

## **SECTION – 1**

### **DIRECTOR'S SUMMARY**

It is a privilege to write a foreword to this 32<sup>nd</sup> Annual Report 2018-2019 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 President of the Society for NERIST, Brigadier (Dr.) B.D. Mishra (Retd), His Excellency the Governor of Arunachal Pradesh for his guidance and support during the period of 2018 - 19. The Institute is also indebted to its Chairman of Board of Management, Prof. Umesh Chandra Ray, who has been a constant source of inspiration and guidance since 18<sup>th</sup> May, 2017. 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 2018-19, a number of academic initiatives and infrastructure developmental activities have been taken up with support from all concerned. TEQIP activities with World Bank funding are going on in fullswing 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 1<sup>st</sup> April, 1994. It has been conferred with the “Deemed to be University” status since May 31<sup>st</sup>, 2005, by the MHRD under Section-3 of UGC Act, 1956.

The Institute follows a modular pattern of education, having multiple entries and exits system and is producing skilled manpower at different levels, i.e., Certificate, Diploma and Degree, through its innovative educational program. The system of education adopted at NERIST is aimed to bridge the technological gap of the eight north eastern states that comprise of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura and rest of the country. This subsequently will increase the pace of socio-economic development in this region.

The Institute has demonstrated successful implementation of modular pattern of education. This has been able to create skilled manpower in nine Certificate courses, six Diploma courses and seven Degree courses that are 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 and Humanities & Social Sciences also have a pivotal role as supporting departments. Although, the Institute admits students at a tender age (after Class-X) with heterogeneous academic standards but its academic and administrative set up has been quite effective to ensure appreciable academic growth of the students including the development of different traits of their personality.

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 to be University’ status in 2005 in subsequent years and Ph.D. programmes (part-time and full-time) in all Engineering and Science departments were started. Since 2006 MBA program is also running. 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 impart in engineers/technologists and trainees a mindset full of creativity to pursue excellence with a 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 Prof. Umesh Chandra Ray is the present Chairman, 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 the 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 the 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 being dealt by the one Senior Stenographer. Besides this, Academic Section also deals with all other matters related to academic affairs of the Institute with MHRD/UGC/AICTE/AISHE and other miscellaneous academic matters. The branch is headed by Assistant Registrar (Academic). As on July-Dec. session 2018-19, the numbers of UG students were 1246, PG students were 341 and Ph.D. Scholar were 273. The total student strength was 1860.

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

All the undergraduate Degree and Post-graduate Programmes in Engineering & Technology are approved by the AICTE.

#### **3.2 Status Report regarding activities**

The 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 1<sup>st</sup>

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 students.

The GATE qualified candidates admitted to the AICTE approved courses are eligible for AICTE – PG Scholarship (GATE). The Ph.D. Research Scholars are also provided Fellowship 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 s/he has registered, failing which the scholarship/stipend may be terminated.

### 3.3 Courses offered for Under Graduate Programme

During 2018-19, 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 Courses Offered in Post Graduate Programme**

The Institute started its Post Graduate Courses and the following Programmes were running during 2018-19.

### **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 under the Department of Mechanical Engineering.
- g) M.Tech. in Thermal and 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 2018-19 are summarized and furnished in the following tables.

**(a) Under Graduate Programmes****Table 1: No. of Students enrolled in 1<sup>st</sup> Year (Module-wise)**

<b>Discipline</b>	<b>Base</b>	<b>Diploma</b>	<b>Degree</b>
Agricultural Engineering (AE)	36	23	22
Civil Engineering (CE)	40	40	50
Computer Science & Engineering (CSE)	0	23	19
Electrical Engineering (EE)	40	46	44
Electronics & Communication Engineering (ECE)	40	28	31
Mechanical Engineering (ME)	40	34	44
<b>Total</b>	<b>196</b>	<b>194</b>	<b>210</b>

**Table 2: No. of Students enrolled in 2<sup>nd</sup> Year (Module-wise)**

<b>Discipline</b>	<b>Base</b>	<b>Diploma</b>	<b>Degree</b>
Agricultural Engineering	16	28	20
Civil Engineering	30	45	48
Computer Science & Engineering	0	16	16
Electrical Engineering	37	38	43
Electronics & Communication Engineering	20	14	26
Mechanical Engineering	28	32	34
<b>Total</b>	<b>131</b>	<b>173</b>	<b>187</b>

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

<b>Year</b>	<b>No. of students</b>
First	17
Second	13
Third	15
Fourth	14
<b>Total</b>	<b>59</b>

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

<b>Discipline</b>	<b>No. of students</b>
Agricultural Engineering	4
Civil Engineering	14
Computer Science & Engineering	11
Electrical Engineering	13
Electronics & Communication Engineering	12
Mechanical Engineering	12
<b>Total</b>	<b>66</b>

**Table 5: No. of Students enrolled as Repeaters**

<b>Discipline</b>	<b>Base</b>	<b>Diploma</b>	<b>Degree</b>
Agricultural Engineering	7	1	2
Civil Engineering	6	1	4
Computer Science & Engineering	0	0	0
Electrical Engineering	4	8	0
Electronics & Communication Engineering	3	1	3
Mechanical Engineering	2	1	0
Forestry	0	0	0
<b>Total</b>	<b>22</b>	<b>12</b>	<b>9</b>

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

<b>Discipline</b>	<b>1<sup>st</sup> Year</b>		<b>2<sup>nd</sup> Year</b>		<b>Repeater</b>		<b>Total</b>
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>	
Agricultural Engineering	27	9	9	7	6	1	<b>59</b>
Civil Engineering	28	12	25	5	4	2	<b>76</b>
Electrical Engineering	25	15	29	8	3	1	<b>81</b>
Electronics & Communication Engineering	30	10	16	4	2	1	<b>63</b>
Mechanical Engineering	36	4	23	5	1	1	<b>70</b>
<b>Total</b>	<b>146</b>	<b>50</b>	<b>102</b>	<b>29</b>	<b>16</b>	<b>6</b>	<b>349</b>



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

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
Agricultural Engineering	13	10	23	5	1	0	52
Civil Engineering	30	10	24	12	0	0	76
Computer Science & Engineering	17	6	12	4	0	0	39
Electrical Engineering	35	11	24	14	4	1	89
Electronics & Communication Engineering	20	8	9	5	1	0	43
Mechanical Engineering	29	5	29	3	1	0	67
<b>Total</b>	<b>144</b>	<b>50</b>	<b>121</b>	<b>43</b>	<b>7</b>	<b>1</b>	<b>366</b>

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

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Bridge		Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
AE	15	7	6	14	3	1	1	1	48
CE	35	15	33	15	11	3	3	1	116
CSE	15	4	11	5	8	3	0	0	46
EE	31	13	36	7	9	4	0	0	100
ECE	23	8	17	9	10	2	3	0	72
ME	39	5	31	3	10	2	0	0	90
<b>Total</b>	<b>158</b>	<b>52</b>	<b>134</b>	<b>53</b>	<b>51</b>	<b>15</b>	<b>7</b>	<b>2</b>	<b>472</b>

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

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		3 <sup>rd</sup> Year		4 <sup>th</sup> Year & Repeater		Total
	Male	Female	Male	Female	Male	Female	Male	Female	
FO	6	11	8	5	6	9	6	8	59

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

Discipline	GE	OBC	SC	ST	Total
AE	8	7	3	41	59
CE	12	12	1	51	59
EE	15	14	7	45	81
ECE	24	14	3	22	63
ME	33	9	7	21	70
<b>Total</b>	<b>92</b>	<b>56</b>	<b>21</b>	<b>180</b>	<b>332</b>

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

Discipline	GE	OBC	SC	ST	Total
AE	6	2	1	43	<b>52</b>
CE	18	13	5	40	<b>76</b>
CSE	16	5	3	15	<b>39</b>
EE	34	7	3	45	<b>89</b>
ECE	12	9	2	20	<b>43</b>
ME	35	16	3	13	<b>67</b>
<b>Total</b>	<b>121</b>	<b>52</b>	<b>17</b>	<b>176</b>	<b>366</b>

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

Discipline	GE	OBC	SC	ST	Total
AE	4	8	1	35	<b>48</b>
CE	27	16	7	66	<b>116</b>
CSE	10	14	5	17	<b>46</b>
EE	28	21	6	45	<b>100</b>
ECE	28	13	3	28	<b>72</b>
ME	40	13	8	29	<b>90</b>
FO	13	7	4	35	<b>59</b>
<b>Total</b>	<b>150</b>	<b>92</b>	<b>34</b>	<b>255</b>	<b>531</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	2	21	4	9	10	0	12	0	1	<b>59</b>
CE	5	25	7	8	9	5	10	0	7	<b>76</b>
EE	9	22	11	8	9	4	9	1	8	<b>81</b>
ECE	14	8	14	6	8	0	7	0	6	<b>63</b>
ME	8	13	16	6	7	3	6	0	11	<b>70</b>
<b>Total</b>	<b>38</b>	<b>89</b>	<b>52</b>	<b>37</b>	<b>43</b>	<b>12</b>	<b>44</b>	<b>1</b>	<b>33</b>	<b>349</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	1	25	1	4	8	2	8	2	1	<b>52</b>
CE	9	19	9	7	9	3	6	7	7	<b>76</b>
CSE	9	3	7	5	5	1	4	2	3	<b>39</b>
EE	8	25	12	9	11	2	6	6	10	<b>89</b>
ECE	6	5	9	5	11	1	2	0	4	<b>43</b>
ME	8	16	17	3	11	0	3	2	7	<b>67</b>
<b>Total</b>	<b>41</b>	<b>93</b>	<b>55</b>	<b>33</b>	<b>55</b>	<b>9</b>	<b>29</b>	<b>19</b>	<b>32</b>	<b>366</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	2	17	7	4	5	2	6	3	2	48
CE	9	25	25	7	9	7	14	9	11	116
CSE	3	6	9	6	8	3	4	4	3	46
EE	10	21	16	9	10	3	12	6	13	100
ECE	7	9	18	6	7	2	7	4	12	72
ME	11	13	29	7	8	1	7	4	10	90
FO	2	6	10	7	7	6	6	7	8	59
<b>Total</b>	<b>44</b>	<b>97</b>	<b>114</b>	<b>46</b>	<b>54</b>	<b>24</b>	<b>56</b>	<b>37</b>	<b>59</b>	<b>531</b>

**(b) Post-Graduate Programmes****Table 16: No. of Students enrolled in M.Tech. (Full Time)**

Sl. No.	Dept.	Name of the Programme	No. of students admitted				Total	
			1 <sup>st</sup> Year		2 <sup>nd</sup> Year			
			Male	Female	Male	Female	Male	Female
1.	AE	Soil & Water Conservation Engineering	4	6	1	2	5	8
		Farm Machinery & Power	2	2	3	1	5	3
2.	CE	Environmental Science & Engineering	14	4	9	4	23	8
		Geotechnical Engineering	12	6	13	2	25	8
3.	CSE	Computer Science & Engineering	4	2	4	5	8	7
		Information Technology	1	3	0	0	1	3
4.	EE	Power System Engineering	8	7	3	6	11	13
5.	ECE	Electronics & Comm. Engineering	2	7	4	10	6	17
6.	ME	Computer Integrated Manufacturing	7	0	8	0	15	0
		Thermal and Fluid Engineering	7	0	4	0	11	0
<b>Total</b>			<b>61</b>	<b>37</b>	<b>49</b>	<b>30</b>	<b>110</b>	<b>67</b>

**Table 17: Category-wise No. of Students enrolled in M.Tech. (Full Time) 1<sup>st</sup> Year**

Sl. No.	Dept.	Name of the Programme	GE	SC	OBC	ST	Total
1.	AE	Soil & Water Conservation Engineering	1	0	1	8	10
		Farm Machinery & Power	1	0	3	0	4
2.	CE	Environmental Science & Engineering	4	0	2	12	18
		Geotechnical Engineering	2	3	6	7	18

3.	CSE	Computer Science & Engineering	0	1	2	3	6
		Information Technology	3	1	0	0	4
4.	EE	Power System Engineering	1	2	4	8	15
5.	ECE	Electronics & Comm. Engineering	4	0	4	1	9
6.	ME	Computer Integrated Manufacturing	2	0	2	3	7
		Thermal and Fluid Engineering	0	0	4	3	7
<b>Total</b>			<b>18</b>	<b>7</b>	<b>28</b>	<b>45</b>	<b>98</b>

Table 18: Category-wise No. of Students enrolled in M.Tech. (Full Time) 2<sup>nd</sup> Year

Sl. No.	Dept.	Name of the Programme	GE	SC	OBC	ST	Total
1.	AE	Soil & Water Conservation Engineering	0	0	0	3	3
		Farm Machinery & Power	1	0	1	2	4
2.	CE	Environmental Science & Engineering	1	0	0	12	13
		Geotechnical Engineering	2	1	2	10	15
3.	CSE	Computer Science & Engineering	4	0	3	2	9
		Information Technology	0	0	0	0	0
4.	EE	Power System Engineering	1	2	1	5	9
5.	ECE	Electronics & Comm. Engineering	4	0	6	4	14
6.	ME	Computer Integrated Manufacturing	2	0	3	3	8
		Thermal and Fluid Engineering	1	0	1	2	4
<b>Total</b>			<b>16</b>	<b>3</b>	<b>17</b>	<b>43</b>	<b>79</b>

Table 19: No. of Students enrolled in M.Sc.

Sl. No.	Dept.	Name of the Programme	No. of students admitted				Total	
			1 <sup>st</sup> Year		2 <sup>nd</sup> Year			
			Male	Female	Male	Female	Male	Female
1.	PH	M.Sc. in Physics	5	7	8	4	13	11
2.	CH	M.Sc. in Chemistry	7	3	4	4	11	7
3.	MA	M.Sc. in Mathematics	12	6	2	8	14	14
4.	FO	M.Sc. in Forestry	8	10	5	12	13	22
<b>Total</b>			<b>32</b>	<b>26</b>	<b>19</b>	<b>28</b>	<b>51</b>	<b>54</b>

Table 20: Category-wise No. of Students enrolled in M.Sc. 1<sup>st</sup> Year

Sl. No.	Dept.	Name of the Programme	GE	SC	OBC	ST	Total
1.	Physics	M.Sc. in Physics	0	2	6	4	12

2.	Chemistry	M.Sc. in Chemistry	4	1	4	1	10
3.	Mathematics	M.Sc.in Mathematics	3	0	4	11	18
4.	Forestry	M.Sc. in Forestry	1	1	3	13	18
<b>Total</b>			<b>8</b>	<b>4</b>	<b>17</b>	<b>29</b>	<b>58</b>

Table 21: Category-wise No. of Students enrolled in M.Sc. 2<sup>nd</sup> Year

Sl. No.	Dept.	Name of the Programme	GE	SC	OBC	ST	Total
1.	Physics	M.Sc. in Physics	3	1	5	3	12
2.	Chemistry	M.Sc. in Chemistry	2	0	6	0	8
3.	Mathematics	M.Sc.in Mathematics	0	0	3	7	10
4.	Forestry	M.Sc. in Forestry	1	1	1	14	17
<b>Total</b>			<b>6</b>	<b>2</b>	<b>15</b>	<b>24</b>	<b>47</b>

Table 22: No. of Students enrolled in MBA

Sl. No.	Centre	Name of the Programme	No. of students admitted				Total	
			1 <sup>st</sup> Year		2 <sup>nd</sup> Year			
			Male	Female	Male	Female	Male	Female
1.	CMS	Management Studies	13	12	20	14	33	26

Table 23: Category-wise No. of Students enrolled in MBA 1<sup>st</sup> Year

Sl. No.	Centre	Name of the Programme	GE	SC	OBC	ST	Total
1.	Management Studies	MBA	6	0	4	15	25

Table 24: Category-wise No. of Students enrolled in MBA 2<sup>nd</sup> Year

Sl. No.	Centre	Name of the Programme	GE	SC	OBC	ST	Total
1.	Management Studies	MBA	6	4	3	21	34

**Table 25: No. of Students enrolled in Ph.D. (Part Time & Full Time)**

<b>Engineering Disciplines (A)</b>							
<b>Sl. No.</b>	<b>Name of the Dept.</b>	<b>No. of Students admitted</b>				<b>Total</b>	
		<b>Part Time</b>		<b>Full Time</b>		<b>Male</b>	<b>Female</b>
		<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>		
1.	Agricultural Engineering	1	0	13	6	14	6
2.	Civil Engineering	6	6	9	5	15	11
3.	Computer Science and Engineering	1	0	4	1	5	1
4.	Electrical Engineering	13	3	18	6	31	9
5.	Electronics and Communication Engineering	16	4	10	6	26	10
6.	Mechanical Engineering	16	0	19	5	35	5
<b>Total (A)</b>		<b>53</b>	<b>13</b>	<b>73</b>	<b>29</b>	<b>126</b>	<b>42</b>
<b>Science, Humanities &amp; Management Studies Disciplines (B)</b>							
<b>Sl. No.</b>	<b>Name of the Dept.</b>	<b>No. of Students admitted</b>				<b>Total</b>	
		<b>Part Time</b>		<b>Full Time</b>		<b>Male</b>	<b>Female</b>
		<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>		
7.	Physics	5	0	11	5	16	5
8.	Chemistry	2	1	3	6	5	7
9.	Mathematics	8	0	2	6	10	6
10.	Forestry	4	1	18	9	22	10
11.	Humanities & Social Sciences	7	3	1	2	8	5
12.	Management Studies	4	3	1	3	5	6
<b>Total (B)</b>		<b>30</b>	<b>8</b>	<b>36</b>	<b>31</b>	<b>66</b>	<b>39</b>
<b>Total (A) + (B)</b>		<b>Male</b>		<b>Female</b>		<b>Total</b>	
		<b>192</b>		<b>81</b>		<b>273</b>	

**Table 26: Category-wise No. of Students enrolled in Ph.D. (Part Time & Full Time)**

<b>Engineering Disciplines (A)</b>						
<b>Sl. No.</b>	<b>Name of the Dept.</b>	<b>GE</b>	<b>SC</b>	<b>OBC</b>	<b>ST</b>	<b>Total</b>
1.	Agricultural Engineering	6	0	7	7	20
2.	Civil Engineering	5	2	4	15	26
3.	Computer Science and Engineering	3	0	2	1	6
4.	Electrical Engineering	17	3	13	7	40
5.	Electronics and Communication Engineering	19	1	14	2	36
6.	Mechanical Engineering	23	3	9	5	40

<b>Total (A)</b>	<b>73</b>	<b>9</b>	<b>49</b>	<b>37</b>	<b>168</b>
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<b>Science, Humanities &amp; Management Studies Disciplines (B)</b>						
<b>Sl. No.</b>	<b>Name of the Dept.</b>	<b>GE</b>	<b>SC</b>	<b>OBC</b>	<b>ST</b>	<b>Total</b>
7.	Physics	7	0	9	5	21
8.	Chemistry	5	1	3	3	12
9.	Mathematics	6	0	9	1	16
10.	Forestry	9	1	8	14	32
11.	Humanities & Social Sciences	4	2	1	6	13
12.	Management Studies	3	0	5	3	11
<b>Total (B)</b>		<b>34</b>	<b>4</b>	<b>35</b>	<b>32</b>	<b>105</b>

### 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 kind of fees related to Academic and Examination are being collected through online payment mode through automation.

Institute has participated in the National Institutional Ranking Framework (NIRF) 2019 and ranked 173 in Engineering.

All the Undergraduate and Postgraduate courses of the Engineering and Technology and MBA of the Institute are recognized by the All India Council for Technical Education, New Delhi.

The data of the Institute has been successfully uploaded in the All India Survey on Higher Education (AISHE) for the year 2018-19.

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

The 7<sup>th</sup> Convocation was held on 19<sup>th</sup> November, 2018. Honourable Governor of Arunachal Pradesh & President, NERIST Society, Brig. (Dr.) B. D. Mishra (Retd.) has presided over the Convocation. Prof. A.D. Sahasrabudhe, Chairman, All India Council of Technical Education, New Delhi has given the Convocation Address as Chief Guest.

## SECTION - 4

### 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 filed 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.	<b>Dr. B. Singh</b>	Professor	Horticulture & Agroforestry
2.	<b>Dr. C. L. Sharma</b>	Professor	Wood Science & Technology
3.	<b>Dr. M. B. Sharma</b>	Professor	Wood Science & Forest Products



4.	<b>Dr. Karuna Shrivastava</b>	Professor & <b>Head</b>	Fungal Diversity, Plant-microbe Interactions, Plant Biotechnology
5.	<b>Dr. P. R. Gajurel</b>	Associate Professor	Plant diversity & Taxonomy Ethnobotany
6.	<b>Dr. S. Sureshkumar Singh</b>	Associate Professor	Natural Product Biotechnology, Microbial Diversity & Bioprospecting
7.	<b>Dr. A. Kumar</b>	Associate Professor	Wildlife behavioral ecology & Conservation
8.	<b>Dr. O. P. Tripathi</b>	Associate Professor	Forest Ecology, Biodiversity, Forest Geoinformatics, Climate Change
9.	<b>Dr. L. B. Singha</b>	Associate Professor	Forest ecology and Biodiversity, Bamboos of Northeast, Nutrition Science.
10.	<b>Dr. G. Pangging</b>	Assistant Professor	Forest Economics & Management
11.	<b>Dr. Ashish Paul</b>	Assistant Professor	Ecology & Biodiversity Conservation
12.	<b>Dr. Madhu Kamle</b>	Assistant Professor	Plant Biotechnology, Molecular Disease Diagnostics, Fungal-Plant Interaction
13.	<b>Dr. Pradeep Kumar</b>	Assistant Professor	Biotechnology , Plant Pathology & Biocontrol

#### 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, Microbiology and Biotechnology, Soil biology and management 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 60 projects completed and 14 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 75 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 Organization.

#### 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 75 research projects (completed/ongoing) sponsored by several funding agencies like MHRD, DST, CSIR, AICTE, 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), stereomicroscope (Zeiss), Phase-contrast microscope (Olympus), Spectrofluorimeter, wood microtome, circular saw, automatic weather station, PCR systems, Gel documentation system, Gel electrophoresis, Gas Chromatograph, Socs Plus and Fibra Plus, Kelplus, UV-vis 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 Biotechnology	Dr. Karuna Shrivastava
Lab 3	Forest Systematic Ethnobotany & Horticulture	Dr. P. R. Gajurel
Lab 4	Environment, NRM and Restoration Ecology	Dr. 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. A. Kumar
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/ Thesis completed by PG / Ph. D students

##### (i) Ph.D. thesis (awarded/submitted):

Name and Roll No.	Supervisor (s)	Status	Title of Ph.D. Thesis
Mr. Robert Panmei Ph.D./(FT)/FO/13/05	B. Singh P. R. Gajurel	Awarded	“Cross-cultural ethnobotany among the Zeliangrong tribe of Manipur”
Mr. Kabuk Lego Ph.D. (PT)/12/FO/03	C. L. Sharma M. B. Sharma	Awarded	“Studies on wood density variations in <i>Pinus merkusii</i> jungh. & de Vriese of Arunachal Pradesh, India”
Mr. Govinda Pangging, Ph.D.(PT)/14/FO/01	C. L. Sharma M. B. Sharma	Awarded	“Ethnobotanical studies of plants used in magico religious practices by selected tribes of Assam”
Ms. Ulman Yashmita Nitin Ph.D. (FT)/13/FO/03	Awadhesh Kumar, M. B. Sharma	Awarded	“Faunal diversity and its threat assessment in traditional agroforestry systems in Northern Assam, India”
Gurumayum Ranibala Ph.D.(PT)/ 51107	S. S. Singh	Awarded	“Evaluation of nuclear and chloroplast genome sequences for development of DNA barcode in selected <i>Musa</i> species occurring in North Eastern India”
Wahengbam Robindro singh Ph.D.(PT)/10/FO/02 51006/2010	S. S. Singh Karuna Shrivastava	Awarded	“Genome characterization and phylogenetic analysis of wild and cultivated Bananas ( <i>Musa spp.</i> ) of Manipur, India”
H. Boboy Singh Ph.D. (PT)/10/FO/03	S. S. Singh	Awarded	“Studies on occurrence and diversity of endomycorrhizal fungi associated with selected medicinal plants of Manipur”
Ms. Diana Ethel Amonge Ph.D. (PT)/11/FO/02	Awadhesh Kumar, M. B. Sharma	Submitted	“Studies on reproductive and behavioural ecology of eastern hoolock gibbon ( <i>Hoolock leuconedys</i> ) in conservation breeding center at Itanagar, Arunachal Pradesh, India”

Mr. Biswajit Pramanik Ph.D.(FT)/13/FO/01	Karuna Shrivastava	Submitted	Exploration of microbial diversity and microbial role in arsenic mobilization in As-contaminated groundwater of North Eastern states (Arunachal Pradesh and Assam)
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**(ii) Project work completed by PG students:**

Name of Student / Roll. No.	Dissertation title	Supervisor(s)
Ms. Hobby Dabi (MS/16/FO/01)	Biomass and carbon pool potential of plantations in Nari circle of East Siang district, Arunachal Pradesh	Dr. Ashish Paul
Mr. Tachin Sidisow, MS/16/FO/02	Dissertation entitled, "Effect of industrial emission on the anatomical characteristics of <i>Dipterocarpus macrocarpus</i> and <i>Tetrameles nudiflora</i> ".	Prof. C.L. Sharma
Ms. D. M. Umlong (MS/16/FO/03)	"Taxonomic enumeration of 'Tyra' bamboo and Ecological analysis of its habitats in East Khasi Hills District of Meghalaya"	Dr. L. B. Singha
Mr. R. Lowang MS/16/FO/04	Screening of antihypertensive activities of some medicinal plants	Dr. S. S. Singh
Mr. Saurav Baruah MS /FO/16/05	Implications of landuse change in biomass and carbon stock potential in East Khasi hill district of Meghalaya using Landsat OLI data	Dr. O. P. Tripathi
Zeiwang Konyak (MS/16/FO/06)	Isolation, characterization and evaluation of termitarium inhabiting <i>bacillus</i> spp., their biocontrol and plant growth promoting activities"	Dr. Pradeep Kumar
Mr Stephen Maring MS/16/FO/07	Studies on Agroforestry systems in Mizoram	Prof. B. Singh
Bhumika Gurung (MS/16/FO/08)	Isolation and identification of total microflora of Orange (Mandarin) and their Post-harvest management using Essential Oils's	Dr. Madhu Kamle
Saurabh Tamagn (MS/16/FO/09)	Role of homegarden agroforestry systems in conservation of India flying fox in Biswanath district of Assam, India.	Dr. Awadhesh Kumar
Mr. D. Taker Ms/16/FO/10	Diversity and taxonomy of tree flora of Zero Valley in Arunachal Pradesh	Dr. P. R. Gajurel
Mr. Narang Tado, MS/16/FO/11	Dissertation entitled Variation in physical properties of <i>Phyllostachys bambusoides</i> Siepold. & Zucc.	Prof. M. B. Sharma

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

Name	Title	Funding	Venue	Period
Dr. S. S. Singh, Dr. Karuna Shrivastava and Dr. P. R. Gajurel	Three day training workshop on “Taxonomy of higher plants with reference to Banana taxonomy”	DBT	NERIST	27 <sup>th</sup> – 29 <sup>th</sup> March 2019

#### 4.1.6 Short-term courses/ seminars/workshops/conferences attended by the faculty:

Prof. B. Singh	- Attended the 13 <sup>th</sup> World Congress on Pharmacology and Toxicology” in Nov. 14-15, 2018 Melbourne Australia
Dr. Karuna Shrivastava	- Attended and presented a paper in 11th International Mycological Congress, held at San Juan, Puerto Rico, USA from July, 16 <sup>th</sup> -21 <sup>st</sup> 2018.
Dr. P.R. Gajurel	- Attended the 13 <sup>th</sup> World Congress on Pharmacology and Toxicology” in Nov. 14-15, 2018 Melbourne Australia
Dr. O. P. Tripathi	<ul style="list-style-type: none"> <li>- Carbon stock assessment in different landuse sectors of Ziro valley, Arunachal Pradesh using geospatial approach “Advancement in Geospatial Technology for Societal Benefits” SAC, Ahmedabad. 03.12.2018</li> <li>- Assessment of landuse change implication on carbon stock of subtropical forests of East Khasi hills, Meghalaya “Advancement in Geospatial Technology for Societal Benefits” SAC, Ahmedabad. 04.12.2018</li> <li>- Estimation of carbon sequestration potential of <i>Citrus sinensis</i> in tropical zone of Arunachal Pradesh. “6<sup>th</sup> Int. Conference on Plant and Environment NBRI, Lucknow” 27.11.2018</li> <li>- Ecosystem services assessment and community role in conserving the services in tropical deciduous forests of Kamrup district of Assam Northeast India “6<sup>th</sup> Int. Conference on Plant and Environment NBRI, Lucknow” 29.11.2018</li> </ul>
Dr. L. B. Singh	<ul style="list-style-type: none"> <li>- International conference on “Plants and Environmental Pollution-6” organized by International Society for Environmental Botanists, CSRI-NBRI Lucknow during 27-30 Nov 2018.</li> <li>- ii) 3rd World Bamboo Workshop India 2019-Breaking the Challenges of Bamboo for a better future, organized by World Bamboo Organization, USA, at City Convention Centre, Imphal, Manipur, INDIA, during 4 to 8 February 2019.</li> </ul>
Mr. G. Pangging	- National Seminar on Himalayan Plant diversity: Taxonomy conservation and sustainable utilization” organised by BSI, Shillong, Meghalaya in collaboration with NEHU and EHSST on 8th& 9th March, 2018.
Dr. A. Paul	- National Symposium on ‘Arunachal Pradesh: Known to Unknown’, on 24-25 November, 2018, organised by Intellectual Forum of North East at Art of Living, Jollang, Itanagar, Arunachal Pradesh.
Dr. Pradeep Kumar	<ul style="list-style-type: none"> <li>- Attended and Oral Presentation at "2nd International Conference on Advances in Agricultural, Biological and Applied Sciences for sustainable future" 20-22 Oct 2018.</li> <li>- Attended and delivered Invited talk at National Seminar "Biotechnological Intervention in Agriculture, Health and Industry" on 23-24 Feb 2019.</li> </ul>

	<ul style="list-style-type: none"> <li>- Attended and Delivered Plenary lecture at “Sixth Biopesticides International Conference (BIOCICON-19) at, Amity University Chhattisgarh, (Raipur), India during March 06-08, 2019</li> <li>- Participated in Two Online FDP programme organised by E&amp;ICT academy and IIT Guwahati sponsored by Ministry of MeitY.</li> </ul>
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#### 4.1.7 New Degree/ Professional Membership Obtained by the faculty:

<b>Mr. Govinda Pangging,</b>	Ph. D. Degree awarded on topic “Ethnobotanical studies of plants used in magico religious practices by selected tribes of Assam”
<b>Prof. C. L. Sharma</b>	Life member of East Himalayan Society for Spermatophyte Taxonomy, University of North Bengal, P.O. North Bengal University, Siliguri 734013, India
<b>Prof. M. Sharma</b>	Membership of International Association of Wood Anatomists (IAWA, Netherland)
<b>Dr. Karuna Shrivastava</b>	Life Member, Association of Microbiologists of India
<b>Dr. S. Suresh Kumar Singh</b>	Life Member, Association of Microbiologists of India
<b>Dr. A. Paul</b>	<ul style="list-style-type: none"> <li>i. National Environmental Science Academy (Life Member)</li> <li>ii. Natural Areas Association (Member)</li> </ul>
<b>Dr. M. Kamle</b>	<ul style="list-style-type: none"> <li>i. Life member Nano molecular Society</li> <li>ii. Member-American Society of Microbiology</li> </ul>
<b>Dr. P. Kumar</b>	<ul style="list-style-type: none"> <li>i. Life member Nano molecular Society</li> <li>ii. Life member Agricultural Technology Development Society (ATDS)</li> </ul>

#### 4.1.8 Achievements, awards, recognition earned by the faculty:

<b>Dr. P R Gajurel</b>	Awarded Singapore Flora Fellowship by Singapore National Park Board (2019)
<b>Dr. O. P. Tripathi</b>	<ul style="list-style-type: none"> <li>• Editorial Board: Journal of Plant Sciences – 2018-2021 (ISSN:2331-0723)</li> <li>• Academic Editor: Advances in Research – 2018 - 2021</li> <li>• Academic Editor: Int. Journal of Environment and Climate Change – 2019 - 2023</li> <li>• International Society for Research and Development, (F3140900141)</li> <li>• Associate Editor: Asian Journal of Agriculture Sciences (Maxwell)</li> <li>• Associate Editor: Research Journal of Environmental and Earth Sciences</li> <li>• International Society of Environmental Botanists (ISEB), Lucknow (Life Member)</li> </ul>
<b>Dr. M. Kamle</b>	• Editor- Achieves of phytopathology and plant protection

<b>Dr. P. Kumar</b>	<ul style="list-style-type: none"><li>• First Prize-Best Oral Presentation Award-2<sup>nd</sup> Int. Conference. “Advances in Agricultural, Biological and Applied Sciences For Sustainable Future. Organized by ATDS, Ghaziabad &amp; Cairo University, Egypt.</li><li>• Early Career Research Award from DST-SERB, Government of India (2018)</li><li>• Emerging Scientist Award-2018 by ATDS Society, Ghaziabad (2018)</li><li>• Academic Editor: PLOS ONE (IF- 2.77)</li><li>• Associate Editor: BMC-Complementary and Alternative Medicine (IF-2.28)-Springer-Nature</li><li>• Guest Editor –Evidence-Based Complementary and Alternative Medicine (eCAM)- Biotechnological and Therapeutic Application of Useful Plants in Endocrinal Disorder: (IF-2.28)- Hindawi</li><li>• Editor Board- <i>Food &amp; Pharma International</i>- Taylor &amp; Francis-HKB</li><li>• Editor- <i>Plant Cell Biotechnology and Molecular Biology (PCBMB)</i> (ISSN: 0972-2025)</li><li>• <i>Agrica</i>-An International Journal (ISSN: 2320-1193) –Editorial Board</li></ul>
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## 4.1.9 Project Sanctioned by outside agencies to the faculty of the department

1.	Name of PI/CoPI	Title of project	Funding agency with order No.	Period	Amount (Lakhs)
2.	Prof. Binay Singh (PI), Dr. P.R. Gajurel (Co-PI),	Capacity Building of Rural Tribal Women in Management and Marketing of Wild Edible Plants in Arunachal Pradesh	DST	2018-2020	30.90
3.	Prof. B. Singh (PI) Dr. P.R. Gajurel (Co-PI),	Promotion of promising horticultural crops in degraded ecosystem and abandoned jhum lands in Arunachal Himalaya for improvement of livelihood	GBPNIHESD	2018-2020	11.65
4.	Dr. Karuna Shrivastava (PI), Dr. S. S. Singh (Co-PI),	Collection, evaluation, documentation and conservation of banana genetic resources from north eastern region	DBT, Govt. of India DBT- NER/AGRI/33/20 16	2018-2021	23.19
5.	Dr. PR. Gajurel (PI), Prof. B. Singh (Co-PI)	Bio resources and sustainable livelihood in Northeast India	DBT	2018-2020	76.00
6.	Dr. PR. Gajurel (PI), Prof. B. Singh (Co-PI), Dr. S.S. Singh (co-PI)	Comprehensive metabolic profiling and pharmacological studies of Piper species: a natural bioenhancer in pharmaceuticals	DBT	2019-2021	46.00
7.	Dr. P.R. Gajurel (PI), Prof. B.Singh, (Co-PI)	Taxonomic revision and phylogeny of the genus Piper L. (Piperaceae) in India with its Biogeography	DBT	2019-2021	23.00
8.	Dr. S. S. Singh (PI), Dr. Karuna Shrivastava(Co-PI)	“Exploration of microbial diversity from unique habitats of Arunachal Pradesh”	BT/PR12956/NDB /39/504/2015	2017-2020	27.104
9.	Dr. S. S. Singh (PI), Dr. Karuna Shrivastava(Co-PI)	Diversity Assessment, Germplasm Conservation and Database Development on Banana Resources of North Eastern India	DBT, Govt. of India NER/AGRI/33/20 16	2018-2021	84.95
10.	Dr. S. S. Singh (PI), Dr. Karuna Shrivastava(Co-PI)	Consortium for managing Indian Banana Genetic Resources	DBT, Govt. of India	2018-2021	26.80



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11.	Dr. S. S. Singh (PI),	Screening of Banana germplasm from the NE for <i>Fusarium</i> wilt resistance and molecular characterization in contrasting genotypes	DBT, Govt. of India	2018-2021	14.55
12.	Dr. Awadhesh Kumar (PI)	Exploring wildlife and nature based tourism as potential livelihood option for local people inhabiting in and around the protected areas in Eastern Himalayas, Arunachal Pradesh: a sustainable approach for biodiversity conservation	NMHS-GBPNIHESD Almora, Uttrakhand	2018-2021	45.00
13.	Dr. Awadhesh Kumar (PI)	Status survey and potential threats of threatened Takin ( <i>Budorcas taxicolor</i> )” and its Conservation through sensitization of local communities in Eastern Arunachal Pradesh, India	IERP-GBPNIHESD Almora, Uttrakhand	2018-2021	9.97
14.	Dr. OP Tripathi (PI), Dr. Madhusudan Mishra & Dr. Ashish Paul (Co-PI),	Characterizing pattern and process of alpine ecosystem in Indian Himalaya with special emphasis to Arunachal Pradesh	SAC-ISRO Ahmedabad	2018-2021	24.01
15.	Dr. Ksh. L.B. Singha (PI) Dr. O.P. Tripathi (Co-PI), Prof. H.S. Yadav(Co-PI)	Invasive Alien Plants in Himalayas: Status, Ecological impact and Management	MoEF & CC, Govt. of India NMHS-2017/LG-01/475 Date: 22-12-2017	2018-2021	64.17
16.	Dr. G. Pangging	Documentation of Indigenous knowledge system of selected major tribes of Arunachal Pradesh and the relevance of Intellectual property right to IKS	NMHS, Govt. of India	2018-2021	48.33
17.	Dr. Ashish Paul (PI), Dr. OP Tripathi & Dr. LB Singha Co-PI	Impacts of climate change on bioresources and livelihoods of local people of Arunachal Pradesh	DST-HICAB New Delhi	2018-2021	56.91
18.	Dr. Ashish Paul (PI), Dr. OP Tripathi & Dr. LB Singha: Co-PI	Diversity, population status of rhododendron and genetic diversity of <i>Rhododendron arboreum</i> in Eastern Himalayas and Western Ghats	DBT New Delhi	2018-2021	31.97
19.	Dr. Madhu Kamle & Dr. Pradeep Kumar	Micropropagation of <i>Litsea cubeba</i> (Lour.) Pers: an indigenous plant of North East India for genetic conservation.	GBPNIHESD, GBPI/IERP/17-18/58/	2018-2021	4.00

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20.	Dr. Pradeep Kumar	Exploring the <i>Bacillus thuringiensis</i> genetic diversity with anti-coleopteran, anti-lepidopteron specific Cry genes to combat agriculturally important insect pest from North-East (Arunachal Pradesh) India.	DST-SERB ECR/2017/001143	2018- 2020	23.8
21.	Dr. Pradeep Kumar & Dr. Madhu Kamle	Screening of Phytochemical and Bioactive compounds against human pathogenic bacteria from some selected indigenous medicinal plants of Arunachal Pradesh, India.	DBT, New Delhi BT/PR24741/NER /95/659/2017	2019- 22	28.0

## 4.1.10. Publications

## (a) Referred Journal:

Journal Articles	
1.	Ronald, K., Gajurel, P. R. & Singh, B. 2019. Assessment of eco-diversity status of <i>Homalomena aromatica</i> (Spreng.) Schott and its habitat in tropical forest of Indian Eastern Himalaya <i>Plant Science Today</i> , 6(2):71-83. DOI: <a href="https://doi.org/10.14719/pst.2019.6.2.435">https://doi.org/10.14719/pst.2019.6.2.435</a>
2.	Sharma, M., Sharma, C. L., Bage, M., Gogoi, B. R. and Pangging G. 2018. Anatomical Characteristics and Fibre Dimensions of Some Grass Species of Arunachal Pradesh and their Potential for Pulp and Paper. <i>Journal of Bioresources</i> 5(1): 41-48.
3.	Panmei, R., Gajurel, P. R. & Singh, B. 2019. Ethnobotany of medicinal plants used by the Zeliangrong ethnic group of Manipur, northeast India <i>Journal of Ethnopharmacology</i> , 235:164-182. DOI: <a href="https://doi.org/10.1016/j.jep.2019.02.009">https://doi.org/10.1016/j.jep.2019.02.009</a> [IF 3.49]
4.	Kashung, S., Gajurel, P. R. & Singh, B. 2019. Morphological variations and phenology of <i>Ipomoea</i> L. species of Arunachal Pradesh, Eastern Himalaya <i>Int. J of Plant Reproductive Biology</i> , 11(1):91-97. DOI: <a href="https://doi.org/10.14787/ijprb.2019.11.1">https://doi.org/10.14787/ijprb.2019.11.1</a>
5.	Panmei, R., Gajurel, P. R. & Singh, B. 2018. Ethnomedicinal plants of the Bunning Wildlife Sanctuary of Manipur, India <i>Pleione</i> 12(1):1-10. DOI: <a href="https://doi.org/10.26679/Pleione.30.6.2018.001-010">https://doi.org/10.26679/Pleione.30.6.2018.001-010</a>
6.	Kashung, S., Gajurel, P. R. & Singh, B. 2018. Record of two climber species <i>Ipomoea cairica</i> (L.) Sweet and <i>Ipomoea triloba</i> L. (Convolvulaceae) - new for the flora of Arunachal Pradesh, India <i>Pleione</i> , 12(2):341-346. DOI: <a href="https://doi.org/10.26679/Pleione.12.2.2018.341-346">https://doi.org/10.26679/Pleione.12.2.2018.341-346</a>
7.	Bawri, A., Gajurel, P. R. & Khan, M. L. 2018. Lecto typifications of five names of <i>Primula</i> species (Primulaceae) <i>Kew Bulletin</i> 73:29 DOI: <a href="https://doi.org/10.1007/S12225-018-9750-9">https://doi.org/10.1007/S12225-018-9750-9</a> UGC No. 6508 (ISSN 00755974)
8.	Devi, W. D., Gajurel, P. R. & Rethy, P. 2018. Phenological behaviour of <i>Piper sylvaticum</i> Roxb. (Piperaceae) a medicinally important species occurring in north East India <i>Int. J. of Plant Reproductive Biology</i> , 10(1):84-89. DOI: <a href="https://doi.org/10.14787/ijprb.2018.10.1.84-89">https://doi.org/10.14787/ijprb.2018.10.1.84-89</a>
9.	Panda, P. C., Kumar, S., Singh, J. P, Gajurel, P., et al. 2018, Improving macropropagation and seed germination techniques for conservation of threatened species. <i>Current Science</i> , 114, (3), 562-565. UGC No. 14405 (ISSN 00113891)
10.	Sharma, M., Sharma C. L. and Haokip, D. 2018. Anatomical and physical characteristics of some rattan species. <i>J. Indian Acad. Wood Sci.</i> 15(2):132–139.
11.	Lego, K., Sharma C. L. and Sharma M, 2018. Axial variation of wood density in <i>Pinus merkusii</i> Jungh. & de Vriese. <i>Journal of Tree Sci.</i> 37 (1) : 1-10 (DOI: 10.5958/2455-7129.2018.00001.8)
12.	Pangging G, Sharma C. L. and Sharma M, 2018. Ethnobotanical studies of magico-religious plants with reference to Khampti tribe. <i>International Journal of Life Sciences Research</i> Vol. 6 (2):196-202.
13.	Lego, K., Sharma C. L. and Sharma M, 2018. Ring width variation in <i>Pinus merkusii</i> Jungh. & de Vriese - An endemic pine of Arunachal Pradesh. <i>International Journal of Biology Research</i> 3(1): 372-379.
14.	Gogoi, B. R, Sharma M. and Sharma, C. L. 2018. Tracheid length variation in <i>Pinus kesiya</i> Royle ex Gord.as affected by age, distance from pith, growth rate and ring width. <i>Journal of Tree Sciences</i> Volume37 (2): 55-61. DOI: 10.5958/2455-7129.2018.00017.1

