, to the best of our knowledge and belief, were necessary for the purpose of our audit;

- ii. The Balance Sheet and Income and Expenditure Account/Receipt and Payment Account, dealt with by this report, have been drawn up in terms of the Format of Accounts prescribed by the Ministry of Education (erstwhile Ministry of Human Resource Development), Government of India, vide order No. 29-4/2012-FD dated, 17 April 2015.
- iii. In our opinion, proper books of accounts and other relevant records have been maintained by the National Institute of Technology, Silchar, Assam, as required under Section-22(2) of the NIT Act, 2007, insofar as it appears from our examination of books.
- iv. We further report that:

#### **Comments on Accounts**

##### **A. Balance Sheet**

##### **1.1 Liabilities**

##### **1.1.1 Corpus/Capital Fund (Schedule-1): ₹533.61 crore**

The above head was understated by ₹17.22 crore, as the closing balance of the Fund, for the previous year, had not been modified, even though, in the earlier audit, on the accounts for the financial year 2018-19, Audit had commented that the 'Excess of income over expenditure' should be added to the 'Corpus/Capital Fund' exhibited under Schedule-1, instead of adding the same to the 'Corpus Fund' maintained under the 'Designated/ Earmarked/ Endowment Funds' (Schedule-2). The 'Designated/ Earmarked/ Endowment Funds' (Schedule-2), were overstated by the same amount.

##### **1.2 Assets**

##### **1.2.1 Investment from Earmarked/Endowment Funds (Schedule-5): ₹104.60 crore**

The above head was overstated by ₹40.65 crore, due to inclusion of Investment of the 'Earmarked Fund/Endowment Fund', made by the Institute, in the SBI Mutual Fund, which was confirmed on 03.04.2020 (₹3,232.50 lakh in the 'Corpus Fund'; ₹424.50 lakh

in the 'Depreciation Fund'; ₹390 lakh in the 'Maintenance Fund'; and ₹18 lakh in the 'Staff Development Fund'). This also resulted in understatement of 'Current Assets-Cash at Bank' (Schedule-7) by the same amount.

## **B. Income and Expenditure Accounts:**

### **2.1 Income**

'Income' was understated by ₹ 2.11 crore, due to the following:

a) It was understated by ₹2.08 crore, due to non-consideration of the interest accrued during the financial year from 'Recurring/Non recurring' (Investment-Others). This needs to be corrected.

b) It was understated by ₹2.97 lakh, due to non-consideration of the interest accrued during the financial year 2019-20, in 'Stock TDR against LC', in the Axis Bank, under the sub-head 'Investment-other (recurring/non recurring)'.

Consequently, the Excess of Income over Expenditure, of the Institute, was understated by ₹2.11 crore.

## **C. General**

3.1 Closing Balances under the heads 'Staff Payment and Benefits (Schedule-15)' and 'Administrative and General Expenses (Schedule-17)', as per the Income and Expenditure Accounts, were shown as ₹45.05 crore and ₹33.96 crore, respectively. The Closing Balances of the said heads, as per the Ledger/Tally, were, however, ₹71.33 crore and ₹7.69 crore, respectively. The discrepancy needs to be rectified.

3.2 'Pension & Pensionary Benefit', amounting to ₹11.04 crore, was shown under 'Administrative and General Expenses' (Schedule-17), instead of being shown under the Head 'Staff Payment and Benefits' (Schedule-15), in violation of the provisions of the MHRD format of Accounts.

3.3 The Institute was following the 'Written Down Value' method, instead of the 'Straight Line' method, for depreciation calculation, in contravention of the MHRD format of Accounts. Further, the rates of depreciation, charged under various heads, were not as per the rates prescribed by the MHRD format of accounts.

3.4 Depreciation on 'Assets', acquired during the financial year, was being charged on *pro-rata* basis from the date of acquisition, instead of being charged at full rates, in contravention of the MHRD format of accounts.

3.5 The Institute did not charge depreciation on e-books, stating that the procurement of e-books was being done on a perpetual basis. This was not in conformity with the MHRD format of accounts.

3.6 Despite mention in the previous years' Audit Report, no provisions, on 'actuarial valuation' basis, for retirement benefits, such as gratuity, pension and leave encashment, were made, in contravention of Accounting Standard-15.

#### **D. Grants-in-Aid**

The Institute is mainly financed from grants received from the Government of India and had an opening grant balance of ₹55 crore. During the financial year 2019-20, it received total grants of ₹103.74 crore {Revenue Non-Salary (OH-31): ₹68.74 crore, Revenue Salary (OH-36): ₹35.00 crore and Capital (OH-35): ₹0.00 crore}. Out of the total available grants of ₹158.74 crore, it spent ₹132.18 crore {Revenue Non-Salary expenditure (OH-31): ₹63.95 crore, Revenue Salary (OH-36): ₹45.06 crore and Capital Expenditure (OH-35): ₹23.17 crore}. Thus, there was an unspent balance of ₹26.56 crore, at the end of the financial year 2019-20.

In addition, during the financial year 2019-20, it received Project Grants of ₹5.02 crore from various authorities, against which ₹2.40 crore was utilized, while ₹0.16 crore was refunded to the Ministry, and ₹2.46 crore remained utilized.

### Annexure

#### **A. Adequacy of the Internal Audit System**

The Internal Audit System is inadequate on the account of the following:

- (i) There is no Internal Audit wing in the Institute. One Internal Audit Officer was, however, appointed on contractual basis.
- (ii) No internal audit is being conducted.

#### **B. Adequacy of the Internal Control System**

The Internal Control System of the Institute is not adequate in the following areas:

- (i) The Institute does not have its own Accounting Manual.
- (ii) There is no internal management reporting system, such as an MIS (Management Information System).
- (iii) No Security Deposits or Fidelity Bonds are being obtained in respect of employees handling Cash (petty cash) and Stores.
- (iv) There is no consolidated list of approved suppliers for procurement of goods.

#### **C. System of Physical Verification of Assets**

The cumulative book value of the 'Fixed Assets' has not been tallied with the Annual Accounts. Further, no physical verification of library books and journals has been conducted since the financial year 2014-15. In addition, the Institute is not maintaining a 'Fixed Assets Register', and has also not updated its 'Register of Patents and Trademarks'.

#### **D. Statutory Liabilities**

The statutory liability of 'Labour Cess', amounting to ₹3 lakh, has been due against the Institute for more than six months.

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
BALANCE SHEET AS AT 31ST MARCH 2020

Amount in Rupees

SOURCES OF FUND	SCHEDULE	CURRENT YEAR	PREVIOUS YEAR
CORPUS / CAPITAL FUND	1	5,33,61,05,097	5,19,61,64,882
DESIGNATED / EARMARKED / ENDOWMENT FUNDS	2	1,10,79,91,778	1,06,01,93,725
CURRENT LIABILITIES & PROVISIONS	3	78,43,05,993	1,07,06,39,797
TOTAL		7,22,84,02,868	7,32,69,98,403

APPLICATION OF FUNDS	SCHEDULE	CURRENT YEAR	PREVIOUS YEAR
FIXED ASSETS			
Tangible Assets		5,15,19,27,263	5,29,27,39,609
Intangible Assets	4	6,48,46,843	5,04,40,771
Capital Works-In-Progress		58,28,591	58,28,591
INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS	5	1,04,60,00,000	50,40,00,000
INVESTMENTS - OTHERS	6	30,18,53,621	51,15,82,451
CURRENT ASSETS	7	52,53,17,884	81,28,20,389
LOANS, ADVANCES & DEPOSITS	8	13,26,28,666	14,95,86,593
TOTAL		7,22,84,02,868	7,32,69,98,403

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Dated, Silchar  
The 28th August, 2020.

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2020

Amount in Rupees

PARTICULARS	SCHEDULE	CURRENT YEAR	PREVIOUS YEAR
<b>INCOME</b>			
Academic Receipts	9	21,15,39,873	19,70,62,870
Grants /Subsidies	10	1,09,00,75,337	74,89,49,625
Income from Investment	11	1,14,00,673	3,43,715
Interest Earned	12	13,67,196	8,81,78,938
Other Income	13	40,01,30,294	32,66,02,533
Prior Period Income	14	-	-
<b>TOTAL (A)</b>		<b>1,71,45,13,373</b>	<b>1,36,11,37,681</b>
<b>APPLICATION OF FUNDS</b>			
<b>EXPENDITURE</b>			
Staff Payment & Benefits (Establishment Expenses)	15	45,05,52,453	62,55,74,039
Academic Expenses	16	20,04,58,984	15,71,41,430
Administrative and General Expenses	17	33,96,32,430	5,70,25,160
Transportation Expenses	18	27,33,112	29,32,368
Repairs & Maintenance	19	5,87,98,938	3,14,55,978
Finance Costs	20	1,80,421	-
Depreciation	4	35,80,91,546	28,10,04,390
Other Expenses	21	3,77,19,000	3,37,77,000
Prior Period Expenses	22	-	-
<b>TOTAL (B)</b>		<b>1,44,81,66,883</b>	<b>1,18,89,10,365</b>
<b>Balance being excess of Income over Expenditure (A-B)</b>		<b>26,63,46,490</b>	<b>17,22,27,316</b>
Transferred to Corpus Fund		-	17,22,27,316
Building Fund		-	-
Others (specify)		-	-
<b>Balance Being Surplus / (deficit) Carried to Capital Fund</b>		<b>26,63,46,490</b>	

SIGNIFICANT ACCOUNTING POLICIES

23

CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS

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Dated, Silchar  
The 28th August, 2020.

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

SCHEDULE - 1 : CAPITAL FUND

		Amount in Rupees	
	Particulars	CURRENT YEAR	PREVIOUS YEAR
A.	<u>CAPITAL FUND</u> : Balance at the beginning of the year	5,19,61,64,882	5,22,13,39,119
Less:	Reappropriation of Capital Fund of earlier year against refund to Ministry (as per Audit Comment)	-	1,37,84,185
Add:	Excess of Income over Expenditure transferred from Income & Exp A/C	26,63,46,490	-
Less:	Depreciation on Capital Assets	35,80,91,546	28,10,04,390
	Total	5,10,44,19,825	4,92,65,50,545
Add:	Grants from Govt. of India to the extent utilized for Capital expenditure	23,16,85,272	26,96,14,337
Add:	Reappropriation of Capital Fund of earlier year against refund to Ministry	-	-
Add:	Unclaimed Liability W/off	-	-
	BALANCE AT THE YEAR END	5,33,61,05,097	5,19,61,64,882

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

SCHEDULE - 2 : DESIGNATED / EARMARKED / ENDOWMENT FUNDS

Particulars	Fund wise Breakup					Amount in Rupees	
	Pension Fund	Depreciation Fund	Maintenance Fund	Staff Dev. Fund	Student Welfare Fund	Current Year	Previous Year
						Total	
(1): A.							
a) Opening Balance	-	17,65,53,639	17,21,40,282	1,86,93,023	7,08,117	36,80,95,061	35,15,82,110
b) Additions during the year	65,24,768	7,03,200	-	7,03,200	1,20,197	80,51,365	1,46,53,034
c) Income from Investments made of the funds	-	-	-	-	-	-	1,35,74,419
d) Accrued Interest on Investments	-	83,85,231	83,84,282	11,16,968	-	1,78,86,481	-
e) Interest on Savings Bank a/c.	-	17,16,963	16,50,437	26,999	-	33,94,399	2,86,253
f) Interest on TDS Received	-	47,619	52,621	7,644	-	1,07,884	12,32,794
Less: Excess Provision of TDS on accrued interest	-	1,99,740	2,20,721	32,064	-	4,52,525	-
Total (A)	65,24,768	18,72,06,912	18,20,06,901	2,05,15,770	8,28,314	39,70,82,665	38,13,28,610
B : Utilization / Expenditure towards objective of funds							
i) Capital Expenditure	-	-	-	-	-	-	-
ii) Revenue Expenditure	65,24,768	-	-	-	-	65,24,768	1,32,33,549
Total (B)	65,24,768	-	-	-	-	65,24,768	1,32,33,549
Closing balance at the year end (1) (A-B)	-	18,72,06,912	18,20,06,901	2,05,15,770	8,28,314	39,05,57,897	36,80,95,061
Represented by							
Cash and Bank Balances	-	5,47,815	5,49,991	1,39,782	-	12,37,588	10,40,82,496
Investment	-	13,41,50,000	13,30,00,000	1,66,00,000	-	28,37,50,000	25,60,00,000
SBI MF (Savings Fund)	-	4,24,50,000	3,90,00,000	18,00,000	-	8,32,50,000	-
Interest accrued but not due	-	83,85,231	83,84,282	11,16,968	-	1,78,86,481	-
TDS Receivable	-	-	-	-	-	-	25,43,755
Balance lying with Institute A/c	-	16,73,866	10,72,628	8,59,020	8,28,314	44,33,828	54,28,810
Total	-	18,72,06,912	18,20,06,901	2,05,15,770	8,28,314	39,05,57,897	36,80,55,061

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

SCHEDULE - 2 : DESIGNATED / EARMARKED / ENDOWMENT FUNDS

Particulars	Fund wise Breakup						Amount in Rupees	
	Instt. Dev. Fund	Employees Welfare Fund	Deptt. Promotion Fund	Virtual Class Room	NMEICT Fund	Total		
						Current Year	Previous Year	
(2) : A.								
a) Opening Balance	29,32,455	5,69,185	29,32,455	1,91,656	1,42,420	67,68,171	55,80,664	
b) Additions during the year	4,80,789	1,20,197	4,80,789	-	-	10,81,775	14,10,175	
c) Income from Investments made of the funds	-	-	-	-	-	-	-	
d) Accrued Interest on Investments/Advances	-	-	-	-	-	-	-	
e) Interest on Savings Bank a/c.	-	-	-	-	-	-	-	
f) Other additions (specify nature)	-	-	-	-	-	-	-	
<b>Total (A)</b>	<b>34,13,244</b>	<b>6,89,382</b>	<b>34,13,244</b>	<b>1,91,656</b>	<b>1,42,420</b>	<b>78,49,946</b>	<b>69,90,839</b>	
<b>B : Utilization / Expenditure towards objective of funds</b>								
i) Capital Expenditure	-	-	-	-	-	-	-	
ii) Revenue Expenditure	-	81,603	-	-	-	81,603	2,22,668	
<b>Total (B)</b>	<b>-</b>	<b>81,603</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>81,603</b>	<b>2,22,668</b>	
<b>Closing balance at the year end (2): (A-B)</b>	<b>34,13,244</b>	<b>6,07,779</b>	<b>34,13,244</b>	<b>1,91,656</b>	<b>1,42,420</b>	<b>77,68,343</b>	<b>67,68,171</b>	
<b>Represented by</b>								
Cash and Bank Balances	-	-	-	-	-	-	-	
Investment	-	-	-	-	-	-	-	
Interest accrued but not due	-	-	-	-	-	-	-	
Balance lying with Institute A/c	34,13,244	6,07,779	34,13,244	1,91,656	1,42,420	77,68,343	67,68,171	
<b>Total</b>	<b>34,13,244</b>	<b>6,07,779</b>	<b>34,13,244</b>	<b>1,91,656</b>	<b>1,42,420</b>	<b>77,68,343</b>	<b>67,68,171</b>	

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020  
SCHEDULE - 2 : DESIGNATED / EARMARKED / ENDOWMENT FUNDS

Particulars	Fund wise Breakup					Amount in Rupees	
	Student Aid Fund	Corpus Fund				Current Year	Previous Year
						Total	Total
(3) : A.							
a) Opening Balance	-	67,95,97,787	-	-	-	68,53,30,493	48,84,89,410
b) Additions during the year	-	35,32,015	-	-	-	47,04,015	46,77,015
c) Income from Investments made of the funds	-	-	-	-	-	-	86,09,699
d) Accrued Interest on Investments	-	1,73,94,345	-	-	-	1,73,94,345	-
e) Interest on Savings Bank a/c.	-	23,16,078	-	-	-	23,16,078	3,30,451
f) Interest on TDS Received	-	24,853	-	-	-	24,853	1,09,96,602
g) Surplus of Income & Expenditure A/c transferred	-	-	-	-	-	-	17,22,27,316
Less: Excess Provision of TDS on accrued interest	-	1,04,246	-	-	-	1,04,246	-
Total (A)	-	70,27,60,832	-	-	-	70,96,65,538	68,53,30,493
<b>B : Utilization /Expenditure towards objective of funds</b>							
i) Capital Expenditure	-	-	-	-	-	-	-
ii) Revenue Expenditure	-	-	-	-	-	-	-
Total (B)	-	-	-	-	-	-	-
Closing balance at the year end (3) : (A-B)	-	69,04,706	-	-	-	70,96,65,538	68,53,30,493
<b>Represented by</b>							
Cash and Bank Balances	-	23,27,872	-	-	-	23,27,872	20,27,726
Investment	-	35,57,50,000	-	-	-	35,57,50,000	24,80,00,000
SBI MF (Savings Fund)	-	32,32,50,000	-	-	-	32,32,50,000	-
Interest accrued but not due	-	1,73,94,345	-	-	-	1,73,94,345	-
TDS Receivable	-	-	-	-	-	-	5,85,993
Balance lying with Institute A/c	-	40,38,615	-	-	-	1,09,43,321	43,47,16,774
Total	-	70,27,60,832	-	-	-	70,96,65,538	68,53,30,493
Closing balance at the year end (1+2+3)	34,13,244	19,47,19,397	2,07,07,426	9,70,734	1,10,79,91,778	1,06,01,93,725	

