

SECTION-1

DIRECTOR'S SUMMARY

It is a privilege to write a foreword to this 30th Annual Report 2016-2017 of NERIST which gives a glimpse of various activities of this Institute during the last one year. In this period, we have worked together to develop and improve the infrastructure and strived hard to give a responsive and transparent administration.

In this endeavour, the Institute shall always remain indebted to the out going Presidents of the Society for NERIST, Shri Jyoti Prasad Rajkhowa, IAS (Retd.), Shri V. Shanmuganathan and Shri Padmanabha Acharya, His Excellency the Ex. Governors of Arunachal Pradesh for their guidance and support during the period of 2016 - 17. The Institute is also indebted to its Chairman of Board of Management, Shri Pranab Kumar Barbora, Air Marshal (Retd.). PVSM, VSM, who is a constant source of inspiration and guidance since 13th December, 2013. In this connection, the Institute shall also like to thank the Technical Bureau, IFD and other offices of MHRD for their support and cooperation from time to time.

During the period of the year 2016-17, a number of academic initiatives and infrastructural development have been taken up, with support from all concerned. TEQIP activities with World Bank funding are going on in full-swing and the administration is ever alert to offer transparency and support growth. However, there is no room for complacency and the Institute shall work even harder to achieve a still higher standard and try to meet targets for more than what has been expected of it so far.

The Institute has a highly qualified, motivated, and relatively young faculty and a devoted group of non-teaching employees. NERIST students are disciplined, motivated and sincere and have successfully competed with the students from some of the best institutions of the country in different competitive examinations in their respective fields. They have also earned laurels for themselves and for the Institute in India and abroad. The Institute has successfully carried out many prestigious sponsored research projects from reputed external funding agencies.

The placement record of the Institute has been satisfactory but more needs to be done. The present team of Training & Placement Cell has been doing their best to invite Govt./Semi Govt./Public Enterprises to the Institute to conduct placement interviews for our students.

Director

SECTION-2

INTRODUCTION

2.1 The Institute

Perched in the untrammled beauty of the “land of the rising sun” the North Eastern Regional Institute of Science and Technology (NERIST) was set up by the Government of India, initially as a pilot project of the North Eastern Council, Shillong under the Ministry of Home Affairs, Govt. of India to create a base of technical manpower, aimed at meeting the challenges at various level of development in the region. The campus of the Institute is located at Nirjuli, Itanagar, the capital city of Arunachal Pradesh and is well connected to Guwahati by road, air and rail.

The Institute came under the direct control of Ministry of Human Resource Development (MHRD), Government of India, from 1st April, 1994. It has been conferred with the “Deemed to be University” status on May 31st, 2005, by the MHRD under Section-3 of UGC Act, 1956.

The Institute follows a modular pattern of education, having a multiple entry and exit system and is producing skilled man-power in different levels, i.e., Certificate, Diploma and Degree, through its innovative educational programmes. The system of education adopted at NERIST is aimed at enabling the region consisting of eight states comprising of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, to bridge the technology gap with the rest of the country, and also to increase the pace of socio-economic development in the region. Sikkim has been included as the eight beneficiary state of the Institute in the year 2006.

The Institute has demonstrated successful implementation of modular pattern of education, which has been able to provide skilled manpower in nine Certificate courses, six Diploma courses and seven Degree courses, being offered by the different departments, namely, Agricultural Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Electronics & Communication Engineering, Mechanical Engineering and Forestry. Chemistry, Physics, Mathematics, Humanities & Social Sciences also have a pivotal role as supporting departments. Although the Institute admits students at a tender age (after Class-X) having heterogeneous academic standards, but its academic and administrative set up has been quite effective to ensure appreciable academic growth including development of different traits of personality amongst the students.

The Post-Graduate academic programmes were started in 1996-97 in two subjects viz., Information and Technology and Environmental Science & Engineering with due approval of AICTE and MHRD. After acquiring ‘Deemed University’ status in 2005, PG and Ph.D. programmes, both part time and regular basis, in all Engineering departments, M.Sc. in Forestry w.e.f. 2007-08 and M.Sc. in Physics, Chemistry and Mathematics, w.e.f., 2009-10 sessions have

also started. Full time, as well as part time Ph.D programmes has been started in all 11 departments since 2006 including MBA. NERIST has the distinction of being the first institute in the state of Arunachal Pradesh to start M.Tech and MBA programmes.

VISION OF THE INSTITUTE

To produce professionals with competency for pursuing excellence in Science & Technology Education, Research, and Entrepreneurship with ethical values and social sensitivity for offering specialized services to the society meeting the global requirements and standards in a multicultural environment.

MISSION OF THE INSTITUTE

1. To create a niche in the field of science & technology education and research through an innovative modular system.
2. To produce globally competitive technical and scientific manpower in different disciplines with high ethical values and with particular reference to the North Eastern Region.
3. To induce in engineers/technologists and trainees a mind-set full of creativity to pursue excellence with focus on stakeholders, accountability, environment, and people.
4. To develop collaborations with world class R&D organizations, industries, and educational institutions in India and abroad for attaining excellence in teaching, research and consultancy practices.

2.2 Administrative set up

The Institute is registered as a Society under Societies Registration Act of 1860. At present, the Hon'ble Governor of Arunachal Pradesh is the ex officio President of NERIST Society and Mr. Pranab Kumar Barbora, Air Marshal (Retd.) is the present Chairman of Board of Management (BoM) of the Institute.

2.3 Salient Features

- Modular Technical Education System;
- Multi-point entry and exit system;
- Unconventional and innovative academic programme to create technical manpower at various levels for the development of NE Region;
- Development of knowledge, skills and value based education system;
- Highly qualified faculty and dedicated staff;
- P.G. and Ph.D. programmes;
- Well equipped laboratories and workshops;
- Fully residential campus;
- Dedicated service for development of NE Region.

SECTION – 3

ACADEMIC PROGRAMMES

3.1 A Brief Profile of the Section

Academic Section is the backbone of any Academic Institute/University. Present Academic Branch is divided into three cells, viz., Undergraduate, Postgraduate and Ph.D. for better functioning. The Undergraduate cell deals with admission process, scholarships/other academic affairs of Base, Diploma & Degree Modules. The Postgraduate Cell deals with admission and other related affairs of M. Tech., MBA, M.Sc. including scholarships of UG & PG students and the Ph.D. Cell deals with all activities like admission of Ph.D. scholars, conducting DPGC, BPGS, and other activities related to Ph.D. scholars including scholarships of Ph.D. students. Matters relating to Convocation, Academic Council meeting, RTI, Correspondences with AICTE, UGC etc. and other miscellaneous academic matters are also dealt by the cell. Beside this, Academic Section also deals with all other matters related to academic affairs of the Institute with MHRD/UGC/AICTE and other miscellaneous academic matters. The branch is headed by Assistant Registrar (Academic). As on July-Dec. session 2016-17, the numbers of UG students are 1311, PG students are 290 and Ph.D. Scholar are 245. The total strength of students is 1846.

All the undergraduate courses are accredited by the National Board of Accreditation (NBA).

All the undergraduate Degree Programmes in Engineering & Technology are approved by the AICTE. The M.Tech. Programmes in Information Technology, Environmental Science & Engineering, Power System Engineering, M.Tech. in Computer Integrated Manufacturing & Automation under the Department of Mechanical Engineering, Thermo-Fluid Engineering under the Department of Mechanical Engineering, Electronics & Communication Engineering & Farm Machinery & Power under the Department of Agricultural Engineering, are also approved by the AICTE.

3.2 Status Report regarding activities

The modular structure of curriculum at NERIST consists of three independent modules in Engineering and Technology streams and one independent module in Forestry. These are as follows:

(a) Engineering & Technology Stream

1. Base (Certificate) Module
2. Diploma Module
3. Degree Module

(b) Forestry Stream

1. Degree Module

In the Engineering and Technology stream, the Institute runs three modules viz., Base (admitted after Class X), Diploma (admitted after Class 10+2/NERIST Base Module Course) and Degree Module (admitted after Diploma with requisite CGPA/Polytechnic Diploma with 1st Class). Each module is of 2 years' duration, besides the duration of bridge courses of Degree Module admitted through NEE-III which takes three years to complete their degrees.

Scholarship/Fellowship

Different kind of Scholarships, viz. Ishan Uday Scholarship, State Government stipends, centrally sponsored scholarship schemes through National Scholarship Portal, etc. have been provided to the eligible Undergraduate students.

The GATE qualified candidates admitted to the AICTE approved courses are eligible for Scholarship/Stipend and book grants by the AICTE, subject to the availability of grant, received from the AICTE. The Ph.D. Research Scholars are also provided with fellowships as per the norms of the Govt. and the Institute.

However, irrespective of the source of scholarship/stipend, a student must attend at least 75% of classes in each course in which he/she has registered, failing which the scholarship/stipend may be terminated.

3.3 Courses offered for Under Graduate Programme

During 2016-17, the Institute offered the following courses in each module:

Base (Certificate) Module

Sl. No.	Base (Certificate) Module	Trades
1	Agricultural Engineering	i. Tractor Mechanic ii. Food Processing Technician
2	Construction Technology	i. Draftsman ii. Surveyor
3	Maintenance Engineering (Electrical)	Electrician
4	Maintenance Engineering (Electronics)	Electronic Technician
5	Maintenance Engineering (Mechanical)	i. Mechanical Craftsmanship ii. Refrigeration & Air Conditioning

Diploma Module (E&T Stream)

- a) Agricultural Engineering
- b) Civil Engineering
- c) Computer Science and Engineering

- d) Electrical Engineering
- e) Electronics & Communication Engineering
- f) Mechanical Engineering

Degree Module (E&T Stream)

- a) Agricultural Engineering
- b) Civil Engineering
- c) Computer Science and Engineering
- d) Electrical Engineering
- e) Electronics & Communication Engineering
- f) Mechanical Engineering

Degree Module (4-year programme in Forestry)

3.4 Course Offered in Post Graduate Programme

The Institute started its Post Graduate Courses and the following programmes are running during 2016-17.

M.Tech. (Full Time)

- a) M.Tech. in Information Technology under the Department of Computer Science & Engineering.
- b) M.Tech. in Computer Science & Engineering under the Department of Computer Science & Engineering.
- c) M.Tech. in Environmental Science & Engineering under the Department of Civil Engineering.
- d) M.Tech. in Geotechnical Engineering under the Department of Civil Engineering.
- e) M.Tech. in Power System Engineering under the Department of Electrical Engineering.
- f) M.Tech. in Computer Integrated Manufacturing & Automation under the Department of Mechanical Engineering.
- g) M.Tech. in Thermo-Fluid Engineering under the Department of Mechanical Engineering.
- h) M.Tech. in Electronics & Communication Engineering (Specialization in VLSI/Communication Engineering).
- i) M.Tech. in Farm Machinery & Power under the Department of Agricultural Engineering.
- j) M.Tech. in Soil and Water Conservation Engineering under the Department of Agricultural Engineering.

M.Sc.

- a) M.Sc. in Forestry under Department of Forestry
- b) M.Sc. in Physics under Department of Physics
- c) M.Sc. in Chemistry under Department of Chemistry
- d) M.Sc. in Mathematics under Department of Mathematics

MBA

Master of Business Administration under the Center for Management Studies.

Ph.D. (Full time) & Ph.D. (Part time)

Engineering streams

- Agricultural Engineering
- Civil Engineering
- Computer Science & Engineering
- Electrical Engineering
- Electronics & Communication Engineering
- Mechanical Engineering

Science, Humanities and Management streams

- Forestry
- Physics
- Chemistry
- Mathematics
- Humanities & Social Sciences
- Management Studies

3.5 Any other relevant information/data

Number of Students enrolled in July-December Semester, for the session 2016-17 are summarized and furnished in the following tables.

(a) Under Graduate Programmes

Table 1: No. of Students enrolled in 1st Year (Module-wise)

Discipline	Base	Diploma	Degree
Agricultural Engineering (AE)	26	21	26
Civil Engineering (CE)	41	41	42
Computer Science & Engineering (CSE)	00	12	19
Electrical Engineering (EE)	41	37	36
Electronics & Communication Engineering (ECE)	19	21	37
Mechanical Engineering (ME)	36	35	36
Total	163	167	196

Table 2: No. of Students enrolled in 2nd Year (Module-wise)

Discipline	Base	Diploma	Degree
AE	29	22	26
CE	36	42	49
CSE	00	11	13
EE	36	44	37
ECE	19	26	39
ME	31	36	43
Total	151	181	207

Table No.3: No. of Students enrolled in Degree (Forestry)

Year	No. of students
First	22
Second	14
Third	13
Fourth	12
Total	61

Table 4: No. of Students enrolled in Degree Bridge Year

Discipline	No. of students
AE	03
CE	16
CSE	13
EE	11
ECE	09
ME	08
Total	60

Table 5: No. of Students enrolled as Repeaters

Discipline	Base	Diploma	Degree
AE	08	03	01
CE	06	05	06
CSE	00	00	04
EE	10	13	04
ECE	08	16	18
ME	10	11	02
Forestry (FO)	00	00	00
Total	42	48	35

Table 6: Gender-wise Detail of Students (Base Module)

Discipline	1 st Year		2 nd Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
AE	19	07	24	05	06	02	63
CE	32	09	24	12	03	03	83

EE	30	11	27	09	09	01	87
ECE	15	04	12	07	07	01	46
ME	33	03	28	03	09	01	77
Total	129	34	115	36	34	08	356

Table 7: Gender-wise Detail of Students (Diploma Module)

Discipline	1 st Year		2 nd Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
AE	14	07	09	13	02	01	46
CE	33	08	27	15	04	01	88
CSE	12	00	08	03	00	00	23
EE	26	11	39	05	11	02	94
ECE	15	06	20	06	14	02	63
ME	31	04	33	03	11	00	82
Total	131	36	136	45	42	06	396

Table 8: Gender-wise Detail of Students in Engineering (Degree Module)

Discipline	1 st Year		2 nd Year		Bridge		Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
AE	17	09	17	09	02	01	01	00	56
CE	31	11	40	09	12	04	06	00	113
CSE	14	05	09	04	09	04	02	02	49
EE	30	06	27	10	09	02	04	00	88
ECE	25	12	31	08	06	03	18	00	103
ME	35	01	40	03	08	00	02	00	89
Total	152	44	164	43	46	14	33	02	498

Table 9: Gender-wise Detail of Students in Forestry (Degree Module)

Discipline	1 st Year		2 nd Year		3 rd Year		4 th Year & Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
FO	10	12	06	08	07	06	06	06	61

Table 10: Category-wise Detail of Students (Base Module)

Discipline	GE	OBC	SC	ST	PWD	Total
AE	10	02	02	41	00	55
CE	16	15	04	42	01	77
EE	29	03	04	41	01	77
ECE	17	04	02	15	01	38
ME	29	14	06	18	01	67
Total	101	38	18	157	04	314

Table 11: Category-wise Detail of Students (Diploma Module)

Discipline	GE	OBC	SC	ST	PWD	Total
AE	06	05	01	31	00	43
CE	19	09	06	49	03	83
CSE	09	05	01	08	01	23
EE	25	14	01	41	01	81
ECE	23	04	01	19	00	47
ME	40	06	08	17	00	71
Total	122	43	18	165	5	348

Table 12: Category-wise Detail of Students (Degree Module)

Discipline	GE	OBC	SC	ST	PWD	Total
AE	10	02	02	41	00	55
CE	36	12	05	54	05	107
CSE	08	09	03	25	02	45
EE	27	16	02	39	02	84
ECE	49	14	06	16	02	85
ME	40	16	05	26	00	87
FO	12	10	07	32	01	61
Total	182	79	30	233	12	524

Table 13: State-wise Detail of Students (Base Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	03	23	03	05	08	00	08	03	02	55
CE	02	21	07	08	08	06	08	08	09	77
EE	03	26	10	08	08	03	07	04	08	77
ECE	05	03	08	05	08	02	03	00	04	38
ME	05	19	14	03	08	02	04	04	08	67
Total	18	92	42	29	40	13	30	19	31	314

Table 14: State-wise Detail of Students (Diploma Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	04	17	02	05	05	02	06	02	00	43
CE	09	19	09	08	07	05	11	6	9	83
CSE	03	01	04	03	07	01	03	01	00	23
EE	09	23	08	08	09	05	07	04	08	81
ECE	06	09	08	05	05	01	06	01	06	47
ME	08	13	16	07	06	02	04	04	11	71
Total	39	82	47	36	39	16	37	18	34	348

Table 15: State-wise Detail of Students (Degree Module)

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	06	25	04	04	04	01	09	00	02	55

CE	09	23	18	06	11	08	09	09	14	107
CSE	04	10	06	05	06	04	05	02	03	45
EE	10	20	12	09	10	02	06	03	12	84
ECE	16	14	10	05	12	05	06	08	09	85
ME	11	11	17	07	10	03	07	08	13	87
FO	03	10	08	08	08	06	05	08	05	61
Total	59	113	75	44	61	29	47	38	58	524

(b) Post-Graduate Programmes

Table 16: No. of Students enrolled in M.Tech. (Full Time)

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 st Year	2 nd Year	Repeater	
1.	AE	Soil & Water Conservation Engineering	06	06	00	12
		Farm Machinery & Power	02	03	00	05
2.	CE	Environmental Science & Engineering	10	08	01	19
		Geotechnical Engineering	10	09	01	20
3.	CSE	Computer Science & Engineering	06	05	01	12
		Information Technology	04	04	0	08
4.	EE	Power System Engineering	14	16	01	31
5.	ECE	Electronics & Comm. Engineering	14	00	00	14
		Very Large Scale Integrated	00	12	00	12
6.	ME	Computer Integrated Manufacturing & Automation	08	08	01	17
		Thermo-Fluid Engineering	08	08	01	17
Total			82	79	6	167

Table 17: No. of Students enrolled in M.Sc.

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 st Year	2 nd Year	Repeater	
1.	PH	M.Sc. in Physics	12	10	00	22
2.	CH	M.Sc. in Chemistry	10	10	00	20
3.	MA	M.Sc. in Mathematics	09	07	00	16
4.	FO	M.Sc. in Forestry	11	08	01	20
Total			42	35	01	78

Table 18: No. of Students enrolled in MBA

Sl. No.	Name of the Center	Name of the Programme	No. of students admitted			Total
			1 st Year	2 nd Year	Repeater	
1.	CMS	MBA	26	19	00	45

Table 19: No. of Students enrolled in Ph.D. (Part Time & Full Time)

Engineering Disciplines (A)				
Sl. No.	Name of the Dept.	No. of Students admitted		Total
		Part Time	Full Time	
1.	AE	01	24	25
2.	CE	11	07	18
3.	CSE	01	05	06
4.	EE	16	26	42
5.	ECE	06	15	21
6.	ME	10	23	33
Total (A)		45	100	145

Science, Humanities & Management Studies Disciplines (B)				
7.	Physics	04	12	16
8.	Chemistry	01	06	07
9.	Mathematics	04	10	14
10.	Forestry	07	28	35
11.	Humanities & Social Sciences	09	08	17
12.	Management Studies	08	03	11
Total (B)		33	67	100

Total (A) + (B)		78	167	245
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3.6 Miscellaneous

The Automation Process for Academic Section and Examination Cell activities of the Institute has become operational since July-December, 2016 session. All kinds of fees related to Academic and Examination are being collected through online payment mode.

The Institute has participated in the National Institutional Ranking Framework (NIRF) and has been ranked between 151 and 200.

The data of the Institute has been successfully uploaded in the All India Survey on Higher Education (AISHE) for the year 2016-17.

Online Anti-Ragging undertaking has been introduced from July, 2016. The students have to submit the Anti-Ragging (online) undertaking every year in the month of July during Semester Registration.

MEMBERS OF ACADEMIC COUNCIL AS ON 31.03.2017

1.	Prof. H.S. Yadav, Director, NERIST	-	Chairman
2.	Prof. P.K. Tripathy, Dean (Academic)	-	Member
3.	Prof. Md. A. Hussain, Dean (Planning & Development)	-	Member
4.	Prof. B. Singh, Dean (Student's Affairs)	-	Member
5.	Prof. M.F. Hussain, Dean (Administration)	-	Member
6.	Prof. N.S. Raghuwanshi, Dept. of Agri. and Food Engg., IIT, Kharagpur, W.B.	-	Member
7.	Prof. Sankar Chandra Deka, Deptt. of Food Engg. & Tech., Tezpur University, Tezpur (Assam)	-	Member
8.	Prof. D.N. Das, Dean, Faculty of Life Science, Rajiv Gandhi University, Doimukh (Itanagar)	-	Member
9.	Prof. Debabrata Das, Head, Deptt. of Business Administration Tezpur University, Tezpur	-	Member
10.	Prof. Tomo Riba, Dean Faculty of Environmental Science, Rajiv Gandhi University, Doimukh, Itanagar	-	Member
11.	Prof. Anjan Dutta, Deptt. of Civil Engg., IIT, Guwahati	-	Member
12.	Mr. Talo Potom, ADM cum CEO, Govt. of A.P, Itanagar-		Member
13.	Prof. J. Choubey, Deptt. of Mathematics	-	Member
14.	Prof. S.K. Singh, Deptt. of Civil Engg.	-	Member
15.	Prof. Mubarak Hussain, Deptt of Chemistry	-	Member
16.	Prof. M. Muralidhar, Deptt. of ME	-	Member
17.	Prof. S.K. Pandey, Deptt. of Mathematics	-	Member
18.	Prof. (Mrs). P. Rethy, Deptt. of Forestry	-	Member
19.	Prof. P.R. Alapati, Deptt. of Physics	-	Member
20.	Prof. P.P. Dabral, Deptt. of AE	-	Member
21.	Prof. L.K. Arora, Deptt. of Mathematics	-	Member
22.	Prof. K.D. Ram, Deptt.of Chemistry	-	Member
23.	Prof. K.N. Dewangan, Deptt. of AE	-	Member
24.	Prof. Saibal Chatterjee, Deptt. of EE	-	Member
25.	Prof. B.D. Nayak, Deptt. of HSS	-	Member
26.	Prof. C.L. Sharma, Deptt. of Forestry	-	Member
27.	Prof. A.S. Rai, Deptt. of Mathematics	-	Member

28.	Prof. N. Deb, Deptt. of Chemistry	-	Member
29.	HoD (CE)	-	Member
30.	HoD (ME)	-	Member
31.	HoD (EE)	-	Member
32.	HoD (AE)	-	Member
33.	HoD(ECE)	-	Member
34.	HoD (CSE)	-	Member
35.	HoD (Physics)	-	Member
36.	HoD (Chemistry)	-	Member
37.	HoD (Maths)	-	Member
38.	HoD (Forestry)	-	Member
39.	HoD (HSS)	-	Member
40.	HoC (CMS)	-	Member
41.	HoC (CATARD)	-	Member
42.	Dr. S.K. Srivastava, Associate Prof., Deptt. of AE	-	Member
43.	Shri D.K. Shyamal, Associate Prof., Deptt. of AE	-	Member
44.	Dr. R.K. Mehta, Associate Prof., Deptt. of EE	-	Member
45.	Dr. M.P. Thaddues, Assistant Prof., Deptt. of ME	-	Member
46.	Shri T.V.P. Singh, Assistant Prof., Deptt. of EE	-	Member
47.	Shri K. Legoh, Assistant Prof., Deptt. CSE	-	Member
48.	Controller of Examination	-	Invitee
49.	Registrar	-	Non-Member Secretary

4.1 DEPARTMENT OF FORESTRY

4.1.1 A Brief Profile of the Department

The Department of Forestry came into existence in 1986 along with the establishment of NERIST with an object to impart forestry education to the younger generations of eight northeastern states of India. The Department currently offers programmes at Graduate (4 years B. Sc.), Post graduate (2 year M. Sc.) and Ph. D. levels. It is set against a large landscape of verdant scenic beauty and is equipped with infrastructure designed to produce professional personnel with management capacity and ability to take up the future challenges in the field of forestry. Forestry courses in the institute are also an attempt to conform to National Forest Policy 1988, which emphasizes forestry education in India. Northeastern states of India are endowed with a large forest cover, which requires intellectual human resources for their conservation and sustainable management. Moreover, the region is considered as a mega diversity hot spot area rich not only in biodiversity but also having many rare, endangered, threatened and endemic species, some of which may become extinct soon without human intervention. With the vast learning experience, the outgoing students would be able to accomplish the mission of maintaining a balance between preservation of the genetic resources and sustainable utilization of forest resources on one hand and development of the region on the

other. The students are given exposure and training in various forest-based aspects through field visits, project and dissertation work to gain practical knowledge and skills.

The back bone of the multi-disciplinary forestry course in the institute is its faculty, who are specialized in frontier subjects i.e. Forest Ecology, Forest Geoinformatics, Wood Science and Technology, Horticulture, Taxonomy, Ethnobotany, Silviculture, Biodiversity conservation, Wildlife Management, Biotechnology, Microbiology, Forest Genetics, Forest Economics and Management etc. Apart from teaching, faculty members are also actively involved in conducting research work in different field of forestry and allied subjects and guiding Ph. D. students in their respective field of specializations. The Department has produced so far more than 41 doctoral theses leading to Ph.D. degrees.

List of Faculty member with their designation and field of specialization

Sl.	Name	Designation	Area of specializations
1.	Dr. B. Singh	Professor	Horticulture & Agroforestry
2.	Dr. C. L. Sharma	Professor	Wood Science & Technology
3.	Dr. (Mrs.) M. Sharma	Professor & Head	Wood Science & Forest Products
4.	Dr. (Mrs.) K. Shrivastava	Professor	Microbial Molecular Biology
5.	Dr. P. R. Gajurel	Associate Prof.	Taxonomy, Ethnobotany & Medicinal Plants
6.	Dr. S. Sureshkumar Singh	Associate Prof.	Biotechnology, Microbial Ecology & Bioinformatics
7.	Dr. A. Kumar	Associate Prof.	Wildlife Management
8.	Dr. O. P. Tripathi	Associate Prof.	Forest Ecology, Biodiversity Conservation & Remote sensing & GIS
9.	Dr. L. B. Singha	Associate Prof.	Forest Ecology, Biochemistry & Stress Physiology
10.	Mr. G. Pangging	Assistant Prof.	Forest Economics & Management
11.	Dr. Ashish Paul	Assistant Prof.	Ecology & Biodiversity Conservation
12.	Dr. Pradeep Kumar	Assistant Prof.	Biotechnology, Plant Pathology & Biocontrol
13.	Dr. Madhu Kamle	Assistant Prof.	Plant Biotechnology, Fungal-Plant Interaction

4.1.2 Academic activities

Education in Forestry Science and research in Forestry and its allied discipline are the major academic activities of the department. The various academic courses presently offered in Forestry sciences are:

Sl. No.	Name of Course	Duration
1	B. Sc. Forestry	4 Years
2	M. Sc. Forestry	2 years
3	Ph.D. programme	Minimum three years with one year course work

All the important aspects of Forestry viz., Forest management, conservation, protection and utilization, Forest policy and planning, Forest Biology, Wildlife management, Silviculture, Wood Sciences & Technology, Application of GIS and Remote Sensing, Soil biology and management, Microbiology and Biotechnology etc. have been covered along with related interdisciplinary subjects like Biochemistry, Bio-statistics, Surveying, Marketing etc. particularly in B. Sc. Forestry. The department has the potential to do justice with the Forestry education in NERIST. Industrial training for 50 days is an integral component of B.Sc. Forestry course wherein students are attached with forest departments, zoological parks, research institution across the country and in non-government organizations such as M. S. Swaminathan Research Foundation; WWF, WIMCO, PRADAN, etc. The major topics undertaken in industrial training are natural resource management, wildlife management, tea cultivation and management, rural management, remote sensing, NWFP, Biodiversity conservation and forest ecology, etc.

The Department has in its credit more than 55 projects completed and 8 ongoing projects. The students working in the research projects have also got the opportunity to register for Ph.D. by which several young scientists are being produced by the Department. The department has already produced more than 50 Ph. D. scholars. The faculty members working in different areas of forestry and allied disciplines have contributed significantly to the overall knowledge dissemination through publications in scientific journals of national and international repute. The department has a strong collaboration at national and international level with leading Institutes and Organizations.

4.1.3 Laboratories and Laboratory development:

The Department has seven well equipped laboratories for conducting practical classes and R & D activities inside the department beside three field labs (Nursery, Net house & Mist chamber). The Research Laboratory of the Department caters to the need of research activities of the

department. It may be mentioned that the department has undertaken more than 65 research projects (completed/ongoing) sponsored by several funding agencies like MHRD, DST, CSIR, MoEF, UNESCO, GBPIHED, ICAR, ICFRE, DBT, ISRO, DSIR, UNDP, NEC etc. Laboratories of Forestry are well equipped with conventional and sophisticated instruments and apparatus like seed germinator, BOD incubator, portable leaf area meter (Licor), laminar air-flow chamber, rotary shaker, refrigerated centrifuge, refrigerator, deep freezer, hot air oven, muffle furnace, spectrophotometer, flame photometer, colony counter, autoclave, electronic balance, research microscopes (Leica), stereo microscope (Zeiss), wood microtome, circular saw, automatic weather station, PCR systems, Gas Chromatograph, Socs Plus and Fibra Plus, Kelplus, UV spectrophotometer, Flame photometer, GPSs, GIS softwares etc. for conducting different experiments for student practices at various modules as well as research activities. Well-developed departmental computer centre and Library provides the resources to students and faculties to carry out their academic and research activities. The Department has good number of computers with internet on LAN and printing facilities.

Existing Laboratories:

Lab No.	Name of lab and facilities	In-charge
Lab 1	Wood science & Forest products	Dr. M. Sharma
Lab 2	Plant Microbe Interaction and Microbial Biotechnology	Dr. Karuna Shrivastava
Lab 3	Forest Systematic Ethnobotany & Horticulture	Dr. P. R. Gajurel
Lab 4	Environment, NRM and Restoration Ecology	Mr. G. Pangging
Lab 5	Silviculture, Forest Ecology and Biodiversity	Dr. O. P. Tripathi
Lab 6	Wildlife conservation	Dr. A. Kumar
Lab 7	Remote sensing and GIS lab	Dr. O. P. Tripathi
Facility 1	Computing Facility	Dr. L. B. Singha
Facility 2	Department Library	Dr. A. Kumar
Facility 3	Forest Nursery	Dr. P. R. Gajurel
Facility 4	Forestry Herbarium	Dr. P. R. Gajurel
Facility 5	Bioinformatics Centre	Dr. S. S. Singh

4.1.4 Project/ Theses completed by PG / Ph. D students

(i) Ph.D. theses (awarded/submitted):

Name; Regn. No./Roll No.	Supervisor (s)	Status	Title of Ph.D. Thesis
Ms. Pallabi Bharali Ph.D.(FT)/11/FO/08	Dr. C. L. Sharma and Dr. B. Singh	Awarded	Ethnobotany and economic potential of spices and condiments used by selected communities of Arunachal Pradesh and Assam.
Ms. Malti Kumari Singh	Dr. M. B. Sharma and Dr. C. L. Sharma	Awarded	Evaluation of wood characteristics of some timber species of Assam, NE India with reference to wood quality and identification.
Mr. N. Premkumar Singh Ph.D./(PT)/FO/09/01	Dr. P.R. Gajurel and Dr. P. Rethy	Awarded	Studies on Ethnomedicinal plants and healing practices used for malaria and jaundice by the tribes of Nagaland North east India.
Mr. Amal Bawri Ph.D./(FT)/FO/11/01	Dr. P.R. Gajurel and Dr. M. L. Khan	Awarded	Diversity and Population structure of a few selected species of <i>Primula</i> L. in Arunachal Pradesh
Ms. Chumi Khanikar Ph.D.(FT)/FO/09/1/01	Dr. S. S. Singh	Awarded	Studies on functional diversity of microfungi in the rhizosphere soil of important medicinal plants of N.E. India using morphological and molecular techniques.
Ms. Janmoni Kalita Ph.D.(FT)/FO/09/1/01	Dr. S. S. Singh and Dr. M. L. Khan	Awarded	Molecular and biochemical characterization of <i>Clerodendrum</i> spp. occurring in NE India.
Mr. Anup Kumar Das	Dr. L. B. Singha and Dr. M. L. Khan	Awarded	Regeneration ecology of <i>Pinus merkusii</i> Jungh. & de Vriese in Anjaw District of Arunachal Pradesh, India.
Mr. C. Murali Krishna Ph.D./(FT)/FO/11/05	Dr. A. Kumar and Dr. O. P. Tripathi	Awarded	Diversity and Ecology of Flying Squirrels in Arunachal Pradesh, India: With Special Emphasis to Red Giant Flying Squirrel (<i>Petaurista petaurista</i>).
Mrs. Michi Mamung Ph.D.(PT)/FO/09/1/04	Dr. A. Kumar	Awarded	Suitability of various larval diets on growth and development of <i>Corcyra cephalonica</i> (Stainton) and its effects on parasitic efficiency of <i>Trichogrammatoidea bactrae</i> (Nagaraja).

Mr. Parimal Chand Ray PhD.(FT)/11/FO/06)	Dr. A. Kumar and Dr. M. L. Khan	Submitted	Ecology of western hoolock gibbon (<i>Hoolock hoolock</i>) and regeneration status of their most preferred food plant species in Namdapha National Park, Arunachal Pradesh, India.
Ms. Gyati Yam Ph.D./(FT)/12/FO/05	Dr. O. P. Tripathi	Submitted	Studies on Above Ground Biomass and Carbon Sequestration in Talle Wildlife Sanctuary of Arunachal Pradesh, India.
Ms. Karabi Devi Ph.D.(PT)/FO/09/1/07)	Dr. K. Shrivastava	Submitted	Studies on diversity of macrofungi in Kamrup district of Assam, India.

(ii) Project works completed by PG students:

Name of Student / Roll. No.	Dissertation title	Supervisor(s)
Mr. Karma Tashi Sherpa (MS/14/FO/01)	Macro-fungal diversity and use pattern among local people in Papum Pare district of Arunachal Pradesh.	Dr. K. Shrivastava
Mr. Hage Tatu (MS/14/FO/02)	Status and conservation of wildlife species in and around Talle Wildlife Sanctuary, Arunachal Pradesh, India.	Dr. A. Kumar
Mr. Vishnu Dutt (MS/14/FO/03)	Woody species diversity and above ground biomass of forests in Papum Pare district using geospatial approach.	Dr. O. P. Tripathi
Mr. Imlipokem Pongener (MS/14/FO/04)	Wild edible and Medicinal Plants used by the Ao tribe of Nagaland.	Dr. P. R. Gajurel
Ms. Tangwa Lakiang (MS/14/FO/05)	Comparative analysis of ecological niches and regeneration status of <i>Nepenthes khasiana</i> Hook. f. - A threatened endemic plant of Meghalaya in East and South-West Khasi Hills Districts of Meghalaya.	Dr. L. B. Singha
Mr. Savior J. Sangma (MS/14/FO/06)	Knowledge and valuation of tree species used in traditional agroforestry systems in Eastern Himalaya- A case study of fringe villages in Doimukh Forest Range, Arunachal Pradesh.	Mr. G. Pangging
Mr. Nage Mepolla (MS/14/FO/07)	Study of germination performances of two economic important tree species using various treatments.	Dr. B. Singh
Mr. Confirm Motsun (MS/14/FO/08)	Studies on ethnomedicinal practices by Jaintia community of Meghalaya and in vitro screening of antidiabetic and antimicrobial properties.	Dr. S. S. Singh

Mr. Mide Bage (MS/14/FO/10)	Fibre characteristics evaluation of some grasses in relation to pulp and paper from Papum pare District, Arunachal Pradesh.	Dr. M. B. Sharma and Dr. C. L. Sharma
Ms. Kimkhohoi Changloi. (MS/14/FO/11)	Anatomical and Physical characteristics of <i>Schizostachyum dulloa</i> , <i>Schizostachyum fuschianum</i> , <i>Schizostachyum polymorphum</i> from Nagaland.	Dr. M. B. Sharma and Dr. C. L. Sharma
Ms. Dhanashree Laishram (MS/14/FO/12)	Anatomical and physical characteristics of <i>Schizostachyum manii</i> , <i>Schizostachyum munroi</i> and <i>Schizostachyum pergracile</i> of Manipur.	Dr. C. L. Sharma and Dr. M. B. Sharma
Ms. Sonia Padu (MT/14/ESE/09)	Evaluation of efficient litter decomposition process in avenue plantations with reference to nahar (<i>Mesua ferrea</i>).	Dr. S. S. Singh

4.1.5 Short-term Courses/workshops organized:

Name	Title	Funding	Venue	Period
Prof. M. Sharma & Dr. P.R. Gajurel	One day training workshop on Northeast India Biodiversity Portal.	ATREE, Eastern Himalaya Circle	NERIST	24 th Sept. 2016
Prof. B. Singh & Dr. P.R. Gajurel	Training programme for the farmers on Cultivation and Management of medicine and aromatic plants.	NEC, Govt of India under project	Pasighat	4-5 June 2016
			Dulungmukh Lower Subansiri	4-5 th Feb 2017
			Laluk, Lakhimpur district	25 th March 2017
Dr. S. S. Singh	Workshop on Capacity Building in Grand Writing Skill and Management of Intellectual Property Rights (IPR)	DBT, Delhi	Naharlagun	28-30 Aug 2016

4.1.6 Short-term Courses/workshops, etc. attended:

Dr. Karuna Shrivastava	i) Attended international conference on “Global biodiversity, climate change and sustainable development” (ICBCS-2016) held from 15 th –18 th October, 2016 at RGU, Rono Hills, Arunachal Pradesh.
Prof. B. Singh	i) Presented the research paper “Regeneration of <i>Canarium strictum</i> Roxb. – a high socio-economically important tree species of Northeast India” in Taipei, Taiwan 14 th International Conference on Business, Economics, Social Science & Humanities during 30-31 March 2017.
Dr. P.R. Gajurel	i) Attended Workshop on Capacity Building in Grant Writing Skill and Management of Intellectual Property Rights (IPR) during 28-30/9/16 organized by DBT with Biotech Hub, Department of Forestry, NERIST ii) Attended and presented a paper in International Conference on Biodiversity, Climate Change Assessment and Impacts on Livelihood. January 10-12, 2017 Tribubhan University Kathmandu, Nepal. iii) Delivered a lecture in workshop on Demonstration and training on Biodiesel production organized by Mechanical department, NERIST at NERIST from 17 th to 18 th October 2016. iv) Attended a PAMC meeting as a UGC nominee in Kolhapur University in February 9, 2017
Dr. S. Sureshkumar Singh	i) Attended 2-Days International Workshop on 30 th Year of Biotechnology-Science for Society on 5 th to 6 th Feb. 2016 at Vigyan Bhavan, DBT, Govt. of India, New Delhi. ii) Attended the “28 th All India BTISnet (DBT-BIF/BIC/SDIC) Coordinators Meeting” on 3 rd and 4 th March 2016 at BIF, Kumaun University, Uttarkhand. iii) Attended the “6 th Review Meeting of the Coordinators of DBT-Biotech-Hubs in the North-Eastern Region” on 24 th and 25 th June 2016 at Mizoram University, Aizwal.
Dr. A. Kumar	i) Attended International Conference on Natural Resources Management and Technology Trends (ICNRM-17) from 27-29 th March 2017 at Imphal organized by Center of Advanced Study, Dept. of Life Sciences, Manipur University, Imphal, India.
Dr. L.B. Singha	i) Training-cum-Workshop on ‘High throughput Sequencing: Bioinformatics and Data Analysis’ during 25-27 April, 2016 organized by Bioinformatics Centre, DIC, North-Eastern Hill University, Shillong, sponsored by Department of Biotechnology, Govt. of India. ii) Threat to bamboo resources due to gregarious flowering in the Indian Eastern Himalayas and their conservation measures in: International Conference on ‘Global Biodiversity, Climate Change and Sustainable Development’ (ICBCS-2016) organized by Rajiv Gandhi University, Rono Hills, Arunachal Pradesh, India.
Mr. G. Pangging	i) Participated in international conference on strategies for environmental protection and management (ICSEPM-2016) organized by JNU, New Delhi at

	<p>JNU from 11th to 13th December 2016.</p> <p>ii) Participate in workshop on capacity building in grants writing skills and effective management of Intellectual Property Rights (IPR) in Biotechnology by universities and research institutions in the North East Region. Organised by Biotech Consortium India limited (BCIL), New Delhi at Naharlagun from 28th to 30th September 2016.</p> <p>iii) Participated in demonstration and training on Biodiesel production organised by Mechanical department, NERIST at NERIST from 17th to 18th October 2016.</p> <p>iv) Participated in workshop on Digital India, organized by NSS NERIST and Ministry of Electronics and Information Technology, GoI at NERIST on 24th August, 2016.</p> <p>v) Participated and presented lecture on “Potential sustainable livelihood options for Arunachal Pradesh” in workshop on “Sustainable Livelihood Development: Issues, options and challenges in Arunachal Pradesh” organised by G.B.P.H.E.D & S.D, Itanagar and HESCO, Dehradun at Itanagar on 28th November, 2016.</p>
Dr. A. Paul	<p>ii) Participated in TEQIP-II (MHRD-World Bank Project) sponsored Short Term Training Programme (STTP) on ‘<i>Pedagogy Training for Outcome Based Education</i>’ on 16th – 17th March, 2017, organized by NITTTR, Bophal, Madhya Pradesh and NERIST, Nirjuli, Arunachal Pradesh.</p> <p>iii) Attended and presented a poster in the International Conference on ‘<i>Global Biodiversity, Climate Change and Sustainable Development (ICBCS-2016)</i>’, on 15-18th October, 2016 at Rajiv Gandhi University, Arunachal Pradesh. Jointly organized by CPEB-II and GBPNIHESD. Sponsored by UGC, DBT, DST, New Delhi.</p>
Dr. Pradeep Kumar	<p>ii) Participated in Training programme on “Pedagogy Training for outcome Based Education” Organised by NITTTR, Bhopal at NERIST, Nirjuli, AP, India (16.03.2017-17.03.2017)</p> <p>iii) Attended and Poster Presentation at National Conference on ‘Underutilized Plants, Food Security and Climate Link’. In Department of Botany, D.D.U. Gorakhpur University, Gorakhpur. 20-21, January, 2017.</p>
Dr. Madhu Kamle	<p>iii) Participated in Training programme on “Pedagogy Training for outcome Based Education” Organised by NITTTR, Bhopal at NERIST, Nirjuli, AP, India (16.03.2017-17.03.2017)</p> <p>iii) Attended and Poster Presentation at National Conference on ‘Underutilized Plants, Food Security and Climate Link’. In Department of Botany, D.D.U. Gorakhpur University, Gorakhpur. 20-21, January, 2017.</p>

4.1.7 Achievements, awards, membership, etc. earned by the faculty:

Dr.P R Gajurel	i) Life Member, Indian Association of Reproductive Biologist
Dr. S. S. Singh	i) Life Member, Association of Microbiologists of India
Dr. A. Kumar	Best paper presentation award at International Conference on Natural Resources Management and Technology Trends (ICNRM-17) organized by Center of Advanced Study, Dept. of Life Sciences, Manipur University, Imphal, India
Mr. G. Pangging	i) Awarded Best poster award for presenting the poster entitled “Knowledge and valuation of tree species used in traditional agroforestry systems in Eastern Himalaya.” during International conference on strategies for environmental protection and management (ICSEPM-2016) organised by JNU, New Delhi from 11th to 13th December 2016. ii) Sessional Member (SLM254) of “The Indian Science Congress Association”, Kolkata, for 2016-17.
Dr. A. Paul	Reviewer: Brazilian Journal of Botany (Springer)
Dr. P. Kumar	Life membership of Nano Molecular Society-2017 (ID- NMS/2014/LM/035)
Dr. Madhu Kamle	Life membership of Nano Molecular Society-2017 (ID- NMS/2014/LM/036).

4.1.8 Research project with amount date of sanction, agency, etc. (ongoing projects during the period)

Name of PI	Title of project	Funding agency with order No.	Period	Amount (Lakhs)
Dr. B. Singh & Dr. P.R. Gajurel	Mapping Management & Analysis of Medicinal and Aromatic Plants in Arunachal Pradesh using GIS and Phytochemical & Molecular Techniques.	NEC, Shillong	4 years (2012-16)	Rs. 212.00
Dr. P.R. Gajurel	Preventing extinction and improving conservation status of threatened plants through application of biotechnological tools.	DBT New Delhi	5 years (2012-17)	Rs. 8.41
Dr. O.P. Tripathi	HIMADRI-Alpine Forest of Arunachal Pradesh. (PI)	ISRO-SAC, Ahmedabad	4 years (2013-17)	Rs.24.00
	Ecological analysis of traditional and developed AFS for sustainable livelihoods and improved land management in Arunachal Pradesh, Northeast India.	DST New Delhi	2 years (2014-16)	Rs. 18.702
	Assessment of carbon stock and carbon sequestration potential of major land use sectors in Arunachal Pradesh.	DST New Delhi	3 years (2015-18)	Rs. 84.624
	Biomass and carbon assessment in India- Phase II.	NRSC, ISRO	3 years (2015-18)	Rs. 14.00
Dr. K. Shrivastava	Establishment of a culture collection centre in North East region of India Phase II	DBT New Delhi	3 years (2017-2020)	Rs.27.104
Dr. A. Kumar	Exploration of Biodiversity and conservation issues of Talley Valley Wildlife sanctuary, Arunachal Pradesh with reference to wildlife species distribution along climate and topographical gradients.	MoEFCC New Delhi	2 years (2016-2018)	Rs. 38,96,640

4.1.9 Publications

(a) Referred Research Journal:

- Babu, V., Singh, S. K., Venkatasubramanian, P. & Gajurel, P. R. 2016. Comparative analysis of major alkaloids in Piperspecies traded as ‘Pippali’ in South Indian markets: absence of the chief known constituent – piperine in selected samples. *Current Science*, 111(9):1507-1510
- Bajpai, R., Shukla, V., Singh, C. P., Tripathi, O. P., Nayaka, S. & Upreti, D. K. 2016. Lichen Community Composition in Tawang District of Arunachal Pradesh, Tool for Long-Term Climate Change Monitoring. *Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.*, DOI 10.1007/s40011-016-0830-z
- Bamin, Y., Gajurel, P. R. & Paul, A. 2017. Community structure, species composition and population status of NTFPs of Ziro Valley in Arunachal Pradesh, India. *Journal of Forest and Environmental Science*, 33 (3): (Accepted).
- Bawri, A., Gajurel, P. R. & Khan, M. L. 2016. *Primula calderiana* subsp. *bawarii* (Primulaceae): a new subspecies from Arunachal Pradesh, India. *Phytotaxa*, 265(1):67-72
- Bharali, P., Sharma, C. L., Singh, B. & Sharma, M. 2017. Ethnobotanical studies of spice and condiment plants used by some communities of Assam. *International Journal of Advances in Scientific Research*, 3(01): 01-11.
- Bharali, P., Sharma, M., Sharma, C. L. & Singh, B. 2017. Ethnobotanical survey of spices and condiments used by some tribes of Arunachal Pradesh. *Journal of Medicinal Plants Studies* 5(1): 101-109.
- Bharali, P., Singh, B. & Sharma, C. L., 2016. Ethnomedicinal knowledge of Galo tribe from Arunachal Pradesh, India. *Int. J. Curr. Res. Biosci. Plant Biol.* 3(6), 139-148.
- Das, A. K., Singha, L. B. & Khan, M. L. 2016. Community structure and species diversity of *Pinus merkusii* Jungh. & de Vriese forest along an altitudinal gradient in Eastern Himalaya, Arunachal Pradesh, India. *Tropical Ecology*, (Accepted)
- Deka, J., Yumnam, J.Y., Mahanta, P. & Tripathi, O. P. 2016. Improvement in Estimation of Above Ground Biomass of *Albizia lebbek* using Fraction Reflectance of Landsat TM Data. *IJPEN* DOI No. : 10.18811/ijpen.v1i1.7118.
- Devi, K. & Shrivastava, K. 2016. Diversity of macrofungi in ‘Jalukbari reserve forest’ of Kamrup District, Assam. *Advances in Applied Science Research*, 7(1): 115-119.