15.	D. Paria, S. Kundu, Kh. Kennedy Singh, S. Sureshkumar Singh and K. Surjit Singh (2018) Synthesis, Characterization and Antidiabetic Activity of Some Water Soluble Zn (II) Complexes with (E)-N-(Thiophen-2-ylmethylene) anilines. (Page1115-1116), <i>Asian Journal of Chemistry</i> (March, 2018) ISSN: 0970-7077
16.	G. Ranibala, S. Sureshkumar Singh and M. Latif Khan (2018). Evaluation of nuclear and chloroplast genome sequences for delineation of species identity in six ornamental species of <i>Musa</i> from North East India, 7th Symposium of the DNA Society of India, 17-18th Nov, 2017.
17.	Mohapatra J, Singh CP, Tripathi OP and Pandya HA (2019). Remote sensing of alpine treeline ecotone dynamics and phenology in Arunachal Pradesh Himalaya. <i>International Journal of Remote Sensing</i> <a href="https://doi.org/10.1080/01431161.2019.1608383">https://doi.org/10.1080/01431161.2019.1608383</a> .
18.	Murali CK, Kumar A, Tripathi OP (2019). Characteristics of nesting trees of Red giant flying squirrel ( <i>Petaurista petaurista</i> ) in a Tropical Forest of Namdapha National Park, India. <i>Journal of Threatened Taxa</i> , 11: 13720-13726. <a href="https://doi/10.11609/jott.4384.11.6.13720-13726">https://doi/10.11609/jott.4384.11.6.13720-13726</a> .
19.	Kumar A, Kishore BSPC, Saikia P, Deka J, Bharali S, Singha LB, Tripathi OP, Khan ML (2018). Tree diversity assessment and above ground forests biomass estimation SAR remote sensing: a case study of higher altitude vegetation of Northeast India. <i>Physics and Chemistry of the Earth</i> . doi.org/10.1016/j.pce.2019.03.007.
20.	Nath AN, Tiwari BK, Sileshi GW, Sahoo UK, Brahma B, Deb S, Ningthoujam B, Das AK, Reang D, Chaturvedi SS, Tripathi OP, Das DJ, Gupta A (2019). Development of robust models for estimation of forest biomass in North East India. <i>Forests</i> , 10, 103; doi: 10.3390/f10020103.
21.	Yam G and Tripathi OP (2018). Soil carbon sequestration along forest canopy gradient: mitigating climate change. <i>Journal of Bioresources</i> , 5(1): 28-33.
22.	Deka S, Tripathi OP and Paul A (2018). Perception-based assessment of ecosystem services of Ghagra Pahar forest of Assam, Northeast India. <i>Geology, Ecology, and Landscapes</i> , DOI: 10.1080/24749508.2018.1553020.
23.	Bordoloi R, Das B, Yam G, Pandey PK, Tripathi OP (2018). Modeling of water holding capacity using readily available soil characteristics. <i>Agriculture Research</i> <a href="https://doi.org/10.1007/s40003-018-0376-9">https://doi.org/10.1007/s40003-018-0376-9</a> .
24.	Kashung Y, Das B, Deka S, Bordoloi R, Paul A and Tripathi OP (2018). Geospatial technology based diversity and above ground biomass assessment of woody species of West Kameng district of Arunachal Pradesh. <i>Forest Science and Technology</i> 14(2):84-90.
25.	Diana Ethel Amonge and Awadhesh Kumar (2018). Role of Fragmented Forests in Conservation of Biota: A Study in Balipara Reserve Forest, Sonitpur District, Assam (India). <i>Journal of Bioresources</i> , 5 (1):18-27.
26.	Mrigakhi Borah, Ashalata Devi and Awadhesh Kumar (2018). Diet and Feeding Ecology of Western Hoolock Gibbon ( <i>Hoolock hoolock</i> ) in a Tropical Forest Fragment of Northeast India. <i>Primates</i> , 59:31-44 DOI 10.1007/s10329-017-0627-6
27.	Yashmita-Ulman, Madhubala Sharma and Awadhesh Kumar (2018). Agroforestry systems as habitat for avian species: assessing its role in conservation. <i>Proceedings of the Zoological Society</i> , 71(2):127–145. <a href="https://doi.org/10.1007/s12595-016-0198-3">https://doi.org/10.1007/s12595-016-0198-3</a> . [IF 1.196]
28.	Kumar, A., Kishore, B.S.P.C., Saikia, P., Deka, J. Bharali, S., Singha, L.B., Tripathi, O.P., Khan, M.L., 2019. Tree Diversity Assessment and Above Ground Forests Biomass Estimation using SAR Remote Sensing: A case study of Higher Altitude Vegetation of North-East Himalayas, India. <i>Physics and Chemistry of the Earth</i> . <a href="https://doi.org/10.1016/j.pce.2019.03.007">https://doi.org/10.1016/j.pce.2019.03.007</a> (In Press). (IF: 1.923)

29.	Singha, L.B., Niri, P., Devi, R., 2018. <i>Stapletonia rigoense</i> (Poaceae), a new bamboo species bearing very long internodes from Arunachal Pradesh, India. <i>Phytotaxa</i> . 350 (1): 079–085. (IF: 1.185).
30.	Stephanie, S., Davies, T.J., Saikia, P., Deka, J., Bharali, S., Tripathi, O.P., Singha, L.B., Khan, M.L., Dayanandan, S. 2018. Phylogenetic diversity patterns in Himalayan forests reveal evidence for environmental filtering of distinct lineages. <i>Ecosphere</i> . 9(5): 1-13. ISSN: 2150-8925. DOI: 10.1002/ecs2.2157. (IF- 2.49).
31.	Medak, B., and Singha, L.B., 2018. Trace elements and antioxidant activity of six wild edible plants that are widely consumed by ethnic tribes of Arunachal Pradesh, India. <i>Indian J. Agric. Res.</i> 52 (1): 85-88. (IF: 0.162).
32.	Pangging, G. and Arunachalam, A. (2018). Role of forest policy in sustainable development of forests in India. In: K.K. Sood, and V. Mahajan (Eds). <i>Forests, climate change and biodiversity</i> . Kalyani Publishers, New Delhi.
33.	Pangging, G., Sharma, C.L. and Sharma, M. 2018. Ethnobotanical studies of magico-religious plants with reference to Khampti tribe. <i>International Journal of Life science Research</i> . 6(2): 196-202.
34.	Pangging, G., Sharma, C.L. and Sharma, M. 2019. Ethnobotanical study on plants used in magico-religious practices of Deori tribe in Assam, India. <i>Plant Archives</i> . 19(1). (Accepted).
35.	Paul, A., Khan, M.L. and Das, A.K. (2018) Phenological characteristics of <i>Rhododendron</i> species in temperate mixed broad-leaved forests of Arunachal Himalaya, India. <i>Journal of Forest and Environmental Science</i> 34(6): 435-450.
36.	Paul, A., Khan, M.L. and Das, A.K. (2018) Population structure and regeneration status of rhododendrons in temperate mixed broad-leaved forests of western Arunachal Pradesh, India. <i>Geology, Ecology, and Landscapes</i> (Published online). ISSN: (Print) 2474-9508 (Online)
37.	Salehi, B., M. Kamle, P Kumar*, N. Martin, JS Rad (2019) Beneficial Effects and Potential Risks Of Tomatoes Consumption For Human Health: An Overview. <i>Nutrition</i> . 10.1016/j.nut.2019.01.012 (IF-3.75).
38.	H Barak, P Kumar, A Zaritsky, Z Mendel, D Ment, A Kushmaro, E Ben-Dov (2019) Diversity of Bacterial Biota in <i>Capnodis tenebrionis</i> (Coleoptera: Buprestidae) Larvae. <i>Pathogens</i> 8 (1), 4. (SCIE).
39.	B Salehi P Kumar, JS Rad (2018) Antioxidants: Positive or Negative Actors? <i>Biomolecules</i> 8 (4), 124. (SCIE).
40.	Bajpai V. K., Kamle M, Shukla S, Mahato DK, Chandra P, Hwang SK, Kumar P, Huh YS, Han YK (2018) Prospects of Using Nanotechnology for Food Preservation, Safety, and Security. <i>Journal of Food Drug Analysis</i> . <a href="https://doi.org/10.1016/j.jfda.2018.06.011">https://doi.org/10.1016/j.jfda.2018.06.011</a> . (IF-3.048).
41.	Baranwal A, Srivastava A, Kumar P, Bajpai VK, Maurya PK and Chandra P (2018) Prospects of Nanostructure Materials and Their Composites as Antimicrobial Agents. <i>Front. Microbiol.</i> 9:422. doi: 10.3389/fmicb.2018.00422 (IF-4.07).
42.	Bajpai V. K., V. Chandra, NH Kim, R. Rai, Kumar P, K. Kim, A. Aeron, S C Kang, D K Maheshwari, MK Na, I A Rather, YH Park (2018) Ghost probiotics with a combined regimen: a novel therapeutic approach against Zika virus, an emerging world threat. <i>Critical Review in Biotechnology</i> . 38(3):438-454. (IF-6.542).
43.	Khan I, Bahuguna A, Kumar P, Bajpai VK, Kang SC (2018) In vitro and in vivo antitumor potential of carvacrol nanoemulsion against human lung adenocarcinoma A549 cells via mitochondrial mediated apoptosis. <i>Scientific Report-Nature</i> 8(1):144. (IF-4.259).

44.	Kumar S., Das G., Shin H, Kumar P, and Patra, JK. (2018). Evaluation of Medicinal Values of <i>Gymnopetalum chinense</i> (Lour.) Merr., a Lesser Known Cucurbit from Eastern Ghats of India. <i>Brazilian Archives of Biology and Technology</i> , 60, e17160580. Doi:10.1590/1678-4324-2017160580 (IF- 0.66)
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**(b) Conference Papers:**

1.	Karuna Shrivastava and Karma Tashi Sherpa (2018). “Distribution, Ethnomycology and Nutraceutical studies of Wild Edible Fungi of Kamrup district of Assam, Northeast India”. Paper presented in 11th International Mycological Congress, held at San Juan, Puerto Rico, USA from July, 16th -21st 2018.
2.	Singha LB, Tripathi, OP, Khan, ML and Tripathi, RS (2018). Prospects of bamboo resources available in Northeast India in boosting socio-economic condition of the people and in mitigating climate change, In: International conference on “Plants and Environmental Pollution-6” organized by International Society for Environmental Botanists, CSRI-NBRI Lucknow during 27-30 Nov 2018.
3.	Z. Konyak, M. Kamle, P. Kumar (2018) Isolation and characterization of termite hill bacterial biocontrol against <i>Alternaria alternata</i> . In 2 <sup>nd</sup> Int. Conference. “Advances in Agricultural, Biological and Applied Sciences For Sustainable Future. Dated 20-22 Oct 2018. Organized by ATDS, Ghaziabad & Cairo University, Egypt at Shubharati University, Meerut, UP, India.
4.	Konyak Z, Kamle M, Kumar P (2019). Isolation of Termitarium Inhabiting <i>Bacillus</i> sp. and explore its biocontrol activity against <i>Alternaria alternata</i> . UGC sponsored National Seminar on Biotechnological intervention in agriculture, Health and industry. 23-24 Feb 2019 at Gorakhpur Univ. [Invited Lecture]
5.	Barak H, Kumar P, Zaritsky A, Mendel Z, Ment D, Kushmaro A, Ben-Dov E (2019). Diversity of bacterial biota in <i>Capnodis tenebreonis</i> (Coleoptera: Buprestidae). Biotechnology and bioentrepreneurship conference and tutorial (BIOX conference) at Beersheva, Israel. 1-05 march 2019.
6.	Pradeep Kumar (2019) <i>Bacillus</i> species as weapons for Plant pathogens and insect-pest management. Sixth Biopesticides International Conference (BIOCICON 2019) at Amity University Raipur, India, 06-08 March 2019. Volume: ISBN: 978-93-85525-53-7 [Plenary Lecture]
7.	Yaron Sitrit, Satish Lakkakula, Ariel Kushmaro, Madhu Kamle, Efraim Lewinsohn, Einat Bar, Varda Kagan-Zur, Nurit Roth-Bejerano, Zeev Barak, Eli Zaady (2019) Pre-Symbiotic Signals Exchange Of Hormones And Volatile Organic Compounds Between The Host-Plant <i>Helianthemum sessiliflorum</i> And The Desert Truffle <i>Terfezia boudieri</i> . International Conference on Plant, Cellular & Molecular Biology. Valencia, Spain. February 18 -19, 2019.
8.	L. Satish, Y. Galit, Madhu Kamle, C. D. Patil, Ariel Kushmaro, Varda Kagan-Zur, Nurit Roth-Bejerano, Ze'ev Barak, Yaron Sitrit (2018). <i>Agrobacterium tumefaciens</i> mediated genetic transformation of the ectendomycorrhizal fungus <i>Terfezia boudieri</i> . Israel Society of Microbiology 2018 annual meeting on 3-4 July 2018.



**(c) Books/ Book Chapter:**

<b>Books</b>	
1.	Advances in Microbial Biotechnology: Current Trends and Future Prospects (Eds.) P. Kumar, J. K. Patra, and P. Chandra. Publisher: Apple Academic Press (Taylor's & Francis group) ISBN: 9781771886673. [2018] –International BOOK
2.	Emerging Trends of Plant Physiology for Sustainable Crop Production (Eds.) Z. Abbas, A. Tiwari and P. Kumar. Publisher: Apple Academic Press (Taylor's & Francis group) ISBN: 9781771886369. [2018] –International BOOK
<b>Book Chapters</b>	
3.	Kuladip Sarma, Awadhesh Kumar and Ashalata Devi (2018). Habitat Structure of <i>Hoolock leuconedys</i> in Protected and Non-Protected Forest of Arunachal Pradesh, India. In: <i>Biodiversity Appraisal, Monitoring and Utilization</i> , (Gupta, A. Ed.). Pp. 12-30. Aavishkar Publishers, Distributors, Jaipur, India. ISBN 978-81-7910-568-9
4.	Murali Krishna and Awadhesh Kumar (2018). Small carnivore diversity and threats to the species in Eastern Arunachal Pradesh, India. In: <i>Biodiversity and Conservation- strategies and applications</i> . (Solanki, G.S., Ed). Pp. 95-105. South-Eastern Book Agencies, Kuhiram Path, Ambikagiri Nagar, Zoo Road, Guwahati. ISBN No. 978-81-937-3-274-8
5.	Parimal Chandra Ray and Awadhesh Kumar (2018). The role of potential fruiting trees in conserving associated frugivore species in Namdapha National Park, Arunachal Pradesh, India: A model based case study. In: <i>Biodiversity and Conservation- strategies and applications</i> . (Solanki, G.S., Ed). Pp. 178-197. South-Eastern Book Agencies, Kuhiram Path, Ambikagiri Nagar, Zoo Road, Guwahati .ISBN No. 978-81-937-3-274-8
6.	R. Kumar & P. Kumar (2018) Microbial Fuel Cells for Wastewater Treatment, Bioremediation, and Bioenergy Production. In book: <i>Advances in Microbial Biotechnology Current Trends and Future Prospects</i> . Eds. P Kumar, JK Patra & P. Chandra. Publisher: Apple Academic Press (CRC Press) pp.247-269.
7.	P Kumar, M Kamle, P K Maurya and Ravi Kant Singh (2019). Beneficial uses and application of Plant growth promoting rhizobacteria (PGPR) in sustainable agriculture. Chapter 2 In: In book: <i>Microbiology for Sustainable Agriculture, Soil Health, and Environmental Protection</i> . Eds. D. K. Verma. Apple Academic Press (Taylor & Francis Grp.), USA. Pp. 81-104
8.	JK Patra, DK Mahato, P. Kumar* (2019) Biosensor Technology—Advanced Scientific Tools, With Special Reference to Nanobiosensors and Plant-and Food-Based Biosensors. In book: <i>Nanomaterials in Plants, Algae and Microorganisms</i> . Eds. Editors: Durgesh Kumar Tripathi Parvaiz Ahmad Shivesh Sharma Devendra Chauhan Nawal Kishore Dubey. Elsevier: Academic Press DOI: 10.1016/B978-0-12-811488-9.00014-7

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

The faculty members are actively interacting with the following outside agencies/ organizations 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.
- Interacted with the scientist of NBRI (Lucknow)
- ATREE (Bangalore)
- JNTBGRI (Trivandrum)
- Singapore Herbarium
- CSIR-CDRI, Lucknow
- Guwahati University.
- Mizorum University
- Nagaland University
- NBPGR-ICAR, New Delhi
- TERI University, New Delhi
- NRCB, Thiruchinapalli, Tamil Nadu
- IIT Kharagpur

**4.1.12. Consultancy projects undertaken: Nil**

**4.1.13. Achievements of students:**

1. Ms. Dhanashree Laishram (PhD/FT/16/FO/05) Awarded DST-INSPIRE for Ph. D.
2. Mr. Neelam Gap was awarded National Fellowship and Scholarship for Higher Education of ST Students by UGC, New Delhi.
3. Ms. Yakhari Kashung was awarded National Fellowship and Scholarship for Higher Education of ST Students by UGC, New Delhi.
4. Rocky Sharma cleared ICAR NET & SLET
5. Ms. Diana Ethel Amonge [Ph.D.(PT)/11/FO/02 & Reg. 0817] (Ph.D. Student): Placed as “*Project coordinator*” post at G.B. Pant National Institute of Himalayan Environment & Sustainable Development, at North East Unit, Itanagar, Arunachal Pradesh @ 55,000/- per month.
6. Mr. Parimal Chandra Ray (Ph.D. Student): Placed as “*Project Coordinator*” at Turtle Conservation Alliance, at Regional Centre, Biswanath Chariyali, Assam @45,000/- per month.
7. Ms. Ulman Yashmita Nitin [Ph.D(FT)/13/FO/03 & Regn. No. 51304] (Ph.D. Student): Placed as “*Assistant Professor*” in Agroforestry at Narendra Dev Agriculture University, Faizabad, Uttar Pradesh, India (Permanent).



8. Mr. Daniel Debbarma Awaded JRF Fellowship from UGC, Govt. of India
9. Mr. Zeiwang Konyak was awarded National Fellowship and Scholarship for Higher Education of ST Students by Ministry of Tribal affair, New Delhi.
10. Bikash Biswakarma (B.Sc. Forestry), Environment Assistant, Singtam Range, Forest Department, Sikkim
11. Mr. Samrat Deb, (B.Sc. Forestry), WWF-India, New Delhi.

**4.1.14 Any other relevant information:**

- i. Enhancement of laboratory facilities through 21 externally funded R&D projects in different laboratories
- ii. Developmental activities through plantation and management in Forest Nursery.
- iii. Sharing of 'Technical Know How' to various farmers interested in cultivation and plantation management.
- iv. Study tours, field visits of students in different Forest areas, Institution etc.

## 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 may join postgraduate programmes and Ph.D.

Department has 14 faculty members of which 02 are on lien and 01 is on study leave. Five sponsored research projects (SERB, DST, AICTE and MoEF & CC) on emerging areas of Agricultural Engineering are running in the department besides one All India Coordinated Research Project (AICRP) on Human Engineering and Safety in Agriculture, funded by ICAR, New Delhi.

### 4.2.2 Academic Activities

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

### 4.2.3 Laboratories and Laboratory Development: Following equipment's were purchased for laboratories:

Sl. No.	Name of items	Date of receipt	Qty
1	Desktop PC with Monitor-Inteli5-7400/8GB, 1 TB HDD	09/03/2019	16
2	Desktop PC with Monitor-Inteli5-7400/8GB, 2 TB HDD	09/03/2019	10
3	HP color laserjet Pro-M254dw	09/03/2019	01

**4.2.4 Project completed by the Ph.D., PG and UG students.****A. Ph.D.**

S.No	Title of the project	Name of the guide	Name of the student
1.	Identification and characterization of meteorological drought in different Agro-climatic zones of Assam	Dr. P.P. Dabral	Lamneithem Hangshing
2.	Development of a Spatially Distributed Snowmelt Runoff Model and its Application in an Eastern Himalayan Watershed under Projected Climatic Scenarios	Dr. A. Bhadra Dr. A. Bandyopadhyay	Shelina Rajkumari
3.	Effect of dust on workers health and its minimization in Rice Mills of Assam	Dr. P.K. Pranav	Mrinmoy Biswas

**B. M.Tech. (Soil and Water Conservation Engineering/Farm Machinery and Power) project (completed in May, 2018)**

S.No	Title of the project	Name of the guide	Name of the student
1.	Time series analysis of monthly rainfall for selected stations of Nagaland using SARIMA model	Dr. P.P. Dabral	Anelu Puro
2.	Evaluating the influence of spatial resolution of DEM on estimation of soil erosion using SWAT	Dr. A. Bhadra Dr. A. Bandyopadhyay	Vethito Nyekha
3.	Measurement and Modelling of Soil matrix infiltration under different Land uses.	Dr. P. K. Pandey	Tatung Taka Sikar
4.	Remote Controlled Turning Mechanism of Power Tiller During Field Operation	Dr. P K Pranav Mr. Anubhab Pal	Mayangkaba Aier
5.	Impact of Ergonomic Intervention on Load Carrying Capacity in Sherpa Mode	Dr. T. Patel	Sipe Miso

6.	Influence of removing linear and nonlinear trends from climatic variables on temporal variations of annual reference evapotranspiration in east District of Sikkim	Mrs. Vanita Pandey	Indira Taloh
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### C. Degree projects (completed in May, 2018)

S.No	Title of the project	Name of the guide	Name of the student
1.	Probability analysis of rainfall and analysis of dry and wet spells using Markov Chain model	Dr. P.P. Dabral	Mitu Dada Nibu Odi
2.	Investigation on workplace layout of Tractors	Dr. K.N. Dewangan	Ani Rilo Takhe Robin
3.	Estimation of probable maximum precipitation for humid north east of India	Dr. S.K. Shrivastava	Nentilo Woch Vanlalmaunpuia
4.	To study the fissuring characteristics of Paddy at different moisture content and different drying conditions	Mr. D.K. Syamal Mr. A.K. Choudhary	Narang Tassang Richik Kemprai
5	Quantitative morphometric analysis of a river basin using remote sensing and GIS	Dr. A. Bhadra	Lijum Nirin, Tarak Golom
6	Comparison of freely available daily gridded precipitation data with observed data over Arunachal Pradesh	Dr. A. Bandyopadhyay	Penima R. Marak, Koj Kuru
7	Evaluation of cumulative infiltration models under different land use	Dr. P. K. Pandey	Aman Venia
8	Measurement of Physiological and Postural Stress of worker during Tea Plucking	Dr. T. Patel Dr. P. K. Pranav	Nani Kani Kago Nanu
9	Virtual Ergonomics Evaluation For Design Concept of Hand Operated Maize Sheller	Dr. T. Patel	Nchumbeni M Odyuo Roselina Deka

10	Evaluation of simple flat plate solar water heater	Mr. M.U. Singh	Milton Ngasepam Imvo Imchen
11	Engineering properties of Nahar (Mesua Ferrea) seeds	Mr. A K Choudhary	Mharoni Y Ezung Arishinaro Longkumer
12	Evaluation and Calibration of Relative sunshine duration based model for estimation of global solar radiation	Mrs. Vanita Pandey	Roni Dui Liki Ete
13	3-Dimensional analysis of centre of gravity of a 2WD tractor	Mr. Tage Tapang	Gaurav Kumar Rahul Kumar Thakur

#### D. Diploma projects (completed in May, 2018)

S.No	Title of the project	Name of the guide	Name of the student
1.	Investigation of location of controls of off-road vehicles	Dr. K.N. Dewangan	Chibilombi Sylvia Kharkongor
2.	Analysis of Seasonal Variations in Diurnal Temperature Range for Mago Basin of Arunachal Pradesh	Dr. A. Bhadra	Thuanbamlung B. Guanmei, Kuputo K Chishi
3.	Analysis of inconsistencies in multi-year gridded precipitation estimate for Mago basin	Dr. A. Bandyopadhyay	Punwang Lowang, Sulika Assumi
4.	Effect of load in bending of female in Sherpa mode	Dr. P.K. Pranav	Yapong Singming Mebarina K. Sangma
5.	Performance evaluation of different types of Hargreaves equations under humid sub tropical climate of Imphal west district, Manipur	Dr. P. K. Pandey	Upananda Barman S. Rokhu
6.	Comparative Study of Anthropometric Database for	Dr. T. Patel	Kipa Nuka Karken Rallen

	Male Agricultural Workers of India		
7.	Packaging of Broccoli for extending shelf life	A K Choudhary	Subhabrata Basu Laitphar Wanning
8.	To study the fissuring characteristics of paddy at different moisture content and different drying condition	D K Syamal & A K Choudhary	Narang Tassang Richik Kemprai
9.	Wind Term based calibration of Hargreaves equation under the climatic condition of Imphal, Manipur	Vanita Pandey	Rukna Sikom Aditi Kumari Gupta
10.	Development of auto-controlled greenhouse under hot and humid condition	Tage Tapang	Sanjeev Chakravarty and Rimum Murtem

#### 4.2.5 Short-term course/seminars/workshops/conferences organized at NERIST:

1.	Dr. K.N. Dewangan acted as a Coordinator of the ASSOCHAM sponsored one day conference on “Startups and MSMEs in Food Processing” organized on 18 <sup>th</sup> January 2019 at NERIST, Nirjuli.
2.	Mr. A.K. Chaoudhary acted as a Co-Coordinator and organised ASSOCHAM’S <b>Conference</b> on Startups and MSME in Food Processing at NERIST on January 18 <sup>th</sup> 2018

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

1.	Dr. K.N. Dewangan and Mr. T. Tapang attended 53 <sup>rd</sup> <i>Annual Convention of Indian Society of Agricultural Engineers (ISAE) and International Symposium on Engineering Technologies for Precision and Climate Smart Agriculture</i> (28 <sup>th</sup> to 30 <sup>th</sup> January, 2019), at Banaras Hindu University, Varanasi, India.
2.	Dr. K.N. Dewangan attended 16 <sup>th</sup> International Ergonomics Conference on “Humanizing Work and Work Environment (HWWE-2018)”, College of Engineering Trivandrum, Tiruvantpuram, India, 14–16 December 2018.
3.	Dr. K.N. Dewangan attended 10 <sup>th</sup> Workshop of “All India Coordinated Research Project (AICRP) on Ergonomics and Safety in agriculture (ESA)” Punjab Agricultural University, Ludhiana, India, 27–28 November, 2018.
4.	Dr. A. Bhadra attended India-UK Water Centre Workshop on “Integrating precipitation forecasts and climate predictions with basin-scale hydrological modelling in the

	Himalayas” held at Wildlife Institute of India, Dehradun, Uttarakhand, India during 2-4 May 2018. Attended by.
5.	Dr. A. Bhadra and Dr. A. Bandyopadhyay attended 13th Int. Conference on Hydroinformatics (HIC 2018), Palermo, Italy, July 1-6, 2018.
6.	Dr. A. Bandyopadhyay has attended the Brainstorming Workshop on “Development of Integrated Hydrologic Model” at NIH Roorkee during 01-02 November 2018.
7.	Dr. P.K. Pandey, Dr. T. Patel, Mr. A.K. Choudhary and Mr. A. Pal attended the 13 <sup>th</sup> International Conference on Agricultural and Food Engineering (PICAF-19) at Paris, France from 14-16 March 2019.
8.	Dr. T. Patel participated in X workshop of AICRP on ESA at PAU, Ludhiana, during November 27-28, 2018.
9.	Dr. T. Patel participated in MOOC on Dynamics of Teaching Learning at NAARM, Hyderabad during, November 1-30, 2018
10.	Dr. T. Patel and Mrs. V. Pandey attended Winter FDP on AI and Machine Learning , 17 – 21 December 2018 at NERIST
11.	Mr. M.U. Singh and Mr. T. Tapang attended ICAR Summer school on <i>Adaptation of Energy Efficient Agricultural Technologies for Climate Change Mitigation</i> (4 <sup>th</sup> to 24 <sup>th</sup> June, 2018), at College of Agricultural Engineering and Post-Harvest Technology, Ranipool, Sikkim, India.

#### 4.2.7 New Degrees/Professional Memberships obtained by the faculty.

1.	Mr. A. Pal obtained the Lifetime membership of International Society for Research and Development (ISRD) since 26/05/2018. Membership Number M4150905843.
2.	Mr. A. Pal obtained the Lifetime membership of International Association of Engineers (IAENG) since 09/05/2018. Membership number 214184.
3.	Mr. T. Tapang obtained the Life Membership of Indian Society of Agricultural Engineers, New Delhi.

#### 4.2.8 Achievements/awards/recognition earned by the faculty.

1.	Dr. K.N. Dewangan acted as an External Subject Expert for recruitment of the Guest Faculty in the Department of Agricultural Engineering, Assam University, Silchar.
2.	Dr. K.N. Dewangan acted as an External Expert, College Extension Advisory Committee, College of Agricultural Engineering and Post Harvest Technology, Ranipool, Sikkim.

3.	Dr. K.N. Dewangan acted as a Member, Scientific Committee, Krishi Vigyan Kendra, Papum Pare, Arunachal Pradesh.
4.	Dr. K.N. Dewangan was the Session Co-Chair of 53 <sup>rd</sup> Annual Convention of the Indian Society of Agricultural Engineers (ISAE), Banaras Hindu University, Varanasi, India, 28–30 January 2019.
5.	Dr. K.N. Dewangan was the Session Chair of 16 <sup>th</sup> International Ergonomics Conference on “Humanizing Work and Work Environment (HWWE-2018)”, College of Engineering Trivandrum, Tiruvantpuram, India, 14–16 December 2018.
6.	Dr. Aditi Bhadra received Certificate of Outstanding Contribution in Reviewing from Journal of Hydrology, Elsevier, in July 2018.
7.	Dr. Arnab Bandyopadhyay received Certificate of Outstanding Contribution in Reviewing from Agricultural Water Management, Elsevier, in May 2018.
8.	Dr. P.K. Pandey recognized as a resource person in training Programme entitled “Climate change adaptation of Natural resource management” organised by IIFM Bhopal and Department of Forestry (NERIST) 15 – 19 January 2018.
9.	Dr. P.K. Pandey recognized as a resource person in summer school on “Adaptation of Energy efficient Agricultural Technologies for climate change mitigation”, Organised by ICAR, New Delhi, At CAEPHT, CAU, Gangtok. 5 <sup>th</sup> June 2018
10.	Dr. T. Patel nominated as a Board Member of Int. Conference on Applied Human Factors and Ergonomics 2018 - Los Angeles, USA
11.	Dr. T. Patel nominated as a Board Member of Int. Conference on Human-Computer Interaction 2018 - Vancouver, Canada
12.	Mrs. V. Pandey recognized as a resource person in summer school on “Adaptation of Energy efficient Agricultural Technologies for climate change mitigation”, Organised by ICAR, New Delhi, At CAEPHT, CAU, Gangtok. 5 <sup>th</sup> June 2018

#### 4.2.9 Projects sanctioned by outside agencies to the faculty of the department (2017)

S.No	Title of the Project	Name of PI and Co-PI	Name address of of Funding Agency	Grant Sanctioned (Rs.)	Duration	
1.	All India Coordinated Research Project on Ergonomics and Safety in Agriculture, NERIST Center	Dr. K.N. Dewangan (PI) and Dr. T. Patel (Co-PI)	ICAR, New Delhi	Rs. 36.08 Lakhs	2019	2020



2.	Spatially distributed erosion estimation and hydrological modelling on a glaciated and ungauged river basin of Arunachal Pradesh using geo-informatics	Dr. A. Bhadra (PI) and Dr. Arnab Bandyopadhyay (Co-PI).	SERB, New Delhi/, -	Rs. 63.05 Lakhs	July 2018	June 2021
3.	Assessment of natural spring reliability for rural water security in the lesser Himalayan region- Arunachal Pradesh.	<b>Dr. P.K. Pandey (PI), Mrs. Vanita Pandey (Co-PI)</b> and Dr. O.P. Tripathi (Co-PI)	MoEF & CC through GBPIHE&S D, Almora.	Rs.46.06 Lakhs	Dec., 2018	Dec., 2021
4.	Response of selected natural resource in changing climate scenerios and its impact on socio-economy of Arunachal Himalaya: An indigineous and Technological Approach	Liagi Tajo (PI) , <b>P.K.Pandey (Co – PI)</b> and Vishnu Dutt (Co-PI)	DST, HICAB, New Delhi	Rs.58.07 Lakhs	2019	2022
5.	Effect of Climate Changes on Working Capacity and Livelihood Sustainability for Agricultural Worker of Arunachal Pradesh	Dr. T. Patel (PI) and Dr. P.K. Pranav (Co-PI)	DST	Rs.51.68 Lakhs	March, 2019	March, 2022
6.	Research Promotion Scheme- Ergonomic Design and Performance Evaluation of Self-Propelled Multipurpose Weeder Suitable to Northeast Hilly Agriculture	Dr. T. Patel	AICTE	Rs.2.23 Lakhs	March, 2019	March, 2022

## 4.2.10 Publications:

## (a) Referred Journal

1.	Rakheja, S., <b>Dewangan, K.N.</b> , Dong, R.G. and Marcotte, P. (2019). Whole-body vibration biodynamics - a critical review: I. Experimental biodynamics. <i>International Journal of vehicle performance</i> (Article in press).
2.	Rakheja, S., <b>Dewangan, K.N.</b> , Dong, R.G. and Marcotte, P. and Pranesh, P. (2019). Whole-body vibration biodynamics - a critical review: II. Biodynamic modeling. <i>International Journal of vehicle performance</i> (Article in press).
3.	Lalremruata, <b>Dewangan, K.N.</b> and Patel, T. (2019). Noise exposure to tractor drivers in field operations. <i>International Journal of vehicle performance</i> (Article in press).
4.	Khayer, S.M., Patel, T. and <b>Dewangan, K.N.</b> (2019). Structural design optimization for pedal operated paddy thresher using response surface methodology.
5.	<b>Dewangan K.N.</b> , Rakheja, S. and Marcotte, P. (2018). Gender and anthropometric effects of whole body vibration power absorption of the seated body. <i>Journal of Low Frequency Noise Vibration and Active Control</i> , 37(2): 167–190.
6.	Hamouda, K., Rakheja, S., <b>Dewangan, K.N.</b> and Marcotte, P. (2018). Fingers' vibration transmission and grip strength preservation performance of vibration reducing gloves. <i>Applied Ergonomics</i> , 66: 121–138.
7.	Chiphang, N., Mishra, P., <b>Bandyopadhyay, A., Bhadra, A.</b> 2018. Temporal Variations in Snow Albedo at Glaciated Upper Elevation Zone of an Eastern Himalayan River Basin. In: Pant, N.C., Ravindra, R., Srivastava, D., Thompson, L.G. (eds). <i>Himalayan Cryosphere: Past and Present</i> . Geological Society, London, Special Publications, 462: 139-154. DOI: 10.1144/SP462.8.
8.	Nengzouzam, G., Chiphang, N., Rajkumari, S., Kiba, L.G., <b>Bandyopadhyay A., Bhadra, A.</b> 2019. Estimation of snow water equivalent from MODIS Albedo for a noninstrumented watershed in Eastern Himalayan Region. <i>Journal of Himalayan Earth Sciences</i> , 52(1): 12-26.
9.	Das, B., Paul, A., Tripathi, O.P., <b>Pandey, P.K.</b> (2018). Soil erosion risk assessment of hilly terrain through integrated approach of RUSLE and geospatial technology: a case study of Tirap District, Arunachal Pradesh. <i>Model. Earth Syst. Environ.</i> 4: 373. DOI: <a href="https://doi.org/10.1007/s40808-018-0435-z">10.1007/s40808-018-0435-z</a> .
10.	Bordoloi, R., Das, B., Yam, G., <b>Pandey, P.K.</b> , Tripathi, O.P. (2018). Modeling of Water Holding Capacity Using Readily Available Soil Characteristics. <i>Agric Res.</i> DOI:10.1007/s40003-018-0376-9. (ESCI)
11.	<b>Patel, T.</b> (2019). Structural design optimization for pedal operated paddy thresher using response surface methodology. <i>Agricultural Engineering International: CIGR Journal</i> , 21(1), 67-73.

12.	<b>Patel, T., Pranav, P. K.,</b> Biswas, M. (2018). Nonfatal agricultural work-related injuries: A case study from Northeast India. <i>Work</i> , 59(3), 367-374.
13.	<b>Patel, T.,</b> Ningthoujam, B., Kumar, P., Gurung, S. (2018). Validation of Two-Dimensional Digital Photogrammetry Measurement for Hand Anthropometric Dimensions. <i>J Ergonomics</i> , 8(236), 2.
14.	<b>Pandey, Vanita, Pandey, P.K.</b> (2018) Calibration and ranking of Valiantzas reference evapotranspiration equations under the humid climate of northeast India. <i>Journal of Water and Climate Change</i> . DOI: 10.2166/wcc.2018.305
15.	<b>Pandey, P.K,</b> Das, L., Jhahharia, D, <b>Pandey, Vanita.</b> (2018) Modelling of interdependence between rainfall and temperature using copula. <i>Modeling Earth Systems and Environment</i> 4(2): 867–879
16.	<b>Pandey, P.K. &amp; Pandey, Vanita.</b> (2018). Estimation of infiltration rate from readily available soil properties (RASPs) in fallow cultivated land. <i>Sustain. Water Resour. Manag.</i> DOI: 10.1007/s40899-018-0268-y
17.	Patle, G. T. , Yadav, S. R. <b>Pandey, Vanita</b> (2018) Effect of irrigation levels and mulching on growth, yield and water use efficiency of cauliflower and broccoli in per humid ecoregion. <i>Multilogic in Science</i> , VIII (XXV): 188-191.

**(b) Conference papers**

1.	Khamo, M. and <b>Dewangan, K.N.</b> (2019). Agricultural accidents in Nagaland: A case study. <i>53<sup>rd</sup> Annual Convention of the Indian Society of Agricultural Engineers (ISAE), Banaras Hindu University, Varanasi, India.</i>
2.	Sharma, P.T. and <b>Dewangan, K.N.</b> (2019). Agricultural accidents in Nagaland: A case study. <i>53<sup>rd</sup> Annual Convention of the Indian Society of Agricultural Engineers (ISAE), Banaras Hindu University, Varanasi, India.</i>
3.	Lalremruata, <b>Dewangan, K.N.</b> and Patel, T. (2018). Prevalence of hearing loss among tractor drivers. <i>16<sup>th</sup> International Conference on Humanizing Work and Work Environment (HWWE)-2018, College of Engineering Trivandrum, India,</i> pp 111.
4.	<b>Bandyopadhyay, A.,</b> Grace, N., Singh, W.R., Hangsing, N., <b>Bhadra, A.</b> 2018. <i>Comparison of Various Reanalyses Gridded Data with Observed Data from Meteorological Stations over India.</i> In: La Loggia, G. Freni, V. Puleo and M. De Marchis (eds.), Proc. 13 <sup>th</sup> Int. Conference on Hydroinformatics (HIC 2018), Palermo, Italy, July 1-6, 2018 (EPiC Series in Engineering, Vol. 3): 190-198. DOI: 10.29007/c1sf.
5.	<b>Bhadra, A.,</b> Lalramnghaki, H., Kiba, L.G., <b>Bandyopadhyay, A.</b> 2018. <i>Temporal Variation in Water Induced Soil Erosion by RUSLE Model using Remote Sensing and GIS.</i> In: La Loggia, G. Freni, V. Puleo and M. De Marchis (eds.), Proc. 13 <sup>th</sup> Int. Conference on Hydroinformatics (HIC 2018), Palermo, Italy, July 1-6, 2018 (EPiC Series in Engineering, Vol. 3): 236-244. DOI: 10.29007/271c.

6.	<b>Pandey, P.K.</b> (2019). <i>Estimation of Reference crop evapotranspiration using Pan coefficient approach under humid climatic conditions of Northeast India</i> . Proceeding of 13 <sup>th</sup> International conference on Agricultural and Food engineering (PICAF – 19). Paris March 14 – 16, 2019
7.	<b>Patel, T.,</b> Pongener, S. & Khayer, S. M. (2019). <i>Effects of age and gender on maximal isometric</i> . Proceeding of 13 <sup>th</sup> International Conference on Agricultural and Food Engineering (PICAF-19) March 14-16, 2019 Paris (France), pp. 72.
8.	<b>Chaudhary, A.K.</b> (2019). <i>Engineering properties of Nahar seeds as potential for developing decorticating machine</i> ". Proceeding of 13 <sup>th</sup> International Conference on Agricultural and Food Engineering (PICAF-19) at Paris, France from 14-16 March 2019.
9.	<b>Pal, A.</b> (2019). <i>Development of a computer program for predicting drawbar power from engine speed and throttle position of agricultural tractor</i> . Proceeding of 13 <sup>th</sup> International Conference on Agricultural and Food Engineering (PICAF-19) at Paris, France from 14-16 March 2019.
10.	<b>Tapang, T.</b> (2018). <i>Performance evaluation of variable hitch height during haulage by 2WD tractor</i> , 53 <sup>rd</sup> Annual Convention of Indian Society of Agricultural Engineers (ISAE) and International Symposium on Engineering Technologies for Precision and Climate Smart Agriculture, Pg. no. 190, ISAE-2019/FMP/PFICT-08.