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020  
SCHEDULE : 2A : DESIGNATED / EARMARKED / ENDOWMENT FUNDS

Sl. No.	Name of the Endowment	Opening Balance		Addition during the year		Total		Expenditure on the object during the year	Closing Balance		Total (10+11)
		Endowment	Accumulated Interest	Endowment	Interest	Endowment (3+5)	Accumulated Interest (4+6)		Endowment	Accumulated Interest	
1	2	3	4	5	6	7	8	9	10	11	12
1	Depreciation Fund	12,35,30,960	5,30,22,679	7,03,200	99,50,073	12,42,34,160	6,29,72,752	-	12,42,34,160	6,29,72,752	18,72,06,912
2	Maintenance Fund	11,96,60,204	5,24,80,078	-	98,66,619	11,96,60,204	6,23,46,697	-	11,96,60,204	6,23,46,697	18,20,06,901
3	Staff Dev. Fund	1,33,18,715	53,74,308	7,03,200	11,19,547	1,40,21,915	64,93,855	-	1,40,21,915	64,93,855	2,05,15,770
4	Student Welfare Fund	7,08,117	-	1,20,197	-	8,28,314	-	-	8,28,314	-	8,28,314
5	Instt. Dev. Fund	29,32,455	-	4,80,789	-	34,13,244	-	-	34,13,244	-	34,13,244
6	Employees Welfare Fund	5,69,185	-	1,20,197	-	6,89,382	-	81,603	6,07,779	-	6,07,779
7	Deptt. Promotion Fund	29,32,455	-	4,80,789	-	34,13,244	-	-	34,13,244	-	34,13,244
8	Virtual Class Room	1,91,656	-	-	-	1,91,656	-	-	1,91,656	-	1,91,656
9	NMEICT Fund	1,42,420	-	-	-	1,42,420	-	-	1,42,420	-	1,42,420
10	Pension Fund	-	-	-	-	-	-	-	-	-	-
11	Student Aid Fund	57,32,706	-	11,72,000	-	69,04,706	-	-	69,04,706	-	69,04,706
12	Corpus Fund	62,67,72,369	5,28,25,418	35,32,015	1,96,31,030	63,03,04,384	7,24,56,448	-	63,03,04,384	7,24,56,448	70,27,60,832
	TOTAL	89,64,91,242	16,37,02,483	73,12,387	4,05,67,269	90,38,03,629	20,42,69,752	81,603	90,37,22,026	20,42,69,752	1,10,79,91,778

Amount in Rupees

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

SCHEDULE : 3 : CURRENT LIABILITIES AND PROVISIONS

PARTICULARS	Amount in Rupees	
	CURRENT YEAR	PREVIOUS YEAR
<b>A. CURRENT LIABILITIES</b>		
Deposits from staff	39,91,410	32,31,871
Deposits from Students	3,64,03,926	3,59,53,926
For Goods & Services	67,56,008	1,26,41,747
Others	-	-
Deposits - Others (including EMD, Security Deposit & Project)	1,05,59,666	1,59,91,832
Statutory Liabilities (GSLI, P Tax, EPF, CPF)	73,35,082	30,85,335
<u>Other Current Liabilities:</u>	-	-
Sponsored Project Liability (Including P Tax and others)	84,39,085	23,03,203
Receipts against sponsored projects	6,11,47,228	3,51,30,348
Receipts against sponsored fellowships & Scholarship	55,79,471	82,71,965
<u>Unutilized Grants :-</u>		
Under Non Recurring Grants (OH-35)	7,95,79,798	31,12,65,070
Under Recurring Grants (OH-31)	4,78,77,116	-
Under Recurring Grants (OH-36)	13,82,16,349	23,87,68,802
TEQIP PHASE-I	10,31,65,960	10,31,65,960
TEQIP PHASE-II	9,60,64,457	9,60,64,457
Other funds including Sponsored Projects (Previous)	5,63,32,201	5,55,46,732
Other liabilities	12,28,58,236	14,92,18,549
<b>Total (A)</b>	<b>78,43,05,993</b>	<b>1,07,06,39,797</b>
<b>B. PROVISIONS</b>		
For Taxation	-	-
Gratuity	-	-
Superannuation Pension	-	-
Others if any	-	-
<b>Total (B)</b>	<b>-</b>	<b>-</b>
<b>TOTAL (A+B)</b>	<b>78,43,05,993</b>	<b>1,07,06,39,797</b>

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020  
SCHEDULE : 3A : SPONSORED PROJECTS FUND

Sl. No.	Name of the Project	Opening Balance		Receipts during the year		Total	Expenditure during the year	Refund to Ministry	Closing Balance	
		Credit	Debit	Grants	Interest/ Other Receipts				Credit	Debit
1	2	3	4	5	6	7	8	9	10	11
A	MCIT, GoI	9,80,036	-	63,47,791	76,047	74,03,874	50,65,396	-	23,38,478	-
B	DST, GoI	1,21,26,346	-	79,50,213	4,49,777	2,05,26,336	53,24,378	6,24,661	1,45,77,298	-
C	MNRE, GoI	1,12,555	-	-	4,679	1,17,234	-	-	1,17,234	-
D	MoEsc., GoI	27,288	-	-	1,177	28,465	-	-	28,465	-
E	ICSSR	19,061	-	75,000	2,601	96,662	-	-	96,662	-
F	SERB, GoI	1,61,08,085	-	2,66,64,270	6,65,236	4,34,37,591	87,90,786	9,66,409	3,36,80,397	-
G	IBM	9,37,792	-	-	25,933	9,63,725	-	-	9,63,725	-
H	AICTE -RPS	1,60,592	-	-	4,320	1,64,912	-	-	1,64,912	-
I	AICTE -MODROBS	16,31,348	-	-	51,423	16,82,771	-	-	16,82,771	-
J	BRNS	2,68,679	-	-	7,381	2,76,060	2,950	-	2,73,110	-
K	NRRDA	36,408	-	-	-	36,408	-	36,408	-	-
L	DEITY (incl. Instt share)	6,05,822	-	22,55,000	22,569	28,83,391	22,09,606	-	6,73,786	-
M	SPARC	-	-	47,14,910	70,191	47,85,101	9,47,584	-	38,37,517	-
N	CPRI	10,26,487	-	-	20,444	10,46,931	7,41,499	-	3,05,432	-
O	NMHS	4,45,112	-	15,13,445	16,201	19,74,758	6,02,599	-	13,72,160	-
P	DDMA	-	-	-	-	-	-	-	-	-
Q	CSIR	1,18,886	-	6,78,333	21,133	8,18,352	36,000	-	7,82,352	-
R	ARDB	5,25,851	-	-	13,650	5,39,501	2,74,913	11,657	2,52,931	-
	TOTAL	3,51,30,348	-	5,01,98,962	14,52,762	8,67,82,072	2,39,95,709	16,39,135	6,11,47,228	-

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

## SCHEDULE - 3 (1): SPONSORED PROJECTS FUNDS

Particulars	Fund wise Breakup										Total	
	M C I T	D S T	M O E S	I C S S R	M N R E	DIETY	CPRI	NIMHS	BRNS	Current Year	Previous Year	
(1): A.												
a) Opening Balance	9,80,036	1,21,26,346	27,288	19,061	1,12,555	6,05,822	10,26,487	4,45,112	2,68,679	1,56,11,386	2,54,34,321	
b) Additions during the year	63,47,791	79,50,213	-	75,000	-	22,55,000	-	15,13,445	-	1,81,41,449	1,69,84,212	
c) Interest on Savings Bank a/c.	76,047	4,49,777	1,177	2,601	4,679	22,569	20,444	16,201	7,381	6,00,876	9,94,438	
d) Other additions	-	-	-	-	-	-	-	-	-	-	-	
e) Loan from Institute	-	-	-	-	-	-	-	-	-	-	-	
Total (A)	74,03,874	2,05,26,336	28,465	96,662	1,17,234	28,83,391	10,46,931	19,74,758	2,76,060	3,43,53,711	4,34,12,971	
<b>B : Utilization / Expenditure towards objective of funds</b>												
i) Capital Expenditure												
Equipment	-	40,40,761	-	-	-	6,37,458	2,09,370	-	-	48,87,589	1,81,25,362	
Computer	-	-	-	-	-	-	-	-	-	-	68,846	
Software	-	-	-	-	-	-	-	-	-	-	-	
Furniture	-	-	-	-	-	-	-	-	-	-	-	
Other Cost	-	-	-	-	-	-	-	-	-	-	97,175	
ii) Revenue Expenditure	50,65,396	12,83,617	-	-	-	15,72,148	5,32,129	6,02,599	2,950	90,58,838	83,32,028	
iii) Refunded to Ministry	-	6,24,661	-	-	-	-	-	-	-	6,24,661	11,78,174	
iv) Refund of Loan to Institute	-	-	-	-	-	-	-	-	-	-	-	
Total (B)	50,65,396	59,49,039	-	96,662	1,17,234	22,09,606	7,41,499	6,02,599	2,950	1,45,71,088	2,78,01,585	
Closing balance at the year end (1)	23,38,478	1,45,77,298	28,465	96,662	1,17,234	6,73,786	3,05,432	13,72,160	2,73,110	1,97,82,624	1,56,11,386	

## SCHEDULE - 3 (1): SPONSORED PROJECTS FUNDS

Particulars	Fund wise Breakup											Total						
	AICTE - RPS	AICTE - MODROB	I B M Project	S E R B	NRRDA	SPARC	DDMA	CSIR	ARDB	Current Year	Previous Year							
(2) : A.																		
a) Opening Balance	1,60,592	16,31,348	9,37,792	1,61,08,085	36,408	-	-	1,18,886	5,25,851	1,95,18,962	1,95,64,673							
b) Additions during the year	-	-	-	2,66,64,270	-	47,14,910	-	6,78,333	-	3,20,57,513	1,38,65,053							
c) Interest on Savings Bank a/c.	4,320	51,423	25,933	6,65,236	-	70,191	-	21,133	13,650	8,51,886	18,47,497							
d) Other additions (specify nature)	-	-	-	-	-	-	-	-	-	-	-							
Total (A)	1,64,912	16,82,771	9,63,725	4,34,37,591	36,408	47,85,101	-	8,18,352	5,39,501	5,24,28,361	3,52,77,223							
<b>B : Utilization /Expenditure towards objective of funds</b>																		
i) Capital Expenditure																		
Equipment	-	-	-	34,04,543	-	-	-	-	-	-	-	-	-	34,04,543	70,47,418			
Computer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,27,400			
Software	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Furniture	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Books	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
ii) Revenue Expenditure																		
iii) Refunded to Sanctioning authority																		
Revenue Expenditure	-	-	-	53,86,243	-	9,47,584	-	36,000	2,74,913	66,44,740	55,07,288							
Refunded to Sanctioning authority	-	-	-	9,66,409	36,408	-	-	-	11,657	10,14,474	30,76,154							
Total (B)	-	-	-	97,57,195	36,408	9,47,584	-	36,000	2,86,570	1,10,63,757	1,57,58,260							
Closing balance at the year end (2):	1,64,912	16,82,771	9,63,725	3,36,80,397	-	38,37,517	-	7,82,352	2,52,931	4,13,64,605	1,95,18,962							
Closing balance at the year end (1+2)	25,03,390	1,62,60,069	9,92,190	3,37,77,059	1,17,234	45,11,303	3,05,432	21,54,512	5,26,041	6,11,47,228	3,51,30,348							

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

SCHEDULE : 3B : SPONSORED FELLOWSHIPS AND SCHOLARSHIPS

Sl. No.	Name of the Sponsors	Amount in Rupees					
		Opening Balance		Transaction during the year		Closing Balance as on 31.03.2020	
		Credit	Debit	Credit	Debit	Credit	Debit
1	2	3	4	5	6	7	8
1	Various Agencies	82,71,965		19,07,845	46,00,339	55,79,471	-
	Total	82,71,965	-	19,07,845	46,00,339	55,79,471	-

## NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM

## SCHEDULE 4 - FIXED ASSETS

S. No	Assets Heads	Gross Block				Depreciation for the Year 2019-20				Net Block	
		Opening Balance as on 01.04.2019	Additions	Deduction	Cl. Balance	Dep Opening Balance	Depreciation for the Year	Deductions/A djustment	Total Depreciations	31.03.2020	31.03.2019
1	Land	8,66,458	-	-	8,66,458	-	-	-	-	8,66,458	8,66,458
2	Site & Campus Development	6,02,84,627	39,44,513	-	6,42,29,140	2,12,86,249	20,11,082	-	2,32,97,331	4,09,31,809	3,89,98,378
3	Buildings	5,20,69,96,803	1,85,79,715	15,54,340	5,22,40,22,178	84,34,16,577	21,90,74,860	-12,208	1,06,25,03,645	4,16,15,18,533	4,36,35,80,226
4	Roads & Bridges	9,54,69,121	1,62,79,260	-	11,17,48,381	2,05,21,669	41,46,034	-	2,46,67,703	8,70,80,678	7,49,47,452
5	Tubewells & Water Supply	18,65,06,164	-	-	18,65,06,164	4,65,36,784	70,17,642	-	5,35,54,426	13,29,51,738	13,99,69,380
6	Sewerage & Drainage	5,95,92,554	-	-	5,95,92,554	29,21,252	28,41,328	-	57,62,580	5,38,29,974	5,66,71,302
7	Electrical Installation & Equipment	5,17,14,517	2,82,47,173	1,55,040	7,98,06,650	2,28,82,279	62,59,667	4,865	2,91,37,081	5,06,69,569	2,88,32,238
8	Plant & Machinery	11,12,46,815	83,30,061	49,701	11,95,27,175	6,49,42,920	73,78,590	-2,334	7,23,23,844	4,72,03,331	4,63,03,895
9	Scientific & Laboratory Equipment	36,38,48,078	3,70,47,421	1,08,00,192	39,00,95,307	19,18,88,889	2,65,56,874	-41,718	21,84,87,481	17,16,07,826	17,19,59,189
10	Office Equipment	2,09,29,564	50,880	-	2,09,80,444	1,32,35,863	11,59,302	-	1,43,95,165	65,85,279	76,93,701
11	Audio Visual Equipment	1,04,44,545	2,52,764	-	1,06,97,309	59,02,187	6,84,348	-	65,86,535	41,10,774	45,42,358
12	Computers & Peripherals	18,77,64,795	3,40,38,238	-	22,18,03,033	13,99,61,357	2,09,76,944	47,384	16,08,90,917	6,09,12,116	4,78,03,438
13	Furniture, Fixtures & Fittings	14,73,17,731	2,15,71,972	-	16,88,89,703	7,44,22,401	82,89,654	-	8,27,12,055	8,61,77,648	7,28,95,330
14	Vehicles	61,97,000	8,16,115	-	70,13,115	45,29,666	4,21,580	-	49,51,246	20,61,869	16,67,334
15	Lib. Books & Scientific Journals	7,14,96,967	22,34,948	44,99,324	6,92,32,591	5,36,13,906	41,40,150	-	5,77,54,056	1,14,78,535	1,78,83,061
16	Other Assets	8,57,81,622	2,50,47,935	32,484	11,07,97,073	6,68,86,170	92,04,205	4,011	7,60,86,364	3,47,10,709	1,88,95,452
	Total (A)	6,66,64,57,362	19,64,40,995	1,70,91,081	6,84,58,07,276	1,57,29,48,170	32,01,62,260	-	1,89,31,10,430	4,95,26,96,846	5,09,35,09,192
17	Capital Works in Progress (B)	58,28,591	-	-	58,28,591	-	-	-	-	58,28,591	58,28,591
	INTANGIBLE ASSETS:										
18	Computer Software	6,35,46,666	1,62,21,605	-	7,97,68,271	2,85,56,383	62,99,686	-	3,48,56,069	4,49,12,202	3,49,90,283
19	E- Books	1,51,51,237	64,78,353	19,94,200	1,96,35,390	-	-	-	-	1,96,35,390	1,51,51,237
20	E-Journals	13,71,96,645	3,16,29,600	-	16,88,26,245	13,71,96,645	3,16,29,600	-	16,88,26,245	-	-
21	Patents	2,99,251	-	-	2,99,251	-	-	-	-	2,99,251	2,99,251
	Total (C)	21,61,93,799	5,43,29,558	19,94,200	26,85,29,157	16,57,53,028	3,79,29,286	-	20,36,82,314	6,48,46,843	5,04,40,771
22	TEQIP I Assets (D)	10,31,65,960	-	-	10,31,65,960	-	-	-	-	10,31,65,960	10,31,65,960
23	TEQIP II Assets (E)	9,60,64,457	-	-	9,60,64,457	-	-	-	-	9,60,64,457	9,60,64,457
	Grand Total (A+B+C+D+E)	7,08,77,10,168	25,07,70,553	1,90,85,281	7,31,93,95,440	1,73,87,01,197	35,80,91,546	-	2,09,67,92,743	5,22,26,02,697	5,34,90,08,971

## NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM

## SCHEDULE 4(C) (I) - PATENTS AND COPYRIGHTS

Particulars	Amount in Rupees					
	Op Balance 01.04.2019	Additions	Gross	Amortization	Net Block 2019-20	Net Block 2018-19
<b>A. Patents Granted</b>						
1. Balance as on 31.03.2016 of Patents obtained in 2008-09 (Original Value - Rs. )	-	-	-	-	-	-
2. Balance as on 31.03.2016 of Patents obtained in 2010-11 (Original Value - Rs. )	-	-	-	-	-	-
3. Balance as on 31.03.2016 of Patents obtained in 2012-13 (Original Value - Rs. )	-	-	-	-	-	-
4. Patents granted during the Current Year	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	-
<b>B. Patents Pending in respect of Patents applied for:</b>						
1. Expenditure incurred during 2013-14	-	-	-	-	-	-
2. Expenditure incurred during 2014-15	-	-	-	-	-	-
3. Expenditure incurred during 2015-16	42,180	-	42,180.00	-	42,180	42,180
4. Expenditure incurred during 2016-17	83,551	-	83,551.00	-	83,551	83,551
5. Expenditure incurred during 2017-18	1,25,790	-	1,25,790.00	-	1,25,790	1,25,790
6. Expenditure incurred during 2018-19	47,730	-	47,730.00	-	47,730	-
7. Expenditure incurred during 2019-20	-	-	-	-	-	-
<b>Total</b>	2,99,251	-	2,99,251	-	2,99,251	2,51,521
<b>Grand Total (A+B)</b>	2,99,251	-	2,99,251	-	2,99,251	2,51,521

## NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

## SCHEDULE : 5 : INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS

Amount in Rupees

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
1. In Central Government Securities	-	-
2. In State Government Securities	-	-
3. Other approved Securities	-	-
4. Shares	-	-
5. SBI Mutual Fund : Saving Fund	40,65,00,000	-
6. Term Deposits with Banks	-	-
Investment of Corpus Fund	35,57,50,000	24,80,00,000
Investment of Depreciation Fund	13,41,50,000	12,00,00,000
Investment of Maintenance Fund	133000000	12,00,00,000
Investment of Staff Development Fund	1,66,00,000	1,60,00,000
7. Others	-	-
Total	1,04,60,00,000	50,40,00,000

## SCHEDULE : 6 : INVESTMENTS - OTHERS

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
1. In Central Government Securities	-	-
2. In State Government Securities	-	-
3. Other approved Securities	-	-
4. Shares	-	-
5. Debantures and Bonds	-	-
6. Term Deposits with Banks: Short Term Deposit	30,00,00,000	51,00,00,000
7. Others : Margin Money Account (L.C.)	18,53,621	15,82,451
Total	30,18,53,621	51,15,82,451

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR												
SCHEDULE SHOWING INVESTMENTS OF EARMARKED AND OTHER FUNDS AS ON 31.03.2020 (Corresponding to Schedule - 5 & 6)												
Sl	Bank	F.D No	Date	Face Value as on 31.03.19	Addition during 2019-20	Matured / encashed during 2019-20	Face Value as on 31.03.2020	Accrued Interests upto 31.03.19	Accrued Interest earned during 2019-20	Accrued Intt. Recd. during 2019-20	Interest Recd during 201920	Accrued Interests Upto 31.03.2020
A	Corpus Fund											
1	SBI NIT Sil	38362343252	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
2	- do -	36362381549	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
3	- do -	38362382270	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
4	- do -	38362382746	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
5	- do -	38362383386	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
6	- do -	38362385612	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
7	- do -	38362386285	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
8	- do -	38362386808	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
9	- do -	38362387369	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
10	- do -	38362387937	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
11	- do -	38362388512	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
12	- do -	38362388986	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
13	- do -	38362389479	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
14	- do -	38362390008	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
15	- do -	38362397162	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
16	- do -	38362397707	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
17	- do -	38362401624	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
18	- do -	38362402673	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
19	- do -	38362411780	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
20	- do -	3836412230	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
21	- do -	38362412897	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
22	- do -	38362413324	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
23	- do -	38362414135	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
24	- do -	38362415093	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
25	- do -	38362415616	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
26	- do -	38362416198	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
27	- do -	38362416686	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
28	- do -	38362417205	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
29	- do -	38362417873	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
30	- do -	38362418298	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236

Sl	Bank	F. D No	Date	Face Value as on 31.03.19	Addition during 2019-20	Matured / encashed during 2019-20	Face Value as on 31.03.2020	Accrued Interests upto 31.03.19	Accrued Interest earned during 2019-20	Accrued Intt. Recd. during 2019-20	Interest Recd during 2019-20	Accrued Interests Upto 31.03.2020
31	-do-	38362483733	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
32	-do-	39238647608	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
33	-do-	39238648931	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
34	-do-	39238649059	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
35	-do-	39238649082	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
36	-do-	39238649117	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
37	-do-	39238649151	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
38	-do-	39238649195	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
39	-do-	39238649220	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
40	-do-	39238649253	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
41	-do-	39238649311	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
42	-do-	39238649297	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
43	-do-	39238649355	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
44	-do-	39238649446	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
45	-do-	39238649661	27.03.2020	-	37,50,000	-	37,50,000	-	3,099	-	-	3,099
46	-do-	SBI Saving Fund	31.03.2020	-	32,32,50,000	-	32,32,50,000	-	-	-	-	-
		<b>TOTAL</b>		24,80,00,000	43,10,00,000	-	67,90,00,000	-	1,73,94,345	-	-	1,73,94,345
B	Depreciation Fund											
1	SBI NIT Sil	38362321545	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
2	-do-	38362340422	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
3	-do-	38362341299	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
4	-do-	38362345227	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
5	-do-	38362345884	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
6	-do-	38362346468	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
7	-do-	38362347075	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
8	-do-	38362347532	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
9	-do-	38362348308	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
10	-do-	38362348807	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
11	-do-	38362349469	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
12	-do-	38362350779	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
13	-do-	38362351503	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
14	-do-	38362353747	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
15	-do-	38362341903	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
16	-do-	39238649923	27.03.2020	-	61,50,000	-	61,50,000	-	5,081	-	-	5,081

Sl	Bank	F. D No	Date	Face Value as on 31.03.19	Addition during 2019-20	Matured / encashed during 2019-20	Face Value as on 31.03.2020	Accrued Interests upto 31.03.19	Accrued Interest earned during 2019-20	Accrued Intt. Recd. during 2019-20	Interest Recd during 201920	Accrued Interests Upto 31.03.2020
17	- do -	39238649876	27.03.2020	-	80,00,000	-	80,00,000	-	6,610	-	-	6,610
18	- do -	SBI Saving Fund	31.03.2020	-	4,24,50,000	-	4,24,50,000	-	-	-	-	-
		<b>TOTAL</b>		12,00,00,000	5,66,00,000	-	17,66,00,000	-	83,85,231	-	-	83,85,231
C	<b>Maintenance Fund</b>											
1	SBI NIT Sil	38362366451	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
2	- do -	38362367159	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
3	- do -	38362367692	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
4	- do -	38362368244	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
5	- do -	38362368890	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
6	- do -	38362329758	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
7	- do -	36362361588	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
8	- do -	38362362344	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
9	- do -	38362362821	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
10	- do -	38362363201	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
11	- do -	38362363788	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
12	- do -	38362364238	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
13	- do -	38362364737	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
14	- do -	38362365209	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
15	- do -	38362365804	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
16	- do -	39238649990	27.03.2020	-	65,00,000	-	65,00,000	-	5,371	-	-	5,371
17	- do -	39238649956	27.03.2020	-	65,00,000	-	65,00,000	-	5,371	-	-	5,371
18	- do -	SBI Saving Fund	31.03.2020	-	3,90,00,000	-	3,90,00,000	-	-	-	-	-
		<b>Total</b>		12,00,00,000	5,20,00,000	-	17,20,00,000	-	83,84,282	-	-	83,84,282
D	<b>Staff Development Fund</b>											
1	SBI NIT Sil	38362419100	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
2	- do -	38362419164	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	-	-	5,58,236
3	- do -	39238648454	27.03.2020	-	6,00,000	-	6,00,000	-	496	-	-	496
4	- do -	SBI Saving Fund	31.03.2020	-	18,00,000	-	18,00,000	-	-	-	-	-
		<b>Total</b>		1,60,00,000	24,00,000	-	1,84,00,000	-	11,16,968	-	-	11,16,968
	<b>Total Earmarked Fund (A+B+C+D)</b>											
				50,40,00,000	54,20,00,000	-	1,04,60,00,000	-	3,52,80,826	-	-	3,52,80,826
E	<b>RECURRING/NONRECURRING</b>											
1	SBI NIT Sil	38362521384	30.03.2019	10,00,00,000	-	-	10,00,00,000	-	69,22,329	-	-	69,22,329
2	- do -	38362504415	30.03.2019	10,00,00,000	-	-	10,00,00,000	-	69,22,329	-	-	69,22,329
3	- do -	38362522195	30.03.2019	10,00,00,000	-	-	10,00,00,000	-	69,22,329	-	-	69,22,329

Sl	Bank	F.D No	Date	Face Value as on 31.03.19	Addition during 2019-20	Matured / encashed during 2019-20	Face Value as on 31.03.2020	Accrued Interests upto 31.03.19	Accrued Interest earned during 2019-20	Accrued Intt. Recd. during 2019-20	Interest Recd during 201920	Accrued Interests Upto 31.03.2020
4	- do -	38362522865	30.03.2019	10,00,00,000	-	10,00,00,000	-	-	-	-	54,28,892	-
5	- do -	38362420046	30.03.2019	1,00,00,000	-	1,00,00,000	-	-	-	-	5,42,889	-
6	- do -	38362550393	30.03.2019	10,00,00,000	-	10,00,00,000	-	-	-	-	54,28,892	-
		<b>Total</b>		<b>51,00,00,000</b>	<b>-</b>	<b>21,00,00,000</b>	<b>30,00,00,000</b>	<b>-</b>	<b>2,07,66,987</b>	<b>-</b>	<b>1,14,00,673</b>	<b>2,07,66,987</b>
7	Axis Bank	Stock TDR against LC	31.03.16	15,82,451	-	-	15,82,451	3,20,199	-	-	-	3,20,199
8	HDFC Bank	Stock TDR against LC	31.03.2020	-	2,71,170	-	2,71,170	-	-	-	-	-
		<b>Grand Total</b>		<b>1,01,55,82,451</b>	<b>54,22,71,170</b>	<b>21,00,00,000</b>	<b>1,34,78,53,621</b>	<b>3,20,199</b>	<b>5,60,47,813</b>	<b>-</b>	<b>1,14,00,673</b>	<b>5,63,68,012</b>

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

## SCHEDULE : 7 : CURRENT ASSETS

PARTICULARS	Amount in Rupees	
	CURRENT YEAR	PREVIOUS YEAR
<b>1. STOCKS:</b>		
a) Storers and spares	-	-
b) Loose Tools	-	-
c) Publications	-	-
d) Laboratory Chemicals	-	-
e) Building materials	-	-
f) Electrical Materials	-	-
g) Stationery	-	-
h) Water supply materials	-	-
<b>2. SUNDRY DEBTORS</b>	-	-
a) Debts outstanding for a period exceeding six months	68,672	68,672
b) Others	-	-
<b>3. CASH AND BANK BALANCES</b>	-	-
Cash in hand	15,223	8,837
<u>Cash at Bank:</u>	-	-
A) With Scheduled Banks:	-	-
In Current Accounts	44,44,32,709	65,83,39,628
In Savings Accounts	8,08,01,280	15,44,03,251
<b>Total</b>	<b>52,53,17,884</b>	<b>81,28,20,389</b>

## SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

## SCHEDULE : 7 (A) ANNEXURE - CURRENT ASSETS

Amount in Rupees

PARTICULARS	CURRENT YEAR	PREVIOUS YEAR
<b>With Scheduled Banks:</b>		
In Current Accounts		
SBI-10521277057 (NON PLAN)	3,05,16,926.11	11,09,85,130
SBI-10521277068 (PLAN GRANT)	41,19,07,456.99	54,72,93,998
SBI-34999649864 ONLINE FEE A/C	20,08,325.43	60,500
Total	44,44,32,709	65,83,39,628
In Savings Accounts		
SBI-10521277818(CORPUS FUND)	23,27,871.73	20,27,726
SBI-30052416379(STAFF DEV FUN)	1,39,781.96	2,28,202
SBI-30052438520(DEPRECIATION FUND)	5,47,815.11	5,30,26,564
SBI-30052443879(MAINT.FUND)	5,49,990.71	5,08,27,730
AXIS-10049704315 (PLAN)	29,20,970.84	6,66,085
SBI-10521278244 (SCHOLARSHIP)	62,55,276.00	87,38,746
SBI-30763009570(NONPLAN FEE)	19,53,542.73	1,54,53,095
HDFC A/C No.-50200039712972 (Plan)	13,83,394.66	-
SBI-38478849539 Tendering A/c	14,00,441.00	-
SBI-36535392913 (AWARD FUND)	4,70,816.00	4,56,217
SBI-36017852338 ( START UP INDIA FUND)	897.00	897
SBI-30293190682(TUC)	7,544	7,293
SBI-35538434664 (IEDC)	6,39,523	2,11,504
SBI-30033506221 (SMDP)	8,04,991	2,89,609
SBI-34671803739 (AM&MT/FIST)	90,95,976	39,797
SBI-30780415571(RPS SCHEME)	3,05,84,823	1,99,18,569
SBI-30780416041(MODROBS)	16,82,771	16,31,348
SBI-31306562769(BEHAVIOUR OF CLAY/MoESc)	8,619	8,332
SBI-37093726031 (NHMS)	7,19,027	2,94,813
SBI-31306566082(REG EXTREME RAINFALL)	26,764	25,874
SBI-37808839310 (ARDB)	2,52,165	5,50,851
SBI 38599144369 (SERB)	1,57,67,764	-
SBI 38692109587 (SPARC)	32,60,517	-
Total	8,08,01,280	15,44,03,251

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
SCHEDULE FORMING PART OF BALANCE SHEET AS AT 31ST MARCH 2020

## SCHEDULE : 8 : LOANS, ADVANCE AND DEPOSITS

PARTICULARS	Amount in Rupees	
	CURRENT YEAR	PREVIOUS YEAR
1. Advances to employees (Non-interest bearing) :		
Loan to Staff	33,229	82,089
HTC Advance	22,000	22,000
LTC Advance	22,17,038	8,03,883
Other Advance To Employees (for Medical treatment)	-	3,00,000
Recoverable Advance	1,60,66,388	82,50,229
TA Advance	8,43,028	2,20,800
2. Long Term Advances to employees: (Interest bearing) :		
Vehicle Loan	-	
Home Loan		
Soft Loan	4,93,066	6,25,265
3. Advances & other amt recoverable in cash or in kind or for value to be received :		
On Capital Account		
Deposit Work	11,42,640	11,42,640
Secured Advance	-	40,00,000
Advance - PHE Water Supply	124	124
Margin Money for LC	-	0
Adv- NCC Ltd	-	-
Suppliers/Firm		
Others		
Electricity Consumption Receivable	2,91,161	3,04,633
House Rent / Licence Fee receivable	83,448	49,443
Shop & Canteen Rent receivable	-	1,13,914
Advance Tax		
Receivable against Start Up India (Project)	15,61,301	15,61,301
Receivable from NE Books	843	
DST Receivable	1,69,687	1,69,687
Receivable from Ashim Kumar Das (I Tax)	8,040	33,000
Receivable from Consultancy	-	24,528
Receivable from Scholarship Fund	12,82,766	27,89,766
SMDP Project Receivable	-	14,219
RPS Project Receivable	-	3,17,752
N C Roy	-	12,16,000

Sudeep Nath	-	4,46,500
Receivable from Wasim Arif(I Tax)	-	11,000
4. Prepaid Expenses :		
Insurance	36,415	13,61,084
Against E Journal	1,30,81,036	26,69,316
Printed Journal		
5. Deposits :		
APDCL (Electricity)	54,49,323	4,00,854
AICTE	-	
SBI ATM (TDR)	10,000	10,000
Security for POL	1,62,084	1,62,084
Security against LPG	46,200	46,200
6. Income Accrued :		
On investments from Earmarked / Endowment Fund	3,52,80,826	-
On Investment - Others	3,20,199	3,20,199
On Loans and Advances	-	
Others (including income due unrealized)	-	
7. Other - Current assets receivable from UGC /Sponsored projects :		
Debit balances in Sponsored Projects	-	
Debit balances in sponsored Fellowship & Scholarships	-	
Grants receivable	-	10,00,00,000
Grants receivable from UGC	-	
Recoverable from MR Staff ( EPF Subscription)	27,08,310	27,08,310
TDS Receivable	13,41,600	31,29,748
TDS Receivable- Sponsored Project	755	755
TDS Receivable- Others (Non Plan)	2,16,875	7,15,403
Adv to Firm- Balmer lawrie	77,26,249	45,36,665
8. Claims receivable :	4,20,34,035	1,10,27,201
<b>Total</b>	<b>13,26,28,666</b>	<b>14,95,86,593</b>

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

## SCHEDULE 9- ACADEMIC RECEIPTS

Amount in Rupees

FEES FROM STUDENTS	CURRENT YEAR	PREVIOUS YEAR
Academic		
1. Tuition fee	17,75,09,926	16,88,35,399
2. Admission fee	69,06,510	57,17,130
3. Enrolment fee		
4. Library Admission fee	37,28,000	34,20,250
5. Laboratory fee - I T System fee	74,38,000	67,05,050
6. Art & Craft fee		
7. Registration fee / Institutional fee		
8. Syllabus fee		
Total (A)	19,55,82,436	18,46,77,829
Examinations		
1. Admission test fee		
2. Annual Examination fee	72,96,280	64,01,510
3. Mark sheet, certificate fee		
4. Entrance fee		
Total (B)	72,96,280	64,01,510
Others Fees		
1. Identity card fee		
2. Fine/Miscellaneous fee	18,80,552	10,72,621
3. Medical fee	22,37,070	21,39,060
4. Transportation fee	22,23,700	20,27,350
5. Hostel fee - Light & Water charges		