- Devi, K. S., Venugopal, N. & Singha, L. B. 2016. A critical analysis on the digestive glands of endemic and endangered pitcher plant (*Nepenthes khasiana* Hook. f.) of Northeast India. *NeBio*, 7(3): 98-100.
- Devi, K. S., Venugopal, N. & Singha, L. B. 2016. Microscopic Features of Dominant Bladderworts of Northeast India. *International Journal of Basic Sciences and Applied Computing*, 2(1): 5-9.
- Devi, W. D., Gajurel, P. R. & Rethy, P. 2016. Phenology of *Piper mullesua* Buchanan-Hamilton ex D. Don (Piperaceae) - a medicinally important dioecious plant. *Pleione*, 10(2): 239-247.
- Dutta, J., Balasubramanian, D., Arunachalam, A. and Singh, S.S. 2016. Methane (CH₄) emission from high altitude wetland rice-cum-fish integrated agriculture system in Eastern-Himalayan foothills. *Climate Change and Environmental Sustainability*, 4 (1): 68-75.
- Dutta, J., Muang, O., Blasubramanian, Pangging, G & Arunachalam, A. 2017. Sacred groves of Ziro valley dominated by Apatani tribes in Arunachal Pradesh. *Indian Journal of in Hill Farming*. 30(1) 1-7.
- Haq, S., Kumar, P., Singh, R. K., Verma, S. K., Bhatt, R., Sharma, M., Kuchwaha, S. & Kothari, S. L. 2016. Development of EST-SSRs for Bulk segregation analysis and transferability, cross-taxa utility for yield and sugar in sugarcane. *Genetic Research International*. Article ID 7052323
- Kamle, M., Bajpai, A., Kalim, S. & Chandra, R. 2016. Recurrent Somatic Embryogenesis and Plantlet Regeneration in *Psidium guajava* L. *Brazilian Archives of Biology and Technology*, 59, e16150170. <https://dx.doi.org/10.1590/1678-4324-2016150170>. (IF-0.56)
- Kamle, M., Bar, E., Lewinsohn, D., Shavit, E., Roth-Bejerano, N., Kagan-Zur, V., Guy, O., Zaadi, E., Lewinsohn, E. & Sitrit, Y. 2016. Characterization of Morphology, Volatile Profiles and Molecular Markers in Edible Desert Truffles from the Negev Desert. *J. Agric. Food Chem.*, <http://pubs.acs.org/doi/pdf/10.1021/acs.jafc.6b04063>. (IF-2.9)
- Kumar*, P., Mahato, D. K., Kamle, M., Mohanta, T. K. & Kang, S. G. 2017. Aflatoxins: A Global Concern for Food Safety, Human Health and Their Management. *Front. Microbiol.* 7:2170. doi: 10.3389/fmicb.2016.02170. (IF-4.165).
- Kumar, P.*, Kamle, M., Misra, A. K., O'Donovan, A., Pagano, M. & Modi, D. R. 2016. Identification and characterization of *Fusarium mangiferae* as pathogen of mango malformation in India. *Brazilian Archives of Biology & Technology*, Vol.59:

e16160280 (IF- 0.5)

- Kumar, P., Pagano, M. & O'Donovan, A. 2017. Biotechnological advancement in beneficial fungi for plants. *Mycosphere-Journal of Fungal Biology*. 8(3) 445-455. (IF-0.654)
- Kumar, P., Tiwari, A. K. & Kang, S. G. 2016. Current Status of major fungal diseases of sugarcane in India: an overview. *Brazilian Archives of Biology and Technology*. Vol.60: e17160477. Doi:10.1590/1678-4324-2017160477. (IF- 0.5)
- Kumar, S., Das, G., Shin, H. S., Kumar, P. & Patra, J. K. 2016. Evaluation of medicinal values of *Gymnopetalum chinense* (Lour.) Merr., a lesser known cucurbit from Eastern Ghats of India. *Brazilian Archive of Biology and Technology*. Vol.60: e17160580. Doi: 10.1590/1678-4324-2017160580. (IF- 0.5)
- Mamung, M. & Kumar, A. 2016. Effect of different diets of *Corcyra cephalonica* on fecundity, longevity, and emergence percentage of *Trichogrammatoidea bactrae* Nagaraja (Hymenoptera: Trichogrammatoidea) under laboratory condition in Arunachal Pradesh. *International Journal of Applied and Pure Science and Agriculture*, 2 (4): 122-126
- Medak, B. & Singha, L. B. 2016. Nutritional Profile of a few selected wild edible plants of Papum Pare district of Arunachal Pradesh. *Journal of Bioresources*, 3(2): 17-21.
- Mohanta, T. K., Kumar, P., & Bae, H. 2017. Genomics and evolutionary aspect of calcium signaling event in calmodulin and calmodulin-like proteins in plants. *BMC Plant Biology*. 17:38 doi: 10.1186/s12870-017-0989-3 (IF-3.68)
- Murali C. K., Kumar, A. & Tripathi, O. P. 2016. Gliding performance of the red giant gliding squirrel *Petaurista petaurista* in the tropical rainforest of Indian eastern Himalaya, *iWildlife Biology* 22: 7–12, 2016, doi: 10.2981/wlb.00120
- Murali, C. K, Kumar, A., Tripathi, O.P. & Koprowski, J. L. (2016). Diversity, Distribution and Status of Gliding Squirrels in Protected and Non-protected Areas of Eastern Himalayas in India. *Hystrix- Italian Journal of Mammology*, doi:10.4404/hystrix-27.2-11688
- Pandey, A. K., Kumar*, P., Singh, P., Tripathi, N. N. & Bajpai, V. K. 2017. Essential Oils: Sources of Antimicrobials and Food Preservatives. *Front. Microbiol.* 7:2161. doi: 10.3389/fmicb.2016.02161 (IF-4.165).
- Pangging, G & Mandal, S. 2017. Assessment of shade trees and socio-economic condition of the tea workers: A case study of tea estate around Banderdewa forest range. *Bulletin of Arunachal Forest Research*. ISSN 0970-9487 (accepted).

- Pangging, G., Ao, A. & Das, A. K. 2017. Population structure and regeneration status of *Dipterocarpus macrocarpus*, *Sapium baccatum* and *Stereospermum personatum* along three disturbance regime in Singphan wildlife sanctuary, Nagaland, India. *Environment & Ecology*, 35(2C) 1287-1290 (Paper accepted).
- Pangging, G., Sharma, M., Sharma, C. L. & Sharma, A. S. 2016. Natural Resource Management in eastern Himalaya: A case study of fringe Villages of Shergaon Forest Division, Arunachal Pradesh. *Curr. World Environ.* 11(3): 800-807
- Panmei, R., Gajurel, P. R. & Singh, B. 2016. Ethnobotany and nutritional values of some selected wild edible plants used by Rongmei tribe of Manipur northeast India. *International Journal of Applied Biology and Pharmaceutical Technology*, 7(2): (online published DOI: 10.21276/Ijabpt)
- Ronald, K. H., Gajurel, P. R., Buragohain, R., Rethy, P. & Singh, B. 2016. Poor Phyto-sociological status of medicinal plants in Eastern Himalaya: Case study on the present scenario of some rare and economically important medicinal plants. *Folia malaysiana*, 18(1) 2016: 43 – 56.
- Roy, M., Roy, S., Singh, K. S., Kalita, J. and Singh, S. S. 2016. Synthesis, characterization and anti-diabetic activities of triorganotin(IV) azo-carboxylates derived from amino benzoic acids and resorcinol: Crystal structure and topological study of a 48 membered macrocyclic-tetrameric trimethyltin(IV) complex. *Inorganic Chimica Acta*, 439:164–172.
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- Shrivastava, K., Devi, K. & Brahma, J. 2016. Diversity and utilization of wild macro fungi in Chirang district of Assam, Northeast India. *Journal of Basic and Applied Mycology*, 12 (I & II): 16-23.
- Singha, L. B., Dilip, S., Devi, K. S. & Singh, S. C. 2016. *Schizostachyum arunachalensis* Naithani - the bamboo with the longest internode blooms in the Eastern Himalaya, India. *NeBio*, 7(3): 98-100.
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- Ulman, Y., Sharma, M. & Kumar, A. 2016. Agroforestry systems as habitat for avian species: assessing its role in conservation. *Proceedings of the Zoological Society*, DOI 10.1007/s12595-016-0198-3.
- Yam, G., Tripathi, O. P. 2016. Tree diversity and community characteristics in Talle Wildlife Sanctuary, Arunachal Pradesh, Eastern Himalaya, India. *Journal of Asia-Pacific Biodiversity* 9 (2016) 160e165. DOI No. : 10.18811/ijpen.v1i1.7118.

(b) Research articles in Books, Conference Proceedings, etc.

- Kalita, J., Singh, S. S. & Khan, M. L. 2016. Diversity and medicinal values of *Clerodendrum* spp. occurring in North East India. In Proceeding Int. Conf. on "Global Biodiversity, Climate Change and Sustainable Development-2016" at RGU, Rono Hills, during 15-18th October 2016.
- Kamle, M. & Kumar, P. 2016. *Colletotrichum gloeosporioides*: Pathogen of Anthracnose disease in Mango (*Mangifera indica* L.) In: Current Trends in Plant Disease Diagnostics and Management Practices Eds. Kumar *et al.* Springer, Switzerland. 207-219.
- Khanikar, C. & Singh, S. S. 2016. Identity and antimicrobial properties of a new fungus, *Aspergillus* sp. NFML_137 isolated from the rhizosphere soil of medicinal plant. In 57th Annual Conference and International Symposium of Association of Microbiologists of India (AMI) held at Guwahati University, Guwahati, during 24th to 27th November 2016.
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- Kumar, P. & Misra, A. K. 2016. Current scenario of mango malformation and its management strategies- an overview In: Current Trends in Plant Disease Diagnostics and Management Practices Eds. Kumar *et al.* Springer, USA. 221-236.
- Kumar, P., Kamle, M., Misra, S. K. & Gupta, V. K. 2016. *Trichoderma*: utilization for agriculture management and biotechnology In: The Handbook of Microbial Bioresources Editor(s) Gupta, V. K., Sharma, G. D., Tuohy, M. G., Gaur, R. CABI, USA. Pp 29-55. DOI 10.1079/9781780645216.0029
- Maurya, P. K., Kumar, P., Kumar P. & Brietzke, E. 2016. Methods for monitoring oxidative stress using conventional and advanced nanodiagnosics methods. Dr. Pranjali Chandra (ed.) In. Nanobiosensors for Personalized and Onsite Biomedical Diagnosis. ISBN: 978-1-84919-950.
- Paul, A., Khan, M. L. & Das, A. K. 2016. Western Arunachal Pradesh, Centre of Rhododendrons: Needs Urgent Conservation. In: Upadhaya, K. (ed), Biodiversity and Environmental Conservation. 1st edition. Discovery Publishing House Private Limited. New Delhi, India. pp. 185-201. ISBN: 978-93-5056-775-3.
- Ranibala, G., Singh, S. S. & Khan, M. L. 2016. Diversity of banana (*Musa* species) in Arunachal Pradesh, North Eastern India: Focus on Ornamental Species. In Int. Conf. on “Global Biodiversity, Climate Change and Sustainable Development-2016” at RGU, Rono Hills, during 15-18th October 2016.
- Singh, K. K., Singh, S. S. & Sharma, C. L. 2016. Antidiabetic properties of six lesser known medicinal plants from Manipur, North Eastern India. In Int. Conf. on “Global Biodiversity, Climate Change and Sustainable Development-2016” at RGU, Rono Hills, during 15-18th October 2016.
- Tiwari, A., Singh, A., Dagar, A., Kumari, K., Kumar, D., Pandey, N. & Kumar, P. 2017. An Overview of Major Fungal Diseases of Sugarcane in India: Detection and Management Strategies. Molecular Markers in Mycology, Fungal Biology, B.P. Singh, V.K. Gupta (eds.), Springer, Switzerland 2016. ISBN 978-3-319-34104-0

4.1.10 Interaction of faculty/Department with out side agency, membership in professional bodies/committees, etc.

The faculty members are actively interacting with the following outside organisation/ agencies for academic and developmental works

- Botanical Survey of India (BSI), Kolkata, Shillong and Itanagar
- Department of Biotechnology (DBT), Delhi
- Department of Science and Technology (DST), Delhi

- Research collaboration with Dept. of Chemistry, NIT, Agartala on biological activity screening of synthetic compounds
- Forest Research Institute (FRI), Dehradun
- Forest Survey of India (FSI), Dehradun
- Foundation for Revitalisation of Local Health Tradition (FRLHT), Bangalore
- Indian Institute of Remote Sensing (IIRS), Dehradun
- Indian Space Research Organisation (ISRO-SAC), Ahmedabad
- North Eastern Council (NEC), Shillong
- Multidisciplinary Research Unit, ICMR, Naharlagun, Govt. of Arunachal Pradesh.
- Universities like NEHU, Gauhati University, Manipur University, Delhi University, Tezpur University, Rajiv Gandhi University, etc.
- National Institute of Technology, Agartala.
- External experts for recruitments of project positions, dissertations, practical examinations, etc. in various Institutions.

4.1.11 Consultancy project undertaken: Nil

4.1.12 Achievements of the students:

4.1.13 Any Others, if any:

The following are the some of the important activities/achievement of the department during the year

I. Developmental works- Plantation of many economically and medicinally important species in the nursery of the department.

II. New equipments added: Some equipments useful for teaching and research have been added in the department, which are as follow

Sl. No.	Name of equipment	Lab No.
1.	Digital Microscopy Imaging with Micro-calibration facility (Rs.1.9 Lakhs)	2

4.2 DEPARTMENT OF AGRICULTURAL ENGINEERING

4.2.1 A Brief Profile of the Department

Agricultural Engineering is the application of engineering principles in agriculture. Agricultural Engineering deals with the use of engineering tools and practice to solve crop production, handling and processing problems for food and fiber along with the production to consumption chain. It includes the application of scientific knowledge in diverse and multidisciplinary activities for the overall development of the nation and farming community under protective environment.

The Agricultural Engineering Department started its B. Tech. program in Agricultural Engineering in the year 1986. The Department adopts modular pattern of education leading to the degree of B.Tech. in Agricultural Engineering, in three modules viz., base (in two separate trades of (i) Food Processing and (ii) Tractor Mechanic), diploma and degree. Each module provides terminality corresponding to an occupational level and at the same time provides entry to the next higher module finally leading to degree in Agricultural Engineering. After B.Tech they join postgraduate programmes and Ph.D. At present student is registered in M. Tech. (Farm Machinery and Power) & M. Tech. (Soil & Water Conservation Engineering) and in Ph. D programme are 07, 12 and 10, respectively.

At present the Department has 16 faculty members. Department runs 05 sponsored research projects (SAC ISRO, MoEF, CSIR) on emerging areas of Agricultural Engineering. Presently one All India Coordinated Research Projects viz; AICRP on Human Engineering and Safety in Agriculture, ICAR, New Delhi are operative under the Department.

4.2.2 Academic Activities

Modification of existing courses	: Nil
Introduction of new elective	: Nil
Laboratory Works Sheets designed	: Nil
Modification in the course structures	: Nil

4.2.3 Laboratories and Laboratory Development:

- Farm Power Laboratory
- Farm Machinery Laboratory
- Food Process Engineering Laboratory
- Dairy and Food Engineering Laboratory
- Soil and Water Conservation Engineering Laboratory
- Irrigation and Drainage Engineering Laboratory

Laboratory Development: Following equipments were purchased for laboratories:

- (a) Deep Freezer model RQV-660plus cost (Rs. 3,42,012) for Food Processing Lab development.

4.2.4 Project completed by the Ph.D., PG and UG students (completed in May, 2016).

A. Ph.D.

S.No	Title of the project	Name of the guide	Name of the student
1.	Modelling of reference evapotranspiration in humid region of North east India	Dr. P. P. Dabral	Mr. P. K. Pandey (Ph. D.(PT)/10/AE/01

B. M.Tech. (Soil and Water Conservation Engineering/Farm Machinery and Power) project

S.No	Title of the project	Name of the guide	Name of the student
1	Modelling and Forecasting of rainfall time series	Dr. P. P. Dabral Dr. P. K. Pandey	Ms. Mharhoni Z Murry
2	Hydrological Draught Assessment of Sutlej River Basin	Dr. S.K. Shrivastava	Aphiya Tana
3	Reservoir Operation and Modeling- A case study of Terri	Dr. D. Jhajharia	Techi Yabe
4	Future Changes in Temperature using Statistical Downscaling Model (SDSM) for an Eastern Himalayan Catchment	Dr. A. Bandhyopadhyay Dr. A. Bhadra	V. Victoria Zaphu
5	Evaluation of Noise Emission of Tractors during Field operations and its effect on Hearing loss among Drivers.	Prof. K.N. Dewangan Dr. T. Patel	Mr. Lalremruata
6	Matching of virtual Hitch point with line of pull for Tractor implement combination.	Dr. P.K. Pranav Mr. A. Pal	Mr. Avinash Kumar
7	Optimization of Design parameters of pedal operated paddy thresher using response surface Methodology and Digital Human Modeling Technique	Dr. T. Patel Prof. K.N. Dewangan	Mr. Shadad Md. Khayer
8	Development of system for determining tractor wheel torque in field condition from drop in Engine speed.	Mr. A. Pal Dr. P.K. Pranav	Bitu Hazarika

C. Degree projects

S.No	Title of the project	Name of the guide	Name of the student
1.	Drought identification and characterization- a case study	Dr. P. P. Dabral Dr. P. K. Pandey	Ashish ChoudhuryP. Agassir Marak
2.	Investigations on power Grip Strength.	Dr. K.N. Dewangan	Ms. Bhawana (DE/14/AE/005) Ms.Jandeno Humtsoe (DE/14/AE/002)
3.	Development of crop coefficient curve – a case study	Dr. D. Jhajharia Dr. P.K. Pandey	Ms.Pempa Lhamu Bhutia (DE/14/AE/ Mridusmita Barman (DE/14/AE/003)
4.	Measurement of Weight Transfer for 2WD Tractor at various depth.	Dr. P.K. Pranav	Yendrembam Phamnaiba Singh (DE/14/AE/004) Tapo Ngute Gumsar (DE/14/AE/004)
5	Performance evaluation of Tractor operated tillage implements in Arunachal Pradesh.	Mr. M.U. Singh	L.Chingshak Paulongphom (DE/13/AE/052) Mr.Cyamukam Yimchunger (DE/14/AE/006)
6	Drying kinetics of ginger using tray drying method	Mr. Arun Kumar Choudhary Mr. D.K. Syamal	Ruatfela Darlong (DE/13/AE/13)
7	Development of computer programming for predicting drawbar power for engine speed drop	Mr. A. Pal	Ms. Sabita Basnett Mr. Limwapong Imchem

D. Diploma projects

S.No	Title of the project	Name of the guide	Name of the student
1.	Drying of Ginger and Garlic	Mr. D.K. Shymal	Lheineiting Touthang Kago Nanu
2.	Influence of Meteorological variables on pan evaporation	Dr. D Jhajharia	Richik Kemprai Imvo Imchen Narang Tassang
3.	Altitudinal variations in soil physico-Chemical properties at high altitude Arunachal Himalayan watershed	Dr. A. Bhadra	Nyigam Bole, Lijum Nirin, Tarak Golom
4.	Development of stage-discharge rating curve for three catchments of Arunachal Pradesh	Dr. A. Bandyopadhyay	Liki Ete, Arishinaro Longkumer, Roni Dui
5.	Shift in tractors Centre of Gravity by varying front axle height	Dr. P.K. Pranav	Rahul Kr. Thakur Gaurav Kumar Mharoni Y. Ezung
6.	Estimation of pan evaporation under limiting data condition	Dr. P. K. Pandey Dr. P. P. Dabral	Nentilo Woch Vanlalmaunpuia Takhe Robin
7.	Inter-And Intra-observe error -- Associated with antropometric measurement.	Dr. T. Patel	Mitu Dada Ani Rilo
8.	Economics of solar water heater	Mr. M.U. Singh	Nani Kani Aman Venia Sanjit Jamatia
9.	Development of part-load-part-throttle curve for Mahindra B275DI tractor	Mr. Anubhab Pal	Mriganka Sharma Jayantifull Hoojon

10.	Engineering properties of large cardamom	Mr. Arun Kumar Choudhary	Roselina Deka Nchumbeni M Odyuo Lopez Ch. Marak
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4.2.5 Short-term courses/seminars/workshops/conferences organized at NERIST:

Dr. K.N. Dewangan and Dr. T. Patel organized an Industry Institute Interaction Workshop on “Ergonomics, Safety and Occupational Health” (2016), NERIST, India.

4.2.6 Short-term courses/seminars/workshops/conferences attended by the faculty.

1. Dr. K.N. Dewangan presented Lead paper and Chaired session in the International Ergonomics Conference from December 8 – 11, 2017 at NIT Jalandhar.
2. Dr. A. Bandyopadhyay presented a paper in the International Conference on Water Resources and Environment Research (ICWRER 2016), Kyoto, Japan, June 05-09, 2016.
3. Dr. A. Bandyopadhyay attended a training course on Basic Hydrology in National Institute of Hydrology, Guwahati, Sep 26-30, 2016 as resource person.
4. Dr. A. Bhadra presented a paper in the International Conference on Water Resources and Environment Research (ICWRER 2016), Kyoto, Japan, June 05-09, 2016.
5. Dr. A. Bhadra attended a training course on Climate Change Assessment: Hydrological Modelling and Perspective in NIT Silchar, Oct 19-23, 2016 as resource person.
6. Dr. T. Patel attended and presented a paper in 50th ISAE Annual Convention and Symposium during January 19-21, Bhubaneswar, Odisha
7. Dr. T. Patel attended and presented a paper in National Seminar during February 25-26, Guwahati, Assam
8. Dr. T. Patel attended and presented a paper in 7th International Conference on Agricultural and Food Engineering during March 17-18, 2016 Abu Dhabi (UAE)
9. Dr. T. Patel attended and presented a paper in 8th International Conference on Agricultural and Food Engineering during Dec. 14-15, Pattaya (Thailand)
10. Mr. A.K. Choudhary attended one week training programme on processing, value addition and entrepreneurship development in food Agri. Business by CIPHET Ludhiana from Nov. 14-21, 2016.
11. Mr. A.K. Choudhary attended two days training programme on pedagogy training for outcomes based education by the NERIST from March 16-17, 2017

12. Mr. A.K. Choudhary and Mr. A. Pal attended two days' workshop on Industrial training interaction on Ergonomics, safety and occupational Health organised by Dept. of AE, NERIST from Sep. 30 to 1st Oct. 2016.
13. Mr. A.K. Choudhary attended one day's workshop on Digital India organised by NERIST from Aug. 24th 2016.
14. Mr. A. Pal attended 2 days Pedagogy training for outcome based education conducted by NITTR, Bhopal at NERIST during 16-17 March, 2017

4.2.7 New Degrees/Professional Memberships obtained by the faculty.

1. Dr. T. Patel was awarded membership of Asia- Pacific Chemical, Biological & Environmental Engineering Society
2. Mr. A.K. Choudhary was awarded Life Membership of ISAE (LM-11261)

4.2.8 Achievements/awards/recognition earned by the faculty.

1. Prof. P. P. Dabral was awarded Fellow Membership by Indian Association of Hydrologists, Roorkee on 18th February, 2017.
2. Dr. T. Patel was awarded Board Member on the Ergonomics in Design track for 8th International Conference on Applied Human Factors and Ergonomics (AHFE 2017) - Los Angeles, California, USA
3. Dr. T. Patel was awarded Board Member on 8th International Conference on Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management track for International Conference on Human-Computer Interaction 2017 - Vancouver, Canada
4. Mr. A. Pal was awarded Session best paper award for paper titled 'Development of a system for determining tractor axle torque in field condition from drop in engine speed.' in the 8th ICAFE '16 held at Pattaya, Thailand.

4.2.9 Projects sanctioned by outside agencies to the faculty of the department (2015)

1. A. Bhadra (PI) and A. Bandyopadhyay (Co-PI), Development of Hydrological Module for Snowmelt Runoff in the Himalayan Region (Budget: Rs. 26,12,000/-; Sponsoring Agency: SAC, ISRO, Ahmedabad; Period of Funding: December 2013 – March 2017): Fund received during the review year: Rs. 4,50,000/-.
2. A. Bandyopadhyay (PI) and A. Bhadra (Co-PI), 3. Vulnerability of North-East India to Climate Change for Hydrological Extremes of Floods and Droughts (Budget: Rs. 30,71,880/-; Sponsoring Agency: MoWR, New Delhi; Period of Funding: April 2012 – December 2017): Fund received during the review year: Rs. 5,22,000/-.

4.2.10 Publications:

4.2.11

(a) Referred Journal

1. Chowdhury, P., Dabral, P. P. and Singh R. K.(2016). Rainfall-runoff modeling under different agricultural land uses of a hilly watershed. *International Journal in Physical and Applied Sciences*, 3(1) :80-93.
2. Dabral, P. P., Kumar, A., Tana, G.(2016). Determination of surface drainage coefficient-a case study of Doimukh(Arunachal Pradesh), India. *Agricultural Engineering International: CIGR Journal*, 18(4) :1-10.
3. Pandey, P. K., Dabral, P. P., Pandey, V. (2016). Evaluation of reference evapotranspiration methods for the northeastern region of India. *International Soil and Water Conservation Research*, 4: 56-67.
4. Dabral , P. P., Saring, T. and Jhajharia, D.(2016). Time series models of monthly rainfall and temperature to detect climate change for Jorhat (Assam), India, *Global NEST Journal*, 18(3) : 494-507.
5. Dabral, P. P., Choudhury, A., Barman, M. and Pandey, P. K. (2016). Determination of erodibility under different land uses in the vicinity of Nirjuli, Arunachal Pradesh, 15(4) :292-295.
6. Dabral, P. P., Choudhury, K. and Debbarma, S. (2016). Probability analysis of 5-day antecedent rainfall at different return periods and seasons for Doimukh(Itanagar), Arunachal Pradesh, 44(3) :332-335.
7. Dabral, P. P., Pandey, P. K. (2016). Models to estimate soil moisture retention limits and saturated hydraulic conductivity. *J. Indian Water Resour. Soc.*, 36(1) :50-55.
8. Hamouda, K., Rakheja, S., Marcotte, P. and Dewangan, K.N. (2016). Fingers vibration transmission performance of vibration reducing gloves. *International Journal of Industrial Ergonomics*, <http://dx.doi.org/10.1016/j.ergon.2016.11.012>.
9. Senzeba, K.T., Rajkumari, S., Bhadra, A., Bandyopadhyay, A. 2016. Response of stream flow to projected climate change scenarios in an eastern Himalayan catchment of India. *Journal of Earth System Science*, Springer, 125(3): 443-457. DOI: 10.1007/s12040-016-0680-3.
10. Mishra, P., Zaphu, V.V., Monica, N., Bhadra, A., Bandyopadhyay, A. 2016. Accuracy assessment of MODIS fractional snow cover product for an eastern Himalayan catchment. *Journal of the Indian Society of Remote Sensing*, Springer, 44(6): 977-985. DOI: 10.1007/s12524-016-0548-7.
11. Pandey P,K and V Pandey (2016) Evaluation of temperature-based Penman–Monteith (TPM) model under the humid environment (Publication Date 2016/9/1). *Modeling Earth Systems and Environment* 2(3):152.
12. P. K. Pranav, Thaneswer Patel, K. Padmeshore Singh (2017) Development of database and mathematical models for predicting engine performance parameters using biodiesel. *International Journal of Agricultural and Biological Engineering*, 10(3):121-129., DOI:10.3965/j.ijabe.20171003.1789.
13. Patel, T., Moraru, R. L., Vidhu, K. P., Kumar, A., & Singh, W. A. (2016). Physiological and perceptual responses in the Sherpa method of carrying loads: Role of hip belt and shoulder strap supports. *Agricultural Engineering International: CIGR Journal*, 18(4), 157-164.
14. Sanjog, J., Baruah, R. L., Patel, T., & Karmakar, S. (2016). Redesign of Work-Accessories towards Minimizing Awkward Posture and Reduction of Work Cycle Elements in an Indian

- Shop-Floor Workstation. In *Advances in Ergonomics in Design* (pp. 219-232). Springer International Publishing.
15. Patel, T., Sanjog, J., Chatterjee, A., & Karmakar, S. (2016). Statistical Interpretation of Collected Anthropometric Data of Agricultural Workers from Northeast India and Its Comparison with National and International Databases. *IIE Transactions on Occupational Ergonomics and Human Factors*, 1-14.
 16. Patel, T., Sanjog, J., & Karmakar, S. (2016). Ergonomics Perspective in Agricultural Research: A User-Centred Approach Using CAD and Digital Human Modeling (DHM) Technologies. *Journal of the Institution of Engineers (India): Series A*, 1-10.
 17. Pranav, P. K., & Patel, T. (2016). Impact of ergonomic intervention in manual orange harvester among the workers of a hilly region in India. *WORK: A Journal of Prevention, Assessment & Rehabilitation*, 54(1), 179-187.
 18. Kumar, P., Chakrabarti, D., Patel, T., & Chowdhuri, A. (2016). Work-related pains among the workers associated with pineapple peeling in small fruit processing units of North East India. *International Journal of Industrial Ergonomics*, 53, 124-129.
 19. Sanjog, J., Patnaik, B., Patel, T., & Karmakar, S. (2016). Context-specific design interventions in blending workstation: an ergonomics perspective. *Journal of Industrial and Production Engineering*, 33(1), 32-50.

(b) Conference papers

1. Lalremruata, Patel, T., Dewangan, K.N. and Rakheja, S. (2016). Noise exposure to tractor drivers during field operations. *Proceeding of the International Ergonomics Conference Humanizing Work and Work Environment (HWWE)-2016*.
2. Dewangan, K.N., Rakheja, S. and Marcotte, P. (2016). Gender effect on seat-to-head transmissibility responses to vertical whole body vibration of humans seated on an elastic seat. *International Ergonomics Conference Humanizing Work and Work Environment (HWWE)-2016*, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar-144011, India.
3. **Dewangan, K.N.**, Rakheja, S. and Marcotte, P. (2016). Effects of elastic seats on vertical seat-to-head vibration transmission responses of the seated body. *6th American Conference on Human Vibration, Medical College of Wisconsin and Marquette University, Milwaukee, Wisconsin, USA*, pp 89–90.
4. Bhadra, A., Mishra, P., Rajkumari, S., Kumar, A., Tripathy, S. 2016. Temporal Variation in Dry and Wet Snow Cover for Nuranang Catchment of Arunachal Pradesh, India. *7th International Conference on Water Resources and Environment Research (ICWRER 2016)*, Kyoto, Japan, June 05-09, 2016: g02-01-1–6.
5. Bandyopadhyay, A., Mishra, P., Chiphang, N., Kumar, A., Tripathy, S. 2016. Validation of Broadband Snow Albedo Derived from AWiFS for Eastern Himalaya. *7th International Conference on Water Resources and Environment Research (ICWRER 2016)*, Kyoto, Japan, June 05-09, 2016: g02-02-1–6.
6. Kiba, L.G., Singh, W.R., Zaphu, V.V., Bandyopadhyay, A., Bhadra, A. 2016. Generation of NDVI Signature Plots for Major Vegetation Covers of Arunachal Pradesh. *Proc., Int. Conference on Climate Change Mitigation and Technologies for Adaptation (IC3MTA 2016)*, Synod College, Shillong-793002, Meghalaya, India, June 20-21, 2016: 19-26. ISBN: 978-93-81693-07-2.
7. Nengzouzam, G., Mishra, P., Khatso, V., Mondal, N.K., Matthew, T., Michelle, K., Bhadra, A., Bandyopadhyay A. 2016. Intra-annual variation in mean areal precipitation of Arunachal Pradesh using Thiessen Polygon Method. *Proc., Int. Conference on Climate Change Mitigation and Technologies for Adaptation (IC3MTA 2016)*, Synod College, Shillong-793002, Meghalaya, India, June 20-21, 2016: 27-33. ISBN: 978-93-81693-07-2.

8. Mishra, P., Nirin, L., Golom, T., Bole, N., Bhadra, A., Bandyopadhyay, A. 2016. Altitudinal variations of soil physico-chemical properties at a high altitude catchment in Arunachal Himalayan region. Proc., Int. Conference on Emerging Technologies in Agricultural and Food Engineering (etae2016), IIT Kharagpur, December 27-30, 2016: 281-291. ISBN: 978-93-86256-29-4.
9. Mishra, P., Singh, W.R., Senzeba, K.T., Bandyopadhyay, A., Bhadra, A. 2016. Effect of Climate Change on Average Depletion Pattern of a Snow-Covered Watershed in the Eastern Himalayan Region. eProc., Int. Conference on Emerging Technologies in Agricultural and Food Engineering (etae2016), IIT Kharagpur, December 27-30, 2016: 352-363.
10. Thaneswer Patel, J. Sanjog, Abhirup Chatterjee, Arvind Shroff, Siddharth Shankar Prusty, Sibasis Mohapatra, Sougata Karmakar: Virtual Ergonomics Evaluation of a Design Concept of Manual Powered Portable Paddy Thresher Suitable for Hilly Region Agriculture. Research into Design for Communities, Volume 1, 02/2017: pages 503-512; , ISBN: 978-981-10-3517-3, DOI:10.1007/978-981-10-3518-0_44.
- 11 J. Sanjog, Rajiv Lochan Baruah, Thaneswer Patel, Sougata Karmakar: Redesign of Work-Accessories towards Minimizing Awkward Posture and Reduction of Work Cycle Elements in an Indian Shop-Floor Workstation. Advances in Ergonomics in Design, 01/2016: pages 219-232; , ISBN: 978-3-319-41982-4, DOI:10.1007/978-3-319-41983-1_20
- 12 Pal, A. Development of a system for determining tractor axle torque in field condition from drop in engine speed. in the 8th ICAFE '16 held at Pattaya, Thailand during 18-19 April 2017

(c) Chapters in Books:

- 1 Thaneswer Patel: Progress of Biotechnology in India. Progress of Biotechnology in India, First edited by S. C. Santra, A. Mallick, 05/2017: chapter Solid Waste Management and Handling in India: pages 16-29; ENVIS Centre on Environmental Biotechnology., ISBN: 978-93-5267-783-2 (HB) and 978-93-5267-784-9 (PB)
- 2 P K Pranav, Thaneswer Patel, Y K Rao: A Comparative Study of Biomass Materials Using Downdraft Gasifier. Engineering Practices for Agricultural Production and Water Conservation: An Interdisciplinary Approach, Edited by Megh R. Goyal, R. K. Sivanappan, 03/2017: chapter Renewable Energy Use in Agriculture: pages 263–275; <https://www.crcpress.com/Engineering-Practices-for-Agricultural-Production-and-Water-Conservation/Goyal-Sivanappan/p/book/9781771884518>., ISBN: 978-1-77188-451-8, DOI:10.1201/9781315365954-18
- 3 Thaneswer Patel, G. R. Ramakrishna Murthy: Precision Fertilizer Applicator: Localized and Subsurface Placement. Engineering Practices for Agricultural Production and Water Conservation: An Interdisciplinary Approach, Edited by Megh R. Goyal, R. K. Sivanappan, 03/2017: chapter Part I: Soil and Water Conservation and Management; <https://www.crcpress.com/Engineering-Practices-for-Agricultural-Production-and-Water-Conservation/Goyal-Sivanappan/p/book/9781771884518>., ISBN: 978-1-77188-451-8, DOI:10.1201/9781315365954-6.

(d) Books:

Nil

4.2.11 Interaction of faculty/department with outside agencies:

1. Dr. K.N. Dewangan visited CONCAVE Research Centre in Concordia University, Montreal and worked there as visiting scientist during summer vacation in 2016 with Prof. S. Rakheja.
2. Dr. K.N. Dewangan, was invited as external expert for M.Tech thesis evaluation in the Dept. of Agril. And Food Engg, IIT Kharagpur
3. Dr. K.N. Dewangan, was invited as a resource person in the workshop on Recent Advances in Farm Machinery, Power and Energy Technologies, Assam University, Silchar
4. Dr. A. Bandyopadhyay and Dr. A. Bhadra worked in the multi-institutional project “Measurement to Management (M2M): Improved Water Use Efficiency and Agricultural Productivity through Experimental Sensor Network” (Budget: Rs. 23,66,000/-; Sponsoring Agency: ITRA, Media Lab Asia, DEITY, Min. of Comm. and IT; Period of Funding: October 2015 – July 2017) with IIT Kharagpur, IIT Gandhinagar, IGKV Raipur, and AAU Godhra.
5. Dr. A. Bhadra and Dr. A. Bandyopadhyay worked in the multi-institutional project “Development of Hydrological Module for Snowmelt Runoff in the Himalayan Region” (Budget: Rs. 26,12,000/-; Sponsoring Agency: SAC, ISRO, Ahmedabad; Period of Funding: December 2013 – March 2017) with IIT Kharagpur, IIT Guwahati, and IISc Bangalore.
6. Dr. A. Bandyopadhyay was invited as a resource person in a training course on Basic Hydrology by National Institute of Hydrology, Guwahati, Sep 26-30, 2016.
7. Dr. A. Bhadra was invited as a resource person in a training course on Climate Change Assessment: Hydrological Modelling and Perspective by NIT Silchar, Oct 19-23, 2016.

4.2.12 Consultancy projects undertaken:

Nil

4.2.13 Achievements of students:

Ms. Bhawana (DE/14/AE/005) qualified ICAR JRF 2016

4.2.14. Any other relevant information

Nil

4.3 DEPARTMENT OF CIVIL ENGINEERING

4.3.1 A brief profile of the Civil Engineering Department

The Department of Civil Engineering came into existence as a part of the Institute since its inception in 1985. Over the years the Department has developed and is recognized as one of the major engineering departments in the north-eastern region of the country. The main objectives of the Department are to develop high quality technical manpower at Certificate, Diploma and Degree levels and to cater to the needs of the North Eastern Region in particular, and the nation in general. It has started offering PG programmes and research activities leading to PhD, after the Institute attaining the Deemed-to-be University status.

The Department has capability of imparting quality education to the students through well-qualified faculty and staff. Presently, the Department has 16 well-qualified faculty members with specialization in different areas of Civil Engineering. Recently one faculty Dr. D. Pal has been awarded Ph. D. degree from IIT Guwahati. Two Associate Professors are promoted to Professor and one Assistant Professor is selected as Associate Professor.

There are two technical officers, three senior instructors, one senior technician, one technician five laboratory attendants. The staff members are well trained and one senior instructor, Dr. P Sivakumar, has completed his Ph. D. from NERIST.

The laboratories of the Department are well equipped to meet the requirements of undergraduate as well as postgraduate courses. The Department offers courses in Structural Engineering, Geotechnical Engineering, Structural Dynamics, Earthquake Engineering, Computational Methods in Civil Engineering, Advance Mechanics of Solids, Hydraulics and Water Resources Engineering, Fluid Mechanics, Environmental Engineering, Transportation Engineering, Geodetic Surveying, Engineering Graphics and Drafting, Building Science, Town Planning, Planning, Estimation and Valuation, etc . Projects are offered to the Diploma and Degree final year students keeping in view the academic advances, requirements of the industry as well as the local needs. The Department has the competency of carrying out challenging consultancy works and sponsored research projects. The Department organizes workshops and short-term courses to disseminate the knowledge to the teaching community, Government officials particularly of Arunachal Pradesh, NGOs as well as village level community of the state.

4.3.2 Vision:

To become one of the best Civil Engineering Departments in the country and produce professionals meeting the global standards with an innovative modular system of education and contribute to the socio-economic development of the nation.

4.3.3 Mission:

The mission of the Department is:

- To produce professionals with sound technical knowledge and skills with competence in planning, analysis, design and implementation of infrastructural schemes in various areas of Civil Engineering.

- To inculcate leadership qualities and communicative skills among the students along with moral and professional ethics to make them confident in providing innovative ideas in the fields of civil engineering and to cope up with the present and future needs of the private and public sectors.
- To produce professionals having commitment and responsibility towards sustainable growth of the society.
- To provide opportunity for co-curricular and extra-curricular activities for overall development of the individuals and motivation for lifelong learning.

4.3.4 Programme Education Objectives (PEOs)

The civil engineering programme will produce graduates that within a few years of graduation, will

1. Have successful technical or professional careers in civil engineering, higher studies, research and in other fields they choose to pursue with values, adoptability, and innovations.
2. Make ethical decisions and have commitment to service to the profession, society and nation.
3. Pursue lifelong learning, and become leaders both in their chosen profession and in other activities.

4.3.5 Programme Outcomes (POs)

After undergoing the undergraduate programme of the Department of Civil Engineering, the student should be able to:

1. Apply knowledge of mathematics, science and engineering fundamentals to solve civil engineering problems.
2. Design and conduct experiments / simulations as well as analyse and interpret data.
3. Design a system, components or process to meet the desired needs within the realistic constraints such as economic, environmental, social, safety and sustainability.
4. Identify, formulate, model and solve civil engineering problems.
5. Use the techniques, skills and modern engineering tools necessary for engineering practices.
6. Understand engineering and management aspects effectively and to be able to function on diverse and multidisciplinary teams.
7. Understand professional ethics and responsibility to extend the benefit of the civil engineering projects to the society.
8. Understand the impact of engineering solutions in a global, economic, and multicultural societal context in the light of contemporary and environmental issues.
9. Communicate effectively both verbally and in writing within the engineering community and with people in the society.

- 10 Recognize the need for, and an ability to engage in lifelong learning to incorporate technological innovations.

4.3.6 The Department at present has the following laboratories:

1. Computer Lab
2. Drawing and Drafting Section
3. Engineering Geology Lab
4. Environmental Engineering Lab - I
5. Environmental Engineering Lab - II
6. Field Engineering Lab
7. Geotechnical Engineering Lab -I
8. Geotechnical Engineering Lab -II
9. Highway Engineering Lab
10. Material Testing Lab
11. Structures Lab
12. Surveying Lab
13. Water Resources Engineering Lab

In addition, it has a Seminar Hall equipped with audio visual teaching and presentation facilities. All the labs are equipped with modern equipments used for both teaching and research and rendering consultancy services.

4.3.7 Joining of New Faculty Members: Nil

4.3.8 Academic Activities - Curricular Development:

Modification of existing courses/ Course Structure

Overall course revision is under process.

4.3.9 Laboratory Development

List of new equipments procured

The following are the list of equipment procured during the year.

S. No.	Name of Labs	Name of equipment	Quantity	Make	Total Cost (Rs.)
1.	Computer Lab	Computer Apple	10	i- mac	9,38,999.00
2.	Material Testing Lab	AIM-334 J Ring App.	1 Nos	AIMIL	27,996.00
		AIM-334 U-Box Test App.	1 Nos	AIMIL	11,323.00
		L – L Box Test App.	1 Nos	AIMIL	13,809.00
		V. Funnel App	1 Nos	AIMIL	9,419.00
		Flow Table Self with Compacting Cone	1 Nos	AIMIL	12,353.00
		Permeability App.	1 Nos	AIMIL	2,03,056.00
		Permeability App. Air Compressor Working pressure	1 Nos	AIMIL	89,443.00

4.3.10 Projects completed by the UG students (completed in May 2016 for B. Tech., & Diploma

(a) Diploma Projects completed

(b)

S. No	Title	Name of the Students	Submitted in	Guide
1.	Shear Centre for Open Thin Walled Members	Poonam Kumari Tadar Depi Momi Deb Mukesh Kumar Prasad Nur Mohammad Mussa Kalimullah	May - 2016	S. K. Sahu

2.	To Determine the Effect of Sand on Strength of 1:3 Cement Sand Mortar	Charakho N Chah Amit Sharma Sonjuraj Pegu Tilling Taser	May - 2016	S. Mishra
3.	Affect of Gravel Percentage on Compaction Characteristics of Soil	Arbin Thakur Anant Gautam Tahir Ahmed Laskar Hemant Lakra Lokesh Kumar Singh	May - 2016	Dipika Devi
4.	To Study the Effect on Geotechnical Properties of Soil Due to Addition of Admixtures	Mobyas Nikang Geli Basar Anil Sangno Techi Taram Yangtsapila T. Anar	May - 2016	M. Puming
5.	Physio-Chemical and Biological Characteristics Analysis of Waste Water from Arun Dairy Farm Karshingsha	Onminlal Guite Thounaojam Ashananda Monish Laishram Blassius Pyngrupe Loyangamba Thokchom	May - 2016	Y. B. Devi
6.	Modification of Existing Traffic Flow in NERIST Campus : Case Study	K. Lalhmangaihzuali Prakash Lamichane Chandroday Bora Lakhi Mena	May - 2016	N. G. Sorum
7.	Study on Traffic Parameters in Overtaking Operation	Barsa Sharma Lamtar Nasi Medozonuo Ruth Kelio Saunimantre Pohleng Rajbahadur Reang	May - 2016	Dibyendu Paul

(b) B. Tech. Projects completed

S. No	Title	Name of the Students	Submitted in	Guide
1.	Estimation of Water Supply Demand and Design of a Suitable Overhead Tank for the Institute Campus	Narayan Chandra Debnath Mohit Singh Neeva Ahanthem Pratik Kumar Tapas Tripura	May - 2016	S. K. Singh

2.	Study of Water Table Pattern of NERIST Campus by	J. M. Khanikar, M. Mukharjee, L. Cheda, T. A. Laskar and Sohini Das	May - 2016	R. K. Prasad
3.	Design of Reinforced Soil Retaining Wall to Support Hill Slope	Techi Tadeer Paominlen Touthang Gramisa Ch. Sangma Deepjoy Ray Asuile Liegise	May - 2016	S. Baishya
4	Study on the Variation of Compressive Strength of Geopolymer Concrete Cured at Different Elevated and Ambient Temperatures.	Lashanlang Rynjah Md. Amir Hussain Job Lalrinchhana Tage Dolley	May - 2016	S. Mishra
5	Finite Element Analysis of Beams and Frames using MatLab	Ms. Mohna Mayanglambamr. Nabajit Sarkar Rajat Kanti Saha Millo Dante John Tana	May - 2016	Dipika Devi
6.	Rainfall Runoff Modeling of Iril Catchment using SCS-CN Method	Sourabh Ch. Das Ajay Deb Liken Kamgo Soibam Monika Devi Shahkhah Jomoh	May - 2016	K. James Singh
7.	Affect and Improvement of Flexible Pavement Sub-grade in Frost Affected Areas	Jyotish Rajkonwar Bidyut Das Ajoy Sarkar Kalyan Biswas Ritesh Kumar	May - 2016	Yamem Tamut
8.	Quantification of Congestion at Mid-block Section of No-lane-disciplined Traffic Stream	Lashanlang Rynjah Job Lalrinchhana Kapu Sanjay	May – 2016	Dibyendu Paul

(c) M. Tech Projects Completed

Sl. No.	Name of Student	Year	Title of the Dissertation	Name of the Supervisor
1.	Jungsham Gahja	May - 2016	Land Use Land Cover Mapping and Change Detection of Namchik-Rima River Basin Using RS and GIS	K. James Singh
2.	Abdul Khalid	May - 2016	Rainfall-Runoff Modelling using HEC-HMS	R. K. Prasad
3.	Kamal Kalai,	May - 2016	Finite element analysis of strip footing in layered and nonlinear soil using MATLAB	Dipika Devi
4.	Tadak Lardak Murtem	May - 2016	Strength behaviour of soil mixed with synthetic fibre and fly ash	Ajanta Kalita
5.	Boken Jempen	May - 2016	Shear Strength Characteristics of Bamboo Fibre Reinforced Soil	Dipika Devi
6.	Khope Mekrisuh	July - 2016	Comparative Study on Beam on Non-Linear Winkler Foundation and 2-D Finite Elements for Shallow Foundations under Seismic Loading	S. Baishya
7.	Toba Karga	July - 2016	Soil Nailing for Itanagar Capital Complex Region.	Y. Tamut
8.	Risso Johnny	July - 2016	Stability of Slopes for Jullang Road Using Geosynthetic Reinforced Wall.	Y. Tamut
9.	Hage Aruna	May - 2016	A Study on Water Quality and Pollution Status of Dikrong River Water Flowing from Senkiview to Doimukh.	Y. Tamut
10.	Minam Mibang	July - 2016	Study of Rainfall Induced Landslide in Cut Slope	S K Singh
11.	Mapung Dodum	July - 2016	Characterization of Jute Geotextile as Soil reinforcement using Itanagar Soil	S K Singh
12	Dare Bhahghang	May, 2016	Study on Suspended Particulate Matter and Ambient Gaseous Pollutants at Stone Crusher Site, in and around Itanagar Capital Complex	Dr. Ajay Bharti
13	Yapek Yudik Taba	May, 2016	Environmental Impact Assessment of Pare Hydroelectric Project during Construction Phase	Dr. Ajay Bharti

14	Mobyta Tat	May, 2016	Attachment of Silver Nanoparticles on a Substrate and Study of its Anti-Microbial Potential for Water Purification Process	Dr. Ajay Bharti & Dr. Binod Pokhrel
15	Sonia Padun	May, 2016	Evaluation of Efficient Litter Decomposition Process in Avenue Plantations with reference to Nahar (Mesua ferrea)	Dr. Ajay Bharti & Dr. S S Singh

(d) Ph. D. theses submitted /awarded to research Scholar/ Faculty / Laboratory assistants

S. No.	Name of Student	Year	Title of the Dissertation	Name of the Supervisor
1.	Mr. P. Shivkumar	April - 2016	Hydraulic Simulation, Quality and Uncertainty Analyses of Water Distribution Networks (Awarded)	Dr. R. K. Prasad and Dr. S. Chandramauli
2.	Ms. Nabum Rich	2016	Nitrogen & Carbon Transformation Process in In-Vessel Composting of Municipal Solid Waste. (Thesis Submitted)	Dr. Ajay Bharti and Dr. Sunil Kumar
3	Ms Neelu Das	2016	A Study on Suitability of Brown Waste Materials for Civil Engineering Applications. (Thesis Submitted)	Prof S K Singh

4.3.11 Short-term Courses/Seminars/Workshops Organized

Dipika Devi organized an Industry-Institute Interaction Programme with “IDAC India Pvt. Ltd. Pune” at NERIST, Nirjuli, Arunachal Pradesh, during September 19-20, 2016, sponsored by TEQIP II

Dibyendu Pal organized an Industry Institute Interaction with “ICLAT Engineering Consultants, Hyderabad” at NERIST, Itanagar during September 25-26, 2016 sponsored by TEQIP II.