### (c) Chapters in Books:

1.	Jhajharia D., <b>Pandey, P.K.</b> , et al. (2018) Trends in Sunshine Duration in Humid Climate of Northeast India: A Case Study. In: Sarma A., Singh V., Bhattacharjya R., Kartha S. (eds) Urban Ecology, Water Quality and Climate Change. Water Science and Technology Library, vol 84. Springer, Cham
2.	Khayer, S. M., <b>Patel, T.</b> , & Ningthoujam, B. (2019). Ergonomic Postural and Biomechanical Analysis of Manual Weeding Operation in Agriculture Using Digital Human Models. <i>In Research into Design for a Connected World</i> (pp. 451-462). Springer, Singapore.
3.	<b>Patel, T.</b> , P K Pranav, Nikhil Kumar, S Chaudhuri (2018) Tractor Three-Point Linkage System: Computer-Aided Design and Simulation Analysis. <i>In Goyal, M. R. (Ed.)</i> . (2018). Sustainable Biological Systems for Agriculture: Emerging Issues in Nanotechnology, Biofertilizers, Wastewater, and Farm Machines. CRC Press.
4.	Jhajharia D, <b>Pandey P.K, Pandey, Vanita.</b> et al. (2018) Changes in sunshine duration in humid environments of Agartala (Tripura), India. In: Singh V., Yadav S., Yadava R. (eds) Climate Change Impacts. Water Science and Technology Library, vol 82. Springer, Singapore.

**(d) Books:**

Nil

**4.2.11 Interaction of faculty/department with outside agencies:**

1.	Dr. K.N. Dewangan interacted with the Faculty of the Department of Agricultural Engineering, Assam University, Silchar.  Dr. K.N. Dewangan interacted with the Faculty of the College of Agricultural Engineering and Post Harvest Technology, Ranipool, Sikkim.
2.	Dr. A. Bhadra attended India-UK Water Centre Workshop on “Integrating precipitation forecasts and climate predictions with basin-scale hydrological modelling in the Himalayas” held at Wildlife Institute of India, Dehradun, Uttarakhand, India during 2-4 May 2018 and delivered a talk on: “Assessment of future runoff from the Nuranang watershed, eastern Himalayan region, India under projected climatic scenarios”.
3.	Dr. A. Bhadra attended the “Preparatory & Information Event on the ‘Horizon 2020’ Arctic Call: The changing cryosphere: Uncertainties, risks and opportunities” held during 19-20 November 2018 at the National Centre for Polar and Ocean Research (NCPOR) in Goa and interacted with Delegation of the European Union to India for promoting research.
4.	Dr. A. Bhadra attended a one-day Meeting on 24 April 2018 at Divecha Centre for Climate Change, IISc Bangalore, to launch a major coordinated research programme on Himalayan Cryosphere and interacted with other researchers.
5.	Dr. A. Bandyopadhyay attended a two-day Brainstorming Workshop on “Development of Integrated Hydrologic Model” as invited expert at NIH Roorkee during 01-02 November 2018 and interacted with researchers from IIT Kharagpur and NIH Roorkee on a national hydrologic model development.
6.	Dr. A. Bandyopadhyay attended a Brainstorming Session on “Perspectives on Water Managements in India and Future Directions” at NIH Roorkee on 15 December 2018 and 40 <sup>th</sup> Anniversary of NIH Foundation Day on 16 December 2018 and interacted with hydrologists from all over India who were also invited in this event.

**4.2.12 Consultancy projects undertaken:** Nil**4.2.13 Achievements of students:**

05 (Five) students have cleared GATE, 2018.

**4.2.14 Any other relevant information**

1.	Dr. T. Patel has organized Farm Technology Awareness-cum-Demonstration Mela on February 15, 2019 at NERIST.
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### **4.3. DEPARTMENT OF CIVIL ENGINEERING:**

#### **4.3.1 A brief profile of the 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, Degree, and Post Graduate levels catering to the needs of the North Eastern Region in particular and the nation in general. The Department has capability of imparting quality education to the students through well-qualified faculty and staff.

Presently, the Department has 14 well-qualified faculty members with specialization in different areas of Civil Engineering.

There are two technical officers, three senior instructors, one senior technician, one technician, and five laboratory attendants. The staff members are well trained and one senior instructor, Dr. P. Sivakumar, obtained 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 has the competency of carrying out challenging consultancy works and sponsored research projects. The Department organizes workshops, short-term training programmes and conferences to disseminate the knowledge to the teaching community, government officials particularly of Arunachal Pradesh, NGO's as well as village level community of the state.

At present there 76 students in Base Module, 76 in Diploma Module, 116 in Degree Module, with total 268 students registered in UG programmes. There are 31 students in M Tech in ESE, and 33 students in M Tech in GTE. Total 26 Research Scholars are registered for Ph. D. programme.

#### **4.3.2 Academic activities**

The Department of Civil Engineering offers Certificate, Diploma and Degree programmes since inception of the institute. After obtaining the Deemed-to-be-University status, two M. Tech programmes, one in Environmental Science and Engineering (ESE) and the other in Geo-Technical Engineering (GTE), are also offered by the Department. Ph. D. programmes are available in the major and emerging areas of civil engineering.

Some of courses offered by the Department are: 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 students and dissertations are offered to Post Graduate final year students keep in view the academic advances, requirements of the industry as well as the local needs.

The total No of publications by the faculty in the year under review is 9 with 6 in refereed journals and 3 in National and International Conferences.

The vision, mission, programme education objectives (PEOs) and programme outcomes (POs) have been formulated to meet the academic objectives of the Department and are as follows:

**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.

**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.

**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.

**Programme Outcomes (POs)**

After undergoing the undergraduate programmes 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 life long learning to incorporate technological innovations.

Under graduate programme of the department was NBA accredited.

### **Modification of existing courses/ Course Structure**

The courses of the Department have been designed to meet the objectives as stated in its vision, mission, programme education objectives (PEOs), and programme outcomes (POs). In addition it considers requirements of the Industry and Organizations, employability, and overall development of the candidates. The courses are periodically revised based on the feedback from the stakeholders and to reflect the recent development in different areas.

### **4.3.3 Laboratories and Laboratory Development**

The Department 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 laboratories are equipped with modern equipments required for teaching, research and consultancy services.

#### (b) New equipments purchased during 2018-19

S. N.	Equipment/ instrument/ machine	Make & Model	Cost (Rs.)	Nos	Total Cost	Remarks
1.	COMPUTER-ALL-IN-ONE DESKTOP	HP-Pro-One-200 G3	47480.95	14	6,64,733.30	One for all labs
2.	Printer	HP-Pro M1136 MFP	10540.95	14	1,47,573.30	
3.	Liquid Limit Device Cassagrande type	HEICO	13000.00	2	26000.00	
4.	Electric Balance 40 kg x 2 gm	Scaletec mechatronics	12200.00	1	12200.00	
5.	Electric Balance 40 kgx 1 gm	Scaletec mechatronics	4600.00	1	4600.00	GTE – I
6.	Hot plate with energy regulator 250 mmx300 mmx150 mm	Sood Steel Industries	3000.00	2	6000.00	
7.	Bomb Calorimeter	Sood steel Industries	79000.00	1	79,000	Env. Engg. Lab. II

#### 4.3.4 Projects completed by the UG/PG/Ph.D. Students (Please specify the title of the project and name of the guide.)

##### (a) Diploma Projects completed

Sl. No.	Project Title	Name of Students	Project Guide
1.	Stress Strain Characteristics and Shear Strength Parameters of	Mr. S. Sarkar Ms. B. Borah	Prof. S. Baishya

	Cohesive Soils at Different Moisture Contents.	Mr. P. P. Boruah Ms. A. Chakraborty Ms. V. R. Pegha Mr. P. P. Sarathi Mr. D. Raj Mr. R. K. Sahani	
2.	Verification of Different Parameters of Hydraulic Jump.	Ms. S. Sharma Ms. K. Mamung Mr. S. Das Mr. A. Kumar Ms. R. Rai Mr. A. Subba	Mr. S. K. Sahu
3.	Design and Cost Analysis of Beam Slab Type and Flat Slab Type Raft Foundation	Ms. T. Lamhoiting Mr. H. Takke Mr. P. K. Singh Mr. S. B. Singh Mr. Saikat Das Mr. B. K. Lobom	Prof. S. Mishra
4.	Effects of Surfactant on Water Quality Parameters	Mr. S. Wahlang Mr. C. Rai Mr. K. Tayeng Mr. G. Kamki Mr. D. Nalo	Ms. Y. B. Devi
5.	Design of Subgrade of Pavement	Mr. C. N. Chah Mr. Z. Veswuh	Mrs. Yamem Tamut

		Ms. T. N. Haokip	
		Mr. J. K. Tungi	
		Ms. Y. Sangtam	
		Mr. K. Ketan	
		Mr. D. Mukharjee	
6.	Coagulation for Domestic Water Supply of NERIST (Alum Treatment)	Mr. R. Lhousa Mr. M. Langstang Mr. R. Nongrum Mr. T. Ezung Mr. D. Tamin	Mr. K. J. Singh
7.	Improving Unconfined Soil Strength by Human Hair Fibre	Mr. L. Tagu Mr. A. Chanda	Mr. N. G. Sorum

**(b) B. Tech. Projects completed**

<b>Sl.NO.</b>	<b>Project Title</b>	<b>Name of Student</b>	<b>Project Guide</b>
1	Design of flexible pavement by enhancing the soil peoperties using synthetic fibres	Mr. Charakho N. Chah Tilling Taser Ms. Vithuzonu Viswentso	Prof S.K. Singh
2	Comparative study on design method of pavement using gep synthetic flyash and cement	Mr. Angshuman Das Mr. Saunimantre Pohleng Mr. Tilak Jamatia	Mrs. Yamem Tamut
3		Mr. Gemin Mr. Rudilhoulie	Dr. Ajanta Kalita

	Stabilization of soil with cement, fly ash and glass fibre to determine the compressive strength	Mr. Shekhoto Thulutso	
4	Shear Center for Thin Walled Members	Nur Mohammad Mussa Kalimullah Ms.Tadar Depi Poonam Kumari	Mr. S.K. Sahu
5	Design of water treatment plant for NERIST Campus	Mr.Thounaojam Ashananda Mr. Monish Laishram Mr. Asem Rikeshchandra Singh	Mrs. Yumnam Bidyalaxmi Devi
6	To study the sanitation problems in NERIST	Anil Sangno Lamtar Nasi Geli Basar	Dr. Ajay Bharti
7	Spatial distribution of iron and other subordinate parameters of water quality in Papum pare district, Arunachal Pradesh	Mr. LOYANGAMBA THOKCHOM Mr. Blassius Pyngrope Lakhi Mena	Mr. K.J. Singh
8	Stability analysis of slope using finite element(FE) method	Subhankar Karmakar Mr. Techu Taram Mr. PRAKASH LAMICHANE	Prof. Sukumar Baishya

9	Status of water supply and its requirement in the NERIST Campus	Ms. Medozonuo Ruth Kelio Mr. Mukesh Kumar Prasad Ms. Agatchi D. Areng	Prof. R.K. Prasad
10	Study the variation of compressive strength of geopolymer cured at elevated and ambient temperature	Mr.Takam Natung Taw Rija	Prof. S. Mishra
11	Analysis of Geotextile Reinforced Earth Embankment using FEM	Mr. Arbin Thakur Mr. Anant Gautam Mr. Tahir Ahmed Laskar	Dr. Dipika Devi
12	Landfill site selection using Engvironmental Assessment Method	Moby Nikang Partha Barman Momi Deb	Mrs. Mudo Puming
13	Evolution of subgrade and subabse layers of flexible pavement using human hair	K. Lalhmangaihzuali Ms.C. Vangokhipathai Mr. Kissanu Modak	Mr. N. G. Sorum
14	Distribution of headway and free flow speed of no lane discipline traffic stream	Ms.Barsa Sharma Ms. Nisha Kumari Ms.Tshering Bhutia	Dr. Dibyendu Pal

**(a) M. Tech Projects Completed**

<b>Sl. No</b>	<b>Name of Student</b>	<b>Title of the Dissertation</b>	<b>Name of the Supervisor</b>
1.	Phurba Dorjee Philley	Study of Strength Characteristic of Soil Mixed with Cement, Fly Ash and Reinforced with Glass Fibre.	Dr. Ajanta Kalita
2.	Johny Tasung	Comparative Study on Improvement of CBR Behaviour of Soil Treated with Cement and Geotextile.	Mrs. Yamem Tamut
3.	Ribha Arabella Shabaong	A Study on the Effects of Egg Shell Powder and Saw Dust Ash on the Geotechnical Properties of Fine Grained Soil.	Prof. S.K Singh
4.	Kirge Payum	Study of Characteristics of Expansive Soil Using Fly Ash and Lime	Dr. Ajanta Kalita
5.	Nabajyoti Sarkar	Behavior of Precast Cantilever Concrete Sheet Pile Using FEM	Dr. Dipika Devi
6.	Anurag Dutta	Finite Element Analysis of Dynamic Response and Dynamic Earth Pressure Considering Retaining Wall-Backfill-Foundation Soil Interaction	Dr. S. Baishya.
7.	Genden Tsering Serthipa	Treatment of Dairy Waste Water Using Natural Coagulant	Smt.Y Bidyalaxmi Devi
8.	Ngater Tato	Spatial Distribution of Water Quality Parameters in West Siang District	Dr. Ajay Bharti
9.	Jide Gumja	A Study on the Effect of Inorganic Salts on The Strength of Landfill Liner	Mrs. Mudo Puming
10.	Tinu Lusi Tamin.	Construction And Demolition Waste Management with Sustainable Developement	Dr. Sudisht Mishra
11.	Rashidul Alam	Development of Fluorescent Carbon Dot for Heavy Metal Detection in Water	Dr. Ajay Bharti
12.	Landi Kaku	A Study on Municipal Solid Waste Management	Mrs. Mudo Puming

13. Doli Nyicyor Surface Water Quality Analysis of Rivers in Arunachal Pradesh with Special Reference to Dikrong River Dr. R.K Prasad
14. Mr. Uddipan Das Assessment of APTI and Bio-Indicative and Ambient Air Quality from Industrial Areas in Arunachal Pradesh Dr. Ajay Bharti and Dr. S. S. Singh
15. Sange Sangmu Ratkhipa A Study on Effect of Surfactant on Soil Parameters Smt. Y Bidyalaxmi Devi
16. Sumita Jongkey Effect of Freezing and Thawing Cycles on the Unconfined Compression Strength of Soil Treated With Cement and Geotextile Mrs. Yamem Tamut

**(d) Ph. D. thesis submitted /awarded to research Scholar/ Faculty / Laboratory assistant**

S. No.	Name of Student	Title of the Dissertation	Name of the Supervisor
1.	Ms Neelu Das	A Study on Locally Available Brown Waste Materials for Civil Engineering Applications	Prof S K Singh
2.	Mr. Kirki Ori	Study on Vermicomposting of Wet Organic Waste from High-Rise Apartment.	Dr. A. Bharti & Dr. Sunil Kumar
3.	Mr. Agnivesh Uday Roy	Environmental Impact Assessment of Hydro Power Projects in Siyom River Basin. (Thesis Submitted)	Dr. A. Bharti & Dr. R. K. Prasad
4.	Mr. Takum Nalo	Performance Studies for Anaerobic Digestion of Municipal Solid Waste. (Thesis Submitted)	Dr. A. Bharti & Dr. Sunil Kumar

5.	Mr. Tomi Ete	A Study of Traditional Sanitary Practices Among Selected Indigenous Tribes of Arunachal Pradesh  (Thesis Submitted)	Dr. A. Bharti &  Dr. R. K. Prasad
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#### 4.3.5 Short term courses/seminars/workshops attended by the faculty

1. Dr. Dibyendu Pal attended and passed Online FDP course on 'Reinforced Concrete Road Bridges' organized by NPTEL-AICTE during Aug-Sept. 2018.
2. Dr. Dibyendu Pal attended and passed Online FDP course on 'Regression Analysis' organized by NPTEL-AICTE during Jul-Oct. 2018.
3. Dr. Dibyendu Pal attended and passed Online FDP course on 'Technical English for Engineers' organized by NPTEL-AICTE during Aug-Sept. 2018.
4. Mrs. Yamem Tamut attended and passed Online FDP course on 'Regression Analysis' organized by NPTEL-AICTE during Jul-Oct. 2018.
5. Mrs. Yamem Tamut attended and passed Online FDP course on 'Technical English for Engineers' organized by NPTEL-AICTE during Aug-Sept. 2018.
6. Mrs. Yamem Tamut attended and passed Online FDP course on 'Geosynthetics Testing Laboratory' organized by NPTEL-AICTE during Aug-Sept. 2018
7. Dr. R. K. Prasad attended three weeks Leadership Development Programme for Academicians (LEAP) organized by MHRD, GOI, Two weeks at university of Hyderabad during 11<sup>th</sup> to 24<sup>th</sup> Feb. and One week at Monash University at Australia during 26<sup>th</sup> Feb. to 2<sup>nd</sup> March 2019.
8. Dr. Dibyendu Pal attended 79<sup>th</sup> Annual Session of Indian Roads Congress (IRC) during 22-25 November, 2018 at Nagpur, India.
9. Mrs. Yamem Tamut attended 79<sup>th</sup> Annual Session of Indian Roads Congress (IRC) during 22-25 November, 2018 at Nagpur, India.
10. Dr. S. Mishra attended International Conference on Research in Engineering Technology and Science during 3-7 February, 2019 at Lisbon Portugal.

#### 4.3.6 New Degrees/Professional Memberships obtained by the members of faculty

1. Dr. Ajay Bharti obtained Fellow membership (F-124080-5) from Institution of Engineers (India).

#### 4.3.7 Achievements / awards / recognition earned by faculty

1. Dr. Dibyendu Pal achieved the Course Topper on FDP course on Reinforced Concrete Road Bridges under NPTEL-SWAYAM course organized by IIT Kharagpur.



#### 4.3.8 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)

#### 4.3.9 Publications

##### (a) Referred Journals:

1. Das, N., and **Singh, S. K.** 2019. Geotechnical Behaviour of Lateritic Soil Reinforced with Brown Waste and Synthetic Fibre. *International Journal of Geotechnical Engineering*, 13(3), 287-297.
2. Rich, N., Bharti, A., Kumar, S. 2018. Effect of Bulking Agents and Cow Dung as Inoculant on Vegetable Waste Compost Quality. *International Journal of Bioresource Technology*, 252, 83-90.
3. Gyadi, T., **Puming, M.** 2019. Biogas Production from the Co-Digestion of Kitchen waste and Cow Manure. *IJTIMES*, 5(3), 938-946. ISSN 2455-2585.
4. **Pal, D.**, and Chunchu, M. 2019. Effect of Vehicular Lateral Gap Models on Heterogeneous Traffic Stream Behavior. *Transportation Letters*. (ISSN: 1942-7875). DOI: 10.1080/19427867.2019.1611709.
5. **Pal, D.**, and Chunchu, M. 2018. Smoothing of Vehicular Trajectories under Heterogeneous Traffic Conditions to Extract Microscopic Data. *Canadian Journal of Civil Engineering*, 45(6), 423-434. DOI: <https://doi.org/10.1139/cjce-2017-0452> (ISSN: 0315-1468).

**(b) Conference Papers:**

1. Lusi T. and **Mishra, S.** 2019. “Assessment of Structural Performance of Demolition Waste Mixed Cement Mortar” ICRETS-2019, Lisbon Portugal.
2. **Pal, D.**, and Sreenivasulu, S. 2019. Impact of vehicular lateral placement on speed under non-lane discipline traffic stream. 9<sup>th</sup> International Conference on Applied Physics and Mathematics (ICAPM 2019), Chulalongkorn University, Bangkok, Thailand, January 21-23.
3. Prasad R. K., 2018. “Urban Water Security at Local Level – A Pilot Study to Itanagar, Arunachal Pradesh” at NFiCE 2018, at IIT Bombay during 30<sup>th</sup> Nov to 1<sup>st</sup> Dec. 2018.

**(C) Books:**

Sl. No.	Author	Title	Publisher & year of publication	ISSN/ISBN No.
1	Prasad R. K.	Environmental Systems Modeling,	Standard Publishers Distributors, Delhi, 2018	ISBN 798-81-8014-258-1

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

- (i) Prof. S. K. Singh acted as a Member on AIB-UGET of AICTE, New Delhi
- (ii) Prof. S. K. Singh acted as a Member on Board of Studies, School of Engineering & Technology, Mizoram University
- (iii) Prof. S. K. Singh acted as a Member on Board of PG Studies, Department of Civil Engineering, Tezpur University
- (iv) Prof. S. K. Singh acted as a Member on State Higher Education Council, Government of Arunachal Pradesh.
- (v) Prof. S. Mishra acted as Nodal Officer for Technical Scrutiny of Detailed Project Reports (DPRs) under NESIDS, Govt. of Arunachal Pradesh.
- (vi) Prof. S. Mishra acted as a member of Building Construction Committee, in Rajiv Gandhi University, Itanagar, Arunachal Pradesh
- (vii) Dr. Ajay Bharti is a Nodal Officer, STA (State Technical Agency), Public Health Engineering and Water Supply Department, Arunachal Pradesh.
- (viii) Dr. Ajay Bharti is a Member of SEIAA (State Level Environment Impact Assessment Authority), Arunachal Pradesh.
- (ix) Dr. Ajay Bharti is a Member, State Pollution Control Board, Arunachal Pradesh

**4.3.11 Consultancy Projects undertaken**

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

Sl No	Agencies	Title of consultancy project	Amount (Rs)
1	Deputy Manager, Comp Scheme, POWERGRID, NER, AP.	Testing of aggregates	96,819.00
2	A.E. PWD, Naharlagun Divn II, Sub Divn IV.	Testing of Brick	11,328.00
3	A.E. PWD, Naharlagun Divn II, Sub Divn IV.	Testing of Brick	11,328.00
4	M/S angla Enterprises	AIV Test	4,956.00
5	M/S N. T. Agency	Cube Test	5,900.00
6	M/S Mepung Enterprises	Cube Test	5,900.00
7	EE (Civil) GREF	Cube Test	11,800.00
8	M/S Mepung Enterprises	Concrete Mix Design	148,680.00
9	M/S N. T. Agency	Cube Test	5,900.00
10	M/S N. T. Agency	Cube Test	5,900.00
11	M/S Mepung Enterprises	Cube Test	5,900.00
12	Planning Department, Govt. of A.P.	Vetting of 19 DPRs	1,092,500.00
		Total	1,406,911.00
(Rs. Fourteen Lakh Six Thousand Nine Hundred and Eleven )			

(b) Detailed Project Reports (DPRs) Under NESIDS (Govt. of Arunachal Pradesh) Vetted by the department are as:

Sl No.	Name of the Projects
1	Improvement and extension of Likhabali Township roads (10 km) in Lower Siang district.
2	Construction of Road from Murga Bridge Point to Rho-village (15 km) in Tawang district.
3	Construction of Rigid Pavement road in Tawang Township
4	Construction of Road from Chongkam to Meme via Namliang village (10 km) in Namsai district.
5	Construction of Road from Terung to Sumsipathar in Tirap District
6	Construction of Road from BRTF road to PIDI, West Siang District.
7	Construction of road from Longkhow to Pumao under Longding District (18.00 km) (Sh:- FC, Culverts, RW, Bridge).
8	Infrastructure development for Govt. Hr. School at Kanubari in Longding District.
9	C/o Permanent Structure for Sainik School, East Siang at Niglok, East Siang District.
10	Augmentation of Water Supply at Aalo Township in West Siang District.
11	Augmentation of Water Supply at Bhalupong Town.
12	Augmentation of Water Supply at Hapoli Township in Lower Subansiri District.
13	Infrastructure Development of Rang Frah Vidhya Niketan Vidhalaya at Changlang.
14	Construction of Road from Bomikoto village to Nilling Circle HQ Via Sima-Dha (25 kms) in Upper Subansiri District under NESIDS
15	Augmentation of Water Supply at Miao Township (3.57 MLD) under NESIDS
16	C/O Road from Rungong ADC HQ to connect Kaying EAC HQ (64.0 kms) Phase –I (Molong to Bogne village 23.0 kms) in Siang District, Arunachal Pradesh
17	C/O Road from Likwa Gyadi to Gyawepurang (10.86) kms

18	Water Supply in Tawang Township
19	Waste Water Management in Tawang Township

#### 4.3.12 Achievement of students

##### a) Name of the student who have gone for Industrial Training in June 2018

Sl.No	Name	Roll No.	Name of Training Centre	Remarks
1	Rajiv Ranjan Ray	D/15/CE/01	IISc BANGALORE	
2	Mashi Longdo	D/15/CE/02	MeECL UMIAM	
3	Ijom Ninu	D/15/CE/03	NEEPCO PARE	
4	Kojeen Gyati	D/15/CE/04	PHED, ITANAGAR	
5	Lishi Talin	D/15/CE/05	NEEPCO PARE	
6	Tenod Raji Tamin	D/15/CE/06	NEEPCO PARE	
7	Tasso Tarun	D/15/CE/07	IOCL GUWAHATI	
8	Pranabjyoti Bora	D/15/CE/09	MeECL UMIAM	
9	Sandipon Garg	D/15/CE/10	MeECL UMIAM	
10	Kevilhoukho Lhousa	D/15/CE/11	MeECL UMIAM	
11	Devid Kakati	D/15/CE/12	MeECL UMIAM	
12	Ramesh Kumar	D/15/CE/13	MeECL UMIAM	
13	Thejasietuo Yhoshu	D/15/CE/14	IOCL GUWAHATI	
14	Vikas Pandey	D/15/CE/15	NEEPCO PARE	
15	Madhurima Das	D/15/CE/16	PHE SILCHAR	
16	Mhabeni Tsopoe	D/15/CE/17	IOCL GUWAHATI	

17	Vivi Kiso	D/15/CE/18	IOCL GUWAHATI	
18	Linda Lalmuanpuii	D/15/CE/19	NCS AIZAWL	
19	Bhagyashri Deuri	D/15/CE/20	MeECL UMIAM	
20	Leejum Subba	D/15/CE/22	NHPC TEESTA-V	
21	Petsho-U	D/15/CE/25	IOCL GUWAHATI	
22	Jayalaxmi Ngasepam	D/15/CE/26	SPARK INTERNSHIP , IIT Roorkee	
23	Attom Uttam Kumar	D/15/CE/27	PHED, ITANAGAR	
24	Prakas Chaudhury	D/15/CE/28	ONGC PALATANA	
25	Cheerfree Kt	D/15/CE/29	IOCL GUWAHATI	
26	Shahjahan Kalai	D/15/CE/30	ONGC PALATANA	
27	Triple Grace Mawlein	D/15/CE/31	NCS AIZAWL	
28	Shreeyasee Dutta	D/15/CE/32	PHED, ITANAGAR	
29	David Lalwmpuia	D/15/CE/33	NCS AIZAWL	
30	Gagan Pradan	D/15/CE/34	IOCL GUWAHATI	
31	Sakimi Shylla	D/15/CE/35	IOCL GUWAHATI	
32	Animesh Deb	D/15/CE/36	ONGC PALATANA	
33	B. Nongrum	D/15/CE/37	IOCL GUWAHATI	
34	Oyinto Mengu	D/15/CE/101	PHED, ITANAGAR	
35	Kh. Bidya Devi	D/15/CE/102	IOCL GUWAHATI	
36	C Zonunsiana	D/15/CE/104	PHED, ITANAGAR	
37	Alonika Chophi	D/15/CE/105	IOCL GUWAHATI	
38	Samdup Lachungpa	D/15/CE/106	IOCL GUWAHATI	
39	Dikshita Baishya	D/16/CE/201	CETPA NOIDA	

40	Baishali Buragohain	D/16/CE/202	CETPA NOIDA	
41	Abhijeet Basfor	D/16/CE/203	PHED, ITANAGAR	
42	Debajit Barman	D/16/CE/204	NEEPCO PARE	
43	K. Lalsiammawia	D/16/CE/207	NCS AIZAWL	
44	Kelhoukhrietuo	D/16/CE/208	PHED, ITANAGAR	
45	Satyabrata Nag	D/16/CE/210	PHED, ITANAGAR	
46	Parmishmita Das	D/16/CE/211	CETPA NOIDA	
47	K. Ahmed Barbhuiya	D/16/CE/212	MeECL UMIAM	
48	Raja Gyadi	D/16/CE/216	PHED, ITANAGAR	
49	Sanjuraj Pegu	DE/17/CE/001	IOCL GUWAHATI	
50	Hemant Lakra	DE/17/CE/002	IOCL GUWAHATI	
51	Onminlal Guite	DE/17/CE/003	PHED, ITANAGAR	
52	R. Lalbiakzuali	DE/17/CE/004	NCS AIZAWL	

**b) Campus Placement during April 01, 2018- March 31, 2019**

<b>Sr No</b>	<b>Name</b>	<b>Roll No</b>	<b>Company</b>
1.	Madhurima Das	D/15/CE/16	Tata Projects
2.	Bhagyashree Deuri	D/15/CE/20	Tata Projects
3.	Baniengskhem D. Nongrum	D/15/CE/037	Fidelity
4.	David Kakati	D/15/CE/012	Rishishwar Const.
5.	Pranab Jyoti Bora	D/15/CE/09	Rishishwar Const.
6.	Ramesh Kumar	D/15/CE/13	Rishishwar Const.
7.	Sandipon Garg	D/15/CE/10	Rishishwar Const.

c). **Students Qualified GATE – 2019**

Sl. No	Name	Roll No.	GATE Score
1.	Samduo Lachungpa	D/15/CE/106	35.38
2.	Animesh Deb	D/15/CE/036	33.64
3.	Mashi Longdo	D/15/CE/002	29.89
4.	Lishi Talin	D/15/CE/005	28.41
5.	Ijom Ninu	D/15/CE/003	28.36
6.	Sanjuraj Pegu	DE/17/CE/001	24.93
7.	Tasso Tarun	D/15/CE/008	24.93
8.	Baniengskhem Nongrum	D/15/CE/037	22.84
9.	Tenod Raji Tamin	DE/15/CE/006	24.52

**4.3.13 Any other relevant Information**

1. Prof. S. Baishya delivered two lectures in TEQIP sponsored STTP, entitled “Recent Advances in Civil Engineering”, at Jorhat on 27<sup>th</sup> and 28<sup>th</sup> August, 2018.



## **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.

- \* M.Tech in Computer Science and Engineering started in 2006-07.
- \* M.Tech in Information Technology started in 2011-12.
- \* The PhD programme started in 2007-2008.

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 CISR, MHRD, NEC, DoE etc.

The department has well equipped LAN connected laboratories System Lab, PC Lab, Microprocessor Lab, Hardware Lab, Networking Lab and Embedded Systems Lab with state-of-the art machines.

The department has 1GBPS internet connectivity through NKN.

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 Intel i3 PC's, Laserjet printers, Deskjet printers, Line Printers etc.

#### **PC Lab II**

This is a newly setup lab where practical classes of Diploma Module and Base Module are held. The students get exposure to various types of Application Software such as Turbo C++, Dev C++, etc in this lab. High level language programming for the students of all the engineering departments of NERIST is given here. It is well equipped with i5 PC's.

#### **System Lab I**

The Systems Laboratory - I is well equipped with servers and terminals basically for working in UNIX/LINUX, Windows and MAC 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 10g and SQL Server, Visual Studio.NET and MATLABR2016a are available in this lab. The lab has several HCL Infinity Globalline Servers, a HP Proliant ML 5350e Gen 8V2 server which are connected to highend Intel i5 PC's and iMAC desktops. This lab also has a Dell PowerEdge T430 server which is the Matlab Server and is accessed by users of the entire institute 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 two HCL Infinity Global Line 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.

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

##### Ph.D

Title of Project	Name of guide	Name of Student
Securing Spectrum Sensing in Infrastructure-less Cognitive Radio Network	Dr.(Mrs.) N. Marchang	Roshni Rajkumari

##### M.TECH IT

S. No.	Name of the student	Roll No.	Supervisor	Topic
1.	Nishigandha Dutta	MT/16/IT/01	Dr. Moirangthem Marjit Singh	Wormhole Attack Detection In Wireless Sensor Network Using Artificial Neural Network
2.	Bhargav Das	MT/16/IT/02	Mr. Kapang Legoh	Text Dependent Speaker Identification System Using

				Improved Vector Quantization Method.
3.	Swmdwn Basumatary	MT/16/IT/03	Mr. Ajit Kr.Singh Yadav	Optimizing the Life Time of Wireless Sensor Networks.

**M.TECH CSE**

<b>S. No.</b>	<b>Name of the student</b>	<b>Roll No.</b>	<b>Guide Allotted</b>	<b>Project Topic</b>
1.	Sunita Saha	MT/16/CSE/02	Mr. Monjul Saikia	Design and Development of Wireless Sensor Node Development Strategy for Hilly Terrains
2.	Parismita Bhuyan	MT/16/CSE/03	Mr. Pradeep Kamboj	Optimization of Routing Techniques in Vehicular AD-HOC Network
3.	Naga Kipa	MT/16/CSE/04	Dr. Ninginla Marchang	Spectrum Allocation in Cognitive Radio Network Using Network Graph Based Techniques

**DEGREE**

S.No.	Name of student	Roll No.	Supervisor	Topic
1	Alisha Shylla	DE\16\CS\02	Mr. Ajit Kr. Yadav	Energy efficient hybrid routing protocol for WSN.
2	Widala Pde Kipa Mary Gapak Dulom	D\15\CS\211 D\15\CS\206 D\15\CS\213	Mr. Satya Jyoti Borah	Designing an efficient routing in opportunistic networks
3	Hirak Jyoti Sarmah Gaisingam Pamei	D\15\CS\202 DE\16\CS\04	Mr. Amar Taggu	Mitigation of primary user emulation attack in CRN using distance based and encryption based technique
4	Vikamlipto Tikhir Sandeep Kumar	D\15\CS\207 DE\16\CS\07	Mrs. Margret Kathing	A Novel method for skin cancer detection
5	Yogesh Narrayan Patel Tamchi Tari	DE\16\CS\01 DE\16\CS\05	Mr. Yogendra Mohan	Performance evaluation of Multicast Source Authentication scheme
6	Suresh Gurung Aditya Anand	DE\16\CS\03 DE\16\CS\06	Mr. Aswani Kr. Patra	Towards improved cancer diagnosis based on machine learning techniques
7	Chengrang N Sangai Lohit Kumar Borah	D\15\CS\205 D\15\CS\203	Mr. Pradeep Kamboj	Analysis of direction based routing protocols for vehicular ad-hoc networks.
8	Shanglai Wungrising Subhankar Das	D\15\CS\204 D\15\CS\209	Mr. Monjul Saikia	Design of distributed load scheduling in Android Platform

**DIPLOMA**

S. No.	Name of the student	Roll No.	Guide Allotted	Project Topic
1.	Sekhar Saikia Subham Gupta	D/16/CS/105 D/16/CS/102	Mr. Yogendra Mohan	Online Chat Application
2.	N Shamananda Thorese Pheiroijam Ansh Kr. Patel	D/16/CS/112 D/16/CS/109 D/16/CS/103	Mr. A.K.Patra	Voice recognition app.
3.	Aditya Sharma Vikas Kumar Sharma	D/16/CS/104 D/16/CS/101	Mr. Pradeep Kamboj	Implementation of Data Mining tools

				and Techniques on e-commerce website.
4.	Ksh. Simanata L. Lang Nongsiang Apeka Ayemi	D/16/CS/108 D/16/CS/111 D/16/CS/110	Mr. S.J.Borah	Android based application

#### 4.4.5 SHORT TERM COURSES/ SEMINARS/WORKSHOPS CONFERENCES ORGANIZED AT NERIST :

Sl.No.	Title	Coordinator	Duration	Sponsored by	No of Participants
1	In-House Training Program on Computer Networking	Dr. Moirangthem Marjit Singh	1 week(28 Jan-01 Feb 2019)	NITTTR Kolkata	30
2	Artificial Intelligence and Machine Learning	Mr. Ajit Kr. Singh Yadav	1 week(17-21 December 2018)	MeitY, Govt. of India	23

#### 4.4.6 SHORT TERM COURSES/ SEMINARS/WORKSHOPS CONFERENCES ATTENDED BY THE FACULTY:

##### Dr. M. Marjit Singh

1. 2019 IEEE 4<sup>th</sup> International Conference on Computer and Communication Systems (ICCCS 2019), 23-25 February 2019 held at Nanyang Technological University Singapore.
2. One Week In-House Training Programme on Computer Networking,2019 by NITTTR Kolkata during 28 Jan-01 Feb 2019 held at the Department of Computer Science and Engineering, NERIST.
3. Faculty Development Program on Wireless and Mobile Communication organized by IIT Guwahati during 3<sup>rd</sup> to 7<sup>th</sup> Dec, 2018.
4. Faculty Development Program on DSP and Sensors organized by NIT Warangal during 10<sup>th</sup> to 14<sup>th</sup> Dec, 2018.
5. Faculty Development Program on AI and Machine Learning organized by IIT Guwahati during 17<sup>th</sup> to 21<sup>st</sup> Dec, 2018

##### Dr. (Mrs.) N. Marchang

1. One-week In-house Training Programme on “Computer Networking” Organized by NITTTR, Kolkata, CSE Department, NERIST during 28 Jan-01 Feb 2019.

**Mrs. M. Kathing**

1. One-week In-house Training Programme on “Computer Networking” Organized by NITTTR, Kolkata, CSE Department, NERIST during 28 Jan-01 Feb 2019.

**Mr. A. K. Patra**

1. Attended a summer school on “Bigdata Research in Biosciences” jointly organized by Allahabad University and Heidelberg University, Germany from 1<sup>st</sup> April, 2019 to 5<sup>th</sup> April, 2019 at Allahabad University, Allahabad.

**Mr. Amar Taggu**

1. Winter School on Cognitive Radio and Internet of Things under ITRA project during 9-10 November, 2018 at the department of Computer Science and Engineering, NERIST.
2. One week In-house Training Programme on “Computer Networking” Organized by NITTTR, Kolkata, CSE Department, NERIST during 28 Jan-01 Feb 2019.

**Mr. Pradeep Kamboj**

1. FDP on Emerging Trends in Wireless Communication organized by IIT Guwahati during 26<sup>th</sup> to 30<sup>th</sup> Nov, 2018.
2. FDP on Wireless and Mobile Communication organized by IIT Guwahati during 3<sup>rd</sup> to 7<sup>th</sup> Dec, 2018.
3. FDP on DSP and Sensors organized by NIT Warangal during 10<sup>th</sup> to 14<sup>th</sup> Dec, 2018.

**Mr. Ajit Kr. Singh Yadav**

1. Faculty Development Programme on " Emerging Trends in Image and Text Analytics Using Machine Learning" organized by BVCOE, New Delhi during May 21-25, 2018.
2. Faculty Development Programme on "Emerging trends in Wireless Communication" organized by E&ICT Academy, IIT Guwahati during Nov 26-30, 2018.
3. Faculty Development Programme on " Wireless and Mobile Computing" organized by MeitY, Govt of India, NERIST, during Dec 03-07, 2018.
4. Faculty Development Programme on " DSP & Sensors" organized by MeitY, Govt of India, NERIST, during Dec 10-14, 2018.
5. Faculty Development Programme on " AI and Machine Learning" organized by MeitY, Govt of India, NERIST, during Dec 17-21, 2018.
6. Faculty Development Programme on " Computer Networking" organized by NITTTR, Kolkata, NERIST, during Jan 28-Feb 01, 2019.

**Mr. Yogendra Mohan**

1. Faculty Development Programme on "Emerging trends in Wireless Communication" organized by E&ICT Academy, IIT Guwahati during Nov 26-30, 2018.
2. Faculty Development Programme on " Wireless and Mobile Computing" organized by MeitY, Govt of India, NERIST, during Dec 03-07, 2018.
3. Faculty Development Programme on " DSP & Sensors" organized by MeitY, Govt of India, NERIST, during Dec 10-14, 2018.
4. Faculty Development Programme on " AI and Machine Learning" organized by MeitY, Govt of India, NERIST, during Dec 17-21, 2018.

**4.4.7 NEW DEGREES/PROFESSIONAL MEMBERSHIPS OBTAINED BY THE FACULTY:**

*Mr. Satya Jyoti Borah* was awarded Ph.D in Computer Science and Engineering from NSIT

**4.4.8 ACHIEVEMENTS/AWARDS/RECOGNITION EARNED BY THE FACULTY:**

**Dr. Moirangthem Marjit Singh** has been elevated to the Senior Member grade of IEEE, USA in June,2018.

**4.4.9 PROJECTS SANCTIONED BY OUTSIDE AGENCIES TO THE FACULTY OF THE DEPARTMENT : ----**

1. **Name of the PI : Dr. Ningrinla Marchang**  
**Title of the project:** Public Interest Event Monitoring in Sparsely-populated Mountainous Regions using Mobile Crowd-Sensing, SERB-DST, EEQ/2017/000083,, 2018 - Rs. 30.61 lakhs.  
**Funding Agency :**  
**Date of Sanction:** Date: 4th Sept. 2018  
**Total Amount :** Rs. 30.61 lakhs
2. **Name of the PI: Mr. Amar Taggu**  
**Title of the project:** Network Analytics for user performance management, using machine learning and data analytics  
**Funding Agency:** AICTE  
**Date of Sanction:** 14<sup>th</sup> March 2019  
**Total Amount :** 12,71,000 (Rupees Twelve Lakhs Seventy One Thousand Only)  
**Amount Received:** 12,51,000 (Rupees Twelve Lakhs Fifty One Thousand only)



#### 4.4.10 PUBLICATIONS: -

##### A. Referred Journal

###### Dr. M. Marjit Singh

1. **Singh, M.M.** and Mandal, J.K.(2018), “*Impact of black hole attack on reliability of mobile ad hoc network under DSDV routing protocol*”, International Journal of Systems, Control and communications,(Inderscience), Vol.9,No.1,pp.20-30, ISSN: 1755-9340.(2018).
2. **Singh, M.M.** and Basumatary, H.(2018), “*MERAM-R: Multi-clustered energy efficient routing algorithm with randomly moving sink node*”, J Sci Ind Res, Vol. 77(01)2018,pp.15-17, ISSN: 0022-4456.