6. Migration fee		
7. Summer term course fee	14,83,335	55,000
<b>Total (C)</b>	<b>78,24,657</b>	<b>52,94,031</b>
<b>Sale of Publications</b>		
1. Sale of Admission forms		
2. Sale of syllabus and question paper, etc.		
3. Sale of prospectus including admission forms		
<b>Total (D)</b>		
<b>Other Academic Receipts</b>		
1. Registration fee for workshops, training programmes	28,000	20,000
2. Registration fee (Academic Staff College)		
3. Training & Placement	8,08,500	6,69,500
<b>Total (E)</b>	<b>8,36,500</b>	<b>6,89,500</b>
<b>Grand Total (A+B+C+D+E)</b>	<b>21,15,39,873</b>	<b>19,70,62,870</b>

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

SCHEDULE 10- GRANTS/SUBSIDIES (IRRECOVERABLE GRANTS RECEIVED)

Particulars	Current Year					Previous Year				Total	
	OH-35 (Creation of Assets)	OH-31 (Recurring General)	OH-36 (Salaries)	Current Year Total	OH-35 (Creation of Assets)	OH-31 (Recurring General)	OH-36 (Salaries)	OH-35 (Creation of Assets)	OH-31 (Recurring General)		OH-36 (Salaries)
Balance B/F	31,12,65,070	-	23,87,68,802	55,00,33,872	50,03,95,222	-	17,39,98,427	67,43,93,649	-	-	67,43,93,649
Add: Receipts during the year	-	68,74,00,000	35,00,00,000	1,03,74,00,000	6,67,00,000	40,26,20,000	41,11,00,000	88,04,20,000	-	-	88,04,20,000
Add: Interest earned	-	-	-	-	-	-	-	-	-	-	-
Add: Adjustment against refunded to Ministry written back	-	-	-	-	1,37,84,185	-	-	1,37,84,185	-	-	1,37,84,185
Total	31,12,65,070	68,74,00,000	58,87,68,802	1,58,74,33,872	58,08,79,407	40,26,20,000	58,50,98,427	1,56,85,97,834	40,26,20,000	-	1,56,85,97,834
Less: Utilized for Capital expenditure (A)	23,16,85,272	-	-	23,16,85,272	26,96,14,337	-	-	26,96,14,337	-	-	26,96,14,337
Balance	7,95,79,798	68,74,00,000	58,87,68,802	1,35,57,48,600	31,12,65,070	40,26,20,000	58,50,98,427	1,29,89,83,497	40,26,20,000	-	1,29,89,83,497
Less: Utilized for Revenue expenditure (B)	-	63,95,22,884	45,05,52,453	1,09,00,75,337	-	-	34,63,29,625	74,89,49,625	40,26,20,000	-	74,89,49,625
Balance C/F (C)	7,95,79,798	4,78,77,116	13,82,16,349	26,56,73,263	31,12,65,070	-	23,87,68,802	55,00,33,872	-	-	55,00,33,872

**NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT**

Schedule 11 - INCOME FROM INVESTMENT

Particulars	Amount in Rupees					
	Earmarked/Endowment Funds		Other Investments			
	CURRENT YEAR	PREVIOUS YEAR	CURRENT YEAR	PREVIOUS YEAR	CURRENT YEAR	PREVIOUS YEAR
1 Interest						
a. On Government Securities	-	-	-	-	-	-
b. Other Bonds/Debentures	-	-	-	-	-	-
2 Interest on Term Deposits						
Interest on Stock Term Deposits from AXIS Bank	-	3,44,13,514	-	-	-	-
Interest on Term Deposits against short term deposits.					1,14,00,673	3,43,715
3 Income accrued but not due on Term Deposits	3,52,80,826	-	-	-	-	-
4 Interest on Savings Bank Accounts	57,10,477	6,16,704	-	-	-	-
5 Others - Interest on Investment of Non-plan fund	-	-	-	-	-	-
<b>Total</b>	<b>4,09,91,303</b>	<b>3,50,30,218</b>	<b>1,14,00,673</b>	<b>3,43,715</b>	<b>1,14,00,673</b>	<b>3,43,715</b>
Transferred to Earmarked/Endowment Funds	4,09,91,303	3,50,30,218				
Balance	-	-	1,14,00,673	3,43,715	1,14,00,673	3,43,715

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

## SCHEDULE 12: INTEREST EARNED

Amount in Rupees

Particulars	CURRENT YEAR	PREVIOUS YEAR
1 On Savings Accounts with scheduled banks :		
Against fee account no. 30763009570	8,46,878	2,09,572
Against Scholarship account no. 10521278244	2,09,024	23,414
Against Auto Sweep A/c (Non Plan)	-	1,32,57,867
Against Auto Sweep A/c (Plan)	-	6,70,84,532
Against Auto Sweep A/c (Fees A/c)	-	63,00,463
Against on Auto sweep Scholarship account no. 10521278244	-	8,29,699
Interest on Axis Bank account no. 10049704315	1,80,908	3,50,827
Interest on HDFC Bank A/C No.50200039712972	11,179	-
Interest on E-Tender Account: SBI A/C No.38478849539	11,355	-
Accrued Interest on Stock TDR	-	24,304
Interest received on TDS	30,381	
Total (A)	12,89,725	8,80,80,678
2 On Loans :		
a. Employees/Staff - Interest on Soft Loan	77,471	98,260
b. Others - Against Interest recovery of LTC/HTC		-
Total (B)	77,471	98,260
3 On Debtors and Other Receivables		
Total (C)	-	-
Grand Total (A+B+C)	13,67,196	8,81,78,938

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

## SCHEDULE 13- OTHER INCOME

Amount in Rupees

A. Income from Land & Buildings	CURRENT YEAR	PREVIOUS YEAR
1. Hostel room Rent	74,40,183	65,03,461
2. License fee	47,29,413	30,44,486
3. Hire Charges of Auditorium/Play ground/Convention Centre, Shop etc.	14,57,238	14,64,017
4. Guest House Rent	23,73,039	25,75,138
5. Electricity charges recovered	66,58,857	56,61,445
6. Light & Water charges recovered	71,44,000	62,34,500
Total	2,98,02,729	2,54,83,048
B. Sale of Institute's Publications	-	-
C. Income from holding events		
1. Gross Receipts from annual function/Sports Carnival	-	-
Less: Direct expenditure incurred on the annual function/Sports Carnival	-	-
2. Gross Receipts from fetes	-	-
Less: Direct expenditure incurred on the fetes	-	-
3. Gross Receipts for educational tours	-	-
Less: Direct expenditure incurred on the tours	-	-
4. Others (to be specified and separately disclosed)	-	-
Total	-	-
D. Others		
1. Institute Overhead ( Project)	22,20,644	20,07,929
2. RTI Fees	558	790
3. Income from Royalty	-	-
4. Sale of application form (Recruitment)	24,11,839	36,93,992
5. Misc. receipts (Sale of Tender Form)	4,94,500	3,56,000
6. Profit on sale/disposal of Assets	-	-
a) Owned assets	-	-
b) Assets received free of cost	-	-
7. Others (Lake)	-	-
8. Pension Fund Contribution	65,24,768	1,32,33,549
9. KIDS NITS Fund Contribution (Appropriation)	-	-
10. Capital Fund appropriation against Depreciation	35,80,91,546	28,10,04,390
11. Misc. Receipts	5,83,710	8,22,835
Total	37,03,27,565	30,11,19,485
Grand Total (A+B+C+D)	40,01,30,294	32,66,02,533

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

## SCHEDULE 14- PRIOR PERIOD INCOME

Amount in Rupees

Particulars	Current Year	Previous Year
1. Academic Receipts	-	-
2. Income from Investments	-	-
3. Interest earned	-	-
4. Other Income	-	-
Total	-	-

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

**SCHEDULE 15 - STAFF PAYMENTS & BENEFITS (ESTABLISHMENT EXPENSES)**

Particulars	Amount in Rupees					
	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
A) Salaries and Wages						
Teaching & Admin		34,96,21,674	34,96,21,674		26,15,03,434	26,15,03,434
Group B & C		1,87,14,839	1,87,14,839		1,53,07,780	1,53,07,780
Group D		3,22,94,821	3,22,94,821		3,12,14,928	3,12,14,928
B) Other Adhoc						
Salary of outsourced staff		-	-		2,67,871	2,67,871
Salary of Contractual Teaching & Admin		-	-		3,00,28,965	3,00,28,965
Salary of M R Staff		-	-		1,71,65,721	1,71,65,721
C) Allowances & Bonus						
Cumulative Professional Dev. Allowance		72,42,613	72,42,613		43,25,115	43,25,115
D) Contribution to Other Fund						
NPS Contribution		-	-		1,48,33,240	1,48,33,240
Pension contribution (Deputation)		-	-		-	-
EPF Contribution(Employer) MR		-	-		21,00,611	21,00,611
EPF Contribution FFW Workers' Society		-	-		-	-
CPF Contribution		-	-		2,09,916	2,09,916
EPF Contribution Contractual & others		-	-		26,71,717	26,71,717
E) Staff Welfare Expenses						
Mobile & Telephone expenditure		3,35,008	3,35,008		6,67,128	6,67,128
F) Retirement and Terminal Benefits						
Death cum Retirement Gratuity		1,62,57,950	1,62,57,950		98,35,533	98,35,533
Pension		-	-		11,39,25,075	11,39,25,075
Commuted Pension		-	-		86,82,378	86,82,378

Leave Encashment	72,72,985	72,72,985		1,32,08,812	1,32,08,812
Leave Salary (Deputation)	-	-			
G) LTC facility					
Home Travel Concession	3,27,198	3,27,198		7,30,357	7,30,357
Leave Travel Concession	70,50,960	70,50,960		65,14,900	65,14,900
H) Medical facility					
Medical Reimbursement	24,36,599	24,36,599		20,04,736	20,04,736
Medicine & Dispensary expenses	11,43,565	11,43,565		4,29,844	4,29,844
I) Children Education Allowances	72,04,500	72,04,500		17,569	17,569
J) Honorarium				3,67,500	3,67,500
K) Others :					
Security Services	-	-		5,56,69,866	5,56,69,866
House Keeping	-	-		3,33,21,554	3,33,21,554
Joining Time TA	1,60,375	1,60,375		2,38,924	2,38,924
Relocation Charges	4,89,366	4,89,366		3,30,565	3,30,565
Total	45,05,52,453	45,05,52,453	-	62,55,74,039	62,55,74,039

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT  
SCHEDULE 15 A - EMPLOYEES RETIREMENT AND TERMINAL BENEFITS

Particulars	Amount in Rupees				
	Pension	Gratuity	Leave Encashment	Total	
Opening Balance as on.....	-	-	-	-	-
Addition : Capitalized value of Contributions received from other Organisations	-	-	-	-	-
Total (a)	-	-	-	-	-
Less : Actual payment during the year (b)	-	-	-	-	-
Balance Available on 31.03..... (a-b)	-	-	-	-	-
Provision required on 31.03..... As per Actuarial Valuation (d)	-	-	-	-	-
A. Provision to be made in the Current year (d-c)	-	-	-	-	-
B. Contribution to New Pension Scheme	-	-	-	-	-
C. Medical Reimbursement to Retired Employees	-	-	-	-	-
D. Travel to Hometown on Retirement	-	-	-	-	-
E. Deposit Linked Insurance Payment	-	-	-	-	-
Total (A+B+C+D+E)	-	-	-	-	-

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

SCHEDULE 16- ACADEMIC EXPENSES

Particulars	Amount in Rupees					
	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
a) Laboratories expenses		5,91,596	5,91,596		10,94,894	10,94,894
b) Field work/Participation in Conferences		-	-		1,11,573	1,11,573
c) Expenses on Seminars/workshops		15,37,458	15,37,458		1,92,464	1,92,464
d) Payment to visiting faculty		2,93,500	2,93,500		7,55,214	7,55,214
e) Examination Expenses		30,81,107	30,81,107		34,96,079	34,96,079
f) Students Welfare expenses - Student Internship		-	-		-	-
g) Admission expenses		-	-		-	-
h) Convocation expenses		27,75,625	27,75,625		26,52,922	26,52,922
i) Publications		-	-		-	-
j) Scholarship for PG & PhD		19,09,13,659	19,09,13,659		14,74,33,534	14,74,33,534
k) Subscription expenses		-	-		-	-
l) Contingency to Ph.D. Scholars		-	-		-	-
m) Students Project Expenses		3,60,279	3,60,279		7,91,504	7,91,504
n) Library Contingency		3,16,936	3,16,936		2,37,131	2,37,131
o) Industry Institute Partnership exp		-	-		-	-
p) STIS Project Exp		-	-		-	-
q) Internship Exp		1,74,430	1,74,430		-	-
r) Industry Visit (MBA)		-	-		2,57,785	2,57,785
s) Student Orientation Program		54,394	54,394		1,18,330	1,18,330
t) Summer Term Course Expenses		3,60,000	3,60,000		-	-
Total	-	20,04,58,984	20,04,58,984	-	15,71,41,430	15,71,41,430

**NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM**  
**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT**  
**SCHEDULE 17 - ADMINISTRATIVE AND GENERAL EXPENSES**

	Amount in Rupees					
	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
<b>A. Other Establishment Expenses</b>						
Pension		7,68,11,177	7,68,11,177			
Commuted Pension		1,40,71,913	1,40,71,913			
NPS Contribution		1,92,83,665	1,92,83,665			
CPF Contribution		2,09,916	2,09,916			
EPF Contribution Contractual & others		36,44,581	36,44,581			
EPF Contribution (MR)		21,61,629	21,61,629			
Salary of Contractual Teaching & Admin		2,41,29,720	2,41,29,720			
Salary of M R Staff		1,76,02,838	1,76,02,838			
Security Services		6,48,94,936	6,48,94,936			
House Keeping		3,95,61,248	3,95,61,248			
Honorarium		3,62,202	3,62,202			
<b>B. Infrastructure</b>						
Electricity		3,34,20,245	3,34,20,245		2,97,82,954	2,97,82,954
Water Charges		1,04,33,205	1,04,33,205		65,00,570	65,00,570
Solar Energy Charges		15,15,906	15,15,906			
<b>C. Communication</b>						
Postage		43,266	43,266		3,351	3,351
Telephone, Fax and Internet Charges		6,37,644	6,37,644		6,90,083	6,90,083
<b>D. Others</b>						
Printing and Stationery (consumption)		20,02,717	20,02,717		18,87,551	18,87,551
Travelling and Conveyance Expenses		43,01,300	43,01,300		21,00,749	21,00,749
Hospitality		5,39,969	5,39,969		3,47,351	3,47,351
Auditors Remuneration		11,99,225	11,99,225		8,850	8,850
Professional Charges - Legal fee		3,02,810	3,02,810		1,94,800	1,94,800
Advertisement and Publicity		60,64,846	60,64,846		71,76,795	71,76,795

Magazines & Journals - News paper	16,954	16,954	43,117	43,117	43,117
Training & Placement expenses	4,92,159	4,92,159	4,27,587	4,27,587	4,27,587
Board & Committee meeting	25,10,060	25,10,060	7,24,133	7,24,133	7,24,133
Computer Consumable	7,60,558	7,60,558	3,16,349	3,16,349	3,16,349
Initiative to foster Social Responsibility	3,89,400	3,89,400	-	-	-
Misc. Expenses	1,21,745	1,21,745	55,146	55,146	55,146
Gyan Sagar expenses	1,78,345	1,78,345	70,034	70,034	70,034
Celebration of National Day	14,03,995	14,03,995	9,78,323	9,78,323	9,78,323
NCC & NSS Activity	2,81,851	2,81,851	2,19,449	2,19,449	2,19,449
Promotion of Rashtra Bhasha	1,65,734	1,65,734	52,664	52,664	52,664
Consumable expenses	7,49,876	7,49,876	5,94,402	5,94,402	5,94,402
Contingency Exp	-	-	1,35,137	1,35,137	1,35,137
Transit House Rent	-	-	-	-	-
Celebration of Foundation Day	1,60,034	1,60,034	-	-	-
HPC Cell Expenses	-	-	4,57,961	4,57,961	4,57,961
Innovation Lab Exp	1,34,450	1,34,450	8,51,366	8,51,366	8,51,366
Other Admin Exp	34,77,911	34,77,911	14,09,460	14,09,460	14,09,460
Registration/Nomination fee	-	-	-	-	-
Short Term Training Program	35,022	35,022	-	-	-
NABL Expenses	1,61,129	1,61,129	3,40,675	3,40,675	3,40,675
Start-up conclave expense	-	-	77,223	77,223	77,223
NSDL Service Charges	20,209	20,209	19,367	19,367	19,367
Gymkhana Expenditure	35,05,313	35,05,313	8,32,992	8,32,992	8,32,992
Swachh Bharat Mission Exp	4,14,235	4,14,235	-	-	-
Insurance against Assets	12,78,015	12,78,015	6,97,055	6,97,055	6,97,055
NITs Conclave Exp	53,210	53,210	-	-	-
Excess Provision of accrued interest	1,27,267	1,27,267	-	-	-
Innovation expenses	-	-	29,666	29,666	29,666
<b>TOTAL</b>	<b>33,96,32,430</b>	<b>33,96,32,430</b>	<b>5,70,25,160</b>	<b>5,70,25,160</b>	<b>5,70,25,160</b>