4.3.12 Short term courses/seminars/workshops attended by the faculty

R. K. Prasad participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Dibyendu Pal participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Dibyendu Pal has undertaken Sustainable Urban Transportation System during March 23-25, 2017 sponsored by AICTE, at IIT Kharagpur.

S. Mishra participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Ajay Bharti participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

S. K. Sahu participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Dipika Devi participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

A. Kalita participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

K. J. Singh participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Y. B. Devi participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

M. Puming participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

S Baishya participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

Y. Tamut participated in Two days STTP on “Pedagogy Training for Outcome Based Education”, sponsored by TEQIP-II; jointly organized by NITTR Bhopal and Department of Mechanical Engineering, NERIST during March 16 – 17, 2017.

New Degrees/Professional Memberships obtained by the members of faculty

Dibyendu Pal awarded PhD degree from IIT Guwahati on 19th April 2016 in traffic engineering.

Dibyendu Pal achieved membership of World Conference on Transport Research (WCTR) from July 2016 to May 2019.

4.3.13 Projects sanctioned by outside agencies to the faculty of the department

S. No.	Name of the Project	Name of the PI	Name of the Co-PI	From (Start)	Duration of the Project	No. of manpower in use (with designation & stipend)	Amount of the Project
1.	Spatial Distribution of Uranium and associated Water Quality Parameters in Western Arunachal Pradesh (eight districts namely Tawang, West Kameng, East Kameng, Papumpare, Kurung Kumey, West Siang, Upper Subansiri and Lower Subansiri	Dr. Ajay Bharti	1. Mr. K. James Singh 2. Mr. N. Ghanashyam Singh	06-01-2017	2 Years	01 JRF Rs. 25,000/- + 10% HRA = 27,500/-	Rs. 35,66,300/- (Rupees Thirty Five Lakh Sixty Six Thousand Three Hundred only)

4.3.14 Publications

(a) Referred Journals:

Das, Neelu, and Shashikant Singh. "Evaluation of Water Hyacinth Stem Ash as Pozzolanic Material for Use in Blended Cement." *Journal of Civil Engineering, Science and Technology* 7, no. 1 (2016) pp 1-8.

Das, Neelu, and Shashikant Singh. "Effect of Arecanut Husk Ash and Water Hyacinth Stem Ash on Plasticity Behavior of Lateritic Soil." *ADBU Journal of Engineering Technology*, 4(1), 2016 pp149-151.

Das, Neelu, and Shashi Kant Singh. "Geotechnical Behaviour of Lateritic Soil Reinforced with Brown Waste and Synthetic Fiber." *International Journal of Geotechnical Engineering*, 2017, <https://doi.org/10.1080/19386362.2017.1344002>

Kangujam Monika, S K Singh, and Th Kiranbala Devi. A case Study on Untreated and Treated Soil, *International Journal of Engineering Technology Science and Research, IJETSRS*, Vol 4, No 3, March 2017, pp225-234

Ori, K., and Bharti, A. (2017), "Disposal of Kitchen Waste from High Rise Apartment", *Journal of the Institution of Engineers (India): Series A Civil, Architectural, Environmental and Agricultural Engineering* ISSN 2250-2149 J. Inst. Eng. India Ser. A DOI 10.1007/s40030-017-0213-3.

Roy, A. U., and Bharti, A. (2016), "Environmental Laws in India - An Overview", *International Journal for Pollution & Noise Control*.

Taba, Y., Y., Roy, A U., and Bharti, A. (2016), "Environmental Impact Assessment of Hydroelectric Project During Construction Phase", International Journal for Pollution & Noise Control.

Roy, A. U., Bharti, A., and Prasad, R.K. (2016), "Hydro Power For Safe Energy, Environment & Sustainable Development In India – A Perspective", IOSR Journal of Mechanical and Civil Engineering e-ISSN 2278-1684, p-ISSN 2320-334X [3.781 Impact Factor (2015-16 African Quality Centre for Journals)]

Pokhrel, B., Nilling, J. J., Ete, T., and Bharti, A. (2017), "Green synthesis of stable silver nanoparticles using Euphorbia milii extract and study of its antimicrobial activity against Escherichia coli", International Journal of Chemical Studies 2017; 5(4): 1124-1128, P-ISSN: 2349–8528, E-ISSN: 2321–4902.

Puming M, Monowar H, Geli B, and Moby N, "A study on soil improvement by using Rice Husk and Bentonite" IJIRSET Vol.5, Issue 7, July 2016, 12938-12944, DOI: 10.15680/IJIRSET.2016.0507156. Impact Factor: 6.209.

Puming M, Monowar H, Mido N, and Shivan D, "A Study on the Chemical Properties of Leachate and its Effect on the Geotechnical Properties of Soil" IJETSR Vol. 3, Issue 7, July 2016, ISSN 2394-3386. Impact Factor: 2.120.

Puming M, Jamini M, and Gramisa S, "Design of Self Operating and Economical Water Filter to Improve the quality of Drinking Water for Domestic Supply" IJETMAS Vol. 4, Issue 6, June 2016, ISSN 2349-4476. Impact Factor: 2.24.

Pal, D., and Mallikarjuna, C. (2016). "Analysis of the Effect of Variable Lateral Gap Maintaining Behavior of Vehicles on Traffic Flow Modeling." Procedia Engineering, Elsevier, 142, 197-203.

Omo, Y. and Kalita, A. (2017). "Improvement in CBR Value of Soil-Fly Ash Mix Reinforced with Glass Fibres", International Journal of Exploring Emerging Trends in Engineering, Vol. 04, Issue 01, Jan-Feb 2017, pg. 40 – 45.

S. Mishra, Ganesh Langthasa, Kago Kani, Prawake Pradhan and Tarh Sonu, (2016). "Optimum Cement Content Requirement in Cast In-situ Concrete Wall Construction", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 5, Issue 5, May 2016; pp 9105 - 9109.

(b) Conference Papers:

S K Singh and Kangujam Monika, 'Load Carrying Capacity of Shell Foundations on Untreated and Treated Soil, Indian Geotechnical Conference, IGC2016, December 15-17, 2016, IIT Madras, Chennai.

Das, Neelu, and Shashikant Singh. "Effect of Waste and Synthetic Fiber Reinforcement on Lateritic Soil." International Conference on Frontiers in Engineering, Applied Sciences and Technology, FEAST 17, NIT Trichy. Paper No 00397 March 31, 2017-April 01, 2017.

Prasad, R. K. and Tacheng, R. (2017). Characterization of Municipal Solid Waste of Capital Complex of Itanagar, Arunachal Pradesh, India- A Case Study, International Conference, 9th International Perspective on Water Resources and the Environment, organised by ASCE, 4-6 Jan 2017, Wuhan, China.

Abdul, K. and Prasad, R. K. (2017). Rainfall-Runoff Modeling using HEC-HMS, International Conference, ICMEWRS, Harcourt Butler Technical University, Kanpur, India, March 24-26, 2017.

Sivakumar, P. and Prasad, R. K. (2017). Extended Period Simulation of Pressure Deficient Networks using PRVs in a Looped WDNs, International Conference, ICMEWRS, Harcourt Butler Technical University, Kanpur, India, March 24-26, 2017.

Pal, D., and Mallikarjuna, C. (2016). Vehicle Trajectory correction using Empirical Mode Decomposition. 12th Transportation Planning and Implementation Methodologies for Developing Countries (TPMDC), IIT Bombay, Mumbai, India, December 19-21.

Pal, D., and Mallikarjuna, C. (2016). Impact of Variable Lateral Gap Maintaining Behavior of Vehicles on Macroscopic Traffic Relations. 14th World Conference on Transportation Research (WCTR), Shanghai, China, July 11-16.

Singh, K.J., 2017. Area Submergence of Tipaimukh Dam, India, National Conference on Innovations in Science and Technology 2017, MIT Manipur.

(c) Books:

Mudo Puming and R K Prasad contributed to a chapter on “Optimal Reservoir Operation with Environmental Flows for Ranganadi Hydroelectric Project in Arunachal Pradesh” in the book “Urban Hydrology, Watershed Management and Socio-Economic Aspects”, published by *Springer Publisher DOI: 10.1007/978-3-319-40195-9_17*.

4.3.15 Interaction of faculty/department with outside agencies

S. K. Singh acted as the Member of All India Board for Under Graduate Engineering and Technology (AIB-UGET) of AICTE, New Delhi.

S. K. Singh acted as the Member of Board of Studies, School of Engineering, Mizoram University, Aizwal.

S.K. Singh acted as the Member, Arunachal Pradesh State Higher Education Council, Itanagar

R. K. Prasad chaired a session on Water Supply and Treatment, International Conference, 9 th International Perspective on Water Resources and the Environment, organised by ASCE, 4-6 Jan 2017, Wuhan, China.

D. Devi has been the Member of Vidyalaya Management committee of K.V. NERIST for 2 years.

D. Devi has been Member of School management committee of NERIST KG School for 4 years

Ajay Bharti is a Nodal Officer, STA (State Technical Agency), Public Health Engineering and Water Supply Department, Arunachal Pradesh.

Ajay Bharti is a Member of SEIAA (State Level Environment Impact Assessment Authority), Arunachal Pradesh.

Dibyendu Pal interacted and organized Industry Institute Interaction with ICLAT Engineering Consultants, Hyderabad held at NERIST, Itanagar during September 25-26, 2017 sponsored by TEQIP.

Dibyendu Pal visited various industries during December 2016 with degree 1st year students of civil engineering.

S.K. Singh and Ajanta Kalita have been the member of expert committee formed by Papum Pare district administration, Arunachal Pradesh for examining structural strength/soil profile of a three star hotel.

S. Mishra worked as nodal officer, NERIST for NIRF-2017.

S. K. Sahu and S. Mishra have been the members of Campus Planning and Monitoring Committee.

4.3.16: Consultancy Projects undertaken

The details of the consultancy services tendered by the department are as follows:

Sl No	Name of consultancy Work/Agencies	Amount (Rs.)	Detail of work	Faculty & Technical Staff involved
1	Testing of concrete cubes for Konsi Enterprises, Nirjuli dated 17 th May 2016.	2061.00	Cube testing	M. Puming & A. S. R. Prasad
2	Testing of Concrete cubes for PGCIL, Roing dated 3 rd June 2016.	6210.00	Cube testing	M. Puming & A. S. R. Prasad
3	Testing of Bricks for PGCIL, Roing dated 3 rd June 2016.	4140.00	Brick testing	M. Puming & A. S. R. Prasad
4	AEE, Central subdivision CPWD, Itanagar	60201.00	Concrete Mix Design of M20 grade (two mixes) and M25 grade	S Mishra & A. S. R. Prasad
5	AE Central Subdivision CPWD, Kimin			
6.	S P Construction	20038.00	for M25 grade concrete	S Mishra and A. S. R. Prasad

4.3.17 Achievement of students

NAME OF THE STUDENT WHO HAVE GONE FOR INDUSTRIAL TRAINING IN JUNE 2011

Sl. No	Name of Students	Roll No.	Firm/ Institute given Training	No. of Days Completed	Deficiency (if any)	Whether seminar successfully completed
1	Birsurang Daimary	DE/15/CE/01	IOCL,Digboi	25	No	Yes
2	Mehbub Ahmed Laskar	DE/15/CE/02	IOCL,Digboi	25	No	Yes
3	Agni Bhattacharjee	DE/15/CE/03	IOCL,Digboi	25	No	Yes
4	Sampa Singha Choudhury	DE/15/CE/04	NEEPCO, Doimukh	26	No	Yes
5	Bishwajoty Paul	DE/15/CE/05	Water Resources Deptt., Itanagar	22	No	Yes
6	Ankita Chakraborty	DE/15/CE/06	AAI, Kolkata	22	No	Yes
7	Sraboni Roy	DE/15/CE/07	PWD, Kailashahar	22	No	Yes
8	Tsutshowe Kapfo	DE/15/CE/09	MECL, Meghalaya	20	No	Yes
9	Tapi Rimu	DE/15/CE/10	MECL, Meghalaya	20	No	Yes
10	Jayanta Kalai	DE/15/CE/11	MECL, Meghalaya	20	No	Yes
11	Arpan Anshu	DE/15/CE/12	PWD, Kailashahar	22	No	Yes
12	Bashanbor Kharjana	DE/15/CE/13	MECL, Meghalaya	20	No	Yes
13	Sanjay Tamang	DE/15/CE/14	Madhya Bharat CO. , Sikkim	26	No	Yes
14	Bishal Basnet	DE/15/CE/15	Madhya Bharat CO. , Sikkim	26	No	Yes
15	Mido Nyodu	DE/15/CE/16	AAI, Kolkata	22	No	Yes
16	Abhishek Kumar	DE/15/CE/17	AAI, Kolkata	22	No	Yes

17	Kumar Rajnish	DE/15/CE/18	Water Resources Deptt., Itanagar	22	No	Yes
18	Bijoya Das	DE/15/CE/19	AAI, Kolkata	22	No	Yes
19	Bishal Debnath	DE/15/CE/20	IOCL,Digboi	25	No	Yes
20	J.H. Pauminsiam	DE/15/CE/21	Madhya Bharat CO. , Sikkim	26	No	Yes
21	Shivam Dakpe	DE/15/CE/22	NEEPCO, Doimukh	26	No	Yes
22	Adani Neli	DE/15/CE/23	IOCL,Digboi	25	No	Yes
23	Ngangbam Akash Singh	DE/15/CE/24	PWD Manipur	22	No	Yes
24	Nongthombam Robert Meetei	DE/15/CE/25	PWD Manipur	22	No	Yes
25	Shubhash Kumar	DE/15/CE/26	NEEPCO, Doimukh	26	No	Yes
26	Bapu Tabing	DE/15/CE/27	AAI, Kolkata	22	No	Yes
27	Akumtong Longkumer	DE/15/CE/28	PWD Manipur	22	No	Yes
28	Ningthoujam Jimson Singh	DE/15/CE/29	PWD Manipur	22	No	Yes
29	Jotish Thoidingjam	DE/15/CE/30	PWD Manipur	22	No	Yes
30	Gishon Seb	DE/15/CE/31	PWD Manipur	22	No	Yes
31	Kuru Munya	DE/15/CE/32	NEEPCO, Doimukh	26	No	Yes
32	Deepak Pandey	DE/15/CE/33	Madhya Bharat CO. , Sikkim	26	No	Yes
33	Kago Tada	DE/15/CE/35	MECL, Meghalaya	20	No	Yes
34	Abir Mahanta	DE/15/CE/37	NEEPCO, Doimukh	26	No	Yes
35	Inam Tripura	DE/14/CE/101	MECL, Meghalaya	20	No	Yes
36	Alak Singha	DE/14/CE/102	Tripura Housing and Construction Board,	24	No	Yes

			Agartala			
37	Preetam Saha	DE/14/CE/103	ONGC Tripura Power Company LTD., Palatana, Tripura	26	No	Yes
38	Rashidul Islam	DE/14/CE/104	Home Planers and Partners, Silchar	26	No	Yes
39	Priyakshi Kalita	DE/14/CE/105	NEEPCO, Doimukh	26	No	Yes
40	Dorjee Pintso Bhutia	DE/14/CE/106	Madhya Bharat CO. , Sikkim	26	No	Yes
41	Lalchawipuii	DE/14/CE/107	NCS, Mizoram	26	No	Yes
42	Cilhuto Keyho	DE/14/CE/108	MECL, Meghalaya	20	No	Yes
43	Saptarshi Das	DE/14/CE/109	PWD Tripura	22	No	Yes
44	Debanjali Chakraborty	DE/14/CE/110	ONGC Tripura Power Company LTD., Palatana, Tripura	26	No	Yes
45	Kitkumar Khyriem	DE/14/CE/111	MECL, Meghalaya	20	No	Yes
46	Tali Hali	DE/14/CE/112	NEEPCO, Doimukh	26	No	Yes
47	Teli Passo	DE/14/CE/113	NEEPCO, Doimukh	26	No	Yes
48	Techi Puru	DE/14/CE/114	NEEPCO, Doimukh	26	No	Yes
49	Mr. Harivansh Narayan	DE/14/CE/51	NEEPCO, Doimukh	26	No	Yes

Campus Placement During April 01, 2016- March 31, 17

Sl.No.	Name	Roll No	Discipline	Company
1	Ankita Chakraborty	DE/15/CE/06	CE	Tech Mahindra
2	Bijoya Das	DE/15/CE/19	CE	Cortex Constructions Solutions
3	Sampa Singha Choudhury	DE/15/CE/004	CE	JM Projects India Ltd., Mumbai
4	Alok Singha	DE/14/EC/102	CE	JM Projects India Ltd., Mumbai
5	Abhisekh Kumar	DE/15/CE/17	CE	Shriram Transport Finance Co.
6	Alok Singha	DE/14/EC/102	CE	Powrgrid Corpn. of (I) Ltd
7	Bijoya Das	DE/15/CE/19	CE	Powrgrid Corpn. of (I) Ltd

STUDENTS QUALIFIED FOR GATE 2017

Sl.No.	Name	Roll No	Marks out of 100
1.	Alak Singha	DE/14/CE/102	53.84
2.	Arpan Ansu	DE/15/CE/012	44.00
3.	Birsurang Daimary	DE/15/CE/001	37.93
4.	Kumar Rajnish	DE/15/CE/018	37.23
5.	Bijoya Das	DE/15/CE/019	37.20
6.	Kuru Munya	DE/15/CE/032	36.10
7.	Sampa S Choudhury	DE/15/CE/004	33.24
8.	Sraboni Roy	DE/15/CE/007	31.06
9.	Biswajyoti Paul	DE/15/CE/005	31.00
10.	Dorjee Pintso Bhutia	DE/14/CE/106	27.54
11.	Mido Nyodu	DE/15/CE/016	25.50
12.	Adani Neli	DE/15/CE/023	23.40
13.	Gison Seb	DE/15/CE/031	20.20

4.3.18 : Any Other Information

AIMIL India Limited has approached to the department for taking up major consultancy project in a collaborative manner. Same is under process and after completing the legal aspects, Civil Engineering Department will be able to take up major consultancy work with AIMIL India Limited.

Ms Nirigi Linggi was awarded first prize for her poster presentation in International Conference on “Integrated Solid Waste Management Practices in Developing Countries” Organised by CSIR, NEERI, Nagpur, held during April 11-12, 2017.

4.4 DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

4.4.1 . A Brief Profile of the Department

The Computer Science and Engineering Department of NERIST came into existence right at the inception of the institute in 1986. It offers a unique combination of courses and projects that helps the students to cope with the recent advancements in the computer industry and information technology. The department gives diploma and degree in computer science and engineering using a modular pattern. The M.Tech programme in Computer Science and Engineering started in 2008, M.Tech programme in Information Technology in 2011 (shifted from ECE dept) and the PhD programme in 2007.

The Department offers regular courses like Computer Organization, Application Software, Operating System, Discrete Mathematics, Digital Electronics, Microprocessors, Database Management Systems, Compiler Design, Data Communications, Computer Networks, Design and Analysis of Algorithm to name a few of them. Apart from the regular courses a few of the important courses offered are Artificial Intelligence, VLSI Design, Image Processing, Fault Tolerant Computing, Information Theory, etc.

The faculty members of the Department are involved in various inter-disciplinary research projects funded by agencies like DeiTy, AICTE, CISR, MHRD, NEC, DoE etc.

The Department has well equipped LAN connected laboratories such as System Lab-I, System Lab-II, PC Lab-I, PC Lab-II, Microprocessor Lab, Hardware Lab, Networking Lab with state-of-the art machines. The department is facilitated by the NKN (National Knowledge Network) internet connectivity.

Our graduates are well placed in organizations like, Infosys, C-Dot, SIEMENS, Tata Telecom, British Mahindra Telecom, DRDO, NICNET, ISRO, OIL, CSIR, Telecom, CMC, PCL, HCL, IDPL, IOC, SAIL. TELCO, TISCO, ESCORTS, Mindtree, State Departments of Electronics, Power & PHED.

4.4.2 . ACADEMIC ACTIVITIES

The Department offers Diploma, Degree and M.Tech and Ph. D programme. Besides undergoing the regular courses, the students of each module carry out project in the second year. The degree first year students also undergo industrial training for 50 days. The Department student counselor guides these students in allotment of training seats. The students also give seminar presentation after completion of their summer training.

4.4.3 LABORATORIES AND LABORATORY DEVELOPMENT

PC Lab I

The practical classes of Diploma Module and Base Module are held in this laboratory. The students get exposure to various types of Application Software such as Visual Basic, C++, Visual C++, etc in this lab. Basic Computer training for the students of all the Departments of NERIST is also given here. It is well equipped with 13 PC's Laserjet printers, Deskjet printers, Line Printers etc.

PC Lab II

Practical classes of Diploma Module and Base Module are held in this Lab. The students get exposure to various types of Application Software such as Turbo C++, Dev C++, etc in this lab. High level language programming experience for students of all the engineering departments of NERIST is given here. It is well equipped with 15 PC's.

System Lab I

The Systems Laboratory - I is well equipped with servers and terminals basically for working in UNIX/LINUX and Windows environment as well. Practical classes for Diploma and Degree and PG students are held here. Hands on exposure to various programming Software such as C, C++, and RDBMS software like Oracle 9i and SQL Server, Visual Studio.NET and MatlabR2016a are available in this lab. Several HCL Infinity Global Line Servers are connected to highend Intel i5 PC's and iMAC desktops. The lab also has Laserjet printers, Line matrix printer, Scanner etc. All the machines are on the institute LAN and thus have Internet access. The students are encouraged to do network related projects in this lab.

System Lab II

System laboratory II is well equipped with Servers running on Red Hat Linux 4.0 Enterprise Edition, and several HP Thin clients for working purely in UNIX/LINUX environment. This lab also has high end Intel i7 PCs and MAC mini desktops. Practical classes for M.Tech and Degree students are held here.

Microprocessor & Digital Lab

Training in various types of Microprocessors and Computer hardware is imparted in Microprocessor laboratory. This laboratory is complete with different types of Microprocessor and Micro-controller Kits and hardware related equipment. It also has the facility for training in Digital Electronics, which is the heart of every Computer. Practical classes for Diploma and Degree students are held here. The lab is well equipped with Frequency counters, Oscilloscopes, Analog Multi-meters, Power supplies, Digital IC trainers, Electronic Multi-meters, Functional Generators, Audio Generators, Pulse Generators, Microprocessor Trainer Kit IMPACT, Microprocessor Trainer Kit Star 85, Microprocessor Kit 68 K, Microprocessor Trainer Kit 6802, Microprocessor Trainer Kit DYNA86, Micro-controller Kit DYNA 51,

STD Based Card for Computers, Servo Controlled Voltage Stabilizers, Isolation Transformer, Bread Boards, Bush Monitors for 85 kit, Colour TVs etc.

Hardware Lab

The Hardware lab is set up in the Computer Science and Engineering Department for subjects like Peripherals, Assembling of Computer, Fault tolerance and different hardware related topics. To carry on these classes the lab is well equipped with Pentium PCs (100 Mhz, 16 MB RAM, 2.1 GB HDD), different 386 machines like a set of PC ORG SYSTEM XT, PC ORBIT XT, PCL PC AT 386, WIPRO GENIUS 386, ESPL SUPERCHIP XT, ESPL SUPERCHIP AT, PCL-HALLMARK-II and various types of monitor like GeBBS COLOUR MONITOR, DOSL/50 MONO MONITOR, HCL GR-86 VDU, WEBEL MONITOR, one color TV, TVSE, L&T and INKJET printers, 1KV UPS and Tool kits like ISA Post Card (Hardware Diagnostic Card), Advanced Hardware Debugger Card, PC Trainer Cum Demonstrators etc.

Network Lab

This lab is equipped with PCs which are connected to LAN T (LAN Trainer kits) consisting LANT – NIU, LAN-T PS and LANT Software. It also has ISECURIT - a Network and Data Security Training System and and QUALNET 5.0 . M.Tech and B.Tech lab assignments on Computer Communication, Networking, Simulation and Network Security are carried out in this lab.

Infinity Global Line Servers are connected to highend Intel i5 PC's and iMAC desktops. The lab also has Laserjet printers, Line matrix printer, Scanner etc. All the machines are on the institute LAN and thus have Internet access. The students are encouraged to do network related projects in this lab.

4.4.4 PROJECTS COMPLETED BY THE UG/PG/Ph.D STUDENTS

M.TECH in CSE

	Title of Project	Name of guide
1.	Mitigating SSDF Attack using Distance-based Outlier Algorithm in Cognitive Radio Networks	Dr. N. Marchang
2.	Exploring gene expression- A Bayesian Perspective(Part I)	Mr. A. K. Patra
3.	Text Mining using Genetic Algorithm	Mr. M. Marjit Singh
4.	"Key Predistribution Scheme for WSN using Sensor Deployment Knowledge".	Mr. Monjul Saikia

M.TECH in IT

	Title of Project	Name of guide
1.	Mitigating SSDF Attack using Deviation-based Outlier Detection in Cognitive Radio Networks	Dr. N. Marchang
2.	Study of Primary User Channel Utilization for Cognitive Radio Networks	Mr. Amar Taggu
3.	Towards improved Spectrum Sensing in Cognitive Radio Networks(Part I)	Mr. A. K. Patra
4.	Comparative Study of Life Maximization Techniques in Wireless Sensory Networks	Mr. M. Marjit Singh
5.	"Secure Routing Algorithm for Wireless Sensor Network".	Mr. Monjul Saikia

DEGREE

	Title	Faculty
1.	Attack-Resistant Collaborative Spectrum Sensing in CRN using Hybrid Distance-Based Outlier Method	Dr. N. Marchang
2.	Game Theory based Mitigation of Jamming Attack in Cognitive Radio Networks	Mr. Amar Taggu
3.	A decision support system towards improved medical diagnosis.	Mr. A. K. Patra
4.	"Implementation of Identity-Based Cryptography for WSN"	Mr. Monjul Saikia

4.4.5. SHORT TERM COURSES/ SEMINARS/WORKSHOPS CONFERENCES ORGANIZED AT NERIST**Mr. A. K. Patra**

1. One week Short term Course on “*Automatic Control Systems Engineering and Design*” at IIST, Trivandrum during 27th to 30th December, 2016.
2. 3 days workshop on “*Computational Information Processing*” conducted by ISI Kolkata at SMIT, Sikkim during 23rd to 25th March, 2017.

3. “*Reinvent yourself at Workplace*” delivered at MDP on “Getting Ready for the Corporate World” jointly organized by Dept of EE and CMS, NERIST during 18-19th February, 2017.

Mr. Monjul Saikia, Assistant Professor

1. *International Conference on Computing, Communication and Automation (ICCCA 2016)*, 29th-30th April, 2016, Greater Noida, India
2. International Conference on Computing, Communication and Automation (ICCCA2017) 5-6 May 2017 Galgotias University Noida, India.

Mr. Amar Taggu, Assistant Professor

1. 2-weeks Short Course on Cognitive Radio and Wireless Communications- Theory Practice and Security, IIT Kanpur, 1st September to 10th September 2016.

Mr. Ajit Kr. Singh Yadav, Assistant Professor (CSE Dept.)

1. Short term training program on “Research Methodology” Organized by Delhi School of Management, DTU New Delhi during 14th Dec– 18th Dec 2016.
2. FDP on “Cryptography and Algebraic Coding Theory” organized by Inderprastha Engineering College Ghaziabad during 14th Mar to 18th Mar 2017.
3. Workshop on “The Role of Local Chapter of NPTEL” conducted by IIT Kanpur, organized at NERIST, Nirjuli, Arunachal Pradesh on 29th April 2017.

Mr. Pradeep Kamboj, Assistant Professor (CSE Dept.)

1. Short term training program on “Research Methodology” Organized by Delhi School of Management, DTU New Delhi during 14th Dec– 18th Dec 2016.
2. Short term training program on “Pedagogy Training for Outcome Based Education” conducted by NITTTR, Bhopal, organized at NERIST, Nirjuli Arunachal Pradesh during 16th Mar to 17th Mar 2017.
3. Workshop on “The Role of Local Chapter of NPTEL” conducted by IIT Kanpur, organized at NERIST, Nirjuli, Arunachal Pradesh on 29th April 2017.

4.4.6 NEW DEGREES/PROFESSIONAL MEMBERSHIPS OBTAINED BY THE FACULTY: NIL

4.4.7 ACHIEVEMENTS/AWARDS/RECOGNITION EARNED BY THE FACULTY: NIL

4.4.8 PROJECTS SANCTIONED BY OUTSIDE AGENCIES TO THE FACULTY OF THE DEPARTMENT:

Mobile Broadband Service Support over Cognitive Radio Networks", as a New Partner Institution (PIN) (ITRA/15(63)/Mobile/MBSSCRN/o2/2015,

P.I. : Dr. Ningrinla Marchang, Co-PI: Mr. Amar Taggu

Funding Agency :- ITRA (MediaLabAsia) DeiTy, Govt. of India

Date: 23rd July, 2015 ongoing

Amount : Rs. 35.94 lakhs

4.4.9 PUBLICATIONS :

A. Referred Journal

Dr. Ningrinla Marchang

1. Ningrinla Marchang, Raja Datta and Sajal K. Das, "A Novel Approach for Efficient Usage of Intrusion Detection System in Mobile Ad Hoc Networks", IEEE Transactions on Vehicular Technology, Year: 2017, Volume: 66, Issue: 2, Pages: 1684 - 1695, DOI: [10.1109/TVT.2016.2557808](https://doi.org/10.1109/TVT.2016.2557808)
2. Kennong Rina, Shikhamoni Nath, Ningrinla Marchang and Amar Taggu, "Can Clustering be Used to Detect Intrusion During Spectrum Sensing in Cognitive Radio Networks? ", (In Print) Accepted in June, 2016 for publication in IEEE Systems journal. DOI: [10.1109/JSYST.2016.2584098](https://doi.org/10.1109/JSYST.2016.2584098).
3. Roshni Rajkumari and Ningrinla Marchang, Modelling and Mitigating Spectrum Sensing Non-cooperation Attack in Cognitive Radio Network, Accepted in May, 2016 for publication in Int. J. of Ad Hoc and Ubiquitous Computing (Inderscience).
4. " Bhattacharjee S. and Marchang N.", "Malicious User Detection with Local Outlier Factor during Spectrum Sensing in Cognitive Radio Network ", (In Print) Accepted (in April, 2017) for publication in Int. J. of Ad Hoc and Ubiquitous Computing (Inderscience).

Mr. Amar Taggu

1. "Rina K, Nath S., Marchang N. and Taggu A.," "Can Clustering be Used to Detect Intrusion During Spectrum Sensing in Cognitive Radio Networks?", (In Print) Accepted in June 2016 for publication in IEEE Systems journal. DOI: 10.1109/JSYST.2016.2584098.

B. Conference papers:

Dr. Ningrinla Marchang

1. Dikita Salam, A.Taggu and Ningrinla Marchang, "An Effective Emitter-Source Localisation-based PUEA Detection Mechanism in Cognitive Radio Networks", In Proc. ICACCI, 21-24 September, 2016, Jaipur

Mr. A. K. Patra

1. S.Choudhury, A.K.Patra, A.K.Parida, S.Chattarjee, "Interval Type-II Fuzzy Multiple Group Decision Making Based Ranking for Customer Purchase Frequency Determinants in Online Brand Community", 6th international conference on "Soft Computing for Problem Solving(SocProc2016)" at Thapar University, Patiala, during 23-24th December, 2016
2. S.Choudhury, A.K.Patra, A.K.Parida, S.Chattarjee, "Renewable energy capacity estimation for Indian energy sector using energy demand forecasting through fuzzy time series", International Conference on Emerging Trends and Advances in Electrical Engineering and Renewable Energy(ETAEEERE2106), at SMIT, Sikkim during 17-18th December, 2016.

Mr. Monjul Saikia

1. M. Saikia and M. A. Hussain, "Improving the performance of key pre-distribution scheme in sensor network using clustering of combinatorics," *2016 International Conference on Computing, Communication and Automation (ICCCA)*, Greater Noida, India, 2016, pp. 682-686. doi: 10.1109/CCTA.2016.7813809
2. Monjul Saikia, Uddipta Kashyap Das and Md. Anwar Hussain, "Secure Energy Aware Multi-path Routing With Key Management in Wireless Sensor Network" published in 4th International Conference on Signal Processing and Integrated Networks (SPIN 2017). 2-3 February 2017. Amity University Noida, India.
3. Monjul Saikia, Supriya Bhuyan and Md. Anwar Hussain, "Improving Closest Pair Key Distribution Scheme using Neighbour Node Connectivity Prediction" published in 4th International Conference on Signal Processing and Integrated Networks (SPIN 2017). 2-3 February 2017. Amity University Noida, India.
4. Monjul Saikia and Md Anwar Hussain. "Combinatorial Group Based Approach for Key Predistribution Scheme in Wireless Sensor Network" International Conference on Computing, Communication and Automation (ICCCA2017) 5-6 May 2017 Galgotias University Noida, India, page 502-506.

Mr. Amar Taggu

1. Salam D., Taggu A., Marchang N., "An Effective Emitter-Source Localisation-based PUEA Detection Mechanism in Cognitive Radio Networks", 2016 Intl. Conference on Advances in Computing, Communications and Informatics (ICACCI), Sept. 21-24, 2016, Jaipur, India

Books: NIL**4.4.10 ACHIEVEMENT OF STUDENTS:****PLACEMENT**

Name	Organization
Sandeepan Sharma Roy	WIPRO and SAP LAB
Priyanka Das	WIPRO
Pamella Shylla	BHEA Bangalore

4.5 DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

4.5.1 A Brief Profile of the Department

The Department of ECE was established in the year 1985. The first batch of intake was taken in the year 1986. The Department of Electronics and Communication Engineering runs courses for three modules, namely Base, Diploma and Degree, giving B.Tech degree to the students who pass out degree module successfully and M.Tech for the postgraduate students. The courses are designed by taking into consideration of present trends in technology, basic knowledge to pursue technological steps in the fields of Electronics and Communication Engineering and to meet the demand of man power in the technology development and support to the country. The Department has been running PG programme (M. Tech in VLSI) since 2012. From this academic year the Department has started M.Tech in ECE with two specializations. The Department of Electronics and Communication Engineering also runs PhD (part time and full time) in the fields of Electronics and Communication Engineering, VLSI and Information Technology. There are 14 regular faculty members in the department of which two are on QIP leave and pursuing Ph. D. at IIT, Kharagpur and IIT, Guwahati and one is on Lien.

4.5.2 Academic Activities

The Department conducts academic activities based on the modular pattern of NERIST-certificate in Maintenance Engineering, Diploma and Degree in Electronics and Communication Engineering. The students of M.Tech and Ph.D students are encouraged to attend and present their published papers across the country. Its NERIST Electronics Society (NES) is a pioneer

body for professional activities of students. The Department has organized workshops, seminars with technical collaboration by the faculty members /experts of other universities.

4.5.3 Laboratories and Laboratory development

The Department has 14 numbers of laboratories to conduct practical classes for various courses. The Department has modernized DSP laboratory with funds from MHRD. The Department is also further developing the existing VLSI and Computer Networking laboratories. The Department has taken up steps to develop labs for M.Tech (VLSI) courses for which Xilinx ISE series along with VHDL based kits, TI 6713 series DSP kits, etc. have been procured along with ORCAD and Microwind Design Software and Cadence. Procurement of online UPS and batteries has been made for DSP and computer lab for uninterrupted power supply.

4.5.4 Projects completed by the UG/PG/PhD students:

a. Post Graduate (M.Tech) Projects:

SI	Name of the students	Name of Supervisor	Project Title
1	SHARALI JUN GOGOI	Dr. Pranab Kishore Dutta	<i>Study and Performance Analysis of Memory Cell Using D-FF in Hybrid SET-MOS Architecture</i>
2	SARITA SINGH	Dr. J. Bora	<i>“Design and Analysis of a FinFET Based Four-Bit Ripple Carry Adder Using MCML-FB Logic</i>
3	DEBIKA DAS	Mr. Tripurari Sharan	<i>Subthreshold, Bulk Driven Complementary Folded Cascode Otaand Its Implementation in Gm-C Filter Design</i>
4	SHUBHRATA SHARMA	Dr. Md. Anwar Hussain	<i>Multicast Routing for 3D Network on Chip (NoC)</i>
5	SHYAMOSREE GOSWAMI	Mr. Akho John Richa	<i>FinFET Based Dram Sense Amplifier and Its Performance</i>
6	TSERING EDROI DIRKHIPA	Mr. Anil Kumar Gautam	<i>Low Power Hybrid Domino Logic Based 4-BIT ALU</i>
7	SANGHAMITRA DEBNATH	Dr. Swanirbhar Majumder	<i>FPGA Implementation of LSB-Based Steganography</i>
8	KAUSHIK DAS	Mr. R. K. Mangang	<i>FIR Filter Design Using Approximate Computing and Distributed Arithmetic</i>
9	TRISHNA BARMAN	Mr. Tripurari Sharan	<i>Design of Subthreshold, Bulk-Driven OTA Based CCII± and Its Implementation in Current Mode Filter Design</i>
10	CHELSEA LEIPHRAKPAM	Mr. M. Edison Singh	<i>All Optical and Gate Using Defect in Photonic Crystals</i>
11	BININDITA SUTRADHAR	Dr. A. Dinamani Singh	<i>Design and Analysis of MUX Based Encoder Using Partially Adiabatic Logic</i>

b. Under Graduate (B.Tech) Projects:

SI	Name of the students	Name of Supervisor	Project Title
1	VINAY KUMAR PANDEY HIMANGSHU BARMAN MUKESH KUMAR GIRI TANA BAPU	Mr. Akho John Richa	GSM Based Home Automation System
2	MUSKAN KUMARI PRAGYA JAFFER KHAN	Mr. Tripurari Sharan	Realization and Verification of Biquadratic Filter Using OTA

	NEVIL KSHETRIMAYUM		
3	SUBHOM CHOUDHURY ASHEM CHINGKHEI MEITEI ABINASH THAPA PAOLENMANG HMAR	Dr. Pranab Kishore Dutta	“Study and Performance Analysis of Hybrid SET-MOS Circuits at Room Temperature”
4	SHUVAM CHHETRY ABHISHEK KUMAR	Dr. Swanirbhar Majumder	Classification of Normal/Abnormal Heart Sound Recordings
5	MAIDANON LANGTHASA RUPESH KUMAR KANTH	Dr. Swanirbhar Majumder	Real Time Speech Processing of North Eastern Languages of India
6	ARATI KUMARI SHAH SANJIB KUMAR ROY ROSHNI PORTHAL NIKITA PAUL	Mr. Anil Kumar Gautam	High Security Transportation
7	KARAM BHARAT SINGH SUSMITA RAI BOITULLA HOQUE PYNSKHEMBORLANG KHONGPHAN	Mr. R. K. Mangang	Design of Carry Adder Based on Approximate Computing
8	RAJARSHI SEN BIPLAB NATH ABHISHEK KR. GUPTA ANKITA CHOUDHURY	Prof. Md. Anwar Hussain	3d Sensor Networking and It's Application in Cognitive Radio Network
9	PRAKHAR KUMAR ANGKUSH KR. SHARMA MANISH KUMAR SAH AMIT KUMAR SAH	Mr. Moirangthem Edison Singh	E-Braille Reader: A Portable, Economical and Smart Ebook Reader for the Visually Impaired.
10	BHABATOSH BAS AMIR HUSSAIN N. UMAKANTA SINGH SH. ROMESH SINGH	Dr. A. Dinamani Singh	Design of Earthquake Alarm System
11	WAHIDA MALIK LASKAR NABOJWAL ACHARJEE TECHI NIKAM	Dr. Joyatri Bora	An Analysis of Correlation and Co-Channel Interference in Cellular Network

4.5.5 Courses/Seminars/Workshops/Conferences Organized at the Department

Department of Electronics and Communication Engineering has organised two student development (SDP) as well as industry interaction program (IIP) with sponsorship from TEQIP-II as listed below:

1. “System Modeling and FPGA prototyping” from 19th to 24th of September 2016.
 2. “Sensor Design and Wireless Communication” from 26th of September to 1st of October, 2016.
- The approximate numbers of participants were 100+ from various departments in the mentioned workshops and the experts were from Industries.

Dr. S. Majumder along with Prof. R. Barthakur of Dept of Humanities and Social Sciences and Prof S. Chatterjee of Electrical Engg Department has organized and industry interaction program with CDAC for Natural Language Processing under TEQIP II. The programme has resulted to a joint project submission of the institute with CDAC, NIT Silchar, and NEHU, Shillong.

a. Short term courses/Seminars/Workshops/Conferences attended by the faculty

- Dr. Rajesh Kumar:
 - Attended a workshop on Antenna: Design, Fabrication and Testing from 5th Dec 2016 to 09th Dec 2016 at Department of Electronics Engineering, JSS Academy of Technical Education, Noida., UP, India
 - Participated in the “IUCEE International Engineering Educator Pre-Certification workshop” conducted by Dr. Neeraj Buch (Associate Dean, Michigan State University) at ABES Engineering College, Ghaziabad, UP from 18-20 July 2016.
 - Participated in two days’ seminar on “Intellectual Property Rights: Role & Importance in ICT & Electronics” sponsored by Department of Electronics & IT, Ministry of communication & IT, Gov. of India. Conducted at ABES Engineering College, Ghaziabad, UP from 22-23 July 2016.
 - Participated in AICTE recognized Short Term Course on “Strategic Management & SWOT Analysis for Institutional Excellence” through ICT, NITTTR, Chandigarh from 29th August to 2nd September 2016 (one Week).
 - Participated in ACM Chapter International Workshop on “Amateur Radio Communication & Computing in Educational Environments” held on 14-15 September 2016 at ABES Engineering College, Ghaziabad, UP.
 - Attended a National Seminal on “Role of Cloud Computing in Contemporary Business” held on 1st October 2016 at ABES Engineering College, Ghaziabad, UP.
 - Participated in Five Days Workshop on “Antenna: Design, Fabrication and Testing (ADFT) 2016” held at JSS Academy of Technical Education, Noida from 5th December to 9th December 2016.
 - Participated in a Short Term Course on “Pedagogy Training for Outcome Based Education” conducted by NITTTR, Bhopal, held on 16-17 March 2017 at NERIST, Nirjuli, Itanagar, Arunachal Pradesh.
- Mr. P. K. Dutta:
 - Attended a one day workshop on emerging areas of electronics and communication engineering in Department of ETCE Jadavpur University on 29/7/2016.
- Dr. Swanirbhar Majumder:
 - Attended Short term Training program on "Pedagogy Training for outcome based Education", by NITTTR Bhopal in NERIST under TEQIP-II on 16-17 th March 2017
 - Attended the 19th North East Workshop on "Computational Information Processing" by Electronics and Communication Sciences Unit (ECSU), ISI Kolkata and Dept of Electrical and Electronics Engg, SMIT, Sikkim on 23-25th March 2017.
- Mr. R. K. Mangang:
 - Attended short-Term Course on “Algorithms and Architectures for High Efficiency Video Coding” Organized by Centre for Educational Technology IITG from 5th – 9th September, 2016

4.5.6 New Degree/Professional membership obtained by the faculty: NIL

4.5.7 Achievements/Awards/recognition by the faculty:

- Mr. Pranab Kishore Dutta has reviewed for Journals of Nanoelectronics and Optoelectronics.
- Dr. Swanirbhar Majumder has reviewed for Springer's Multimedia Tools and Applications(MTAP), IET's Biometrics and Image Processing, Elsevier's Journal of King Saud University-CIS (JKSU-CIS), Journal of Measurement and Computer Methods and Programs in Biomedicine(CMPB) and IEEE Transactions on Systems, Man, and Cybernetics: Systems
- Dr. Aheibam Dinamani Singh has reviewed for IET communications and Springer Telecommunication Systems.