###### Mr. Pradeep Kamboj

1. **Pradeep Kamboj**, Parismita Bhuyan “*An ACO based Routing Protocol for VANET*” International Journal of Engineering Sciences Paradigms and Researches, Vol. 47, Issue 04, Quarter 04 (October-November-December 2018), pp. 34-38.
2. **Pradeep Kamboj**, Ajit Kumar Singh Yadav, “*Internet of Things: Security Issues and Countermeasures*”, International Journal of Computer Sciences and Engineering, Vol.6, Issue.12, pp.657-661, 2018. DOI: [10.26438/ijcse/v6i12.657661](https://doi.org/10.26438/ijcse/v6i12.657661).

###### Mr. Ajit Kr. Singh Yadav

1. Pradeep Kamboj, **Ajit Kumar Singh Yadav**, "Internet of Things: Security Issues and Counter Measures" International Journal of Computer Science and Engineering (IJCSE) Dec-2018, Vol.-6, Issue-12, PP 657-661.
2. **Ajit Kumar Singh Yadav**, Rajesh Kumar Yadav,"A Reliable and Secure AODV Protocol for MANETs" International Journal of Engineering and Technology (IJET-SCOPUS) Dec-2018, Vol.-7, Issue-4.38, PP 893-897.

###### Mr. Aswini Kumar Patra

1. **Marchang, N.**, Taggu, A., Patra, A. K., 2018. Detecting Byzantine Attack in Cognitive Radio Networks by Exploiting Frequency and Ordering Properties. IEEE Transactions on Cognitive Communications and Networking, Vol. 4, No. 4, 816-824, ISSN: 2332-7731

###### Mr. Amar Taggu ISSN: 2332- 773

1. Marchang N., **Taggu A**, Patra K. A., Detecting Byzantine Attack in Cognitive Radio Networks by Exploiting Frequency and Ordering Properties, Published on December 2018, IEEE Transactions on Cognitive Communications and Networking, Volume: 4, Issue:4. 816-824, ISSN: 2332-7731

**Dr. Ningrinla Marchang**

1. **Marchang, N.**, Taggu, A., Patra, A. K., 2018. Detecting Byzantine Attack in Cognitive Radio Networks by Exploiting Frequency and Ordering Properties. IEEE Transactions on Cognitive Communications and Networking, Vol. 4, No. 4, 816-824, ISSN: 2332-7731.
2. Rajkumari, R., **Marchang, N.**, 2018. Secure Non-Consensus Based Spectrum Sensing in Non-Centralized Cognitive Radio Networks. IEEE Sensors Journal, vol. 18, no. 9, 3883 – 3890, 2018.
3. Rajkumari, R., **Marchang, N.**, 2018. Binary Decision-Based Collaborative Spectrum Sensing in Infrastructure-less Cognitive Radio Network, Annals of Telecommunications, Issue 11-12. DOI 10.1007/s12243-018-0670-3.
4. Bhattacharjee, S., **Marchang, N.**, 2019. Malicious User Detection with Local Outlier Factor during Spectrum Sensing in Cognitive Radio Network. Int. J. of Ad Hoc and Ubiquitous Computing (Inderscience), Vol. 30, No.4, 215 – 223.

**Mr. Yogendra Mohan**

- 1 Yogendra Mohan, Vikas Tripathi, Comparative Analysis of Facial Expression Detection Techniques Based on Neural Network, international journal of Engineering & Technology, Vol 7, No 4.38 (2018), DOI: 10.14419/ijet.v7i4.38.27597.

**Dr. S.J.Borah**

1. Woungang I, Dhurandher S, Singh J, Borah SJ. Energy Aware Routing for Efficient Green Communication in Opportunistic Networks. IET Networks. 2019 Mar 11.

**Mr Monjul Saikia**

1. Monjul Saikia and Md. Anwar Hussain, "Costas Array Based Key Pre-Distribution Scheme Grid based Wireless Sensor Network" International Journal of Research in Engineering, IT and Social Sciences, ISSN 2250-0588, Volume 08 Issue 10, October 2018, Page 69-74

**B. Conference papers:**

**Dr. M. Marjit Singh**

**Singh, M.M.** and Mandal, J.K.(2019): *Gray hole attack analysis in AODV based mobile ad hoc network with reliability metric*, Proceedings of 2019 IEEE 4<sup>th</sup> International Conference on Computer and Communication Systems (ICCCS 2019), 23-25 February 2019, Pp 565-569, Nanyang Technological University Singapore.

**Dr. Ningrinla Marchang**

“Faiz,Md. F., Hussain, Md. A and **Marchang, N.**” Detection of Collusive App-pairs Using Machine Learning”, IEEE/IEIE International Conference on Consumer Electronics Aisa 2018 (ICCE-Asia 2018), Jeju, Korea, 24-26 June 2018.

**Dr. S.J.Borah**

Borah, S. J., Dhurandher, S. K., Woungang, I., Kandhoul, N., & Rodrigues, J. J. (2018, May). An Energy-Efficient Location Prediction-Based Forwarding Scheme for Opportunistic Networks. In 2018 IEEE International Conference on Communications (ICC) (pp. 1-6).

**Mr. A. K. Patra**

1. **A.K.Patra**, Swanirbhar M. Mishra Madhusudhan, Making Effective Statistical Inferences: The Recent Trends, 9<sup>th</sup> ICAPM 2019, Bangkok, Thailand, 2019.

**Mr. Amar Taggu**

Amar Taggu, Abhishek Mungoli, Ani Taggu, "Reverse Route: An Application-Layer Scheme for Detecting Blackholes in MANET using Mobile Agents", IEEE TIMES-iCON, Dec 12-14, 2018, Bangkok, Thailand, DOI:10.1109/TIMES-iCON.2018.8621825

**Mr. Ajay Kr. Singh Yadav**

Presented a Paper on " A reliable and secure AODV Protocol for MANETs" in 4<sup>th</sup> International Conference on Recent Trends in Computer Science and Electronics during 03-06 Jan-2019, University of Hawaii, USA.

**Mr. Monjul Saikia**

1. Monjul Saikia and Md. Anwar Hussain " Delaunay Triangulation based Key distribution for Wireless Sensor Network", In *2nd International Conference on Signal Processing and Information Communications will be held in Phuket, Thailand during January 19-21, 2019*
2. Monjul Saikia and Md. Anwar Hussain "Implementation of Light Weight Crypto-processor using Logistic Map for Wireless Sensor Network" International Conference on Communication, Devices and Networking (ICCDN 2018) Sikkim India 2-3 June, 2018. DOI: 10.1007/978-981-13-3450-4\_55. Advances in Communication, Devices and Networking, Lecture Notes in Electrical Engineering 537.

**C. Books / Book Chapter:**

**Dr. M. Marjit Singh**

1. Dutta, N. and **Singh,M.M.(2019)**: Wormhole attack in wireless sensor network: A critical review, In: J.K.Mandal et al (eds.), Advanced Computing and Communication

- Technologies, *Advances in Intelligent Systems and Computing* 702, pp 147-161. Springer Nature Singapore Pte. Ltd, (2019) DOI: [https://doi.org/10.1007/978-981-13-0680-8\\_14](https://doi.org/10.1007/978-981-13-0680-8_14)
2. **Singh, M.M.** and Mandal, J.K.(2018).: Effect of black hole attack on MANET reliability in DSR routing protocol, In: R.K.Chaudhary et al. (eds.), *Advanced Computing and Communication Technologies, Advances in Intelligent Systems and Computing* 562, pp 275-283. Springer Nature Singapore Pte. Ltd, (2018) DOI: [https://doi.org/10.1007/978-981-10-4603-2\\_26](https://doi.org/10.1007/978-981-10-4603-2_26).
  3. Basumatary, H and **Singh,M.M.(2018)**: Multi clustered energy efficient routing algorithm with mobile sink node moving in clockwise direction, In: B.Tiwari et al.(eds.), *Proceedings of International Conference on Recent Advancement in Computer and Communication, Lecture Notes in Networks and Systems* 34, pp 645-654. Springer Nature Singapore Pte. Ltd, (2018) DOI: [https://doi.org/10.1007/978-981-10-8198-9\\_67](https://doi.org/10.1007/978-981-10-8198-9_67)

#### **Dr. Ningrinla Marchang**

1. Faiz, I.F., Hussain, Md. A., **Marchang, N.**, 2019. App-Collusion Detection Using a Two-Stage Classifier, in: Barolli, L., Takizawa, M., Xhafa, F., Enokido, T. (Eds.), *Web,Artificial Intelligence and Network Applications, Proceedings of the Workshops of the 33rdInternational Conference on Advanced Information Networking and Applications (WAINA-2019)* DOI 978-3-030-15035-8\_68
2. Singh W.N., **Marchang N.** (2019) Security Vulnerability in Spectrum Allocation in Cognitive Radio Network. In: Kamal R., Henshaw M., Nair P. (eds) *International Conference on Advanced Computing Networking and Informatics. Advances in Intelligent Systems and Computing*, vol 870. Springer, Singapore, Feb. 22-24, 2018, Indore, India. 10.1007/978-981-13-2673-8\_24.

#### **Mr. Yogendra Mohan**

- 1 Mohan Y., Krishna C.R., Singh K. (2018) Performance Evaluation of Multicast Source Authentication Scheme. In: Bokhari M., Agrawal N., Saini D. (eds) *Cyber Security. Advances in Intelligent Systems and Computing*, vol 729. Springer, Singapore

#### **Mr Monjul Saikia**

1. Monjul Saikia and Md. Anwar Hussain "A Novel Key Predistribution Scheme for Minimum Angle Routing in Wireless Sensor Network", In *Integrated Intelligent Computing, Communication and Security*, Springer Singapore 2019, pp. 301--309, ISBN 978-981-10-8797-4, doi=10.1007/978-981-10-8797-4\_32.

#### **4.4.11 INTERACTION OF FACULTY WITH OUTSIDE AGENCIES:**

**Dr. Moirangthem Marjit Singh** has become one of the executive members of IE(I) Arunachal Pradesh State Center w.e.f. 4<sup>th</sup> December 2018.

**4.4.12 ACHIEVEMENTS OF STUDENTS:****1. Placed through pool campus interview**

<b>S. No.</b>	<b>Name of the student</b>	<b>Roll No.</b>	<b>Company</b>
1.	Anirban Sarkar	D/15/CS/105	INFOSYS
2.	Rachna Raj	D/15/CS/106	INFOSYS
3.	Jyosmita Das	D/16/CS/210	FIDELITY NATIONAL FINANCE

**2. Qualified at GATE 2019**

<b>S. No.</b>	<b>Name of the student</b>	<b>Roll No.</b>
1.	Malemnganba Soubam	D/15/CS/101
2.	Thanghou Khup Zou	D/15/CS/102
3.	Anirban Sarkar	D/15/CS/105
4.	Kipa Tachak	D/15/CS/109
5.	Dipankar Mitra	D/16/CS/207

## 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 in Electronics and Communication Engineering with two specialization communication and VLSI. 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 of Electronics and Communication Engineering also runs PhD (part time and full time) in the fields of Optical Fiber Communication, DSP & Embedded systems, Microelectronics, Instrumentation, VLSI, Computer Networking, Information Security, Wireless Communication, Microwave Engineering and VLSI. There are 13 regular faculty members in the department. One faculty members is on lien and working at Tripura University.

### 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 research publication in international and national conferences. All the research scholars are motivated to publish their research work in esteemed journals worldwide. A departmental society named as 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 research laboratory with funds from MHRD under visvesvaraya PhD Scheme. The department is also further developing the existing VLSI and Computer Networking laboratories. The department has taken up steps to develop PG labs for M.Tech courses for which Silvaco, 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.

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

Under-graduate Projects: List of Degree,2016 students who has submitted Thesis

Sl. No.	Name	Roll No.	Title	Name of Guide
1.	Donald Laishram Nyanbemo Ngullie Sachin Kumar Singh Shashanka S. Tripathy	DE/16/EC/24 DE/16/EC/04 DE/16/EC/18 DE/16/EC/25	Design of a Hand Gesture to Speech Conversion Smart Glove for Dumb People	Dr. Aheibam Dinamani Singh Assoc. Professor

2.	Lazumith Lepcha Sagarmoy Baidya Atanu Chakrabarti	DE/16/EC/208 DE/16/EC/201 DE/16/EC/12	Universal Biquard Filter Using CFOA	Dr. Tripurari Sharan Asst. Professor
3.	Merlin Maria Salom Pallavi Kumari L.Surmala	DE/16/EC/02 DE/16/EC/08 DE/16/EC/11	Prediction of Critical and Non-Critical Patients in ICU	Mr. Moirangthem Edison Singh Asst. Professor
4.	Anupam Kumari Sujit Kumar Singh Ashish Kumar Mishra Washima Akhtar	DE/16/EC/03 DE/16/EC/13 DE/16/EC/22 DE/16/EC/203	Study on GPS Based precursor of Epicenter and Intensity of Earthquake	Mr. Pranab Kishore Dutta Asst. Professor
5.	Pynkmenbha Wanniang Nyato Tato Ngangbam Micheal Singh Khwaitrakpam Rabi Singh	DE/16/EC/206 DE/16/EC/212 DE/16/EC/204 DE/16/EC/205	“Alarm Security System”	Mr. Akho John Richa Asst. Professor
6.	Sunanda Bhowmik Debdali Roy Saumya Kumari	DE/16/EC/09 DE/16/EC/10 DE/16/EC/17	Study on Channel Estimation Forlfe Downlink	Dr. Joyatri Bora Asst. Professor
7.	Arijit Bhadra Abhik Bhattacharjee Sandip Banik	DE/16/EC/20 DE/16/EC/21 DE/16/EC/23	Speaker Identification Using Machine Learning	Mr. Moirangthem Edison Singh Asst. Professor
8.	Aruna Bharati Dichen D. Sherpa Meemoh Haque	DE/16/EC/14 DE/16/EC/15 DE/16/EC/01	Health Monitoring System	Dr. Rajesh Kumar Assoc. Professor
9.	Nameirakpam Premjit Singh Rahul Kumar Sentimeren Ao Nishant Pratihast	DE/16/EC/19 DE/16/EC/06 DE/16/EC/16 DE/16/EC/202	Dual Mode Controlled Wheelchair	Mr. Anil Kumar Gautam Asst. Professor
10.	Abhinaba Roy Pranjay Mehta Rwngari Debbarma	DE/16/EC/07 DE/16/EC/05 DE/16/EC/209	Text Categorization of Reuters Newswire (1987) Documents Using Kullback-leibler Distance (KLD) Algorithm	Mr. Rusni Kima Mangang Asst. Professor

## Post Graduate (M.Tech) Projects:List of M.Tech,2016 students who has submitted Thesis

Sl.No.	Name	Roll No.	Title	Name of Guide
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1.	Ananya Bhattacharjee	MT/16/EC/01	Lung Cancer Detection Based on Image Processing	Dr. Swanirbhar Majumder Asst. Professor
2.	Laishram Mona Devi	MT/16/EC/02	A Study on Capacity Analysis of MRC Receiver over OWDP Fading Channels and Generalized K-Fading Channels	Dr. Aheibam Dinamani Singh Assoc. Professor
3.	Sandip Singh	MT/16/EC/03	Substrate Integrated Waveguide Filter for KU-BAND Satellite Communication	Mr. Moirangthem Edison Singh Asst. Professor
.	Ramkhun Gangmei	MT/16/EC/05	Study on Co-Channel Interference and Performance Analysis of Cellular Communication System	Dr. Rajesh Kumar Assoc. Professor
5.	Nivedita Das	MT/16/EC/06	A Study on Capacity Analysis of Cooperative Diversity with EGC Over Nakagami-M Fading Channels and Performance of Digital Communication Over Generalized K-Fading Channels	Dr. Aheibam Dinamani Singh Assoc. Professor
6.	Faizur Rahman Babul	MT/16/EC/07	A Study on Small Cell Intensities for Cellular Network Affected by Cell-EDGE and Uncovered Areas	Dr. Joyatri Bora Asst. Professor
7.	Prayas Bajgai	MT/16/EC/08	Design and Analysis of CMOS Compatible CFOA for Analog Signal Filtering	Dr. Tripurari Sharan Asst. Professor
8.	Khoirom Johnson Singh	MT/16/EC/09	Design and Analysis of CMOS Instrumentation Amplifier for Biomedical Application	Dr. Tripurari Sharan Asst. Professor
9.	Catherine Langpoklakpam	MT/16/EC/10	High Performance Leakage Tolerant Keeper Domino Circuit for wide Fan-in GATES	Mr. Pranab Kishore Dutta Asst. Professor
10.	Shubham Jha	MT/16/EC/11	Study and Performance Analysis of Modified GATE Diffusion Input (MGDI) Technique	Mr. Anil Kumar Gautam Asst. Professor



11.	Deepika Yadav	MT/16/EC/12	Design and Analysis of Sense Amplifier Topologies for SRAM Application	Mr. Akho John Richa Asst. Professor
12.	Takhellambam Gautam Meitei	MT/16/EC/13	FPGA Based Analysis of PCG Signal for Heart Conditions	Dr. Swanirbhar Majumder Asst. Professor
13.	Ningthoujam Chingkhei	MT/16/EC/14	Design and Comparison of 128 BIT Serial parallel CYCLIC redundancy check for high speed applications	Mr. Rusni Kima Mangang Asst. Professor

#### 4.5.5 Courses/Seminars/Workshops/Conferences Organized at the department

Sl. No	Courses/Seminars/Workshops/Conferences Areas & Title	coordinator	duration	Funding agencies	Number of Participants
1.	FDP on Emerging Trends in Wireless Communication	Dr. J Bora Mr. M Mishra	One week, 26-30 November, 2018.	E&ICT academy IIT Guwahati	30
2.	FDP on Wireless and Mobile Communication	Dr. R Kumar Mr. A K Ray	One week, 03-07 December, 2018	E&ICT academy IIT Guwahati	29
3.	FDP on Digital Signal Processing and Sensors	Dr. R Kumar Mr. A K Ray	One week, 10-14 December 2018	E&ICT academy IIT Guwahati	25

#### 4. Invited Talk by A K RAY

Application of Synopsis Sentaurus TCAD Tool in modelling devices "from 08-12 Oct, 2018 at NIT Mizoram,

## 4.5.6 Short term courses/Seminars/Workshops/Conferences attended by the faculty

Sl.No	Name of Faculty/ Staff	Description of STTP/ Training Programme	Period	Organized by
1.	Prof. Md. Anwar Hussain	Conducted a technical lecture in Emerging Trends in Wireless Communication	30/11/2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
2.	Dr. Aheibam Dinamani Singh	<i>International Conference on Information, Communication, Engineering and Technology (ICICET)</i>	Aug 29-31, 2018	Zeal College of Engineering and Research, Narhe, Pune, India
3	Dr. Aheibam Dinamani Singh	Emerging Trends in Wireless Communication	26/11/2018-30/11/2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
4	Dr. Aheibam Dinamani Singh	Wireless and Mobile Communication	03/12/2018-07/12/2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
5	Dr. Aheibam Dinamani Singh	DSP and Sensors	10/12/2018-14/12/2018	Deptt of ECE, NERIST and E & ICT Academy, Indian Institute of Technology Guwahati
6	Dr. Aheibam Dinamani Singh	<i>International Conference on Computational Intelligence &amp; IoT (ICCIoT)</i>	<i>15<sup>th</sup> December 2018.</i>	<i>NIT Agartala, India</i>
7	Dr. Rajesh Kumar	QIP Short term course on Magneto-electric Composites for Smart Sensors and Signal Processing Devices	02/04/2018 - 06/04/2018	IIT, Bombay
8	Dr. Rajesh Kumar	FDP on 5 G	11/06/2018-15/06/2018	E & ICT Academy, IIT Guwahati

		Communication		
9	Dr. Rajesh Kumar	4th International Conference on Green Computing and Engineering Technologies (ICGCET®)	17 Aug - 19 Aug 2018	Aalborg University, Niels Bohrs Vej 8, Esbjerg, Denmark
10	Dr. Rajesh Kumar	Wireless and Mobile Communication	03/12/2018-07/12/2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
11	Dr. Rajesh Kumar	DSP and Sensors	10/12/2018-14/12/2018	Deptt of ECE, NERIST and E & ICT Academy, Indian Institute of Technology Guwahati
12	Dr. Rajesh Kumar	4th International Conference on Recent Trends in Computer Science and Electronics (RTCSE®)	03 Jan - 06 Jan 2019	University of Hawaii (Manoa campus) in Honolulu, Hawaii, USA

13	Dr. Rajesh Kumar	Computer Networking	28.01.19 to 01.02.2019	Department of CSE, NERIST in collaboration with NITTTR, Kolkata
14	Dr. Tripurari Saran	One week FDP on Wireless and Mobile Communication	03-07 December, 2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
15	Dr. Joyatri Bora	One week FDP on Emerging Trends in Wireless Communication	26-30 November, 2018	Department of Electronics and Communication Engineering, NERIST in association with E&ICT academy IIT Guwahati.
16	Dr. Joyatri Bora	One week FDP on Wireless and Mobile Communication	03-07 December, 2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati

17	Dr. Joyatri Bora	One week FDP on Digital Signal Processing and Sensors	10-14 December, 2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
18	Dr. Joyatri Bora	Computer Networking	28.01.19 to 01.02.2019	Department of CSE, NERIST in collaboration with NITTTR, Kolkata
19	Pranab Kishore Dutta	Op-Amp Practical Applications: Design, Simulation and Implementation. (NPTEL Online course)	12 weeks (Jul-Oct 2018)	NPTEL-AICTE
20	Pranab Kishore Dutta	IEEE International Conference on Computing, Power and Communication Technologies (GUCON) 2018.	28-29 September 2018	Galgotias University, Greater Noida, India
21	Pranab Kishore Dutta	Emerging Trends in Wireless Communication	1 weeks 26-30 Nov 2018	MeitY, Electronics & ICT Academy IIT Guwahati, NERIST
22	Madhusudhan Mishra	One week national workshop on Emerging Tools and Technologies in Research.	05-09 November, 2018	Department of Information Technology, Tripura University, Tripura

23	Madhusudhan Mishra	One week FDP on Emerging Trends in Wireless Communication	26-30 November, 2018	Department of Electronics and Communication Engineering, NERIST in association with E&ICT academy IIT Guwahati
24	Madhusudhan Mishra	One week FDP on Wireless and Mobile Communication	03-07 December, 2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati

25	Madhusudhan Mishra	One week FDP on Digital Signal Processing and Sensors	10-14 December 2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
26	Madhusudhan Mishra	Computer Networking	28.01.19 to 01.02.2019	Department of CSE, NERIST in collaboration with NITTTR, Kolkata
27	Madhusudhan Mishra	One week AICTE sponsored QIP short term programme on Remote sensing, GIS and Image Processing using FOSS for Urban Planning .	4-10 March 2019	organized by Ranbir and Chitra Gupta School of Infrastructure Design and Management, IIT Kharagpur
28	A K Ray	ANN and Deep Learning	11 <sup>th</sup> to 15 <sup>th</sup> June, 2018	EICT academy IIT Guwahati
29	A K Ray	Wireless and Mobile Communication	03/12/2018-07/12/2018	Deptt of ECE, NERIST, and E & ICT Academy, Indian Institute of Technology Guwahati
30	A K Ray	DSP and Sensors	10/12/2018-14/12/2018	Deptt of ECE, NERIST and E & ICT Academy, Indian Institute of Technology Guwahati
31	A K Ray	Modeling and Simulation of Nano-Transistors	JANUARY 21 - 25, 2019	Department of Electrical Engineering, IIT Kanpur
32	A K Ray	Computer Networking	28.01.19 to 01.02.2019	Department of CSE, NERIST in collaboration with NITTTR, Kolkata
33	Rusni Kima Mangang	Summer Faculty Research Programme	1 <sup>st</sup> June – 10 July 2018	QIP Office IIT Delhi

34	Rusni Kima Mangang	DSP and Sensor	10 – 14 December 2018	EICT Academy, IIT Guwahati
35	Rusni Kima Mangang	IoT: Gateway to Smart Future.	12th to 17th April 2018	Electronics &ICT ,IITG &MeitY and NIT Manipur
36	M Edison Singh	IoT: Gateway to Smart Future.	12th to 17th April 2018	Electronics &ICT ,IITG &MeitY and NIT Manipur
37	M Edison Singh	Emerging Trends in Wireless Communication	26-30 November 2018	Electronics &ICT ,IITG &MeitY and NERIST
38	M Edison Singh	Wireless and Mobile Communication	3-7 <sup>th</sup> Dec 2018	Electronics &ICT ,IITG &MeitY and NERIST
39	M Edison Singh	DSP and SENSORS	10-14 <sup>th</sup> Dec 2018	Electronics &ICT ,IITG & MeitY and NERIST
40	M Edison Singh	2 <sup>ND</sup> International conference on innovations in electronics, signal Processing and Communication(IESC)	2 <sup>ND</sup> March 2019	NIT Meghalaya
41	Anil Kumar Gautam	One-week FDP on DSP and Sensors	10.12.2018 to 14.12.2018	E & ICT academics National Knowledge Network, Meity, Govt. of India
42	Anil Kumar Gautam	One-week FDP on Wireless and Mobile Communication	03.12.2018 to 07.12.2018	E & ICT academics National Knowledge Network, Meity, Govt. of India

43	Anil Kumar Gautam	One-week FDP on Emerging Trends in Wireless Communication	26.11.2018 to 30.12.2018	E & ICT academy IIT Guwahati in association with department of ECE, NERIST, Nirjuli and support from Keysight Technologies and Scientech Technologies
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#### 4.5.7 New Degree/Professional membership obtained by the faculty:

1. Rusni Kima Mangang, IEEE Membership Member/Customer number: 92549462

#### 4.5.8 Achievements/Awards/recognition by the faculty: Nil

#### 4.5.9 Projects Sanctioned by outside agencies to the faculty of the department

Name of PI and Coinvestigator	Title of the Project	Funding agency	Date of Sanction	Total amount	Year
Dr. Aheibam Dinamani Singh	“A Prototype of Auto-navigating ECart using Multispectral Imaging”	Ministry of Electronics and Information Technology (MeitY), New Delhi	26/10/2018	40.00 Lakh	For Three years

#### 4.5.10 Publications (Total = 53)

**Referred Journal: 28**

**Conference papers: 22**

**Books: chapter:03**

Faculty wise details are as follows:

##### a) Referred Journal:

##### Publication of Prof. Md. Anwar Hussain

1. Tasher Ali Sheikh, Joyatri Bora and **Md. A. Hussain**, “Combined User and Antenna Selection in Massive MIMO Using Precoding Technique”, *International Journal of Sensors, Wireless Communications and Control*, Vol. 9, No. 1, pp.1-10, 2019. **(Impact factor: 0.18)**.

2. Monjul Saikia and Md. **A. Hussain**, “A Novel Key Predistribution Scheme for Minimum Angle Routing in Wireless Sensor Network”, In *Integrated Intelligent Computing, Communication and Security*, Singapore 2019, pp. 301-309, 2019.
3. Faiz, M.F.I., and Marchang, N. and **Md. A. Hussain**, “App-Collusion Detection Using a Two-Stage Classifier”, *Web, Artificial Intelligence and Network Applications (WAINA'2019)*, vol. 927, Cham, 2019.
4. Janmoni Borah, **Md. Anwar Hussain** and Joyatri Bora, “Effect of Inter-Cell Interference on Cell-Boundaries Users in 3-Cell and 7-Cell HetCN,” *Radioelectronics and Communications Systems*, 2019. **(Impact factor: 0.39)**.
5. Janmoni Borah, **Md. Anwar Hussain** and Joyatri Bora, “Effect on Energy Efficiency with Small Cell Deployment in Heterogeneous Cellular Networks,” **Internet Technology Letters**, 2019.
6. Tasher Ali Sheikh, Joyatri Bora and **Md. A. Hussain**, “Sum-rate Performance of Massive MIMO Systems in Highly Scattering Channel with Semi-orthogonal and Random User selections”, *Radioelectronics and Communications Systems*, Vol. 61, No. 12, pp. 547-555, 2018, **(Impact factor:0.39)**.

#### **Publication of Dr. A. D. Singh**

7. Nibedita Das, Laishram Mona Devi, Suparna Goswami and **Aheibam Dinamani Singh** “A Study of Digital Communication over Generalized K Fading Channels” *Advances in Communication, Devices and Networking, Springer Nature Singapore Pte Ltd. 2019, pp 277 - 284*. \*Supervisor
8. Laishram Mona Devi, Nibedita Das, Suparna Goswami and **Aheibam Dinamani Singh** “A Study on Capacity of MRC over OWDP Fading Channels” *Advances in Communication, Devices and Networking, Springer Nature Singapore Pte Ltd. 2019, pp 229 - 238*. \*Supervisor
9. Laishram Mona Devi, Nibedita Das, Suparna Goswami and **Aheibam Dinamani Singh** “Capacity Analysis in Generalized K Fading Channels”, *Advances in Communication, Devices and Networking, Springer Nature Singapore Pte Ltd. 2019, pp 297 - 305*. \*Supervisor
10. **Aheibam Dinamani Singh**, Suparna Goswami, and Laishram Mona Devi, “Data Rate Analysis of  $\kappa$ - $\mu$  Shadowed Fading Channels for IoT Applications” Elsevier *International Journal of Computational Intelligence & IoT, Vol. 1, No. 1, 2018, pp 116-119*. \*Supervisor
11. Kishorjit Nongmeikapam, Wahengbam Kanan Kumar, Ranita Khumukcham and **Aheibam Dinamani Singh**,” An Unsupervised Cluster-wise Color Segmentation of Medical and Camera Images using Genetically Improved Fuzzy-Markovian Decision Relational Model.” DOI: [10.3233/JIFS-17968](https://doi.org/10.3233/JIFS-17968), *Journal of Intelligent & Fuzzy Systems.*, 2018, pp. 1147–1160. \*supervisor
12. Kishorjit Nongmeikapam, Wahengbam Kanan Kumar and **Aheibam Dinamani Singh**,” A Fast and Automatically Adjustable GRBF Kernel based Fuzzy C-Means for Cluster - wise Coloured feature extraction and Segmentation of MR Images.” DOI: [10.1049/iet-ipr.2017.1102](https://doi.org/10.1049/iet-ipr.2017.1102) , *Online ISSN 1751-9667, IET Image Process.*, 2018, Vol. 12 Iss. 4, pp. 513-524. \*supervisor .



**Publication of Dr. Rajesh Kumar**

13. Kurmendra, **Rajesh Kumar**, “Design and Analysis of MEMS Shunt Capacitive Switch with Si<sub>3</sub>N<sub>4</sub> Dielectric and Au Beam Material to Improve Actuation Voltage and RF Performance in Consideration With and Without Circular Perforations” in Transactions on Electrical and Electronic Materials, The Korean Institute of Electrical and Electronic Material Engineers (KIEEME), <https://doi.org/10.1007/s42341-019-00112-y>, online, issue:3, Page: 1-10, April 2019, Springer, **Online ISSN**2092-7592
14. Kurmendra, Jagdeep Rahul, Rajesh Kumar, “Micro-cantilevered MEMS Biosensor for Detection of Malaria Protozoan Parasites” in Journal of Computational and Applied Mechanics, DOI: 10.22059/jcamech.2019.276035.36, Feb 2019, Published by University of Tehran, online ISSN 2423-6713.
15. Kurmendra, Rajesh Kumar, “MEMS based cantilever biosensors for cancer detection using potential bio markers present in VOCs: A survey” Microsystem Technologies Microsystem Technologies, <https://doi.org/10.1007/s00542-019-04326-1>, online, Feb 2019, Springer-Verlag GmbH Germany, part of Springer Nature 2019.
16. Kurmendra, Rajesh Kumar, “**Design and simulation of mems shunt capacitive switch for lower switching time**” in 3c Tecnología journal, Volume-8, Issue-2, Pages 167-178, January 2019, Publisher : 3ciencias, DOI: <http://dx.doi.org/10.17993/3ctecno.2019.specialissue.15>
17. Ashish Gupta, Rajesh Kumar, “An IOT Enabled Air Quality Measurement “ Indian Journal of Science and Technology, Vol 11(46), page:1-6, DOI: 10.17485/ijst/2018/v11i46/139720, December 2018, ISSN (Print) : 0974-6846 ISSN (Online) : 0974-5645

**Publication of Mr. M. Mishra**

18. M. Mishra, H. Menon and A. Mukherjee, “*Characterization of S1 and S2 heart sounds using stacked autoencoder and convolutional neural network*”, in IEEE Transactions on Instrumentation and Measurements., p.10.1109/TIM.2018.2872387 (Early access), 2018.

**Publication of Dr. P.K.Dutta**

19. SR Ghimiray, PK Dutta, **2019**, Novel leakage current reduction domino technique for Leakage tolerant hybrid XOR gate, Journal of Analysis and Computation, 13(2), <http://www.ijaonline.com/novel-leakage-current-reduction-domino-techniqueleakage-tolerant-hybrid-xor-gate/>
20. SR Ghimiray, P Meher, PK Dutta, **2018**, Ultralow power, noise immune stacked double stage clocked-inverter domino technique for ultradeep submicron technology, International Journal of

Circuit Theory and Applications 46 (11), 1953-1967, <https://doi.org/10.1002/cta.2524> (**SCI Impact Factor 1.444**)

21. A Jain, A Ghosh, PK Dutta, NB Singh, SK Sarkar, **2018**, Error probability independent delay analysis of single electronics circuits, International Journal of Circuit Theory and Applications, 46 (2), 290-298, <https://doi.org/10.1002/cta.2389>. (**SCI Impact Factor 1.444**)
22. C Langpoklakpam, SR Ghimiray, PK Dutta, **2019**, A Novel High-Performance Leakage-Tolerant Keeper Domino Circuit for Wide Fan-In Gates, Advances in Communication, Devices and Networking, Springer, Singapore, pp 11-19.

#### **Publications of Dr. Joytri Bora**

23. Janmoni Borah and Joyatri Bora, "Small-cell Intensities for Cellular Network Affected by Cell-edge and Hotspot," International Journal of Communication Systems, Vol.31, No.15, pp.e3788, Aug. 2018 (SCI, SCOPUS, Web of Science, DOI: 10.1002/dac.3788)
24. Tasher Ali Sheikh, Joyatri Bora, Md. Anwar Hussain, "Combined User and Antenna Selection in massive MIMO Using Precoding Technique," International Journal of Future Generation Communication Networking , vol.11 No.5(2018), pp. 27-36
25. Tasher Ali Sheikh, **Joyatri Bora** and Md. Anwar Hussain, "Sum-rate Performance of Massive MIMO Systems in Highly Scattering Channel with Semi-orthogonal and Random User selections", *Radioelectronics and Communications Systems*, Vol. 61, No. 12, pp. 547-555, 2018.

#### **Publications of Dr. Swanirbhar Majumder**

26. "A New Steganography Method Using Integer Wavelet Transform and Least Significant Bit Substitution", Section C: Computational Intelligence, Machine Learning and Data Analytics, The Computer Journal, published by Oxford University Press, Impact Factor 0.792, 5-year Impact Factor:0.860, Copyright © 2019 DOI:  
:10.1093/comjnl/bxz014, British Computer Society, ISSN 0010-4620. (M. Kalita, S. Majumder, T. Tuithung)

#### **Publication of Mr. A K Ray**

27. Sinha, D.K., Ansari, M.S., **Ray, A.**, Trivedi, G., Chatterjee, A., Schrimpf, R.D.: Fast ionization front induced anomalous switching behavior in trigger bipolar transistors of marx-bank circuits under base-drive conditions. IEEE Transactions on Plasma Science 46(6) (June 2018) 2064–2071.

**Publications list of Mr. A. K. Gautam**

28. Nemthianhoi Zou P and Anil Kumar Gautam, “A study on second generation current conveyor” JAC, Vol. xiii, Issue I, January 2019, JAC ISSN-0973-2861.

**b. Conference papers:**

**Publication of Prof. Md. Anwar Hussain**

1. Monjul Saikia and Md. A. Hussain, “Delaunay Triangulation based Key distribution for Wireless Sensor Network”, *2nd International Conference on Signal Processing and Information Communications will be held in Phuket, Thailand during January 19-21, 2019.*
2. Popi Bora and Md. A. Hussain, “A Robust LSB Image Steganography Technique Using Chaotic Logistic Maap”, *ICRIEECE-2018*, Bhubaneswar, India, July 2018.
3. Popi Bora and Md. A. Hussain, “A Highly Secure Digital Image Steganography Technique Using Chaotic Logistic Map and Support Image”, *2018 IEEE International Conference on Information Communication and Signal Processing (IEEE ICSP 2018)*, Singapore, September, 2018.
4. Md. A. Hussain, “A Clean Novel Watermarking Technique Using Chaotic Logistic Map and Multiple Embedding”, *10th International Conference on Graphics and Image Processing (ICGIP 2018)*, Chendu, China, December, 2018.
5. Begum, and S. M. S. Askari and Md. A. Hussain, “A Noble Dead-End Free ThreeDimensional Routing and Scheduling Techniques for Multi-Hop Wireless Networks,” *9th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, Bangalore, pp. 1-6, July 2018.
6. Faiz, M.F.I., M., Marchang, N. and Md. A. Hussain, “Detection of collusive apppairs using machine learning”, *3rd International Conference on Consumer Electronics ASIA*, pp.206-212, June 2018.
7. Janmoni Borah, Md. Anwar Hussain and Joyatri Bora, “Enhancement of Throughput for Cellular Data Network by Small cell Deployment,” *IEEE International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE'2018)*, Odhisa, India, July 2018.
8. Amlan Bora, Md. Anwar Hussain and J. Bora, “Performance analysis of precoding techniques in cellular network”, *IEEE International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE)*, Odhisa, India, July 2018.

**Publication of Dr. A. D. Singh**

9. Suparna Goswami and Aheibam Dinamani Singh, “Capacity on Adaptive Transmission Methods over OWDP Fading Channels” *International Conference on Information, Communication, Engineering and Technology (ICICET)* Zeal College of

Engineering and Research, Narhe, Pune, India. Aug 29-31, 2018.\*Supervisor

#### **Publication of Dr. Rajesh Kumar**

10. A Chamuah, Kurmendra, **Rajesh Kumar**, “A Novel structure for piezoelectric based MEMS Energy Harvester” in 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON) on 2-4 November 2018, published in IEEE Explore with IEEE INSPEC Accession Number: 18384419 DOI: [10.1109/UPCON.2018.8596823](https://doi.org/10.1109/UPCON.2018.8596823).

#### **Publication of Dr. T. Sharan**

11. T. Sharan, K. Johnson Singh, A.K. Gautam, “Current Feedback Operational Amplifier Based Biquadratic Filter,” 1<sup>st</sup> International conference VLSI Communication and Signal processing, (VCAS-2018) held at ECE department of MNNIT, Prayag Raj, Allahabad, UP, held during 29<sup>th</sup> Nov. 2018 to 1<sup>st</sup> Dec., 2018.

#### **Publication of Mr. M. Mishra**

12. M. Mishra, S. Pratiher, S. Banerjee, and A. Mukherjee, Grading heart sounds through variational mode decomposition and higher order spectral features, in Proc. IEEE Instrum. Meas. Technol. Conf. (I2MTC), Houston, TX, USA, May 2018, pp. 1-5.
13. A K Patra, S. Majumdar, and M. Mishra, Making Effective Statistical Inferences: The Recent Trends in International Conference on Applied Physics and Mathematics, ICAPM-2019 as extended abstract, Thailand.

#### **Publication of Dr. P. K. Dutta**

14. Khuraijam Nelson Singh, Pranab Kishore Dutta, **2019**, Comparative Analysis of Underlapped Silicon on Insulator and Underlapped Silicon on Nothing Dielectric and Charge Modulated FET based Biosensors, 3rd IEEE International Conference Devices for Integrated Circuit (DevIC 2019), Kalyani, West Bengal.
15. Sapna Rani Ghimiray, Pranab Kishore Dutta, **2018**, Strength-Varying keeper based 4: 1 MUX for low-leakage and low jitter at 500 MHz Clock, IEEE International Conference on Computing, Power and Communication Technologies (GUCON2018), Pg. No 997-1002. DOI: 10.1109/GUCON.2018.8675094.

#### **Publications of Dr. Joytri Bora**

16. Janmoni Borah, Md. Anwar Hussain and Joyatri Bora, “Enhancement of Throughput for Cellular Data Network by Small cell Deployment,” IEEE International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE'2018), 27-28th July, 2018.

17. Amlan Borah and Joyatri Bora, "Post processing noise of ZF detector with varying channel condition," IEEE International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE'2018), 27-28th July, 2018 organized by KIIT Deemed to be University, Bhubaneswar, Odisha, ISBN: CFP18P98-PRT/978-1-5386-5994- 6
18. Amlan Borah, Md. Anwar Hussain, and Joyatri Bora, "Performance analysis of precoding techniques in cellular network," IEEE International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering - (ICRIEECE'2018), 27-28th July, 2018 organized by KIIT Deemed to be University, Bhubaneswar, Odisha, ISBN: CFP18P98-PRT/978-1-5386-5994-6
19. Afruza Begum, Md Anwar Hussain, **Joyatri Bora**, S Md S Askari, "A Simple Three Dimensional Joint Routing and Scheduling Protocol for Multi-hop Wireless Networks", IEEE 4th International Conference on Recent Advances in Information Technology (RAIT), 2018.