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

SCHEDULE 18 - TRANSPORTATION EXPENSES

Particulars	Amount in Rupees					
	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
1. Vehicles (owned by Institution)						
a) Running Expenses		26,32,330	26,32,330		27,02,865	27,02,865
b) Insurance Expenses		1,00,782	1,00,782		2,29,503	2,29,503
2. Vehicles taken by Rent/Lease						
a) Rent/Lease Expenses			-		-	-
3. Vehicle (Taxi) hiring Expenses						
TOTAL	-	27,33,112	27,33,112	-	29,32,368	29,32,368

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

SCHEDULE 19 - REPAIRS & MAINTENANCE

Particulars	Amount in Rupees					
	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
a) Buildings		3,53,09,027	3,53,09,027		1,16,33,671	1,16,33,671
b) Furniture & Fixtures		9,71,139	9,71,139		4,49,126	4,49,126
c) Plant & Machinery		27,98,901	27,98,901		45,36,734	45,36,734
d) Office Equipment		-	-		-	-
e) Scientific Equipment - (Digital Labrary)		-	-		-	-
f) Audio Visual Equipment		-	-		-	-
g) Cleaning Materials & Casual work		1,74,711	1,74,711		9,90,483	9,90,483
h) Book Binding Charges		-	-		-	-
i) Gardening		9,14,143	9,14,143		89,165	89,165
j) Estate Maintenance (Electrical)		38,94,343	38,94,343		44,86,610	44,86,610
k) Bio Gas Contingency expenses		-	-		-	-
l) D.G. Set		99,62,559	99,62,559		67,60,417	67,60,417
m) Networking including AMC		44,28,608	44,28,608		20,95,223	20,95,223
n) Guest House Maintenances		3,45,507	3,45,507		4,14,549	4,14,549
TOTAL	-	5,87,98,938	5,87,98,938	-	3,14,55,978	3,14,55,978

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT

SCHEDULE 20 - FINANCE COSTS

Amount in Rupees

Particulars	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
a) Bank Charges	-	1,80,421	1,80,421	-	-	-
b) Others	-	-	-	-	-	-
<b>TOTAL</b>	-	1,80,421	1,80,421	-	-	-

SCHEDULE 21 - OTHER EXPENSES

Particulars	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
a) Provision for Bad and Doubtful Debts/Advances						
b) Irrecoverable Balances/Written-off						
c) Grants to Kendriya Vidyalaya		3,77,19,000	3,77,19,000		3,37,77,000	3,37,77,000
d) Support/Salaries to NITS-KIDS staff						
<b>TOTAL</b>	-	3,77,19,000	3,77,19,000	-	3,37,77,000	3,37,77,000

SCHEDULE 22 - PRIOR PERIOD EXPENSES

Particulars	CURRENT YEAR			PREVIOUS YEAR		
	Plan	Recurring	Total	Plan	Recurring	Total
1) Establishment Expenses (CEA)						
2) Academic Expenses						
3) Administrative Expenses						
4) Transportation Expenses						
5) Repair & Maintenance						
6) Others						
<b>TOTAL</b>				-	-	-

NATIONAL INSTITUTE OF TECHNOLOGY SILCHARSIGNIFICANT ACCOUNTING POLICIESSCHEDULE: 23

## 1. BASIS FOR PREPARATION OF ACCOUNTS

The financial statements are prepared under the Historical cost convention and on the basis of Generally Accepted Accounting Principles in India. Institute's accounts are maintained on accrual system of accounting in terms of the New System.

## 2. REVENUE RECOGNITION

- 2.1 Fees from students (except Tuition Fees), Application fee, Interest on Savings Bank accounts are accounted on cash basis. Tuition Fees collected separately for each semester is accounted on accrual basis.
- 2.2 Income from Land, Buildings & other Property and Interest on Investments are accounted on accrual basis.
- 2.3 Interest on interest bearing advances to staff for Soft Loan is accounted on actual basis every year.

## 3. FIXED ASSETS AND DEPRECIATION

- 3.1 Fixed assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition and commissioning.
- 3.2 Depreciation on Fixed assets is provided on written down value method as followed in earlier years, at the rates mentioned below. As regard to Govt. of India guidelines for providing depreciation on straight line method, the same could not be given effect during 2019-20 also, due to the fact that, change in method and rate of depreciation on the assets procured prior to 2014-15 will attracts complicity.

<u>Tangible Assets</u>	<u>Rate of Depreciation</u>
1. Land	0%
2. Site Development	5%
3. Buildings	5%
4. Roads & Bridges	5%
5. Tube wells & Water Supply	5%
6. Electrical Installation and equipment	15%
7. Plant & Machinery	15%
8. Scientific & Laboratory Equipment	15%
9. Office Equipment	15%
10. Audio Visual Equipment	15%
11. Computers & peripherals	30%
12. Furniture, Fixtures & Fittings	10%
13. Vehicles	20%
14. Lib. Books & Scientific journals	30%

Intangible Assets (amortization):

1. E-Journals	100%
2. Computer Software	15%

- 3.3 Depreciation is worked out 100% on the opening balance and proportionately on additions during the year. The amount of depreciation has been adjusted with the Capital Fund account and simultaneously shown under "Other Income" in the Income & Expenditure A/c.
- 3.4 Assets created out of Sponsored Projects funds, are setup by credit to Current Liabilities (Schedule No. 3.A), with separate entity . No depreciation on the Assets created out of projects has been charged.

- 3.5 Electronic Journals (E-journals) are separated from Library Books in view of the limited benefit that could be derived from the on-line access provided. E-journals are not in a tangible form, but temporarily capitalized in view of the magnitude of expenditure and the benefit derived in terms of perpetual knowledge of academic and Research Scholars, Depreciation is provided in respect of E-journals at a higher rate of 100% as against depreciation of 30% provided in respect of Library Books, since the access is permitted for a specific period only.
- 3.6 No depreciation has been charged on E-Books since the procurement of e-books are made on perpetual basis for the Institute.
4. STOCKS: Expenditure on purchase of chemicals, glassware, publications other stores as revenue expenditure, they are valued at cost.
5. **RETIREMENT BENEFITS**  
Retirement benefits of employees appointed prior to the year 2004 are entitled to pension and terminal benefits such as Gratuity, commuted value of pension, Leave encashment etc., are shown at actual as per provisions made by the Institute in annual Budget as Grants in Aid and provided for as per orders of the Govt. of India and paid as per schemes as applicable from time to time. Employees appointed after 2004 are governed by the New Pension Scheme to whom on a monthly basis matching employers contribution is paid from the salary grants provided under Non-plan Grant duly budgeted.
6. **INVESTMENT**  
Institute has invested temporary surplus in Term Deposits with banks. Investments are stated at cost. A schedule showing details of Investments of various funds annexed with the statement of accounts.
7. **Earmarked/ Endowment Funds.**  
The following long term funds are earmarked for specific purpose. Most of the funds have separate bank account. Those with large balances also have investments in term deposits with Banks. The income from Investment/advances, interest on savings Bank Accounts are credited to the respective Funds. The expenditure and advances if any, are debited to the fund. The balance in the respective funds is carried forward and is represented on the assets side by the balance at Bank, Investments and accrued interest.
- 7.1 **CORPUS FUND** is created in compliance with Govt. of India, MHRD, Department of Higher Education, New Delhi vide letter no. F.21-7/2006-TS.III dated 31.03.2006. This fund is in the nature of Endowment Fund. Income from the investments of the fund is added to the fund. The balance in the Corpus Fund which is carried forward is represented by the balance in a separate bank Account, investment in fixed deposits and SBI Mutual fund with the Bank and Accrued interest on investments.
9. **GOVERNEMENT GRANTS**
- 9.1 Government Grants are accounted on accrual basis (as per date of sanction letters).
- 9.2 To the extent utilized towards capital expenditure, (on accrual basis) government grants are transferred to the Capital fund.
- 9.3 Government Grants for meeting revenue Expenditure (on accrual basis) are treated utilized and simultaneously transferred to Income & Expenditure a/c as Income from Grants and Subsidies.
- 9.4 Unutilized grants including advances paid out of such grants are carried forward and exhibited as liability in the Balance Sheet.
10. **INVESTMENTS OF EARMARKED FUNDS AND INTEREST INCOME ACCRUED ON SUCH INVESTMENTS:**  
To the extent not immediately required for the expenditure, the amounts available against such funds are invested in fixed term deposits with Banks and SBI Mutual fund leaving the balance in savings Bank Accounts.  
  
Interest received, interest accrued due and interest accrued but not due on such investments are added to the respective funds as income of the institution.
11. **SPONSORED PROJECTS**  
In respect of ongoing Sponsored Projects, the amount received from sponsors is credited to the head "Current Liabilities and Provisions- Current Liabilities-Other Liabilities-Receipt against ongoing sponsored projects". As and when expenditure is incurred/ advances are paid against such projects, or the concerned project account is debited with allocated overhead charges, the liability account is debited.
12. The Institution itself also awards Scholarships to M.Tech./M.Sc. & Ph.D. scholars, which are accounted as academic expenses.
13. In compliance of audit observation for the year 2018-19, excess of income over expenditure amounting to Rs. 2663.46 lakh transferred to Capital Fund account instead of Corpus fund account during the year 2019-20.

SCHEDULE: 24

CONTINGENT LIABILITIES AND NOTE TO ACCOUNTS (ILLUSTRATIVE)

1. CONTINGENT LIABILITIES : There is no contingent liability during the year under report.
2. CAPITAL COMMITMENTS: All the major works have been completed and thus there is no Capital commitment during the year.
3. FIXED ASSETS:
  - 3.1 Addition in the year to Fixed Assets in Schedule 4 includes Assets purchased out of Plan Funds Rs. 2316.85 lakh. The assets have been set up by credit to Capital Fund.
  - 3.2 In the Balance Sheet as on 31.03.20 and the Balance Sheets of earlier years, fixed assets created out of Plan funds were exhibited distinctly. The additions during the years, from plan and other funds, and the depreciation on those additions respectively have been exhibited in the Sub Schedules A,B,C,D & E to the main schedules of Fixed Assets (Schedules 4).
4. CURRENT ASSETS, LOANS, ADVANCES AND DEPOSITS  
In the opinion of the management, the current assets, Loans, Advances and Deposits have a value on realization in the ordinary course, equal to at least the aggregate amount shown in the Balance Sheet.
5. The details of the Balances in the Savings Bank accounts, Current accounts with Banks are depicted in Schedule 7A of Schedule of Current assets. The details of Investment with banks against various funds are annexed separately in page no. 17 & 18 of the Annual Accounts.
6. Figures in the Final accounts have been rounded off to the nearest rupee.
7. Schedules 1 to 22 are annexed and form an integral part of Balance Sheet at 31<sup>st</sup> March 2020, and the Income & Expenditure account for the year ended on that date.
8. Provident fund accounts and the New Pension Scheme accounts are shown separately with the Institute Accounts. A Receipt & Payments Account, an Income & expenditure Account and a balance sheet of the Provident fund Accounts as well as the New Pension Schemes for the year 2019-20 have been attached with the Institute accounts. The balance held in New Pension Scheme as on 31.03.2020 is Rs. 160.60 lakh. Out of which, Rs. 108.46 lakh remitted in May 2020 and the remaining amount in respect of 14 members amounting to Rs.52.14 lakh yet to be transferred to NSDL, due to non-allotment of PRA number till date.
9. Pension Fund Contribution (Schedule-2): During the year a total amount of 65.25 Lacs has been appropriated as income from the Pension Fund Contribution and the same has been stated as revenue expenditure against the Pension Fund (Endowment Fund).
10. Fixed Assets (Schedule-4): Addition of fixed assets during the year amounting to Rs.2316.85 Lac. No expenditure incurred against Patent. Thus total capital expenditure of Rs. 2316.85 Lac booked as capital expenditure from Plan Grant (OH-35) only.
11. A statement showing the details of investment and interest accrued is annexed, which is corresponding to Schedule 5 and 6.
12. Grants and Subsidies (Schedule-10):, The unspent balance under Non Recurring Grant (OH-35) is Rs. 795.80 lakh and Recurring Grant under (OH- 31 & 36) is Rs.1860.93 lakhs as on 31.03.2020.
13. TEQIP III project has been allotted to the Institute during the year 2017-18. The project is implemented as a Central Sector Scheme implying that it is 100% funded by the Union Govt. and implemented by the Central Government machinery. With this background MHRD has developed Direct Fund Transfer System through PFMS. Accordingly the Institute is registered on PFMS and all the transaction under TEQIP III are made through PFMS. A consolidated statement showing details of expenditure under TEQIP III is annexed with the Books of Account.
14. The Institute had spent an amount of Rs.183.80 lakh through foreign currency transaction against procurement of Equipment and other expenses.
15. Due to re-classification of some Establishment expenditure from Schedule 15 to Schedule 17, expenditure against Sch-15 decreased and Sch-17 increased, during the year 2019-20.

Registrar

Director

**NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM**  
**RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2020**

		Amonut in Rupees			
RECEIPTS	CURRENT YEAR	PREVIOUS YEAR	PAYMENTS	CURRENT YEAR	PREVIOUS YEAR
<u>I. Opening Balances:</u>			<u>I. Expenses:</u>		
a) Cash Balances	8,837	51,225	Establishment expenses	44,29,87,021	60,18,73,542
b) Bank Balance :			Academic Expenses	19,94,79,517	14,12,91,113
Current Accounts	65,83,39,628	1,23,75,67,862	Administrative Expenses	31,84,71,787	5,28,46,766
Savings Account	15,44,03,251	21,69,54,214	Transportation Expenses	24,13,588	21,41,635
			Repairs & Maintenance	5,18,08,232	2,90,96,801
			Finance Cost	1,80,421	83,697
II. Grants Received:			Prior Period Expenses	-	-
Non Recurring Grant: From Govt of India	-	6,67,00,000	Other Expenses	3,79,92,410	3,43,95,774
Recurring Grant: From Govt of India	1,03,74,00,000	71,37,20,000	II. Payments against Earmarked/Endowment Funds	6,84,374	2,36,668
Grants-in-Aid Receivable :			III. Payments against Sponsored Projects	1,74,46,710	2,47,11,565
Non Recurring Grant: From Govt of India	-	-	Misc Payments against Grant/Conference		
Recurring Grant: From Govt of India	-	-	IV. Payments against Sponsored Scholarship	46,00,339	63,30,215
III. Academic Receipts	19,83,99,565	19,63,11,915	V. Investments and Deposits made		
IV. Receipts against Earmarked/Endowment Funds	44,36,831	3,55,82,608	a) Out of Earmarked	54,20,00,000	50,40,00,000
V. Receipts against Sponsored Project: Grants Received from AICTE/GOI	5,01,98,962	2,21,95,719	b) Out of own funds(Investments-others	18,50,000	-
Other Misc Receipts against Conference	2,26,97,793	94,00,453	VI. Term Deposits with Schedule Banks	-	51,00,00,000
VI. Receipts against sponsored Fellowships & Scholarships	19,07,845	91,89,264	VII. Expenditure on Fixed Assets and Capital Works- in -Progress		
			a) Fixed Assets	21,86,91,122	15,67,03,559

## RECEIPT AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2020

		Amonut in Rupees			
RECEIPTS	CURRENT YEAR	PREVIOUS YEAR	PAYMENTS	CURRENT YEAR	PREVIOUS YEAR
VII. Income on Investments from Earmarked/Endowment funds Other investments	35,02,283.00	1,57,17,952.00	b) Capital works -in- Progress	-	2,91,18,663
VIII. Interest received : Bank Deposit	-	22,75,452	Viii. Other Payments including statutory	6,55,60,960	5,50,28,915
Loans and Advances (Margine Money)	12,64,870	6,53,231	IX. Refund of Grants (Sponsored Projects)	16,39,135	42,54,328
Savings Bank Account	1,14,00,673	9,03,79,741	X. Deposits and Advances	7,03,85,328	11,90,46,269
Interest on Others	14,52,762	-	XI. Other Payments	24,34,84,393	33,85,26,971
Against Project Account					
IX. Investments encashed					
X. Term Deposits with Scheduled Banks encashed	21,15,78,830	36,90,45,573	XII. Closing balances		
XI. Other income (including prior Period Income)	3,74,59,412	3,17,88,293	a) Cash in hands	15,223	8,837
XII. Deposits and Advances			b) Bank balances		
Plant Machinery & Equipment			Current Accounts	44,44,32,709	65,83,39,628
Other Deposits ( S Debtors)	10,20,13,737	13,74,15,014	Savings Account	8,08,01,280	15,44,03,251
Loans & Advances	6,97,81,950	10,46,42,153			
XIII. Miscellaneous Receipts including Statutory Receipts	11,03,83,205	9,47,20,196			
XIV. Any other Receipts	6,82,94,115	6,81,27,332			
TOTAL	2,74,49,24,549	3,42,24,38,197	TOTAL	2,74,49,24,549	3,42,24,38,197

Dated, Silchar

The 28th August, 2020.