4.5.8 Projects Sanctioned by outside agencies to the faculty of the department

Nil

4.5.9 Publications:

- a) "ABEP Upper and Lower Bound of BPSK System over OWDP Fading Channels", (AWMC), Advances in Wireless and Mobile Communications, ISSN 0973-6972, Volume 10, Number 2 (2017), pp. 307-313. (Suparna Goswami, Shanjit Heisnam Singh and **Aheibam Dinamani Singh**)
- b) "Performance of Digital Communication System Over OWDP Fading Channels", Optical and Wireless Technologies (OWT), 17th -18th March, 2017, MNIT Jaipur, India. (Suparna Goswami and **Aheibam Dinamani Singh**)
- c) "Performance of SC Receiver Over OWDP Fading Channels", International Conference on Communication Devices and Networking (ICCDN), 3rd - 4th June, 2017, SMIT, Sikkim, India. (Suparna Goswami and **Aheibam Dinamani Singh**)
- d) "Implementation of Universal Gates (NAND) Based on Nano-Magnetic Logic Using Multiferroics" Quantum Matter, Volume 5, Number 4, August 2016, pp. 505-509(5), American Scientific Publishers, DOI: <https://doi.org/10.1166/qm.2016.1338> (Anup Sarkar; **Pranab Kishore Dutta**; Ankush Ghosh; Sudhabindu Ray; Subir K. Sarkar)
- e) "Design And Implementation Of Intelligent Car Parking System " International Journal of Electronics, Electrical and Computational System , Volume 6, Issue 3, March 2017, pp. 143-146, ISSN 2348-117X. (Sujit Kumar Singh; Rusni Kima Mangang; **Pranab Kishore Dutta**)
- f) "Design and implementation of 4-bit ripple carry adder using SETMOS architecture", IEEE International Conference on Recent Trends in. Electronics, Information & Communication Technology: RTEICT-2016, Bangalore, India, May 20-21, 2016, DOI: 10.1109/RTEICT.2016.7807782 (Dayananda Rajkumar ; **Pranab Kishore Dutta** ; Subir Kumar Sarkar)
- g) "Hybrid SVD based Image Watermarking- Studies on Multimedia Information Hiding and Watermarking with Biometrics", ISBN-13: 978-3-659-85454-5, ISBN-10: 3659854549, EAN: 9783659854545, LAMBERT PUBLISHERS, Germany, 2016. (**Swanirbhar Majumder**)
- h) "Multiresolution SVD Based Image Watermarking Scheme Using Noise Visibility Function", International Journal of Applied Evolutionary Computation (IJAEC) Volume 8, Issue 1, pg 38-48, ISSN: 1942-3594 DOI: 10.4018/ijaec.2017010103 IGI Global publishers. (**Swanirbhar Majumder**)
- i) "Biomedical Image Processing and Analysis" Chapter 6 of Intelligent Analysis of Multimedia Information with Editors Dr. Siddhartha Bhattacharyya, Mr. Hrishikesh

- Bhaumik, Dr. Sourav De and Dr. Goran Klepac, IGI Global Publishers, For release in the Advances in Multimedia and Interactive Technologies Book Series with Editor(s): Joel J.P.C. Rodrigues ISSN: 2327-929X , DOI: 10.4018/978-1-5225-0498-6.ch006 (**Swanirbhar Majumder** and S. Majumder)
- j) "Gene Expression Programming", pg 269 to 292 Chapter 10 of Book "Bio-Inspired Computing for Information Retrieval Applications" by D. P. Acharya and Anirban Mitra ISBN13: 9781522523758|ISBN10: 1522523758|EISBN13: 9781522523765|DOI: 10.4018/978-1-5225-2375-8; DOI: 10.4018/978-1-5225-2375-8.ch010 (Badrud Zaman Laskar, and **Swanirbhar Majumder**)
 - k) "A New Steganographic Method Using Contourlet Transform", pg 274-278, proceedings of 2016 International Conference on Signal Processing and Communication (ICSC 2016), held at Jaypee Institute of Information Technology (JIIT), Noida UP from 26th to 28th December 2016. ISBN: 978-1-5090-2684-5 CD: 978-1-5090-2683-8, IEEE Conference Record No.: 39610, IEEE Conference ID: 39610XP. DOI: 10.1109/ICSPCom.2016.7980590 (Manashee Kalita and **Swanirbhar Majumder**)
 - l) "A Spatial Domain Steganographic Approach Using Pixel Pair Differencing and LSB Substitution", proceedings of 4th International Conference on Signal Processing and Integrated Networks (SPIN 2017), organized by AMITY University Noida, from 2nd to 3rd February'2017, CFP17SPJ-ART 978-1-5090-2797-2, CD-ROM CFP17SPJ-CDR 978-1-5090-2796-5. (M. Kalita, **Swanirbhar Majumder**, and T. Tuithung)
 - m) "A Review on Hardware Implementation of Steganography", 2017 Devices for Integrated Circuit (DevIC), held at Kalyani Government Engineering College from March 23-24, 2017, organized by IEEE KGEC Student Branch Chapter in association with Department of ECE, KGEC, technically co-sponsored by IEEE EDS Kolkata Chapter. (Sanghamitra Debnath, Manashee Kalita, **Swanirbhar Majumder**)
 - n) Acoustic analysis of vowels in languages of Nagaland for Language Identification", proceedings of NSA-2016(International symposium on Acoustics for Engineering Applications) held on 17-19 November 2016, Organised by ASI & KIIT GURGAON (J. Basu, T. Basu, S. Khan, M. Pal, R. Roy, S. Nandi, T. K. Basu, S. Chatterjee, **Swanirbhar Majumder**, R. Barthakur)
 - o) "Adaptive Heart Rate Detection from Non-Invasive Fetal ECG", proceedings of National Conference on Recent Trends in Engineering and Technology (NCRTE-2017), organized by Tripura Institute of Technology, 17-18, March, 2017 (Anil Kumar Shaw, N. D. Singh, Jeswin Cherian, Sheelu Kumari, Pankaj Bhandari, **Swanirbhar Majumder**)
 - p) "Design analysis modelling and simulation of novel rectangular cantilever beam for MEMS sensor and energy harvesting Applications" has been accepted for publication in International Journal of Information Technology (springer). (**R. Kumar**).

4.5.10 Interaction of faculty/department with outside agencies

- Dr. R. Kumar conducted with ICT ACADEMY Training program on web design for the students of final year..
- Dr. S. Majumder was the TPC member of International Conference on Intelligent Control, Power and Instrumentation (ICICPI-2016) on 21st-23rd October, 2016 sponsored by TEQIP-II and organized by Department of Electrical Engineering and Applied Electronics and Instrumentation Engineering of RCC Institute of Information

Technology, Kolkata. The conference is technically co-sponsored by IEEE Kolkata section, IEEE Power and Energy Society (USA and Canada), IEEE CSS-IMS Kolkata Chapter.

- Dr. S. Majumder has been invited to be the TPC member of International Conference on Innovations in Electronics, Signal Processing and Communication (IESC-2017) held on 6-7th April 2017 at NIT Meghalaya, EEE Conference Record Number:40615
- Mr. P. K. Dutta and Dr. S. Majumder has been invited to be the TPC member of by the Department of Electronics and Communication Engg, Sikkim Manipal Institute of Technology, Sikkim for organising an IEEE conference on Communication, Devices and Networking (ICCDN-2017) during 3-4 June 2017.
- Mr. R. K. Manganag, Dr. A. D. Singh, Dr. P. K. Dutta and Dr. S. Majumder were in the Technical Committee member (TPC) of national conference entitled "National Conference on Innovations in Science and Technology 2017 (NCIST-17)". The conference will be held at the Takyelpat campus of Manipur Institute of Technology, Imphal during 20-21 March 2017.
- Dr. S. Majumder was a TPC member, First International Conference on Advanced Computational and Communication Paradigms (ICACCP) held at Sikkim Manipal Institute of Technology (SMIT), Sikkim during 08-10 September 2017. It is organized by The Dept. of CSE, SMIT, Sikkim, and technically collaborated with Computer Society of India (CSI), Kolkata Region.

4.5.11 Consultancy projects undertaken

Nil

4.5.12 Achievements of Students

Our passed-out students have been recruited by reputed companies. Moreover, few students have scored in GATE and pursuing higher studies in the reputed Institutes.

4.5.13 Any other information

- The Department has been accredited by AICTE for both its UG (B.Tech in Electronics and Communication Engineering) and PG (MTech in Electronics and Communication Engineering with specializations in VLSI and Communication Engineering) programme for the current session.
- Dr. Aheibam Dinamani Singh, has been promoted to Associate Professor of the Department in September'2016
- Dr. Rajesh Kumar, has recently joined the department as Associate Professor in September'2016

4.6 DEPARTMENT OF ELECTRICAL ENGINEERING

4.6.1 About the Department

The Department of Electrical Engineering has been playing a vital role in producing highly competent engineers and scientists ever since the institute was established. The first batch of students graduated in 1992. A two-year modular structure of the institute is being followed in undergraduate programmes and offer courses in Base module, Diploma module and Degree module. The students in each module are admitted through NERIST Entrance Examination namely, NEE-I, NEE-II and NEE-III respectively. The Department also offers postgraduate (M. Tech) programme with specialization in Power System Engineering and Ph. D programme in all fields of Electrical Engineering to cater to the ever increasing needs of highly skilled technical manpower in the country.

The Department has distinguished and well qualified faculty members having Ph. D/M. Tech degrees from renowned institutes in India. The infrastructure and laboratory facilities are upgraded from time to time and provide adequate opportunities to students and researchers to learn and innovate. Many faculty members are handling research projects sponsored both by the government and the industry.

The broad objectives of the undergraduate/postgraduate programmes in the Department are:

- Train the base module students in the art of troubleshooting, servicing and maintenance of electrical circuits and systems.
- Impart enough supervisory and guiding skills to the diploma module students.
- Provide sound knowledge to the degree module students so as to make them able to analyze, design and capable to lead with innovative ideas in the field of Electrical Engineering suitable for the current need of modern industries and public sectors.
- Train students at post graduate level for carrying out researches relevant to industrial needs.
- Research and development in Electrical Engineering.

4.6.2 Programs

The Department offers the following programmes:

- a) Undergraduate Programmes
 - Certificate courses
 - Diploma in Electrical Engineering
 - B. Tech in Electrical Engineering
- b) Post Graduate Programs
 - M. Tech in Power System Engineering
- c) PhD programmes
 - In all fields of Electrical Engineering

4.6.3 Facilities

There are 13 well equipped laboratories offering facilities to work in all areas of electrical engineering. They are provided with a number of high end PCs, servers and workstations hosting several software packages and linked through a local area network. Uninterrupted internet services are available for both students and faculty members. A departmental library houses books and journals for ready reference.

4.6.4 Research

The Department of Electrical Engineering works under three main research groups namely, (i) Electrical Power and Energy Systems, (ii) Control and Instrumentation, and (iii) Electrical Machine, Drives and Power Electronics. In addition to carrying out research in the above areas, the members of the groups are also involved in

- Review of undergraduate and postgraduate curricula.
- Organizing seminars/workshops/conferences.
- Supervising B. Tech/M. Tech/PhD Projects/Dissertations/Theses.
- Providing consultancy services.
- Facilitating Institute-Industry interaction.
- Publication in national and international journals/conferences.

4.6.5 List of faculty members of the Department with Qualification and area (s) of specialization

Sl. No.	Name	Designation	Areas of specialization
1.	Dr. S. Chatterjee Ph. D (Jadavpur University)	Professor	High Voltage, Power System
2.	Dr. S. K. Bhagat Ph. D (IIT (BHU), Varanasi)	Professor	Control Systems
3.	Dr. R. K. Mehta Ph. D (Jadavpur University)	Professor	Control Systems
4.	Dr. O. P. Roy Ph. D (ISM, Dhanbad)	Professor	Microprocessor based Control & Instrumentation, Power System Reliability
5.	Dr. Sarsing Gao Ph. D (IIT, Delhi)	Professor	Electrical Machines, Energy, Distributed Power Generations & Power Quality

6.	Dr. A. K. Singh Ph. D (Tezpur University)	Professor	Power System, Electrical Machines & Drives
7.	Mr. Radak Blange M. Tech (NERIST, Nirjuli)	Associate Professor	Control Systems, Energy, Electrical Machines & Drives
8.	Mr. T. V. P. Singh M. Tech (MNNIT, Allahabad)	Associate Professor	Control Systems, VLSI Design
9.	Mr. M. D. Singh M. Tech (Tezpur University)	Assistant Professor	Power Electronics, Digital Systems
10.	Mr. A. K. Parida M. Tech (MITS, Gwalior)	Assistant Professor	Industrial Drives, Power Electronics & Energy Audit
11.	Mr. Anu K. Das M. Tech (NIT, Silchar)	Assistant Professor	Power System Stability, FACTS & Renewable Energy
12.	Mr. N. L. Meitei M. Tech (Tezpur University)	Assistant Professor	Energy Management
13.	Ms. Somila Hashunao M. Tech (Jamia Milia Islamia, Delhi)	Assistant Professor	Electrical Power System Management
14.	Mr. Akhilesh Sharma M. Tech (MMMEC, Gorakhpur)	Assistant Professor	Power Electronics and Drives
15.	Ms. Piyali Das M. E (Jadavpur University)	Assistant Professor	Illumination Engineering, Control System
16.	Mr. P. Devachandra Singh M. Tech (NERIST, Nirjuli)	Assistant Professor	Power System Engineering

4.6.6 Activities

In addition to regular academic activities, consultancy and other forms of collaborative ventures with various organizations are being carried out. A number of sponsored research projects have been completed and others are ongoing as a part of the Department's continuing institute-industry interactive approach of education. Many workshops, seminars and symposia in various specialized fields have been organized with participations of persons from industry and academia from all over the country.

4.6.7 Laboratories and laboratory development

The theoretical knowledge imparted to the students is further supplemented by the practical classes. Some of the equipment and software available in the various laboratories are detailed as under:

Power System Lab

Power System lab is equipped with Distribution Line Simulator, PC controlled Power Analyzer, Oil test set, Different types of Electromagnetic and Static Relays, Dielectric Purification Plant, Analog Oscilloscope, Digital Storage Oscilloscope, 3-phase Variable Inductor, 1-phase and 3-phase Loading Rheostats, Digital Clamp or Power meters, LCR-Q meter, 3-phase Capacitor Bank, Capacitance and Tan Delta Test Set, Circuit Breaker Analyzer, Liquid Dielectric Purification Plant.

High Voltage Engineering Lab

This lab houses the latest 100 kV AC/145 kV DC Dielectric Test Set & 300 kV, 7.5 kJ, 1.2/50 microsecond Impulse Test Set, Measuring Sphere Gap MF-100, Electronic Sphere EZK, 2-Channel, 200MHz Digital Storage Oscilloscope with software for direct transfer of data from Oscilloscope to PC.

Electrical Machine Lab

Electrical machine lab has wide range of motors and generators including DC Compound Motor, DC Compound Generator, 3-phase Induction Motor, both Squirrel Cage and Slip Ring type, DC Shunt Motor, DC Series Motor, Universal Motor, AC Synchronous Generator, AC Synchronous Motor, Scan Drive System for DC and AC Drive Speed Control, Motor Fault Simulator, Logic Pulse Generator, Function Generator, Digital Storage Oscilloscope, 3-phase Fluke Power Analyzer, 1-phase Induction Motor and Thyristor Control Panel, DG set, Stepper Motor Training System, PWM based Induction Motor Drive, V/f Controlled AC Drive, d-Space Real Time Simulator software.

Power Electronics Lab

This lab is equipped with EMMA Microcomputer, Fast AD/DA converter, DDC Motor Module, Command Potentiometer, LCR Q-tester, SCR Firing Unit, Industrial Electronics Trainer with Oscilloscope, Digital Storage Oscilloscope (4-channel), HP Computer (Pentium-IV), Motion

Control Development Kit, MCK240 Development Package with Kit, Thyristor and Motor Control (Make: Feedback, UK), Power-scope, Oscilloscope (Make: Yokogawa), CASPOC Simulation Software, Bedford and Parallel Inverter Trainer kit, Micro Controller based Firing Circuit for Controlled Rectifier trainer kit, Speed Control of Universal Motor using SCR Trainer kit, 1-phase controlled Rectifier with cosine Firing Scheme Trainer kit, 1-phase Controlled Rectifier with Ramp comparator firing scheme Trainer kit, IGBT characteristics Trainer kit, 1-phase Cyclo-Converter Trainer kit, Speed Control of AC Motor using TRIAC Trainer kit.

Digital Electronics and Microprocessor Lab

This lab is equipped with Microprocessor Training Kits such as Dyna 8085 , STAR 85, VPL 8086/8088, Micro controller training Kit such as VMC-ICE31/51 and 80C196KC, Advance Handy Serial Programmer, Universal Programmer, Universal and Analog IC tester, Data Acquisition Software, Study Cards such as Memory Decoders, Usart, Programmer Timer, DMA,PPI with timer and Latch Cards, PC based Analog and Digital motor control teaching set, Robotics, Thermocouple, Load Cell, LVDT and DC motor speed control, 485 Protocol based Distributed Control System, Gain Measuring Instruments.

Electrical Maintenance Lab

This lab is mainly for the students of Base module who are expected to learn hands on training on repair and maintenance of electrical appliances. Number of appliances such as Domestic Refrigerator, Air conditioners, Geysers, Heat Convector, Table and Ceiling Fans, Vacuum Cleaner, UPS set, Water Cooler, Hot Plate, Immersion Heater, Different types of lamps with fittings, Oscilloscopes, Working Models for Electrical Circuits of Automobiles (in order) etc.

Electrical Workshop:

This lab is also dedicated to the students of Base module who are expected to learn hands on training on electrical wiring and related activities. This laboratory is equipped with Mini Lathe Machine, Winding Machine, Drilling Machine, Cubical for different types of Wiring Practice, Necessary tools, Tools Display Boards, 1-phase and 3-phase Energy meters, Charts etc.

Circuits and Measurement Lab:

This lab is equipped with Wave Analyser, Double Channel Recorder, Analog Oscilloscope, DC Power supply unit (0-300V), DC power supply (0-60V) and Storage adapter, Wheatstone Bridge, Kelvin Double Bridge, VTVM, Instrumentation Tutor, Digital Storage Oscilloscope (2-channel), HP Computer (Pentium-III), LCR-Q Meter, Meggar, etc. are some of the equipment available in this lab.

Control and Instrumentation Lab :

This lab has DC Position Servo Trainer Unit, AC Servo Motor Speed/Torque Control Unit, DC Motor Speed Control Unit, Magnetic Amplifier, Synchro Transmitter and Receiver, Experimental PID Controller Unit, Digital ON-OFF Temperature Controller Unit, Analog and

Digital Storage Oscilloscope (4-channel), Training and Development System for 8086, Data Acquisition of Control system, Direct Digital Control Training System, IBM Computer (Pentium-III), CA-06 Digital Motor, PC based Analog and Digital Motor Control, Distributed Control system DCS-5000, PC 45/ML programmable control teaching set, Digital Transducer and Instrumentation Trainer, Direct Digital Control System (CA-04), Rotary Servo 9 Plant (Servo 2).

PC Lab :The Department has a well-furnished PC lab for undergraduate students with more than 40 computers with internet connectivity. Softwares such as Matlab, Multisim, etc. are installed in all the computers.

Energy Lab

In this lab energy related experiments are performed both by undergraduate and postgraduate students. The lab is equipped with advanced experimental setups such as Photo Voltaic Test Rig, Photo Voltaic Electric Generator, anemometers, solarimeter, etc. Experiments are carried out to plot I-V characteristics of PV modules, determine efficiency of PV driven water pumping system, etc.

Research and Project Lab

This lab is dedicated to mainly postgraduate students and research scholars for modeling and simulation works along with hardware implementation. Twenty PCs with 4 GB RAM has been provided in the lab. Uninterrupted internet connectivity is made available. Students can browse and download journal/conference papers from institutionally subscribed site such as IEEEExplore, ScienceDirect, Elsevier, etc. The lab houses softwares like COMSOL, Matlab, PSCAD, PSSE, etc.

VLSI Lab

VLSI lab is equipped with Cadence PG Bundle and Mentor Graphics HDL Simulator.

4.6.8 Projects completed by UG/PG/PhD students

B. Tech Projects completed

Sl. No.	Project Title	Student (s)	Faculty member (s)
1.	Modeling, design and simulation of hybrid filter	DE/15/EE/13 DE/15/EE/14	Prof. S. Gao
2.	Performance analysis of PMSG	DE/15/EE/31 DE/14/EE/107	Prof. S. Gao

3.	Design of dry transformer using PSCAD	DE/15/EE/03 DE/15/EE/05 DE/14/EE/101	Prof. S. Chatterjee
4.	Study and simulation of HVAC HVDC network analyser	DE/15/EE/21 DE/15/EE/07 DE/15/EE/11	Prof. S. Chatterjee
5.	Modeling of Southern Indian Grid using PSSE	DE/15/EE/23 DE/15/EE/27	Prof. S. Chatterjee
6.	Study of North East Language using digital signal processing	DE/15/EE/06 DE/15/EE/16 DE/15/EE/18	Prof. S. Chatterjee
7.	Fabrication and harmonic analysis of three-phase converter system	DE/15/EE/04 DE/15/EE/08	Mr. A. K. Parida
8.	Design of an Arduino based intelligent controller	DE/14/EE/108 DE/14/EE/110	Mr. P. D. Singh
9.	Design and implementation of gate drive circuit of power MOSFETs for switching converter	DE/14/EE/109 DE/14/EE/111	Mr. M. D. Singh
10.	Development of a microprocessor based versatile low power dc motor drive	DE/15/EE/10 DE/15/EE/12	Mr. M. D. Singh
11.	Design of Arduino based Luxmeter	DE/15/EE/29 DE/14/EE/105	Mr. N. L. Meitei
12.	Design of automatic street light switch using Arduino microcontroller	DE/15/EE/15 DE/14/EE/51	Mr. N. L. Meitei
13.	Controller design for tape transport system	DE/15/EE/26	Prof. R. K. Mehta

		DE/15/EE/28	
14.	Feedback control of dc motor	DE/15/EE/20 DE/15/EE/22	Prof. R. K. Mehta
15.	Design of speed controller for an indirect vector controlled drive	DE/15/EE/25 DE/14/EE/103	Mr. A. Sharma
16.	Hardware implementation of inverter fed single-phase induction motor drive	DE/15/EE/02 DE/15/EE/24	Mr. A. Sharma
17.	Investigation of insulating oil for power equipment	DE/15/EE/09	Mr. A. K. Das

M. Tech Dissertations completed

Sl. No.	Title of Dissertation	Student (s)	Faculty member (s)
1.	Design of Controllers for Muti-Area Power Systems: A Comparative Study	MT/15/PSE/09	Prof. S. K. Bhagat
2.	State Feedback Optimal Controller Design for the Multi-Area Load Frequency Control	MT/15/PSE/18	Prof. R. K. Mehta
3.	Automatic Voltage Regulator Design for the Synchronous Generator Connected to Power System	MT/15/PSE/07	Prof. R. K. Mehta
4.	Biogeography based Optimisation in Power System	MT/15/PSE/12	Prof. S. Chatterjee
5.	Evaluation of Dielectric Performance of Nanofluid for High Voltage Equipment	MT/15/PSE/11	Prof. S. Chatterjee & Mr. A. K. Das
6.	Modeling Dispersion of Partial Discharges in Power Cables	MT/15/PSE/17	Prof. S. Chatterjee
7.	Study of Short Circuit Calculation for Oblong	MT/15/PSE/01	Prof. S. Chatterjee

	Core Transformer		
8.	Study and Analysis of STATCOM of a Transmission Line	MT/15/PSE/10	Prof. A. K. Singh
9.	Analysis of Various Losses and Remedial Measures of a Transmission Line	MT/15/PSE/16	Prof. A. K. Singh
10.	Reactive Power Monitoring by using Microprocessors	MT/15/PSE/13	Prof. O. P. Roy
11.	Interconnected Systems Reliability Evaluation	MT/15/PSE/08	Prof. O. P. Roy
12.	Feasibility Study of Renewable Energy based Micro-Grid	MT/15/PSE/14	Prof. S. Gao
13.	Performance Analysis of Electrical Machines using FE Method	MT/15/PSE/04	Prof. S. Gao
14.	Performance of Load Frequency Controller for Multi-Area Power Systems via Model Order Reduction	MT/15/PSE/15	Prof. S. K. Bhagat
15.	Power System Harmonics Mitigation using Active Power Filters	MT/15/PSE/02	Mr. M. D. Singh
16.	Study and Design of Sliding Mode Controller for LFC	MT/15/PSE/05	Ms. P. Das

PhD Theses completed/submitted

Sl. No.	Name of student (s)	Title of Thesis	Supervisor (s)	Status
1.	Mr. Rajen Pudur	Harnessing hydroelectric power using Savonius rotor	Prof. S. Gao	Awarded

4.6.9 Short term courses/seminars/workshops/conferences organised at NERIST

- Mr. A. K. Das coordinated Two-week Online ISTE workshop on “Electric Power System” organized by IIT Kharagpur at NERIST Remote Centre under NMEICT project, MHRD, Govt. of India during June 12-July 15, 2017.

4.6.10 Short term courses/seminars/workshops/conference attended by faculty members

Name of the Faculty: Dr. O. P. Roy, Professor

Month and Year	Title of the Workshop/FDP/STTP	Venue
Dec. 19-23, 2016	“Control Systems - Analysis and Design using MATLAB” organized by NITTTR Kolkata at NITTTR Kolkata Extension Centre, Girls’ Polytechnic, Bamuni Maidan, Guwahati, Assam	Guwahati

Name of the Faculty: Dr. A. K. Singh, Professor

Month and Year	Title of the Workshop/FDP/STTP	Venue
Dec. 19-23, 2016	“Control Systems - Analysis and Design using MATLAB” organized by NITTTR Kolkata at NITTTR Kolkata Extension Centre, Girls’ Polytechnic, Bamuni Maidan, Guwahati, Assam	Guwahati

Name of the Faculty: Mr. M. D. Singh, Assistant Professor

Month and Year	Title of the Workshop/FDP/STTP	Venue
24.08.2016	"Digital India" sponsored by Ministry of Electronics & Information Technology, Govt. of India and organised by NSS Cell, NERIST	NERIST
Sep. 19-24, 2016	"System Modelling and FPGA Prototyping" sponsored by TEQIP-II & organised by Dept. of Electronics & Communication Engineering, NERIST	NERIST

Name of the Faculty: Mr. P. D. Singh, Assistant Professor

Month and Year	Title of the Workshop/FDP/STTP	Venue
Sep. 19-24, 2016	"System Modelling and FPGA Prototyping"	NERIST

	sponsored by TEQIP-II & organised by Dept. of Electronics & Communication Engineering, NERIST	
Oct. 28-29, 2016	“Recent trends in renewable energy technologies for sustainable future with special reference to NE India”	NIT Mizoram
Mar. 16-17, 2017	“Pedagogy Training for Outcome Based Education”	NERIST

Name of the Faculty: Mr. N. L. Meitei, Assistant Professor

Month and Year	Title of the Workshop/FDP/STTP	Venue
Sep. 19-24, 2016	"System Modelling and FPGA Prototyping" sponsored by TEQIP-II & organised by Dept. of Electronics & Communication Engineering, NERIST	NERIST
Mar. 16-17, 2017	“Pedagogy Training for Outcome Based Education”	NERIST

4.6.11 New Degrees/Professional Memberships obtained by Faculty members

- Prof. S. Chatterjee, is elevated to Fellow, IE (I).
- Mr. P. Devachandra Singh is Member of International Association of Engineers (Membership no.170360)

4.6.12 Achievements/awards/recognition earned by faculty member

- Prof. S. Chatterjee is a Chartered Engineer, IE (I).

4.6.13 Projects sanctioned by outside agencies to the faculty of the department

- FIST (Fund for Improvement of S&T) project to strengthen the PG Teaching and Research in Electrical Engineering Department – Funded by DST, Ministry of S&T, GOI. Amount: 75.6 lakh. PI: Prof. Saibal Chatterjee

4.6.14 Publications

(a) Refereed Journal

1. Kaveri Bhuyan, and Saibal Chatterjee, "Simulation of overvoltage stresses on surge arrester insulation", *International Transactions on Electrical Energy Systems*, vol. 26, Issue 6, 1 June 2016, pp. 1210-1225, DOI: 10.1002/etep.2130.
2. Adikanda Parida, Shibabrata Choudhury, Saibal Chatterjee, Debashis Chatterjee, "A rule based electrical energy distribution model for energy efficiency in technical institutions: A case study", *Energy and Buildings (Elsevier)*, vol. 126, 15 August 2016, pp. 508-516, DOI: DOI: 10.1016/j.enbuild.2016.05.069.
3. Shantanu Chatterjee, Prashant Kumar, Saibal Chatterjee, "A techno-commercial review on grid connected photovoltaic system", *Renewable and Sustainable Energy Reviews (Elsevier)*, in Press June 2017, DOI: 10.1016/j.rser.2017.06.045.
4. Anu Kumar Das, Saibal Chatterjee, Finite element method-based modelling of flow rate and temperature distribution in an oil-filled disc-type winding transformer using COMSOL multiphysics", *IET Electric Power Applications*, 2017, vol. 11, Issue: 4, pp. 664 - 673, DOI: 10.1049/iet-epa.2016.0446
5. Adikanda Parida, Shibabrata Choudhury, Saibal Chatterjee, Debashis Chatterjee, "A cost effective trade-off based renewable power augmented energy efficient load model for manufacturing industries for demand side management", *Cogent Engineering (Taylor and Francis)*, DOI: 10.1080/23311916.2016.1239299, 22nd Sept, 2016.
6. Shibabrata Choudhury, A. K. Patra, A. K. Parida, S. Chatterjee, "Interval type –II fuzzy multiple group decision making based ranking for customer purchase frequency determinants in online brand community", *Advances in Intelligent Systems and Computing*, vol. 546, pp. 276-285, 2017. DOI: 10.1007/978-981-10-3322-3_26.
7. Prashant Kumar, Shantanu Chatterjee, Devnath Shah, U. K. Saha, Saibal Chatterjee, "On comparison of tuning method of FOPID controller for controlling field controlled DC servo motor", *Cogent Engineering (Taylor and Francis)*, DOI: 10.1080/23311916.2017.1357875, in Press July 2017
8. M. Deben Singh, R. K. Mehta, A. K. Singh, "Integrated fuzzy-PI controlled current source converter based D-STATCOM", *Cogent Engineering, Taylor and Francis*, 2016. DOI 10.1080/23311916.2016.1138921
9. Renu Singh and A. K. Singh, "A review on text-independent speaker verification techniques in realistic world", *Oriental Journal of Computer Science & Technology*, Vol.9. No (1), pp 36-40. April'2016. DOI: <http://dx.doi.org/10.13005/ojst/901.07>

(b) Conference papers

1. Kamaljiyoti Gogoi, Tousehik Maiti, Saibal Chatterjee and Brajagopal Datta, "Modeling and Study of Eastern and North-Eastern Regional Grid of India", C2E2 – 2016, SKFGI, Mankundu, Hooghly, West Bengal 712139, India, Jan 15-16, 2016, *Proc. Taylor and Francis Publications*.
2. Devnath Shah, Shantanu Chatterjee and Saibal Chatterjee, "Tuning of fractional order PID controller - a review", C2E2 – 2016, SKFGI, Mankundu, Hooghly, West Bengal 712139, India, Jan 15-16, 2016, *Proc. Taylor and Francis Publications*.

3. Brajagopal Datta, Saibal Chatterjee and Kamaljyoti Gogoi, “Effects of Close Proximity and Hybrid Operation of HVAC & HVDC Transmission Lines under Steady-State and Fault Conditions: A Literature Survey”, C2E2 – 2016, SKFGI, Mankundu, Hooghly, West Bengal 712139, India, Jan 15-16, 2016, *Proceedings in Taylor and Francis Publications*.
4. A. Kumar and S. K. Bhagat, “A Comparative Study on Voltage Stability Analysis of Single Machine Infinite Bus System using Lyapunov Methods,” *IEEE Int. Conf. MICROCOM 2016*, NIT Durgapur, India, 2016.
5. Mudang Taro, Dayal Shill, Anu Kumar Das and Saibal Chatterjee, “Experimental Investigation of Transformer Oil Based Nanofluids for Applications in Distribution Transformers”, *3rd Intl. Conf. on Condition Assessment Techniques in Electrical Systems (CATCON 2017)*. (accepted)
6. O. P. Roy and Abhijeet Singh “Expert System Model for Diagnosis of Diseases and Remedial Advice”, *Proc. National Conference on Role of Electrical. Electronics and Computer Technologies in Making Digital India (REECTMDI – 2017)*, organised by Electrical. Electronics and Computer Departments, Kautilya Institute of Technology and Engineering, Jaipur in association with IE India, CXI and ISTE India February 18 – 19, 2017.
7. Rohit Kumar Sah and Om Prakash Roy “Review on Applications of ZigBee Technology for Smart Controlling and Decision Making”, *Proc. National Conference on Role of Electrical. Electronics and Computer Technologies in Making Digital India (REECTMDI – 2017)*, organised by Electrical. Electronics and Computer Departments, Kautilya Institute of Technology and Engineering, Jaipur in association with IE India, CXI and ISTE India February 18 – 19, 2017.
8. Divakar Tamang, Sourabh Prakash Roy and O. P. Roy, “A review on solar tracking system”, *Proc. National Conference on Role of Electrical. Electronics and Computer Technologies in Making Digital India (REECTMDI – 2017)*, organised by Electrical. Electronics and Computer Departments, Kautilya Institute of Technology and Engineering, Jaipur in association with IE India, CXI and ISTE India February 18 – 19, 2017.
9. H. K. Singh, R. S. Raw, A. K. Singh, et al, “Analysis of angle based opportunistic routing protocol for vehicular Ad-Hoc Networks”, *Proc. 2nd Intl. Conf. on Information and Communication Technology for Competitive Strategies (ICTCS-2016)*. DOI: <http://dx.doi.org/10.1145/2905055.2905181>.

(c) Books

Book Chapter:

Shibabrata Choudhury, Rajive Mohan Pant, Saibal Chatterjee, and Asha Nanding, “Destination Branding of Ziro Through Potentiality of Bio-tourism”, *Bioprospecting of Indigenous*

Bioresources of North-East India, DOI 10.1007/978-981-10-0620-3_21, # Springer Science + Business Media Singapore 2016.

11. Interaction of faculty /department with outside agencies

Prof. S. Gao	<ul style="list-style-type: none"> ▪ Reviewer, IEEE and IET Journals, IE (I) ▪ Member, National Advisory Committee, National Conf. on New Horizons in Technology for Sustainable Energy and Environment (NHTSEE 2017), Mar. 9-10, 2017, Faridabad, Haryana, India.
Prof. S. Chatterjee	<ul style="list-style-type: none"> ▪ Executive Member of IEEE DEIS Kolkata Chapter 2016 ▪ Technical Program Committee Member of IEEE CATCON 2017 (IIT Ropar) ▪ Reviewer, IET journals, Elsevier journals, Emerald journals
Mr. A. K. Das	<ul style="list-style-type: none"> ▪ Coordinator, Remote Centre, NMEICT, MHRD

4.6.15 Consultancy projects undertaken

The faculty members of the Department are actively considering improved institute-industry interaction as well as consultancy services with PGCIL, NEEPCO and nodal agencies of the Govt. of Arunachal Pradesh.

4.6.16 Achievements of students

- Mr. Punyo T. Byai, 2017 pass-out is placed as Engineer in PGCIL
- Mr. Tomnya Geyi, 2017 pass-out is placed as Engineer in PGCIL
- Mr. Khruzo Rakho, 2017 pass-out is placed as Engineer in PGCIL
- Mr. Ashwini Kumar, 2017 pass-out is placed as Junior Engineer in PGCIL
- Mr. Amlesh, 2016 pass-out is placed as Junior Engineer in PGCIL
- Mr. Yogendra Singh, 2015 pass-out is placed as Junior Engineer in POSOCO
- Mr. Ripon Kabak, Mr. Michi Tajo and Ms. Sushma Linggi have been appointed as Assistant Engineer by APPSC in 2017
- Mr. Darshan Prakash Borthakur, 2016 pass-out has qualified GATE 2017 with a score of 552
- Mr. Yumto Yudik Taba, 2017 pass-out has qualified GATE 2017
- Mr. Yike Lomri, 2017 pass-out has qualified GATE 2017
- Mr. Domni Gamkak, 2017 pass-out has qualified GATE 2017
- Mr. Punyo T. Bai, 2017 pass-out has qualified GATE 2017
- Mr. Rohit Singh, 2017 pass-out has qualified GATE 2017
- Mr. Guru Prasad Singh, 2017 pass-out has qualified GATE 2017

4.6.17 Any other relevant information

The faculty members of the Department are also rendering additional responsibilities in the institute.

- Prof. S. Chatterjee has jointly supervised PhD thesis of Mr. Shibabrata Choudhury, Centre for Management Studies, NERIST.

- Prof. R. K. Mehta is looking after Electrical Maintenance Cell, NERIST.
- Prof. S. Chatterjee had been the Coordinator TEQIP Cell, NERIST.
- Prof. S. K. Bhagat is Member, Library Advisory Committee, NERIST.
- Prof. A. K. Singh is Chairman, Central Time Table Committee, NERIST.
- Mr. M. D. Singh is working as Programme Officer, NSS CELL, NERIST.
- Mr. P. D. Singh is working as Programme Officer, NSS CELL, NERIST.
- Mr. A. Sharma is working as Warden, Boys Hostel Block E, NERIST.
- Ms. P. Das is working as Programme Officer, NSS CELL, NERIST.

4.7 DEPARTMENT OF MECHANICAL ENGINEERING

4.7.1 Brief profile of the Department

Department of Mechanical Engineering is run by a mix of experienced as well as young motivated well-qualified (from reputed institutes like IISc, IITs, NITs, JU, IT-BHU, BESU etc.) faculty members and experienced supporting staff to generate human resources to cater the fast growing industrial and academic need of the country at various levels for about 200 students (from eight North Eastern States and other parts of India). It offers courses to train the students in the art of servicing, maintenance and troubleshooting aspects in certificate level, to impart supervisory skills to the diploma module students and to provide analytical skills in various subjects related to Mechanical Engineering and interdisciplinary areas to the degree module and Post-Graduation students.

The Department offers certificate course in three trades, namely, Refrigeration & Air-Conditioning, Craftsmanship & Automobile Servicing, Diploma in Mechanical Engineering, B.Tech. in Mechanical Engineering, M.Tech in Mechanical Engineering with specialization in Computer Integrated Manufacturing & Automation (CIMA) and Thermo-Fluid Engineering (TFE) and Ph. D. in Mechanical Engineering. The course curriculum for the degree module is at par with the other premier institutions of the country. At present the department offers about 115 courses and 20 projects every year for all the modules combined. Elective courses from specialized, advanced and emerging fields are offered to both the UG & PG students depending on availability of faculty members.

The Department also provides short term tailor made training modules for the in-service professionals at various levels.

Fourteen laboratories and six workshops in the Department are equipped with advanced equipment and machines. A list along with the major equipment in respective laboratories is appended as Appendix-A. The Department possesses its own Audio-Visual lab (Seminar Hall), computational facility with internet access and a fairly rich departmental library. Faculty-Student, Faculty-Staff & Staff-Student relationships are warm and friendly. The Department organizes periodical industrial visit to the nearby industries/power generating stations as per the need of the curriculum to provide exposure to the industrial and practical environment to the

students. The departmental curriculum also includes compulsory vocational training for the students in certificate and degree modules.

A series of quality U.G. projects and P.G projects/thesis have been completed. Passed out students of the Department are placed in reputed organizations in India and abroad. In view of the worldwide economic recession, in the period under review the department achieved about 20% placement for the outgoing students. Some students have also qualified for higher studies in India. During this period, the Department of Mechanical Engineering had an all-round achievement in terms of several academic as well as developmental criteria and would like to look forward for higher laurels within the scope.

4.7.2 Vision and Mision of the department

Vision

To create a niche in the field of Mechanical Engineering through education and research to develop a sound human resource by nurturing the young talents especially from North Eastern States and also from other states of India, matching the global standards and demands.

Mission

To create an environment for providing balanced education in Mechanical Engineering through teaching, learning and practice rendering equal weightage in all.

To create a Centre of excellence in research that will provide the students necessary impetus for future development and life-long learning.

To create technical manpower in different levels for the North Eastern states in particular and for the country in general.

Academic activities

Apart from the B.Tech programme, the department runs two PG programmes (i) M.Tech in Computer Integrated Manufacturing and Automation (CIMA) and (ii) M. Tech. in Thermo-Fluid Engineering. Besides conventional teaching methodology, the Department provides facility of audio-visual sessions on selected areas conducted in the departmental seminar hall through e-learning CDs. Several proposals have been processed to streamline the course contents or credit distribution of a course. New and emerging elective courses are offered to the students.

Curriculum review process for all the modules have been completed and implemented. The curriculum has been approved by Academic Council and the new curricula have been implemented since 2010-2011 academic session. Vocational Training is included as a part of the curriculum for certificate and degree modules. Students of Certificate module are sent to the relevant reputed industries or repairing & maintenance shops, all over the India, for hands on training & experience on the principles they study. Job training is also a part of the curriculum

for certificate module students where the repairing and maintenance of equipment are carried out by the students under the supervision of faculty members and technical staffs. Degree module students have undergone training in various reputed public sector and private organizations as a part of their curriculum requirement for the award of their degrees.

During the period under review Base, Diploma and Degree module students were taken to nearby automobile repairing shops, cold storages and RAC plants and hydel plants for some hands on practice. All India Industrial tour has also been organized for the degree module students visiting industries to know the reality of the courses undergone during the degree programme.

Mechanical Association of NERIST (MAN), jointly officiated by faculty, staff and students of the Department, provides a platform to resolve academic issues solely related to the departments. MAN also organizes lecture series, mock interviews, technical competitions etc. for the students of NERIST in general and students of mechanical engineering department in particular. Students of the Department take active role in organizing and participating in various academic, cultural and sports activities at the Institute level such as RACAF, SHRISHTI etc. Students are also encouraged to participate in technical events organized by various other Institutions of India.

4.7.3 Department activities

1. **Prof. P. Lingfa**, coordinated Two days Institute-Industry Interaction Programme on “*Demonstration & Training on Biodiesel Production*”, held on 16th& 17th October, 2016, organised by Department of Mechanical Engineering, North Eastern Regional Institute of Science and Technology, Itanagar, Arunachal Pradesh-791109 (India), under TEQIP-II sponsored.
2. **Prof. S. Mahto** coordinated Two days STTP on “*Pedagogy Training for Outcome Based Education*” held on 16th& 17th March, 2017, jointly organised by Department of Mechanical Engineering, North Eastern Regional Institute of Science and Technology, Itanagar, Arunachal Pradesh-791109 (India) and NITTTR, Bhopal, under TEQIP-II sponsored
3. **Prof. S. Mahto** coordinated Five days Institute-Industry Interaction Programme on “*Industrial Computer Numerical Control (CNC) Systems*” held from 4th to 8th Nov., 2017, organised by Department of Mechanical Engineering, North Eastern Regional Institute of Science and Technology, Itanagar, Arunachal Pradesh-791109 (India), in collaboration with M/s MTAB Engineers Pvt. Ltd., Chennai under TEQIP-II sponsored.

✚ Short- term Courses/Workshops/Seminars attended

1. **Prof. M. Muralidhar** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
2. **Prof. P. Lingfa** attended One day Workshop on the '*Role of Local Chapter*', organised by Prof. Satyaki Roy NPTEL Coordinator, IIT Kanpur at NERIST.
3. **Prof. P. Lingfa** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
4. **Prof. M. Chandrasekaran** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
5. **Prof. S. Mahto** attended Short Term Course (STC) on “*Control System Engineering and Design*”, 27-30th Dec’2016, Department of Avionics, Indian Institute of Space Science & Technology(IIST), Thiruvananthapuram. Kerala.
6. **Prof. S. Mahto** attended TEQIP School on “*Mechanics of Reinforced Polymer Composites*”, 22-23th Jan’2017, Department of Aerospace Engineering, Indian Institute Technology (IIT) Kanpur, UP.
7. **Dr. S.Samanta** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
8. **Dr. S. Samanta** participated in STTP on “*Functional Textiles and Protections*” organized by NITTTR Kolkata during 19.09.16 to 23.09.16.
9. **Mr. K.K.Mandal** participated in One day workshop on “*Recent Trend in Composite Material*” organized by Mechanical Engineering Department., Jadavpur University, Kolkata, on 18.08.16.
10. **Mr. K.K.Mandal** participated in Two days workshop on “*Solidification and Phase Transformation*” organized by Centre of Excellence in Phase Transformation and Product Characterization (TEQIP II), Jadavpur University on 26.08.16 and 17.08.16.
11. **Mr. K.K.Mandal** participated in Two days workshop on “*Advances in Joining Processes*” organized by Centre of Excellence (TEQIP II), Jadavpur University on 22.09.16 and 23.09.16.
12. **Mr. K.K.Mandal** participated in Two days workshop on “*Advances in Joining Processes*” organized by Centre of Excellence (TEQIP II), Jadavpur University on 22.09.16 and 23.09.16.

13. **Mr. K.K.Mandal** participated in Two days workshop on “*Materials Characterization Techniques*” organized by Centre of Excellence in Phase Transformation and Product Characterization (TEQIP II), Jadavpur University on 04.10.16 and 05.10.16
14. **Mr. Nabam Teyi** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
15. **Mr. S. K. Tamang** participated in Two days STTP on “*Pedagogy Training for Outcome Based Education*”, sponsored by TEQIP-II jointly organized by NITTR Bhopal and Department of Electrical Engineering, NERIST during March 16.03.17 to 17.03.17.
16. **Mr. S. K. Tamang** participated in Two days Institute-Industry Interaction Programme on “*Demonstration & Training on Biodiesel Production*’, held on 16th & 17th October 2016.

4.7.4 Research projects in the department

- Institute of Excellence for Education, Research and Training in Mechanical Engineering (Investigator from NERIST)
(Principal Investigator : Prof. U. S. Dixit, Mechanical Engineering Department, IIT, Guwahati)
Sponsoring Agency : AICTE
Amount : Rupees Twentyfive Lakhs
STATUS : Completed
- *Establishment and Demonstration of 250 Litre Capacity Integrated Biodiesel Reactor System at NERIST.*
(Principal Investigator : Prof. P.Lingfa Mechanical Engineering Department, NERIST, Nirjuli)
Sponsored by DST,(GOI)
Amount: Rupees Fifty Lakhs
STATUS: Completed

4.7.5 Research activities in the department

The Department is actively involved in current scenario of research in the major fields of Mechanical Engineering. The faculty members along with their Research Scholars have also published their work in several reputed International Journals and conference proceedings as listed in the following section. At present 27 research scholars (Full time and Part time) are working in the department. The table below gives the details of Ph.D. Research Scholars.

S.No.	Name of the Scholar	Title of the thesis	Supervisor (s)
1.	Mr. S. K. Tamang	Intelligent based optimization for sustainable machining of Nickel	Prof.

		based super alloys	M. Chandrasekaran
2.	Mr. Santosh Kumar	Studies on ergonomic aspects of manufacturing assembly system in Indian industry	Prof. M. Muralidhar
3.	Mr. Dipanka Bhuyan	Natural and mixed convective condensation inside a parallel plate channel	Prof. Asis Giri
4.	Mr. Kankan Kishore	Natural and mixed convective studies through a surrounded vertical variable height fin array	Prof. Asis Giri
5.	Mr. Sujoy Kumar Dey	Synthesis and characterization of PEEK and HA based composite	Dr.S.Samanta
6.	Mr. Dharmeswar Dash	Synthesis and characterization of Mg based MMC	Dr.S.Samanta
7.	Mr. Shubhajit Das	Study on characterization and WEDM machinability aspect of AA6061 -SiC- B4C hybrid nanon composite	Prof. M. Chandrasekaran & Dr. S. Samanta
8.	Mr. Santosh Kumar Sahu	Fabrication, characterization and evaluation of design parameter variability of honeycomb core sandwich beams with hybrid polymer nano composite skin	Dr. S. Samanta & Dr. P. S. R. Srinkanth (Ext.)
9.	Mr. N. D. Badgayan	Characterization of h/BNNP/MWCNT reinforced HDPE hybrid polymer composite	Dr. S. Samanta & Dr. P. S. R. Srinkanth (Ext.)
10.	Mrs. Sweety Mahanta	Metal matrix nano-composites and study on characterization and machining investigation of hybrid metal matrix nano composites	Dr. S. Samanta & Prof. M. Chandrasekaran

11.	Mr. Bishub Choudhary	Experimental investigation of GTAW in Nickel based alloys and optimization of sustainable measures.	Prof. M. Chandrasekaran
12.	Mr. Santosh Das	Bio-fuel	Prof. P. Lingfa
13.	Mr. Nabam Papu Hina	Characterization of bio diesel potential of newly isolated fresh water micro algae strains from AP India	Prof. P. Lingfa
14.	Mr. Moiching Sajit Ahamed	Comprehensive synopsis not submitted yet	Prof. P. Lingfa
15.	Mr. Hemanta Doley	Comprehensive synopsis not submitted yet	Dr. Sandeep Singh
16.	Mr. Sohini Chowdhury	Comprehensive synopsis not submitted yet	
17.	Mr. Numan Siddique Mazumder	Comprehensive synopsis not submitted yet	Prof. Asis Giri
18.	Mr. Pranjal Borah	Comprehensive synopsis not submitted yet	Dr. Sandeep Singh & Dr. S. Samanta
19.	Mr. Pulakesh Chetia	Comprehensive synopsis not submitted yet	Dr. S. Samanta & Prof. S. Mahto
20.	Mr. Banarsi Pandey	Comprehensive synopsis not submitted yet	Prof. S. Mahto
21.	Mr. Diju Kumar Baro	Comprehensive synopsis not submitted yet	Prof. S. Mahto
22.	Mrs. Sangeeta Das	Glass and glass ceramic synthesis, optical, electrical and tribological properties of lead calcium titanate borosicate glass doped with Ge, Fe ₂ O ₃ and V ₂ O ₅	Dr. S.S. Gautam
23.	Mr. Sidhartha Das	Performance analysis of heat pipe	Prof. Asis Giri

		using nano fluid	
24.	Mr. Maibam Romio Singh	Electronic cooling with phase change material using fin	Prof. Asis Giri
25.	Mr. Vivek Singh	Welding investigation and optimization of weld strength, weld speed and power consumption.	Prof. M. Chandrasekaran & Dr. S. Samanta
26.	Mr. Khumbongmayum Churanjit	Synthesis and characterization of pineapple L fibre and sunnhemp fibre hybrid polymer matrix composite	Dr. S. Samanta
27.	Mr. Devarasiddappa D.	Machinability investigation on WEDM of titanium alloy and optimization of parameters for sustainable production	Prof. M. Chandrasekaran

4.7.6 UG, PG and Ph.D students' projects (completed by May, 2016)

As a part of their academic curriculum, the final year PG and UG students carried out their projects on emerging topics of mechanical engineering under the supervision of respective faculty members. The below given lists provide the details of projects undertaken by students.