#### **Publications of Dr. Swanirbhar Majumder**

20. "Automated Computer-Aided Lung Cancer Detection System", Pg 425-433, 2nd International Conference on Communication, Devices and Networking (ICCDN2018), 2-3rd June, 2018, Organized by: Dept. of Electronics and Communication, Sikkim Manipal Institute of Technology, Sikkim. Published in Advances in Communication, Devices and Networking, Lecture Notes in Electrical Engineering, [https://doi.org/10.1007/978-981-13-3450-4\\_46](https://doi.org/10.1007/978-981-13-3450-4_46) (Ananya Bhattacharjee, and S. Majumder) (PRESENTATION)
21. "Overview of Liveliness Detection of Fingerprint for using it in BaaS Protocol in Cloud", in Proceedings of International Conference on Computational Intelligence & Internet of Things (ICCIoT), 2018 held at National Institute of Technology, Agartala, India on 14th and 15th of December'18. International Journal of Computational Intelligence & IoT, Vol. 2, No. 4, 2018. pg 817-821, Available at SSRN: <https://ssrn.com/abstract=3361570> (Swarup Nandi and S. Majumder)

#### **Publication of Mr. A K Ray**

22. Koushik Bharadwaj, Ashok Ray, Sushanta Bordoloi and Gaurav Trivedi "Current Collapse reduction technique using N-doped buffer layer into the bulk region of a Gate Injection Transistor" 32nd International Conference on VLSI Design held in New Delhi from 5-9<sup>th</sup> January 2019.

**c. Books/chapters/Lecture Notes:**

**Publication of Dr. Rajesh Kumar**

1. Kurmendra, Kumar R., Pertin O. (2019) Design of An Improved Micro-ElectroMechanical-Systems Switch for RF Communication System. In: Khare A., Tiwary U., Sethi I., Singh N. (eds) Recent Trends in Communication, Computing, and Electronics. **Lecture Notes** in Electrical Engineering, vol 524. Springer, Singapore [https://doi.org/10.1007/978-981-13-2685-1\\_1](https://doi.org/10.1007/978-981-13-2685-1_1), **Dec 2018**, **Print ISBN 978-981-132684-4**, **Online ISBN978-981-13-2685-1**

**Publications of Dr. Swanirbhar Majumder**

2. Chapter 9 "Trends of ECG Analysis and Diagnosis", in Book "Handbook of Research on Trends in the Diagnosis and Treatment of Chronic Conditions", ISBN13: 9781466688285|ISBN10: 1466688289|EISBN13: 9781466688292| DOI: 10.4018/978-1-4666-8828-5, published by IGI Global Publications. DOI: 10.4018/978-1-4666-8828-5.ch009 (S. Majumder, S. Pal)
3. Chapter 1, "PCG-Based Biometrics", pg 1-25; of book "Handbook of Research on Information Security in Biomedical Signal Processing", DOI: 10.4018/978-1-52255152-2, April'2018, by Chittaranjan Pradhan, Himansu Das, Bighnaraj Naik and Nilanjan Dey, ISBN13: 9781522551522|ISBN10: 1522551522|EISBN13: 9781522551539, DOI: 10.4018/978-1-5225-5152-2.ch001 (Takhellambam Gautam Meitei, Sinam Ajitkumar Singh and S. Majumder)

**4.5.11 Interaction of faculty/department with outside agencies**

Dr. Rajesh Kumar was also invited as an external examiner to conduct practical examination in the department of Electronics & Communication Engineering, Rajiv Gandhi University, Arunachal Pradesh.

Dr. Rajesh Kumar had interaction with IIT Guwahati and APJ Abdul Kalam University, Lucknow, UP as Joint Research Publication.

Dr. A. Dinamani Singh was also invited as an external examiner to conduct practical examination in the department of Electronics & Communication Engineering, Rajiv Gandhi University, Arunachal Pradesh.

Dr. A D Singh had interaction with IIIT, Manipur (Joint Research Project) and RGU, Rono Hills (Joint Research Publication)

Mr. P. K Dutta was invited as a guest faculty in the department of Electronics (PG Section), North Lakhimpur College, North Lakhimpur, Assam. He was also invited as an external examiner to conduct practical examination in the department of Electronics & Communication Engineering, Rajiv Gandhi University, Arunachal Pradesh.

Mr. R. K. Mangang has done joint Research with Prof. J. Harshan, deptt. Of EE, IIT Delhi under summer faculty Research Programme.

Our faculty members have a very good relationship with other organisations. Department of ECE have organised short term courses in collaboration with Jadavpur University and Calcutta University in past. Resource persons from different IITs have helped to organise the short term programmes at NERIST. Also, our faculty members have attended short term courses, conferences and training program organised by IITs, IISc and other reputed institutes.

#### **4.5.12 Consultancy projects undertaken** NIL

#### **4.5.13 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.

#### **4,5,14 Any other information**

Signed MOU with Advance Level Telecommunication Training Centre, Ghaziabad for the updating the knowledge and skills of our students in the field of Telecommunication.



## 4.6 DEPARTMENT OF ELECTRICAL ENGINEERING

### 4.6.1 A brief profile the Department

The Department of Electrical Engineering has been playing a vital role in producing highly competent electrical engineers and scientists ever since the institute was established. The first batch of students graduated in 1992. A two-year modular pattern/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 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.

### 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) Ph.D. programmes
  - In all fields of Electrical Engineering
  -



## Facilities

There are 13 well equipped laboratories offering facilities to work in all areas of electrical engineering. They are provided with 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/journals for ready reference.

## Research

The Department of Electrical Engineering works under three main research groups namely, (1) 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./Ph.D. Projects/Dissertations/Theses.
- Providing consultancy services.
- Facilitating Institute-Industry interaction.
- Publication in National and International Journals/Conferences.

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

Sl. No.	Name	Designation	Areas of specialization
1.	Dr. S. Chatterjee (on lien) 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. (IIT, 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.	Dr. A. K. Parida Ph.D. (Jadavpur University)	Assistant Professor	Industrial Drives, Power Electronics & Energy Audit
11.	Dr. Anu K. Das Ph.D. (NERIST)	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

#### 4.6.2 Academic 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 going on 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.

#### 4.6.3 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 Analyser, 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 Analyser, 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, Megger, 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, solarmeter, 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.

#### 4.6.4 Projects completed by UG/PG/Ph.D. Students

##### B. Tech/Diploma Projects completed

Sl. No.	Project Title	Student (s)	Faculty member(s)
1.	Modeling and control of grid connected hybrid system using wind driven DFIG and hydro driven SCIG	D/16/EE/3,14,16	P. Devchandra Singh
2.	Design of a Battery Charge Controller	D/16/EE/15,19	P. Devchandra Singh
3.	Techno-economic Feasibility Analysis of Renewable Energy in Remote Areas.	DE/15/EE/211,209, 207	S. Hashunao
4.	Analysis of Electric Stress in HVAC cable	D/16/EE/6,8,7	A K Das
5.	Analysis of Hydrokinetic Power Generation System	D/15/EE/26,31	SG
6.	Performance analysis of microgrid for rural area	D/15/EE/15, D/16EE/201,208	PD
7.	Application of PLC in Industrial Automation	D/15/EE/4,7,10,12	OPR
8.	IoT based lighting controller for visual comfort	D/15/EE/104,D/16/EE/206,210,DE/17/EE/01	NLM

9.	Study of symmetrical hybrid multilevel inverter for linear and nonlinear load	D/15/EE/8,11,105	AS
10.	Study of asymmetrical hybrid multilevel inverter for linear and nonlinear load	D/15/EE/5,6,101	AS
11.	Study of Wireless Power Transmission System	D/15/EE/09,14,21 DE/17/EE/02	MDS
12.	Fuzzy Logic Based controller design for a MIMO system	D/16/EE/205, DE/17/EE/03	PD
13.	VLSI design of multiplier	D/16/EE/22, D/16/EE/207	TVP
14.	Analysis of ECG for diagnosis	D/15/EE/18,27,32,106	TVP
15.	“Modeling and control of grid connected hybrid system using wind driven DFIG and hydro driven SCIG”	(DE/16/EE/04), (DE/16/EE/21), (DE/15/EE/208)	PDS
16.	DESIGN OF A BATTERY CHARGE CONTROLLER	(D/16/EE/107) (D/16/EE/105), (D/16/EE/106)	PDS
17.	DESIGN OF A GSM BASED REMOTE CONTROLLED INDUCTION MOTOR	{D/16/EE/13}, {D/16/EE/19}, {D/16/EE/09}	PDS
18.	IR BASED REMOTE CONTROL INDUCTION MOTOR	(D/16/EE/16), (D/16/EE/25) (D/16/EE/23)	PDS
19.	Investigation on Electric Field for Complex Configurations of Transmission Lines		A K Das
20.	Road Lighting design of NERIST main Campus		PD
21.	Feasibility checking of micro hydro power generation in Dikrong river		PD

### M. Tech. Dissertations Completed

Sl. No.	Title of Dissertation	Student (s)	Faculty member(s)
1.	Modeling and Simulation of ANN based Custom Power Devices.	MT/17/PSE/06	Mr. M.D.Singh

2.	Modeling and Performance Analysis of Parallel Operated 3-ph Induction Generators for Application in Microgrid Operation.	MT/17/PSE/03	Mr. P. Debchandra Singh
3.	Study and Survey of Consensus Control for Multi-agent System.	MT/17/PSE/04	Ms. Piyali Das
4.	Analysis of Thermo-Electric Stress in HVAC Power Cable.	MT/17/PSE/09	Dr. Anu Kumar Das
5.	Closed Loop Operation of an Inverter for Dynamic Load.	MT/17/PSE/05	Mr. Akhlesh Sharma
6.	Reliability Evaluation of Distributed Generating Stations.	MT/17/PSE/02	Prof. Omprakash Roy
7.	Hybrid PV Biomass Energy System Modelling for Rural Electrification in Arunachal Pradesh.	MT/17/PSE/07	Dr. A. Parida
8.	Modeling of solar radiation potential using ANN.	MT/17/PSE/10	Ms. Somila Husnao
9.	Study of Variable Renewable Energy Based Utility Grid.	MT/17/PSE/11	Prof. S. Gao

#### Ph.D. Theses completed/submitted

Sl. No.	Name of student (s)	Title of Thesis	Supervisor (s)	Status
1.	Mr. Ralli Sangno	.....	Prof. R. K. Mehta	Submitted

#### 4.6.5 Short term courses/seminars/workshops/conferences organised at NERIST

Title	Coordinator	Date	No. of Participants	Funded by
Online Workshop on Scilab	Dr. Anu Kumar Das	4 <sup>th</sup> May 2019	10	NMEICT IITB

**4.6.6 Short-term courses/seminars/workshops/conferences attended by the faculty.****Name of the faculty: Mr. Akhilesh Sharma**

Title	Venue	Duration	Organized by
Coordinators' Workshop on Scilab	NERIST	16 <sup>th</sup> April 19	NMEICT IITB
Emerging Trends in Wireless Communication	NERIST	Nov 26 -30, 2018	IITG
computer networking	NERIST	Jan 28 to Feb 02, 19	NITTTR Kolkata
First international IEEE conference on sustainable Energy Technologies and system	KIIT B	26 Feb to 01 March, 19	KIIT Bhubaneswar
5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering	Gorakhpur, India	2-4 Nov 2018	
2 <sup>nd</sup> IEEE International conference on power Electronics, Intelligent Control and Energy systems		22-24 Oct 2018	
2nd International Conference on Power, Energy and Environment: Towards Smart Technology	Shillong, India	1-2 June 2018	

**Name of the faculty: Mr. P. Devchandra Singh**

One week FDP on Advances in Renewable Energy Technologies and Systems	Tezpur University	19 <sup>th</sup> – 24 <sup>th</sup> February 2018	AICTE NEQIP
In-house training Programme on Computer Networking	NERIST	28 <sup>th</sup> Jan to 1 <sup>st</sup> Feb 2019	NITTR Kolkata



2nd International Conference on Energy, Power and Environment: Towards Sustainable Growth	NIT Meghalaya	01-06-2018 to 02-06-2018	NIT Meghalaya
8 <sup>th</sup> IEEE India International Conference on Power Electronics 2018	MNIT Jaipur	13-12-2018 to 15-12-2018	MNIT Jaipur

**Name of the faculty: Dr. A.K Singh**

Mechatronics & Robotics	PEC, Chandigarh	16 <sup>th</sup> July to 20 <sup>th</sup> July, 2018.	TEQIP-III
DSP & SENSOR		10 <sup>th</sup> to 14 <sup>th</sup> December, 2018.	
Computer Networking	NERIST	28 <sup>th</sup> Jan to 1 <sup>st</sup> Feb 2019	NITTR Kolkata

**Name of the faculty: Mrs. S. Hashunao**

Behavioral Remodeling and Research Methodology		01 – 05 April, 2019	E& ICT Academy IIT Guwahati
Emerging Trends in Wireless Communication	IIT Guwahati	26 – 30 November, 2018	E& ICT Academy IIT Guwahati
NPTEL Online Certification on Technical English for Engineer		Aug-Sept, 2018	IITM

**Name of the faculty: Dr. A.K Das**

Coordinators' Workshop on Scilab	NERIST	16 <sup>th</sup> April 2019	NMEICT IITB
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Name of the faculty: Ms. Piyali Das			
Behavioral Remodeling and Research Methodology		01 – 05 April, 2019	E& ICT Academy IIT Guwahati
One week FDP on Advances in Renewable Energy Technologies and Systems	Tezpur University	19 <sup>th</sup> – 24 <sup>th</sup> February 2018	AICTE NEQIP
International Conference on Computational Intelligence & IoT (ICCIoT 2018)".	NIT, Agartala	14-15 <sup>th</sup> Dec, 2018	SSRN, Elsevier
2018 Fourth International Conference on Research in Computational Intelligence and Communication Networks (ICRCICN)	RCCIIT, Kolkata	November 22-23, 2018	IEEE
26 <sup>th</sup> ICSEng 2018	Sydney, Australia	19-21 <sup>st</sup> Dec, 2019	IEEE

#### 4.6.7 New Degrees/Professional Memberships obtained by Faculty members

New Degrees/Professional Memberships	Faculty
PhD Acquired on 21.03.2018	Dr. A.K Das
Member of IEEE (PES & DEIS)	Dr. A.K Das
Member of IET	Dr. A.K Das
ISTE Life Member	Dr. A.K Das
Member of IEI	Dr. A.K Das
Member IEEE	Mr. Akhilesh Sharma
Member IAENG	Mr. Akhilesh Sharma

Member of IEEE Industrial  
Applications Society 93314064

Mr. P. Devchandra Singh

Life Membership of IE (I)

Dr. A.K Singh

Life Membership of ISTE

Dr. A.K Singh

Life Membership of IETE

Dr. A.K Singh

IEEE Membership for 2018-2019

Miss. Piyali Das

#### 4.6.8 Achievements/awards/recognition earned by faculty member : Nil

#### 4.6.9 Projects sanctioned by outside agencies to the faculty of the department

Project title: Evaluation of Coconut Oil for Application in High Voltage Transformer Funding Agency: Coconut Development Board, Ministry of Agriculture & Farmers Welfare, Government of India, Kochi (India).

Date of sanction: 11.04.2019

Total amount: Rs. 27.98 Lakh.

Fund received: Rs. 13.99 Lakh.

#### 4.6.10. Publications

##### (a) Refereed Journal

	Reputed Referred Journals
1.	Analysis of Thermophoresis and Brownian Motion Effect in Heat Transfer for Nanofluid Immersed Distribution Transformer, Electrical Engineering, Springer, (2018) 100:1963–1974. ( <a href="https://doi.org/10.1007/s00202-017-0676-2">https://doi.org/10.1007/s00202-017-0676-2</a> )
2.	Impulse Performance of Synthetic Ester Based-Nanofluid for Power Transformer”, Materials Research Express 5 (2018) 125026, Sep 2018( <a href="https://doi.org/10.1088/2053-1591/aae237">https://doi.org/10.1088/2053-1591/aae237</a> )
3.	Singh, M. D., Mehta, R. K., Singh, A. K., “Power quality enhancement in wind power generation integrated distribution system using fuzzy logic controlled CSC based DVR,” ADBU Journal of Engineering Technology, vol.7, pp. 1-10, June 2018, India.
4.	Singh, A K and Roy SourabhPrakash, “A Preliminary Study of Grid Connected Wind Power System” Published in Grenze International Journal of Engineering and Technology, Jan. 2019
5.	Singh M. Deben, R. K. Mehta, A. K. Singh,” Performance Evaluation of CSC Based Series APF for Power Quality Improvement”, Pramana research Journal, Vol,09, Issue 3, March’2019
6.	Improved Lighting System for Emergency Lighting Driven by Renewable Energy, Communicated to publish in AIP proceedings

**(b) Conference papers**

1.	Kumar A. and Bhagat S. K., "Study of Stability Analysis using Lyapunov function for IEEE-9 bus system," <i>Presented in IEEE Int. Conf.</i> , ICECCT, 20-22 Feb, Chennai, India, 2019.
2.	Pal D. and Bhagat S. K., "Design of an Efficient Fuzzy based Cluster Routing Protocol in Wireless Sensor Networks," <i>Presented in IEEE Int. Conf.</i> , ICECCT, 20-22 Feb, Chennai, India, 2019.
3.	Pal D., Shah D. and Bhagat S. K., "Design of a Genetic Algorithm based Shortest Path Routing with different Mutation Techniques," <i>Presented in IEEE Int. Conf.</i> , ICECCT, 20-22 Feb, Chennai, India, 2019.
4.	Singh, Renu , BhattacharjeeUtpal and Singh A K, "A Comparative Study of Cepstral based Speech Features for their Relative Noise Robustness", IEEE Conference Proceedings , organized by PEC, Tamil Nadu,India on 28 <sup>th</sup> -29 <sup>th</sup> Jan.'2019 (CEP18O37-PRT-978-1-5386-4303-7).
5.	A. Sharma, D. Singh, P. Devachandra Singh and S. Gao, "Analysis of Sinusoidal PWM and Space Vector PWM based diode clamped multilevel inverter," <i>2018 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)</i> , Gorakhpur, 2018, pp. 1-6.doi: 10.1109/UPCON.2018.8596899
6.	P. D. Singh and S. Gao, "An Isolated Hydro Power Generation using Parallel Asynchronous Generators at Variable Turbine Inputs using AC-DC-AC Converter," <i>2018 8th IEEE India International Conference on Power Electronics (IICPE)</i> , JAIPUR, India, 2018, pp. 1-6.doi: 10.1109/IICPE.2018.8709477
7.	P. Devachandra Singh, A. Sharma and S. Gao, "PWM Based AC-DC-AC Converter for an Isolated Hydro Power Generation with Variable Turbine Input," <i>2018 2nd International Conference on Power, Energy and Environment: Towards Smart Technology (ICEPE)</i> , Shillong, India, 2018, pp. 1-6. doi: 10.1109/EPETSG.2018.8659179
8.	Akhilesh Sharma, Deepak Singh and S. Gao , "Analysis of Selective Harmonic Elimination using Genetic Algorithm for Three Phase Cascaded Multilevel Inverter ,First international IEEE conference on sustainable Energy Technologies and system (ICSETS
9.	Deepak Singh, Akhilesh Sharma, PukhrambamDevachandra Singh and SarsingGao," Selective Harmonic Elimination for Cascaded three phase multilevel inverter", <i>2<sup>nd</sup> IEEE International conference on power Electronics, Intelligent Control and Energy systems (ICPEICES)</i> 22
10.	M. Deben Singh, R. K. Mehta, A. K. Singh, "CSC Based UPQC for Power Quality Enhancement using Integrated Fuzzy-PI Controllers" presented & published in the Conference Proceedings of "34 <sup>th</sup> National Convention of Electrical Engineers & National Seminar on Recent Advancement in High Voltage Direct Current (HVDC) Transmission"

	organized by The Institution of Engineers (India) Tripura State Centre in association with NIT Agartala & TSECL Tripura, pp. 98 - 108, November 2018.
11.	Comparative Performance Analysis for A MIMO System Based On Various Optimization Techniques, P Das, R. K. Mehta, O. P. Roy, IEEE Explore <a href="https://doi.org/10.1109/ICSENG.2018.8638205">10.1109/ICSENG.2018.8638205</a>
12.	A novel optimization technique for FOPI $\lambda$ D $\mu$ controller applied in MIMO system, P Das, R. K. Mehta, O. P. Roy, IEEE Explore, <a href="https://doi.org/10.1109/ICRCICN.2018.8718701">10.1109/ICRCICN.2018.8718701</a>
13.	Improved lighting system for emergency lighting driven by renewable energy, P Das, S. Hashunao, S. Mazumder, R. K. Mehta, O. P. Roy, AIP Proceedings, <a href="https://doi.org/10.1063/1.5049102">doi.org/10.1063/1.5049102</a>
14.	Das, Piyali and Chiphang, Ngahorza, Study of IoT Based Control Technologies for Lighting Control System (March 19, 2019). International Journal of Computational Intelligence & IoT, Vol. 2, No. 2, 2019. Available at SSRN: <a href="https://ssrn.com/abstract=3355510">https://ssrn.com/abstract=3355510</a>

(c) **Books:** Nil

#### 4.6.11 Interaction of faculty/department with outside agencies

- |                 |   |
|-----------------|---|
| Prof. S. Gao    | <ul style="list-style-type: none"> <li>▪ Reviewer, IEEE and IET Journals, IE (I)</li> <li>▪ 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.</li> <li>▪ Reviewer, IET Journals.</li> </ul> |
| Dr. A.K. Parida | <ul style="list-style-type: none"> <li>▪ Reviewer, IEEE Transactions.</li> <li>▪ Reviewer, Elsevier Journals.</li> <li>▪ Reviewer, T&amp;F Journals.</li> </ul>   |
| Ms. P. Das      | <ul style="list-style-type: none"> <li>▪ Reviewer IE (I) journals</li> </ul>  |

#### 4.6.12 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.

**4.6.13 Achievements of students**

Sl.No	Name	Roll No.	Company
1	Karson Lusi Tamin	D/15/EE/004	Infosys
2	Pema Sonam Bhutia	DE/15/EE/103	PowergridCorpn. of (I) Ltd
3	SangitaSaikia	D/15/EE/011	PowergridCorpn. of (I) Ltd
4	Romi Kino	D/15/EE/018	PowergridCorpn. of (I) Ltd
5	Sanjeev Kumar Soni	D/15/EE/101	PowergridCorpn. of (I) Ltd
6.	Abhishek Kumar	D/15/EE/108	PowergridCorpn. of (I) Ltd
7.	HeisnamJimbrown Singh	D/15/EE/014	Infosys
8.	AbhishekSanyal	D/15/EE/024	Infosys
9.	Ajay Upadhaya	D/15/EE/017	Fidelity National Financial
10.	Taken Nguri	D/15/EE/019	GATE SCORE
11.	Biswajit Changkakoty	D/15/EE/106	Fidelity National Financial
12.	Ronak Sahu	D/16/EE/209	Assam Electricity Grid Corporation Ltd

**4.6.14 Any other relevant information**

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

- Prof. R. K. Mehta is looking after Electrical Maintenance Cell, 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.
- Ms. P. Das is working as Warden, Girls Hostel, NERIST.
- Prof. S. Gao is working as Controller of Examination, NERIST.
- Dr. A.K. Parida has jointly supervised PhD thesis with Dr. Shibabrata Choudhury, Centre for Management Studies, NERIST.
- Mrs. S. Hashunao is working as Chairman, SC/ST Cell

## **4.7 DEPARTMENT OF MECHANICAL ENGINEERING:**

### **4.7.1 A Brief Profile of the Department**

Department of Mechanical Engineering came into existence as one of the core branch of engineering and started since the inception of the institute in 1986. The department offers Base, Diploma, Degree in Mechanical engineering. M.Tech. programme and Ph.D. programmes were started from 2006 onwards. The department is run by a mix of experienced as well as young motivated well-qualified faculty members (17) and experienced supporting staff (22) to generate human resources to cater the fast-growing industrial and academic need of the country. There are about 227 students including 36 research scholars, 23 M.Tech. students currently pursuing their studies at various levels. At present the department offers about 125 courses and nearly 30 student's project every year, all the modules combined. The departmental vision and mission is as follows:

#### **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.

### **4.7.2. Academic activities**

Apart from B.Tech. programme, the department runs two PG programmes (i) M. Tech in Computer Integrated Manufacturing Automation (CIMA) and (ii) M. Tech. in Thermal and Fluid Engineering as well as Ph.D programme. 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. Vocational Training is included as a part of the curriculum for certificate and degree modules.

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, SHRISTI etc. Students are also encouraged to participate in technical events organized by various other Institutions of India.

#### 4.7.3 Laboratories and Lab development

The department has initiated for establishment of new laboratories namely Composite lab, advanced manufacturing lab, etc. In addition the maintenance activities of different laboratories were carried out in order to upkeep lab and workshop equipments. The construction of Central workshop under ME department is under progress.

#### 4.7.4 Project completed by UG/PG/PhD Students.

(a) Ph.D. awarded / theses submitted

S. No	Name of the Scholar	Supervisor (s)	Status	Title
1	Santosh Kumar	Prof. M. Muralidhar	Awarded	Studies on ergonomic aspects of manufacturing assembly systems in Indian Industries
2	Santosh Kumar Tamang	Prof. M. Chandrasekaran	Awarded	Experimental Investigation and intelligence based optimization for sustainable machining of Inconel 825
3	K. K. Pathak	Prof. Asis Giri and Prof. P. Lingfa	Awarded	Laminar convective heat transfer from shrouded vertical variable height fin array
4	Dipanka Bhuyan	Prof. Asis Giri and Prof. P. Lingfa	Awarded	Study of film wise condensation from moist air inside a parallel plate channel
5	Mr. Santosh Kumar Dash	Prof. P. Lingfa	Submitted	Studies of biodiesel production from Nahar oil using Calcium and its utilization in CI engine

(b) M. Tech.

S.No	Name of Student	Supervisor(s)	Thesis Title
M. Tech (TFE)			
1	Mr. Amarendra Deka	Prof. P. Lingfa	Synthesis of biodiesel from Madhuca Indica oil by base catalyzed transesterification
2	Mr. Sydi Laskar	Prof. P. Lingfa	Optimization of process parameters in the extraction of biodiesel from neem oil



3	Mr. Yanglow Rangjang	Prof. P. Lingfa	Optimization of the production process of palm oil biodiesel and characterization of its blends
4	Mr. Mohmad Imran Ahmed	Prof. P. Lingfa	Production of an alternate fuel from waste plastics PE and PET plastic using pyrolysis with calcium hydroxide as catalyst
5	Ms. Barbi L.	Dr. S. Singh	Natural convection in a nano fluid filled square enclosure
6	Mr. Mehbub Alom Mollah	Prof. P. Lingfa	A feasibility study of production of bio diesel from castor oil
<b>M. Tech (CIMA)</b>			
7	Mr. Sapam Ningthemba Singh	Dr. N. Yadaiah	FE based three dimensional transient heat transfer analysis during a multi layer laser based additive manufacturing process
8	Mr. Radhe Novin	Dr. S. S. Gautam	Characterization of tapered hydrodynamic short journal bearing with fluid inertia
9	Mr. Clint T.C	Dr. S. Samanta	Study of the effect of major processing parameter of SLM in porosity and build rate of CP Ti and its statistical modelling
10	Miss Kritya Lata	Prof. M. Chandrasekaran	Experimental investigation of GMAW of AISI201 grade stainless steel
11	Mr. Bikram Singh	Dr. N. Yadaiah	Conduction based heat transfer analysis of dissimilar plate by gas metal arc welding process using FEM
12	Mr. Subrata Kushari	Dr. N. Yadaiah	Development of finite element based three dimensional transient heat transfer model during a single layer gas metal arc additive manufacturing process

NOTE: On 26<sup>th</sup> Academic Council meeting held on 19.05.2018 (AC. No. 26.10) M. Tech. specializations of ME department i.e., CIMA and TFE are renamed as Computer Integrated Manufacturing (CIM) and Thermal and Fluid Engineering (TFE) respectively.

(c) B. Tech.

S.No	Name of Student	Supervisor(s)	Thesis Title
1	Mr. Jadab Sonowal Mr. Madhurya Paul Mr. Anal bezborah	Prof. M. Chandrasekaran	Optimization of hard turning process of AISI 4340 steel

2	Mr. Siddartha De Mr. Pinku Kakati Mr. Saikat Das	Prof. S.Mahto	Parametric study of a beam subjected to moving load
3	Mr. T. Sidartha Singh Ms. Keisham Sushima Devi Mr. Justin Hijam	Prof. S.Mahto	Study of nonlinear dynamics of a two link compound pendulum
4	Mr. Priyam Dutta Mr. Aditya Sinha	Dr. S. Singh	Analysis of road hump geometry and vibration analysis of two wheeler at different velocities
5	Mr. Nishikanta Das Mr. Manish Pal Mr. Doroli Mongzar Mr. Satyam Roy	Dr. N. Yadaiah	Estimation and analysis of welding induced residual stresses during laser beam welding
6	Mr. Allandy B. Swer Mr. Roshan Sanyashi Mr. Latlungam Gonmei Mr. Kenyuhilo Kent	Dr. N. K. Rana	Fabrication of portable fish descaling machine
7	Mr. Samrat Choudhury Mr. Rahul Kumar Mr. Kanhaya Pandey	Mr. K. K. Mandal	Prediction of laser beam machining responses using artificial neural network
8	Mr. P. Manyao Konyak Mr. Laishram Santabir Khuman Mr. W. Wanglen Angomocha	Mr. N. Teyi	Design and fabrication of power generation system using footsteps (Mechanical Method)

**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

**4.7.5 Short term courses/ seminars/ workshops/ conferences attended by the faculty.**

<b>Mr. K. K. Mandal</b>	Attended STTP on "Thermodynamics," Period:12 <sup>th</sup> Nov. - 16 <sup>th</sup> Nov. 2018, NITTTR Kolkata
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**4.7.6 New Degrees/ Professional Memberships obtained by the faculty.**

<b>Prof. P. Lingfa</b>	Chief Editor, "THE GAMLE" (The Wisdom), 'Souvenir' released during Golden Jubilee Celebration of Government Higher Secondary School, Pampoli, District East Kameng, Seppa, Arunachal Pradesh: 790102 (India)
<b>Prof. P. Lingfa</b>	Regional Co-ordinator of Unnat Bharat Abhiyan (UBA), NERIST.

#### 4.7.7 Achievements/ awards/ recognition earned by the faculty:

1. **Prof. P. Lingfa** (2018), Reviewer of International Conference on "Recent Innovations and Developments in Mechanical Engineering", held 8-10<sup>th</sup> November 2018, organized by (Mechanical Engineering Department, NIT Meghalaya, Shillong (India).

#### 4.7.8 Projects sanctioned by outside agencies to the faculty of the department (April 2015 to March 2016) (Name 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

#### 4.7.9 Publications

##### (a) Journal papers published (40 Nos.)

1. Benjaman Das, **Yadaiah N**, Rupshree Ozah, Sohini Chowdhury, Mandal AK and **Muralidhar M.**, A perspective review on estimation of keyhole profile during plasma arc welding process, **Int. Jr. Materials Today proceedings**, 5 (2018) 6345–6350.
2. Sohini Chowdhury, **Yadaiah N**, Khan S.M., Rupshree Ozah, Benjaman Das and **Muralidhar M.**, Perspective review on experimental investigation and numerical modeling of electron beam welding process, **Int. Jr. Material Today proceedings**, 5 (2018) 4811–4817.
3. Kumar Santosh and **Muralidhar M**, CTS estimation in shock absorber assembly workforce in Indian automobile industry: a study, **15<sup>th</sup> Int. conf. on Humanizing work and work environment**, submitted to International Jr. published in Jan 2019.
4. Rupshree Ozah, and **Manapuram Muralidhar**, "Development of Casting Genome for Automotive Piston Casting: A Study, submitted to **International Foundry Trade Journal**, November 2018.
5. Sohini Chowdhury, **Yadaiah Nirsanametla**, and **Manapuram Muralidhar**, Finite element based transient heat transfer analysis of Ti2AlNb electron beam welds using hybrid volumetric heat source, **Indian Welding Journal**, October 2018, vol 51, No. 4, India, pp73-80.
6. S.Chowdhury, **N.Yadaiah**, **M.Muralidhar**, S.Bag, S.K.Patra, Influence of weld parameters on weld regime and vaporisation rate in electron beam welding of Ti6Al4V alloy, **Jr. of Brazilian Society of Mechanical Science & Engineering**, accepted in 2018 and published in March 2019,4:180.
7. Santosh Kumar and **Muralidhar M**, Studies on Ergonomic Aspects of Shock absorber Manufacturing Assembly Systems in Indian Industries, **European Journal of Industrial Engineering**, March 2018 (under review).

8. Rupshree Ozah, and **Manapuram Muralidhar**, Development of Methods for Machine Intelligence Quotient Measurement for Piston Casting by Die Casting Machines: A Study, submitted to scopus journal, **2019**.(pipeline).
9. Mahanta, S., **Chandrasekaran, M., Samanta, S.**, Arunachalam, R. M., **2018**. EDM investigation of Al 7075 alloy reinforced with B<sub>4</sub>C and fly ash nanoparticles and parametric optimization for sustainable production. **J Braz. Soc. Mech. Sci. Eng.**40, 263. <https://doi.org/10.1007/s40430-018-1191-8>
10. Kumar, KM. S., Thirumalai, R., Senthilkumar, J.S. **Chandrasekharan, M., 2018**. Experimental investigation of process parameters during environmental friendly turning process. **Eco. Env. & Cons.**, 24, S431-S436.
11. Devarasiddappa, D., **Chandrasekaran, M.**, 2018. Evaluation of power consumption and MRR in WEDM of Ti-6Al-4V alloy and its simultaneous optimization for sustainable production. *J Braz. Soc. Mech. Sci. Eng.*, 40,400. DOI: [//doi.org/10.1007/s40430-018-1318-y](https://doi.org/10.1007/s40430-018-1318-y).
12. Tamang, S. K., **Chandrasekaran, M.**, Sahoo, A. K., **2018**. Sustainable machining: an experimental investigation and optimization of machining Inconel 825 with dry and MQL approach. **J Braz. Soc. Mech. Sci. Eng.**, 40,374. DOI: [//10.1007/s40430-018-1294-2](https://doi.org/10.1007/s40430-018-1294-2).
13. Das, S., **Chandrasekaran, M., Samanta, S.**, Palanikumar, K., Davim, J. P., **2018**. Fabrication and tribological study of AA6061 hybrid metal matrix composites reinforced with SiC/B<sub>4</sub>C nanoparticles. **Ind. Lub. & Trib.**, *71, 1*, DOI: [//doi.org/10.1108/ILT-05-2018-0166](https://doi.org/10.1108/ILT-05-2018-0166).
14. Devarasiddappa, D., **Chandrasekaran, M.**, Sambandam, M. T., **2018**. Multi Performance Optimization in Wire cut EDM of Inconel 825 using Desirability Function coupled with Analytical Hierarchy Process. **Mat. Tdy. : Proc.**, 5, 11531-11547. DOI: [//doi.org/10.1016/j.matpr.2018.02.121](https://doi.org/10.1016/j.matpr.2018.02.121)
15. Das, S., **Chandrasekaran, M., Samanta, S.**, **2018**. Comparison of Mechanical properties of AA6061 reinforced with (SiC/B<sub>4</sub>C) micro/nano ceramic particle reinforcements, **Mat. Tdy. : Proc.**, 5, 18110-18119. DOI: <https://doi.org/10.1016/j.matpr.2018.06.146>
16. Mahanta.S, **Chandrasekaran.M, Samanta.S.**, Arunachalam. R. M (**2018**), “EDM investigation of Al 7075 alloy reinforced with B<sub>4</sub>C and fly ash nanoparticles and parametric optimization for sustainable production,” *J Braz. Soc. Mech. Sci. Eng.*, Vol. 40, 263.(SCI = 1.63 IF)(DOI: [org/10.1007/s40430-018-1191-8](https://doi.org/10.1007/s40430-018-1191-8)) (UGC Journal Number:10932).
17. S. K. Dash, **P. Lingfa** and S. B. Chavan (**2018**), "An experimental investigation of the application potential of nahar biodiesel and its diesel blends as diesel engine fuels," **Energy Sources, Part A: Recovery, Utilization and Environmental Effects** (Taylor & Francis), (SCI - 0.555 IF), (DOI: [10.1080/15567036.2018.1514433](https://doi.org/10.1080/15567036.2018.1514433)) (UGC Journal Number: 19581)
18. S. K. Dash and **P. Lingfa** (**2018**), "Performance evaluation of nahar oil diesel blends in a single cylinder direct injection diesel engine," **International Journal of Green Energy** (SCOPUS), Vol. 15, 400-405 (DOI: [org/10.1080/15435075.1464926](https://doi.org/10.1080/15435075.1464926)) (UGC Journal Number: 22846)
19. D. Bhuyan, **A. Giri, P. Lingfa** (**2018**), "Entropy analysis of mixed convection condensation by evaluating fan velocity with a new approach," **Journal of Thermal Science and Engineering Applications** (ASME), (SCI- 0.81 IF), Vol. 10, 051003 (DOI: [10.1115/14039355](https://doi.org/10.1115/14039355)) (UGC Journal Number: 11385)
20. **P. Lingfa** (**2018**), L.M. Das, S.N.Naik, “Study of Engine Performance and Exhaust Emissions on Multi-Cylinder Turbo-Charged Diesel Engine Operated with B5 Biodiesel Blend” Open Science Index, **International Journal of Agricultural and Biosystems Engineering**, Vol:12, No.8, **2018**.
21. Sahu S.K, Badgayan N.D, **Samanta S**, Sreekanth P.S R. (**2018**), “Quasistatic and dynamic nanomechanical properties of HDPE reinforced with 0/1/2 dimensional carbon nano fillers based

- hybrid”, **Journal of Materials Chemistry and Physics**, ELSEVIER, Vol.203, 173-184, (DOI: [org/10.1016/j.matchemphys.2017.09.063](https://doi.org/10.1016/j.matchemphys.2017.09.063)), (SCI = 2.296 IF)
22. Badgayan N. D., Sahu S. K, **Samanta S.**, Sreekanth P.S. R. (2018), “Assessment of nanoscopic dynamic mechanical properties and B-C-N triad effect of MWCNT/h-BNNP nanofillers reinforced HDPE hybrid composite using oscillatory nano indentation: An insight into medical applications,” **Journal of the Mechanical Behavior of Biomedical materials** (ELSEVIER), Vol. 80, 180-188.(DOI: [org/10.1016/j.jmbbm.2018.01.027](https://doi.org/10.1016/j.jmbbm.2018.01.027))
  23. Badgayan N.D, Sahu S.K, **Samanta S**, Sreekanth P.S.R (2018), “Assessment of bulk mechanical properties of HDPE Hybrid composite filled with 1D/2D nanofiller system”, **Materials Science Forum, Trans TECH Publications**, Switzerland, Vol.917, 12-16, DOI:10.4028/www.scintific.net/MSF.917.12
  24. Sahu S.K, Badgayan N.D, **Samanta S**, Sreekanth P.S.R (2018), “ Dynamic Mechanical Thermal Analysis of High Density Polyethylene reinforced with nanodiamond, Carbon Nanotube and Graphite Nanoplatelet”, **Materials Science Forum, Trans TECH Publications**, Switzerland, Vol.917, 27-31 DOI:10.4028/www.scintific.net/MSF.917.27
  25. Chetia P, **Samanta S**, Singh T.J (2018), “Parametric optimization in Drilling of Bamboo/Basalt Hybrid Composite”, **Materials today :proceedings**, ELSEVIER, Vol.5, 5544-5552. DOI: <https://doi.org/10.1016/j.matpr.2017.12.145>
  26. Das S, Vaiphei S.K.L, **Chandrasekaran M, Samanta S (2018)**, “Wire cut of Al6061 hybrid Nano Composites: Experimental Investigations and RSM modeling of surface roughness”, **Materials Today :Proceedings**, ELSEVIER, Vol.5, 8206-8215. DOI: [org/10.1016/j.matpr.2017.11.510](https://doi.org/10.1016/j.matpr.2017.11.510).
  27. Das S, **Chandrasekaran M, Samanta S (2018)**, “Comparison of Mechanical properties of AA6061 reinforced with (SiC/B<sub>4</sub>C) micro/nano ceramic particle reinforcements”, **Materials today :proceedings**, Vol.5, 18110-18119. DOI: <https://doi.org/10.1016/j.matpr.2018.06.146>
  28. Sahu S.K, Badgayan N.D, **Samanta S.**, Sahu D, Sreekanth P.S.R (2018), “ Influence of cell size on out of plane stiffness and in-plane compliance character of the sandwich beam made with tunable PCTPE nylon honeycomb core and hybrid polymer nanocomposite skin”, **International journal of Mechanical Sciences**, ELSEVIER, Vol.148, 284-292. DOI:<http://doi.org/10.1016/j.ijmecsci.2018.08.011>.
  29. **Sandeep Singh** and Rajiv Tiwari, Model based identification of crack and bearing dynamic parameters in flexible rotor systems supported with an auxiliary active magnetic bearing, **Mechanism and Machine Theory** 122(2018) 292-307.
  30. B. Nayak, R. K. Das, **S. S. Gautam** (2018), “Vibration performances of MRE embedded sandwich beam: experimental study,” *Vibroengineering Procedia*(Scopus). Vol. 21, 20-25.(DOI: [doi.org/10.21595/vp.2018.20383](https://doi.org/10.21595/vp.2018.20383)).
  31. S. Das, A. Madheshiya, **S. S. Gautam**, C. R. Gautam, D. Tripathy (2019), “Electrical characteristics of PbO-CaO-TiO<sub>2</sub>-SiO<sub>2</sub>-B<sub>2</sub>O<sub>3</sub> glass ceramics doped with germanium,” **Journal of Materials Science: Materials in Electronics**(Springer, SCI,2.324 Impact Factor), Vol. 30, 3, 2431-2441. (DOI: [org/10.1007/s10854-018-0516-9](https://doi.org/10.1007/s10854-018-0516-9)).
  32. S. Das, A. Madheshiya, M. Ghosh, K. K. Dey, **S. S. Gautam**, J. Singh, R. Mishra, C. R. Gautam (2019), “Structural, optical, and nuclear magnetic resonance studies of V<sub>2</sub>O<sub>5</sub> doped lead calcium titanate borosilicate glasses,” **Journal of Physics and Chemistry of Solids**(Elsevier, SCI,2.207 Impact Factor), Vol. 126, 17 - 26. (DOI: [org/10.1016/j.jpcs.2018.10.030](https://doi.org/10.1016/j.jpcs.2018.10.030)).
  33. S. Das, **S. S. Gautam**, C. R. Gautam (2018), “Mechanical and tribological characterization of lead calcium titanate borosilicate glass ceramic doped with ferric oxide,” **Materials Today: Proceedings** (Elsevier, Scopus), Vol. 5, 17746 – 52.(DOI: [10.1016/j.matpr.2018.06.098](https://doi.org/10.1016/j.matpr.2018.06.098)).