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF RECEIPTS & PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31ST MARCH 2020

RECEIPTS :	Amount in Rupees	
	Current Year	Previous Year
Particulars		
<b>GRANTS-IN-AID RECEIVED FROM GOVT OF INDIA:</b>		
NON RECURRING GRANT : RECEIVED FROM GOVT OF INDIA: OH-35	-	6,67,00,000
RECURRING GRANT: RECEIVED FROM GOVT OF INDIA OH-36 (SALARIES)	35,00,00,000	36,11,00,000
RECURRING GRANT: RECEIVED FROM GOVT OF INDIA OH-31 (GENERAL)	68,74,00,000	35,26,20,000
Total	1,03,74,00,000	78,04,20,000
<b>Academic Receipts</b>		
Academic Fee		
Tuition Fees	16,19,19,530	16,53,16,444
Admission Fee	67,74,510	56,62,630
Library Fee	36,62,000	33,92,750
I.T System Fee	73,06,000	66,50,050
Examination Fee	71,67,568	63,47,010
Late Fine/Penalty	3,24,584	1,52,044
Misc Fees	14,89,968	8,93,577
Medical Facility Fee	21,97,470	21,22,560
Transportation Fees	21,84,100	20,10,850
Summer Term Course Fee	14,83,335	55,000
Other Academic Receipts		
Training & Placement Fee	7,42,500	6,25,000
Short Term Training Programme Fee	28,000	20,000
Development Fee	31,20,000	30,64,000
Total	19,83,99,565	19,63,11,915
<b>EARMARKED / ENDOWMENT FUND:</b>		
Pension Fund Contribution		1,32,33,549
Employees welfare fund		42,187
Student Aid Fund	10,48,000	10,28,000
Total (A)	10,48,000	1,43,03,736
<b>CORPUS FUND :</b>		
Corpus Fund	23,40,931	1,99,36,752
Corpus fee received from Students	10,47,000	10,28,000

Migration fee (Charged under income of Corpus Fund)	900	2,000
Institute Share from Transcript fee & Verification Fee		3,12,120
Corpus Fund interest on Savings Bank		
Total (B)	33,88,831	2,12,78,872
Grand Total (A+B)	44,36,831	3,55,82,608
<b>SPONSORED PROJECTS:</b>		
Grants Received against Sponsored Projects:		
MCIT : GoI	63,47,791	55,56,217
SERB : GoI	2,66,64,270	1,31,39,180
DST: GoI	79,50,213	6,69,096
MNRE: GoI	-	1,453
BRNS: GoI		3,70,854
UGC		78,883
ICSSR	75,000	80,000
DEITY	22,55,000	10,00,000
CPRI		5,83,245
ARDB		6,58,657
NMHS	15,13,445	58,134
SPARC Scheme	47,14,910	
CSIR	6,78,333	
Total	5,01,98,962	2,21,95,719
<b>OTHER MISC. GRANTS/SPONSHORSHIP:</b>		
Received from SERB (DST)	13,92,710	3,00,000
Received from Project	9,138	
Received from CBSE		72,000
Manish Roy Memorial Scholarship Fund	6,903	7,388
K.K Mrinalini Kroni Gold Medal Fund	3,451	3,694
Abhijit Hom Choudhury Memorial Award Fund	507	543
Saswata Purkayastha Memorial Fund	3,738	4,000
YFRFs Visvesvararya scheme (Project A/c)	15,21,620	14,80,000
DST- FIST	91,08,000	
DST- Inspire Scholarship		8,00,000
IGNCA		
DST (WORKSHOP)		1,00,000
Education Loan Refundable		1,16,000
GIAN Course Fee	40,500	57,500

GIAN FUND	10,88,000	19,04,000
GPF Payable ( Against Auto Sweep)		2,96,847
AICTE Exam		5,28,000
NMHS Project	6,50,000	22,295
Payable Against Gandhi Global Yatra	1,22,840	
Payable Against IAF Exam	16,820	
Payable Against TEQIP III	8,000	
Payable Against NEET 2019 Exam	2,48,850	
Payable Against ONGC Online Exam	1,66,592	
Payable to Balmer Lawrie & Co	4,83,097	
Payable to Bhargov Bhattacharyya (Student)	5,000	
Payable to GP Fund (TDS)	7,65,192	
Payable to P.J.Roy (NPS)	3,710	
Payable Project (TDS)	755	
START UP India		32
West Bengal JEE	29,460	33,880
CHSL online Exam		5,05,258
Academic Development Fee (MBA)	14,40,000	15,00,000
SPARC Scheme	53,82,910	
NRCs Swayam PMMMNMTT Scheme		14,70,000
Indian Academic Science		1,99,016
NEC-2020	2,00,000	
Total	2,26,97,793	94,00,453
<b>VI. Receipts against sposeded Fellowships and Scholarships:</b>		
Outside Scholarship	19,07,845	87,87,043
Doctoral Fellowship (ICSSR)		4,02,221
Total	19,07,845	91,89,264
<b>INTEREST RECEIVED FROM EARMARKED FUND:</b>		
Depreciation Fund Interest on Savings Account	17,64,582	80,13,157
Maintenance Fund Interest on Savings Account	17,03,058	63,63,417
Staff Dev Fund Interest on Savings Account	34,643	7,16,892
Kids Fund Interest on Savings Account		6,24,486
Total	35,02,283	1,57,17,952
Interest Earned		
Interest on Saving A/c		

Interest on Fees A/c	8,35,007	2,09,572
Interest on Scholarship A/c	2,09,024	23,414
Interest on Savings Bank A/c	1,90,458	3,50,827
Interest on Savings Bank A/c (Project)		69,418
Interest on TDS	30,381	
Total	12,64,870	6,53,231
Interest Others		
Interest on (Auto Sweep) Non Plan	-	1,34,80,014
Interest on Auto Sweep A/c (Fee)	-	63,00,463
Interest on Auto Sweep A/c (Scholarship account)	-	8,29,699
Interest Others (from Paln/Non-plan Investment)	1,14,00,673	3,43,715
Interest on Auto Sweep A/c (Plan)	-	6,70,84,532
Interest on Auto Sweep Fist / Modrom & Other Projects	-	23,41,318
Total	1,14,00,673	9,03,79,741
Interest Against Project A/c		
Interest on Saving A/c (Sponsored projects a/c.)	14,52,762	
Misc Receipts		
Total	14,52,762	-
Investment with scheduled banks		
Investment (Corpus Fund)	-	10,59,10,710
Investment (Depreciation Fund)	-	12,49,58,489
Investment (Maintenanc Fund)	-	11,35,00,000
Investment (Staff Dev. Fund)	-	97,75,374
Investment (KIDs NITS Fund)	-	1,00,00,000
Investment (Nonplan)	11,00,00,000	
Investment (Nonplan Fees)	10,00,00,000	45,00,000
Investment (Plan- Margin Money A/C)	15,78,830	4,01,000
Total	21,15,78,830	36,90,45,573
Other Income ( Including Prior Period Income)		
Income From Land & Building		
License Fee	46,38,405	29,95,043
Hire Charges for Shops Canten and Office	14,57,238	13,50,103
Seat Rent/Hostel Room Rent	73,08,183	64,55,961
Guest House Room Rent	23,71,069	25,65,188
Electricity Consumption Receipts	63,67,696	53,56,812
Light & Water (Hostel)	70,12,000	61,87,000

Other Income		
RTI Fees	558	790
Application Fee	24,11,839	36,93,992
Tender Form Fee	4,94,500	3,56,000
Institute Overhead on Project	37,20,046	5,08,527
Misc Receipts	4,75,906	8,22,835
Institute Overhead on Consultancy	12,01,972	14,96,041
	<b>Total</b>	<b>3,74,59,412</b>
Margin Money for LC		22,75,452
	<b>Total</b>	<b>-</b>
<b>OTHER DEPOSITS:</b>		
Accrued Interest on LC Investment		7,333
Accrued Interest on Corpus Fund		3,51,56,492
Accrued Interest on Depreciation Fund		3,50,05,843
Accrued Interest on Maintenance Fund		4,74,40,931
Accrued Interest on Staff Dev Fund		37,42,255
Accrued Interest on Non Plan Fund		15,36,286
Accrued Interest on KIDS NITS Fund		16,02,216
Electricity Consumption Receivable	3,04,633	4,55,012
House Rent/Licence Fee Recivable	49,443	1,43,892
Shops & Canteen Rent Recivable	1,13,914	18,272
Hydarulic Engineering Lab Building (Recovery)		5,34,638
Receivable from Consultancy	24,528	
Grants Receivable	10,00,00,000	
Receivable From Scholarship Fund	15,07,000	
Receivable from SMDP Project	14,219	
Earth Quik Engg Building (Recovery)		10,83,872
Girls Hostel No.3 (Recovery)		84,453
Lab Equipment		4,70,040
Boys Hostel No.9		1,01,33,479
	<b>Grand Total</b>	<b>10,20,13,737</b>
<b>Loans,Advances &amp; Deposits</b>		
<b>Sundry Debtors</b>		
Panorama International	5,08,542	
Advance to Employees		

HTC Advance		1,46,789
LTC Advance	19,25,879	41,13,370
Other Advance To Employees		
Recoverable Advance	73,52,361	86,10,419
Recoverable Advance (Project)	93,900	1,96,276
TA Advance	26,22,449	15,58,943
TA Advance (Project)	1,15,999	35,560
Soft Loan (Staff)	7,35,842	8,84,328
Interest Free Loan	3,72,860	6,88,975
Medical Advance	5,00,000	
Deposit Work		
CPWD		1,54,50,000
Adv to NCC Ltd		30,40,000
Adv to N C Roy	12,16,000	8,68,000
Receivable from CSAB against Fee	3,09,65,000	2,72,95,000
Receivable from CCMT against Fee	66,45,300	71,50,000
Receivable from CCMT-Others	3,90,574	3,10,793
Receivable from CCMN	8,55,000	6,72,500
Receivable from CP Fund (Against Pension Contb.)		1,88,50,882
TDS Receivable (IT Non Plan)	7,15,403	
TDS Receivable (Earmarked Fund)	31,29,748	
Receivable from RPS Fund	3,77,752	13,41,712
Loan to CSAB		2,00,000
Loan to TEQIP (Recovery)	1,12,59,341	1,32,28,606
	<b>Total</b>	<b>6,97,81,950</b>
		<b>10,46,42,153</b>
<b>MISCELLANEOUS RECEIPTS INCLUDING STATUTORY RECEIPTS:</b>		
Provision -TAX:		
GST (PAYABLE)	57,61,768	28,50,517
GST (PAYABLE) Project	21,904	75,450
Income Tax (Against Salary & Contracts)	6,31,51,845	5,21,84,896
Income Tax -Project		20,450
Professional Tax	12,04,782	9,44,382
Professional Tax (Project)	9,360	10,924
Labour Cess	3,00,427	2,43,150
GSLI	5,38,800	5,73,450
EPF Subscription MR Employee	20,10,822	19,30,378

EPF Subscription FW Workers Society/Housekeeping	21,55,133	14,29,361
EPF Subscription Contractual Staff	12,61,244	11,44,185
GPF Advance Recovery	12,12,323	15,80,348
GPF	1,22,28,534	1,31,73,000
GPF Subscription (Other org)	12,15,000	4,15,000
CPF Subscription	2,09,916	2,21,161
NPS Subscription	1,91,01,347	1,79,23,544
Total	11,03,83,205	9,47,20,196
<b>CURRENT LIABILITIES</b>		
<b>OTHER DEPOSITS FROM STUDENTS:</b>		
Hostel Caution Money	35,000	5,000
Institute Caution Money	53,55,000	51,60,000
<b>Sundry Creditors &amp; Others</b>		
CIS Bureaus Services Pvt Ltd	1,28,726	3,65,174
CIS Bureaus Services Pvt Ltd (As per Labour Union)	5,45,102	14,93,540
M/s Sify Technologies Ltd		
Balmer Lawrie & Co	63,06,257	8,47,838
Mashuk Uddin Barbhuiya	4,00,000	
Rajib Sen	1,60,000	
saidul Alam Mazumder	18,50,000	
Sudip Nath	4,46,500	
B.K.Construction	3,00,000	
Rafique Uddin Ahmed	6,00,000	
NCC Ltd		36,18,680
Gulanur Hussain Choudhury	10,00,000	9,15,035
Naresh Chandra Roy	12,00,000	
Sudev Podder	5,00,000	
Nupin Enterprises	11,00,000	
DDF Consultant Pvt. Ltd.		4,71,025
Duttco Instruments		12,947
Integrated Micro system		69,825
J V Enterprises		19,793
Labtech Electronics		5,691
LCGC Bioanalytic Solutions		43,485
Rajiv Sen		4,58,979
Swapan & Associates		400

Mukesh & Associates		2,69,867
Nanda Kr. Singh		3,78,447
Earnest Money Deposit	42,95,750	53,23,847
Security Deposit	25,09,096	26,47,776
Performance Security (BRNS project)		42,825
Performance Security (Proect A/c)		2,20,977
Alumini Association Fee	10,53,000	10,29,000
Deposit Remittance	9,82,952	9,29,412
Deposit Remittance (project)	43,481	583
Recovery of Electricity Charges (Project)	35,858	30,765
Recovery of Licence Fee (Project)	1,23,494	34,200
CCTV Payable	11,87,871	9,34,647
Group Insurance Claim	5,95,442	12,10,954
Gymkhana	73,41,000	66,96,650
Hostel Management		6,000
Leave Encashment Payable (Other Org)	2,34,956	1,20,395
Liability Towards DCRG	3,00,000	1,50,000
L.I.C.I Payable	47,92,904	44,20,533
Pension Fund Contribution (Other Org)		2,51,735
Mediclaime Insurance	21,19,357	16,72,750
Mess Establishment	67,42,480	61,54,000
Processing Charges	4,25,369	4,38,500
Refundable Excess Deposit	2,27,833	6,16,475
Student Mediclaime	8,18,286	5,61,958
Transcript Fee	7,51,400	7,00,400
RPS Project A/c	93,77,269	19,80,637
Verification fee	1,37,500	1,49,650
Provision -Plan (others)	5,77,637	
DST FIST (M.E Adv Mfg)		1,57,00,000
Recovery against Trainee Teachers (RD)	2,20,800	2,20,800
Unclassified receipts (Institute)	16,07,302	2,80,515
Unclassified receipts (Project A/c)		50,000
ASDMA Training	1,73,700	
APDCL Exam		78,600
BHM Fee	1,66,000	46,500
CEE 2018	45,940	53,410
CSAB Exp	6,47,351	
CTET 2019	2,05,250	
DST FIST (Demurrage Charges)	3,55,971	
ICRAME 2020	2,62,546	
Mahabir Systems	9,735	
IUSSTF Base Fellowship (Project A/c)		51,027
Relief fund receipts		1,70,713
Blue Star Ltd.		1,81,000
INSA Visiting fellowship		29,405
BMG Informatics		8,04,967
	Total	6,82,94,115
		6,81,27,332

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
SCHEDULES FORMING PART OF RECEIPTS & PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31ST MARCH 2020

PAYMENTS :	Amount in Rupees	
	Current Year	Previous Year
Particulars		
Establishment Expenses		
Salary Teach & Admin	34,96,21,674	26,15,03,434
Salary Class-III	1,87,64,977	1,53,07,780
Salary Class-IV	3,22,94,821	3,12,14,928
Salary of Cont. Staff (Teach/admin/III/IV)	-	2,77,74,302
Salary of MR Staff	-	1,57,06,799
Salary of Outsourced Staff	-	2,67,871
Professional Dev Allowance	61,89,797	40,98,838
NPS Contribution	-	1,48,33,240
CPF Contribution	-	2,09,916
EPF Contribution on MR Salary	-	21,00,611
EPF Contribution on Contract Staff Salary	-	26,71,717
Mobile & Telephone Bill Reimbursement	3,16,223	6,67,128
Death Cum Ret. Gratuity	1,55,76,483	98,35,533
Pension	-	11,39,25,075
Commuted Pension	-	86,82,378
Leave Encashment	72,72,985	1,11,72,652
Home Travel Concession	2,15,106	5,60,846
Leave Travel Concession	48,73,186	54,75,277
Medical Reimbursement	23,89,263	19,23,222
Medicine & Dispensary Exp	11,23,765	3,95,202
Children Education Allowance	36,99,000	17,569
Honorarium/Sitting Fees	-	3,67,500
Security Services	-	4,19,32,686
House Keeping	-	3,06,59,549
Joining Time T.A	1,60,375	2,38,924
Relocation Charges (Transportation)	4,89,366	3,30,565
Total	44,29,87,021	60,18,73,542

Academic Expenses		
Lab Consumable	5,22,758	8,61,535
Conferences	3,36,463	1,11,573
Visiting Faculty Remuneration	2,93,500	7,43,214
Examination Expenses	27,13,562	31,38,397
Convocation Expenses	27,46,166	26,00,225
Stipend to M.Tech/ Ph.D	19,09,13,659	13,24,57,526
Student Project Expenses	3,01,194	6,97,094
Library Contingency	3,16,936	2,17,131
Industry Visit (MBA)		2,57,785
Student orientation programme	54,394	1,18,330
Summer Term Course Exp	3,60,000	
Workshop & Seminer expense	9,20,885	88,303
Total	19,94,79,517	14,12,91,113
Administrative Expenses		
Pension	7,67,48,304	-
Commuted Pension	1,33,36,713	-
NPS Contribution	1,92,83,665	-
CPF Contribution	1,74,930	-
EPF Contributiion Contractual & others	35,42,503	-
EPF Contribution (MR)	19,99,779	-
Salary of Contractual Teaching & Admin	2,40,27,331	-
Salary of M R Staff	1,76,02,838	-
Security Services	5,88,88,207	-
House Keeping	3,58,97,429	-
Honorarium	3,60,202	-
Electricity & Power Charges	3,34,20,245	2,97,82,954
Water and Electricity Charges to PHE	89,21,622	65,00,570
Solar Energy Charges	15,15,906	
Postage Exp	43,266	3,351
Internet Expenses	6,37,644	6,62,359
Telephone Charges		27,724
Printing and Stationary Exp	18,94,427	17,27,100