LIST OF M.TECH (CIMA) PROJECTS, 2016

S.No	Name of the Student	Roll No	Title of the thesis	Supervisor(s)
01	Ms. Sohini Chowdhury	MT/14/CIMA/01	Laser based additive manufacturing: State of art, heat transfer analysis and capabilities	Prof. M.Chandrasekaran & Dr.N.Yadaiah
02	Mr. Pulakesh Chetia	MT/14/CIMA/02	Characterization of Hybrid Composite	Dr. S. Samanta
03	Mr. Hemanta Doley	MT/14/CIMA/03	Parametric optimization and modelling of machining Mg based metal matrix with nano sized reinforcements	Dr. S. Samanta & Mr. Santosh Tamang
04	Mr. Bishub	MT/14/CIMA/04	Study on GTAW characteristics nickel based	Prof. M.Chandrasekaran

	Choudhury		aerospace alloy	
05	Mr.Pranjal Borah	MT/14/CIMA/06	Enhancement of the properties of the composite material with the addition of fillers	Dr. S. Samanta
06	Ms.Gollo Rinu	MT/14/CIMA/07	FE based heat transfer analysis of deep penetration laser welding using analytically estimated volumetric heat source	Dr. N. Yadiah
07	Mr.S.K.Lal Muan	MT/14/CIMA/09	Experimental investigation and process modelling of machining Al matrix based nano composite	Prof. M. Chandrasekaran & Mr. S.K. Tamang
08	Mr.Pranjal Kalita	MT/14/CIMA/10	Experimental investigation & numerical modelling of hybrid laser welding process	Dr. N. Yadaiah

LIST OF M.TECH (TFE) PROJECTS, 2016

S.No	Name of the Student	Roll No	Title of the thesis	Supervisor(s)
01	Mr. Jitender S. Rawat	MT/14/TFE/01	Design and manufacturing of solar thermal storage system	Dr. M.P Thaddeus
02	Ms. Tana Pompe	MT/14/TFE/02	Comparative study and experimental investigation of mesua ferrea, jatropha and pongamia pinnata methyl esters as bio-diesel in CI engines.	Prof. P. Lingfa
03	Mr. Pranjal P. Newar	MT/14/TFE/03	Experimental investigation of heat and mass transfer in rectangular fin array.	Prof. Asis Giri
04	Mr. Sheikh M. Rashid	MT/14/TFE/04	Production of bio-lubricants from non-edible oil seeds	Prof. P. Lingfa
05	Mr. Moiching S. Ahamed	MT/14/TFE/06	Simulation and economic analysis of bio-diesel production from waste cooking oil	Prof. P. Lingfa
06	Mr. Krishna Roy	MT/14/TFE/07	Numerical and experimental investigation of mixed convective cooling of electronic	Prof. Asis Giri

			chips with vortex generator at entry region	
07	Mr. Ojing Siram	MT/14/CIMA/09	Numerical and experimental analysis on electronic chip	Prof. Asis Giri & Mr. Nabam Teyi

LIST OF B. TECH. PROJECTS, 2016

BTP Batch No.	Names of the students with roll numbers	Supervisor(s)	Project title
1	Md. Murtaza Alam Animesh Borah Kallol Debnath Duniwanhi Suchiang	Prof. M. Muralidhar	Mechanical characterization of sugarcane bagasse and fish scale based composite materials.
2	Rameez Raja Khan Amrita Sharma Chandan Kumar Jaiswal	Prof. P. Lingfa	Performance and emission characteristics of a single cylinder 4-stroke diesel engine running on karanja and waste cooking oil biodiesel blend with diesel
3	Kriti Lata Dilwar Hussain Laskar Shital Chandra Das Chiranjit Kumar Roy	Prof. P. Lingfa	Determination of fuel characteristics and performance and emission analysis of a C.I engine using biodiesel and its blends.
4	Sunny Donkumar Blah Medonlem Clyde Langstieh	Prof. A. Giri	Earth tube heat exchanger.
5	Indrajeet Paul Dipta Shankha Roy Choudhury	Prof. A. Giri	Theoretical analysis of diesel engine.
6	Mercy Chawang Gaijinliu Gangmei	Prof. M. Chandrasekaran & Mr. S. Tamang.	Investigation for obtaining improved cutting conditions in machining Al/SiCp metal matrix composites.
	Mughaka B Sema Mantu Rangson	Prof. M. Chandrasekaran &	Performance study of wire cut EDM on hybrid MMC.

7	Nitish Kumar Yadav	Mr. S. Tamang.	
8	Raagdeep Raj Roman Newar Sourav Paul	Dr. S. Samanta	Logistics and modelling of disaster relief supply chain of dhemaji district.
9	Mayan Bhowmik Ratnadeep Das Hiranya Dutta	Dr. S. Samanta & Mr. S. Tamang	Machining parameter optimization of MgSic
10	Aman Kumar Prashant Shrivastava Shailendra Pratap Sandeep KrRavi	Dr. S. Singh	Model based identification of transverse crack in an offset rotor and experimental validation.
11	Rajesh Soram Haobam Bimol Singh Sweyiekrul Kikhi	Mr. Nabam Teyi	Fabrication of compressed air engine.
12	Radhe Novin Thanglunmang Lhungdim	Mr. Nabam Teyi	Fabrication of a quadcopter with embedded sensors for self levelling.
13	Shashi Sharma Jeetu Kumar Khampherbor Kharnari	Dr. N. Yadaiah	Some studies on conduction heat transfer analysis of laser based additive manufacturing.
14	Arindam Roy Subhadeep chakraborty	Dr. N. Yadaiah	Heat transfer and fluid flow analysis of GMAW.
15	Bikram Singh Pankaj Kumar Sah Batista Girod	Dr. N. Yadaiah	Some studies on thermal analysis of GMAW.

4.7.7 LIST OF Ph.D. AWARDED (2016-2017)

Dr. N. K. Rana obtained his Ph. D degree from NERIST, Nirjuli (A.P) in 2017.

Thesis title: “Study of hydrostatic / hybrid conical journal bearing with micropolar lubricant”

Dr. Thingujam Jackson Singh awarded his Ph. D degree from NERIST, Nirjuli (A.P) in 2016

Thesis title: “Characterization of Bamboo/Kevlar fiber reinforced polymer hybrid composite materials”

4.7.8 Interaction of faculty members/department with outside agencies

- ✓ Faculty members are engaged in joint research with faculty members from IIT Delhi (P. Lingfa), Jadavpur University (A. Giri), IIT Guwahati (M. Chandrasekaran, S. Mahto, S. Singh, M. Dabi, N. Yadaiah), Jadavpur University (K.K. Mandal), Bengal Engineering and Science University, NIST, Orissa, NIT AP (S. Samanta), IITBHU (S.S. Gautam).

4.7.9 Participation of department faculty/staff members in the institute administration

- ✓ Dr. P. Lingfa, Professor, Head of the Department as Liaison Officer SC/ST, Chairman EVC, Chairman Security, Coordinator ISTE NERIST Chapter, Coordinator, Unnat Bharat Abhiyan
- ✓ Dr. M. Chandrasekaran, Professor as Chairman TPT & Coordinator AICTE Cell.
- ✓ Dr. S. Samanta, Associate Professor as Advisor T&P, Member NEE.
- ✓ Dr. Sandeep Singh, Associate Professor as Chief Warden, Chairman HMC & Chairman Gymkhana.
- ✓ Dr. S.S. Gautam, Associate Professor as Vice Chairman Security.
- ✓ Mr. Santosh Tamang, Assistant Professor as Warden Block D.
- ✓ Mr. Y. T. Camdir, as Transport Officer.

4.7.10 Other Information

- The following softwares are procured in CAD lab for the use B.Tech and M.Tech students as well as for students’ projects/ research activities.
 - i) ANSYS (V-15): 5 users License
 - ii) Creo Parametric software (Pro-Engineer)-50 user License.
- Renovation of various laboratories and workshop is underway. Mr.T.Chakraborty is acting as Workshop co-ordinator and Mr.D.Maji is acting as Laboratory co-ordinator of the department for this purpose.

4.7.11 Publications

Books and Book Chapters

U. S. Dixit, V. Yadav and A.K. Singh (2017), *Estimation of Temperature Distribution in Flat Rolling, in Rolling of Advanced High Strength Steels: Theory, Simulation and Practice*, Publisher CRC Press, pp. 130-169 (Chapter 3).

Journals

1. D. Bhuyan, **Asis Giri & Pradip Lingfa** (2016) "Effect of relative humidity on film wise condensation- A numerical study", *International Journal of Mechanical and Production Engineering Research and Development* Special Issue ISSN(P): 2248-6890;ISSN(E): 2249-8001, pp 87-100.
2. K.K. Pathak, **A. Giri&P. Lingfa** (2017) "Evaluation of heat transfer coefficient of a shrouded vertical array of heat sinks (fins): A computational approach", *International Journal of Mechanical Engineering and Technology*, Vol. 8, Issue 4, ISSN Print:0976-6340 and ISSN Online:0976-6359, pp 319-326.
3. S. K. Das, S. Das and **P. Lingfa**, (2017) "Comparative assessment of performance and emission analysis of a diesel engine fuelled with biodiesel prepared from different sources", *Journal of Industrial Pollution Control* 33 (1), pp 1114-1119.
4. **S.K. Tamang** and **M. Chandrasekaran** (2016) "Integrated optimization methodology for intelligent machining of inconel 825 and its shop floor application", *J. Braz. Soc. Mech. Sci. Eng.*, Vol. 39(3): 865 –877.
5. **S.K. Tamang** and **M. Chandrasekaran** (2016) "ANN-PSO Integrated Optimization Methodology for Intelligent Control of MMC Machining", *J. Inst. Eng. India Ser. C*, DOI 10.1007/s40032-016-0276-3.
6. **S. K. Tamang**, N. Natarajan and **M. Chandrasekaran** (2016) "Optimization of EDM process in machining micro holes for improvement of hole quality" *J. Braz. Soc. Mech. Sci. Eng.*, Vol. 39(4): 1277–1287.
7. D. Devarasiddappa, J. George, **M. Chandrasekaran** and **N. Teyi** (2016) "Application of artificial intelligence approach in modeling surface quality of aerospace alloys in WEDM process", *Procedia Technology*, ELSEVIER publications, Vol. 25: 1199-1208.
8. **V. Yadav**, A. K. Singh and U. S. Dixit, (2017), "Experimental validation of strategy for the inverse estimation of mechanical properties and coefficient of friction in flat rolling", *Journal of Institutions of Engineers, India Series C*, Vol. 98(4), pp. 48–52.
9. **Mahto.S.**(2016)"Effects of system parameters and controlled torque on the dynamics of rigid-flexible robotic manipulator", *Journal of Robotics, Networking and Artificial Life*, Vol. 3(2), pp. 116-123.

10. Nitesh Dhar Badgayan, **Sutanu Samanta**, Santosh Kumar Sahu , S.B.Venkata Siva, Kishor Kumar Sadasivuni, Duryodhan Sahu , P.S.Rama Sreekanth, “Tribological behavior of 1D and 2D nanofiller based high density poly- ethylene hybrid nanocomposites: A run-in and steady state phase analysis”, *Wear*, Vol. 376-377,2017, pp 1379-1390.
11. Thingujam Jackson Singh & **Sutanu Samanta**, “Effect of stacking sequence on mechanical strength of bamboo/Kevlar K29 inter-ply laminated hybrid composite”, *Indian Journal of Fibre & Textile Research*, Vol. 42, June 2017, pp. 230-234.
12. Thingujam Jackson Singh, **Sutanu Samanta** & Hemanta Singh, “Influence of Kevlar Hybridization on Dielectric and Conductivity of Bamboo Fiber Reinforced Epoxy Composite”, *Journal of Natural Fibers*, Taylor and Francis, 2017, DOI: 10.1080 / 15440478.2017.1279583.
13. **N.K. Rana, S. S. Gautam** and S. Verma(2016),“Performance characteristics of constant flow valve compensated conical multirecess hybrid journal bearing under micropolar lubrication,” *Int. J. Design Engineering*, Vol. 6, No.3. pp. 218-236.
14. **N. K. Rana, S. S. Gautam** and S. Verma(2016), “Comparative study on effect of Recesses on conical Hybrid Journal Bearing Compensated with CFY under micropolar fluid lubrication,” *Tribology Online*, Vol.11, No. 3, pp.474-486.
15. **Sandeep Singh** and Rajiv Tiwari (2016) Model-Based Switching-Crack Identification in a Jeffcott Rotor With an Offset Disk Integrated With an Active Magnetic Bearing, *J. Dyn. Sys., Meas., Control*, Vol.138(3).
16. **Sandeep Singh** et.al. (2016) Tribological characterization of some oils used in fabrication of bio diesel, *International Journal of Research in Engineering, Technology and Science*, Vol. 4, Issue I & II, Dec. 2016.
17. **N. K. Rana, S. S. Gautam**, S.Verma and F. Rahmani (2016), “On the stiffness and damping coefficients of constant flow valve compensated conical hydrostatic journal bearing with micropolar lubricant,” *Procedia Technology*, ELSEVIER, Vol. 23, pp. 42-50.
18. Thingujam Jackson Singh, **Sutanu Samanta**, “Multi response parametric optimization in drilling of bamboo/Kevlar fiber reinforced sandwich composite”, *IOP Conf. Series: Materials Science and Engineering* 149 (2016) 012028 doi:10.1088/1757-899X/149/1/012028.

19. Santosh Kumar, and **Muralidhar M**, “Analysis of Prevalence of Carpal Tunnel Syndrome in Shocker Manufacturing Workers”, published in *Advances in Production Engineering and Management*, Vol. 11 (2), pp. 126-140, 2016.
20. B.Kumar, Suresh Kumar, Yadaiah N, and **Muralidhar M**, “Analysis of Materials for Indian LMV Sub-systems: A Study”, *International Journal of Advanced Research in Science and Engg.* (ISSN 2319-8354), vol. 5, issue No.8, August 2016.
21. **Muralidhar M** and Datta GL, “Analysis of Energy Consumption and Conservation of a Cast Iron Automobile Foundry: A Study” *Indian Foundry Journal*, October 2016 special Issue.
22. **K.K.Mandal**, B. Chatterjee, A.S.Kuar &S.Mitra, “Parametric Study of Hole Taper in Laser Micro-drilling of Copper Sheet”, *International Journal of Emerging Trends in Science and Technology*, Vol. 03, Issue 05, May 2016.
23. **K.K.Mandal**, B. Chatterjee, A.S.Kuar &S.Mitra “Parametric Study of Heat Affected Zone (HAZ) Width in Laser Micro-drilling of Copper Sheet”, *ELK Asia Pacific Journals*, Special Issue, May 2016
24. C. R. Gautam, C.W. Manpoong, **S. S. Gautam**,A. K. Singh, A. Madheshiya, M. Tamuk, (2016)“ Synthesis,microstructure and dielectric properties of (Sr,Bi)TiO₃ borosilicate glass ceramics”, *Journal of Ceramic Science & Technology*, Vol.1, No.7.
25. C. R. Gautam, C.W. Manpoong, **S. S. Gautam**,A. K. Singh, A. Madheshiya, M. Tamuk, (2016)“Microwave synthesis of hydroxyapatitebioceramic and tribological studies of itscomposites with SrCO₃ and ZrO₂”, *Journal of Material Science*,SPRINGER, Vol.51, No.10.

Conference Proceedings

1. **Lingfa P.**, "Experimental investigation of engine performance and exhaust emissions on multi-cylinder turbo-charged diesel engine fuelled with biodiesel blend", International Conference on Bio-fuels Application (ICBFA 2016).
2. **Lingfa P.**, “Effect of relative humidity on film wise condensation- A numerical study”, ICRIET(2016), at G.I.ET, Gunupur, India.

3. Das S., **Lingfa P.**, "Biodiesel from Mesua ferrea (Nahar) oil as an alternative fuel for diesel engine" An International Conference Global Biodiversity (2016), Rajiv Gandhi University, Rono Hills, Arunachal Pradesh, India.
4. **Lingfa P.**, "Effect of fin tip to shroud clearance on the thermal performance of a rectangular vertical shrouded fin array" 4th International Conference on Innovations in Information, Embedded and Communication Systems (2016), Gandhi Institute of Engineering and Technology, Gunupur, India.
5. S. K. Das and **P. Lingfa** "A review on production of biodiesel using catalyzed transesterification' AIP Conference Proceedings(2017).
6. U.S. Dixit, **V.Yadav**, V. Sharma, P.M. Pandey, A. Roy and V.V. Silberschmidt, "Estimation of cutting forces in conventional and ultrasonic-vibration assisted turning using inverse modelling", IVth International Conference on Production and Industrial Engineering, CPIE (2016), NIT Jalandhar, India.
7. U.S. Dixit, **V.Yadav**, P.M. Pandey, A. Roy and V.V. Silberschmidt, "Analysis of experimental results of ring compression and flat rolling on asperity-based friction model", Proceedings of the National Conference on Sustainable Mechanical Engineering: Today and Beyond (SMETB)(2017), Tezpur University, India.
8. D. Devarasiddappa, **M. Chandrasekaran** and M.T. Sambandam, "Multi performance optimization in wire cut EDM of Inconel 825 using Desirability Function coupled with Analytical Hierarchy Process", International Conference of Materials, Manufacturing and Modeling, ICMMM (2017)
9. D. Devarasiddappa, **M. Chandrasekaran** and J. George "Improvement in surface roughness and dimensional accuracy in WEDM of Inconel alloy", 6th International & 27th All India Manufacturing Technology, Design and Research Conference (2016).
10. Sweety Mahanta, **M. Chandrasekaran**, Sutanu Samanta and **Santosh Tamang** "Processing and Wear Investigation on Rice-Husk Filled Basalt-Epoxy Composites", Proceedings of 6th International & 27th All India Manufacturing Technology, Design and Research Conference (2016)
11. Sweety Mahanta, **M. Chandrasekaran** and Sutanu Samanta "Processing and Investigation of Tribological Properties of Basalt Epoxy Composites", International conference on advancements in aeromechanical materials for manufacturing, (2016)

12. Shubhajit Das, **M. Chandrasekaran**, S. Samanta, “Parametric Analysis and Optimization of WEDM of Al6061/ 7% SiC/ 3% B₄C Hybrid MMCs”, 6th International & 27th All India Manufacturing Technology, Design and Research Conference, AIMTDR(2016).
13. S. K. Lalmuan, Shubhajit Das, **M. Chandrasekaran**, **Santosh K. Tamang**, “Machining Investigation on Hybrid Metal Matrix Composites- A Review”, International Conference on Advancements in Aeromechanical Materials for Manufacturing ,ICAAMM (2016).
14. Shubhajit Das, S. K. Lalmuan Vaiphei, **M. Chandrasekaran**, S. Samanta “Wire cut EDM of Al6061 Hybrid Nano Composites: Experimental Investigations and RSM modeling of Surface Roughness”, International Conference on Emerging Trends in Materials and Manufacturing Engineering, IMME, (2017).
15. Dhrubajit Sarma, **M. Chandrasekaran** and M. T. Sambandam “Sustainable modeling for machining Inconel 718 and parametric optimization” International Conference on Manufacturing Technology and Simulation (2017)
16. Pallab Sarmah, **M. Chandrasekaran** and R. Ramesh, “Experimental investigation and multiple performance characteristics of WEDM process on Al 6063/ZrSiO₄ metal matrix composites” International Conference on Manufacturing Technology and Simulation (2017)
17. **M. Chandrasekaran**, **S.K. Tamang**, Jeess Gorge and R. Thirumalai “AHP Coupled with Grey Relational Analysis for Optimization Multiple Characteristics of CNC Wire Cut EDM Parameters”, International Conference on Mechanical and Building Sciences,(2016).
18. **S. K. Tamang**, **M. Chandrasekaran** and R. Thirumalai “Sustainable Machining of Inconel 825 to Optimize Multiple Performance Characteristics using Utility Approach” International Conference on Mechanical and Building Sciences, (2016)
19. S.K. Tamang and **M. Chandrasekaran**, "Experimental Investigation, Modeling and Comparison of Cutting Power in Dry Turning of Inconel 825", International Conference on Applied Mechanics and Industrial Systems ICAMIS, Muscat, Oman, (2016),
20. **S.K. Tamang**, **M. Chandrasekaran** and M.T.Sambandam (2016), "Sustainable Turning Of Inconel 825 For Energy Saving And Minimization Of Co₂ Emissions", Conference proceeding ENERGY 2016, NIT , India (2016)
21. Santosh Kumar and **Muralidhar M**, “Ergonomical Study of Hand- Arm Vibrational Exposure in a Gear Manufacturing Plant in India” 18th International Conference on Applied Human Factors and Ergonomics, Kaulalumpur, Malaysia, (2016)

22. B.Kumar, Suresh Kumar, **Yadaiah N** and **Muralidhar M**, “Analysis of Materials for Indian LMVs Sub-systems: A Study” International Conference on Recent Innovations in Engineering, Science and Humanities and Management, GVP College, Visakhapatnam, AP (2016).
23. **Muralidhar M**, “World Casting Value Analysis and Casting Value Indices: A Study” 56th International Foundry Conference, Portorose, Slovenia, (2016)
24. Animesh Borah, Duniwanhi Suchiang, Kallol Debnath, Md. Murtaza Alam, and **M. Muralidhar**, “Studies on Design and Fabrication of Polymer Based Composite Materials with Fish Scale Reinforcement” AETM, MM University, Ambala, India (2016).
25. Santosh Kumar , M. K. Goyal and **M. Muralidhar**, “Ergonomic study to prevent and control the occurrence of carpal tunnel syndrome among automotive shocker assembly plant workers”, International Conference, Humanizing Work and Work Environment, NIT Jalandhar, India (2016)
26. Santosh Kumar, and **Muralidhar M.**, “Study of Pinch Strength Interrelationship and Correlation of CTS amongst Assembly Line Workers in a Muffler Manufacturing Plant”, 6th International & 27th All India Manufacturing Technology Design and Research Conference AIMTDR (2016).
27. Bishub Choudhury, **M. Chandrasekaran**, **Santosh Tamang** & **Nabam Teyi**, “Optimization study on GTAW of Inconel 825 using Desirability Function Analysis (DFA)”, 6th International & 27th All India Manufacturing Technology Design and Research Conference AIMTDR (2016).
28. G.Rinu, **N.Yadaiah**, S.Choudhury, K.Pranjal & **N.Teyi**, “Studies on numerical modeling of deep penetration laser welding process based on finite element method”, 6th International & 27th All India Manufacturing Technology Design and Research Conference AIMTDR (2016).
29. **K.K.Mandal**, A. S. Kuar & S. Mitra, “Taguchi-based Grey Relational Analysis of Hole Taper and Heat Affected Zone (HAZ) Width for Laser Micro-drilling of Copper Sheet”, 6th International & 27th All India Manufacturing Technology Design and Research Conference AIMTDR (2016).
30. **K.K.Mandal**, A. S. Kuar & S. Mitra, “Parametric Study of Hole Taper in Laser Micro-drilling of Copper Sheet”, Int. Conf. on Recent Issues in Engineering, Science & Technology, ICRIEST, Institute of Engineering Research, Salem, Tamilnadu, India (2016).

31. **K.K.Mandal**, A. S. Kuar & S. Mitra, "Parametric Study of Heat Affected Zone (HAZ) width in Laser Micro-drilling of Copper Sheet" 2nd Int. Conf. Advancements and Recent Innovations in Mechanical, Production and Industrial Engineering ITS Engg. College, Greater Noida, UP, India(2016).

4.7.12 Honour, awards and other credentials

- **Prof. P. Lingfa** received '*Distinguished Faculty In Engineering*' (Specialization-Mechanical) during the Faculty Awards-VIFA 2017, held on July 8, 2017 at Green Park Chennai, India during the 3rd Contemporary Academic Meet - CAM 2017.
- **Prof. P. Lingfa** received a '*Certificate of Honour*' for research contributions made in the area of biodiesel production from plant bio-resources of North East India during 'International Conference on Global Biodiversity, Climate Change and Sustainable Development' (ICBCS 2016) held during 15th-18th October 2016 at Rajiv Gandhi University (RGU), Rono Hills, Arunachal Pradesh, India.
- **Prof. P. Lingfa** was the *Chief Editor* of "THE GAMLE" (The Wisdom), 'Souvenir' released during Golden Jubilee Celebration of Government Higher Secondary School, Pampoli, District East Kameng, Seppa, October 2016, Arunachal Pradesh: 790102 (India).
- **Prof. P. Lingfa** is an *Editorial Board Member*, Research in Mechanical and Civil Engineering (IJERMCE) (*Monthly Journal for Mechanical and Civil Engineering*)
- **Prof. P. Lingfa** received a '*Memento*' for being the first IITian from Government Higher Secondary School Pampoli East Kameng District, Arunachal Pradesh, India during Golden Jubilee Celebration held during 13th-15th November 2016, India.
- **Prof. P. Lingfa** was an *Advisory Committee Member*, International Conference on 'Global Biodiversity, Climate Change and Sustainable Development' (ICBCS-2016), held during 15th-18th October, 2016 at Rajiv Gandhi University (RGU), Rono Hills, Arunachal Pradesh, India.
- **Prof. P. Lingfa** was an *Advisory Committee Member*, International Conference on 'Advanced Functional Materials 2017', held on 3-5th May 2017 at Adhi College of Engineering and Technology, Kanchipuram Dist Tamil Nadu 631605, India.

- **Prof. P. Lingfa** was an *Advisory Committee Member*, A National Conference on 'Sustainable Mechanical Engineering: Today and Beyond' (SMETB) March 25-26, 2017, Organized by Department of Mechanical Engineering, Tezpur University, Tezpur, India.
- **Prof. P. Lingfa** was an *Advisory Committee Member*, National Workshop on 'Synthesis and Characterization of Photoactive Nano composites for Solar Application', 11th-16th September, 2017, Jointly organized by Department of Energy Engineering North-Eastern Hill University Shillong-793022, Meghalaya, India and Anton Paar India Pvt. Ltd. Phase V, Udyog Vihar Industrial Area Gurgaon –122016.
- **Prof. P. Lingfa** was a *Reviewer* of the International conference on 'Mechanical, Materials and Renewable Energy' (ICMMRE 2017), organised by Department of Mechanical Engineering, Sikkim Manipal Institute of Technology, Sikkim, India on 8th - 10th December, 2016.
- **Prof. M. Chandrasekaran** is a *Reviewer* of Journal of Institution of Engineers (India), Series C (JIE) since 2014.
- **Prof. M. Chandrasekaran** is a *Reviewer* of Journal of the Brazilian Society of Mechanical Sciences and Engineering (JBSME) since 2015.
- **Prof. M. Chandrasekaran** is a *Reviewer* of Journal of Scientific and Industrial Research (JSIR) since 2015.
- **Prof. M. Chandrasekaran** is a *Reviewer* of Indian Journal Of Engineering & Materials Sciences (IJEMS)
- **Dr. Vinod Yadav** is a *Reviewer* of Journal of Institution of Engineers (India), Series C, since February 2015
- **Prof. M. Muralidhar** presented a paper titled “World Casting Value Analysis and Casting Value Indices: A Study”, at 56th International Foundry Conference, Sept. 14-16, 2016, **Portorose, Slovenia**.
- **Dr. S. Samanta**, presented a paper titled, “Wear behaviour of saw dust filled glass /jute epoxy hybrid composite” in Second International Conference on Mechanical Engineering and Automation (ICMEAS 2016) held at **Singapore** during October 13-15, 2016.
- **Dr. S. S. Gautam**, presented a paper titled, “Performance characteristics of conical multirecess hydrostatic journal bearing under micropolar lubrication for different load

arrangement” in Second International Conference on Mechanical Engineering and Automation (ICMEAS 2016) held at **Singapore** during October 13-15, 2016.

- **Mr. S.K. Tamang**, presented a paper titled, "Modeling and Comparison of Cutting Power in Dry Turning of Inconel 825" in International Conference on Applied Mechanics and Industrial Systems (ICAMIS) held at **Sultanese Qaboos University, Muscat, Sultanate of Oman** on 6-8th Dec. 2016.
- **Mr. Nabam Teyi**, presented a paper titled, "Experimental Investigation and Evaluation of Process Parameters in WEDM of Al- 6061alloy/1.5%SiC/0.5%B4C Hybrid Nano MMCs " in International Conference on Applied Mechanics and Industrial Systems (ICAMIS) held at **Sultanese Qaboos University, Muscat, Sultanate of Oman** on 6-8th Dec. 2016.

4.7.13 Invited Lectures/Seminars

- **Prof. P. Lingfa** "Bio-fuel and its Potential Toward Greener Future Fuel", during 'World Biofuel Day', organised by National Yuva Cooperative Society Ltd and Department of Mechanical Engineering, NERIST in collaboration with Ministry of Petroleum and Natural Gas, Government of India, held on 12th August 2017 at NERIST Auditorium Hall, Nirjuli, Papumpare, Arunachal Pradesh India.
- **Prof. P. Lingfa** "Career Guidance and Counselling", delivered expert talk during Career Guidance & Counselling to youth at Chandi Hotel, Naharlagun on 21th May 2017, organised by HECHE Welfare Society, Arunachal Pradesh, India.
- **Prof. P. Lingfa** "Biodiesel as a Future Sustainable Fuel", at North Hill University (NEHU), Meghalaya Shillong 2017, India.
- **Prof. P. Lingfa** "Sustainable Development for Rural Bharat", National Institute of Technology (NIT) Arunachal Pradesh 2017, India.
- **Prof. P. Lingfa** was an Invited Speaker for the International Conference on 'Advanced Functional Materials 2017', held on 3-5th May 2017 at Adhi College of Engineering and Technology, Kanchipuram Dist Tamil Nadu 631605, India.
- **Prof. P. Lingfa** was an Invited Resource Person, for his paper "Biodiesel as a future sustainable fuel" at International Conference Global Biodiversity, Climate Change and

Sustainable Development(ICBCS-2016), 15th-18th October, 2016 Rajiv Gandhi University (RGU), Rono Hills, Arunachal Pradesh, India.

4.7.14 Achievements of students

Some of UG students achieved good score in GATE 2017 and got admission in many reputed institutions like IITs, NITs and other institutions. Moreover, the Department provides campus placements and in the last year 2016-17, Thirteen (13) students' got placed in various organizations. Students are involved in design and development of proto type models such as a bio-gas plant, solar heaters in the part of their project work. Students of the Departement also visited to other premier institutions such as IITs for summer internship training and for conducting experiments for their project work. M.Tech students and Research Scholars had a visit to IIT Guwahati for lab visit/practice for FMS system. IC engine run by Compressed air was designed and manufactured under projects by the students.

The list of campus selected students (2016--2017)

Sl. No.	Name of the student	Roll No.	Name of the Organization
1	Ms. Tage Opiyung	DE/15/ME/17	OIL India Duliajan & Tech Mahindra
2	Mr. Dipankar Deori	DE/15/ME/19	Tech Mahindra
3	Mr. Alisher Ansari	DE/15/ME/29	Tech Mahindra & Cummins India
4	Mr. Bidyut Chakraborty	DE/15/ME/02	Tech Mahindra & ASAHI India Glass
5	Mr. Abhishek Kr. Poddar	DE/15/ME/14	Cummins India & ASAHI India Glass
6	Mr. Sudipta Mukherjee	DE/15/ME/03	ASAHI India Glass
7	Ms. Sayantana Roy	DE/15/ME/16	Cummins India
8	Mr. T. Hauzel	DE/15/ME/22	Cummins India
9	Mr. Anurag Kashyap	DE/15/ME/01	OIL India Duliajan & ASAHI India Glass
10	Mr. Biplab Deka	DE/15/ME/08	OIL India Duliajan

11	Mr. Siddhant Lyndem	DE/14/ME/108	OIL India Duliajan
12	Mr. Jayabrata Das	DE/14/ME/106	OIL India Duliajan
13	Mr. Sumit Kr. Singha	DE/15/ME/20	OIL India Duliajan

MAN (Mechanical Association of NERIST) works with the broad objective of promoting technology through excellence. All the students, technical staff and faculty members of the department are members of the MAN.

4.7.15 List of laboratories and equipment

Sl. No.	Laboratory	Major Equipment
1	Gas Dynamics	Wind Tunnel, Air Flow Rig, Smoke Tunnel, Nozzle Testing Apparatus, Compressor, Three Component Balance, Data Acquisition System
2	HMT and Thermal Engg.	Multi-Purpose Air Duct, Fluidized Bed Apparatus Conductivity Apparatus, Convection & Radiation Apparatus, Computer Linked Boiling Apparatus
3	C.F.D	PC & Related Software(Under Development)
4	Fluid power and Automation	Centrifugal & Reciprocating Pumps, Pelton Wheel, Met Centric Height Apparatus, Hydraulic Trainer, Simulators, Francis & Kaplan Turbines
5	I.C Engines	Two Strokes & Four Strokes Petrol & Diesel Engines, 5-Gas Analyzer, Smoke Meter
6	Biodiesel	Integrated Biodiesel Reactor System (Consists Of Mechanical Oil Expeller, Decorticator, Baby Bath Boiler & Oil Filtering Unit), Magnetic Oil Stirrer, 1-Litre Capacity Biodiesel Reactor, Gas Chromatograph(GC), Bomb Calorimeter, Centrifuge, Flash & Fire Point Apparatus, Cloud, Pour Point Apparatus, Setavis Viscometer
7	R & AC	Computer Linked R & AC Unit, Vapor Compression Unit, Gas Charger, Ice Maker, Refrigerator.

8	Dynamics and Kinematics	Universal Vibration Testing Operators, CAM Analysis Machine, Reciprocating & Rotating Mass Balancing Units, Gyroscope, Governor Apparatus, Function Generator, Digital Oscilloscope, Acoustic Insulation Test Apparatus With Amplifier
9	Strength of Material	UTM, Torsion Testing Unit, Impact Testing Unit, Fatigue Testing Unit, Hardness Tester, Lens Polar Scope With Analyzer, Polar Scope & Other Accessories.
10	Tribology	Hertzian, Contact Apparatus, Air Bearing Apparatus, Multi-Purpose Friction & Wear Tester
11	CADD	PC & Relative Software
12	CIM and Robotics (Tool Room)	Duet CNC-Cum Milling M/C. Max Turn CNC Production, CNC Machine With External Turning Carbide Tool Holder, Max Mill CNC Production Milling Machine With Tooling & Holder Adaptors
13	Computer Lab	PC Analysis Software
14	Metrology and Material Science	Measuring Instrument, Microscope, Pit Furnace, Profile Projector, Polishing Machine
15	Seminar Hall	LCD Projector, Digital Camera, E-Learning Series On Various Subjects, Interactive Smart Classroom System
16	Workshops	Different Metal Forming & Metal Removing Process & Tool Related To Carpentry, Pattern Shops, Machine & Maintenance Shop, Fitting Shop, Welding Shop, Forging Shop & Sheet Metal Shop

4.8 DEPARTMENT OF CHEMISTRY

4.8.1 A Brief Profile of the Department

The Department undertakes teaching of chemistry in Under-Graduate and Post-graduate level courses of Engineering & Technology streams, i.e. Base/ Diploma/ Degree modules, and that in Degree module of Forestry stream. Post-Graduate courses in M.Sc (Chemistry), with organic chemistry as specialization, have been started from the session 2009-2010. Admission process for fresh batch in M. Sc (Chemistry), i.e., 8th batch for M.Sc (previous year) was conducted in July, 2016 through the Written Test conducted by the Department. 81 (Eighty one) applications were received and 78 (Seventy eight) candidates were issued admit cards. Out of that, 62 (Sixty two) candidates had appeared for the admission Test. 10 (Ten)

candidates were put in the selected list, and 10 candidates were included in the wait-list. Finally, 10 candidates took their admission in M.Sc Chemistry for the session 2016-2017. Moreover, admission test (written) and interview were conducted for Ph.D admission also. All the 12 applicants who applied for admission called for written test & interview. 07 (Seven) candidates appeared for the written test followed by interview. , and 06 (six) were selected.

Committees approved for M.Sc & Ph.D Admission for 2016-17 session:

1. Prof. N.Deb (HoD) : Chairman
2. Prof. H.S.Yadav : Member
- 3, Prof. P.K.Tripathy : Member
4. Prof. M.F.Hussain : Member
5. Dr.A.K.Gupta : Member
6. Mr. N.G. Singh : Member (only for M.Sc)
7. Dr. J.Bhuyan : Member
8. Dr.(Mrs.) Meera Yadav : Member

Contributions of the faculty members in the Institute administration were appreciable.

1. Prof. M. Husain, being the senior-most faculty of the Department has acted as Chairman / Member over a number of committees constituted by the Director, NERIST.
2. Prof. H. S. Yadav Contributed as Director i/c, NERIST, Nirjuli, Arunachal Pradesh w.e.f. 19 April, 2016 to 26 March, 2017 and undertook successfully all administrative matters for smooth functioning of the Institute including recruitment of Faculty members / Officers , Promotion of Faculty members under CAS and successfully coordinated the visit of NBA Expert's team resulting accreditation of 06 UG Programs of Engineering Departments (AE, CE, CSE, EE, ECE, ME), besides several meetings / interactions with several offices (MHRD/ AICTE/ UGC) as and when required.
3. Prof. P. K. Tripathy has acted as Dean (Academics) since August 2014, and had acted Chairman/ Members of various committees made by the Director.
4. Prof. M. F. Hussain had acted as Dean (Administration) for the period and still continuing.
5. Dr. J. Bhuyan was looking after the Central Research Facility (CRF) as Coordinator in this period and still continuing.
6. Prof. P.K. Tripathy was the Member of the Board of Management in this period and still continuing. He also acted as Nodal Officer of Centralized Public Grievance Redress and Monitoring System (CPGRAMS). NERIST
7. All the Professors of the Department are members of the Academic Council of the Institute.
8. Prof.N. Deb acted as Director's Nominee to the Board of Postgraduate Studies (BPGS),

Participation of the Faculty members in the Departmental administration were as follows

1. Prof. N.Deb acted as HoD in this period.
2. Dr. K. T. Kamal was Laboratory in-charge of Chemistry Lab-I
3. Dr. Meera Yadav was Laboratory in-charge of Chemistry Lab-II
4. Dr. J. Bhuyan was the Laboratory in-charge of PG Lab-I & Instrumentation Lab.
5. Dr. A. K. Gupta was Laboratory in-charge of PG Lab-II
6. Mr. N.G. Singh was Laboratory in-charge of PG Lab-III

7. Dr. S.L. Bharati was Library Incharge of the department, and acted as representative to the Central Library

4.8.2 Academic activities

- i) Dr. A.K.Gupta was promoted to the post of Professor in Sept'2016
- ii) Dr. K.T.Kamal was promoted to the post of Professor in Sept'2016
- iii) Dr. N.N. Yadav has joined as Assistant Professor (Organic Chemistry specialization) in a regular post on 01/11/2016
- iv) Dr. A. Murugan has joined as Assistant Professor (Physical Chemistry specialization) in a regular post on 26/10/2016
- v) Prof. K.T. Kamal has retired from her service on 31/03/2017.

The 4th Board of Studies (BoS) meeting of Chemistry Department was held on 23/03/2017 to revisit the revised syllabi of various UG and PG courses. The board approved all the courses. All the revised courses of UG and PG courses has implemented from July-Dec'2017 semester. The following members were present in the BoS meeting.

1. Prof. N.Deb, HoD & Chairman
2. Prof. M. Husain, Member
3. Prof. P.K. Tripathy, Member
4. Prof. M.F. Hussain, Member
5. Prof. K.D. Ram, Member
6. Prof. A.K. Gupta, Member
7. Prof. K.T. Kamal, Member
8. Mr. N.G.Singh, Member
9. Dr. J. Bhuyan, Member

The approval on revised syllabus was taken through E-mail from Prof. P.K. Iyer, IIT, Guwahati, and Prof. K. Ismail, NEHU, Shillong as External Members.

The DPGC of the department looked after the various activities of the students of M.Sc and Ph.D courses. The various DC committees' were active to look after the progress of the work of the Ph.D students.

To meet the faculty requirement of teaching loads with 12 (Twelve) regular faculty members for effective teaching in both undergraduate and postgraduate levels, the Department had engaged Dr. Prasenjit Saha as Lecturers on contract basis during Jan-May' 2016 and July-Dec' 2016 semester. Dr. Uttam Thapa was engaged as another contract Lecturer during July-Dec'2016 semester.

Systematic approach has been made to engage theory and practice classes regularly. All the courses were fully covered in time. Tests and practical examinations were conducted successfully. Results of Semester examinations, supplementary examinations, make up tests and quizzes of all the courses were prepared in time and submitted to the Controller of examination.

The mapping of marks with the COs of required courses in regard to NBA were done and will be submitted when it is asked for next NBA.

4.8.3 Laboratories and Laboratory Development

In the Laboratories, Instrumentation facilities that are in working conditions are

- i) Digital Conductivity meters
- ii) Polarimeters,
- iii) Digital pH meters,
- iv) Differential Scanning Calorimeter (DSC),
- v) FT-IR,
- vi) Rotary evaporator,
- vii) Melting Point apparatus, etc.

The following few equipments recently been received and installed in the laboratories.

- i) Digital Magnetic Stirrer with hot plate,
- ii) Quartz Bi-Distillation,
- iii) Variable volume micropipette and
- iv) Analytical balance

4.8.4 Projects completed by the UG/PG/Ph.D students

The presentation of following projects report are done on 10.05.2016 by the M.Sc Final year(PG) students in presence of committee members including Dr. A.Atta as an external expert.

Sl No.	Title of Project	Roll No./ Reg No.	Name of the Sudents	Supervisor
01	Schmidt Reaction Preparation of Steroidal Tetrazoles	MS/14/CH/01 414/082	Manab Jyoti Goswami	Prof. M. Husain
02	One pot Synthesis of Nitrile from Aldehyde in Dry Media by using Microwave oven and their hydrolysis	MS/14/CH/02 414/083	Rekibuddin Ahmed	Dr.(Mrs.) K. T. Kamal
03	Comparative study on the Rate of Reaction of Maleic anhydride/ Maleic Acid / Fumeric Acid with - oxoketene-N,S-Acetals	MS/14/CH/04 414/085	Akash Chetry	Dr. A. K. Gupta
04	Synthesis of Schiff Bases from Aromatic Aldehydes and Aniline as Primary Amine	MS/14/CH/05 414/086	Jusmita Gogoi	Dr.(Mrs.) K. T. Kamal

05	A Facile one Flask Synthesis of 1,2-Disubstituted 4-Arylmethylene-2-Imidazoline-5-Ones	MS/14/CH/06	Sangeeta Kalita	Prof. P. K. Tripathy
06	A Facile synthesis of 3-N-Acylaminocoumarins using 2-oxazoline-5-ones as synthons	MS/14/CH/07 414/123	Pubanita Bhuyan	Prof. P.K. Tripathy

4.8.5 Short-term courses/seminars/workshops organized at NERIST: Nil

4.8.6 Short-term courses/seminars/workshops/conferences attended by the faculty

Dr. J. Bhuyan attended the following courses/seminars.

1. Attended the 18th Seminar on “Hydrocarbon Industry Growth: Prospect and Challenges in North East” conducted at Digboi club premises, Digboi, Assam on 12th and 13th May, 2016 organized by Petrotech, New delhi.
2. Attended and presented paper on 20th CRSI National Symposiums in Chemistry, 2nd to 5th February, 2017, organized by Gauhati University, Guwahati and supported by IIT Guwahati and Tezpur University. (Paper title “Magnesium porphyrin chain controls energy dissipation in the presence of lipids”)
3. Attended and delivered an invited lecture on “Metalloisoporphyrins: synthesis, properties and potential applications” at 5th Symposium on Advanced Biological Inorganic Chemistry (SABIC), 7th-11th January, 2017, Kolkata, India, organized by Tata Institute of Fundamental Research (TIFR) and Indian Association for the Cultivation of Science (IACS).
4. Participated the Pedagogy Training for Outcome Based Education on 16th -17th March, 2017 organized by National Institute of Technical Teachers Training and Research (NITTTR), Bhopal at NERIST, Nirjuli, Itanagar

Dr. Meera Yadav attended the following courses/seminars.

1. **Short term course on “Recent trends in Catalysis”** conducted under the Technical Education Quality Improvement Programme. IIT Guwahati. MHRDG India, May. 13-14, 2016.
2. **Workshops** for capacity building in grant writing skills and effective management of Intellectual Property Rights (IPR) in Biotechnology by universities and research Institutions in the North East Region., Naharlagun, Arunachal Pradesh Sept 28-30, 2016.

Mr. N.G. Singh attended the following courses/seminars.

1. “ Pedagogy Training for Outcome Based Education” Sponsored by: NITTTR, Bhopal(MHRD, Govt. of India) conducted by NERIST, Nirjuli Funded by TEQIP, MHRDCoordinator : B.L.Gupta, NITTR, Bhopal

Dr. N.N.Yadav attended the following short term courses

1. Participated in short term training programme conducted by NITTR on topic “Pedagogy Training for Outcome Based Education” from 16/03/2017 to 17/03/2017 at NERIST.