34. S. Das, C. W. Manpoong, **S. S. Gautam**, A. Madheshiya, C. R. Gautam (2018), "Tribological study of strontium bismuth titanate borosilicate glass ceramics," **Materials Today: Proceedings** (Elsevier, Scopus), Vol. 5, 20306 – 13.(DOI: 10.1016/j.matpr.2018.06.403).
35. **S. K. Tamang**, **M. Chandrasekaran**, K. Palanikumar, R. Arunachalam (2019), "Machining performance optimization of MQL– assisted turning of Inconel-825 superalloy using GA for industrial applications", **Int. J. Mach. and Machinability of Mater.** Vol. 21(2), pp. 43–65. DOI: <https://doi.org/10.1504/IJMMM.2019.098066>. (SCIE; Impact factor : 0.46) (UGC Journal No: 23062)
36. S. Das, **S. K. Tamang**, **M. Chandrasekaran**, **S. Samanta** (2019), "Experimental Investigation, Modeling and Optimization of Tribological Parameters of AA6061/SiC/B4C Hybrid Nano Composites", **Key Eng. Mater.**, Vol. 801, pp.83–88. DOI: <https://doi.org/10.4028/www.scientific.net/KEM.801.83>. (Scopus) (UGC Journal No: 6509)
37. **S. K. Tamang**, **M. Chandrasekaran**, A. K. Sahoo (2018), "Sustainable machining: an experimental investigation and optimization of machining Inconel 825 with dry and MQL approach", **J. Braz. Soc. Mech. Sci. & Eng.** Vol. 40(8), pp. 374–391. DOI: <https://doi.org/10.1007/s40430-018-1294-2>, (SCIE; Impact factor : 1.63) (UGC Journal No: 10932)
38. G. Gangmei, M. Chawang, M., **S. K. Tamang**, **M. Chandrasekaran** (2018), "Fuzzy set based optimization for Grinding Al/SiC MMC; an approach to maximize *MRR* satisfying desired surface roughness", **Int. J. Modern Manuf. Technol.**, Vol. 10(1), pp.43–49.(Scopus) (UGC Journal No: 23176)
39. **K. K Mandal**, A. S. Kuar, S. Mitra (2018), "Experimental investigation on laser micro-machining of Al 7075 Alloy," **Optics and Laser Technology** (ELSEVIER), Vol.107, 260–267 (DOI: [org/10.1016/j.optlastec.2018.05.017](https://doi.org/10.1016/j.optlastec.2018.05.017)) (UGC Journal Number: 36516)
40. **Dabi M**, Saha UK. Application potential of vegetable oils as alternative to diesel fuels in compression ignition engines: A review. **Journal of the Energy Institute** 2019; <https://doi.org/10.1016/j.joei.2019.01.003>

#### (b) Conference papers published (26 Nos.)

1. **Manapuram Muralidhar** and Rupshree Ozah, Fifty Years of World Casting Production Censuses and Analysis of Casting value Indices: A Study” **67<sup>th</sup> Indian Foundry Congress**, Noida, November **2018**.(presented in January 18-20, 2019).
2. Rupshree Ozah and **Muralidhar M**, Development of Methods for Machine Intelligent Quotient measurement for Piston Casting by Die Casting Machines : A Study, accepted for presentation in **ICMCM-2019**, IIT, Guwahati.(presented in March **2019**)
3. Sapam Ningthemba Singh, Sohini Chowdhury, **Md. S Mujaheed Khan**, **Manapuram Muralidhar** and **Yadaiah Nirsanametla**, Finite Element based Heat Transfer Analysis of Laser Additive Manufacturing on Ti-6Al-4V-Alloy, **ICMCM-2019**, IIT,Guwahati, India. (presented in March **2019**)
4. Sohini Chowdhury, **Yadaiah Nirsanametla**, and **Manapuram Muralidhar**, Investigation on Metallographic Analysis of Electron Beam Ti6Al4V Alloy Welds, **ICMCM 2019**, IIT, Guwahati, India. (presented in March **2019**)

5. Rupshree Ozah, and **Manapuram Muralidhar**, “Development of Casting Genome for Automotive Piston Casting: A Study, **73<sup>rd</sup> World Foundry Congress**, Poland, Sept 2018, 73 WFC, Poland, Sept. **2018**.
6. Sohini Chowdhury, **Yadaiah Nirsanametla**, and **Manapuram Muralidhar**, Investigation on Analysis of Electron Beam Ti6Al4V Alloy Welds, **ICMCM 2019**, IIT, Guwahati, India. (presented in March **2019**)
7. Rupshree Ozah, **N Yadaiah** and **Manapuram Muralidhar**, Casting Process Selection by Analytical Hierarchy process for Hybrid Engine, published in **67<sup>th</sup> IFC and 15<sup>th</sup> AFC**, January 2019, Noida, India.(presented in Jan. **2019**)
8. Das, S., **Chandrasekaran, M., Samanta, S., 2018**. Experimental investigation, modeling and optimization of tribological parameters of Al6061 (SiC/B<sub>4</sub>C) Hybrid Nano Composites. Published in the proceedings of **2<sup>nd</sup>International Conference on Advancements in Aeromechanical Materials for Manufacturing (ICAAMM 2018)**, Hyderabad, 13<sup>th</sup> -14<sup>th</sup> July 2018.
9. Das, S., **Chandrasekaran, M., Samanta, S., 2018**. Tribological investigation of Al6061/SiC/B<sub>4</sub>C hybrid nano metal matrix composites and its predictive model using fuzzy logic. Published in the proceedings of **4<sup>th</sup> International Conference on Industrial Engineering (ICIE)**, December 21-23, 2017, SVNIT, Surat, India.
10. Devarasiddappa, D., **Chandrasekaran, M., 2018**. PCA-GRA Integrated Multi Response Optimization of Wire-Cut EDM of Ti-6Al-4V Alloy for Sustainable Production, Presented in the **International Conference on Recent Innovations and Developments in Mechanical Engineering (IC-RIDME18)**, NIT Meghalaya, Shillong, India, Nov 8-10, 2018. The paper was conferred with the Best Oral Presentation Award in the IC-RIDME18.
11. Sarma, D., **Chandrasekaran, M., 2018**. Application of energy efficient machining for sustainable production of component: a state of the art. Presented in **National Conference on Energy, Ecology and Environment (NCEEE18)**, 2-3, Aug 2018, Bannari Amman Institute of Technology, Sathiyamangalam, Tamilnadu.
12. Devarasiddappa, D., **Chandrasekaran, M., Sambandam, M. T., 2018**. Taguchi Analysis of Power Consumption in Wire-Electrical Discharge Machining of Ti-6Al-4V Alloy for Sustainable Production. Presented in **National Conference on Energy, Ecology and Environment (NCEEE18)**, 2-3, Aug 2018, Bannari Amman Institute of Technology, Sathiyamangalam, Tamilnadu.
13. Singh, V., **Chandrasekaran, M., Samanta, S., 2018**. Modelling and optimization Gas metal arc welding of nitrogen strengthened austenitic stainless steel (AISI 201Gr). Presented in the **International Conference on Recent Innovations and Developments in Mechanical Engineering (IC-RIDME18)**, NIT Meghalaya, Shillong, India, Nov 8-10, 2018.
14. Sarma D., Sonowal, J., Paul, M., Bezbaruah, A., **Chandrasekaran, M., Sahoo, A. K., 2018**. Hard turning investigation of AISI 4340 steel and multi response optimization. Presented in the **International Conference on Recent Innovations and Developments in Mechanical Engineering (IC-RIDME18)**, NIT Meghalaya, Shillong, India, Nov 8-10, 2018.

15. N. P. Hina, **P. Lingfa (2018)**, "Isolation, biomass estimation and characterization of the biofuel potential of diatom *navicula sphaerophora*," **AIP Conference Proceedings** (DOI: org/10.1063/1.5032022)
16. S. K Dash, **P. Lingfa (2018)**, "An overview of biodiesel production and its utilization in diesel engines," **IOP Conference Series: Materials Science and Engineering**, Vol. 377, 012006, (DOI: 10.1088/1757-899X/377/1/012006)
17. Awinash kumar, **P.Lingfa (2018)**, "An Exploration of waste plastic oil and different hydrocarbon fuels derived from plastic wastes" **International conference on renewable and alternate energy (ICRAE-2018)**", during 4-6 December, 2018 at Assam Science and Technology University, Guwahati, Assam, India.
18. Awinash Kumar, **P.Lingfa (2018)**, S.K. Dash, M. S. Ahmed, "Study on conversion techniques of alternative fuels from waste plastics" **8<sup>th</sup> International conference on sustainable waste management (IconSWM-2018)**, during 22-24 Nov.,2018, at Acharya nagarjuna University, Andhra Pradesh, India.
19. Santosh K.Dash, **P.Lingfa(2018)**, M.S. Ahmed, " Jathropa Biodiesel Blends as Renewable Diesel Fuel Additives", **8<sup>th</sup> International conference on sustainable waste management (IconSWM-2018)**, during 22-24 Nov.,2018, at Acharya nagarjuna University, Andhra Pradesh, India.
20. M. S. Ahmed, **P.Lingfa (2018)**, A.Kumar, S.K. Dash, " A critical Review on the Production of Biodiesel from Jatropa, Karanja and Castor Feedstocks", **8<sup>th</sup> International conference on sustainable waste management (IconSWM-2018)**, during 22-24 Nov.,2018, at Acharya nagarjuna University, Andhra Pradesh, India.
21. **P. Lingfa (2019)**, " Biofuel as a renewable source of energy", **International conference on materials Engineering & Characterization (ICMECH-2019)**, During 8-9 May,2019. Adhi college of Engineering and Technology, Chennai, India.
22. **P. Lingfa (2018)**, "Biofuels and its potentials towards its greener & safer future", **2<sup>nd</sup> International conference Biofuel & Bio energy**, during 27-28 March, **2018**, France.
23. Hemanta Doley, **Sandeep Singh** and **Nabam Teyi**, Design and Development of apparatus for evaluating Galling Resistance Test, **International Conference on Mechanical Manufacturing and Plant Engineering**, Nov' 14-15, **2018**, Melaka, Malaysia.
24. **Nabam Teyi** and **Sandeep Singh**, "Handling Phase Ambiguity in Full Spectrum from FFT," **International Conference on Mechanical Manufacturing and Plant Engineering**, Nov' 14-15, **2018**, Melaka, Malaysia.
25. **S. Samanta**, Effect of Kevlar hybridization on dry sliding friction and wear behaviour of bamboo/epoxy composites, **4<sup>th</sup> International Conference on Composite materials and material engineering (ICCMME2019)** held at Science university, Tokyo, Japan, 19-22<sup>nd</sup> January' **2019**.
26. **S. Samanta**, RSM modeling and Taguchi of EDM of B<sub>4</sub>C and flyash reinforced hybrid nano composites, **4<sup>th</sup> International Conference on Composite materials and material engineering (ICCMME2019)**, held at Science university,Tokyo,Japan, 19-22<sup>nd</sup> January' **2019**.



**(c) Book/ Book Chapters (02 Nos.)**

1. S. K. Dash and **P. Lingfa** (2018), “Production of biodiesel from high FFA non-edible nahar oil and optimization of yield,” *Lecture notes on Multidisciplinary Industrial Engineering* (SCOPUS), Springer International Publishing, (DOI: org/10.1007/978-3-319-76276-0-47).
2. A. Kumar, **P.Lingfa**, S.K. Das, M. S. Ahmed” Study on conversion techniques of alternative fuels from waste plastics “ (Accepted, To be publish, SPRINGER, nature).

**(d) Publications in magazines (01 No)**

1.	<b>Prof. P. Lingfa</b> (2018) published an article on “Research and Development in pursuits in the area of Biodiesel at NERIST” in Mechanical Association of NERIST magazine.

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

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), Raja Ramanna Centre for Advanced Technology, Indore (N. Yadaiah) and Hindustan Aeronautics Limited, Koraput, Odisha (N. Yadaiah).

**4.7.11 Consultancy projects undertaken (Agencies, title of the consultancy project, amount, faculty and staff associated)**

NIL

**4.7.12 Achievements of students**

One UG student, Mr. Sudhansu Kumar of B.Tech Final year qualified in GATE 2019. Some of the passed out students of year 2018 got admission in reputed institutions like IITs, NITs and other institutions. Students have also been sending to other premier institutions such as IITs for summer internship training and for conducting experiments for their project work. The placement record of the students is as follows

**Placement Record**

Sl. No.	Name	Roll No.	Company	Date Of Interview	Post Offered
1	Monoj Kanti Chakrabary	D/15/ME/05	Tata Projects	10/11 December	Graduate Er. Trainee
2	Harsh Kumar	D/15/ME/04	Tata Projects	10/11 December	Graduate Er. Trainee
3	Ashish Kumar Patra	D/15/ME/101	Infosys	7 <sup>th</sup> /8 <sup>th</sup> March	System Engineer
4	Rounak Bose	D/15/ME/006	Infosys	7 <sup>th</sup> /8 <sup>th</sup> March	System Engineer
5	Sabita Roy	D/15/ME/023	Infosys	7 <sup>th</sup> /8 <sup>th</sup> March	System Engineer
6	Sudhansu Kumar	D/15/ME/010	Infosys	7 <sup>th</sup> /8 <sup>th</sup> March	System Engineer
7	Taru Yallu	D/15/ME/022	Fidelity	18 <sup>th</sup> March	Process Analyst
8	Diken Sharma	D/15/ME/202	Fidelity	18 <sup>th</sup> March	Process Analyst
9	Chandan Kumar	D/15/ME/205	Fidelity	18 <sup>th</sup> March	Process Analyst
10	Pratishtha Gautma Sharma	D/15/ME/030	Fidelity	18 <sup>th</sup> March	Process Analyst
11	Arun Jyoti Kalita	D/15/ME/007	Cognizant	13 <sup>th</sup> /14 <sup>th</sup> April	-
12	PR Pranab Tripathy	D/15/ME/011	Cognizant	13 <sup>th</sup> /14 <sup>th</sup> April	-
13	Jintu Borah	D/15/ME/206	OIL	6 May	Sr. Engineer
14	K. Siddhartha Singh	D/15/ME/103	OIL	6 May	Sr. Engineer

**4.7.13 Any other relevant information**

<b>Prof. P. Lingfa</b>	<ul style="list-style-type: none"> <li>Presented paper titled "Biodiesel as a partial substitute for mineral diesel in compression ignition engines", during 2<sup>nd</sup> International Conference 'Biofuel &amp; Bio-energy', during 27-28 March, 2019, France.</li> <li>Session Chairing and Moderator during 2<sup>nd</sup> International Conference 'Biofuel &amp; Bio-energy', during 27-28 March, 2018, France.</li> <li>Delivered an invited talk on "Importance of Biodiesel," at Doyni Polo Vidya Bhawan, 10<sup>th</sup> August, 2018.</li> </ul>
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	<ul style="list-style-type: none"> <li>• Delivered a lecture on “Life cycle reliability study of energy crops”, during 22-23 April, 2019, International workshop on life cycle reliability of energy systems (IWLRES-2019) Kanziranga University, Assam, India</li> <li>• Presented a paper titled “Biofuels and its potentials towards its greener &amp; safer future”, in the 2<sup>nd</sup> International Conference 'Biofuel &amp; Bio-energy', during 27-28 March, 2019, France.</li> <li>• Presented a paper titled "Development of East Kameng District: Challenges and Prospects", during one day State Level Seminar on the “Process of Development in Arunachal Pradesh: Problems and Prospects (With Special Reference to East Kameng District)” on 28th of September, 2018 at Govt. College Seppa, District East Kameng Arunachal Pradesh-790102, India</li> </ul>
<b>Dr. S. Singh</b>	<ul style="list-style-type: none"> <li>• Delivered lecture as an expert to mentor the school students short listed after the State Level Exhibition &amp; Project Completion (SLEPC) of Arunachal Pradesh, organized under INSPIRE MANAK scheme of Department of Science and Technology, Government of India, and facilitated by the National Innovation Foundation - India (NIF) on 30<sup>th</sup> November 2018 at NERIST.</li> <li>• Participated in Inspire Manak Awards at IIT Delhi on 14<sup>th</sup> and 15 February, 2019 as a Jury member for selection of best innovation from across the country.</li> </ul>
<b>Mr. N. Teyi</b>	<ul style="list-style-type: none"> <li>• Presented a research paper titled " Design &amp; Development of Apparatus for Evaluating Galling Resistance Test" in 4<sup>th</sup> International Conference on Mechanical Manufacturing and Plant Engineering, Nov' 14-15, 2018, Melaka, Malaysia.</li> <li>• Delivered as an expert to mentor the school students short listed after the State Level Exhibition &amp; Project Completion (SLEPC) of Arunachal Pradesh, organized under INSPIRE MANAK scheme of Department of Science and Technology, Government of India, and facilitated by the National Innovation Foundation - India (NIF) on 30<sup>th</sup> November 2018 at NERIST</li> </ul>
<b>Dr. S.K. Tamang</b>	<ul style="list-style-type: none"> <li>• Presented a research paper titled "Experimental Investigation, Modeling and Optimization of Tribological Parameters of AA6061/SiC/B4C Hybrid Nano Composites" in 4<sup>th</sup> ICCMME 2019, Nov' 19-21, 2019, Tokyo, Japan.</li> <li>• Delivered as an expert to mentor the school students short listed after the State Level Exhibition &amp; Project Completion (SLEPC) of Arunachal Pradesh, organized under INSPIRE MANAK scheme of Department of Science and Technology, Government of India, and facilitated by the National Innovation Foundation - India (NIF) on 30<sup>th</sup> November 2018 at NERIST.</li> </ul>

### Appendix A: List of laboratories and equipments

Sl. No.	Name of the laboratory	Major Equipment
1	Gas Dynamics	Wind Tunnel, Air Flow rig, Smoke tunnel, Nozzle testing apparatus, compressor, Three component balance, Data acquisition system

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2	HMT Lab	Multi-purpose air duct, fluidized bed apparatus conductivity apparatus, convection and radiation apparatus, computer linked boiling apparatus
3	Thermal Engg.	Air compressor test rig, Two-shaft gas turbine, Fire and Flash point apparatus, cloud point apparatus, Bomb calorimeter, Viscosity apparatus, etc.
4	Fluid power and Automation	Centrifugal, gear & reciprocating pumps, Pelton wheel, Meta centric height apparatus, Pipe friction, Francis turbine, Hydraulic trainer, PLC trainer, etc
5	I.C Engines	Two strokes and four stroke diesel engines test rig, engine cut section model,5-gas analyzer, smoke meter, temperature synergy, etc
6	Biodiesel	Integrated Biodiesel Reactor System (consists of mechanical oil expeller, decorticator, baby bath boiler and oil filtering unit), magnetic oil stirrer, 1-litre capacity biodiesel reactor, Gas chromatograph(GC), bomb calorimeter, Centrifuge, flash and fire point apparatus, cloud, pour point apparatus, Setavis viscometer
7	R &A/C	Computer linked ref. unit, Computer linked A/C unit, vapor compression R & A/C unit, Heat pump, Mini cold storage, Ice plant, Refrigerator, cut section models, etc
8	Dynamics and Kinematics	Universal vibration testing operators, CAM analysis machine, Reciprocating and Rotating mass balancing units, Gyroscope, Governor apparatus, function generator, digital oscilloscope, acoustic insulation test apparatus with amplifier, etc.
9	Strength of Material	UTM, Torsion testing unit, Impact testing unit, fatigue testing unit, hardness tester, etc
10	Tribology	Hertzian, Contact apparatus, Air bearing apparatus, Multi-purpose friction and wear tester
11	CIM and Robotics	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 and holder adaptors, SCARA robot, etc
12	Computer Lab &CFD	PC , related peripherals, printers and softwares

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13	Metrology and Material Science	Measuring instrument, Microscope, Pit furnace, profile projector, polishing machine
14	Seminar Hall	LCD projector, Smart class room system and PA system
15	Workshops	Different workshops such as carpentry & pattern shop, machine and maintenance shop, fitting shop, welding shop, forging & foundry shop and sheet metal shop with various equipments/machineries, hand tools and measuring instruments.

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## 4.8 DEPARTMENT OF CHEMISTRY

### 4.8.1 A Brief Profile of the Department

The Department offers courses for Under-Graduate levels (Base/ Diploma/ Degree module) of Engineering & Technology streams. The Department also offers courses for Degree module of Forestry stream. The department has started M Sc programme since the academic session, 2009-10. Initially the department was offering only Organic Chemistry specialization in M Sc. We started offering Inorganic Chemistry specialization also since the academic session, 2015-16. Consequently, the 2015-16 Batch of M Sc students were able to take Inorganic chemistry specialization also since Jul-Dec, 2016 semester. Admission process for 10<sup>th</sup> batch in M. Sc (Chemistry) was completed in July, 2018 through the Written Test conducted by the Department. Admission Test for Ph D programme was also conducted in July, 2018. 10 M Sc and 03 Ph D students were admitted in 2018.

Contributions of the faculty members in the Institute administration are given below:

1. Prof. H. S. Yadav joined is the Director, NERIST, Nirjuli, Arunachal Pradesh w.e.f. 06 March, 2018. He is a member of BoS of Chemistry Department.
2. Prof. P. K. Tripathy is a member of AC of the Institute. He is a member of BoS and DPGC of Chemistry Department.
3. Prof M F Hussain is the member of BoS of Chemistry Department. He is a member of AC of the Institute.
4. Prof N Deb is a member of BoS and DPGC of Chemistry Department. He is amember of NEPGET of the Institute. He is a member of AC of the Institute.
5. Dr. J. Bhuyan is looking after the Central Research Facility (CRF) as Coordinator in this period and still continuing. He is the convenor, DPGC, of Chemistry Department. He is the Departmental Coordinator, automation, and NEE Committee.
6. Prof A K Gupta has taken the charge of Head, Department of Chemistry, from 24.04.2018. He is also a member of BoS of Chemistry Department. He is the Chairman, DPGC, of Chemistry Department.
7. Dr M Yadav is a member of BoS of Chemistry Department. She is the departmental Coordinator, NBA, TEQIP-I & II, Departmental representative, Member, Committee for Internal Complaint Committee under Sexual Harrassment of Women at Workplace Act 2013 and Member of Parent Teacher Association of KV, NERIST.
8. Dr S L Bharati is a member of BoS of Chemistry Department.

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

1. Dr. Meera Yadav is the Laboratory in-charge of Chemistry Lab-II
2. Dr. J. Bhuyan is the Laboratory in-charge of PG Lab-I & Instrumentation Lab.
3. Dr. N. N. Yadav is the Laboratory in-charge of PG Lab-II
4. Dr A. Murugan is the Laboratory in-charge of PG Lab-III
5. Dr. S.L. Bharati is the Library in-charge of the department, and the departmental representative to the Central Library, NERIST

#### 4.8.2 Academic activities:

The revised courses of UG, PG and Ph D courses (approved by the fourth Board of Studies held on 23.03.2017) have been implemented from academic session, 2017-18. The DPGC of the department looks after various activities of the students of M Sc and Ph D Courses. The various DC committees of the research scholars have been constituted to look after the progress of the work of the Ph D students. 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 conducted as per schedule and the results submitted to the Controller of examination.

#### 4.8.3 Laboratories and Laboratory Development:

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

- i) Digital Conductivity meters
- ii) Polarimeters
- iii) Digital pH meters
- iv) Differential Scanning Calorimeter (DSC)
- v) Rotary evaporator
- vi) Melting Point apparatus
- vii) Digital Magnetic Stirrer with hot plate
- viii) Quartz Bi-Distillation
- ix) Variable volume micropipette
- x) Analytical balance

#### 4.8.4 Projects completed by the UG/PG/Ph D students:

The presentation of the following project reports were conducted on 18.05.2018 for the M.Sc Final year (PG) students before the Committee constituted for the purpose.

Sl No.	Title of Project	Roll No.	Name of the Student	Supervisor
01	Peroxidase from <i>Cucumis sativus</i> Bio-Catalyst	MS/16/CY/01	Miss Jarpi Kayi	Prof S Yadav
02	Activation of Quinolines/Isoquinolines for the synthesis of various Dihydroquinoline/Isoquinoline derivatives	MS/16/CY/02	Mr Hannanuddin	Dr N N Yadav

03	A novel stereospecific and regiospecific conversion of oxoketenedithioacetals to methyl/aryl- $\beta$ -methyl- $\alpha,\beta$ -unsaturated O-methylesters	MS/16/CY/03	Mr Manjil Nath	Prof A K Gupta
04	A quick conversion of Mono and dicarboxylic acids into their corresponding anilides with phenylisothiocyanate	MS/16/CY/04	Mr Gunanka Hazarika	Prof P K Tripathy
05	Study on depolymerisation activity of Mn (III) complexes	MS/16/CY/05	Mr Parenjit Pegu	Dr S L Bharati
06	Enzymatic characterization of catalase from <i>Daucus carota</i> (carrot)	MS/16/CY/08	Miss Anandita Hazarika	Dr M Yadav
07	Synthesis, characterization and solvent driven aggregation studies of iron, zinc and magnesium tetra-(4-sulfonatophenyl)-porphyrin	MS/16/CY/09	Mr Jyoti Prakash Das	Dr J Bhuyan
08	Application of oxides of Vanadium as co-catalyst in peroxidase catalysed reaction	MS/16/CY/10	Miss Nasreen Beguma	Prof H S Yadav

**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 Programmes:**

1. Participated and received grade A in the UGC-sponsored Orientation Programme (OP-118) held from 15th Dec. 2018 to 11th Jan 2019 at UGC-HRDC, Gauhati University, Guwahati, Assam.
2. Online course on “Learning online: searching and researching” from Future Learn, University of Leeds, 2 weeks, 2 hours per week, issued on 23<sup>rd</sup> December, 2018.

**Dr Meera Yadav attended the following Orientation Programm:**

1. Orientation Programme-118, UGC-HRDC, from Dec 15, 2018 to Jan 11, 2019, HRDC-Guwahati University.



**Dr N N Yadav attended the following Programmes:**

1. One week Faculty Development Programme on “DSP & SENSORS” jointly organised by Electronics and ICT Academics through National Knowledge Network under MeitY, Government of India, at NERIST, from 10<sup>th</sup> – 14<sup>th</sup> December, 2018.
2. Four week Orientation programme at UGC HRDC DDU Gorakhpur University Gorakhpur from 15<sup>th</sup> Jan 19 to 11<sup>th</sup> Feb 19.

**Dr Shashi Lata Bharati attended the following Orientation Programm:**

1. Orientation programme from UGC-Human Resource Development Centre,D.D.U. Gorakhpur University,Gorakhpur dated 10/11/18 to 7/12/18.

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

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

**4.8.9 Projects sanctioned by outside agencies to the faculty of the Department: NIL**

**4.8.10. Publications:**

**(a) In journals:**

1. Study on the condensation of different hydroxyl aromatic aldehydes with 2-Substituted 2-oxazolin-5-ones generated in situ, Pubanita Bhuyan and P. K. Tripathy American J. Heterocyclic Chem., 5(1), 1-3 (2019)
2. Solvent free quick conversion of mono- and dicarboxylic acids into their corresponding anilidea with phenylisothiocyanate, Gunanka Hazarika and P. K. Tripathy American J. Heterocyclic Chem., 5(1), 4-6 (2019)
3. Borah, B.P., Bhuyan, J., 2018, Influence of position of methoxy groups in Zn-methoxyphenyl porphyrins, J. Chem Sci, 130, 130-138  
<https://www.ias.ac.in/article/fulltext/jcsc/130/09/0117>
4. “Preparation of Stable Bicyclic Aziridinium Ions and Their Ring-Opening for the Synthesis of Azaheterocycles”, N. N. Yadav, H.-J. Ha, *J. Vis. Exp.* (138), e57572, doi:10.3791/57572 (2018)
5. “Treatment of bagasse based pulp mill bleach plant effluent by coagulation method” K. Sudarshan, R. Venkateshwaran, P. Kotteswaran and A. Murugan Research Journal of Chemistry and Environment, 22(9), (2018), 7-14

6. “Cyclic voltammetry studies of copper and cadmium porphyrins” A. Murugan, V. Thandiayyakone and Mithun Chakrabarty, Technologically Important Crystalline and Amorphous Solids (TICAS – 2018) (2018), 60-63 (ISBN: 9788190923736)

(b) Conference papers:

1. Study of catalase enzyme activity from *Chayote squash* species, Takio Nene, Meera Yadav, Dept. of Chemistry, NERIST, Nirjuli, Itanagar-791109 (AR) in International conference on “Frontiers in Chemical Sciences (FICS) – 2018” December 6- 8, 2018, Department of Chemistry, Indian IIT Guwahati

(c) **Books:**

1. Yadav, M and Yadav, H.S. Book entitled “Principles of Biochemistry”. International Journals Pubs, Noida, New Delhi. (In press 2019)
2. Yadav S, Yadav M, Yadav K S. 2018. Oxygenase: An Overview. ISBN-978-613-8-39014-5. LAP LAMBERT Academic Publishing. Brivibas gatve 197, LV-1039, Riga, Latvia, European Union
3. Bharati, S.L., Chaurasia, P.K., 2018. Research Advancements in Pharmaceutical, Nutritional and Industrial Enzymology, IGI Global USA

(d) Chapters in a book:

1. Chaurasia, P.K., Bharati, S.L. and Mani, A, Enzymatic Treatment of Petroleum-Based Hydrocarbons, Chapter 19, Handbook of Research on Microbial Tools for Environmental Waste Management, IGI Global, USA, 2018
2. Chaurasia, P.K., Bharati, S.L. and Mani, Significances of Fungi in Bioremediation of Contaminated Soil, Chapter 20, New and Future Developments in Microbial Biotechnology and Bioengineering, Elsevier, 2019

**4.8.11 Interaction of faculty / department with outside agencies:** Nil

**4.8.12 Consultancy Projects undertaken:** Nil

**4.8.13 Achievements of students:** NIL

**4.8.14 Any other relevant information:** Nil

## 4.9 DEPARTMENT OF PHYSICS

### 4.9.1. A 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 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 project 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.

So far, **Ten Ph.D degrees** have been awarded to the research scholars of the department. Out of which three Ph.D. degrees were awarded by NEHU, one by Tezpur University, one by North Orissa University, Baripada and **Five** Ph.D. degrees have been awarded by NERIST. Currently **Twelve** more students are working for their Ph.D. degrees in the department.

#### Faculty members with Degree and area(s) of specialization

S. No.	Name & Designation	Qualification & University	Specialization
1.	Dr. P. R. Alapati Professor	<b>Ph.D. (1988)</b> Nagarjuna University	Condensed Matter Physics (Liquid Crystals)
2.	Dr. Tado Karlo, Professor & (HOD)	<b>Ph.D. (1997)</b> Delhi University	Mathematical Physics

3.	Dr. Manan Sengupta Associate Professor	<b>Ph.D. (1986)</b> Calcutta University	Theoretical Physics
4.	Dr. Arvind Pandey Associate Professor	<b>Ph.D. (2000)</b> Univ. of Rajasthan	Condensed Matter Superconductivity, Solid state Ionics
5	Dr. Th. Gomti Devi Associate Professor	<b>Ph.D. (2005)</b> NEHU, Shillong	Condensed matter Physics (Laser Physics)
6.	Dr. Mukesh Upadhyay, Associate Professor	<b>Ph.D. (2005)</b> Dr. R. M. L. Awadh University	Solid State Physics, Electronics
7.	Dr. Rajesh Kumar Yadav Associate Professor	<b>D.Phil. (2007)</b> Allahabad University	Condensed Matter Physics (Theory)
8.	Dr. Kamal Saharia Assistant Professor	<b>Ph.D. (2009)</b> Gauhati University	Theoretical Plasma Physics
9.	Dr. S. Dhiren Meetei Assistant Professor	<b>Ph.D. (2014)</b> Manipur University	Condensed Matter Physics
10.	Dr. Akbari Jahan Assistant Professor	<b>Ph.D. (2014)</b> Gauhati University	Theoretical Physics, High energy Physics Phenomenology
11.	Dr. Kunal Borah Assistant Professor	<b>Ph.D. (2014)</b> Tezpur University	Electronics , Microwave Electronics, Antenna

## 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	PH3102	2-0-2-3	Physics- IIIB (for AE, CE, CS & ME)
Diploma	PH 3201	2-0-2-3	Physics- IVA (for CS)
Diploma	PH3202	2-0-2-3	Physics- IVB (for AE, CE & ME)
Degree	PH3103	3-0-0-3	Atmospheric Physics and Climate Change (Applied Science stream)
Degree	PH4301	4-0-2-5	Comprehensive Physics (Bridge course)
Degree	PH5101	3-0-2-4	Modern Physics (for EE and EC)

(B) Department of Physics has started offering M.Sc. (Physics) program from July 2009. The details of courses offered at PG level is 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-I

-do-	PH-7152	0-0-6-3	Computer Lab (Programming in C++)
-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	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 UG courses and are 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 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 newly acquired seven iMac computers along with old computer systems which are windows OS based. LAN facility has been provided in the Computer lab for PG and Ph.D. students.

**(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 DST, New Delhi in 1993, Dr. P. R. Alapati had started a research laboratory for liquid crystals work in January 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 pycnometer 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 / electrodeposition 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 1200<sup>0</sup>C. One imported microprocessor based furnace which could be operated up to 1200<sup>0</sup>C is operational. One more furnace which can be operated upto 1000<sup>0</sup>C 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.

##### a) M. Sc. Physics Projects:

- (i) Theoretical Study of Structure and Electronic properties of Nanoclusters- Mr. Riku Das; Supervisor- **Dr. R.K. Yadav**
- (ii) Theoretical Study of Optical and Electrical Properties of Thin Films of Magnesium Fluoride Layer with Mixture of Layer of Different Material- Mr. Pankaj Singh; Supervisor- **Dr. M. Upadhyaya**
- (iii) Study of Refractive Indices and Dielectric constant of different liquids- Ms. Sara Um Lego; Supervisor- **Dr. M. Upadhyaya**
- (iv) Study of Flexible Substrate for Microstrip Antennas for Defence Applications-Mr. Ujjal Pratim Gogoi; Supervisor- **Dr. K. Borah**
- (v) A study of Some Bose-Einstein Integral Functions- Ms. Nashiba Parbin; Supervisor- **Dr. A. Jahan**
- (vi) Radiation of Gluon Jet- Mr. Arandhu Dasgupta; Supervisor- **Dr. M. Sengupta**
- (vii) Supersymmetry of Anticommuting Dirac Numbers- Mr. Parvind Kumar Sahu; Supervisor- **Dr. M. Sengupta**
- (viii) Development of substrate for SERS Measurements of Bio-molecules- Ms. Neelam Chhetry; Supervisor- **Dr. Th. Gomti Devi**
- (ix) Vibrational Study of liquid Mixtures- Mr. Raktim Jyoti Sarmah; Supervisor-**Dr. Th. Gomti Devi**
- (x) Nanocrystalline Phosphor in Pixel for Enhanced Resolution of color display-Mr. Dipankar

Sharma Bordoloi; Supervisor- **Dr. S. Dhiren Meetei****M. Sc.Intake – 18 Nos.****b) Ph.D Students**

SLNo.	Name of the Students	Roll.No.	Title of the thesis	Name of Supervisor	Name of Co-Supervisor	Year of completion
1.	Mr. Mukunda Madhab Borah	Ph.D(FT)/14/PH/02	Raman IR Studies of Complex Biomolecular System	Dr.Th.Gomti Devi, Associate Professor		18/12/ 2018
2.	Ms. Yana Bagbi	Ph.D(FT)/14/PH/01	Engineered Nanomaterials for the application in Remediation of Heavy Metal IONS (Pb & Cr) from water	Dr. Arvind Pandey, Associate Professor	Dr. Partima R. Solanki	31/1/ 19
3.	Mrs. Kakali Bhan (Bora)	Ph.D(PT):1 /PH/01	Pure and Doped ZnO as a Sensor for ammonia: A Novel Approach using Raman Spectroscopy	Prof. P.R. Alapati	Prof. Ayon Bhattacharjee	30.3. 19
4.	Mr. Ramanuj Mishra	Ph.D(FT)/13/PH/01	Dielectric and vibrational Spectroscopic Investigations on Liquid Crystal and Liquid Crystal Nano-Composites	Prof. P.R. Alapati		30.3.19

5.	Ms. Dima Rani Borgohain	Ph.D.(FT)/13/PH04	Study of Plasma Sheath in Multicomponent Plasma with q-Nonextensive Electron Distribution	Dr. Kamal Ssharia		04/4/19
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Ph.D intake – No limits

#### 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:

##### Arvind Pandey:

1. Diptimayee Tripath, Amarjyoti Saikia, Gyati Tachang Tado and Arvind Pandey, 2018. Dielectric study of Ti-doped  $\text{Bi}_2\text{VO}_5$  solid electrolyte, India Journal of Physics, <https://doi.org/10.1007/s12648-018-1356-4>.
2. Diptimayee Tripathy, Amarjyoti Saikia and Arvind Pandey, 2018. Effect of simultaneous Ti and Nb doping on structure and ionic conductivity of  $\text{Bi}_2\text{V}_{1-x}\text{Ti}_x/2\text{Nb}_{x/2}\text{O}_{5.5-d}$  ( $0.1 \leq x \leq 0.25$ ) ceramics, Ionics(2018). <https://doi.org/10.1007/s11581-018-2622-3>.
3. Yana Bagbi, Arvind Pandey and Pratima R. Slanki, 2018. Mesoporous Spherical Shaped Silica Nanoparticles for Effective Adsorption of Aqueous Lead ( $\text{Pb}^{2+}$ ). Advanced Science Letters 24(2), 922-926.
4. Diptimayee Tripathy and Arvind Pandey, 2018. Structural and impedance studies of  $\text{Ti}^{\text{IV}}$  and  $\text{Nb}^{\text{V}}$  co-doped bismuth vanadate system, journal of Alloys and Compounds 737, 136-143.
5. Diptimayee Tripathy, Amarjyoti Saikia, Gyati Tachang Tado and Arvind Pandey, 2019. Role of Al and Ti doping in modulating electrical properties of BIVOX system, journal of Advanced Ceramics (Accepted).
6. Yana Bagi, Arvind Pandey and Pratima R. Solanki, 2019, Electrospun Nanofibrous Filtration Membranes for Heavy metals and dye removal, Nanoscale Materials in Water Purification. DOI: <http://doi.org/10.1016/B978-0-12-81392-4.00015-X>, (Elsevier).

##### Th.Gomti Devi :

1. **Th. Gomti Devi**, XIV<sup>th</sup> International Conference on Molecular Spectroscopy, Kraków – Białka Tatrzańska, Poland, 3 – 7<sup>th</sup> September 2017.
2. **Th. Gomti Devi**, Condensed Matter Days- 2017 (CMDAYS17) Tezpur University, 29-31<sup>th</sup> August 2017.

3. **Th. Gomti Devi**, 105<sup>th</sup> Indian Science Congress, 16-20<sup>th</sup> March 2018, Manipur University, Molecular structure, vibrational frequencies and natural bond orbital analysis of L-Proline monomer and dimer by DFT approach, 16-20<sup>th</sup> March 2018.
4. 26<sup>th</sup> International Conference Raman Spectroscopy held at ICC Jeju, South Korea during **26-31<sup>st</sup>** August, 2018
5. One week FDP on Emerging Trends in wireless communication held at NERIST during 26-30<sup>th</sup> November 2018
6. New degrees/Professional Memberships obtained by the faculty:
7. Indian Biophysical Society Memberships No.1243

#### 4.9.7 Achievements/award/recognition earned by the faculty

1	Physics	Dr. Th. Gomti Devi	2018	International travel award, CSIR, India
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#### 4.9.8 Publications:

##### (a) Referred Journals

1. Mukunda M. Borah, Th. Gomti Devi, 2018. The vibrational spectroscopic studies and molecular property analysis of Estradiol, Tamoxifen and their interaction by density functional theory. *Mol. Struct.* 1163, 205-220. <https://doi.org/10.1016/j.molstruc.2018.02.055>.
2. Mukunda M. Borah, Th. Gomti Devi, 2018. Vibrational study and Natural Bond Orbital analysis of serotonin in monomer and dimer states by density functional theory *Mol. Struct.* 1163, 205-220. <https://doi.org/10.1016/j.molstruc.2018.02.055>
3. P. Udadyaya, Th. Gomti Devi, 2018. Raman bandshape analysis and DFT study of C=O and C-H stretching modes of NN-Dibutyl formamide in DMSO solvent. *Vib. Spectrosc.* 96, 110-117.

##### (b) Conference Papers

1. The Gomti Devi and Mukunda M. Borah, Molecular structure, vibrational frequencies and natural bond orbital analysis of L-Proline monomer and dimer by DFT approach. Indian Science Congress, 2018, page-15.

2. Bhargab Borah, M.M. Borah and Th. Gomti Devi, Raman and IR study of Cu(II) complex with L-Proline molecule, The 26<sup>th</sup> International conference on Raman Spectroscopy, August 26-31, ICC Jeju South Korea, page-618
3. The Gomti Devi, Experimental and theoretical on interacting environment liquid mixtures, The 26<sup>th</sup> Internal Conference on Raman Spectroscopy, August 26-31, 2018, ICC Jeju, South Korea page -906.
4. Kuma Neelam and Th. Gomti Devi, Raman and surface enhanced raman spectroscopies(SERS) studies of medicinal plant Drymaria Cordata, XI Biennial National Conference of Physics Academy of North east(PANE), 21-23<sup>rd</sup> November 2018, Assam University, Diphu campus, Assam, page 87.
5. Bhargab Borah and Th. Gomti Devi, Vibrational characterization of Zn L-Proline complex: a combined experimental and computational approach, 7<sup>th</sup> International Conference on Perspectives in Vibrational Spectroscopy, 25-29<sup>th</sup> November, BARC, Mumbai, page-68.
6. Mukundo M. Borah, Neelam Chetry and Th. Gomti , Studies and molecular property analysis of Estradiol in monomer and dimer states using density functional theory, 25-29<sup>th</sup> November, 2018, BARC, Mumbai, page-68
7. **M. Upadhyaya**, Regional workshop on “Research based Pedagogical Tools” from 27<sup>th</sup> to 29<sup>th</sup> July, 2017 at North Eastern Hill University Shillong, Meghalaya.
8. **M. Upadhyaya**, Short term course on “X-Ray Absorption Spectroscopy and its application to Nano- materials” from December 21 – 28, 2017 at MNNIT Allahabad.
9. **M. Upadhyaya**, 2<sup>nd</sup> Meghnad Saha Memorial International Symposium – cum – Workshop on “Laser Induced Breakdown Spectroscopy” at Department of Physics, University of Allahabad, Allahabad from February 19 – 21, 2018.
10. **M. Upadhyaya**, Delivered a lecture on the topic “Divine Vision to Live Telecasting” in 13<sup>th</sup> T G Rinpoche Lecture series at Central Institute of Himalayan cultural Studies, Dahung, Arunachal Pradesh from March 08 – 10, 2018.
11. **Jahan**, Short Term Course on "The Field Theory of Classical and Quantum Phase Transitions" organized by GIAN, NIT Goa during [July 3 - 13, 2017](#).
12. **Jahan**, Short term Training Programme on "Leadership and Team Building in Academia" organized by NITTTR, Kolkata during [October 30 - November 3, 2017](#).
13. **Jahan**, Delivered an invited talk entitled "An analytical approach to Froissart bound in a proton structure function" in the 9<sup>th</sup> International Workshop on Multiple Partonic Interactions at the LHC held in Shimla during [December 11 - 15, 2017](#) organized by Punjab University.
14. The Science Academies' Refresher Course in "Quantum Mechanics with a special emphasis on Nuclear and Particle Physics" organized by Dept. of Physics, St. Philomena's College, Mysore during [December 17 - 31, 2017](#).