Local Conveyance	4,800	4,600
TA/DA Expenses	39,74,185	18,78,979
Hospitality Exp/Refreshment	5,13,246	3,01,488
Audit Fees	11,99,225	8,850
Professional Fee & Legal Exp		1,94,800
Advertisement Expenses	55,41,441	67,44,732
News Paper & Periodicals	16,954	43,117
Training & Placement Expenses	4,92,159	4,27,587
Board & Committee Meeting	4,64,928	1,97,570
Computer Consumable Exp	7,38,345	2,34,779
Foster Social Responsibility Exp	3,89,400	
Miscellaneous Exp	76,166	40,803
Gyan Sagar Exp	54,986	54,222
Celebration of National Day	10,33,205	6,59,543
NCC & NSS Activities	1,18,100	2,19,449
Promotion of Rashtriya Bhasha	1,46,689	-
Consumable	7,28,950	5,06,620
Innovation Lab Exp	1,02,100	-
Other Admin Exp	30,80,242	10,90,993
Short Term Training Programe Exp	35,022	
NSDL Service Charges	20,209	19,367
Gymkhana Expenditure	5,65,029	5,65,077
NIT Conclave	18,730	-
Swach bharat mission Exp	4,14,235	
Celebration Of foundation Day	1,60,034	
Excess Accrued Interest	1,27,267	
Contingency expenditure		1,35,137
HPC Cell exp		4,57,961
NABL expense	1,61,129	2,50,145
Start-up conclave expense		77,223
Innovation expense		29,666
Total	31,84,71,787	5,28,46,766
Transportation Expenses		

Vehicle Running Expenses	24,13,588	20,13,698
Insurance Exp- Vehilces		1,27,937
Total	24,13,588	21,41,635
<b>Repairs and Maintenance Expenses</b>		
Repairs & Maintenece- Building & Others	3,14,02,082	1,10,54,925
Maintenance of Furniture & Fixtures	9,71,139	4,49,126
Repairs and Maintenece- Tools & Equipments	18,87,765	40,24,129
Casual Work & Carriage	1,66,161	5,33,278
Gardening & Horticulture	1,39,542	79,165
Repairs & Maintenance- Electricity	35,90,957	38,86,619
Maintenance of D.G Set	91,39,496	67,60,417
Manitenece of Networking	30,64,809	1,21,939
Repairs & Maintenece of Guest House	1,14,966	2,13,919
AMC for IT Facility	13,31,315	19,73,284
Total	5,18,08,232	2,90,96,801
<b>Finance Cost</b>		
Bank Charges	1,80,421	83,697
Total	1,80,421	83,697
<b>Prior Period Expenses</b>		
Total	-	-
<b>Other Expenses</b>		
Support to NITS KIDS School	2,73,410	6,18,774
Support to Kendriya Vidyalaya	3,77,19,000	3,37,77,000
Total	3,79,92,410	3,43,95,774
<b><u>EARMARKED FUND / ENDOWMENT FUND :</u></b>		
Corpus Fee	38,000	7,000
NMICT Awareness Program Fund		46,551
Student Aid Fund	8,000	7,000
Employees' Welfare Fund	81,603	1,76,117
Depreciation Fund	1,99,740	
Maintenance Fund	2,20,721	
Staff Dev Fund	32,064	
Corpus Fund	1,04,246	

	Total	6,84,374	2,36,668
<b>SPONSORED PROJECTS:</b>			
Expenditure against Sponsored Projects			
Capital Expenditure			
Equipment		19,08,446	1,11,04,540
Computer		-	1,96,246
Books		-	97,175
Revenue Expenditure		1,55,38,264	1,33,13,604
	Total	1,74,46,710	2,47,11,565
<b>FELLOWSHIP / SCHOLARSHIP :</b>			
Outside Scholarship Payable		46,00,339	59,27,994
Doctoral Fellowship (ICSSR)			4,02,221
	Total	46,00,339	63,30,215
<b>INVESTMENTS &amp; DEPOSITS:</b>			
<b>OUT OF EARMARKED/ENDOWMENT FUNDS;</b>			
Corpus Fund Investment		43,10,00,000	24,80,00,000
Depreciation Fund Investment		5,66,00,000	12,00,00,000
Maintenance Fund Investment		5,20,00,000	12,00,00,000
Staff-Dev Fund Investment		24,00,000	1,60,00,000
	Total	54,20,00,000	50,40,00,000
<b>OTHER INVESTMENT</b>			
Investment (Recurring)			41,00,00,000
Investment (Fee)			10,00,00,000
	Total	-	51,00,00,000
<b>OUT OF OWN FUNDS;</b>			
Investment- LC Margin Money A/C		18,50,000	
	Total	18,50,000	-
<b>EXPENDITURE ON FIXED ASSETS</b>			
Software Developments		1,10,70,125	1,84,20,267
E-Journals		2,80,52,790	78,88,149
E-Books		14,20,449	63,78,342
Patent and Copyright		-	47,730
Buildings			

Institute Building Renovation		43,29,606
Married Scholar Hostels	4,65,619	
Girls Hostel No.1	10,16,737	
Boys Hostel No.6	3,87,551	
Boys Hostel No.9	46,84,631	
Renovation of Hostels	-	19,11,712
Renovation of Staff qtr.	1,55,814	3,37,949
Renovation of Inst. Building	32,32,316	
Security Barrack 2	-	2,77,348
Sports field/Volly Ball/tennis/Batbinton	26,63,575	
Waiting Shed/Parking	8,97,388	
New Administrative Building	43,840	10,42,962
New Academic Building	7,35,617	
New Lib. Building	18,62,309	
Earth Quik Engg Building	48,139	
Non Faculty Staff qtrs.	35,58,063	18,84,101
Expansion of E.E Building	51,851	
Staff qtr. Type V	-	5,00,000
Eat out Dhaba	33,573	1,54,952
Electrical renovation	-	12,84,240
Girls Hostel No.3	-	2,80,427
<b>Roads &amp; Bridges</b>		
Renovation of Internal Road and gate	13,18,576	37,13,258
Road & Power supply	1,21,13,469	86,40,400
<b>Plant, Machinery &amp; Equipments</b>		
Audio Visual Equipments	1,05,500	85,900
Electrical Equipments	2,67,32,859	1,75,47,453
L.T.Line & U.G.Cabling	15,32,157	
D.G.Set	56,65,820	
Field Equipments	2,48,343	
Lab Equipments	3,48,73,921	3,63,96,283
Gym Equipment	-	6,72,785
Furniture Including Hostels	2,10,99,296	48,97,488

Furniture (K.V.NITS)	1,86,240	
Tools & Equipments	3,65,770	1,70,721
Office Equipments	50,880	8,89,831
Institute Contribution Towards Dicoba Scheme	-	10,00,000
Computer Pheriphrls	2,60,24,692	3,17,03,323
Books	22,34,948	42,66,418
Networking	2,44,60,949	1,79,000
Electronics Equipment	59,000	2,90,751
Other assets (Kitchen equpt. For Hostel)	4,22,200	4,41,270
Vehicle	8,16,115	10,70,893
<b>Total</b>	<b>21,86,91,122</b>	<b>15,67,03,559</b>
<b><u>CAPITAL WORK IN PROGRESS:</u></b>		
Boys Hostel-9 (WIP)	-	2,77,85,584
Library Building (WIP)	-	13,33,079
<b>Total</b>	<b>-</b>	<b>2,91,18,663</b>
<b><u>PROVISIONS : (TAX)</u></b>		
Income Tax (Against Salary & Contrats)	5,82,60,556	5,18,77,132
GST	61,45,374	16,88,675
GST (Project)	21,904	75,450
Income Tax (Project)	-	20,450
Professional Tax	11,23,766	9,23,463
Professional Tax (Project)	9,360	10,924
Labour Cess Payable	-	4,32,821
<b>Total</b>	<b>6,55,60,960</b>	<b>5,50,28,915</b>
<b><u>Refund to Ministry (Project A/C)</u></b>		
Refund from Project Account	16,39,135	42,54,328
<b>Total</b>	<b>16,39,135</b>	<b>42,54,328</b>
<b><u>Loans,Advances &amp; Deposits</u></b>		
<b><u>Sundry Debtors</u></b>		
<b><u>Advance to Employees</u></b>		
HTC Advance	-	2,64,100
LTC Advance	40,60,500	56,86,500
<b><u>Other Advance To Employees</u></b>		

Recoverable Advance	2,77,32,760	1,88,80,967
Recoverable Advance (Project)	17,31,591	4,94,030
TA Advance	42,17,540	18,99,900
Soft Loan (Staff)	5,26,172	3,25,000
Interest Free Loan (Festival Advance)	3,24,000	4,82,000
Medical & Other Advance	2,00,000	3,00,000
TA Advance (Project)	6,45,999	35,560
Adv To Balmer Lawrie & co.	1,35,83,766	56,59,306
<b>Advances &amp; Other Receivable on Capital A/c</b>		
<b>Deposit Work</b>		
Deposit Work-CPWD For Internal Road	-	3,00,000
Deposit Work-CPWD New Admin Building	-	2,98,60,000
Deposit Work-CPWD Non Faculty-100 Units Qtr	-	3,14,61,000
Deposit Work-CPWD Swage Disopl. Sytm	-	30,68,000
Margin Money for LC against Equipment	-	1,47,59,406
Advance to NCC Ltd	-	30,40,000
Advance to N.C.Roy	-	20,84,000
Advance to Sudeep Nath	-	4,46,500
Advance to Dipak Nath	31,90,000	
Advance to Hanney Electronics	16,79,000	
Advance to Mashuk Uddin Barbhuiya	4,00,000	
Advance to monotosh Bhattacharjee	15,00,000	
Advance To Rajib Sen	3,10,000	
Advance to Rambabu Kurmi	8,71,000	
Advance to Saidul Alam Mazumder	18,50,000	
Advance to B.K.Construction	29,85,000	
Advance to Erafiq Uddin Ahmed	45,78,000	
<b>Total</b>	<b>7,03,85,328</b>	<b>11,90,46,269</b>
<b>Current Liabilities &amp; Provisions</b>		
Hostel Caution Money	53,54,000	2,05,000
Institute Caution Money	2,46,000	25,68,000
M/s Sify Technologies	-	17,82,336
M/s Panorama International	5,08,542	

Blue Star Ltd	1,81,000	
Intigrated Micro Systems	69,825	
Gulanur Hussain Choudhury	10,00,000	16,29,249
Sudeb Podder	5,00,000	
Naresh Chandra Roy	12,00,000	
Nupin Enterprises	11,00,000	
N.E.Books	843	
M/s NCC Ltd	-	7,78,11,786
Shree Gonesh Associates	-	1,56,034
Earnest Money Deposit	81,67,452	33,40,985
Security Deposit	91,18,029	84,58,942
Performance Security (project)	-	42,825
GSLI Payable	4,98,100	5,75,400
EPF Subscription MR Employees	18,47,995	19,30,445
EPF Subscription FFW Workers' Society/Housekeeping	21,09,224	13,25,934
EPF Subscription Contract Staff	11,67,227	11,37,779
GPF Advance Recovery	17,30,869	10,46,802
GPF Payable (Others)	15,30,000	
GPF Subscription Payable	1,22,28,034	1,31,73,000
CPF Subscription Payable	1,74,930	2,21,161
NPS Subscription Payable	1,92,83,665	1,77,41,226
IUSSTF Base Fellowship (Project A/c)	-	51,027
Electricity Recovery (Project A/c)	37,462	30,765
Recovery of Licence Fee (Project)	1,51,892	34,200
Payable to R.G Nair (Project A/c)	17,154	
YFRF's Visvevaraya PhD	5,39,159	9,80,000
Business Environment Law Cirriculum Fund	-	2,62,831
Unnat Bharat Abhiyaan	1,14,720	18,667
GIAN Course Fee	9,000	71,725
GIAN Fund	9,75,562	20,35,553
DST Inspire Scholarship	-	10,451
Alumini Association Fee	8,000	8,000
CCTV Payable	7,00,840	4,61,135

Deposit Remittance	2,45,637	
Deposit Remittance (Project A/c)	-	
Group Insurance Claim	7,28,235	10,39,960
Gymkhana	20,33,355	50,32,784
Leave encashment payable	20,36,160	
Hostel Management	-	500
Liability Towards DCRG	1,50,000	2,10,000
L.I.C.I Payable	44,18,321	44,19,997
Sponsored Project Liability	-	14,01,842
Sponsored Project Current Year	-	1,42,98,159
Dst Fist (PHY) Payable	91,08,000	
DDF Consultant Pvt Ltd	-	4,71,025
Mr.Rajib Sen	-	4,58,979
M/S.P.Swapan & Associates	-	400
Nando Kumar Singh	-	3,78,447
Mediclaime Insurance	20,25,360	18,31,788
Mess Dues	-	87,594
Mess Establishment	17,89,514	4,81,451
Processing Charges	4,45,750	
Refundable Excess Deposit	98,09,347	65,53,627
Salary teach/Admin Payable	-	6,51,86,778
Student Mediclaime	9,15,050	6,52,415
Transcript Fee	6,27,100	7,54,400
CPF Contribution Payable	-	11,245
Advertisement Exp Payable	1,76,346	90,360
DG Set Maintenance Payable	-	5,73,046
Gardening & Horticulture Exp Payable	-	20,006
Repairs & Maintenane Electricity Payable	4,66,074	1,01,499
Repairs & Maintenane Build & Others Payable	-	5,24,778
Repairs & Maintenane Tools & Equip. Payable	1,900	
Water & Electricity Charges to PHE Payable	-	12,17,273
RPS Project A/c	93,77,269	19,80,637
NPS Contribution Payable	-	29,07,986

HTC/LTC Exp Payable	-	2,19,506
Medical Reimbursement Exp Payable	81,514	4,72,654
Printing & Stationery Exp Payable	-	12,870
Guest House Maint. Exp Payable	-	59,462
BHM Fee	1,40,500	15,500
APDCL Exam Payable	78,600	
CASB Exp	8,47,351	
CEE 2018	-	4,000
CTET 2019	67,380	
GPF Payable Against Autosweep	2,96,847	
DST Inspire Payable	-	8,00,000
Education Loan Refundable	-	1,16,000
Payable To Pulak Nath	-	37,026
Payable Against AICTE Exam	-	5,28,000
Payable Against CHSL Online Exam	-	5,05,258
Payable Against Indian Academic of Sciences (IASc)	-	1,99,016
Children Education Allowance Payable	-	18,30,117
Electricity & Power Charges Payable	-	23,72,524
Contractual Staff Salary Payable	37,13,585	35,68,325
MR Staff Salary Payable	-	14,48,678
Security Service Charges Payable	1,37,37,180	84,71,326
Stipend to M.Tech/ Ph.D Payable	1,49,76,008	1,09,77,727
Support to NITS KIDS Staff Payable	55,264	57,200
Telephone Charges payable	-	5,29,691
Vehicle Repair Expenses Payable	1,35,188	1,18,474
Unclassified Receipts	5,800	
House Keeping Charges Payable	26,17,305	39,30,233
NMHS Project Account	6,50,000	
Provision Plan Others	1,60,04,469	4,65,372
Verification Fee	74,000	1,46,000
CCMT Expenses Payable	1,09,127	
Gandhi Gobal Solar Yatra Payable	1,22,840	
NEET 2019 Examimation Payable	2,33,126	

Payable to Rajib Kahar	53,592	
ONGC Exam Payable	1,66,592	
Prepaid E-Journals	1,30,81,036	26,69,316
Prepaid Insurance	-	13,61,084
Relief fund remittance	-	1,70,713
Mooc project - Library	-	80,000
INSA Visiting Fellowship	-	29,405
BMG Informatics	-	8,04,967
CIS Bureau Services Pvt. Ltd.	20,38,642	8,32,168
DST Project - SERB	17,05,698	19,67,661
PMMMNT Scheme Fund	4,10,500	1,92,743
West Bengal JEE	29,460	33,880
SPARC Scheme	53,82,910	
CSIR - NISTADS	-	70,472
Payable against Visveswaria Contingency (Project)	1,21,519	1,35,612
Payable to BMG Informatics(Project)	-	9,00,000
Payable to Chandra Drug Distributors (Project)	-	87,960
Payable to NS Moyon (Project)	-	39,719
Payable to Saubrata Bera (Project)	-	17,607
Payable to Wasim Arif (project)	-	4,835
Payable to Krushna Goura (project)	83,518	
Payable to M Khanra (project)	28,699	
Payable to Nikhil (Project)	52,680	
Payable to Pujita N (Project)	81,722	
Payable to Subrata Bera (Project)	89,934	
Payable to Subrata Kushari (Project)	25,000	
Payable to VVV (Project)	1,29,410	
Payable to Biplab Das (Project)	-	94,875
<b>Other Receivable</b>		
Receivable from CCMN	8,11,500	5,60,000
Receivable from CCMT	3,48,350	2,01,400
DST Inspire Recoverable	-	1,69,687
Receivable From Consultancy A/c	-	24,528
RPS Project Recoverable	60,000	3,17,752
Receivable from CCMT against Fee	38,78,100	60,44,500
Receivable CSAB	2,31,15,000	1,64,95,000
Receivable From Project A/c	10,75,343	11,43,283
SPARC Receivable	6,692	
Receivable From BHM (Mess Adv)	-	6,43,000
Loan to TEQIP	2,03,51,600	1,58,07,550
TDS Receivable (I Tax) including Project	-	6,28,818
TDS Receivable(IT Non Plan)	84,216	
TDS Receivable	13,41,600	
Group Insurance Receivable	62,054	
Receivable From SMDP Project	-	14,219
IIT GHY Project Adv (Project A/c)	-	23,01,025
<b>Total</b>	<b>24,34,84,393</b>	<b>33,85,26,971</b>

**NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR**

**GENERAL PROVIDENT FUND ACCOUNT  
AND  
NPS ACCOUNT**

**For The FINANCIAL YEAR 2019-20**

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
G P Fund and NPS ACCOUNT

BALANCE SHEET AS AT MARCH 31, 2020

LIABILITIES	(Amount in Rupees)		
	Current Year	Previous Year	ASSETS
<b>CAPITAL FUND (GPF):</b>			<b>INVESTMENT:</b>
Opening Balance	25,82,22,340	26,05,10,970	Investment with Bank
Less: Final Payment	97,92,413	1,81,84,449	Interest accrued on FD
Less: Fund towards Pension Fund transferred	65,24,768	1,32,33,549	
Balance	24,19,05,159	22,90,92,972	<b>CURRENT ASSETS:</b>
Add: GPF Subscription	1,22,28,034	1,31,73,000	Advance to Subscriber
Add: GPF Subscription (Other Org)	11,15,000	4,15,000	Receivable from Institute (NPS Sub & Contr)
Add: Excess payment recovered	-	-	Receivable from Institute against GPF Subs.
Add: Excess of Income Over Exp	2,30,63,095	1,55,41,368	Receivable from Institute
Capital Fund	27,83,11,288	25,82,22,340	GPF Advance receivable from Institute
<b>CURRENT LIABILITIES &amp; PROVISIONS:</b>			Interest receivable against Auto sweep a/c
Pension Fund Contribution Payable (2018-19)	65,24,768	-	Autosweep with Bank
Total	28,48,36,056	25,82,22,340	<b>CASH AT BANK</b>
<b>NPS Account:</b>			
Opening Balance	88,90,683	10,28,183	
Add: Subscription & Contribution (Received)	3,82,02,694	3,58,47,088	
Add: Subscription & Contribution (Other Org)	-	-	
Less: Paid during the year (NSDL)	3,10,33,862	2,79,84,588	
Total (Payable to NSDL)	1,60,59,515	88,90,683	
Grand Total	30,08,95,571	26,71,13,022	Grand Total
			Current Year
			26,50,00,000
			2,05,07,106
			50,60,399
			-
			-
			7,65,192
			-
			-
			-
			95,62,874
			23,07,57,079
			30,08,95,571
			26,71,13,022

Date: 28th August, 2020

Place: Silchar

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
G P Fund ACCOUNT  
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED MARCH 31, 2020

EXPENDITURE	(Amount in Rupees)				
	Current Year	Previous Year	INCOME	Current Year	Previous Year
Bank charges	266	-	Interest Received on FD	-	1,50,18,805
Excess of Income over Expenditure	2,30,63,095	1,55,41,368	Interest Accrued on Investment: On STDR	20,93,385	-
			On SBI Mutual Fund	1,84,13,721	
			Interest received on Savings Account	25,56,255	1,12,980
			Interest Received against Autosweep	-	4,09,583
Total	2,30,63,361	1,55,41,368	Total	2,30,63,361	1,55,41,368

Date: 28th August, 2020

Place: Silchar

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
G P Fund and NPS ACCOUNTS

RECEIPTS AND PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31ST MARCH 2020

(Amount in Rupees)

RECEIPTS	Current Year	Previous Year	PAYMENTS	Current Year	Previous Year
Opening Balance: (As on 01.04.2019)					
Cash at Bank	23,07,57,079	70,52,805	ACCUMULATED FUND:		
ACCUMULATED FUND:					
GPF Subscription	1,22,28,034	1,31,73,000	GPF Adv./Withdrawal		
GPF Subscription Received ( Other Org)	11,15,000		Advance to Subscriber	22,77,000.00	15,80,410
GPF Advance recovery	11,97,323	10,61,802	Pension Fund Contrib. Paid	-	3,20,84,431
NPS Subscription ( Institute)	1,91,01,347	1,77,41,226	Final payment	97,92,413.00	1,81,84,449
NPS Contribution ( Institute)	1,91,01,347	1,77,41,226			
GPF Subscription Receivable (2018-19)	4,15,000	-	NPS Subscription ( Institute)	1,55,16,931.00	1,39,92,294
NPS Contribution Receivable (2018-19)	1,82,318	-	NPS Contribution ( Institute)	1,55,16,931.00	1,39,92,294
NPS Subscription Receivable (2018-19)	1,82,318	-	TDS Receivable	-	3,66,326
GPF Advance Receivable (2018-19)	5,33,546	-	INVESTMENT		
Autosweep Investment received from Inst.	2,96,000	-	Investment during the year (in SBI Mutual Fund)	23,50,00,000	3,00,00,000
Autosweep Interest received from Inst.	847	-	Autosweep investment receivable	-	2,96,000
INVESTMENT			Interest receivable	-	847
Investment Matured	-	23,67,13,141	EXPENSES		
Accrued Interest Received (Maturity)	-	3,22,29,562	Bank Charges	265.60	-
INTEREST					
Interest Received against FD	-	1,50,18,805	Closing Balance:		
Interest Received against Autosweep	-	4,09,583	Cash at Bank	95,62,874	23,07,57,079
Interest on SB A/c	25,56,255.00	1,12,980			
CURRENT LIABILITY					
Deposit Remittance	-	-			
Total	28,76,66,414	34,12,54,130	Total	28,76,66,414	34,12,54,130

Date: 28th August, 2020  
Place: Silchar

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
Schedule of Investment & Interest accrued of G P Fund upto 31.03.2020

(Amount in Rupees)

Sl	Name of Bank	Fixed Deposit/Bond Account No	Dated	Face Value as on 01.04.2019	Addition during 2019-20	Matured/ Encashed during 2019-20	Face Value as on 31.03.2020	Intt Received during 2019-20	Accrued Intt. Earned during 2019-20	Accrued Interests Upto 31.03.2020
1	SBI NIT Sil	38362654224	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	5,58,236
2	- do -	38362656243	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	5,58,236
3	- do -	38362656742	30.03.2019	80,00,000	-	-	80,00,000	-	5,58,236	5,58,236
4	- do -	38362657134	30.03.2019	40,00,000	-	-	40,00,000	-	2,79,118	2,79,118
5	- do -	38362657521	30.03.2019	20,00,000	-	-	20,00,000	-	1,39,559	1,39,559
6	- do -	Mutual Fund	02.4.2019	-	16,00,00,000	-	16,00,00,000	-	1,71,26,569	1,71,26,569
7	- do -	Mutual Fund	27.1.2020	-	7,50,00,000	-	7,50,00,000	-	12,87,152	12,87,152
Total Rs.				3,00,00,000	23,50,00,000	-	26,50,00,000	-	2,05,07,106	2,05,07,106

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP - PHASE- III]  
IDA Credit/ No. 5874-0 IN

BALANCE SHEET AS AT 31st MARCH, 2020

(Amount in Rs.)

S. No.	PARICULARS	CURRENT YEAR	PREVIOUS YEAR
A	SOURCE OF FUNDS:		
	Opening Balance		
	1) Amount allocated from: Govt of India, NPIU	6,48,84,470	3,44,94,378
	2) <u>Less: Expenditure</u>		
	As per last Account Rs.3,35,94,778.00		
	Add during the year <u>Rs.3,10,47,692.00</u>	6,46,42,470	3,35,94,778
	TOTAL	2,42,000	8,99,600
B	APPLICATION OF FUNDS:		
	1) Fixed Assets	-	-
	2) Investment	-	-
	3) Work in progress - Scheme work under implementation	-	-
	TOTAL	-	-
	4) A. Current Assets, Loans and Advances		
	a) Cash Balance	-	-
	b) Bank Balance	-	-
	c) Advance for Capital Goods	-	-
	d) Loans and Advances	2,42,000	8,99,600
	TOTAL (A)	2,42,000	8,99,600
	B. Less: Current Liabilities		
	i. Earnest Money Deposit etc	-	-
	ii. Deposit Remittance	-	-
	Net Current Assets (A - B)	2,42,000	8,99,600
	TOTAL	2,42,000	8,99,600

Dated: 28 /08/2020

Place: Silchar

Registrar

Director

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]  
IDA Credit/ No. 5874-0 IN  
INCOME AND EXPENDITURE ACCOUNT  
FOR THE YEAR ENDED 31/03/2020

EXPENDITURE		INCOME			(Amount in Rupees)	
Previous Year	Particulars	Current Year	Previous Year	Particulars	Current Year	
	Procurement of Goods					
69,78,890	1.3.1.1 Equipment	1,10,07,787	3,05,27,210	Receipt from NPIU	3,03,90,092	
1,03,55,883	1.3.1.2 Learning Resources	-	12,18,000	Settlement of adv for the FY 18-19	8,99,600	
-	1.3.1.3 Furniture	29,16,774				
	Academic Process:	1,39,24,561			3,12,89,692	
8,82,336	1.3.2.11 Industry-Institute Interaction	7,07,517				
15,97,696	1.3.2.1 Improve Student Learning	20,62,959				
1,40,000	1.3.2.2 Research Assistantship	-				
9,48,267	1.3.2.3 Graduate Employability	3,75,478				
94,400	1.3.2.10 Services	94,400				
52,82,338	1.3.2.4 Faculty/staff Development & Motivation	72,44,695				
29,33,419	1.3.2.5 Research and Development	44,87,971				
2,08,276	1.3.2.7 Monitoring/ Twinning System	4,10,879				
11,17,736	1.3.2.8 Reforms, Governance	10,97,080				
64,407	1.3.2.9 Management capacity development	59,000				
-	1.3.2.6 MOOCs Digital Learning	66,617				
	Operating Cost:	1,66,06,596				
-	1.3.3.1 Consumables	18,878				
19,140	1.3.3.3 Office Expenses	8,290				
1,01,492	1.3.3.4 Meetings	1,41,422				
1,21,330	1.3.3.6 Travel Cost	3,47,945				
	Total Expenditure	5,16,535				
	Others:	3,10,47,692				
8,99,600	Payment against advance during FY 19-20 (unadjusted)	2,42,000				
3,17,45,210	Total	3,12,89,692	3,17,45,210	Total	3,12,89,692	

Silchar

Dated: 28 /08/2020

Registrar

Director



NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR  
 TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP - PHASE III]  
Schedules Forming Part of Balance Sheet as at 31st March 2020

(Amount in Rs.)

SCHEDULE-I : GRANTS-IN-AID :		Current Year
Opening Balance as par last Account		3,44,94,378
Received from MHRD, GOI (through PFMS) during the period		3,03,90,092
Total		6,48,84,470

SCHEDULE-II : EXPENDITURE		Current Year
Opening Balance as per last Account		3,35,94,778
Transferred from Income & Expenditure Statement		3,10,47,692
Total		6,46,42,470

SCHEDULE-III : FIXED ASSETS :	Balance as on 01/04/2019	Addition	Deletion	Closing Balance
Equipment	69,78,890	1,10,07,787	-	1,79,86,677
Furniture	-	29,16,774	-	29,16,774
Books & LRs & Software	1,03,55,883	-	-	1,03,55,883
Minor Works	-	-	-	-
Total	1,73,34,773	1,73,34,773		3,12,59,334

Place: Silchar

Dated: 28 /08 /2020

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]  
Schedules Forming Part of Balance Sheet as at 31st March 2020

(Amount in Rs.)

SCHEDULE-III (A): INVESTMENT:	Current Year
STDR (FIXED DEPOSIT)	-
Total	-

SCHEDULE-IV : Current Assets, Loans and Advances:	Current Year
1. Cash in Hand	-
2. Cash at Bank (SBI, NIT Silchar Branch)	-
Total (A)	-
3. Loan and Advances :	
i) Advances for workshop	2,10,000
ii) TA Advances	32,000
Total (B)	2,42,000
Total (A+B)	2,42,000

SCHEDULE-V : Current Liabilities :	Current Year
EARNEST MONEY DEPOSIT	-
Total	-

Place: Silchar

Dated: 28 /08/2020

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
 TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]  
 IDA Credit No. 5874-0 IN  
 STATEMENT OF SOURCES AND APPLICATION OF FUNDS  
Report for the year ended 31/03/2020

Particulars	(Amount in Rupees)		
	Current year	Previous year	Project to date
Opening Balance (A)	-	-	-
Receipts:			
Funds equivalent to expenditure shown in PFMS (Funds made available by MHRD)	3,03,90,092	3,05,27,210	6,37,04,133
Less: Debit Failures	-	-	21,500
Less: Ineligible expenditure*	-	-	16,163
Add: Settlement of Unadjusted advance (FY 2018-19)	8,99,600	12,18,000	21,17,600
Total receipts (B)	3,12,89,692	3,17,45,210	6,57,84,070
Total sources (C=A+B)	3,12,89,692	3,17,45,210	6,57,84,070
Expenditures by Component:			
A. Procurement of Goods	1,39,24,561	1,73,34,773	3,12,59,334
B. Academic Process	1,66,06,596	1,32,68,875	3,16,37,091
C. Operating Costs	5,16,535	2,41,962	17,46,045
Total Expenditures (D)	3,10,47,692	3,08,45,610	6,46,42,470
Closing Balance (C-D) (unadjusted adv in FY 2019-20)	2,42,000	8,99,600	11,41,600

Dated: 28 /08/2020

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
 TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]  
 IDA Credit No. 5874-0 IN

Reconciliation of Claims to Total Applications of Funds  
 Report for the year ended 31/03/2020

Particulars	Schedules	(Amount in Rupees)		
		Current Year	Previous Year	Project to date
Bank Funds claimed during the year (A)	I	3,03,90,092	3,05,27,210	64884470
Total Expenditure made during the year (B)		3,10,58,937	3,08,72,308	64718076
Less: Outstanding bills ©	II	-	-	-
Ineligible expenditure (D)	III	-	-	16163
Expenditure not claimed €	IV	11,245	26,698	59443
Total Eligible Expenditures claimed [(F) = (B)-(C)-(D)-(E)]		3,10,47,692	3,08,45,610	6,46,42,470
World Bank Share @ x% of (F) above (G)		-	-	-

Dated: 28 /08/2020

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
 TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]  
 IDA Credit No. 5874-0 IN  
 Schedules for Reconciliation of Claims to Total Applications of Funds  
For the year ended 31/03/2020

## Schedules - I

Particulars	Current Year	Previous Year	Project to date
Bank Funds claimed during the year	3,03,90,092	3,05,27,210	6,48,84,470
Total	3,03,90,092	3,05,27,210	6,48,84,470

## Schedules - II

Particulars	Current Year	Previous Year	Project to date
Outstanding bills during the year (Exp booked but not shown in M32)	-	-	-
Total	-	-	-

## Schedules - III

Particulars	Current Year	Previous Year	Project to date
Ineligible expenditure during the year	-	-	16,163
Total	-	-	16,163

## Schedules - IV

Particulars	Current Year	Previous Year	Project to date
Expenditure not claimed during the year	11,245	26,698	59,443
Total	11,245	26,698	59,443

Note: Expenditure not claimed in earlier are settled.

Dated: 28 /08/2020

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]

IDA Credit/ No. 5874-0 IN

Report - 1 : PFMS RECONCILIATION STATEMENT

FOR THE YEAR ENDED 31/03/2020

Sl No.	Statement of Expenditure	Amount (Rs.)	Amount (Rs.)
A	Expenditure as per PFMS Statement / Tally	3,10,58,937	6,47,18,076
	Less: Ineligible Expenditure	-	16,163
	Less: Expenditure not claimed during the year	11245	11245
	Total	3,10,47,692	6,46,90,668
B	Less: Debit failure (payments not made by PFMS but shown in the expen [Report EP-04]	-	-
C	Expenditure as per books of accounts (A - B)	3,10,47,692	21,500
			6,46,69,168

Report - 2 : STATUS OF ADVANCES

Sl No.	Date	Amount (Rs.)	Amount (Rs.)
A	Opening Balance as on 1st day of the Quarter / year	8,99,600	8,99,600
B	Plus: Advances paid in the quarter/year	20,32,900	-
C	Less: Adjustment/ Settlement of advances	26,90,500	-
D	Balance as on Last date of Quarter/Year	2,42,000	26,90,500
			2,42,000

Dated: 28 /08/2020

NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR : ASSAM  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME [TEQIP- PHASE III]

Report - 1 : PFMS RECONCILIATION STATEMENT

FOR THE YEAR ENDED 31/03/2020

Report - 2 (a) : AGENCIES OF ADVANCES

Sl No.	Particulars	Period	Amount (Rs.)	Remarks (Reason)
1	Ageing of Advances in closing Balance	upto 15 days	-	
2		upto 30days	-	
3		more than 30 days	2,42,000.00	

Report - 3 : PHYSICAL AND FINANCIAL PROGRESS (PROCUREMENT)

Sl No.	Particulars	Amount (Rs.)
A	Procurement made during the quarter/year as per PFMS report	1,39,24,561
B	Procurement made during the quarter as per PMSS report	1,39,24,561
C	Variation, if any	-
D	Reasons for the variations	-

Dated: 28 /08/2020







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