4.8.7 New degrees/ Professional Memberships obtained by the faculty: NIL

4.8.8 Achivements/awards/recognition earned by the faculty:

Prof N. Deb reviewed the following research papers of international journals as expert reviewer

1. “ A thermogravimetric study of thermal dehydration of copper hexacyanoferrate by means of model free kinetic analysis”, Ida E. Akerblom, D.O. Ojwang, J. Grins & G. Svensson, Ms. No. JTAC-D-16-01297 (submitted on 03/12/2016)

4.8.9 Projects sanctioned by outside agencies to the faculty of the department:

(a) Title of the Project: “Spatial Distribution of Uranium and associated Water Quality Parameters in Western Arunachal Pradesh”

PI: Dr. Ajay Bharti, Assoc. Prof. Dept. of Civil Engineering, NERIST

Co-Investigator: (i) K. James Singh, Asstt. Prof. Dept. of Civil Engg. NERIST

(ii) N. Ghanashyam Singh, Asstt. Prof. Dept. of Chemistry

Funding Agency: DAE, BRNS, Govt. of India

Date of sanctioned: 25/07/2016

Amount sanctioned : 22,47,200/- and amount released 21, 31,100/- dated:

28.04.2016

4.8.10 Publications:

(a) In journals

1. Akhilesh Kumar Gupta, Akash Chetry : “Comparative study on the rate of reaction of Maleic anhydride, Maleic acid and Fumaric acid with α -Oxoketene N, S-acetals towards analogous Nenitzescu Reaction” , International Journal of Advance Research in Science and Engineering (IJARSE), Vol. 5, Special issue, 01, page 1 (2016) Imp. Fac. 1.142
2. Akhilesh Kumar Gupta : “Enamine behaviour of α -Oxoketene N, S-acetals in their reaction with Maleic anhydride and Citraconic anhydride: Synthesis of new 1-Aryl-4-aryl-5-methylthio-2-oxo-3-pyrrolin-3-acetic acids” , International Journal of Advanced Technology in Engineering and Science (IJATES), Vol. 4, Special issue, 01, page 132 (2016) Imp. Fac. 1.012
3. Akhilesh Kumar Gupta : “Synthesis of 1-Alkyl/aryl-3-methyl-4-aryl-5-methylthio-3-pyrrolin-2-ones by base catalyzed decarboxylation of corresponding Pyrrolin-3-acetic acids” , International Journal of Science Technology and Management (IJSTM), Vol. 5, Special issue, 05, page 340 (2016) Imp. Fac. 2.012
4. Akhilesh Kumar Gupta : “Regiospecific synthesis of 3-Aroyl-1-alkyl/cycloalkyl-5-methyl-2-methylthiopyrroles and 7-Benzoyl-5-methyl-2,3-dihydropyrrolo[2,1-b]thiazoles by cyclization of α -Oxoketene N, S-acetals with propargyl bromide” , International Journal of Advanced Technology in Engineering and Science (IJATES), Vol. 4, Special issue, 01, page 130 (2016) Imp. Fac. 1.012
5. Akhilesh Kumar Gupta, Akash Chetry : “Synthesis of novel 2-Phenyl-4-aryl-3-methylthio-1,6-dioxo-2,3-dihydropyrano[3,4-c]pyrroles by direct double cyclocondensation of α -Oxoketene N, S-acetals with Maleic acid using Acetic anhydride as cyclizing agent” , International Journal of Engineering Technology Science and Research (IJETSR), Vol. 3, Issue, 06, page 24 (2016) Imp. Fac. 2.120
6. Akhilesh Kumar Gupta : “Synthetic transformations on the D-ring of 3-Methyl ether of Estrone via its dithioacetal” , International Journal of Engineering Technology, Management and applied Sciences (IJETMAS), Vol. 4, Issue, 05, page 320 (2016) Imp. Fac. 2.24
7. Akhilesh Kumar Gupta : “Comparative study on the rate of reaction of Maleic anhydride and Maleic acid with α -Oxoketene N, S-acetals” , International Journal of Engineering Technology Science and Research (IJETSR), Vol. 3, Issue, 06, page 22 (2016) Imp. Fac. 2.120
8. Akhilesh Kumar Gupta : “Analogous Nenitzescu reaction of α -Oxoketene N, S-acetals with Maleic anhydride ” , International Journal of Engineering Technology Science and Research (IJETSR), Vol. 3, Issue, 05, page 326 (2016) Imp. Fac. 2.120
9. Pankaj K.Chaurasia, Shashi L. Bharati and Chandana Sarma, Laccases in Pharmaceutical Chemistry: A Comprehensive Appraisal, Mini-Reviews in Organic Chemistry, 2016, 13, 430-451.
10. Magnesium trimethoxyphenylporphyrin chain controls energy dissipation in the presence of cholesterol, K.D. Borah, N.G. Singh and J. Bhuyan* *J Chem Sci*, 2017, 129, 449-455.
11. P. Thillai Arasu, A. Murugan and M.S.M. Badusha., “A study of physico-chemical analysis of ground water in and around SIPCOT, Tuticorin, Tamil Nadu, India”, International Journal of Earth Sciences and Engineering, Volume 9 and issue 6, (2016) 2499-2502

12. C.R.Ravikumar, P. Kotteeswaran, V.Bheema Raju, A. Murugan, M. S. Santosh, H.P.Nagaswarupa, S.C. Prashantha, M.R.Anil Kumar and M.S.Shivakumar, “Influence of zinc additive and pH on the electrochemical activities of β -nickel hydroxide materials and its applications in Secondary batteries” , Journal of Energy storage, 9, (2017) 12-24.
13. Enzymatic Characterisation of Lignin Peroxidase from Luffa aegyptiaca Fruit Juice.
Nivedita Rai, Meera Yadav, Hardeo Singh Yadav
American Journal of Plant Sciences, 7, 649-656, 2016.
14. Manganese Peroxidase from Luffa acutangula Fruit Juice
N. Rai, M. Yadav and H. S. Yadav
Current Biochemical Engineering, 4, 2017.
DoI: 10.2174/2212711904666170117143442, Jan. 2017
15. Yadav, N. N.; Dolfen, J.; Kimpe, N. D.; D’hooghe, M.; Ha, H.-J. (Bicyclic Aziridinium Ions in Azaheterocyclic Chemistry – Preparation and Synthetic Application of 1-Azoniabicyclo[n.1.0]alkanes) *Adv. Synth. Catal.* **2016**, 358, 3485–3511.
16. Jeong, H; Yadav, N. N.; Ha, H.-J. (Synthesis of Lacosamide (Vimpat) and Its Derivatives from Aziridine-(2*R*)-carboxylate) *SYNTHESIS* **2016**, 49, 1264-1272.
17. *In- silico* Analysis of Manganese Peroxidases from Different Fungal Sources.,
M.Yadav & K.D.S. Yadav
Current Proteomics. Accepted 2017.

(C) Books

[TOECU] Submission | BSP-TOECU-2016-HT-1. *Betham Science Publisher. Jan 2017.*

Geology: Current and Future Developments - Vol. 1 entitled “*The Role of Organic Petrology in the Exploration of Conventional and Unconventional Hydrocarbon Systems*”

Edited by, *Isabel Suárez-Ruiz*, INCAR-CSIC.,Oviedo. Spain &

João Graciano Mendonça Filho, Department of Geology-UFRJ, Rio de Janeiro. Brazil

4.8.11 Interaction of faculty / department with outside agencies: Nil

4.8.12 Consultancy Projects undertaken : Nil

4.8.13 Achievements of students:

M. Sc. Student P. P. Nath qualified the written test for Ph.D. admission to Hyderabad Central University.

4.8.14 Any other relevant information: Nil

4.9 DEPARTMENT OF PHYSICS

4.9.1 Brief profile of the Department:

The Department of Physics has **Two Professors**, **Five** Associate Professors, and **Four Assistant Professors**. In addition to teaching, the faculty members are actively involved in research activities and have been publishing research papers in both national and international journals. The field of specialization of physics faculty cover a wide spectrum of theoretical and experimental physics viz x-ray diffraction, polymer physics, plasma physics, experimental and theoretical nuclear physics, liquid crystals, solid state ionics, mathematical physics, semiconductor physics, superconductivity and laser Raman spectroscopy. Also, some of the faculty members have acted as reviewers of DST and CSIR projects by other scientists for possible funding and one Ph.D. thesis adjudicators.

Eleven sponsored research projects funded by DST/SERB, CSIR, MHRD and Third World Academy of science (TWAS), Italy have been completed in the field of liquid crystals and solid state ionics. **One** in-House mini Research project has been completed. Currently, **One** research projects funded by Science and Engineering Research Board (SERB), New Delhi is in progress. One project under **FIST** sponsored by DST is underway.

Two BOYSCAST fellowships of DST, New Delhi and **three** bilateral exchange fellowships of INSA, New Delhi-RSL & INSA-JSPS have been awarded to the faculty members of the department to pursue their collaborative research with scientists abroad.

Ten Ph.D degrees (Four in liquid crystals, four in solid state ionics, one in dye sensitized solar cells and one in Raman spectroscopy) have been awarded to the research students worked in the department. Out of which three Ph.D. degrees were awarded by NEHU and one by Tezpur University. **Five** Ph.D. degrees have been awarded by NERIST. Currently **Twelve** more students are working for their Ph.D. degrees in the department.

4.9.2 Academic activities:

- (A) The Department of Physics offers **eight core courses** for the undergraduate students at different levels (Base, Diploma, and Degree modules) of Engineering and Applied Science Streams. Details of these courses are:

Module	Course Code	L-T-P-Cr	Title of the course
Base	PH1101	4-0-2-5	Physics- I
Base	PH1201	4-0-2-5	Physics- II
Diploma	PH3101	4-0-2-5	Physics-III
Diploma	PH3201	3-0-2-4	Physics for CS, EC & EE

Diploma	PH3202	3-0-2-4	Physics for AE, CE & ME
Degree	PH3203	4-0-2-5	Comprehensive physics (Applied Science stream)
Degree	PH4301	4-0-2-5	Comprehensive physics (Bridge course)
Degree	PH5101	3-0-2-4	Modern physics

(B) Department of Physics has started offering M.Sc. (Physics) program from July' 2009. The details of courses offered at PG level is are as follows:

Module	Course Code	L.T. P .Cr.	Title of the course
M.Sc.	PH-7101	3-1-0-4	Classical Mechanics
-do-	PH-7102	3-1-0-4	Mathematical Physics
-do-	PH-7103	3-1-0-4	Computational Physics & Programming
-do-	PH-7104	3-1-0-4	Quantum Mechanics-I
-do-	PH-7151	0-0-6-3	General Physics Lab.(Expts related to G.Phy.)
-do-	PH-7152	0-0-6-3	Computer Lab.(Exercise related to operating system and programming)
-do-	PH-7201	3-1-0-4	Electrodynamics
-do-	PH-7202	3-1-0-4	Statistical Mechanics
-do-	PH-7203	3-1-0-4	Elementary Condensed Matter Physics
-do-	PH-7204	3-1-0-4	Quantum Mechanics-II
-do-	PH-7251	0-0-9-5	General Physics Lab-II
-do-	PH-7252	0-0-9-5	Electronics Lab. (Expts related to the theory Condensed Matter Physics Laboratory
-do-	PH-8101	3-1-0-4	Atomic & Molecular Physics
-do-	PH-8102	3-1-0-4	Electronics
-do-	PH-8103	3-1-0-4	Nuclear Physics
-do-	PH-810*	3-1-0-4	Special Paper-I

-do-	PH-8151	0-0-6-3	Optics & Nuclear Physics Laboratory
-do-	PH-8152	0-0-9-5	Electronics Laboratory
-do-	PH-8201	3-1-2-5	Group theory & Applications
-do-	PH-820*	3-1-0-4	Special Paper –II
-do-	Ph-825*	0-0-6-3	Special Paper Laboratory
-do-	PH-80**	3-0-0-3	Elective
-do-	PH-8299	0-0-16-8	Project

4.9.3 Laboratories & Laboratory Development:

(a) Teaching Laboratories:

The Department conducts the practical classes of all the courses offered in two laboratories.

Physics laboratory 1: Practical classes of the following courses are conducted in this laboratory:

Base Module (Technology/Applied Science) : PH 1101 and PH 1201

Diploma Module (Technology) : PH 310 1

Degree Module (Applied Science) : PH3203

New experiments have been introduced in the Diploma module.

Physics laboratory 2: Practical classes of the following courses are conducted in this laboratory:

Diploma Module (Technology) : PH 3201

Diploma Module (Technology) : PH 3202

Degree Module (Technology) : PH 4301 and PH 5101

Physics laboratory 3: Post graduate General Physics practical classes is being conducted (since, July-Dec.-09) in this laboratory.

Five more laboratories are there for M.Sc. Physics students. There are Electronics laboratory, Solid state Physics laboratory, Nuclear Physics laboratory, Optics laboratory and Computer laboratory.

(b) Computer Facility: The department of Physics has five computers coupled with printers (LASERJET and a dot matrix printer), one scanner and one CD writer. One PC is connected via LAN for the e-mail and internet browsing.

(c) Research Laboratories:

(i) FIST Research Laboratory:

This laboratory was established in 2015 by the grant received from DST, New Delhi under FIST programme. The following major instruments have been setup in the Physics Department:

- XRD Ultima IV
 - LASER Raman Spectroscopy
 - Impedance Analyzer (Wynn Kerr) with high temperature attachment
 - Differential Scanning Calorimeter (This instrument was procured from NEQUIP grant)
- The above mentioned instruments are being utilized by different Research Scholars & Post Graduate Students from the Institute and others such as RGU, Allahabad University, Nagaland University, NIT Arunachal Pradesh.

(ii) Liquid Crystal Research Laboratory: Having sanctioned a first research project by D. S. T., New Delhi in 1993, Dr. P. R. Alapati had started a research laboratory for liquid crystals work in Jan. ' 1995 in an independent building provided by NERIST and over the years established the facilities for synthesis of liquid crystal materials, their characterization for liquid crystallinity and measurements of physical properties. The experimental facilities established include:

- Hot stage polarizing microscope
- Density measurement set up (bicapillary pyknometer technique --INDEGENEOUS)
- Ultrasonic velocity measurement set up
- Impedance analyzer (H-P 4192 A)
- Accessories (heating) for X-ray diffraction studies on liquid crystals using XRD facility available at Central Research facility of NERIST
- Facilities for synthesis of liquid crystal materials

(iii) Solid State Ionics Research Laboratory: A solid state ionics research laboratory for batteries sensors and supercapacitors has been established in 1995 by Dr. S. A. Hashmi in a building space provided by NERIST to carry out his research work on a project funded by Department of Science & Technology, New Delhi. Over the years, following facilities have been developed in the laboratory:

- Medium Frequency (40Hz-100Hz) LCR Hi Tester (HIOKI, Japan).
- Low frequency (1mHz-100 KHz) computer controlled impedance analyzer (HIOKI, Japan).
- Computer controlled Analytical Work Station for Cyclic voltammetry, etc. (Sycopel, UK).

- Indigenous techniques to prepare ion! electron conducting polymers and for their basic characterization.
- X- Y-t Recorder (Graphtec, Japan)

(iv) **Solid State Electronic Materials and Devices Laboratory:** Dr. H. M. Upadhyaya established a Research laboratory in the year 1999 to carry out his research on a project funded by the Department of Science and Technology, New Delhi. Some of the experimental fabrication/ measurement facilities created within the research laboratory are as follows:

- Vacuum Coating Unit (Hind Hi-Vac., Banglore, India -Model 12A 4D) with facility of IEEE 488 interface and software.
- Source - Measure Unit (Keithley Instruments, USA - Model 236) with facility of IEEE 488 INTERFACE and software.
- Chemical Bath Deposition / electro deposition set up for the preparation of semiconducting thin films and conducting polymers.
- Solar Cell Performance measurement set up with the W-Halogen lamp with varying intensity.
- Suryamapi, a device to measure the intensity of the light.

(v) **Material Science Laboratory** : This laboratory was set up by Dr. Arvind Pandey & Dr. Sanjay to carry out research on a project funded by MHRD. The major equipments which have been procured are:

- Keithley Electrometer
- Weighing Balance
- Hydraulic Press
- Rotary Vacuum pump
- Ball milling machine
- Microprocessor based furnace

(vi) **High Temperature Furnace Facility** : Under the in-House mini Research Project Scheme and MHRD project Dr. Sanjay & Dr. Arvind Pandey have established a high temperature furnace room for preparation of ceramic/composite compounds. They have fabricated a furnace indigenously at NERIST which can operate upto 1200⁰C. One imported microprocessor based furnace which could be operated up to 1200⁰C is operational. One more furnace which can be operated upto 1000⁰C is also operational.

4.9.4 Projects completed by the UG/PG/Ph.D. students. Please specify the title of the project and name of the guide.

One Ph. D degree was Awarded Under the Guidance of Prof. P. R. Alapati to Ms.Ragani Dubey during November,2016.

One Ph.D degree was Awarded under the Guidance of Dr. Th. Gombi Devi, Associate Professor, to Mr. Thoudom Nando Singh during 3rd December,2016.

Synthesis, Characterization and Luminescence Study of Metal Oxide Based

Nanoparticles.

M. Sc. Projects

(a) One Project was completed (May-2016) by Ms. Karishna Bhuyan under the guidance of Dr. Th. Gombi Devi, Associate Professor “. Vibrational studies of Estrogen and anti-cancer drug “

(b) One Project completed (May-2016) by Ms. Anju Maga under the guidance of Dr. Kamal Saharia, Assistant Professor : “Effect of q Nonextensivity on Debye shielding in plasma.”

(C) Dr. S. Dhiren Meetei, Assistant Professor, Department of Physics was completed One Project (May-2016):

“Title: Historical Development and Prospect of Efficient Lighting”

**4.9.5 Short-term courses/seminars/workshops/conferences organized at
NERIST: NIL**

**4.9.6 Short-term courses/seminars/workshops/conferences attended by the
faculty:**

1. Dr. Th. Gombi Devi, Associate Professor, Department of Physics has Participated Institute Industry Interaction Programme on “Demonstration & Training on Biodiesel production” NERIST, 17-18 October 2016.
2. Dr. Th. Gombi Devi, Associate Professor, Department of Physics has Participated in TEQIP sponsored STP on “Pedagogy Training for Outcome Based Education” on **16-17th** March 2017.
2. Dr. Rajesh Kumar Yadav, Associate Professor, Department of Physics has attended Short term training programme “Pedagogy Training for Outcome Based Education” conducted by NITTR, Bhopal during 16-17 March, 2017 at NERIST, Arunachal Pradesh.
3. Dr. Rajesh Kumar Yadav, Associate Professor, Department of Physics has attended TEQIP-II Sponsored Short Term Course on “Emerging Trends in Materials Science” (STCETMS-2017) organised by Department of Applied Science, Madan Mohan Malaviya University of Technology, Gorakhpur during 23-29, 2017
4. Dr. Mukesh Upadhyay, Associate Professor, Department of Physics has attended Short term training programme “Pedagogy Training for Outcome Based Education” conducted by NITTR, Bhopal during 16-17 March, 2017 at NERIST, Arunachal Pradesh.
5. Dr. Mukesh Upadhyay, Associate Professor, Department of Physics has attended TEQIP-II Sponsored Short Term Course on “Emerging Trends in Materials Science”

(STCETMS-2017) organised by Department of Applied Science, Madan Mohan Malaviya University of Technology, Gorakhpur during 23-29, 201

6. Dr. Kamal Saharia, Assistant Professor, Department of Physics has attended Xth National conference of Physics Academy of North East (PANE)- November,2016 at St. Anthony's College ,Shillong and Presented paper title : Plasma sheath with two distinct Temperature q-Nonextensive Electrons and Thermal ions” Dima Rani Borgohain and K. Saharia.
7. Dr. S. Dhiren Meetei, Assistant Professor, Department of Physics has attendant Multicolour light emitting Y2O3: Dy3+/ Eu3+ nanocrystal for solid state UV sensor; National Conference on Recent Advances in Nanoscience and Nanotechnology (NCRANNT-2016); Department of Nanotechnology, NEHU, Shillong, India
8. Dr. K. Borah, Assistant Professor, Department of Physics has Participated in TEQIP sponsored STP on “Pedagogy Training for Outcome Based Education” on 16-17th March 2017.

4.9.7 New Degrees/Professional Memberships obtained by the faculty:

Prof. P. R. Alapati Continued as (i) Vice President of Physics Academy of North East (ii) Continued as Member of American Chemical Society and (iii) Became the Member of International Liquid Crystal Society

Dr. S. Dhiren Meetei, Assistant Professor, Department of Physics as Life time Member of Indian Physical Society (IPS).

Dr. S. Dhiren Meetei, Assistant Professor, Department of Physics as Life time Member of “ Materials Research Society of India (MRSI) No. LMB2549.

4.9.8 Achievements/awards/recognition earned by the faculty:

NIL

4.9.9 Projects sanctioned by outside agencies to the faculty of the department:

NIL

4.9.10 Publications:

- 01 On the Dipole – Dipole correlation and Dielectric anisotropy of some N(4-n-alkyloxy benzylidene)-4'-alkylaniline compounds doped with Silver Nanoparticles.

K. N. SINGH, BINODGOGOI, N. M. SINGH, RAGINIDUBEY, L. R. SINGH, H. B. SHARMA and **P. R. ALAPATI**

MOL. CRYST. LIQ. CRYST., **625**, 106-116 (2016) ;ISSN No.:1542-1406

- 02 Dielectric properties of highly polar liquid crystalline material showing various types of layered structures
RAGINI DUBEY, A. MISHRA, K. N. SINGH, R. DHAR and P. R. ALAPATI
LIQUID CRYSTALS, **43**, (2016); *ISSN No.:* 0267-8292
- 03 Dielectric study on the alignment or orientation of N(4-n-heptyloxy benzyldene)-4'-n-butyl aniline and the anomalous dielectric behaviour in the Smectic G phase.

K. N. SINGH, BINODGOGOI, RAGINIDUBEY, N. M. SINGH, H. B. SARMA
and **P. R. ALAPATI**

MOL. CRYST. LIQ. CRYST., **626**, 130-140 (2016) ; *ISSN No.:*1542-1406
- 04 Phukan A, Borah K. Bhattacharyya N.S, "Compact Patch Antenna on Structurally Modified Magneto dielectric Substrate ", Progress in Electromagnetic Research C, vol. 64.11-20,2016.

Paper Published in Conference. Referred Journals:

- (a) Th.Nando Singh1, Th.Gomti Devi and Sh.Dorendrajit Singh, Photoluminescence study of TiO₂:Eu³⁺@SiO₂ core-shell and pure phases of TiO₂ Nanoparticles, Int.J. Lumin. Appls. 6(2016) 172-182.
- (b) Th.Nando Singh1, Th.Gomti Devi and Sh.Dorendrajit Singh, Synthesis and photoluminescence study on europium ion activated titania nanoparticle, Adv. Matter. Letters. 8(2017)557-564.
- (c) Mukunda M.Borah, Th. Gomti Devi, The vibrational spectroscopic studies and molecular property analysis of L-Phenylalanine using quantum chemical method, Journal of Molecular Structure, 1136 (2017) 182-195.
- (d) Th. Gomti Devi, Vibrational study of Azobenzene: Comparative study with *ab-initio* calculation, Asian J. Phys. Vol 25, No 6, (2016) 00-00.

5. Papers presented in Conference:

Dr. Th. Gomti Devi, Associate Professor had presented paper in Raman bandshape analysis of C=O stretching modes of NN-Dibutyl formamide in DMSO

Solvent, ICOPVS 2016, 5-8th Nov., Lucknow.

(b) The vibrational spectroscopic studies on molecular structure, properties and HOMO & LUMO analysis of DL-Phenylalanine, Xth Biennial National Conference of Physics Academy of North-East(PANE 2016), 10-12th Nov, Shillong, 2016.

(c) Synthesis and characterization of optical properties of Ga³⁺ ion activated titania nanoparticle, Xth Biennial National Conference of Physics Academy of North-East(PANE 2016), 10-12th Nov, Shillong, 2016.

(d) Synthesis and Characterization of optical properties of TiO₂:Ga³⁺@SiO₂ core-shell and Ga³⁺ ion activated Titania nanoparticle, International conference on Emerging trends in Nanomaterials Science and Technology (ICETNMST-2017), 4-6th Jan, 2017, NIT, Nagaland.

(e) Vibrational spectra, Molecular parameters, Natural Bond orbital, HOMO-LUMO analysis of Serotonin by Density functional theory, National Conference on Chemical Physics(NCCP-2017), 20-21st March 2017, Assam University.

(f) Achievement of students:

4.9. 11. Interaction of faculty/department with outside agencies: NIL

4.9.12. Consultancy projects undertaken: NIL

4.9.13. Achievements of students: NIL

4.9.14. Any other Achievements/relevant information:

1. Prof. P. R. Alapati, Department of Physics, continued as Member of American Chemical Society
2. Prof. P. R. Alapati, Department of Physics, continued as Life member of Indian Liquid Crystal Society and Indian Science Congress Association
3. Prof. P. R. Alapati, Department of Physics, continued as Chairman, Library Advisory Committee (NERIST)
4. Dr. S. Dhiren Meetei, Assistant Professor, Department of Physics reviewed a manuscript for Journal of Physics: D (Manuscript No.: JPhysD-109138)

4.9.15 Name of HOD and other faculty members with Degree and area(s) of specialization

S/N	Name & Designation	Qualification & University	Specialization
1.	Dr. P. R. Alapati Professor	Ph.D. (1988) Nagarjuna University	Condensed Matter Physics (Liquid Crystals)
2.	Dr. Tado Karlo, Professor & (HOD)	Ph.D. (1997) Delhi University	Mathematical Physics
3.	Dr. Manan Sengupta Associate Professor	Ph.D. (1986) Calcutta University	Theoretical Physics
4.	Dr. Arvind Pandey Associate Professor	Ph.D. (2000) Univ. of Rajasthan	Condensed Matter Superconductivity, Solid state Ionics
5	Dr. Th. Gomti Devi Associate Professor	Ph.D. (2005) NEHU, Shillong	Condensed matter Physics (laser Physics)
6.	Dr. Mukesh Upadhyay, Associate Professor	Ph.D (2005) , Dr. R. M. L. Awadh University	Solid State Physics, Electronics
7.	Dr. Rajesh Kumar Yadav Associate Professor	D.Phil (2007) , Allahabad University	Condensed Matter Physics (Theory)
8.	Dr. Kamal Saharia Assistant Professor	Ph.D,2009 Gauhati University.	Theoretical Plasma Physics
9.	Dr. S. Dhiren Meetei	Ph.D,2014	Condensed Matter Physics

	Assistant Professor	Manipur University	
10.	Dr.Akbari Jahan Assistant Professor	Ph.D, 2014 Gauhati University	Theoretical Physics, High energy Physics, Phenomenology
11.	Dr.Kunal Borah Assistant Professor	Ph.D,2014 Tezpur University	Electronics , Microwave Electronics, Antenna

4.10 DEPARTMENT OF MATHEMATICS

4.10.1	A Brief Profile of the Department.	<p>Introduction and brief profile of the department: The department of Mathematics came into existence as a full-fledged department in 1993. Earlier, it was a part of the Physical Science Group since the inception of the Institute in 1986. The department has highly qualified faculty members with a wide variety of specializations with a mix of both Pure & Applied Mathematics. In addition to teaching, the faculty members are actively involved in research. Also, some of the faculty members have acted as reviewers of Defence Science journal, Mathematical Review and examined several Ph.D. theses of different Universities. The department is a member of NBHM, Department of Atomic Energy, Govt. of India, which provides new books and journals free of cost regularly. The department is running M.Sc. and Ph.D programmes successfully. Department has started Ph.D. programme since 2007. At present there are fifteen research scholars registered for Ph.D. degree under the supervision of faculty members of the department. Thirteen students have been awarded Ph.D. degree. At present, there are Two Professors, one Associate</p>
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		Professor and Five Assistant Professors.
4.10. 2.	Academic Activities:	UG and PG Syllabus revision completed. Ph.D. syllabus have been approved through BPGS.
4.10.3.	Laboratories and Laboratory Development:	Lab work sheet have been designed for both UG & PG courses, Computation Laboratory has been established.
4.10.4.	Projects completed by the UG/PG/Ph.D. students. Please specify the title of the project and name of the guide.	<p>(1) Prof. P.K. Das</p> <p>One student Mr. Naba Jyoti Saikia completed his Ph.D. Degree.</p> <p>Entitled: "MODELING FOR THE STUDY OF MALARIA INCIDENCE AND RISK FACTORS OF MALARIA: A CASE STUDY IN LAKHIMPUR DIST OF ASSAM".</p> <p>(2) Prof. B.K. Singh</p> <p>Two students Ms. W. Warseen Chanu and Ms.Yater Tato completed their Ph.D. degree.</p> <p>(i) Ms. W. Warseen Chanu</p> <p>Entitled "STUDY ON SOME GENERAL CLASSES OF ESTIMATORS OF FINITE POPULATION MEAN IN SAMPLE SURVEYS".</p> <p>(ii) Ms. Yater Tato</p> <p>Entitled:"STUDY ON GENERAL CLASSES OF ESTIMATORS FOR ESTIMATING POPULATION MEAN IN SAMPLE SURVEYS IN PRESENCE OF NON-RESPONSE</p> <p>(3) Dr. M.M. Dixit</p> <p>Two students Mr. Prabhat Yadav and Mr. Rajesh Kumar completed their Ph.D.</p>

		<p>degree.</p> <p>(i) Prabhat Yadav</p> <p>Entitled "ASYMPTOTIC APPROXIMATIONS OF CONTINUOUS WAVELETTRANSFORMATIONS".</p> <p>(ii) Rajesh Kumar</p> <p>Entitled "A STUDY ON CERTAIN TYPE OF WAVELETS AND WAVELET TRANSFORMS".</p> <p>(4) Project Guide: Mr. Jayanta Borah</p> <p>M.Sc. Project: Pranami Phukan</p> <p>Roll No.MS/15/MA/03</p> <p>Project Title: On Formation of Solution of Impulsive Fractional Differential Equation and Inclusion.</p> <p>(5)Project Guide: Pradip Debnath</p> <p>M.Sc. Project: Nirmala Chetry</p> <p>Roll No.MS/15/MA/01</p> <p>Project Title:"A Survey on fixed point theorems on set valued maps".</p> <p>(6) Project Guide : Dr. Kh.Herachandra Singh</p> <p>M.Sc. Project: Tilling Chobing</p> <p>Roll No.Ms/15/MA/06</p> <p>Project Title: "A Survey on Armendariz Rings" for the fulfillment for the requirement of the Course MA-8205.</p>
4.10.5.	Short-term courses/seminars/workshops/conferences	

	organized at NERIST. (Please specify the areas, title, coordinator, duration, and funding agencies/sponsors, no. of participants).	Nil
4.10.6.	Short-term courses/seminar/workshop/conferences attended by the faculty.	<p>(1) Dr. B.K. Singh attended International Conference of Numerical Analysis and Applied Mathematics 2016 (ICNAAM 2016) Rodos Palace-Conference Center, Rhodes, Greece, 19-25 September 2016 & presented a research paper entitled “A Family of Improved Exponential Chain Ratio And Product Type Estimators for Finite Population Mean in Two Phase Sampling in Presence of Non Response”.</p> <p>(2) Dr. M.M. Dixit: Attended the at B.H.U</p> <p>One research paper entitled, “Generalized Wavelet transform associated with chebyshev polynomial”. Presented in national conference on recent trends in Mathematical analysis and its applications during Feb 17-18, 2017.</p> <p>(3) Dr. C.P. Pandey, One research paper entitled, “Coldron Reproducing formula for legendre convolution” presented in National conference on Recent trends in Mathematical Analysis and its applications during Feb 17-18,2017 at B.H.U. Varanasi.</p>
4.10. 7.	New Degrees/Professional Memberships obtained by the faculty.	<p>L.K. Arora: The Indian Science Congress Association.</p> <p>J.Borah: Member of Indian Mathematical Society</p> <p>P. Debnath: Member of Tripura Mathematical Society.</p>

4.10.8.	Achievements/awards/recognition earned by the faculty.	Nil
4.10.9	Projects sanctioned by outside agencies to the faculty of the department (April, 2015 to March,2016) (Names(s) of PI and co-investigator, if any, title of the project, funding agency, date of sanction, total amount, fund received during the year under review)	<p>Research Project</p> <p>Title- Analytical modeling for estimating wave loads on cylindrical structure,</p> <p>Principal Investigator: Dr. M. Hassan</p> <p>Funding agency: DST.(Govt. of India)</p> <p>Duration- 3 years(Dec,2015 – Dec.,2018)</p>
4.10.10	<p>Publications:</p> <p>(a) Referred journal</p> <p>(b) Conference papers</p> <p>(Please give details about, authors, title of the paper, name of the journal/conference, volume, year, month, page nos. Also include only those papers, which were published/presented during the year under reference and do not include papers are under preparation/communicated accepted/and in press.)</p> <p>(c) Books: (Please give the author, title of the book, publisher, and year of publication.</p>	<p>(1) Yater Tato and B.K. Singh (2017), "Double Sampling Chain Ratio cum Product Type Estimator in the Presence of Non-Response" International Journal of Mathematics and Statistics, Vol. 18; Issue No. 1 ISSN 0974-7117 (Print); ISSN 0973-8347 (Online)</p> <p>(2) Yater Tato and B.K. Singh (2016), "A Generalized Family of Improved Exponential Chain Ratio and Product Type Estimators for Finite Population Mean in Double Sampling in Presence of Non Response" Int. J. of Agricult. Stat. Sci, Vol.12, No.2, pp. 511-522. ISSN: 0973-190</p> <p>(3) Yater Tato, B. K. Singh and W.W. Chanu (2016), "A Class of Exponential Dual to Ratio cum Dual to Product Estimator for Finite Population Mean in Presence of Non- Response" International Journal of Statistics and Economics, Volume 17, Issue 2, ISSN 0975-556X.</p> <p>(4) Manoj Kumar, S. Bhatnagar, B.K. Singh and O.P. Sheoran (2016), "Estimation of</p>

		<p>Population Mean using Median as Auxiliary Variable” Int. J. of Agricult. Stat. Sci, Vol.12, No.1, pp. 83-87, 2016. ISSN: 0973-1903</p> <p>(5) Manoj Kumar, Ranjit Kumar Paul and B.K.Singh (2016), “Estimating area, production and productivity trends of cotton crop in Haryana state” J. Cotton Res. Dev. 30 (2) 317-323 (2016)</p> <p>(6) B.K. Singh, W.W. Chanu and Yater Tato (2016), “A Class of Ratio cum Dual to Ratio Estimator in Presence of Non-Response Using Two Phase Sampling Scheme” Gazi University Journal of Science, Volume 29, Issue 1, pp. 213-221</p>
		<p>(7) Ashish Pathak, Prabhat Yadav, M.M. Dixit, An Asymptotic Expansion of Continuous Wavelet Transform for Large Dilation Parameter, Bol.Soc. Paran.Mat. ISSN-2175-1188, V363(2018) 27-39</p> <p>(8) P. Debnath, B.S. Choudhury & M. Neog, Fixed set of set valued mappings with set valued domain in terms of start set on a metric space with a graph, Fixed point Theory and applications, 2017, 2017:5, DOI:10.1186/s 13663-017-0598-8.</p> <p>(9) B.S. Choudhury, N. Metiya & P. Debnath, End point results in metric spaces endowed with a graph. Journal of Mathematics,2016, Article ID 9130107, DOI:10.1155/2016 /9130107.</p> <p>(10) P. Debnath & N. Konwar, Result on approximation properties in intuitionistic fuzzy normed linear spaces, theory & Application of Mathematics & Computer Science 6(2), 2016,134-149.</p> <p>(11) C.P. Pandey, Rakesh Mohan and B.N.</p>

		Tripathi, Discrete Wavelets Associated with Dunkl operator on Real line, International Journal of Computer Applications, ISSN-0975-8887 Vol 134-No 1.2016
4.10.11.	Interaction of faculty/department with outside agencies (Give details regarding membership of out committees, executive committees of professional bodies etc.	Nil
4.10.12.	Consultancy Projects undertaken, (Agencies, title of the consultancy project, amount, faculty and staff associated	Nil
4.10.13.	Achievements of students.	5 students have been awarded Ph.D. Degree
4.10.14.	Any other relevant information.	Nil

4.11 DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

4.11.1 A Brief Profile of the Department

Engineering and technologies have become one of the predominant forces in shaping our vision of reality in the contemporary world. And the domain of humanistic learning enables a future technocrat to sustain the resilience of human spirit in all spheres of life. The department of Humanities and Social Sciences (HSS) of NERIST fulfills this vision of projecting a human content and consciousness required for the expansion of technological and scientific knowledge by synthesizing the sciences and technologies with social sciences and humanities. Coupled with Forestry, the Humanities and Social Sciences were initially tagged with the Applied Sciences group of NERIST. However, since 1993, it has been functioning as an independent department offering courses in English, Economics, Sociology, Psychology and Management. The department has earned a distinctive name for itself, primarily due to the wide-ranging experience of the members of its faculty and the application of innovative teaching methods, keeping in tune with the emerging developments in their respective fields of expertise. With the introduction of the research programme in the year 2006, leading to the degree of Ph. D., in various disciplines of Humanities and Social Sciences and Management, the department of HSS has taken a giant leap in fulfilling the institutional vision of “*nurturing talent and giving wings to imagination.*” The prescribed courses apart, the department is well set to provide consultancy services to various small and medium scale industries of the North Eastern region. This is coupled with a successful hosting of various short-term and need-based training programmes, seminars and special lecture series for executives, teachers and the students alike. Most of the faculty members of the department have the distinction of successfully completing research projects sponsored by such agencies as ICSSR, ICAR, McArthur Foundation, Ministry of Social Justice and Empowerment of the Government of India, AICTE,

Ministry of Human Resource Development, etc. Further, the faculty members are engaged in supervising research scholars on such subjects as Economics, Human Resource Management, Marketing Management, Financial Management, and Organizational Behavior, etc. leading to Ph. D. degrees. A developing technical mind must also acquire sensitivity to socio-cultural needs of human beings. With the experience of the old and the energy of the youth, the department of HSS strives to ensure that the budding technocrats and entrepreneurs are armed with the quality of vision and personality which will enable them to use their skills in bridging the socio-technical gap and establish a strong interface between science, technology and society.

4.11.2.	Academic Activities: Normal Teaching and other academic related activities
4.11.3	Laboratories and Laboratory Development: No new development during the said period.
	(b) Communication Skills Development Laboratory : Department of HSS has developed Language and communication Skills Development Laboratory recently under MHRD MODROB Scheme under the leadership of Prof. B.D. Nayak (P.I.) and Shri Ranendra Prasad, (Co-P.I.) . This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 45 students.
	(c) Department of HSS has also developed a Seminar Hall under AICTE MODROB Scheme under the leadership of Prof. B.D. Nayak (P.I.) and Shri Raju Barthakur, (Co-P.I.) . This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 56 students.
4.11.4.	Projects completed by the PG students. Specify the title of the projects and name of the guide) : Nil
4.11.5.	Short-term courses/seminars/workshops/ conferences organized at NERIST. (Please specify the areas, title Co-ordinator, duration, and funding agencies/ sponsors, no. of participants) Nil
4.11.6.	Short-term courses/seminars/workshops/conferences attended by the faculty. Nil
4.11.7.	New Degrees/Professional Memberships obtained by the faculty: Nil
4.11.8.	Achievements/awards/recognition earned by the faculty: Nil
4.11. 9.	Project sanctioned by outside agencies to the faculty of the

	department (April,2010 to March, 2011) (Name(s) of PI and co-investigator, if any, title of the project, funding agency, date of sanction, total amount, fund received during the year under review.	Nil
	Consultancy Project:	Nil
4.11.10	Publications:	
(a)	Referred Journal:	Nil
(b)	<p>Conference papers (Please give details about, authors, title of the paper, name of the journal/conference, volume, year, month, pages nos. Also include only those papers, which were published/presented during the year under reference and do not include papers are under preparation/communicated/accepted/and in press.)</p> <p><u>Prof. B. D. Nayak</u> A paper “Role of Education in Economic Development: A Reality in reference to Lakhimpur District in Rural Assam.” Was presented in a National Seminar organized by the Dept. of Economics, Dera Natung Government College, Itanagar during 22-23, Oct., 2016.</p>	
(c)	Books: (Please give the author, title of the book, publisher, and year of publication)	
4.11.11	Interaction of faculty/department with outside agencies (give details regarding Membership of outside committees, executive committees of Professional bodies etc.)	Nil
4.11.12	Consultancy Projects undertaken. (Agencies, title of the consultancy project, amount, faculty and staff associated) :	Nil
4.11.13	Achievement of Students:	N.A.
4.11.14	Any other relevant information:	
	<p>Ph.D. Degree Awarded under the Supervision by Prof. B. D. Nayak</p> <ol style="list-style-type: none"> 1. Mr. Dani Kacha has been awarded Ph. D. Degree on his Ph. D. Thesis on “Prospects of Paddy-cum-Fish Culture for Sustainable Economic Growth of Farmers: A Case study of Ziro Valley” in September, 2016 2. Mr. Rashid Khan has been awarded PH. D. Degree on his Ph. D. Thesis on “Cultural tourism potential for Economic Development: A study of multi-ethnic culture of Arunachal Pradesh.” ” in December, 2016 3. Ms. Manashi Patowary has submitted her Ph.D. thesis in February, 2017. 	
(i)	<u>Prof. B. D. Nayak</u>	
	Invited talk	

	<ol style="list-style-type: none"> 1. As a Chief Guest of a National Seminar organized by Paschim Guwahati Mahavidyalaya, Guwahati, delivered a speech on “Entrepreneur Skill Development for Economic Development of North East India.” during 27-28, Oct., 2016. 2. On “Role of Cooperatives in Sustainable Development & Growth” on the occasion of 63rd National Cooperative Week celebration by APSCO, Naharlagun, Arunachal Pradesh on 14th November, 2016.
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4.11.15 Additional responsibilities taken up by the Faculty Members of the Department:

Prof. B.D. Nayak		<ul style="list-style-type: none"> ➤ In-charge Seminar Hall ➤ Chairman’s Nominee of KV NERIST.
Prof. P. Parida		<ul style="list-style-type: none"> ➤ Head of the Dept. ➤ Controller of Examination.
Mr. Ranendra Prasad		<ul style="list-style-type: none"> ➤ In-charge Computer Lab. ➤ In-charge Communication Skills Lab.
Dr. Shyamalee Sinha		<ul style="list-style-type: none"> ➤
Mr. Raju Barthakur		<ul style="list-style-type: none"> ➤ In-charge, <i>Interface...</i> The NERIST News Letter ➤ Member of Library Advisory Committee.

4.12. CENTRE FOR MANAGEMENT STUDIES

4.12.1 A Brief Profile of the Centre:

Centre for Management Studies (CMS) came on 4th November, 2009 as an independent centre to offer Management Programmes. Soon after acquiring Deemed University status in the year 2005, one of the cherished dreams of starting MBA program came closer to reality. Finally, in the year July, 2006, NERIST earned the distinction of being the first institute in Arunachal Pradesh to start MBA program under the department of Humanities and Social Sciences. The Objectives of the Centre for Management Studies is to impart management education to the future managers and policy makers of the region. CMS aims to pursue global vision without losing local priorities and train future managers to develop a synergy between global and local value systems.

Centre for Management Studies became an independent centre to meet the growing aspirations of the region to develop quality managerial talents. Centre offers MBA program in various specialization areas i.e. Human Resource Management, Marketing Management, System Management, Financial Management. Besides a full time MBA programmes, other activities of the centre are as follows:

- Ph.D. program in Management,
- Management Development Program (MDPs) for Executive, government officers ➤ Personality Development Programs (PDPs) for different target groups.

- Motivational workshops.
- Consultancy in diverse areas of Management.

To promote intellectual and professional activities in Centre, the Management Forum of NERIST (MaFoN), a body comprising of student and teachers, has been very actively organizing professional activities like conducting expert talks by eminent speakers, seminars, GDs and outdoor Management Development Activities.

Some of the eminent speakers who delivered lectures in the centre during 2015-16

- Dr. K. Sotechland, Assistant Professor Department of Management, RGU, Doimukh
- Mr. A. Chakraborty, Assistant Professor Department of Management, RGU, Doimukh
- Mr. S.K. Sharma, Associate Professor, D.N. College, Itanagar.

The approach to develop managers with all round personality is paying the dividend and so far, 5(five) batches of students passed out from the centre have been well received by the industry.

4.12.2 Academic Activities of the Centre

Courses Taught During the Year

Dr. M Mall	July-December, 2016	January-May, 2017
	MB-7106, MB-8151, MB 8110 MB-8111	MB-8109, MB-7207, MB-8210

Dr. S Choudhury	July-December, 2016	January-May, 2017
	MB6003, MB 7103, MB7101, MB7105, MB 7151	MB8201, MB8231, MB8232

4.12.3 Department administrative responsibilities details:

Administrative Responsibilities	Dr. M Mall	Dr. S Choudhury
	Head of the Centre, Warden PG Boys Hostel, Chairman BOS, DPGC	ERP Coordinator, T&P Counselor of CMS, Student Counselor, Indset representative, Convener DPGC, Member BOS

4.12.4 Student, Faculty and Staff Details:

Total No. Of Students in CMS Department	MBA-57, Ph.D. - 13
Total No. of faculty at Present	03 Nos. of Asst. Prof., 01 Professor (On Deput.)
Total No. of Faculty required in CMS	06 (Sanctioned), Vacant- 02

Department	
Total No. of Ministerial Staff at present	01 DC, 01 Lab. Attend. and 01 Labor

4.12.5 Dissertation report completed by PG students: MBA 2015-17

Sl. No	Name of the students	Roll No.	Topic
1.	Puja Saha	MBA/15/01	Consumer Perception towards Organized Retailing in the Capital Complex of Arunachal Pradesh
2	Anu Nalo	MBA/15/02	A study on Human Resource Practices in Selected NGOs of Assam & Arunachal Pradesh
3.	Tana Adap	MBA/15/03	Appraisal on Orange farming in Toru Circle of Arunachal Pradesh- A Case Study
4.	Kago Yaph	MBA/15/04	Status of Mineral Water Industry in Arunachal Pradesh- A Case Study
5.	Chandan Singh	MBA/15/05	Consumer Perception about Patanjali Products in Capital Complex of Arunachal Pradesh
6.	Taling Nipa	MBA/15/06	Problems & Prospects of Spice Zero
7.	Priya Pradhan	MBA/15/07	Perspectives of Awareness about Financial Education at Capital Complex of AP
8.	Monadepa Nayak	MBA/15/08	A study on tourism and tourist circles in the Arunachal Pradesh.
9.	Navajyoti S Baidya	MBA/15/09	Commercialization of Local Handloom Products of Papum Pare district of AP
10.	Rajen Biswas	MBA/15/10	A study on Consumer Behavior related to personal cars in Capital complex of AP
11.	Pongji Mara	MBA/15/11	Web Content Analysis: A case study on AP Tourism Website
12.	Jumpi Ete	MBA/15/12	Assessment of rural empowerment programs of Govt. of India & study of socio economic status of farmers in Bagra circle of West Siang district
13.	Jungam Yomcha	MBA/15/13	Study of consumer awareness towards the usage of Mobile banking with special reference to Capital complex of AP
16.	Kage Dabi	MBA/15/17	Market demand analysis of packaged drinking water in Pasighat
18.	Chuku Apu	MBA/15/19	Cardamom cultivation in Mengio circle & its impact on Rural Livelihood

19.	Bojum Yorung	MBA/15/20	A case study on Energy conservation awareness in Capital complex region of AP
20.	Yaling Chije	MBA/15/21	Linkages between festival and tourism- A case of Mechuka adventure tourism festival.

4.12.6 Summary of Industrial Training of MBA from 1st June to 15th July,2016

19 students went for summer training to various PSUS, Banks and other reputed organizations.

4.12.7 Activities by Faculty Members during 2016-17

➤ Details of Research Projects:

1. Success Story of Cleanest Village of Asia: A Study of Mawlynnong Village in Meghalaya
2. A Case Study of District Planning governance under Panchayati Raj System: A case of Lachen and Lachung village in North Under Autonomous District Councils (ADCs) (with Dr. M.K. Shrivastava)
3. Integration and Function of Institutions of Self- Sikkim.

➤ (Details of Article/Books/Chapters in Books published

1. Article/Papers:

A. Prof. R M Pant (On Deputation), Director, NIRD, Guwahati. ➤ Conducted Training Programmes at NIRDPR, Guwahati

(a) As Course Coordinator	05
(b) As Joint Course Coordinator	06
(c) Sessions in other Programs	11

Title	Name of the Journal/Newspaper/Book
*Ishwar ke bagiche Mawlynnong me' (Hindi)	ion Post, Nov 1-15,2015,New Delhi

2. Books:

Title	Co-author, if any	Name of the Publisher
"Development Perspectives in North East India: A Holistic Overview"	Dr. M.K. Shrivastava	Akansha Publishing House New Delhi (ISBN-978-818370-461-8)

2. Chapters
in Books

Title	Co-author, if any	Name of the Publisher
'Dreams of Act East Policy through privatization of developmental activities in Arunachal Pradesh'	Asha Nanding & S Choudhury	Papers published in the Book, ' Look East Policy-Perspectives from South East Asian architecture' edited by A Bhattacharjee, published by Excel India Publication, New Delhi (2015)
'Marketing of Rural Development Schemes for development of North Eastern Region of India'	-	Papers presented as 'Key note lecture' and published in the proceedings of UGC-SAP National Seminar on achieving Sustainable
		Rural Livelihood 'Financial Intervention and Skilling India with special reference to the NER', published by Department of Management, Tezpur University. (Match 4-5,2016)
'Assam: New Opportunities'	-	Paper presented as 'Key note speech' and published in the book ' Turn mirrors in to windows: Rhetoric of Act East Policy & beyond', edited by Amit Choudhury
'Woman entrepreneurship in Arunachal: Sunshine in the clouds' in "Development Perspectives in North East India; a Holistic Overview" edited by Dr. R.M.Pant & Dr. M.K. Shrivastava		Published by Akansha Publishing House New Delhi (ISBN-978-81-8370-461-8)
'Growth of Public-Private Sectors through Infusion of Technical Manpower: A Strategic Approach to Arunachal Pradesh.'	S. Choudhury and Sandeepa Dutta	Published in "Development Perspectives in North East India: a Holistic Overview" edited Published by Akansha Publishing House New Delhi (ISBN-978-81-8370461-by Dr. R.M.Pant & Dr. M.k. Shrivastava

4.12.8 Any other achievement deserving special mention relating to quality in research, training, publications etc.

Ph.D. Guidance/Evaluation/Editorial Boards: ○ Two Scholar under supervision of the undersigned were awarded ph D degree during 2015-16

○ Five scholars are presently working under the undersigned. ○ Editor in Chief, journal of Advance Management Science (JOAMS) ○ Member Scientific Board of Economics, Management and Humanities, ICEHM ○ Three numbers of Ph D thesis evaluated with details as under:

Financing of Micro Enterprises In Mizoram: An analytical study’, on Government Schemes’, Department of Business Management, Mizoram University, Aizawl.