#### 4.9.9 a) Achievements of students :

1. Mr. Mukundo Madhab Borah was awarded DST Inspire Fellowship during his Ph.D work( Aug,2015-Dec,2018)

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

M.Sc. Projects completed in May,2018

- (i) "Evaluation of pion decay particle collision in the laboratory frame" by Dipak Chauhan.
- (ii) "Analysis of tensors of rank 2 & 3 and their applications" by Bhupali Deka

Short Term courses/seminars/workshops/conferences organized at NERIST.

Title of the workshop: An Introduction to LHC Physics.

Coordinator: Dr. Akbari Jahan

Duration Two (02) days

Sponsor: NERIST

No. of participants: Forty (40).

Short Term courses/seminars/workshops/conferences organized at NERIST.

- (i) Two Days' Workshop on "An Introduction to LHC Physics" organised by Department of Physics, NERIST during January 8-9,2019.
- (ii) "FDP on wireless and Mobile Communication" organized by E' & ICT Academy, IIT Guwahati during December 3-7,2018.
- (iii) " FDP on Emerging Trends in wireless Communication" Organised by E & ICT Academy, IIT Guwahati during November 26-30,2018.
- (iv) "XXX IUPAP Conference on Computational Physics", organised by University of California, USA during July 29 – August2,2018.

**Arvind Pandey**, 5<sup>th</sup> International conference on Chemical, Agricultural, Biological and Environmental Sciences (CAFES-17), Kyoto (Japan), April 18-19, 2017. ISBN 978-81-933894-1-6.

#### 4.9.10 New Degrees/Professional Memberships obtained by the faculty:

1. Prof. P. R. Alapati continuing as (i) Vice President of Physics Academy of North East and (ii) Member of American Chemical Society.
2. Dr A. Jahan continuing as Life Member of (i) PANE, (ii) Indian Science Congress Association and (iii) Indian Association of Physics Teachers.

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

**4.9.12 Projects sanctioned by outside agencies to the faculty of the department: NIL**

**4.9.13 Publications:**

**(A) In peer reviewed journals:**

1. Partha Nath Dutta, **Tado Karlo** and Mohon Diamary, Trend change analysis of surface air temperature over Assam, India, International Journal of Engineering Science Invention, **6** (2017) 25-31.
2. Partha Nath Dutta, **Tado Karlo**, Mohon Diamary and Pallabi Dutta, A harmonic analysis in seasonal oscillations of surface air temperature over Assam, International Journal of Engineering Science Inventions **6** (2017) 33-37.
3. Partha Nath Dutta, **Tado Karlo**, Mohon Diamary and Pallabi Dutta, Some features of surface air temperature: a statistical view point, Environment and Ecology Research, **5(5)** (2017) 367-376.
4. Mukunda Madhab Borah and **Th. Gomti Devi**, Vibrational studies of Thyroxine hormone: Comparative study with quantum chemical calculations, Journal of Molecular Structure **1148** (2017) 293-313.
5. Th. Nando Singh, **Th. Gomti Devi** and Sh. Dorendrajit Singh, Synthesis, characterization and optical studies of gallium activated titania nanoparticles, Nano-Structures & Nano-Objects **11** (2017) 65-75.
6. Th. Nando Singh, **Th. Gomti Devi** and Sh. Dorendrajit Singh, Synthesis, characterization and optical study of lanthanide activated TiO<sub>2</sub>@SiO<sub>2</sub> core-shell nanoparticle, Nano-Structures & Nano-Objects **10** (2017) 182-191.
7. Mukunda Madhab Borah and **Th. Gomti Devi**, Vibrational study and Natural Bond Orbital analysis of serotonin in monomer and dimer states by density functional theory, Journal of Molecular Structure **1161** (2018) 464-476.
8. Mukunda Madhab Borah and **Th. Gomti Devi**, Studies and molecular property analysis of Estradiol, Tamoxifen and their interaction by density functional theory, Journal of Molecular Structure **1163** (2018) 205-220.
9. **Mukesh Upadhyay** and Pankaj Singh, Electrical and optical properties of thin film of magnesium fluoride with other layers, American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM) USA **20(1)** (2017) 37-38.
10. **Mukesh Upadhyay** and Sara Um Lego, Refractive Index of Acetone-Water mixture at different concentrations, American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM) USA **20(1)** (2017) 77-79.
11. **Mukesh Upadhyay**, A Review on Piezoelectric Behavior of KI: OH<sup>-</sup> System, American International Journal of Research in Science, Technology, Engineering & Mathematics (AIJRSTEM) USA **21 (1)** (2018) 56-58.
12. Yana Bagbi, Ankur Sarswat, Sachchidanand Tiwari, Dinesh Mohan, **Arvind Pandey** and Pratima R. Solanki, Synthesis of L-cysteine stabilized zero-valent iron (nZVI) nanoparticle for lead remediation from water, Environmental Nanotechnology, Monitoring & Management **7** (2017) 34-45.



13. Yana Bagbi, Ankur Sarswat, Dinesh Mohan, **Arvind Pandey** and Pratima R. Solanki, Lead and Chromium adsorption from water using L-Cysteine functionalized magnetite (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles, *Scientific Reports* **7** (2017) 7672 (1-15).
14. Diptimayee Tripathy and **Arvind Pandey**, Structural and impedance studies of Ti<sup>IV</sup> and Nb<sup>V</sup> co-doped bismuth vanadate system, *Journal of Alloys and Compounds* **737** (2018) 136-143.

**(B) Book Chapters**

1. Yana Bagbi, **Arvind Pandey** and Pratima R. Solanki, Role of nanostructured materials towards remediation of heavy metals/metalloids, *Nanomaterials and Their Applications* (Springer Nature Singapore Pte Ltd.), Ed. Z.H. Khan, **84** (2018) 73-95. DOI [https://doi.org/10.1007/978-981-10-6214-8\\_3](https://doi.org/10.1007/978-981-10-6214-8_3).

**(C) Papers Published in Conference Proceedings/Journals**

1. Yana Bagbi, Ankur Sarswat, Sachhidanand Tiwari, Dinesh Mohan, **A. Pandey** and Pratima R. Solanki, Nanoscale zero-valent iron for aqueous lead removal, *Advanced Materials Proceedings* **2** (4) (2017) 235-241.
2. Yana Bagbi, **Arvind Pandey** and Pratima R. Solanki, Mesoporous Spherical Shaped Silica Nanoparticles for Effective Adsorption of Aqueous Lead (Pb<sup>2+</sup>), *Advanced Science Letters* **24** (2) (2018) 922-926.
3. S. Nilakanta Meetei, A. Hazarika, **K. Borah**, S. Chatterjee, Hot Spot Detection in High Voltage Transformer by Thermal Sensor using COMSOL Multiphysics, *Proceedings of IEEE International Conference for Energy, Power and Environment (ICEPE, 2018)*, NIT Meghalaya, June 1-2, 2018.
4. S. Nilakanta Meetei, A. Hazarika, **K. Borah**, S. Chatterjee, A Review on Partial Discharge Detection in High Voltage Transformer using Fiber Bragg Grating (FBG) Sensor, *Proceedings of International Conference of Materials, Applied Physics and Engineering (ICMAE 2018)*, Indore, 3-4 June, 2018. 978-1-5386-4769-1/18/\$31.00©2018IEEE.

**(D). Papers presented in Conference:**

1. **Th. Gomti Devi**, Concentration fluctuation study of Benzyl acetone in chemical and deuterated solvents using Raman and Density functional theory, XIV<sup>th</sup> International Conference on Molecular Spectroscopy Kraków – Białka Tatrzańska, Poland, 3 – 7<sup>th</sup> September 2017.
2. M.M. Borah, **Th. Gomti Devi**, Vibrational studies of steroid hormone and anti-cancer drug, XIV<sup>th</sup> International Conference on Molecular Spectroscopy Kraków – Białka Tatrzańska, Poland, 3 – 7<sup>th</sup> September 2017.
3. Bhargab Borah, M.M. Borah and **Th. Gomti Devi**, Development of different substrates for SERS measurement of L-Proline molecule, *Condensed Matter Days- 2017 (CMDAYS17)* Tezpur University, 29-31<sup>th</sup> August 2017.
4. **Th. Gomti Devi** and Mukunda M. Borah, 105<sup>th</sup> Indian Science Congress, 16-20<sup>th</sup> March 2018, Manipur University, Molecular structure, vibrational frequencies and natural bond orbital analysis of L-Proline monomer and dimer by DFT approach, 16-20<sup>th</sup> March 2018.



5. Yana Bagbi, **Arvind Pandey** and Pratima R. Solanki, Effective Removal of Lead ( $\text{Pb}^{2+}$ ) from water using Lanthanum Oxide Nanoparticles, 5<sup>th</sup> International conference on Chemical, Agricultural, Biological and Environmental Sciences (CAFES-17), Kyoto (Japan), April 18-19, 2017. ISBN 978-81-933894-1-6.

**4.9.14 Interaction of faculty/department with outside agencies: NIL**

**4.9.15 Consultancy projects undertaken: NIL**

**4.9.16 Achievements of students:** (i) Ms. Nashiba Parbin, (ii) Ms. Sara Um Lego and (iii) Mr. Parvind Kumar Sahu of M.Sc. (Physics) 2015-2017 batch have cleared SLET and (i) Mr. Pankaj Singh of the same batch has cleared NET (JRF) examination conducted jointly by CSIR-UGC.

**4.9.17. 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 has been appointed Director of GKCIET, Malda, West Bengal.

## 4.10 DEPARTMENT OF MATHEMATICS:

### 4.10.1 A Brief Profile of the Department:

**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 twelve research scholars registered for Ph.D. degree under the supervision of faculty members of the department. Fourteen students have been awarded Ph.D. degree. At present, there are **Two Professors, one Associate Professor and Four 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) <b>Project Guide : Dr. M.M. Dixit</b> M.Sc. Project: Damngam Ligu Roll No.MS/17/MA/11 Project Title: “Optimal Solution of Transportation Problem”.</p> <p>2) <b>Project Guide : Dr. Jayanta Borah</b> M.Sc. Project: Anju Gupta Roll No.MS/17/MA/08 Project Title: “A Survey on Fixed Point Theorem and It’s Application”.</p> <p>3) <b>Project Guide : Dr. Jayanta Borah</b> M.Sc. Project: Karbom Tatu Roll No.MS/17/MA/06 Project Title: “An Introduction to Laplace Transform and It’s Application”.</p>
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		<p>(4) <b>Project Guide : Dr. Kh.Herachandra Singh</b> M.Sc. Project: Gayatri Kushwaha Roll No.MS/17/MA/09 Project Title: “A Study of Nilpotent Element in Ring and Module”.</p> <p>5) <b>Project Guide : Dr. Kh.Herachandra Singh</b> M.Sc. Project: Nani Odii Roll No.MS/17/MA/16 Project Title: “A Survey on Rigid Modules”.</p> <p>(6) <b>Project Guide : Dr. M. Hassan</b> M.Sc. Project : Kirge Ado Roll No.MS/17/MA/05 Project Title: “Application of Simplex Method of the Linear Programming Problem”.</p> <p>(7) <b>Project Guide : Dr.C.P. Pandey</b> M.Sc. Project: Takhe Sumpi Roll No.MS/17/MA/02 Project Title: “Construction of Haar Wavelet Transform”.</p> <p>(8) <b>Project Guide : Dr.C.P. Pandey</b> M.Sc. Project: Ranju Pandit Roll No.MS/17/MA/07 Project Title: “Methodology to Solve Integral Equation by Wavelet Transform”.</p>
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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.	(1)B.K. Singh,”Study of some general Classes of estimators for estimating population mean in compromised imputation” International Conference on Partial Differential Equations and Applications, RUDN University, Moscow, Nov, 6-9,2018.

		<p>(2) M.M. Dixit, participated in the course on DSP and Sensors during 10<sup>th</sup> to 14<sup>th</sup> December,2018 held at NERIST, Nirjuli.</p> <p>(3)<b>Jayanta Borah</b>, presented a paper entitled “Existence result with non-instantaneous impulses” at international conference on applied and computational mathematics 2018 (ICACM-2018) at IIT Kharagpur during 23-25 Nov, 2018.</p> <p>(4) <b>Jayanta Borah</b>, presented a paper entitled “Existence result of mild solution of fractional differential inclusion with non-instantaneous impulses” at national Conference of Mathematics Science application in Science, Engineering and Technology during 25-26 March,2019 at Rajiv Gandhi University.</p> <p><b>Conference</b></p> <p>(5) M. <b>Hassan</b>, Title: Hydrodynamics Coefficients due to cylindrical hollow structure with water of infinite depth.Conference name – MSASET, 2019</p> <p>(6)<b>M Hassan</b>, attended FDP-2018, AI and Learning, Jointly Organised by Electronic and ICT academics.</p> <p>(5) Orientation Programme attended at Gorakhpur University, Gorakhpur from January 15 to Feb.11, 2019.</p> <p>(7) <b>Dr. C.P. Pandey</b>, participated in the course on DSP and Sensors during 10<sup>th</sup> to 14<sup>th</sup> December,2018 held at NERIST, Nirjuli.</p>
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4.10.7	New Degrees/Professional Memberships obtained by the faculty.	<b>L.K. Arora:</b> The Indian Science Congress Association. <b>J.Borah:</b> Member of Indian Mathematical Society
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, 2018 to	<b>Project Completed</b> Titled- Application of the two dimensional wave equation. (Mr. Partha Pratim Gogoi) May,2018.

	March,2019) (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)	Name of Guide : <b>Dr. M. Hassan</b>
4.10.10.	<p>Publications:</p> <p>(a) Referred journal</p> <p>(b) Conference papers (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)Upasana Gogoi and <b>B.K.Singh*</b> (2018), “A Class of Dual to Ratio Estimator in some Imputation Methods under Single Sampling Scheme” International Journal of Engineering Science and Technology (IJEST), Vol.10 No. 02S Feb 2018, pp. 188-195,ISSN (Print):2278-9510, ISSN (Online): 0975-5462</p> <p>(2)<b>B.K.Singh*</b> and Upasana Gogoi (2018), “Estimation of Population Mean Using Ratio cum Product Imputation Techniques in Sample Surveys” Research &amp; Reviews: Journal of Statistics, Vol. 7, issue 1, pp. 38-49, ISSN: 2278-2273 (Online), ISSN: 2348- 7909(Print)</p> <p>(3) <b>B.K.Singh*</b> and Upasana Gogoi (2018), “Estimation of Population Mean using Imputation Techniques in Sample Surveys” International Journal of Statistics and Economics, Volume 19, Issue Number: 3, pp. 90-103. ISSN 0975-556X.</p> <p>(4) KrishnajyothiNath and <b>B.K. Singh*</b> (2018), “Estimation of Population Mean Using Imputation Techniques in Sample Survey Under Two- Phase Sampling Scheme”, International Journal of Mathematics and Statistics, Vol. 19; Issue No.2, pp. 26-46, ISSN 0974-7117 (Print); ISSN, 0973-8347 (Online).</p>
		<p>(5) KrishnajyothiNath and <b>B. K. Singh*</b> (2018), “Population Mean Estimation Using Ratio-cum Product Compromised-method of Imputation in Two-Phase Sampling Scheme”, Asian Journal of Mathematics and Statistics, pp. 1-13, ISSN 1994-5418, DOI: 10.3923/ajms.2018.</p> <p>(6) Ashish Pathak, Prabhat Yadav &amp; <b>M.M. Dixit</b> “An Asymptotic Expansion of Continuous Wavelet</p>

		<p>Transform for Large Dilation Parameter” Bol. Soc. Paran. Mat., 36 3(2018) pp.27-39.</p> <p>(7) <b>M.M.Dixit*</b>, C.P.Pandey and Rajesh Kumar, Calderon Reproducing formula for Legendre Convolutions ,International Journal of Computational Engineering Research, Vol.(881), (2018)</p> <p>8) <b>M.M.Dixit*</b>, C.P.Pandey and Rajesh Kumar, Calderon Reproducing formula for Legendre Convolutions ,International Journal of Computational Engineering Research, Vol.(881), (2018)</p> <p>.(9) (9) <b>M.M.Dixit*</b> and C.P.Pandey, Generalized Dunkl Wavelet on N-dimensional spaces, Journal of Computer and Mathematical Sciences, Vol.9 (8),941-947 (2018)</p> <p>(9) (10) C.P.Pandey, <b>M.M.Dixit*</b> , Asymptotic Expansions of Legendre Wavelet , International Journal of Applied Engineering Research, Vol.13 (16), 12887-12891 (2018)</p> <p>(11)<b>M.M.Dixit*</b> , C.P.Pandey and Rajesh Kumar, Calderon Reproducing formula for Legendre Convolutions , International Journal of Computational Engineering Research, Vol.881), (2018)</p> <p>(12) <b>M.M.Dixit</b>,C.P.Pandey and Deepanjan Dass, Calderon’s Reproducing Formula for Generalized Eigenfunction convolution, International Journal of Research and Analytical Reviews , Vol.6(1),760-765 (2019)</p>
		<p>(13) (13)<b>Jayanta Borah</b>, Swaroop Nandan Bora (2018) , Existence of mild solution for mixed Volterra-Fredholm integro fractional differential equation with non-instantaneous impulses, Differential Equations and Dynamical Systems, <a href="https://doi.org/10.1007/s12591-018-0410-1">https://doi.org/10.1007/s12591-018-0410-1</a>, (2018).</p> <p>(14) <b>Jayanta Borah</b>, Swaroop Nandan Bora (2019), Existence of mild solution of a class of nonlocal fractional order differential equation with not instantaneous impulses, Fractional Calculus and Applied Analysis, Vol 22(2), 2019, DOI: 10.1515/fca-2019.</p> <p>(15) <b>K.H Singh</b> , A.M.Buhphang, N.Ansari and M.Dutta “<b>On Quasi Reduced Modules</b>” International Journal of Scientific Research In Mathematics and</p>

		<p>Statistical Science” ISSN 2348-4519 Volume 5, Issue-6 (2018), pp. 255-25</p> <p><b>(16)M. Hassan</b> and S. N. Bora <b>(2019)</b> Diffraction of water waves by a finite circular hollow cylinder in water of infinite depth. Applied Science (Geometry Balkan Press, Bucharest, ROMANIA) accepted on March 13, 2019.</p> <p><b>(17)P. Bora</b> and <b>M. Hassan (2019)</b> An Analytical Solution for the Diffraction Problem by a Pair of Submerged Cylinders in Water, J. of Com. and Math. Sci., an international journal, 10(2), 351-360.</p> <p><b>(18) M. Hassan</b> P. Bora and M. Biswakarma, <b>(2019)</b> Wave forces due to interaction of water wave with a cylindrical hollow structure in water of finite depth, Int. J. Sci. Res. Math. and Stat. Sci., 6(2), 73-77, 2019</p> <p><b>(19) M.M.Dixit</b> and <b>C.P.Pandey</b>, Generalized Dunkl Wavelet on N-dimensional spaces, urnal of Computer and Mathematical Sciences, Vol.9 (8), 941-947 <b>(2018)</b></p> <p><b>(20) C.P.Pandey</b>, M.M.Dixit ,Asymptotic Expansions of Legendre Wavelet, International Journal of Applied Engineering Research, Vol.13 (16), 12887-12891 <b>(2018)</b></p>
		<p><b>(21)M.M.Dixit</b> , <b>C.P.Pandey</b> and Rajesh Kumar, Calderon Reproducing formula for Legendre Convolutions , International Journal of Computational Engineering Research, Vol.881), <b>(2018)</b></p> <p><b>(22)C.P.Pandey</b>, R. Mohan and B.N.Tripathi, A Study on Bessel wavelet transform, International Journal of Applied Engineering Research, Vol.13 (16), 9999-10004 <b>(2018)</b></p> <p><b>(23) M.M.Dixit</b>, <b>C.P.Pandey</b> and Deepanjan Dass, Calderon’s Reproducing Formula for Generalized Chebyshev convolution , Journal of Computer and Mathematical Sciences, Vol.10(2),384-391 <b>(2019)</b></p> <p><b>(24) M.M.Dixit</b>, <b>C.P.Pandey</b> and Deepanjan Dass, Calderon’s Reproducing Formula for Generalized Eigenfunction convolution, International Journal of Research and Analytical Reviews , Vol.6(1),760-765 <b>(2019)</b></p> <p>BOOK: Generalized Wavelet Transforms, Author, <b>(1)C.P.PANDEY AND M.M.DIXIT</b>, LAMBERT PUBLICATION</p>
4.10.11.	Interaction of faculty/department with outside agencies (Give details regarding membership of out	Nil

	committees, executive committees of professional bodies etc.	
4.10.12.	Consultancy Projects undertaken, (Agencies, title of the consultancy project, amount, faculty and staff associated	Nil
4.10.13	Achievements of students.	One Student has 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.	<b>Academic Activities: Normal Teaching and other academic related activities</b>
4.11.3	<b>Laboratories and Laboratory Development: No new development during the said period.</b>
	(t ) <b>Communication Skills Development Laboratory :</b> Department of HSS has developed Language and communication Skills Development Laboratory recently under MHRD MODROB Scheme under the leadership of <b>Prof. B.D. Nayak (P.I.)</b> and <b>Shri Ranendra Prasad, (Co-P.I.)</b> . 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 <b>Prof. B.D. Nayak (P.I.)</b> and <b>Shri Raju Barthakur, (Co-P.I.)</b> . 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.	<b>Projects completed by the PG students. Specify the title of the projects and name of the guide) : Nil</b>
4.11.5.	<b>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</b>
4.11.6.	<b>Short-term courses/seminars/workshops/conferences attended by the faculty. Nil</b>
4.11.7.	<b>New Degrees/Professional Memberships obtained by the faculty: Nil</b>
4.11.8.	<b>Achievements/awards/recognition earned by the faculty: Nil</b>
4.11. 9.	<b>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</b>
<b>Consultancy Project: Nil</b>	
4.11.10.	<b>Publications:</b>
(a)	<b>Referred Journal: Nil</b>
(b)	<b>Conference papers</b> (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)	<b>Books: (Please give the author, title of the book, publisher, and year of publication)</b>
4.11.11.	<b>Interaction of faculty/department with outside agencies (give details regarding Membership of outside committees, executive committees of Professional bodies etc.) Nil</b>
4.11.12.	<b>Consultancy Projects undertaken. (Agencies, title of the consultancy project, amount, faculty and staff associated) : Nil</b>
4.11.13.	<b>Achievement of Students : N.A.</b>

4.11.14.	<b>Any other relevant information:</b>
	<p><b>Ph.D. Degree Awarded under the Supervision of:</b>  <b>Prof. B. D. Nayak</b></p> <p>1. Mrs. Kabita Upadhyai has been awarded her Ph. D. Thesis on “Factors affecting socio economic development of rural communities in Upper Assam” in September, 2018.</p>
(i)	<p><b><u>Prof. B. D. Nayak</u></b>  <b>Invited talk</b></p> <p>1.</p>

#### 4.11.15 Additional responsibilities taken up by the Faculty Members of the Department:

Prof. B.D. Nayak		➤ In-charge Seminar Hall
Prof. P. Parida		➤ Dean, Academic.
Mr. Ranendra Prasad		➤ Head of the Department ➤ In-charge Computer Lab. ➤ In-charge Communication Skills Lab.
Dr. Shyamolee Sinha		➤ Member of Library Advisory Committee
Mr. Raju Barthakur		➤ In-charge, <i>Interface....</i> The NERIST News Letter

## **4.12 DEPARTMENT OF CENTRE FOR MANAGEMENT STUDIES**

### **4.12.1 A Brief Profile of the Department:**

Centre for Management Studies (CMS) came on 4<sup>th</sup> November, 2009 as an independent Centre to offer Management Programs. 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 and Financial Management. Besides a full time MBA program, 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.

**4.12.2 Academic activities**

<b>Name of faculty members</b>	<b>Course code</b>	<b>Course Title</b>	<b>No. of students</b>	<b>No. of weekly hours</b>
<b>Dr. S Choudhury</b>	MB 6003	Entrepreneurship in Renewable Energy	60	03
	MB7103	Quantitative Techniques	32	03
	MB7105	Operations Management	32	03
	MB 7151	Business Communication & IT Lab	32	02
	MB 8191	Industrial Training	32	04
	MB8144	Decision Support System	05	03
	MB8103	DBMS & Data Warehousing	05	03
	MB7204	Management Information Systems	32	03
	MB7205	Financial Markets Institutions & Services	32	03
	MB8201	International Business	22	03
	MB8130	Strategic Human Resource Mgt.	14	03
MB 8299	Dissertations	07	08	
<b>Dr. B L Sarmah</b>	MB7101	Principles of Management	32	03
	MB8120	Sales & Distribution Management	12	03
	MB8121	Marketing of Services	12	03
	MB7201	Marketing Management	32	03
	MB8220	Integrated Marketing Communication	12	03
	MB8221	Consumer Behavior & Retail Marketing	12	03
	MB7108	Business Environment	32	03

<b>Dr. M Mall</b>	MB7151	Business Communication & IT Lab	32	02
	MB7102	Business Economics	32	03
	MB7104	Accounting for Managers	32	03
	MB7106	Business Law	32	03
	MB8151	Enterprise Resource Planning	22	04
	MB8111	Corporate Taxation	14	03
	MB7202	Research Methodology	32	03
	MB9001	Research Methodology [Ph.D.]	14	03
	MB8101	Project Management	22	03
	MB8110	Security Analysis & Portfolio Mgt.	14	03
	MB8210	International Financial Mgt.	14	03
	MB8211	Financial Derivatives & Risk Mgt.	14	03

#### 4.12.3 Projects completed by the PG students.

<b>S.No</b>	<b>Title of the dissertation</b>	<b>Roll. No</b>	<b>Name of student</b>	<b>Name of faculty supervisor</b>
1		MBA/17/02	Tana Marry	Dr. B. L. Sarmah
2		MBA/17/03	Dikkar Taji	Dr. B. L. Sarmah
3	Database Management System of Employees Cooperative Thrift and Credit Society Management	MBA/17/04	Priya Nayak	Dr. S. Choudhury & Dr. A. K. Das
4	Marketing Impact Assessment of Willing to Adopt Solar Based Sources Selected Place of Assam	MBA/17/06	Swapnanil Deka	Dr. S. Choudhury & Dr. A.K. Parida
<b>S.No</b>	<b>Title of the dissertation</b>	<b>Roll. No</b>	<b>Name of student</b>	<b>Name of faculty supervisor</b>
5	Performance Appraisal-Before and After Effect of Performance in Private and Government Organization	MBA/17/07	Irik Koyu	Dr. S. Choudhury & Dr. A. K. Das

6	A Study on Employee Satisfaction in Educational Institute	MBA/17/08	Washim Akram	Dr. S. Choudhury & Dr. A. K. Das
7	A Study on the Factor and Causes for Promotion and Reward Policies in Non-Government Organization (A Case Study on Grace Rehabilitation Center)	MBA/17/09	Hage Kanya	Dr. S. Choudhury & Dr. A.K. Das
8	Yet to receive	MBA/17/10	C. M. Sailo	Dr. B. L. Sarmah
9	Yet to receive	MBA/17/11	P.Talling	Dr. B. L. Sarmah
10	Clustering of Healthcare Datasets with Data Mining Techniques	MBA/17/12	Shubham Sagar	Dr. S. Choudhury & Dr. A.K. Parida
11		MBA/17/13	Sumitra Mondal	Dr. B. L. Sarmah
12	Awareness on Renewable Energy and Willingness to Adopt Solar Energy Solutions by The Farmers of Seppa Town (Arunachal Pradesh)	MBA/17/14	Feto Dada	Dr. S. Choudhury & Dr. A.K. Parida
13	Importance of Bookkeeping in Rural Areas, with Reference to Mengio Circle, Arunachal Pradesh	MBA/17/15	N. Y. Anga	Dr. S. Choudhury & Dr. A.K. Parida
14	Proposed Expert System and its Application in Disaster Management Through Unmanned Aerial Vehicle	MBA/17/16	D. Lalrochunga	Dr. S. Choudhury & Dr. A.K. Parida
15	A Case Study on Organizational Structure of Iconic Automobiles, Mahindra	MBA/17/17	Risso Taruj	Dr. S. Choudhury & Dr. A. K. Das
16	Growth of Patanjali Products in India	MBA/17/18	K. K. Bose	Dr. S. Choudhury & Dr. A. K. Das
17	Impact Assessment of Cross Culture and Global Management over Indigenous Belief System. Of Arunachal Pradesh	MBA/17/20	Toko Lobha	Dr. S. Choudhury & Dr. A. K. Das
18		MBA/17/22	Shaishab Kalita	Dr. M. Mall
19	A Case Study on the Awareness of Farmers Towards Crop Insurance in Lower Siang District of Arunachal Pradesh	MBA/17/23	Gokar Riba	Dr. S. Choudhury & Dr. A.K. Parida
20	Product Awareness of All Terrain Vehicles- Polaris in Arunachal Pradesh	MBA/17/24	Hage Tachang	Dr. S. Choudhury

				& Dr. A.K. Parida
21	Work life Balance of Women Employees Performance of IT Sector, with Reference to A Call Centre in Nirjuli	MBA/17/25	Techi Kuku	Dr. S. Choudhury & Dr. A. K. Das
22		MBA/17/26	Manisha Kumari	Dr. M. Mall
23		MBA/17/27	K.B.Heche	Dr. M. Mall
24	Implementing of Expert Systems in Human Resource	MBA/17/28	S. R. Shapou	Dr. S. Choudhury & Dr. T. Patel
25	Psychological Contract and Employee Engagement Satisfaction of the New Workforce in Arunachal Pradesh	MBA/17/29	R. B. Ronya	Dr. S. Choudhury & Dr. A. K. Das
26		MBA/17/30	K. Lollen	Dr. M. Mall
27		MBA/17/31	Habung Sama	Dr. M. Mall
28	Analysis of Kiwi farm and identifying Problems Pertaining to Kiwi Food Productions	MBA/17/32	Duyu Aka	Dr. S. Choudhury & Dr. A. K. Das

#### 4.12.4 Short-term courses/seminars/workshops/conferences organized by faculty members.

<i>Short-term courses/seminars/ workshops/conferences</i>	<i>Areas</i>	<i>Title</i>	<i>Coordinator</i>	<i>Durati on</i>
Comprehensive Roadmap for the development of a startup  support ecosystem for north east region	Entrepreneurship	NEDFi and IIM, Calcutta  Innovative Park sponsored one- day  workshop	Dr. S. Choudhury	13-02- 2019

Organized one day farmers visit to the model processing unit at Sagalee, Arunachal Pradesh.	Entrepreneurship	NMHS sponsored	Dr. S. Choudhury	10-05-2019
Workshop cum national seminar on “Tribal Empowerment through Entrepreneurship of Indigenous Produced Products”, 2019 (TETEIPP-2019) held on May, 9th & 10th 2019.	Entrepreneurship	NMHS Sponsored in collaboration with Tezpur University and GB Pant National Institute of Himalayan Env. & Sustainable Development, Itanagar, Arunachal Pradesh, India.	Chairman cum Resource Person: Dr. S. Choudhury	09-05-2019 & 10-05-2019

#### 4.12.5 Projects sanctioned by outside agencies to the faculty of the department

03 years project in Mengio Circle of Arunachal Pradesh and Its Impact on Sustainable Rural Livelihood by National Mission on Himalayan Studies, Implemented by the Ministry of Environment, Forest & Climate Change (MoEF&CC). Project Proponent: Dr. S. Choudhury, Assistant Professor, CMS. Total Grant: ₹ 40,70,000.

4.12.6 Publications (Scopus only):				
Authors	Title of the paper	Name of the Journal	Volume, Year, Month	Pages nos
A Parida, S Choudhury, D Chatterjee	Microgrid Based Hybrid Energy Co-Operative for Grid-Isolated Remote Rural	IEEE Transactions on Sustainable Energy	9 (3), 2018	1375-1383



	Village Power Supply for East Coast Zone of India			
<b>Authors</b>	<b>Title of the paper</b>	<b>Name of the Journal</b>	<b>Volume, Year, Month</b>	<b>Pages nos</b>
<b>S Choudhury,</b> AK Patra, A Parida, S Chatterjee	Renewable Energy Capacity Estimation for Indian Energy Sector Using Energy Demand Forecasting Through Fuzzy Time Series	Advances in Smart Grid and Renewable Energy	2018	551-558
Shibabrata Choudhury, Adikanda Parida, Rajive Mohan Pant, Saibal Chatterjee S.	GIS augmented computational intelligence technique for rural cluster electrification through prioritized site selection of micro-hydro power generation system	Renewable Energy	2019	Pages 487-496
Kamboj, S., <b>Sarmah, B.,</b> Gupta, S. and Dwivedi, Y. (2018),	Examining branding co-creation in brand communities on social media: Applying the paradigm of Stimulus-Organism-Response.	International Journal of Information Management	39,2018, SSCI 3.872, <b>Elsevier Publications</b>	pp.169-185
Kamboj, S. and <b>Sarmah, B.,</b>	Construction and Validation of the Customer Social Participation in Brand Communities Scale.	Internet Research	(just-accepted), pp.00-00, SSCI 2.931, <b>Emerald Publications</b>	
Padma Charan Mishra, Manoj Kumar Mohanty, <b>Manmohan Mall</b>	Operational attributes influencing productivity in Indian opencast mines	International Journal of Productivity and	24(2), 2018	177-195

		Quality Management		
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**4.12.7 Any other relevant information.**

MBA Students have undergone Summer Internship Project (SIP) for 45 days in various organizations situated in various parts of north eastern region as well as in different cities of India such as:

Ayana, Axom Urja, Department of Planning-Govt. of Arunachal Pradesh, India Post Payments Bank (IPPB), NEEPCO, Nestle, Odisha Coffee Growers Association, Poct Services Private Limited, Pratishtha NGO, UCO Bank.

## SECTION – 5

### CENTRAL FACILITIES SERVICES AND ACTIVITIES

#### 5.1 CENTRAL LIBRARY

##### 5.1.2 A Brief Profile of the Department:

The Central Library which is the heart of the Institute was established in 1983. It provides one of the important academic services to the Institute. It is a well-equipped Library, centrally located with easy access and does provide right impetus for the intellectual growth of the students, teachers, research scholars & others around. Library has its own independent building of three floors with the carpet area of 3888 Sq. Meter. The library has a collection of 63690 text books and reference books in its stack and 37638 vols. of text books in its book bank. Library is subscribing 90 national journals, 10 magazines and 10 national & regional dailies to provide a base for enhanced learning. The Central Library with its modern collection of knowledge resources and innovative information services supports a complementary role for students, faculty, and the surrounding community in their intellectual pursuits. The library holds knowledge resources predominantly related to Science and Technology, Humanities & Social Sc., Management & other allied subjects. The whole library is covered with high speed WI-FI/Internet facilities for its registered users.

The Institute is a member of E-Sodh Sindhu (Formerly INDEST) Consortium, MHRD, Govt. of India. and also a member of Department of Biotechnology Sponsored DeLCON Consortium. It possesses IS Codes on CD-ROM and other educational DVDs. Being an institutional member of Indian Liquid Crystal Society, Bangalore and Kaziranga Wild Life Society of Assam, it receives literature and information services from them. Library is registered member of National Digital Library, Sponsored by MHRD, New Delhi Coordinate by IIT, Kharagpur.

<b>5.1.3 Staff</b>	:	A) Assistant. Librarian	- 01
		B) Sorter	- 01
		C) Ministerial	- 01
		E) Xerox Operator	- 02
		D) Helper	- 02
		E) Peon	- 04

#### 5.1.4 Books/Journal & Newspapers as on 31.3.19

A) Books (Text & Reference)	= 63417
B) Books (Text) in Books Bank	= 37638
C) Journals	= 90
D) Magazines	= 10
E) News Papers	= 10

#### 5.1.5 E-Resources/Journals

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. JSTORE (Data Base)
5. Economic & Political weekly
6. Web of knowledge (Data Base)
7. Oxford University Press – 141 Titles

NERIST being a member of the DeLCON Consortium can access 800+ plus e-journals. Full text e-journals are available online access through DBT-DeLCON member Institutions till 30th September, 2019. In addition to the e-journals, EBSCO-Discovery Database and Annual Review's Knowable Magazine are also available. The number of e-journals and publisher details are as follows.

1. Springer-291 e-journals
2. Elsevier-210 e-journals
3. Oxford University Press (OUP)-141 e-journals
4. Kargar-80 e-journals
5. Wiley-54 e-journals

6. AAAS-4 e-journals
7. CSHL-4 e-journals
8. MBS-1 e-journal
9. ASBMB- 1 e-journal

**5.1.6 Indian Standards:** Library possess a set of Indian Standard published by BIS on CD ROM.

**5.1.7 A/V Materials:** 139nos.DVD “Video Training Program” is available for different departments.

**5.1.8 Institutional member:**

1. Indian Liquid crystal society, Bangalore,
2. Kaziranga Wild life society, Assam,
3. Association of Indian University, N. Delhi
4. National Digital Library, Sponsored by MHRD, New Delhi
5. NDL (National Digital Library)

**5.1.9 Departmental Library:**

Departmental library has been set up for all 11 departments. Books have been procured by the library for departments are as:

i) Physics	= 29	ii) Chemistry	= 86	iii) Mathematics	= 740
iv) Humanities	= 252	v) Agri. Eng.	= 275	vi) Civil Eng.	= 111
vii) Electrical Eng.	= 118	viii) Electronics Eng	= 434	ix) Comp.Sc.	= 234
x) Mechanical Eng.	= 190	xi) Forestry	= 71		

**5.1.10 USERVICES/ FACILITIES:**

**A) Circulation Service:** Library provides its core service of circulation from stack with brown's charging systems. Every user gets issued a book against a library card issued in the beginning of the session. Students and faculties are issued library cards as stated below.

- |                              |                         |
|------------------------------|-------------------------|
| a) Faculty member's          | 15 cards to each member |
| b) Technical staff           | 5 cards to each member  |
| c) Officers                  | 3 cards to each member  |
| d) Base module Students      | 3 cards to each Student |
| e) Diploma Module Students   | 4 cards to each Student |
| f) Degree Module Students    | 5 cards to each Student |
| g) M.Sc./M.Tech. Students    | 6 cards to each Student |
| h) MBA Students              | 6 cards to each Student |
| i) Ph.D (Full Time) Students | 6 cards to each Student |

**B) Reference service/ Reading facility:** Library provides reference service to the users with sitting capacity of 80 persons with 3500 books of text & reference. Reading facility is provided separately with a sitting capacity of 160 seats. The reference section and reading room remains open from 9.00AM to 11.00 PM on Monday to Friday & 9.00AM to 5.30PM on Saturday.

**C. Book Bank:** There is separate Book bank of 37638 vols., provided to UG students as per new syllabus. The students get a set of text books for the semester covering all courses of that semester. Number of text books available module- wise, are as stated below.

- |                    |                            |
|--------------------|----------------------------|
| 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  |

**5.1.11 Library Automation:** Users OPAC. Online public access is available.

**5.1.12 Average circulation Issue/Return**

300 books per day in the beginning of the semester & App. 100 books per day in other days.

**5.1.13 Library Advisory Committee as on 31-03-2019**

Sl	Name	Deptt	Member
1.	Mr. N.G. Sorum	Civil Eng.	Chairman
2.	Mr. D.M.Sahu	Central Library	Member Sec.
3.	Dr. S.L.Bharati	Chemistry	Member
4.	Dr. K. Saharia	Physics	Member
5.	Ms. Piyali Das	Electrical Eng.	Member
6.	Mr. S.M. Khan	Mechanical Eng.	Member
7.	Dr. K. Hera Singh	Mathematics	Member
8.	Dr. Raju Borthakur	HSS	Member
9.	Dr. S. Choudhury	CMS	Member
10.	Dr. P.K. Pandey	Agriculture Eng.	Member
11.	Dr. Awadesh Kumar	Forestry	Member
12.	Mr. R.K. Mangang	Electronic Eng.	Member
13.	Dr. A.K. Singh Yadav	Computer Sc.	Member

## **5.2 TRAINING AND PLACEMENT CELL**

### **5.2.1 A Brief 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:

### a) 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 undergoing their training during summer 2019 are: IITs, Variable Energy, NESAC, Meghalaya Energy Corporation Ltd., NEEPCO, Power Grid Corpn. of (I) Ltd., NF Railways, ONGC, IOC (Digboi, Guwahati & Bongaigaon), Oil India Ltd., DDK, BSNL, NIC, NHPC, NERIWALM, IICPT, Modern Foods etc.

### b) 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 include: Cognizant, Infosys, Fidelity, Virtusa, Maverik, JustDial, Rishishwar Construction, Power Grid Corpn. of India Ltd., Oil India Ltd., Vedanta, Indian Navy, StartUpLanes etc.

### c). 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. A substantial number of students from different disciplines participated on the different types of '**On-line Tests**' conducted by M/s CoCubes on **26<sup>th</sup> & 27<sup>th</sup> October and 12<sup>th</sup> & 13<sup>th</sup> December**'18.

To streamline the entire placement process, the Training & Placement Cell has entered into an agreement with M/s GREEKTURTLE, Bhopal, and adopted 'TNPSUITE' now called 'Superset' 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.