Consumer spartial behavior approach to retail location: An Empirical Study’, Department of Management, BHU, Varanasi .

‘Effectiveness of Community Health workers (ASHA) in facilitating Health Care Services in three Districts of Assam’, Department of Business Studies Tezpur University, Tezpur

4.12.9 Guest Speaker in out side organization other than NIRD off-campus Programs:

Date	Organization	Programme	Topic	No. of Session taken
May 15, 2015	Department of IT and Communication, Govt. of Nagaland	E-Naga Summit	Role of Quality Technical Institute’s and Building Solid Foundation for the growth of IT in NE Region	Panelist and Resource Person
August 18,2015	University of Science and Technology, Meghalaya	Progress Review of Ph.D Scholar	Employee Retenton	As external expert

October 5, 2015	G.B. Pant Institute of Himalayan Environment & Development, Kosi-Katarmal, Almora	Multi Stake-Holders Himalayan Sustainable Development Forum (HSDF) : National Consultation, at NIRDPR-NERC, Guwahati	Sustainable Development	Delivered lecture / Panelist
November 6, 2015	Tezpur University Department of Business Administration, NAPAAM, Assam	Evaluation of Summer Internship Project (SIP) Report	The Viva Voce Examination	External Examiner
November 19, 2015	Brahmaputra Board, River Development and Ganga Rejuvenation, Ministry of Water Resources, Govt. of India, Basistha, Guwahati	Departmental Promotion Committee Meeting	Post of Assistant Executive Engineer	As a Member
November 19, 2015	Department of Environment and Forest, Govt. of Assam	Launching of Assam State Action Plan on Environment		Member Consultative Group
December 29-30, 2015	G.B. Pant Institute of Himalayan Environment & Development, Kosi-Katarmal, Almora	Multi Stake-Holders Himalayan Sustainable Development Forum (HSDF) : National Consultation, at India Habitat Centre, New Delhi	Sustainable Development	Resource Person and Guest of Honour
January 20-21, 2016	Indira Gandhi Vishwavidyalaya, Raipur	Prospects & Future of Higher Education	Key Note speech & Panellist	Delivered lecture & Chaired one session
February 26-27, 2016	University of Science and Technology, Meghalaya	International Conference on "Raise with East"	Commerce and Connectivity	Panellist and Chaired the session

4.12.10 Journals

B. Dr. S. Choudhury

1. Adikanda Parida, Shibabrata Choudhury, Saibal Chatterje, Debashis Chatterjee, A rule based electrical energy distribution model for energy efficiency in technical institutions: A case study, Energy and Building. Elsevier, volume 126, 15 August 2016, Pages 508-516. <http://dx.doi.org/10.1016/j.enbuild.2016.05.069>.
2. Adikanda Parida, Shibabrata Choudhury, Saibal Chatterje, Debashis Chatterjee, A Cost effective trade-off based renewal power augmented energy efficient load model for manufacturing industries for demand side management, Cogent Engineering, Volume 3, 2016-Issue 1, <https://www.Cogentoa.com/article/10.1080/23311916.201.1239299>

Books Chapters

1. Shibabrata Choudhury, Rajive Mohan Pant, Saibal Chatterjee, Asha Nanding Destination of Branding of Ziro Through Potentiality of Bio-tourism, Book Title: Bio prospecting of Indigenous Bio resources of North-East India, DOI10.1007/978-981-10-0620-3-21, Springer Singapore.
2. Aditya Borborah, Madhulekha Gogoi Borborah, Shibabrata Choudhury, Prospects of Ecotourism in Majuli, Book Title : Bio prospecting Indigenous Bio resources of North East India, DOI10.1007/978-981-10-0620-3-20 Springer Singapore.

Invited Talks

1. How can entrepreneurship be promoted in IT sector on 29th Nonember,2016 at e-Naga Summit at Kohima, Nagaland

Certification

1. Empanelment Financial Education Resource Person for Securities Exchange Board of India (SEBI)

C. Dr. Manmohan Mall

a. Papers Published in Journals

1. Attributes affecting production and productivity in open cast mines: A review, International Journal of Advanced Operation Management, Inderscience Publishers (In Press)
2. Who are hindering shop floor productive hours - An exploratory finding from discrete manufacturing industries of India? International Journal of Productivity and Quality Management (In Press)

3. Link between insurance and economic growth Case of India, Researchers World-Journal of Science, commerce and Management.
4. A study on challenges faced by progressive fish farmers in the cachar district of Assam (2015), International journal of Engineering Technology, Management and Applied Sciences, Vol-3, Issue-3, pp 27-33.
5. Determinants for entrepreneurship development. An empirical study on fish farmers in cachar district of Assam, (2015) Journal Global of Economics, Management and Business Research, Vol-3, Issue-2, pp 49-56.

b. PhD Submitted under his/ her guidance:

NIL

c. Paper presented

1. **Fostering Tourism for peace in India: Economic development Perspective**, Paper presented in the International Symposium on "Fostering Tourism for Global peace Opportunities and Challenges" during 1-3 February 2016 held at Faculty of Hospitality &

Tourism Management Sikha 'O'Anusandhan University, Bhubaneswar in collaboration with International Institute for Peace through Tourism. (India Chapter) & Indian Tourism and Hospitality Congress.

d. Short term courses organized: "Getting ready for the Corporate World" 02 days MDP in association with Electrical Engineering Department sponsored by TEQIP-II, supported by Indian Oil, along with Dr. S Choudhury and Mr. A K Parida.

e. Any other information deemed fit

NA

D. Mrs. Bijoylaxmi Sarmah

a. Papers Published in Journals

Sarmah B. and Rahman Z, (2018)' Transforming Jewelry Designing: Empowering customers through crowd sourcing in India'. Global Business Review (Scopus) Sage Publication (Copy right submitted)
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Sarmah B. UI Islam. J. Rahman Z, (2016) " Mangaldeep: spreading fragrance in India", South Asian Journal of Management Cases, Vol.5,No.,ISSN2277-9779, Sage Publication

Sarmah B. Rahman Z, (2015)" Sustainability, Social Responsibility and Value Co- creation. A case Study Based Approach", Procedia- Social and Behavioral Sciences, 189 314-319 (Scopus) Elsevier Publication

b. Award/Recognition Received

Received of the Ministry of 'Micro, Small and Medium Enterprises' Fellowship for Ph.D. Research Scholar for the year 2016 and currently undertaking a project work from the MSME for development of industries in SIDCUL, Haridwar, Uttarakhand

8. Short term course/workshop attended by the faculty: **NIL**

9. New degrees/professional membership obtained by the faculty: **NIL**

10. Ph.D. Thesis evaluated/external expert

By Prof R.M. Pant acted as external expert for Ph.D. Thesis Evaluation in the following

Universities

- a) Manipur University
 - b) Anna University, Chennai
 - c) Dibrugarh University
 - d) Jayati Vidyapeeth, Jaipur (2 Nos.)
- **Ph D Guidance:** Guiding 08 Phd Scholars, Four scholars were awarded Ph.D degree under my supervision during 2015.
 - **PhD Proposals evaluations :**
 - RGU,Rono Hills, A.P.
 - Dibrugarh University, Dibrugarh

SECTION – 5

CENTRAL FACILITIES SERVICES AND ACTIVITIES

5.1 CENTRAL LIBRARY

(a) No. of books : 63419

(b) No. of Journal : 98

(c) Details of E-Journals

- (i) Own subscription : Not renewed for the year, 2016
- (ii) Being a core member of ESS (formerly INDEST) consortium, the faculty members & students of NERIST is entitled to receive the following E-resources:

1. ACM Digital Library- 1139 titles
2. ASCE Journals online -35 titles
3. ASME Journals online -28 titles
4. ASTM standard
5. Nature
6. ASPP
7. Economic & Political weekly
8. JSTOR
9. Oxford Univ. Press

(d) Magazines : 8

(e) Newspapers : 4 daily

(f) Other facilities

- (1) **Book Bank** has been established in the Central Library. It was initially funded by NEC. Later NERIST has provided the required funds for upgrading the collection with new editions and as per new syllabus. The students get a set of text books for the courses of the semester covering all courses of that semester.

No. of Text books available module- wise, are as under.

- 1. Base Module : 10522 vols. -- 154 titles
- 2. Diploma Module : 12142 vols. – 208 titles
- 3. Degree Module : 12324 vols. – 270 titles
- 4. Degree Forestry : 2650 vols. – 100 titles

Total = **37638 vols.**

(2) **Indian Standards:** Library posses full set of Indian Standard published by BIS on CD ROM.

(3) **Current Awareness Service:** The library provides the new addition list, contents of periodical services,

paper clippings etc. to various department. of the Institute.

(4) **A-V Materials:** 139 nos. DVD “Video Training Programme” is available for different departments.

(5) **Institutional member:**

- 1. Indian Liquid crystal society, Bangalore,
- 2. Kaziranga Wildlife Society, Assam,
- 3. Association of Indian Universities, New. Delhi

(2) **Details of departmental libraries:**

Departmental library has been set up for all 11 departments. Books have been procured by the library for the departments. No. of books purchased department wise are as under:

5.2 Departmental libraries and their collection

Sl. No	Departments	No. of Books
01	Agricultural engineering	275
02	Civil engineering	111
03	Chemistry	86

04	Computer Science & Engineering	234
05	Electrical Engineering	118
06	Electronics and Communication Engineering	434
07	Forestry	71
08	Humanities and Social Sciences	252
09	Mathematics	704
10	Physics	29
11	Mechanical Engineering	190

Library Staff

Sl.No.	Name	Designation
01	Sri Ved Prakash Gupta	Librarian
02	Sri Durga Madhab Sahu	Assistant Librarian
03	Sri Santosh Chandra Ray	Sorter
04	Smt. Manju B Nair	LDC
05	Sri Thal Prasad Khandal	Xerox Operator
06	Mrs. Y. Nyori	Xerox Operator
07	Sri Mohidhar Boro	Peon
08	Sri Babu Lal Mandal	Helper
09	Sri Bharat Chandra Kakati	Helper
10	Sri Jogindra Nath Neog	Peon
11	Sri Kumud Chandra Borah	Peon
12	Mrs. L. Yami	Peon

Library Advisory Committee Members

Sl	Name	Deptt	Member
1	Prof. P.R.Alapati,	Physics	Chairman
2	Dr.(Mrs.) S.L.Bharati,	Chemistry	Member
3	Dr. K.Saharia,	Physics	Member
4	Dr. S.K.Bhagat,	Electrical	Member
5	Mr. S.M. Khan	Mechanical	Member
6	Dr. P.Debnath,	Mathematics	Member
7	Mr. Raju Borthakur,	HSS	Member
8	Mr.S.Choudhury,	CMS	Member
9	Dr. P.K.Pandey,	Agriculture	Member
10	Dr. Awadesh Kumar,	Forestry	Member
11	Dr. R.K.Mangang	Electronics	Member
12	Mr. M.Marjit Singh	Computer Sc	Member
13	Mrs. Mudo Puming	Civil Engg.	Member
14	Mr.V.P.Gupta	Librarian	Member-Secretary

INDEST COMMITTEE MEMBERS

Sl	Name	Department	Member
1	Prof. P.R.Alapati	Physics	Chairman
2	Dr.Mrs. S.L.Bharati	Chemistry	Member
3	Dr.Saibal Chatterjee	Electrical	Member
4	Dr.P.Debnath	Mathematics	Member

5	Dr. P.K.Pandey	Agriculture	Member
6	Mr.Raju Borthakur	HSS	Member
7	Mr. Amar Taggu	Computer	Member
8	Mr. S.Majumder	Electronics	Member
9	Dr. M.Chandrasekharan	Mechanical	Member
10	Dr. M. M.Mall	CMS	Member
11	Dr. Akbari Jahan	Physics	Member
12	Mrs. Mudo Puming	Civil Engg.	Member
13	Mr.V.P.Gupta	Librarian	Member
14	Dr. Suresh Kr. Singh	Forestry	Member, Secretary

5.2 TRAINING AND PLACEMENT

5.2.1 Profile of the Section:

Since its inception in 1991, T & P Cell is instrumental in counseling the final year students in securing jobs in consonance with their knowledge and skills by organizing campus interviews, while simultaneously exploring various avenues for their placement. Workshops are also being organized by the Cell for the pre final and final year students to provide them with substantial exposure in the areas pertaining to their recruitment and facilitate their entry into leading and highly professional organizations.

5.2.2 Status report regarding activities:

Training:

The cell organized Industrial Training or field training for a minimum period of four weeks/30 days for Agricultural, Civil, Computer Science, Electrical, Electronics & Communication, Mechanical Engineering students, at the end of the pre-final year during Summer vacation, which is a compulsory requirement in partial fulfillment of the requirements of B.Tech. curricula. Some of the organizations where NERIST students undertook their training during summer 2017 are: Eclat Engineering, Hyderabad, NHPC, IITs, NIELIT, NESAC, CETPA, Meghalaya Energy

Corporation Ltd., Door Darshan Kendra, BSNL, NEEPCO, IOC, Oil India Ltd., ICAR, Ishan Vikash (Govt. of India Project), NERFMTTI, NERIWALM etc.

Placement :

This Cell arranged On-Campus and Pool Campus drives for the final year B.Sc./ M.Sc. (Forestry), B. Tech./M.Tech. and MBA students. All facilities are provided to officials of companies to conduct campus interview at NERIST. Arrangements are also made for conducting Pool campus interviews at NIT Arunachal/Shillong, Tezpur University, SIT Siliguri, SMIT, Gangtok and AEC Guwahati. The organizations which recently came to conduct campus interviews/pool campus at Guwahati, Shillong, Gangtok and Siliguri include: Tech Mahindra, Asahi India Glass, Cummins India, JMC Projects, Power Grid Corpn. of India Ltd., Axis Bank, Zaloni, Oil India Ltd., HUAWEI Technologies, SAP Laboratories, Shriram Transport, etc.

Initiatives of T&P towards improvement of Placement statistics:

Considering the lack of preparedness and proper sensitization of our students for appearing screening tests during campus interviews and in order to facilitate screening and interface with major companies, T&P Cell organized mock online screening tests for the B.Tech. final year students which was conducted by M/s CoCubes, Bangalore. Around 61 students from different disciplines participated on the different types of 'On-line Tests' conducted by M/s CoCubes on 7th and 10th December '16. **However, lack of an online test facility at NERIST was a hindrance in conducting these online tests and had to be arranged using students' own laptop with power connection and wifi connectivity issues.**

To streamline the entire placement process, the Training & Placement Cell has entered into an agreement with M/s GREEKTURTLE, Bhopal, and adopted 'TNPSUITE' a software by the Firm. Now the placement process(s) has been totally automated and overcome operational challenges thereby forming a platform that connects students and recruiters to Placement Cell, which is serving as a Central Placement System, where we are connecting the students and the Companies, managing all Data, tracking own work, automating all placement process steps, monitoring offers, analyzing student performance to determine training needs, gaining insights from reports and customizing the system to office specific needs.

5.3 SPONSORED RESEARCH AND INDUSTRIAL CONSULTANCY

5.3.1 Profile of the Section

The NERIST Board of Management in its 51st meeting held on 28.08.2001 had approved the Sponsored Research and Industrial Consultancy (SRIC) Cell in NERIST to look after the smooth running of various sponsored research projects in the Institute. Presently the Cell is headed by a Associate Professor as Coordinator. One PA and one Peon are attached with this Cell to help the day to day works of the Coordinator SRIC. The financial matters & other relevant records of all the projects of various departments like Forestry, Agriculture Engineering, Civil Engineering, Mechanical Engineering etc. are being dealt by the Finance Section.

5.3.1 Status Report regarding activities.

Presently about 32 Nos. of projects in various departments of NERIST is going on. Each project is being run by a P.I and other office functionaries as per guidelines of the sponsoring agency.

5.4 CONTINUING EDUCATION PROGRAMME CELL

5.4.1 A Brief Profile of the Section

- a. To provide information to the bright meritorious students about Early Faculty Induction Programme (EEIP) sponsored by AICTE and other agencies
- b. To provide information to faculty members regarding financial assistance from Government/Sponsoring agencies so that faculty members can get grant from these agencies for book writing/material preparation etc.
- c. To provide timely information and proforma to faculty members for applying AICTE or other sponsored Short Term Training Programme etc.
- d. To encourage and coordinate faculty members/departments for specially formulated self financing/sponsored short term courses for Industry, R&D personal.

5.4.2 Status report regarding activities:

- a. A number of faculty members have attended Seminar/Workshops/Short Term courses/Conferences during this period
- b. Various departments of NERIST have also organized some short term programme in NERIST during this period.

5.5 KENDRIYA VIDYALAYA, NERIST

Kendriya Vidyalaya NERIST which was established in 1995 has been catering to the educational needs of the NERIST children. It has been often proved that KV NERIST produced excellent result in terms of academics and also other fields. But in the recent past the result is not so good but our teachers are consistently working hard to bring back the name and glory of KV NERIST. The following are the brief achievements Of the Vidyalaya in different fields:

Result: Class XII (AISSCE-2107): 56%

Class X (AISSE-2017): 94%

(There are 7 students who got 10 CGPA in the board examination)

Sports: Many students of the Vidyalaya have participated in the regional level sports meet. Some of the students have participated in National Sports Meet conducted by Kendriya Vidyalaya Sangathan. Many students from different classes have participated in Regional Level Social Science Exhibition.

Celebrations: The Vidyalaya has celebrated all the important occasions to create awareness among the students and also to highlight the importance of national festivals and other days of importance.

CCA: Apart from quality education the Vidyalaya has conducted many Co-curricular activities for the students to inculcate life skills and other skills in the students.

Above all the Vidyalaya has been consistently working to produce 100% result with quality in this academic session.

5.6 NERIST KG SCHOOL

NERIST KG School was established in the year 1992. It has been started with a mission to provide pre-school education and to promote healthy peer group activity among children of the institution's employees. The school is self-financed for its recurring expenditure and is running

on no profit no loss basis. Presently, the school is running three classes: Play class, Lower Kindergarten (LKG) and Upper Kindergarten (UKG).

Class	Strength	Min. Age of Admission
Play	16	2.5 Years
LKG	45	3 Years
UKG	45	4 Years

Organization structure:

1. Mrs. Meenaxi Arora - Principal-cum-Teacher
2. Mrs. Mithu Sarkar - Assistant Teacher
3. Mrs. Jyoti Deomali - Assistant Teacher
4. Mrs. Adam Bage - Assistant Teacher
5. Mrs. Rupa Khargharia - Assistant Teacher
6. Ms. Mamoni Chetri - Assistant Teacher
7. Mrs. Radhe Jailyang - Non-Teaching Staff
8. Mrs. Geeta Mili - Non-Teaching Staff
9. Mrs. Renu Swargairy - Non-Teaching Staff

5.6.1 Status report regarding activities

During the academic session (April 2016 - March 2017), various activities, competitions and celebrations were organized in addition to Kindergarten level teaching for all round development of the children. National festivals were celebrated to grow patriotic feelings inside the children right from early age. Various other activities were conducted to develop competitive skill in the wards of school which includes:

- Drawing competition,
- Handwriting completion,
- Fancy dress competition,
- Rhyme reciting competition,
- Story telling competition etc.

The School celebrated its Annual day on 14th of November, 2016 i. e. on Children's day. The School organized sports on Republic day (26th January 2017) for physical development of the children. A school picnic was also organized for entertainment. At times, parent's-teacher's meetings were organized for free interactions and conversations between parents/guardians and the teachers.

Starting from 15th August 2016 to 15th August 2017, the whole year has been celebrated as Silver Jubilee year. For **year-round silver jubilee celebration** following activities and competition were conducted:

- Drawing competition amongst the alumni of the school,
- Dance and song competition amongst the alumni of the school,

A get-together was organized on 5th September 2016 and all the past chairpersons, school management committee members and teachers of the school in the last 25 years were felicitated. The closing ceremony of Silver Jubilee celebration cum annual function will be held on 17/08/2017.

1. **Highlights**

The basic infrastructure like space & building for school have been provided and maintained by the NERIST authority. The school is equipped with all kinds of teaching & learning aids, outdoor & indoor games and facilities to develop extracurricular abilities in small children. It includes a big play ground and children's park within the school premises with the facilities such as two safe plastic plane slides, a tunnel slide, Swings, Marry-go-round, See-saw etc. For class room learning, toys, tricycles, slide, charts, audio-video systems, computer, indoor play items etc. are available.

2. **List of Committee Members, if any**

The school management committee is responsible for running the school. The committee is headed by the chairperson/chairman, who is nominated by the Director, NERIST and has one representative member each from NFA, NTSU & the principal-cum-teacher of the school as member secretary.

Present Structure of School Management Committee

- | | |
|-------------------------------------|------------------------|
| 1. Dr. Dipika Devi (from July 2017) | – Chairperson |
| 2. Dr. Dipika Devi (till July 2017) | -- NFA representative* |
| 2. Mr. T. Debnath | – NTSU representative |
| 3. Mr. Nabam Hari | – NTSU representative |
| 4. Mrs. Meenaxi Arora | – Principal, KG School |

(* Note: No NFA representative from July 2017)

3. **Any other relevant information/data**

Nil

5.7 TRANSPORT SECTION

Transport section of NERIST was established in the year 1987 under the administrative control to fulfil the need of in- campus and off- campus transport requirements of the institute. The transport section was initially developed with plying vehicles and kept under the control of Chairman (TPT) and with supervision of Transport Officer. The Transport Section provides better service round the clock for Institute in all activities for student, staff, departmental works and other official works of the university including medical emergency for NERIST Student, staff and their family members.

5.7.1 The Various services offered by the transport section are as follows:

- a) Detailment of vehicles for in campus and off –campus official duty as and when required including odd hours.
- b) Providing the Bus service to NERIST students for attending classes to degree block as per their schedule every day (Monday to Saturday 7.05am to 5.05pm)
- c) Providing School Bus service to the wards of NERIST employees in Kendriya Vidyalaya, NERIST from Type/I Campus and VKV School at Bage Tinali, Nirjuli from NERIST main campus.
- d) Providing the vehicle to the employees and students under staff welfare and students scheme for religious and social functions on payment basis as and when vehicles are available.
- e) Providing the vehicle for campus interview of students at NERIST campus, Guwahati and other places seminars, conferences short term course short term training programs, students study tour shirty and workshops organized by the faculty of various department of NERIST.
- f) Providing the vehicle to various departments for conducting of practical training to different module students including field visits, Industrial visits in campus and off campus for students developments.
- g) Providing the vehicle to NCC/NSS of NERIST for attending campus and awareness camping etc.
- h) Providing the ambulance service for students and employees of NERIST as and when required with capital and up to Guwahati or emergency medical treatment (24x7 hours).
- i) Providing vehicles to physically handicaped students for their attending theory and practical classes.

5.7.2 Status report regarding activities:

The Transport Section is one of the most important supporting departments of the institute. This Department runs fleet of vehicles for official purposes. The Department has 3nos of heavy motors vehicle (Bus) 1 is already condemned, 2 buses are normally engaged for various activities such as departmental purchase (local and outside) NERIST student duty for their attending to classes (5.45am to 5.05pm). School duty for NERIST employee wards, NERIST Students Educational tour, Students industrial visits, Practical classes and Departmental/official duties.

- It has 01 Winger (13+1 seater) the vehicle is used for physically handicaped student's duty and other official duties when required by the department and office. The Department had Seven (07) light vehicles and they are detailed under various duties.
- Two (02) of light vehicles (Innova and Opra-LT) are earmarked for Director, NERIST Chairman BOM and other official dignitaries visiting the institute.
One (01) (AVEO-LT) is used by the Registrar, NERIST, for official duties.
- One (01) AVEO-LT is used by all Deans for their official duties.
- One (01) no (Maurti versa) is detailed for Security, Night duty and other official duties as per requirement.

- One (01) (Scorpio) is used by the Departmental seminar, Director's cell, Registrar's Cell Finance Section, S&P Section, T&P Cell for campus interview, Academic Section Exam Cell, HMC Gymkhana Library and other official/departmental works like meeting, seminar etc.,
- One (01) Maruti Gypsy is detailed to EE (Civil), AE (Civil), Horticulture in-charge, sanitary in-charge for their official duties etc.
- One (Tata mobile) Transportation of material for Departmental works /laboratory works, EE (Civil) office AE (Civil) office E.O office, store & purchase section Hostel HMC, Library, EMC Gymkhana and as per departmental/official requirements etc.
- One (01) (Tavera Ambulance) ambulance service for students and employees and their family members of NERIST as and when required in-campus and off campus (like Tamo Riba State Hospital, Naharlagun, RKM Hospital, Niba Hospital, Papu Nalah, and up to Guwahati Hospital/ Airport) for emergency medical treatment around the clock (24x7).
- The institute had auctioned One (01) old condemned Bus No. ARC 2356 (Bus).
- The Institute Vehicle No. AR01 3980 (Bus) as proposed for condemnation/auction.
- The Institute had One (01) Motors Cycle Bearing Registration No. AR01 B 7520 proposed for auction.
- The Transport Section has water servicing /washing equipment for vehicle servicing and maintenance of institute vehicle.

5.8 NERIST HEALTH UNIT

5.8.1 A Brief Profile of the Department (about 150 words):

The NERIST Health Unit (NHU) is dedicated to the service of the students and staff. The students and staff members can get free medical consultancy for any medical problems. NHU also provides 24x7 ambulance facility for emergency patients. In addition, NHU also provides OPD service to the needy patients from nearby areas. There are currently three doctors, one each of pharmacist, nurse, ANM, dresser, lab assistant and lab-technician, apart from the regular ministerial staff and ward helpers.

There is a 24x7 pharmacy, which provides free medicine to all the authorized employees of the Institute.

NHU consists of 6-bedded ward to cater to any minor medical emergencies. A dressing room for minor OT purpose is also available there.

5.8.2 Activities:

During April 2016 - March 2017:

- a) Approximately 2000 students and 20000 OPD patients were examined in the NHU.
- b) NHU carried out extensive DDT spraying in and around the campus for three consecutive days.
- c) A 'Deworming programme' was conducted in KV NERIST and deworming tablets were distributed for the same.
- d) Under the diarrhea management programme, an ORS-Zinc corner was opened in NHU for distribution of ORS and Zinc tablets to patients (<5 years age) suffering from diarrhea.

- e) NHU conducted two blood donation camps with the help of the campus NSS wing and AIDS control department, Naharlagun.
- f) NHU actively participated in Pulse Polio Immunization programme as per the GoI schedule.
- g) NHU conducted School Health Programme for KV, NERIST for 500+ students.
- h) NHU also acts as a DOT center for the treatment of patients suffering from TB.
- i) Some of the pharmaceutical companies conducted free Hemoglobin Estimation, BMD, Hepatitis screening and Liver Scan camps with the help of our staff in NHU.

5.8.3 Laboratories and Laboratory Development:

NHU provides facilities like normal routine examinations, which includes Hb, Blood Sugar, Blood Grouping, Widal, RMT, Dengue, Malaria etc.

5.8.4 Projects completed by the UG/PG/Ph.D. students. Please specify the title of the project and name of the guide : **NA**

5.8.5 Short-term courses/seminars/workshops/conferences organized at NERIST. (Please specify the areas, title, coordinator, duration, and funding agencies/sponsors, no. of participants): **NIL**

5.8.6 Short-term courses/seminars/workshops/conferences attended by the faculty:
Dr. Sushmita P. Taggu attended Diarrhea Management Programme for treatment and management of diarrhea for < 5 years age group in CHC Doimukh.

5.8.7 New Degrees/Professional Memberships obtained by the faculty : **NIL**

5.8.8 Achievements/awards/recognition earned by the faculty: **NIL**

5.8.9 Projects sanctioned by outside agencies to the faculty of the department (April, 2015 to March, 2016) (Name(s) of PI and co-investigator, if any, title of the project, funding agency, date of sanction, total amount, fund received during the year under review): **NA**

5.8.10 Publications: **NIL**

(a) Referred Journal

(b) Conference papers

(Please give details about, authors, title of the paper, name of the journal/ conference, volume, year, month, pages nos. Also include only those papers, which were published/presented during the year under reference and do not include papers are under preparation/communicated/accepted/ and in press.)

c) Books: (Please give the author, title of the book, publisher, and year of publication.

5.8.11 Interaction of faculty/department with outside agencies (Give details regarding membership of outside committees, executive committees of professional bodies etc.)

The three regular doctors have periodic interactions with the IMA and other professional bodies in the state.

5.8.12 Consultancy Projects undertaken. (Agencies, title of the consultancy project, amount, faculty and staff associated) **NA**

5.8.13 Achievements of students. **NA**

5.8.14 Any other relevant information **NIL**

SECTION -6

MANPOWER

I Teaching (Faculty)

Department wise break-up of faculty as on 31.03.2017 is given below:

1	Forestry	13
2	Agriculture Engineering	15
3	Civil Engineering	16
4	Computer Science & Engineering	11
5	Electrical Engineering	16
6	Electronics & Communication Engineering	14
7	Mechanical Engineering	17
8	Physics	11
9	Chemistry	14
10	Mathematics	08
11	Humanities & Social Sciences	05
12	Centre for Management Studies	04

Total (I) = 144

II Non-Teaching (Officers and Staff)

The break-up of Officers, Technical, Ministerial and Group-C staff in position as on 31.03.2017 is given below:

(i) Officers

a	Group 'A'	15
b	Group 'B'	07
Total		21

(ii) Technical/vocational Staff (Non-teaching)

a	Group 'A'	-
b	Group 'B'	13
C	Group 'C'	64
Total		77

(iii) Ministerial staff

a	Group 'B'	13
b	Group 'C'	57
Total		70

(iv) Non Ministerial Staff Group – C

a	Lab Attendants/Helpers/Pump Attendants	38
b	Security Guard	09
c	Malis, Labourers & Sweepers	27
d	Peons	35
e	Cook & Cook Helpers	69
Total		178

Total (II) 346 GRAND TOTAL (I+II) = 490

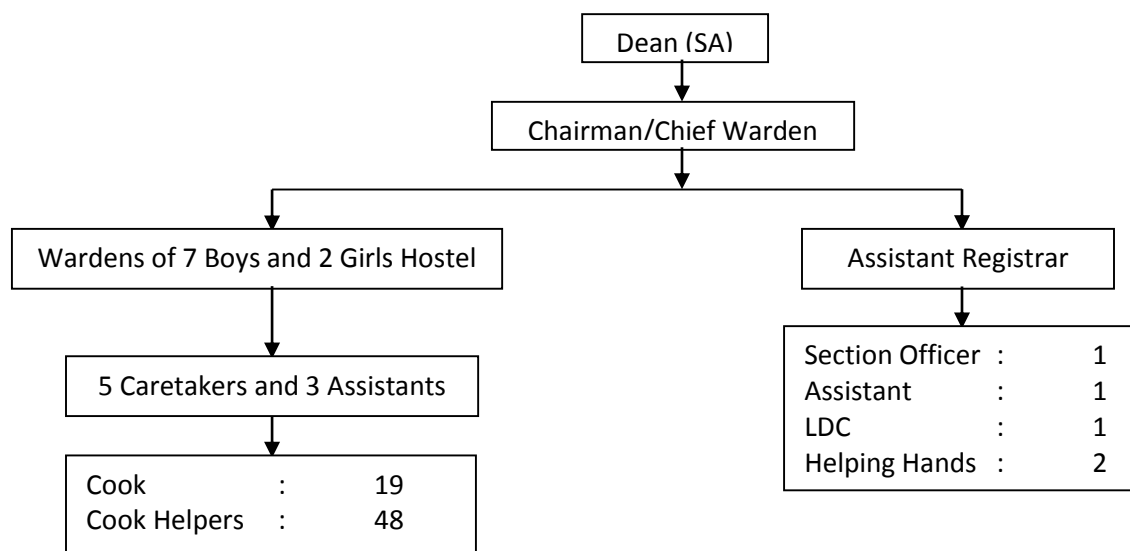
SECTION - 7

CAMPUS LIFE AND EXTRA CURRICULAR ACTIVITIES

7.1 Hostel Management Council (HMC)

7.1.2 A brief profile of the Section:

NERIST is a residential technical Institute and declared as Deemed to be University by the Ministry of Human Resource Development, Govt. of India in the year 2005. Students (both boys and girls) are required to stay in the Hostels situated in the Campus. This helps in the development of an integrated personality and enables the students to receive training in corporate living and continuous communication with fellow students and teachers. The Hostel Management Council (HMCV) is an autonomous body for the management of hostel accommodation and mess facilities of seven boys' hostel and two girls' hostel. One new boys hostel of 400 intake is under construction in 54.5 acres area, opposite to PG Boys Hostel and likely to be handed over very soon by the Construction Agency.

Organizational structure of Office of HMC

7.1.3 Status Report

During the year 2016-17, Dr. Sandeep Singh, Associate Professor, Department of Mechanical Engineering was the Chairman/Chief Warden of the Hostel Management Council. Apart from the Chief

Warden, there are 9 (nine) Wardens, four Mess-Manager-Cum-Caretakers and three Assistants are posted in different Hostels. A brief detail of the Hostels is given below:

Sl. No.	Hostel Block	Hostel Capacity	Mess Manager-cum-Caretakers/Assistants	Wardens
1	A	124	Mr. P. Barman	Dr. Kh. Hera Ch. Singh
2	B	124	Mr. Dorjee Shongmu	Dr. M. Hassan
3	C	124	Mr. B. Patir	Mr. A. K. Chowdhury
4	D	124		Mr. S. Tamang
5	E	250	Mr. A. Gogoi	Mr. A. K. Gautam and Dr. K. Borah
6	F	250	Mr. E. N. V. Nair	Mr. Akhilesh Sharma
7	G	250	Mrs. M. Roy Choudhury	Mrs. Y. Bidya Laxmi Devi
8	H	250	Mr. T. Mathew	Dr. M. M. Mal
9	Subansiri	250	Mrs. N. Siyum	Dr. (Mrs.) S. L. Bharati

7.1.4 Highlights

Like previous years, a Hostel level Anti-Ragging Squad was constituted to visit hostels between 8 p.m. and 12 a.m. for three weeks after admission of new students, to add confidence in the minds of new entrants. The squad consisted of Faculty members including the Hostel Wardens. The Institute constituted an Anti-Ragging Committee as per the guidelines of UGC.

The Independence and Republic Days were celebrated in all the Hostels by hoisting the National Flag by the respective Wardens/Chief Warden/Dean (SA) in the front of the respective Hostel Blocks.

The Boards of Hostels have celebrated Block Day separately in each Hostel Block. The Director, Deans, Registrar, Chief Warden, Hostel Wardens and other Faculty members were invited in the said function.

7.1.5 MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 31/03/2017

Dean (SA)

Dr. Binay Singh

Chairman/Chief Warden

Dr. Sandeep Singh, Associate Professor, Department of Mechanical Engineering.

Assistant Registrar

Mr. Animesh Basu

Section Officer

Mrs. Pratibha Saikia

Office Staff

1. Mrs. A. Adhikari, Assistant
2. Mr. Thomas Mathew, Assistant, Hostel Block H (Part time in Office of HMC)
3. Mr. B. Patir, LDC

7.2 NATIONAL CADET CORPS (NCC)

7.2.1 PROFILE OF THE SECTION

NERIST is having two NCC wings one is SD (Boys), which is fully funded by Non-plan of NERIST, and another one is SW (Girls), which is centrally funded by Tezpur NCC unit directly. For the academic year 2015-16 total students enrolled is given below:

Cadets Enrolled	SD (Boys)
1 st Year	62
2 nd year	66

3 rd Year	04
Extension	24
Total	156

i) Manpower status

	Present	Requirement	Deficiency
ANO/CTO	02	02	NIL
Supporting staff	02	04	02

ii) Infrastructure

	Present	Requirement	Deficiency
Office	01	01	NIL
Store room (Big)	01(Small)	02	01

iii) Budget allocation

During the session 2016-2017 a total of ₹.1,87,408.00 (Rupees One Lakh Eighty Seven Thousand Four Hundred Eight only) was spent, towards the Independence day parade (₹19,340.00), washing and refreshment allowance distribution for the students (₹1,14,225.00), Stationary and office items purchase (₹19941.00), C Certificate examination (₹8000.00), CATC V Camp (₹22662.00) and Youth Exchange Camp (₹3240.00) were incurred.

7.2.2 STATUS REPORT REGARDING ACTIVITIES**i) Parades Conducted**

Total 37 parades

ii) Ceremonial Drill participated

- a) Independence Day (15-08-2016) : 48 SD & 24 SW Cadets
 b) Republic Day (26-01-2017) : 54 SD & 24 SW Cadets

iii) Camps Attended by the NCC cadets

Total 2 camps

- a) CATC Camp at RGGP, ITANAGAR, AR
 W.E.F. 19/08/2016
 b) CATC Camp at RGGP, ITANAGAR, AR
 W.E.F. 13/06/2016
 c) YEP, Russia
 W.E.F. 17/10/2016

7.2.3 HIGHLIGHTS

- i) 'B' Certificate Exam Passed - 18 SD Cadets

List of SD CADETS 'B' Certificate Exam Passed

SL.	Name	Father's Name	Regimental No
1	ABHISHEK KUMAR	GANESH RAY	APSD/15/120442
2	SANJEEV KUMAR SONI	SUDHIR KUMAR	APSD/15/120429
3	KSAN KUPAR LYNRAH	O R KHARKONGOR	APSD/15/120392
4	FIROJ MANI DEBBARMA	BISHWAMANI DEBBARMA	APSD/15/120419
5	SATYA NARAYAN BHUYAN	HARI NARAYAN BHUYAN	APSD/15/120417
6	NOSATO NEIKHA	SALZU NEIKHA	APSD/15/120412

7	RAKESH ROY	RANJIT ROY	APSD/15/120432
8	DHARAM RAJ CHETRY	GYAN BAHADUR CHETRY	APSD/15/120433
9	RAHUL KUMAR SHAH	SURENDRA PRASAD SHAH	APSD/15/120410
10	CHAND PRAKASH SHARMA	PAWAN SHARMA	APSD/15/120407
11	SUBHOJEET C L	CHOTELAL SHAH	APSD/15/120437
12	ANIRBAN DAS GUPTA	DIPANKAR DAS GUPTA	APSD/15/120403
13	NABOJWAL ACHARJEE	MANIK LAL ACHARJEE	APSD/15/120286
14	BOITULLA HOQUE	UJIR ALI AHMED	APSD/15/120287
15	RAKESH KUMAR	CHANDESHWAR SAH	APSD/15/120431
16	DEBRUP SARKAR	DILIP KUMAR SARKAR	APSD/15/120439
17	TANA SERA	TANA BOR	APSD/15/120450
18	KIRTAN KONWAR	A K KONWAR	APSD/15/120454

ii) 'C' Certificate Exam Passed - 3 (Three)

List of SD CADETS 'C' Certificate Exam Passed

SL.	Name	Father's Name	Regimental No
1	ARUP ROY	GANESH ROY	APSD/14/12403
2	PUSPAL MANNA	ADHAR CHANDRA MANNA	APSD/13/120200
3	SUDHANSHU KUMAR	SUDHIR KUMAR	APSD/13/120214

7.2.4 LIST OF COMMITTEE MEMBERS, IF ANY

NIL

7.2.5 ANY OTHER RELEVANT INFORMATION/DATA

NIL

7.3 NATIONAL SERVICE SCHEME

7.3.1 Profile :

Dr.A.Dinamani Singh,Coordinator, NSS Unit NERIST, participated actively in various NSS programmes to guide and motivate NSS volunteers. Other Programme Officers and Group Leaders also extended very good support and cooperation leading to the success of the NSS programmes. One Group 'C' and One Group 'D' employees are in the NSS Cell to look after the office works and also to assist the Coordinator, Programme Officers and Group Leaders for smooth conducting of the NSS programmes and camps.

1. Total No. of Volunteers enrolled : 950 Nos.
2. Male : 740 Nos.
3. Female : 210 Nos.
4. No. of Male Volunteers (APST) : 163 Nos.
5. No. of Female Volunteer (APST) : 40 Nos
6. Name of NSS Programme
Co-Ordinator : Dr.A.Dinamani Singh
7. No. of trees planted during
year 2014-15 : 220 Nos.

7.3.2 Status Regarding Activities

NSS activities for the Academic Session 2016-17 commenced with an orientation programme with the newly joined volunteers on 15.8.2016. Prof.H.S.Yadav, Director, NERIST participated in the orientation programme, who highlighted in his address about the importance of NSS and its role played for the development of a person. Dr.A.Dinamani Singh, Coordinator, NSS also addressed

the newly joined volunteers and enlightened about the aims and objectives of NSS, significance of its motto, badge, about the role expected from an NSS volunteers etc. A lecture was also delivered by Prof. Binay Singh, Dean(SA) about the aims and objectives of NSS.

The National Service Scheme Cell of NERIST observed the NSS day on 24.09.2016. The occasion was marked by a function followed by plantation of tree and awareness campaign on Environment. The ceremony was attended by Program Officers and Volunteers. Speaking on the occasion, the Co-ordinator of the NSS Cell, NERIST emphasized the role of the NSS for the welfare of the society. He also stated that keeping the all-round developments and changes taking place around us the horizon of NSS needs to be enlarged.

Regular activity was organized on 04.04.2016 to 10.04.2016 (Swatcha Bharat Abhiyan) and 03.09.2016 at NERIST main campus and Degree block. Approximately 700 number of volunteers participated in it. The campus cleaning along with plantation of 220 saplings were carried out at PG Hostel & Degree block. A One Day workshop on Digital India programme was held at NERIST auditorium on 24.08.2016. The workshop was organised by the NSS cell, NERIST in collaboration with National e- Governance Division (NeGD).

A Massive Blood donation camp was organized by NSS cell, NERIST, Nirjuli (A.P) in coordination with Naharlagun General Hospital and Medical Health Unit, NERIST on 27.08.2016 110 Nos of NSS Volunteers, Programme Officer, donated blood out of which 45 were girls. The Blood donation camp was followed by a lunch party at NERIST Guest house for Doctors, Technician, Medical Staff and Programme officers.

SPECIAL CAMP REPORT

Special camp was organized from 27.02.2016 to 28.2.2016 at the Nirjuli Village -II (A.P) . The camp was attended by around 250 student volunteers and Program officers of NERIST along with students and Villagers, Gambura of Nirjuli Village - II. Around 200 saplings of amla (*Emblicaindica*) and jack fruit (*Artocarpushetrophylus*) were planted. This is followed by Village cleaning. The plantation and the maintenance of Eco System of Modern village will be taken care of by the NSS Cell, NERIST in future. A community lunch was also organized. This was followed by the interaction of the student volunteers with the villagers.

List of NSS Committee

1. Dr.Awadhesh Kumar	Programme Officer
2. Dr. Ajanta Kalita	Programme Officer
3. Dr.K.Herachendra Sing	Programme Officer
4. Dr.S.Dhiren Meitei	Programme Officer
5. Dr.Akbari Jahan	Programme Officer
6. Dr. Kamal Saharia	Programme Officer
7. Dr.Hohammad Hassan	Programme Officer
8. Ms.Payali Das	Programme Officer
9. Mr.Govind Panging	Programme Officer
10.Mr.Arun Kr. Choudhury	Programme Officer
11.Mr.M.Edison Singh	Programme Officer
12.Dr. Kunal Borah	Programme Officer
13.Mr. Santosh Tamang	Programme Officer
14. Mr. M. Deben Singh	Programme Officer
15. P. Devchandra Singh	Programme Officer

8/25/2016

Workshop On Digital India Held



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[Happy Independence Day to you All Lets Celebrate This Day](#)

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Workshop on Digital India held

August 25, 2016 [Home](#), [Local News](#) [No comments](#)



Workshop on Digital India held

NIRJULI, Aug 24: A one-day workshop on Digital India programme was held at NERIST auditorium here today. The workshop was organized by the NSS Cell, NERIST in collaboration with National e-Governance Division (NeGD), DeitY, Govt of India and State e-Mission Team (SeMT), Govt of Arunachal Pradesh.

Speaking as guest of honour, Debasish Goswami, Head, SeMT highlighted the evolution of Digital India and how it is going to impact the life of common man.

The future belongs to the youths and hence, youths have to actively participate in the popularization of Digital India upto the grassroot level, stated Prof M Muralidhar, who was the chief guest.

Digitisation is our future and all credentials will be available on the click of a mouse, said Dr A Dinamani Singh, coordinator, NSS Cell, NERIST. He also emphasized on the ethical use of data.

Altogether, 250 students from different institutions like Rajiv Gandhi Govt Polytechnic, NIT-Arunachal Pradesh, Kendriya Vidyalaya, Nirjuli, VKV, Nirjuli and host NERIST participated in the workshop.

As a part of the workshops, various competitions were organized among the young participants. While Misha Dey and Pai Snigdha of VKV Nirjuli bagged first and second positions in the poster competition, NERIST and NIT-AP bagged first and second positions respectively in the



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Voluntary blood donation camp held at NERIST

August 28, 2016 [Home](#) [Local News](#) [No comments](#)



Voluntary blood donation camp held at NERIST

Nirjuli, Aug 27: The NSS Cell of NERIST in association with Tomo Riba State Hospital and State Blood Transfusion Council, Naharlagun conducted a voluntary blood donation camp at NERIST Health Unit here.

Dr Nabam Budh, Deputy Director, SBTC highlighted the importance of blood in hospital treatment systems and the need of haemovigilance to ensure the quality and sustainable supply of blood.

NSS being a youth organisation has a vital role to play to reach the target of 100% voluntary blood donation. If all the volunteers donate atleast once a year a huge portion of the blood requirement will be fulfilled, stated Dr A Dinamani Singh while addressing the donors.

A total of 46 blood units were collected during the camp.

9/1/2016

NERIST organises cleaning campaign | The Arunachal Times

NERIST organises cleaning campaign

September 4, 2016

ITANAGAR, Sept 03: Around 250 NSS volunteers of NERIST conducted cleaning campaign inside the institute campus and Nirjuli market.

This activity was a part of various activities carried out by NSS cell, NERIST under "Swachh Bharat Abhiyan".

The volunteers also sensitized the shop owners of Nirjuli area about segregating garbage into biodegradable and non-biodegradable waste and the need to discard them separately.

Besides the cleaning campaign around 50 saplings were also planted in various parts of the campus.

Prof. Binay Singh, Dean (SA) while addressing the gathering stated that NSS volunteers should take active role in preservation of environment. All the volunteers took a pledge to plant atleast a tree in a year and take care of it.

"Youths are the future of the nation and whatever the youths do and think today will be future of our nation. Therefore, youths should actively involve in various social activities and think about the interest of the nation," stated Dr. A. Dinamani Singh, Coordinator NSS, while addressing the volunteers.

11/26/2016

Constitution Day observed | The Arunachal Times

Constitution Day observed

November 26, 2016

NIRJULI, Nov 25: The NSS Cell of NERIST observed Constitution Day by organizing a programme at the Seminar Hall of Department of Electronics and Communication Engineering here on Friday.

The Constitution Day is observed to celebrate the adoption of Indian Constitution by the Constituent Assembly on November 26, 1949, which came into force on January 26, 1950.

During the programme, resource person Sapna Ghimiray elaborately discussed the preamble of Indian Constitution while, Sushmita Kaushik gave a talk on Article 51A of Indian Constitution.

A symposium on the topic "Constitution of India and its relevance in modern society" was also conducted on the occasion.

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Daily Report of Swachh Bharat Week at NERIST, Nirjuli.
(25th September to 2nd October 2016)

Activities Conducted by NSS, NERIST:

- 25/09/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 9 am at PG Hostel area.
- 26/09/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 7.30 am at UG Hostel area.
- 27/09/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 7.30 am at Type-II residential Complex.
- 28/09/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 7.30 am at Type-III residential Complex.
- 30/09/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 7.30 am at Type-IV residential Complex.
- 01/10/2016:** Students and employees of the institute carried out cleaning campaign from 6 am to 9 am at Nirjuli Market Area.
- 02/10/2016:** The day started with the offer of floral tribute to the Portrait of Mahatma Gandhi by the Director and others. Director administered pledge to keep our surrounding clean. Students and employees of the institute carried out cleaning campaign from 6 am to 10.30 am at Departments.

7.4 ESTATE OFFICE

7.41 Profile of the Section

The Estate Office has been established to look after day to day estate matter of the Institute, dealing with matters like land encroachment, illegal construction, Liaisoning with the external agencies like Deputy Commissioner Papum Pare, Deputy Commissioner, Capital Complex, Land & Revenue/Records Officers of the State, Additional Magistrate, Itanagar, EAC, Naharlagun etc. and dealing with legal matters related to land encroachments and others. The Estate Office works also include field visits extended to entire campus and day to day records keeping works, like House Allotment and issue of furniture to quarters etc.

Strength of existing staff .

1. UDC	-	1 No.
2. Peon	: -	1 No.
3. TS Employee	-	1 No.
4. Hand Receipt Employee	-	1 No.

Estate Office is an important branch/section of the institute which is managing its activities with limited permanent employees to look after day to day field and office works. Though there is lack of proper manpower, the Estate Office has been discharging its duties sincerely and efficiently.

Existing Institute quarters at present :

Sl. No.	Type of Qtrs./Accommodation	Total Nos. of Qtrs./ Accommodation	Remarks
01	Type -I	132 numbers	Double Storey
02	Type -II	124	Double Storey
03	Type -III	122	Single/Double Storey
04	Type -IV	98	Single/Double Storey
05	Type -V	20	Single/Double Storey
06	BTA	09	Single Storey
07	Type -VI	01	Director`s Banglow

7.5 EDUCATIONAL TECHNOLOGY CELL

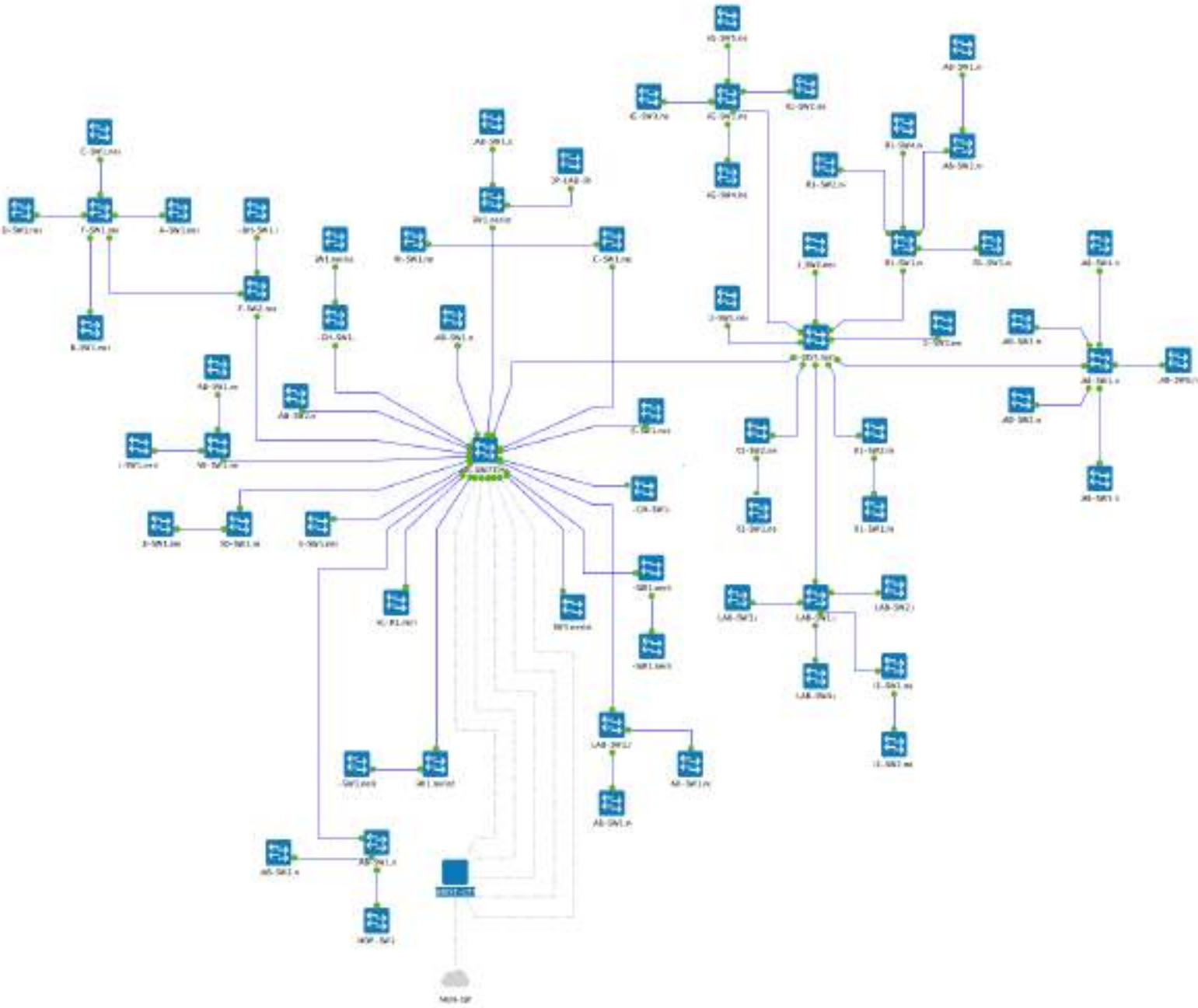
7.5.1 About ET Cell

The ET cell has been established as a project sponsored by the MHRD, Govt. of India with an objective to increase the effectiveness of teaching-learning process with the help of modern audio-visual equipment and Information and Communication Technology(ICT). Presently, the cell mainly manages and maintain the Internet Connectivity to the Institute, Local Area Network(LAN), Wi-Fi LAN, and Server Firm, and different Services. The Cell consists of processing laboratory, seminar room, and board room that are well equipped with the state of art audio-visual equipment. These are used for Seminars, Conferences, Workshops and special lectures by faculty members and professionals from institutions and industries.

7.5.2 The major ICT Services are facilitating by ET Cell are as follows:

1. Managing/maintaining the 1Gbps Internet Connectivity to the Institute provided by NKN ISP(Internet Service Provider). Also a 100 Mbps Internet Link is established to provide failover of NNK Link.
2. Provides LAN Connectivity to all the 12 Academic Departments/Centers, 9 Hostels, Offices, and the Schools in the campus.
3. Wifi LAN Connectivity to Hostels and Residential Areas.
4. E-mail Services to Students, Research Scholars, Faculties and Staff.
5. Locally Hosting and maintaining the Institute Web Server.
6. ET Cell also houses a number high end Servers which facilitates number of Services as: Hyper-V Virtual Platform, DNS, DHCP, Active Directory, RADIOUS, Microsoft SCCM, etc.

7.5.3 Network Connectivity Skeleton of NERIST Campus:



7.5.4 Infrastructure (Network Devices/Servers) of ET Cell:

Network Devices			
Sr. No	Item	Quantity	Objective
1	UTM/Firewall(Cyberoam 2500iNG)	1	To provide user base Internet access, traffic filtering and restricting.
2	Core Switch (Cisco 6509)	1	All NERIST Campus Network Segments are Interconnected through Core Switch.
3	Distribution switch (Cisco 4503)	1	All LANs of Degree Blocks are connected to Distribution Switch.
4	Access Switch	69	All Departments/Sections/Hostels users are connected through Access Switches.
5	Wireless Controller (Ruckus ZD3000)	2	Manage policies, rules and configurations of all Access Points.
6	Access Points (Ruckus ZF 7782)	30	To provide Wireless connectivity to Residential Area.
7	SAN Switch(Brocad)	1	To provide connectivity between storage and Servers over fiber channel.
Servers and Storage:			
8	Dell PowerVault R430 Rack Server	6	Using for Automation (App Server1, App Server2, DB Server, Load Balance Server) and Hyper-V node.
9	Storage Power Vault MD 3000	1	Using for Automation
10	IBM SystemX Rack Server	3	Using for Hyper-V node, Microsoft SCCM, and AD Sever.
11	IBM and HCL Tower Server	3	Using for Public DNS, Web Server, and Mail Server.

7.5.5 Status Report Regarding Activities, 2016-2017:

1. Renewed the Licence of Wi-Fi System of NERIST Campus for next three years.
2. Number of Wi-Fi APs of UG Girls Hostel increased from 6 to 24 numbers and deployed the same for better coverage of Wi-Fi signal.
3. Renewed the Microsoft Campus Agreement Licences for 300 FTE users for One Year.
4. Upgraded the Mail Server “Zimbra Server ZCS 8.6.0” to “Zimbra Server ZCS 8.7.1” and migrated to a high capacity Virtual Machine of Windows Hyper-V node.
5. Developed the new official Website of NERIST which was launched by Director(I/c), NERIST, on 23rd August, 2016. Along with Website a full featured CMS(Content Management System) also developed to ease the website content management process.
6. Established a 100 Mbps ISP link from RailTel, which facilitates backup of primary NKN ISP Link.
7. Successfully conducted Online Counselling and Admission process of NEE 2017.
8. Deployed 50 Nos of Desktop PCs at ACCF for conducting online Interviews/Exams.

SECTION – 8
FUND AND AUDIT

The Institute is a Central Scheme of the Ministry of Human Resource Development and is fully funded by the Government of India through the MHRD.

At the beginning of the financial year 2016-17, the institute had an unspent balance of 3818.35 lakhs. During the year, the Institute received 4087.50 lakhs as grant and 281.69 as IRG. This included grant of 0.00 lakhs sanctioned at the fag-end of 2015-16, but received in 2016-17. The unspent balance as on 31.03.2017 is (-) 345.31 lakhs which will be adjusted towards the grant in aid payable during the next financial year 2017-18. Brief breakup of fund received and expenditure incurred is given as under :-

in lakhs

Details of Account	HEAD			Grand Total (2+3+4)
	PLAN (CAPITAL)	PLAN (GENERAL)	NON PLAN	
1	2	3	4	5
Previous Balance	2312.53	448.24	1057.58	3818.35
Fund received during 2016-17	0.00	0.00	4087.50	4087.50
IRG 2016-17	0.00	0.00	281.69	281.69
Expenditure incurred during 2016-17	2303.21	440.56	5789.08	8532.85
Unspent Balance as on 31.03.2017	9.32	7.68	(-)362.31	(-)345.31

The details information related to the accounts of the Institute for the year 2016-17 and the audited accounts of the Institute is given in Annexure –

Annexure - I

MEMBERS OF NERIST SOCIETY AS ON 31.3.2017

- | | |
|---|-----------|
| 1) His Excellency, the Governor of Arunachal Pradesh & President NERIST Society
Raj Bhawan,
tanagar.
Arunachal Pradesh, | President |
| 2) Shri Madhu Ranjan Kumar
Joint Secretary (TEL)
MHRD, Govt. of India,
Deptt. of Higher Education,
Shastri Bhawan, 'C' Wing ,
New Delhi – 110 001. | Member |
| 3) Smt. Darshana M Debral
Joint Secretary & FA,
IFD, MHRD ,Govt. of India,
Shastri Bhawan, 'C' Wing,
New Delhi-110 001 | Member |
| 4) Shri Himanta Biswa Sarma
Hon'ble Minister
Higher Secondary & Elementary
Assam Sachibalaya
Govt. of Assam,
DISPUR (ASSAM) - 788006. | Member |
| 5) Hon'ble Minister (Education),
Govt. of Mizoram,
AIZAWL (Mizoram).- 796 001. | Member |
| 6) Hon'ble Minister (Higher Education),
Govt. of Nagaland,
KOHIMA (Nagaland)- 797 001. | Member |
| 7) Hon'ble Minister (Higher Education),
Govt. of Tripura,
AGARTALA (Tripura)- 799 001. | Member |

- | | | |
|-----|--|--------|
| 8. | Hon'ble Minister (Education),
Govt. of Manipur,
IMPHAL (Manipur).-795 001. | Member |
| 9. | Hon'ble Minister (Education),
Govt. of Meghalaya-
SHILLONG-793 001.
(Meghalaya) | Member |
| 10. | Hon'ble Minister (Education),
Govt. of Sikkim,
GANGTOK (Sikkim)- 737103. | Member |
| 11. | Hon'ble Minister (Education),
Govt. of Arunachal Pradesh,
Itanagar – 791 111. | Member |
| 12. | Dr. Neeraj Sharma,
Head (TDT),
Ministry of Science & Technology,
Department of Science & Technology,
Technology Bhawan, New Mehrauli Road,
New Delhi - 110 016. | Member |
| 13. | Dr. Avinash S. Pant (10.04.2015 – 09.04.2018)
Vice-Chairman, AICTE,
Chander Lok Building, 7 th Floor
Janpath, New Delhi – 110 001.
Mob.9958411661,011-23724195
pantavinash@hotmail.com | Member |
| 14. | Shri Tarh Nachung (27.08.2015 – 08.03.2018)
P-Sector
P.O.Nirjuli
Dist.- Papum Pare
Arunachal Pradesh. | Member |

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| 15 | Air Marshal (Retd.) Pranab Kumar Barbora,
Chairman, BoM, NERIST,
C-1201, Celebrity Homes,
Palam Vihar,
Gurgaon – 122017 | Member |
| 16 | Director-in-charge,
NERIST | Member |
| 17. | Dr. R.P. Bhattacharjee
Registrar | Non-Member Secretary |

MEMBERS OF NERIST BOARD OF MANAGEMENT AS ON 31.3.2017

- | | |
|---|----------|
| 1. Air Marshal (Retd.) Pranab Kumar Barbora,
Chairman, BoM, NERIST,
C-1201, Celebrity Homes,
Palam Vihar,
Gurgaon – 122017. | Chairman |
| 2. The Joint Secretary & FA,
IFD, MHRD (Govt. of India),
Shastri Bhawan, `C' Wing,
New Delhi-110 115. | Member |
| 3. The Joint Secretary (TEL)
MHRD, Govt. of India,
Deptt. of Higher Education,
Shastri Bhawan, 'C' Wing ,
New Delhi – 110 115. | Member |
| 4. The Commissioner & Secretary,
Higher & Technical Education,
New Secretariat Complex, Room No. 402,
Govt. of Mizoram,
Khatla, Aizawl.-796 001 | Member |
| 5. The Secretary,
Higher & Technical. Education,
Govt. of Sikkim,
Gangtok(Sikkim)-737103. | Member |

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|-----|---|--------|
| 6. | The Commissioner & Secretary,
Higher & Technical. Education,
Govt. of Meghalaya,
Shillong-793 001, Meghalaya. | Member |
| 7. | The Secretary,
(Technical Education),
Govt. of Nagaland,
Kohima-797 001, Nagaland. | Member |
| 8. | The Commissioner & Secretary
(Higher & Technical Education),
Govt. of Manipur,
Imphal-795 001, Manipur. | Member |
| 9. | The Secretary
Technical Higher Education,
Govt. of Tripura.
Agartala-799 001, Tripura. | Member |
| 10. | Prof. T. Mibang,
Vice Chancellor,
Rajiv Gandhi University,
Rono Hills, Doimukh 791112. | Member |
| 11. | The Commissioner and Secretary
Govt. of Assam,
Higher & Technical Education,
CM Block, 1 st Floor, Dispur,
Guwahati – 781 005, Assam | Member |

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|-----|--|--------|
| 12. | The Secretary
Technical & Higher Education,
Govt. of Arunachal Pradesh,
ITANAGAR :: 791 111,
Arunachal Pradesh. | Member |
| 13. | Dr. L. Joyprakash Singh
Associate Professor,
Department of Electronics and Communication Engineering,
North Eastern Hill University (NEHU),
Shillong - 793022,
Meghalaya. | Member |
| 14. | Prof. Gautam Barua
Director,
Indian Institute of Information Technology,
Guwahati, Ambari, Gopinath Bordoloi Road,
Guwahati - 781 001. | Member |
| 15. | Prof. P.K. Tripathy,
Dean (Academic),
NERIST, Nirjuli. | Member |
| 16. | Prof. Md. A. Hussain,
Dean (P & D),
NERIST, Nirjuli. | Member |
| 17. | Prof. Binay Singh
Dean (SA)
NERIST, Nirjuli | Member |

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|------|---|----------------------------|
| 18. | Prof. H.S. Yadav,
Professor Deptt of Chemistry,
NERIST, Nirjuli. | Member |
| 19. | Mr. D.K. Shyamal,
Associate Professor,
Department of Agricultural Engineering
NERIST, Nirjuli – 791 109,
Arunachal Pradesh. | Member |
| 20.. | Mr. T. Saran, Asstt. Prof.
Deptt. of ECE.,
NERIST, Nirjuli - 791109.
Arunachal Pradesh | Member |
| 21. | Prof. H.S. Yadav
Director-in-charge, NERIST. | Member |
| 22. | Dr.R.P.Bhattacharjee
Registrar | Non-member Secretary (BoM) |

MEMBERS OF NERIST FINANCE COMMITTEE AS ON 31.03.2017

- | | | |
|--|---|------------------------------------|
| 1. Air Marshal (Retd.) Pranab Kumar Barbora,
Chairman, BoM, NERIST | - | Chairman |
| 2. Secretary to H.E. the Governor of
Arunachal Pradesh, Itanagar | - | Member |
| 3. The Vice Chancellor, Rajiv Gandhi
University, Doimukh, Arunachal Pradesh | - | Member |
| 4. The Commissioner (Education),
Govt. of AP., Itanagar | - | Member |
| 5. Additional Secretary & FA
MHRD, Govt. of India, New Delhi | - | Member |
| 6. Joint Secretary (TEL), MHRD, Govt. of India, | - | Member |
| 7. Prof. H.S.Yadav, Director-in-charge, NERIST | | -Member |
| 8. Dr. R.P. Bhattacharjee, Registrar, NERIST | - | Member |
| 9. Dy. Registrar (Fin), NERIST | - | Ex-officio Non-Member
Secretary |

MEMBERS OF ACADEMIC COUNCIL AS ON 31.03.2017

1.	Prof. H.S.Yadav, Director-in-charge, NERIST	-	Chairman
2.	Prof. P.K. Tripathy, Dean (Academic)	-	Member
3.	Prof. Md. A. Hussain, Dean (Planning & Development)	-	Member
4.	Prof. B. Singh, Dean (Students Affairs)	-	Member
5.	Prof. M.F. Hussain, Dean (Administration)	-	Member
6.	Prof. N.S. Raghuwanshi, Dept. of Agri. and Food Engg., IIT, Kharagpur, W.B.	-	Member
7.	Prof. Sankar Chandra Deka, Deptt. of Food Engg. & Tech., Tezpur University, Tezpur (Assam)	-	Member
8.	Prof. D.N. Das, Dean, Faculty of Life Science, Rajiv Gandhi University, Doimukh (Itanagar)	-	Member
9.	Prof. Debabrata Das, Head, Deptt. of Business Administration Tezpur University, Tezpur	-	Member
10.	Prof. Tomo Riba , Dean Faculty of Environmental Science, Rajiv Gandhi University, Doimukh, Itanagar	-	Member
11.	Prof. Anjan Dutta, Deptt. of Civil Engg., IIT, Guwahati	-	Member
12.	Mr. Talo Potom, ADM cum CEO, Govt. of A.P, Itanagar-	-	Member
13.	Prof. J. Choubey, Deptt. of Mathematics	-	Member
14.	Prof. S.K. Singh, Deptt. of Civil Engg.	-	Member
15.	Prof. Mubarak Hussain, Deptt of Chemistry	-	Member
16.	Prof. H.S. Yadav, Deptt. of Chemistry	-	Member
17.	Prof. M. Muralidhar, Deptt. of ME	-	Member
18.	Prof. S.K. Pandey, Deptt. of Mathematics	-	Member
19.	Prof. (Mrs). P. Rethy, Deptt. of Forestry	-	Member
20.	Prof. P.R. Alapati, Deptt. of Physics	-	Member
21.	Prof. P.P. Dabral, Deptt. of AE	-	Member
22.	Prof. L.K. Arora, Deptt. of Mathematics	-	Member
23.	Prof. K.D. Ram, Deptt.of Chemistry	-	Member
24.	Prof. K.N. Dewangan, Deptt. of AE	-	Member
25.	Prof. Saibal Chatterjee, Deptt. of EE	-	Member
26.	Prof. B.D. Nayak, Deptt. of HSS	-	Member
27.	Prof. C.L. Sharma, Deptt. of Forestry	-	Member
28.	Prof. A.S. Rai, Deptt. of Mathematics	-	Member
29.	Prof. N. Deb, Deptt. of Chemistry	-	Member
30.	HoD (CE)	-	Member
31.	HoD (ME)	-	Member

32.	HoD (EE)	-	Member
33.	HoD (AE)	-	Member
34.	HoD(ECE)	-	Member
35.	HoD (CSE)	-	Member
36.	HoD (Physics)	-	Member
37.	HoD (Chemistry)	-	Member
38.	HoD (Maths)	-	Member
39.	HoD (Forestry)	-	Member
40.	HoD (HSS)	-	Member
41.	HoC (CMS)	-	Member
42.	HoC (CATARD)	-	Member
43.	Dr. S.K. Srivastava, Associate Prof., Deptt. of AE	-	Member
44.	Shri D.K. Shyamal, Associate Prof., Deptt. of AE	-	Member
45.	Dr. R.K. Mehta, Associate Prof., Deptt. of EE	-	Member
46.	Dr. M.P. Thaddues, Assistant Prof., Deptt. of ME	-	Member
47.	Shri T.V.P. Singh, Assistant Prof., Deptt. of EE	-	Member
48.	Shri K. Legoh, Assistant Prof., Deptt. CSE	-	Member
49.	Controller of Examination	-	Invitee
50.	Registrar	-	Non-Member Secretary

**MEMBERS OF BUILDING AND WORKS Sub-COMMITTEE ON
31.03.2017**

1.	Director, NERIST	Chairman
2.	Secretary, Education, Govt. of A.P	Member
3.	Chief Engineer (WZ), APPWD, Govt. of A.P	Member
4.	Dean (P&D), NERIST	Member
5.	HoD (Civil Engg.), NERIST	Member
6.	Registrar, NERIST :	Member
7.	Sr.Architect, PWD, Govt. of A.P	Member
8.	HoD (EE), NERIST	Member
9.	Deputy Registrar (Fin), NERIST	Member
10.	Executive Engineer (Civil), NERIST	Non-Member Secretary

Annexure-VI

INSTITUTE ADMINISTRATION AS ON 31.03.2017

- | | | |
|-----------------------------------|---|-----------------------------|
| 1. Director-in-charge | - | Prof. H.S. Yadav |
| 2. Deans : | | |
| Administration | - | Prof. M.F. Hussain |
| Academic | - | Prof. P.K. Tripathy |
| Student's Affairs | - | Prof. Binay Singh |
| Planning & Development | - | Prof. Anwar Hussain |
| 3. Group-A Officers : | | |
| Registrar | - | Dr. R.P. Bhattacharjee |
| Deputy Registrar(Admin) | - | Shri. M.K. Camder |
| Deputy Registrar(Fin) | - | Shri. M.K. Camder |
| Assistant Registrars : | | |
| Academic | - | Dr. K.K. Rajesh |
| Examination Cell | - | Shri. Gautam Kr. Roy |
| Store & Purchase | - | Shri. Toko Shama |
| HMC | - | Shri. Animesh Chakraborty |
| Medical Officers : | - | Dr. Sushmita P. Taggu |
| | | Dr. P. Camdir Tok |
| | | Dr. Gyamar Inja |
| Librarian | - | Shri. Asim Kr Gupta |
| | | Shri. V.P. Gupta |
| Assistant Workshop Superintendent | - | Shri. Harshendra Mishra |
| Net Work Administrator | - | Shri. Dewan Rashidul Alam |
| Executive Engineer | - | Shri. Charlie Welly |
| 4. Group-B Officers : | | |
| Sports Officer | - | Shri. B.S. Raja |
| Security Officer | - | Shri. Toko Shama(in-charge) |
| Section Officer(Establishment) | - | Shri. Doge Kamduk |
| Store & Purchase | - | Shri. Rabindra Deb |

Finance	-	Shri. P. Goswami
Exam Cell	-	Shri. Srijit Chattopadhyay
Academic	-	Shri Radhe Tadu
HMC	-	Smt. Pratibha Saikia
5. Chief Vigilance Officer	-	Prof. P.P. Debral
6. Estate Officer	-	Shri. Toko Shama
7. Liaison Officer(SC/ST)	-	Dr. Pradip Lingfa
8. Hindi Officer	-	Shri Ratan Singh
9. Head of the Departments :		
Agricultural Engineering	-	Prof. K.N. Dewangan
Civil Engineering	-	Shri S. K. Sahu
Computer Science & Engg.	-	Dr.(Mrs.) N. Marchang
Electrical Engineering	-	Dr. Sarsing Gao
Electronics & Communication Engg.	-	Dr. A. Dinamani Singh
Mechanical Engineering	-	Dr. Pradip Lingfa
Forestry	-	Dr.(Mrs.) M.B. Sharma
Physics	-	Dr. Tado Karlo
Chemistry	-	Prof. Nidhuban Deb
Mathematics	-	Prof. S.K. Pandey
Humanities & Social Sciences	-	Dr. P. Parida
Centre for Management Studies	-	Dr. M. Mall
10. Head of Centre (CATRD)	-	Dr. S.K. Shrivastava
11. Chairman :		
NEE Committee	-	Dr. O.P. Tripathi
HMC	-	Dr. Sandip Singh
Gymkhana	-	Dr. Aswini Kr. Patra
Telecom	-	Dr. S. Majumdar
Transport	-	Dr. M. Chandrasekaran
Library	-	Prof. P.R. Alapati
HAC	-	Dr. C.L. Sharma
12. Training & Placement i/c	-	Dr. Arnab Bandopadhyay
13. ET Cell i/c	-	Shri. Amar Taggu
14. Co-ordinators :		
SRIC	-	Dr. Arvind Pandey
NSS	-	Dr. A. Dinamani Singh
CEP	-	Dr. Arvind Pandey
CRF	-	Dr. Jadannath Bhuyan

ACCF	-	Shri. Amar Taggu
15. Controller of Examination(i/c)	-	Dr. P. Parida
16. Secretary NEE committee	-	Dr. K.K. Rajesh
17. NCC Officer	-	Mr. Anubhav Pal

Annexure-VII

MEMBERS OF THE LIBRARY COMMITTEE AS ON 31.3.2017

- 1) **Prof.P.R.Alapati** - **Chairman**
- 2) **Dr.S.K.Sahu** - **Member**
- 3) **Dr.(Mrs) S.L.Bharati** - **Member**
- 4) **Dr.K.Saharia** - **Member**
- 5) **Dr.S.K.Bhagat** - **Member**
- 6) **Mr.S.M.Khan** - **Member**
- 7) **Dr.P.Debnath** - **Member**
- 8) **Mr.Raju Barthakur** - **Member**
- 9) **Mr.S.Choudhury** - **Member**
- 10) **Dr.P.K.Pandey** - **Member**
- 11) **Dr.Awadesh Kumar** - **Member**
- 12) **Dr.R.K.Mangang** - **Member**
- 13) **Dr.M. Marjit Singh** - **Member**
- 14) **Mr.V.P.Gupta** - **Member Secretary**

MEMBERS OF NERIST ENRANCE EXAMINATION COMMITTEE AS ON 31.03.2017

- 1) Dr.O.P.Tripathy, Associate Professor (FO) - Chairman
- 2) Dr.S. Samanta, Associate Professor (ME) - Member
- 3) Dr.M.M.Dixit, Associate Professor (MA) - Member
- 4) Dr.Anil Gautam, Assistant Professor(ECE) - Member
- 5) Dr.K.K. Rajesh, Assistant Registrar (Acad) - Member Secretary

MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 31.3.2017

Dean (SA)

Dr.Binay Singh

Chairman-cum-Chief Warden

Dr.Sandeep Singh

Assistant Registrar

Shri Animesh Basu

Section Officer

Mrs Pratibha Saikia

Wardens

- | | | |
|---------------------------------|---|------------------|
| a) Dr.Kh. Hera Ch. Singh | - | Hostel Block – A |
| b) Dr.M. Hassan | - | Hostel Block - B |
| c) Mr.A.K.Chowdhury | - | Hostel Block - C |
| d) Mr.S.Tamang | - | Hostel Block - D |
| e) Mr.A.K.Gautam and Dr.K.Borah | - | Hostel Block - E |
| f) Mr.Akhilesh Sharma | - | Hostel Block - F |
| g) Mrs.Y.Bidya Laxmi Devi | - | Hostel Block - G |
| h) Dr.M.M.Mal | - | Hostel Block - H |
| i) Dr.(Mrs.) S.L.Bharati | - | Subansiri |

Annexure - X

NERIST ENTRNCE EXAMINATIONS**1. Admission notice:**

The admission notification was published in the following newspapers:

Sl.	Name of News Paper
1	Arunachal Times, Itanagar
2	Assam Tribune, Guwahati
3	All editions of Hindustan Times viz : (Education Horizon)
4	Arunachal Front
5	Shillong Times
6	Sikkim Express
7	Nagaland Post
8	Tripura Times
9	Mizoram Post
10	Sangai Express, Imphal

Date of Examination: 23. 04. 2016 - NEE – II & III
24. 04. 2016 - NEE - I

Candidates appeared in NEE-2016 (State - wise)

Name of state	Module			
	NEE-I	NEE-II	NEE-III	Total
Arunachal Pradesh	3191	1775	218	5184
Assam	653	805	151	1609
Manipur	332	439	24	795
Meghalaya	139	222	77	438
Mizoram	15	38	14	67
Nagaland	200	424	36	660
Sikkim	41	50	12	103
Tripura	587	147	64	798
All India	202	129	50	381
PD	5	3	4	12
Total	5365	4032	650	10047

STATEWISE DETAILS OF CANDIDATES APPEARED IN NEE-III, 2016

Name of State	AE	CE	ME	ECE	CSE	EE	TOTAL
Arunachal Pradesh	4	141	12	5	22	33	216
Assam	1	66	29	18	15	22	152
Manipur	-	6	3	9	1	5	24
Meghalaya	1	23	21	6	5	21	77
Mizoram	1	3	2	-	4	4	14
Nagaland	-	17	10	1	2	6	36
Sikkim	-	2	5	2	1	2	12
Tripura	1	23	4	12	7	18	65
All India	-	14	11	5	2	18	50
PD	-	2	1	-	1	-	4
Total	8	297	98	58	60	129	650

RESULT ANNOUNCEMENT

- 1) Result approved on : 29.04.2016
 2) Declaration on notice boards : 29.04.2016
 3) Result given in NERIST website : 29.04.2016

Candidates selected (state and category wise): 2016

Name of state & category	MODULE				Total
	NEE-I	NEE-II		NEE-III	
		Technology	Forestry		
PRC	14	5	2	7	28
PHYSICAL HANDICAPPED	5	2	-	2	9
Arunachal pradesh	20	8	3	7	38
Assam	20	8	3	6	37
Manipur	20	8	3	6	37
Meghalaya	20	8	3	6	37
Mizoram	10	8	3	6	27
Nagaland	20	8	3	5	36
Sikkim	13	6	3	6	28

Tripura	20	8	3	7	38
All India	20	8	3	7	38
Total	182	77	29	65	353

*Floating

Candidates wait-listed (State & Category-wise) 2016

Name of state & category	MODULE				Grand total
	NEE-I	NEE-II		NEE-III	
		Technology	Forestry		
PRC	14	5	2	5+2*	28
PHYSICAL HANDICAPPED	-	-	-	1	1
Arunachal pradesh	40	16	6	11	73
Assam	20	8	3	4	35
Manipur	20	8	3	4	35
Meghalaya	18	8	3	3	32
Mizoram	3	8	1	4	16
Nagaland	20	8	3	4	35
Sikkim	8	6	3	2	19
Tripura	20	8	3	4	35
All India	20	8	3	6	37
Total	183	83	30	50	346

*Floating

COUNSELLING SCHEDULE OF NEE-2016

1	11.07.2016	Selected List of NEE – I (Base)(Excluding Arunachal Pradesh)
2	12.07.2016	Waiting List of NEE – I(Excluding Arunachal Pradesh)
3	13.07.2016	Selected & Waiting List of NEE – I (for the candidates of Arunachal Pradesh state Quota)
4	14.07.2016	Selected List of NEE –II & III, (Excluding Arunachal Pradesh)
5	15.07.2016	Waiting List of NEE-II & III, (Excluding Arunachal Pradesh)
6	16.07.2016	Selected & Waiting List of NEE – II & III (for the candidates of Arunachal Pradesh state Quota)

Candidates admitted in the year 2016 (State and category wise):

Name of State & category	Module											
	NEE-I (200 seats)			NEE-II (Technology) (80 seats)			NEE-II (forestry 30 seats)			NEE-III (72 seats)		
	Sel.	WL	Total	Sel.	WL	Total	Sel.	WL	Total	Sel.	WL	Total
PRC	10	2	12	2	1	3	-	1	1	6	2	8

PD	4	-	4	1	-	1	-	-	-	1	-	1
Arunachal	10	7	17	3	-	3	1	-	1	7	-	7
Assam	9	7	16	1	4	5	3	-	3	6	-	6
Manipur	15	4	19	5	3	8	2	-	2	5	-	5
Meghalaya	13	5	18	3	4	7	2	1	3	3	1	4
Mizoram	10	-	10	2	1	3	2	1	3	2	2	4
Nagaland	6	13	19	5	2	7	2	1	3	4	-	4
Sikkim	10	3	13	2	-	2	1	1	2	6	-	6
Tripura	8	5	13	1	3	4	-	2	2	7	-	7
All India	15	5	20	2	3	5	1	1	2	5	-	5
Floating	-	-	-	-	-	-	-	-	-	-	-	-
Total	110	51	161	27	21	48	14	8	22	52	5	57

Sel- Selected; WL- Waitlisted

CANDIDATES ADMITTED IN BASE MODULE (NEE-I) AS PER COUNSELLING REPORT – 2016 (Branch wise):

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE	1	3	4	-	4	4	-	4	1	1	4	26
CE	1	3	4	4	4	4	4	4	4	4	4	40
EC	-	-	1	4	3	2	-	3	-	2	4	19
EE	1	3	4	4	4	4	4	4	4	4	4	40
ME	1	3	4	4	4	4	2	4	4	2	4	36
TOTAL	4	12	17	16	19	18	10	19	13	13	20	161

CANDIDATES ADMITTED IN DIPLOMA MODULE (NEE-II) AS PER COUNSELLING REPORT – 2016 (Branch wise):

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE	-	-	-	-	1	1	-	1	-	-	-	3
CE	1	-	1	1	1	1	1	1	1	1	1	10
CS	-	1	-	1	3	2	-	2	1	-	2	12
EC	-	-	1	1	1	1	-	1	-	1	1	7
EE	-	1	1	1	1	1	1	1	-	1	1	10
ME	-	1	-	1	1	1	1	1	-	1	-	7
FO	-	1	1	3	2	3	3	3	2	2	2	22
TOTAL	1	4	4	8	10	10	6	10	4	6	7	71

CANDIDATES ADMITTED IN DEGREE MODULE (NEE-III) AS PER COUNSELING REPORT – 2016 (Branch wise):

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE	-	-	1	1	-	-	-	-	-	1	-	3
CE	1	3	2	1	1	1	1+1*	1	1	1	1	15
CS	-	2	1	1	1	1	2	1	1	1	1	12
EC	-	1	1	1	2	-	-	-	2	2	1	10
EE	-	1	1	1	1	2	1	1	1	1	1	11
ME	-	1	1	1	-	-	-	1	1	1	1	7
TOTAL	1	8	7	6	5	4	5	4	6	7	5	58

- In-service candidate

SUMMARY OF NEE-2016

POSITION	NEE-I	NEE-II	NEE-III	Total
No. of candidates appeared	5365	4032	650	10047
No. of candidates selected (Technology)	182	77	65	324
No. of candidates selected (Forestry)	-	29	-	29
No. of candidates waitlisted (Technology)	183	83	50	316
No. of candidates waitlisted (Forestry)	-	30	-	30

HIGHLIGHTS OF NEE-2016

Sl.No.	Events	2015	2016	Remarks
1	No. of candidates appeared	10,722	10,047	Decreased by 675 Nos.
2	No. of candidates taken admission through counseling	NEE-I 176 NEE-II 69 <u>NEE-III 56</u> 301	NEE-I 161 NEE-II 70 <u>NEE-III 57</u> 288	Decreased by 13 Nos.
3	The most preferred branch	CE with 62	CE with 65	Increased by 03 Nos.
4	Less preferred branch	CS with 23	CS with 22	Decreased by 01 No.
5	No. of students admitted from selected list	200	203	Increased by 03 Nos.

6	No. of students admitted From wait list	98	85	Decreased by 13 Nos.
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Adoption of online registration neeonline.ac.in and OMR answer sheets has helped the NEE Cell to publish the NEE result in time as per the schedule. The Challan were made available to the applicants by the Axis Bank Branches throughout the country at major places of choice. Payment mode for application was also available to the candidates via debit cards and credit cards. For up to date information, NERIST website was used for the sell being of the applicants and general public.

Thus the total process of NEE-2016 completed successfully.

Annexure - XI

LIST OF FACULTY MEMBERS AS ON 31ST MARCH, 2017

LIST OF FACULTY MEMBERS as on date 31.03.2017			
FORESTRY			
SI No	Deptt. SI.No.	Name	Post Holding
1	1	Dr.Binay Singh	Professor
2	2	Dr.C.L.Sharma	Professor
3	3	Dr. M.Sharma	Professor
4	4	Dr.K.Srivastava	Professor
5	5	Dr.S.Suresh Kr. Singh	Associate Professor
6	6	Dr. Awadhesh Kumar	Associate Professor
7	7	Dr. P.R. Gajurel	Associate Professor
8	8	Dr. O.P. Tripathi	Associate Professor
9	9	Dr. L.B. Singha	Associate Professor
10	10	Shri Gobinda Pangging	Asstt. Professor
11	11	Dr. Ashish Paul	Asstt. Professor
12	12	Dr. Madhu Kamle	Asstt. Professor
13	13	Dr. Pradeep Kumar	Asstt. Professor
AGRICULTURAL ENGINEERING			
SI No	Deptt. SI.No.	Name	Post Holding
14	1	Dr.P.P.Dabral	Professor
15	2	Dr.K.N.Dewangan	Professor
16	3	Dr. S.K.Srivastava	Professor

17	4	Shri. D.K.Shyamal	Associate Professor
18	5	Dr. Deepak Jhajharia	Associate Professor
19	6	Dr. Aditi Bhadra	Associate Professor
20	7	Dr. Arnab Bandopadhyay	Associate Professor
21	8	Dr. P.K. Pranav	Asstt. Professor
22	9	Shri. Pankaj Kr. Pandey	Asstt. Professor
23	10	Dr. Thaneswar Patel	Asstt. Professor
24	11	Shri. Ukil Singh	Asstt. Professor
25	12	Shri Arun Kr. Choudhary	Asstt. Professor
26	13	Mr. Anubhab Pal	Asstt. Professor
27	14	Shri Tage Tapang	Asstt. Professor
28	15	Mrs. Vanita Pandey	Asstt. Professor

CIVIL ENGINEERING			
SI No	Deptt. SI.No.	Name	Post Holding
29	1	Dr.S.K.Singh	Professor
30	2	Dr. R.K.Prasad	Professor
31	3	Dr.S.Baishya	Professor
32	4	Dr. S.Mishra	Professor
33	5	Sh.S.K.Sahu	Asso. Professor
34	6	Dr. Ajay Bharati	Asso. Professor
35	7	Dr. H.P.Singh	Associate Professor
36	8	Dr. Dipika Devi	Asso. Professor
37	9	Ms. Y. Bidyalaxmi Devi	Asstt. Professor
38	10	Ms. Mudo Puming	Asstt. Professor
39	11	Dr. Monowar Hussain	Asstt. Professor
40	12	Ms. Yamen Tamut	Asstt. Professor
41	13	Mr. Neero Gumsar Sorum	Asstt. Professor
42	14	Shri K. James Singh	Asstt. Professor
43	15	Dr. Ajanta Kalita	Asstt. Professor

44	16	Dr. Dibyendu Pal	Asstt. Professor
COMPUTER SCIENCE & ENGINEERING			
SI No	Deptt. SI.No.	Name	Post Holding
45	1	Dr..N.Marchang.	Asso. Professor
46	2	Ms.M.Kathing	Associate Professor
47	3	Shri. S.J.Borah	Associate Professor
48	4	Shri. K. Leogh	Associate Professor
49	5	Shri. Marjit Singh	Asstt. Professor
50	6	Shri. Aswini Kr. Patra	Asstt. Professor
51	7	Shri. Manjul Saikia	Asstt. Professor
52	8	Shri. Amar Taggu	Asstt. Professor
53	9	Shri Ajit Kumar Singh Yadav	Asstt. Professor
54	10	Shri Yogendra Mohan	Asstt. Professor
55	11	Shri Pradeep Kamboj	Asstt. Professor

ELECTRICAL ENGINEERING			
SI No	Deptt. SI.No.	Name	Post Holding
56	1	Dr.S.Chatterjee	Professor
57	2	Dr.R.K.Mehta	Professor
58	3	Dr.O.P.Roy	Professor
59	4	Dr. Sarsing Gao	Professor
60	5	Dr.S.K.Bhagat	Professor
61	6	Dr.A.K.Singh	Associate Professor
62	7	Shri. R. Blange	Associate Professor
63	8	Shri. T.V.P.Singh	Associate Professor
64	9	Shri Adikanda Parida	Asstt. Professor
65	10	Shri Deben Singh	Asstt. Professor
66	11	Shri Anu Kr. Das	Asstt. Professor
67	12	Shri N.L.Meitei	Asstt. Professor
68	13	Ms. Somila Hashunao	Asstt. Professor
69	14	Shri. Akhilesh Sharma	Asstt. Professor

70	15	Ms. Piyali Das	Asstt. Professor
71	16	Mr. P. Devachandra Singh	Asstt. Professor
ELECTRONICS & COMMUNICATION ENGINEERING			
Sl No	Deptt. Sl.No.	Name	Post Holding
72	1	Dr.Anwar Hussain	Professor
73	2	Dr. Aheibam Dinamani Singh	Associate Professor
74	3	Dr. Rajesh Kumar	Associate Professor
75	4	Shri T. Sharan	Asstt. Professor
76	5	Shri Madhusudan Misra	Asstt. Professor
77	6	Shri Pranab Kr. Dutta	Asstt. Professor
78	7	Dr. Joyatri Bora	Asstt. Professor
79	8	Dr. Swanirbhar Majumdar	Asstt. Professor
80	9	Shri Ashok Kr. Ray	Asstt. Professor
81	10	Dr. Manish Kumar	Asstt. Professor
82	11	Mr. Rusni Kima Mangang	Asstt. Professor
83	12	Shri. Akho John Richa	Asstt. Professor
84	13	Shri. Anil Kr. Gautam	Asstt. Professor
85	14	Mr. M. Edison Singh	Asstt. Professor

MECHANICAL ENGINEERING			
Sl No	Deptt. Sl.No.	Name	Post Holding
86	1	Dr. M.Muralidhar	Professor
87	2	Dr. Asis Giri	Professor
88	3	Dr. Pradip Lingfa	Professor
89	4	Dr.M.Chandrasekhran	Professor
90	5	Dr. S. Mahto	Professor
91	6	Dr. S. Samanta	Associate Professor
92	7	Dr. Satyam Shivam Gautom	Associate Professor
93	8	Dr. Sandeep Singh	Associate Professor
94	9	Shri. K.K. Mondal	Asstt. Professor
95	10	Dr. M.P. Thaddues	Asstt. Professor
96	11	Shri. Maryom Dabi	Asstt. Professor
97	12	Shri. Narendra Kumar Rana	Asstt. Professor
98	13	Shri. Nabam Teyi	Asstt. Professor

99	14	Shri Santosh Kumar Tamang	Asstt. Professor
100	15	Md. S. Mujaheed Khan	Asstt. Professor
101	16	Dr. Yadaiah Nirsanmetla	Asstt. Professor
102	17	Dr. Vinod Yadav	Asstt. Professor

CHEMISTRY

SI No	Deptt. SI.No.	Name	Post Holding
103	1	Dr. Mubarak Hussain	Professor
104	2	Dr. H.S. Yadav	Professor
105	3	Dr. P.K. Tripathy	Professor
106	4	Dr. M.F. Hussain	Professor
107	5	Dr. K.D. Ram	Professor
108	6	Dr. N. Deb	Professor
109	7	Dr. A.K. Gupta	Professor
110	8	Dr(Mrs)K.T.Kamal	Professor
111	9	Shri. N. Ghanashyam Singh	Asstt. Professor
112	10	Dr. Shashi Lata Bharati	Asstt. Professor
113	11	Dr. Meera Yadav	Asstt. Professor
114	12	Dr. Jagannath Bhuyan	Asstt. Professor
115	13	Dr. A. Murugan	Asstt. Professor
116	14	Dr. Nagendra Nath Yadav	Asstt. Professor

HSS

SI No	Deptt. SI.No.	Name	Post Holding
117	1	Dr. B.D.Nayak	Professor
118	2	Dr. P.Parida	Professor
119	3	Dr.(Ms) S. Sinha	Associate Professor
120	4	Shri. R. Prasad	Associate Professor
121	5	Shri. Raju Barthakur	Associate Professor

MATHEMATICS

SI No	Deptt. SI.No.	Name	Post Holding
122	1	Dr. L.K. Arora	Professor
123	2	Dr. B.K. Singh	Professor
124	3	Dr. M.M. Dixit	Associate Professor

125	4	Shri. Jayanta Bora	Asstt. Professor
126	5	Dr. Herachandra Singh	Asstt. Professor
127	6	Dr. Pradip Debnath	Asstt. Professor
128	7	Dr. Mohammad Hassan	Asstt. Professor
129	8	Dr. Chandra Prakash Pandey	Asstt. Professor
PHYSICS			
Sl No	Deptt. Sl.No.	Name	Post Holding
130	1	Dr. P.R. Alapati	Professor
131	2	Dr. Tado Karlo	Professor
132	3	Dr. M.Sengupta	Associate Professor
133	4	Dr. Arvind Pandey	Associate Professor
134	5	Dr. (Mrs.) Th Gomti Devi	Associate Professor
135	6	Dr. Mukesh Upadhyay	Associate Professor
136	7	Dr. Rajesh Kumar Yadav	Associate Professor
137	8	Dr. Kamal Saharia	Asstt. Professor
138	9	Dr. Sanoujam Dhiren Meetei	Asstt. Professor
139	10	Dr.(Ms.) Akbari Jahan	Asstt. Professor
140	11	Dr. Kunal Borah	Asstt. Professor
CMS			
Sl No	Deptt. Sl.No.	Name	Post Holding
141	1	Dr. R. M. Pant	Professor
142	2	Shri. Shibabrata Choudhury	Asstt. Professor
143	3	Ms. Bijoylaxmi Sarmah	Asstt. Professor
144	4	Dr. Manmohan Mall	Assistant Professor

MANPOWER

Teaching (Faculty)

Department wise break-up of faculty as on 31.03.2017 is given below:

1.	Forestry	13
2.	Agriculture Engineering	15
3.	Civil Engineering	16
4.	Computer Science & Engineering	11
5.	Electrical Engineering	16
6.	Electronics & Communication Engineering	14
7.	Mechanical Engineering	17
8.	Physics	11
9.	Chemistry	14
10.	Mathematics	08
11.	Humanities & Social Sciences	05
12.	Centre for Management Studies	04
Total (I) =		144

Annexure - XII

SEPARTE AUDIT REPORT (Six pages)

ANNUAL ACCOUNTS