### **5.2.3 ARRANGEMENT OF TALKS ETC. BY T&P :-**

M/s HCL Foundation, has conducted a symposium at this Institute on 31<sup>st</sup> May'18, which was co-ordinated by T&P Cell. The purpose of this symposium was to share more about one of **HCL Foundation's flagship programs – the HCL Grant**. HCL Grant is one of the largest **CSR Grants of India**, which identifies NGOs doing path-breaking work in rural development through an institutionalized, independent, robust and democratic process.

The pan-India series of symposiums was an effort by HCL Foundation to bring together NGOs, Government, Corporate Partners and Individuals on one platform, in various regions of India such that they can interact with each other, develop regional as well as sectoral understanding about Corporate Social Responsibility and deliberate upon how it can contribute towards Nation Building.

## **5.3 SPONSORED RESEARCH AND INDUSTRIAL CONSULTANCY (SRIC)**

### **5.3.1 A Brief Profile of the Section**

The NERIST Board of Management in its 51<sup>st</sup> 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 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.

### **5.3.2 Status Report regarding activities.**

Presently about 37 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**

### **5.4.1 A Brief Profile of the Section & Activities**

- a. To provide information to the bright meritorious students about Early Faculty Induction Programme (EEIP) sponsored by AIC TE 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 AIC TE 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

#### 5.5.1 A Brief Profile of the KV and its Activities

Kendriya Vidyalaya NERIST is a prestigious educational institute in Nirjuli. It is a single section school with the highest class being class XII. At present there are around 483 students studying in this Vidyalaya.

1. **Result of this Vidyalaya:** The Vidyalaya has produced 100% in class XII and class X respectively for the academic session 2018-19.
2. KV NERIST follows CBSE curriculum which aims at all round development of the students. The Vidyalaya not only provides quality education but also organizes many co-curricular activities to make students fit for the global competitive job market.
  - (a) Social Science exhibition: 60 students of the Vidyalaya have participated in Cluster Level Social Science Exhibition that held at KV No.1 Itanagar. It is a matter of great pride that our Vidyalaya stood first in the Cluster Level Social Science Exhibition
  - (b) Science exhibition: Vidyalaya has participated at regional level science exhibition in 2018 and two models have been selected for National level science exhibition.
  - (c) Scout & Guide: Our school plays an important role in Scout & Guide field. Many students have participated in different Scout Guide activities like Dwitiya Sopan testing camp, Tertiya sopan testing camp, Pre Rajya Puruskar testing camp and they are selected. The Vidyalaya also organized different activities at Vidyalaya level.
  - (d) CCA: Vidyalaya organized CCA activities for all round development of students in the Vidyalaya premises and distribute prizes for the same.
  - (e) Sports: Vidyalaya orginsed many sports activities in order to inculcate sportsmanship and leadership qualities. Further, many students participated in Regional Sports Meet in different events.
  - (f) Olympiad: Students of this Vidyalaya participated in different Olympiads time to time. 3 students of the Vidyalaya have been selected for TECHNETHLON being conducted by IIT Guwahati.
3. KV NERIST is one of the best schools in this region. Many teachers of this Vidyalaya got trainings and in-service courses.

4. Many students of this Vidyalaya have been selected in different prestigious Institutions of Medical and engineering and national level entrance examination.

## 5.6 **NERIST KG SCHOOL**

### 5.6.1 A Brief Profile of the 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	Maximum Strength	Present strength (Session 2017-18)	Min. Age of Admission
Play	16	16	2.5 Years
LKG	45	44	3 Years
UKG	45	44	4 Years

#### **Organization structure:**

1. Mrs. Meenaxi Arora - Principal-cum-Teacher
2. Mrs. Mithu Sarkar - Assistant Teacher
3. Mrs. Jyoti Basumatari - 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

### 5.6.2 Status report regarding activities

During the academic session (April 2018 - March 2019), 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 Children's day on 14<sup>th</sup> of November, 2018 and its Annual day on 19<sup>th</sup> of November, 2018. The School organized sports day on Republic day (26<sup>th</sup> January 2019) for physical development of the children. A school picnic was also organized for entertainment. At times, parent's-teacher's meetings (PTM) were organized for free interactions and conversations between parents/guardians and the teachers. The first PTM was organized on 1<sup>st</sup> week of August, 2018. The school celebrated Independence day on 15<sup>th</sup> August, 2018.

### 5.6.3. 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.

### 5.6.4. 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    | – Chairperson                 |
| 2. Dr. S. Choudhury   | -- NFA representative         |
| 3. Mr. T. Debnath     | – NTSU representative*        |
| 4. Mr. Nabam Hari     | – NTSU representative         |
| 5. Mrs. Meenaxi Arora | – Principal, NERIST KG School |

(\* Note: No representative after his retirement on 31<sup>st</sup> January 2019 )

**5.6.5. Any other relevant information/data:** Nil

## **5.7 TRANSPORT SECTION**

### **5.7.1 A Brief Profile of the Section:**

Transport section of NERIST was established in 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 and it was kept under the control of Chairman (TPT) and under supervisor of Transport Officer, As the institute requirements for vehicle servicing and maintenance started growing. The Transport Section providing better service round the clock for Institute all activities were necessary for student, staff departmental works and other official works of NERIST including medical emergency for NERIST Student, staff and their family member.

### **5.7.2 The Various service offered by the transport section present are as follows:-**

- a) Providing the 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 their attending classes to degree block as per their schedule every day (Monday to Friday 7.05am to 5.05pm)
- c) Providing School Bus service (Monday to Saturday 7.05am to 3.00pm) to the ward of NERIST employees for Kendriya Vidyalaya, NERIST from T/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 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 on emergency medical treatment (24x7).
- i) Providing vehicles to physical handicap student's duty for their attending classes and other purpose like practical classes etc.
- j) Providing the vehicle to security night patrolling duty within campus

### **5.7.3 Status report regarding activities: -**

The Transport Section is one of the most important supporting departments of the institute. This runs fleet of vehicles for official's purposes; this department has only **02nos** of heavy motor vehicle (Bus)

buses normally engaged for various activities such as departmental purchase (local and outside) NERIST student duty for their attending to classes (7.45am to 5.30pm) School duty for NERIST employee work, NERIST Students Educational tour, Student's industrial visits, Practical duty and Departmental/official duties.

It has **01no** Winger (13+1 seated) the vehicle is used for physically handicap student's duty and other official duty when required by the department and office. The department had 09nos of light vehicles and they are detailed under various duty i.e.

**2nos** of light vehicle (Innova and Scorpio) earmarks for Director, NERIST Chairman BOM and other official dignitaries visiting the institute guest etc.,

**01no** of (Optra) used by Registrar, NERIST, for official duties.

**01no** of AVEO-LT used by all Deans for their official duties.

**01no** (Maruti versa) detailed for Security Night patrolling duty and other official duty as per requirement.

**01nos** of (AVEO- LT) 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.,

**01no.** (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 requirement etc.

**01 no.** Tavera (Ambulance ) ambulance service for students and employees and their family members of NERIST as and when require in –campus and off campus (like Tamo Riba Institute of Health and Medical Sciences, Naharlagun, RKM Hospital, Niva Hospital, Papu Nalaha, and up to Guwahati Hospital/ Airport) for emergency medical treatment around the clock (24x7).

**01 no.** Tata Sumo Ambulance had been purchased on dated:24 /04/2018, as the Tavera ambulance is old enough and frequently breakdown due to non-availability of parts in Itanagar (Capital complex)

The institute had Condemn/auctioned the following below old condemned vehicles.

The Institute Vehicle No. AR01 3980 (Bus) auctioned

The Institute Vehicle No. AR01C-7523 (Maruti Gypsy) auctioned

The Institute Vehicle No. AR01A-5286 (Omni Van) auctioned

The Institute Vehicle No. AR01 4600 (Maruti Gypsy) auctioned

The Institute Vehicle No AR01A 4887 (Ambassador) auctioned

The Institute Vehicle No. ARC 333 (Ambassador) auctioned

The Institute Vehicle No. AR01 2104 (Maruti Gypsy) auctioned

1 No. Motors Cycle Bearing Registration No. AR01 B 7520 auctioned

The Transport Section has water servicing /washing equipment for vehicle servicing and maintenance of institute vehicle time to time.

The Transport Section has 12nos. of Institute Vehicle out of 09 nos of Driver, the transportation section required additional 3 nos of Drivers for smoothly function of transport section.

#### 5.7.4 Highlights:

Transport Section has helped to Institute in a big way to speed up the administrative activities by best utilization of the vehicles, Provision for (24X7) ambulance service for NERIST Students and employees and their family member's Provision of Vehicle to NERIST Students for attending their classes to degree block (7.45am to 5:30pm) departmental seminar study tour, practical class as per their requirement and also provision for vehicle to all students and employees of NERIST at subsidized rates to their best satisfaction are some of the other highlights of this section.

### 5.8 NERIST HEALTH UNIT

#### 5.8.1 NERIST Health Unit is functioning with the following number of Staff and Officers as under:

1) Dr. Popi Camdir Tok	-	Chief Medical Officer-in-charge
2) Dr. Sushmita P. Taggu	-	Medical Officer
3) Dr. Gyamar Inja	-	Medical Officer
4) Shri Hareendran P. M	-	Pharmacist
5) Mrs. Mary Biswas	-	Nursing Sister
6) Mr. Dhiren Kr Nath	-	Dresser
7) Mrs. O. Barman	-	Xerox Operator
8) Mr. Minyo Blange	-	Lab Assistant
9) Mr. E. Deomari	-	Lab Attendant
10) Miss Poornima Deb	-	Attendant
11) Mrs. Koj Yallo	-	Helper
12) Mrs. Tana Parbati	-	Peon
13) Mr. Surendra Prasad	-	LDC
14) Mr. Mahesh Mallick	-	Sweeper

#### 5.8.2 Activities

- \* The unit is providing OPD facility for all the staff and their relatives and also for the nearby public those who approach for treatment without any consultation cost. The medicine counter is providing free medicines to the authorized staff throughout the year. And also 24x7 emergency service is provided to the resident of the campus throughout the year.



- \* NERIST Health Unit actively participated in Pulse Immunization programme conducted by Govt of India twice in this year also. Apart from the above NERIST Health Unit observe diarrhea control fortnight this year.
- \* As earlier NERIST Health Unit conducted blood donation camps twice this year in collaboration with APACS and NSS NERIST.
- \* This year also NERIST Health Unit conducted anemia, diabetic, bone density/osteoporosis screening and detection camp quarterly.
- \* Apart from above NERIST Health Unit conducted routine health checkup of Kendriya Vidyalaya students and NERIST Entrance Examination students of NERIST and issued Medical Fitness certificate, Deworming programme also conducted in nearby schools as per the National Health Programme.

## **5.9 CENTRE FOR APPROPRIATE TECHNOLOGY & RURAL DEVELOPMENT (CATRD)**

### **5.9.1 A Brief Profile of the Department**

The Board of Management of NERIST in its 62<sup>nd</sup> meeting held on August 11, 2007 had resolved to establish the Centre for Appropriate Technology & Rural Development (CATRD) at NERIST. It is a multifunctional and multi disciplinary Centre to meet the needs of NE Region. Centre for Appropriate Technology and Rural Development started its activities from August 2007 at NERIST. It is an independent Centre of NERIST with the under mentioned objectives:

- To cater to the technical needs of the people living in Arunachal Pradesh and neighboring states of the North Eastern Region.
- To support in Technical and Vocational Educational activities of the people of the NE Region.
- To assist the development of social welfare and economic growth of the people in NE Region.
- To establish a consortium of scientific and technical talents to undertake activities that will help to promote and provide Technical Manpower base to cater to Non-formal Sector for Technical and Vocational Education and Training (TVET) for Rural Stakeholders
- To encourage Appropriate Technology adaptation and transfer through conducting pilot studies on specific projects.
- To develop documentary films on the lives of the people of the region by use and application of science and technology in socio-economic growth and development.
- To preserve rural and indigenous technologies of the NE Region and assist in technical documentation and dissemination of knowledge.
- To conduct Certificate, Diploma, Degree, Post Graduate Diploma/Degree and Research Degrees in Appropriate Technology and Rural Development for regular or sponsored candidates for State/Central Govt., UN sponsored organizations, SAARC Countries through Multilateral & bilateral agreements under UNDP, UNEP, UNRSCO, WHO, UNIDO, NEC, ADB etc.



- To organize and support Research, Colloquium, Seminar, Workshops, Conference on various Scientific and Technological advancements leading to the social and economic growth and progress of the region.
- To use the concept of Remote Sensing (RS) to Sector Professionals and academic community for forecasting Disaster and ensure remedial measures.
- To solicit, receive and accept grant from Central and State Govt. and other recognized agencies and also materials in the shape of equipments, technical knowledge, documents etc. and also from recognized international funding agencies.
- To develop necessary infrastructure to conduct various programmes in future.

### 5.9.2 List of Committee Members

Dr. S.K.Shrivastava	Head of the Centre
Dr. P.R. Gajurel	Assoc.Prof. (Forestry)
Ms. B.L. Sarmah	A.P. (CMS) on QIP Leave
Ms. Mudo Pumming	A.P. (Civil Engg)

## SECTION – 6

## MAN POWER AS ON 31.03.2019

## 6.1.1 Teaching (Faculty)

Department wise break-up of faculty as on 31.03.2019

1	Forestry	13
2	Agriculture Engineering	14
3	Civil Engineering	14
4	Computer Science & Engineering	11
5	Electrical Engineering	16
6	Electronics & Communication Engineering	13
7	Mechanical Engineering	16
8	Physics	09
9	Chemistry	11
10	Mathematics	07
11	Humanities & Social Sciences	05
12	Centre for Management Studies	04

**Total (I)133**

## 6.1.2 Non-Teaching (Officers and staff)

Break-up of Officers, Technical, Ministerial and Group -C staff in position as on 31.03. 2019 is given below:

## (i) Officers

a	Group 'A'	11
b	Group 'B'	06
<b>Total</b>		<b>17</b>

## (ii) Technical/vocational staff (Non-teaching)

a	Group 'A'	04
b	Group 'B'	23
c	Group 'C'	38
<b>Total</b>		<b>65</b>

## (iii) Ministerial Staff

a	Group 'B'	10
b	Group 'C'	56
<b>Total</b>		<b>66</b>

## (iv) Non Ministerial Staff Group – C

a	Lab Attendants/Helpers/Pump Attendants	36
b	Security Guard	07
c	Malis, Labourers & Sweepers	26
d	Peons	33
e	Cook & Cook Helpers	69
<b>Total</b>		<b>171</b>

**Total (II) 319****GRAND TOTAL (I +II) = 452**

## SECTION – 7

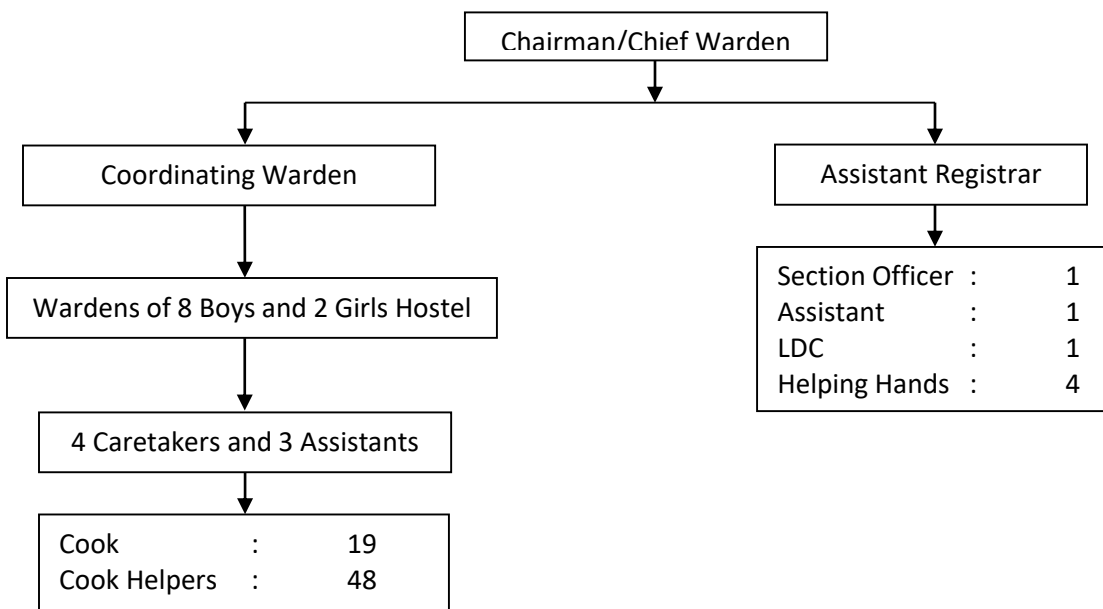
### CAMPUS LIFE AND EXTRA CURRICULAR ACTIVITIES

#### 7.1 HOSTEL MANAGEMENT COUNCIL

##### 7.1.1 A Brief Profile of the Department:

NERIST is a residential technical Institute and declared as Deemed to be University by 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, which is mandatory. 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 (HMC) is an autonomous body for the management of hostel accommodation and mess facilities of eight boys' hostel and two girls' hostel. Among them, Hostel Block H and Brahmaputra are meant for Post Graduate Boys (M.Tech./M.Sc. and MBA students) and Ph.D. students respectively, while Subansiri Hostel is meant for Post Graduate and Ph.D. Girls students on sharing accommodation basis. No single accommodation will be allotted to them. Hostel Block H, Subansiri and Brahmaputra Hostel are running by outsource food caterer, having fssai certificate. Rest of the Hostels are being managed by the Hostel Management Council (HMC) itself.

#### Organizational structure of Office of HMC



##### 7.1.2 Status Report

Mr. Radak Blange, Associate Professor, Department of Electrical Engineering is the Chairman/Chief Warden of the Hostel Management Council. Apart from the Chief Warden and one Coordinating 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 in the next page:

Sl. No.	Hostel Block	Hostel Capacity	Mess Manager-cum-Caretakers/Assistants	Wardens
1	<b>A</b>	124	Mr. Dorjee Shongmu	Dr. Kh. Hera Ch. Singh
2	<b>B</b>	124		Dr. M. Hassan
3	<b>C</b>	124	Mr. B. Patir	Mr. A. K. Chowdhury
4	<b>D</b>	124		Mr. Ajit Kr. Singh Yadav
5	<b>E</b>	250	Mr. A. Gogoi	Dr. K. Borah
6	<b>F</b>	250	Mr. E. N. V. Nair	Mr. Akhilesh Sharma
7	<b>G</b>	250	Mrs. M. Roy Choudhury	Mrs. Piyali Das
8	<b>H</b>	250	Mr. T. Mathew	Dr. M. Upadhaya
9	<b>Brahmaputra</b>	416		Dr. Ashsiah Paul
10	<b>Subansiri</b>	250	Mrs. N. Siyum	Dr. (Mrs.) Deepika Devi

### 7.1.3 Highlights

Like previous years, a Hostel level Anti-Ragging Squad is being 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 are being celebrated in all the Hostels by hoisting the National Flag by the respective Wardens/Coordinating Warden/Chief Warden (Hostel) in the front of the respective Hostel Blocks.

The Boarders of Hostels are being celebrated Block Day separately in each Hostel Block. The Director, Deans, Registrar, Chief Warden (Hostel), Coordinating Warden, Hostel Wardens and other Faculty members and Officers are being invited in the said function.

**MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 20/05/2019****Chairman/Chief Warden**

Mr. Radak Blange, Associate Professor, Department of Electrical 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
4. Mr. J. Milli, Mr. N. B. Thapa, Mrs. L. Ronya and Mrs. B. Hazarika

**7.2. NATIONAL CADET CORPS (NCC)****7.2.1 A Brief Profile of the Section**

Dr. Anubhab Pal is CTO (SD), NERIST, 1 AP BN, NCC. 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 2017-18 total students enrolled is given below:

<b>Cadets Enrolled</b>	<b>SD ( Boys )</b>
1 <sup>st</sup> Year	46
2 <sup>nd</sup> year	68
3 <sup>rd</sup> Year	20
Extension	3
<b>Total</b>	<b>137</b>

**i) Manpower status**

	<b>Present</b>	<b>Requirement</b>	<b>Deficiency</b>
ANO/CTO	02	02	NIL
Supporting staff	02	04	02

**ii) Infrastructure**

	<b>Present</b>	<b>Requirement</b>	<b>Deficiency</b>
Office	01	01	NIL
Store room (Big )	01(Small)	02	01

**iii) Budget allocation**

During the session 2017-2018 a total of ₹1,56,606.00 (Rupees One Lakh Fifty-six Thousand Six Hundred six only) was spent, washing and refreshment allowance distribution for the students (₹75,980.00), CATC Camp (₹17,626.00 + ₹34,000.00 + ₹14,000.00 + ₹15000= ₹80,626.00) 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 4 camps

- a) CATC Camp at DNGC, ITANAGAR, AR  
 W.E.F. 18/06/2018 to 27/06/2018  
 b) CATC Camp at RGGP, ITANAGAR, AR  
 W.E.F. 13/10/2018 to 22/10/2018

c) CATC Camp at JNV Dhing, Nagoan, Assam  
W.E.F. 13/10/2018 to 22/10/2018

d) CATC Camp at RGGP, Itanagar  
W.E.F. 03/01/2019 to 12/01/2019

### 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	REGIM. NO.
1	C. ZOLIANTLUANGA	C. ZOLURA	AR 16 SDA 100340
2	DIBYARANA BARMAN	SURAJIT KR. BARMAN	AR 17 SDA 100321
3	TEZAM TONGLUK	TONHANG TONGLUK	AR 17 SDA 100344
4	SIDHARTH RAI	DILIP KUMAR RAI	AR 16 SDA 100313
5	RAUNAK KUMAR TRIPATHI	RABINDRA NATH TRIPATHI	AR 17 SDA 100349
6	DIPANKAR DEURI	JAJNO RAM DEURI	AR 17 SDA 100315
7	ANKUSH SAHA	TAPAN SAHA	AR 17 SDA 100310
8	RICHARD MIZE	BANI MIZE	AR 17 SDA 100345
9	YASH KUMAR	MUKH RANJAN KUMAR	AR 17 SDA 100316



10	SENTILONG LANGU	LIMAMEREN	AR 17 SDA 100319
11	DIBYA RANJAN NAYAK	SRUSTIDHAR NAYAK	AR 17 SDA 100304
12	BIJOY BASUMATARY	Khagen Basumatary	AR 17 SDA 100329
13	TADAR MAMANG	Tadar Kioda	AR 17 SDA 100337
14	PIYUSH KUMAR	Pravind Kr. Rai	AR 17 SDA 100309
15	VIKASH KR. ROY	Harinder Kr. Roy	AR 17 SDA 100326
16	HRITURAJ DEBNATH	Uttam kr. Debnath	AR 17 SDA 100313
17	PRASHANT MANGAR	Ashok Mangar	AR 17 SDA 100343
18	GOMBOM PERTIN	OKILING PERTIN	AR 17 SDA 100306

## ii) 'C' Certificate Exam Passed -

19 SD Cadets

SL.	NAME	FATHER'S NAME	REGIM. NO.
1	NOVJEET RAJ SAH	MUNGA LAL SAH	AR 16 SDA 100309
2	BIKKI KUMAR	SURENDRA PRASAD	AR 16 SDA 100352
3	ABHISHEK DUTTA	BABUL DUTTA	AR 16 SDA 100306
4	PARTHA DUTTA	PRABIR DUTTA	AR 16 SDA 100321

5	ABINASH SAIKIA	GOLAP SAIKIA	AR 16 SDA 100319
6	TONKU SONAR	L B SONAR	AR 16 SDA 100353
7	DEBASISH BORAH	BUDHIN BORAH	AR 16 SDA 100320
8	SATYAM RAJ	ASHOK KUMAR SINGH	APSD/15/120422
9	SAURAV JHA	BHARAT LAL JHA	AR 16 SDA 100303
10	SUJEET SINGH	BRAJ KISHORE SINGH	AR 16 SDA 100304
11	NOSATO NEIKHA	SALZU NEIKH	APSD/15/10412
12	VIKAS KUMAR GUPTA	AJAY KUMAR GUPTA	AR 16 SDA 100345
13	NAKO KOMO	NAKO TATU	AR 16 SDA 100336
14	GAURAV KUMAR SINGH	GANESH PRASAD SINGH	AR 16 SDA 100341
15	SORAM SAMANANDA SINGH	SORAM IBOHAL SINGH	AR 16 SDA 100301
16	PRABHAT KUMAR PRASAD	SHANKAR PRASAD	AR 16 SDA 100317
17	SATYAM KUMAR	LALAN SAH	AR 16 SDA 100316
18	RANJIT RAI	TALONG RAI	AR 16 SDA 100307
19	NAMAN DEV SHARMA	SUBASH CHANDRA SHARMA	AR 16 SDA 100344

**7.2.4 LIST OF COMMITTEE MEMBERS, IF ANY:** NIL

**7.2.5 ANY OTHER RELEVANT INFORMATION/DATA:** NIL

### **7.3 NATIONAL SERVICE SCHEME (NSS)**

#### **7.3.1 A Brief Profile of the Section**

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.

- |    |   |                       |
|----|---|-----------------------|
| 1. | Total No. of Volunteers enrolled            | : 970 Nos.            |
| 2. | Male  | : 730 Nos.            |
| 3. | Female                                      | : 240 Nos.            |
| 4. | No. of Male Volunteers (APST)               | : 170 Nos.            |
| 5. | No. of Female Volunteer (APST)              | : 45 Nos              |
| 6. | Name of NSS Programme<br>Co-Ordinator       | : Dr.A.Dinamani Singh |
| 7. | No. of trees planted during<br>year 2017-18 | : 300 Nos.            |

#### **7.3.2 Status Regarding Activities**

NSS activities for the Academic Session 2018-19 commenced with an orientation programme with the newly joined volunteers on 16.08.2018. 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 24.09.2018. 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 25.08.2018,02.10.2018, 27.01.2019 02.03.2019 (Swatcha Bharat Abhiyan) at NERIST main campus and Degree block. Approximately 550 number of volunteers participated in it. The campus cleaning along with plantation of 200 saplings were carried out at PG Hostel & Degree block. ). 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 25.08.2018, 60 Nos of NSS Volunteers, Programme Officer, donated blood out of which 40 nos were girls. The Blood donation camp was followed by a lunch party at NERIST Guest house for Doctors, Technician, Medical Staff and Programme officers.

### 7.3.3 Special Camp Report

Special camp was organized from 16.02.2019 at the Nirjuli Village -II . The camp was attended by around 300 student volunteers and Program officers of NERIST along with students and Villagers, Gambura of Nirjuli Village - II. Around 100 saplings of amla (*Emblicaindica*) and jack fruit (*Artocarpushetrophyllus*) were planted. This is followed by campus 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.

### 7.3.4 List of NSS Committee Members

- 1.Mr. M. Deben Singh, Asstt.Prof. (Elect.Engg.)
- 2.Dr. Awadhesh Kumar, Assoc. Prof. (Forestry)
- 3.Dr. Ajanta Kalita, Asstt. Prof. (Civil Engg.)
- 4.Dr. K. Herachandra Singh, Asstt. Prof. (Maths)
- 5.Dr. S. Dhiren Meitei, Asstt. Prof. (Physics)
- 6.Dr. AkbariJahan, Asstt. Prof. (Physics)
- 7.Dr. Kamal saharia, Asstt. Prof. (Physics)
- 8.Dr. Mohammad Hassan, Asstt. Prof. (Maths)
- 9.Ms. Piyali Das, Asstt. Prof. (Elect. Engg)
- 10.Mr.J. Bhuyan, Asstt.Prof. (Forestry)
11. Mr. Arun Kr. Choudhury, Asstt. Prof. Agri. Engg.)
12. Mr. M. Edison Singh, Asstt. Prof. (ECE)
13. Dr. Kunal Borah, Asstt. Prof. (Physics)
14. Mr. Santosh Tamang, Asstt. Prof. (Mech. Engg.)
15. Mr. P. Devchandra Singh, Asstt. Prof. (Elect. Engg.)

## 7.4. ESTATE OFFICE

### 7.4.1 A Brief Profile of the Section and its Activities:

The Estate Office has been established to look after the day to day estate matter of the Institute, dealing with matters like land encroachment, illegal construction, Liaisoning with the District Administration officials of the Capital Complex, Itanagar & Papumpare, Yupia, Government of Arunachal Pradesh. The Estate Office staffs are also visits site along with committee members before allotment of any land/space within Institute's campus, for internal departmental uses, like implementation of central Government sponsored projects as and when required, day to day records keeping works like inventory of residential quarters, house Allotment to the institute's employees and issue of furniture to the residential quarters etc.

### 7.4.2. Strength of staffs of Estate Office:

Assistant Registrar/Estate officer	: 01
UDC	: 01
Peon	: 01
TS Employee	: 01
Hand Receipt Employee	: 01

### 7.4.3 Existing Institute quarters at Present

Sl.No.	Type of Qtrs./Accommodation	Totals Nos. of Qtrs./ Accommodation	Remarks
01.	Type - I	132	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

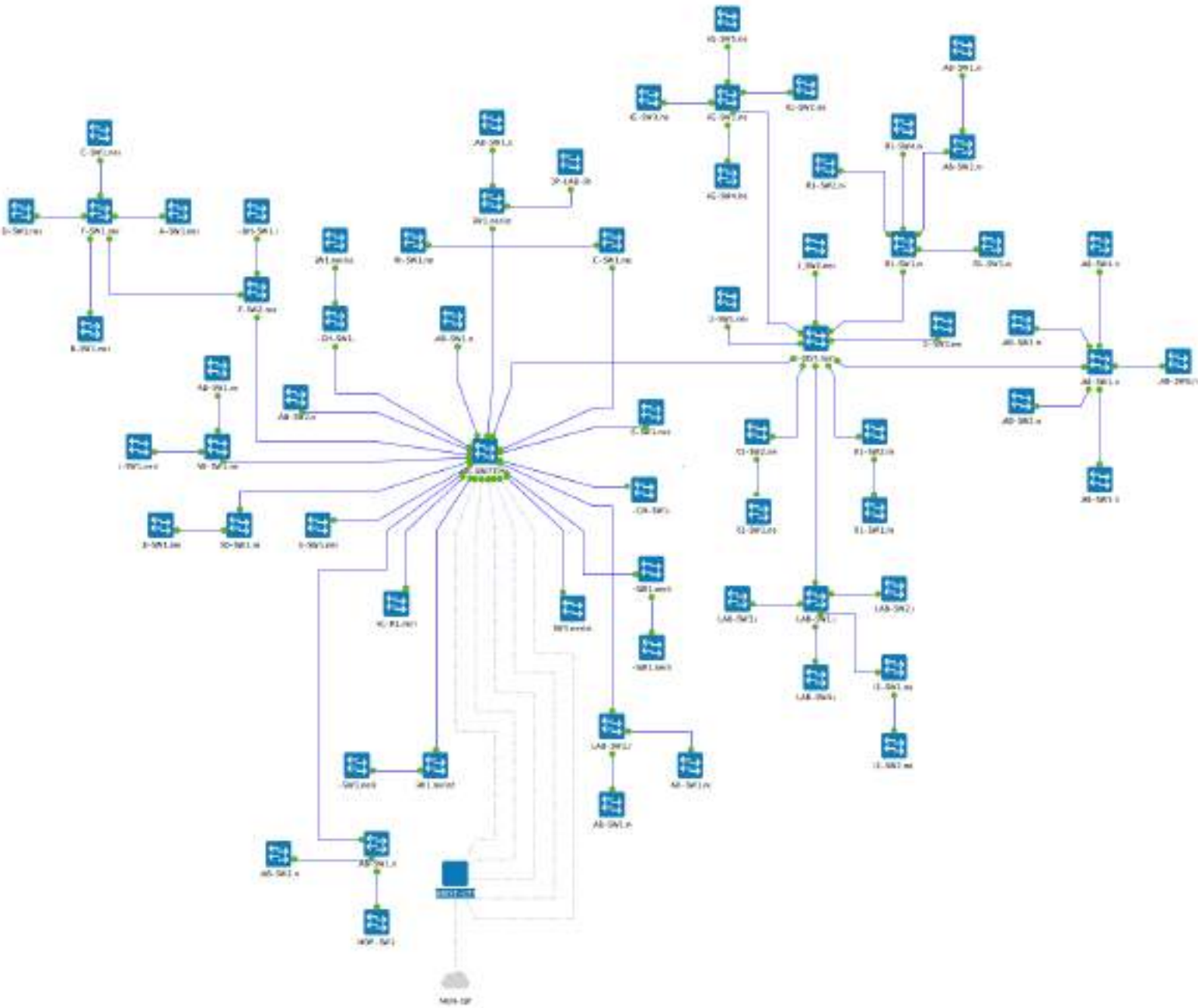
### 7.5.1. A Brief Profile of ET Cell

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.ET Cell conducts different online Interviews for student's recruitments as well as conducts computerised recruitments for different govt. organizations.

### 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 from PGCIL is established to provide failover of NKN 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 that facilitates number of Services as: Hyper-V Virtual Platform, DNS, DHCP, Active Directory, RADIOUS, Microsoft SCCM, etc.
7. ET Cell provides IT Infrastructure Services for Online Registration and Admission process.

7.5.3 Network Connectivity Skeleton of NERIST Campus:



**7.5.4 Network Devices/Servers:**

<b>Network Devices</b>			
<b>Sr. No</b>	<b>Item</b>	<b>Quantity</b>	<b>Objective</b>
1	UTM/Firewall(Cyberoam 2500iNG)	1	To provide userbase Internet access, traffic filtering and restricting.
2	Core Swith (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	75	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, R610, T610)	65	To provide Wireless connectivity to Residential Area.
7	SAN Switch(Brocad)	1	To provide connectivity between storage and Servers over fiber channel.
<b>Servers and Storage:</b>			
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.
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### 7.5.5 Status Report Regarding Activities, 2018-2019:

1. Renewed the Microsoft Campus Agreement Licences for 300 FTE users for One Year.
2. Renewed the 100 Mbps ISP link from PGCIL, which facilitates backup of primary NKN ISP Link.
3. ET Cell established an underground OFC Link to BRAHMAPUTRA Hostel to provide Internet connectivity to the hostellers.
4. ET Cell also deployed high end WiFi Access Points to Hostel BRAJMAPUTRA, BLOK-A, BLOCK-E, and BLOCK-E, which provides reliable and secure Internet services to the hostels.
5. Developed/Deployed WiF/LAN for newly constructed Central Library.
6. Provided support to conducted different Online Campus Interviews for students during 2018-2019 session.
7. Provided supports to conducted different computerised recruitment process for different govt. organisations using infrastructure of ACCF.
8. Provided IT infrastructure supports during online Registration, Counselling, and Admission process for NEE-2018-19/PG/Ph.D of 2018-19 session.

## 7.6 GYMKHANA

### 7.6.1 A Brief Profile of the Section and its Activities:

- i. More than 250 students from all the hostels participated in SDP memorial football tournament during 14-28 Aug 2018.
- ii. A team of 15 students participated state-level inter-college football tournament at DN College Itanagar during 9-14 September 2018.
- iii. More than 50 students participated in an awareness workshop “Think India” to motivate students to Nation Building on 22<sup>nd</sup> Sept 2018 in the Seminar Hall.
- iv. Run for Unity was organized on 22<sup>nd</sup> October 2018 to mark Rashtriya Ekta Diwas where, more than 900 students participated the event.

- v. RACAF 2018 –the cultural festival of the institute was organized on 25-27 October 2018, where more than 1300 students participated and showcased their talents in various cultural activities.
- vi. A team of four students participated in state level Mural painting competition during 5-6 Nov 2018 organized by Office of Director General of Police, Arunachal Pradesh and won Medals, recognition Certificates as 1<sup>st</sup> runner up.
- vii. More than 50 students participated in inter-block chess tournament during 10-20 Nov 2018.
- viii. A team of two students participated Zonal level debate competition organized by DN college, Itanagar during 10-12 Nov 2018 and fetched with 1<sup>st</sup> prize.
- ix. A one-day workshop on payback to society was organized on 2<sup>nd</sup> Dec 2018 where, 50 students participated.
- x. A total of four students each from all the hostel blocks including girls participated in inter block table tennis tournament during 17-20 Jan 2019.
- xi. Awareness on Fire Evacuation Drill was conducted on 21<sup>st</sup> Jan 2019, where more than 540 students took part.
- xii. A team of 18 students showcased a cultural event at Rajbhawan, Itanagar representing NERIST on 26<sup>th</sup> Jan 2019.
- xiii. Annual Athletic meet was organized during 31<sup>st</sup> Jan to 3<sup>rd</sup> Feb 2019, where more than 1000 students comprising (both boys and girls) of Base module to PG and PhD students participate different the events. Major events include, Long runs (500m and 3000m race); Sprints (100m, 200m, 400m & 800m race); Relays 4X100m and 4X400m race); Long jump, High jump, Triple jump; Throws (Javelin, Discuss, shot-put, Hammer); Slow cycling race etc.
- xiv. A total of four students each from all the hostel blocks including girls participated in inter block badminton tournament during 14-20 February 2019.
- xv. More than 100 students participated in inter-block carom tournament, which was held on 23<sup>rd</sup> March 2019.
- xvi. Gymkhana also facilitated numerous memorial tournaments during the last calendar year 2018-19.
  - a) Justland Diengdoh inter-block basketball tournament organized by NERIST Meghalaya students union during 1-6 April 2018.
  - b) LNW memorial inter-block volleyball tournament organized by NERIST Nagaland students' union during 6-13 April 2018.
  - c) VRD memorial intra-state football tournament organized by NERIST Mizo Students' Union during 6-20 August 2018.
  - d) SDP memorial inter-state football tournament organized by NERIST Tripura Students Union during 14-28 August 2018.

- e) Tadar Echu memorial inter-state football tournament organized by NERIST Arunachal Pradesh students' union during 2-20 February 2019.

SHRISTI-the technical festival of NERIST was conducted during 29<sup>th</sup> March to 1<sup>st</sup> April, where more than 800 students actively participated in different events showcasing their innovations and ideas as prototypes.

**SECTION – 8**  
**FUND AND AUDIT**

**ANNEXURE – I**

**MEMBERS OF THE NERIST SOCIETY AS ON 31<sup>ST</sup> MARCH 2019**

- 1 Brigadier (Dr.) B.D. Mishra (Retd), - President  
His Excellency the Governor of Arunachal Pradesh  
Raj Bhawan, Itanagar  
Arunachal Pradesh
- 2 Shri Madhu Ranjan - Member  
Joint Secretary (TEL), MHRD, Govt. of India,  
Deptt. of Higher Education,  
Shastri Bhawan, 'C' Wing ,  
New Delhi – 110 115
- 3 Smt. Darshana M. Dabral - Member  
Joint Secretary & FA,  
IFD, MHRD, Govt. of India,  
Shastri Bhawan, 'C' Wing,  
New Delhi–110 001
- 4 The Hon'ble Minister, - Member  
(Higher & Technical Education)  
Assam Sachibalaya,  
Govt. of Assam,  
Dispur, Guwahati – 781006
- 5 The Hon'ble Minister, - Member  
(Higher & Technical Education),  
Govt. of Mizoram,  
Aizawl – 796 001
- 6 The Hon'ble Minister, - Member  
(Higher & Technical Education),  
Govt. of Nagaland,  
Kohima – 797 001
- 7 The Hon'ble Minister, - Member  
(Higher & Technical Education),  
Govt. of Tripura,  
Agartala – 799 001
- 8 The Hon'ble Minister, - Member  
(Higher & Technical Education),  
Govt. of Manipur,  
Imphal – 795 001

- |    |   |   |                      |
|----|---|---|----------------------|
| 9  | The Hon'ble Minister,<br>(Higher & Technical Education),<br>Govt. of Meghalaya,<br>Shillong - 793 001   | - | Member               |
| 10 | The Hon'ble Minister,<br>(Higher & Technical Education, HRDD)<br>Govt. of Sikkim,<br>Gangtok - 737103   | - | Member               |
| 11 | The Hon'ble Minister,<br>(Higher & Technical Education),<br>Govt. of Arunachal Pradesh,<br>Secretariat Building<br>Itanagar – 791 111   | - | Member               |
| 12 | Dr. Neeraj Sharma,<br>Head (TDT),<br>Ministry of Science & Technology,<br>Department of Science & Technology,<br>Technology Bhawan, New Mehrauli Road,<br>New Delhi - 110 016 | - | Member               |
| 13 | Prof Anoop K Das,<br>Dept. of Mechanical Engineering,<br>IIT,Guwahati,<br>Guwahati-781039   | - | Member               |
| 14 | Shri Tarh Nachung,<br>P-Sector, P.O.Nirjuli<br>Dist.- Papum Pare<br>Arunachal Pradesh   | - | Member               |
| 15 | Prof. Umesh Chandra Ray,<br>Chairman, BoM, NERIST,<br>W/2, Ashiana Nagar, Phase-I<br>Patna-800025, Bihar.   | - | Member               |
| 16 | Prof. H.S. Yadav,<br>Director, NERIST   | - | Member               |
| 17 | Shri M. K. Camder<br>Registrar, NERIST  | - | Non-Member Secretary |

**ANNEXURE – II****MEMBERS OF THE NERIST BOARD OF MANAGEMENT AS ON 31<sup>ST</sup> MARCH, 2019**

- |   |  |            |
|---|--|------------|
| 1 | Prof. Umesh Chandra Ray<br>Chairman, BoM, NERIST,<br>W/2 Ashiana Nagar, Phase-I,<br>Patna – 800 025, Bihar   | - Chairman |
| 2 | The Joint Secretary & FA,<br>IFD, MHRD (Govt. of India),<br>Shastri Bhawan, 'C' Wing,<br>New Delhi-110 115   | - Member   |
| 3 | The Joint Secretary (DL & Admin),<br>MHRD, Govt. of India,<br>Deptt. of Higher Education,<br>Shastri Bhawan, 'C' Wing ,<br>New Delhi – 110 115           | - Member   |
| 4 | The Commissioner & Secretary,<br>Higher & Technical Education,<br>New Secretariat Complex, Room No. 402,<br>Govt. of Mizoram,<br>Khatla, Aizawl.-796 001 | - Member   |
| 5 | The Secretary,<br>Higher & Technical Education,<br>Govt. of Sikkim,<br>Gangtok (Sikkim)-737103   | - Member   |
| 6 | The Commissioner & Secretary,<br>Higher & Technical. Education,<br>Govt. of Meghalaya,<br>Shillong-793001, Meghalaya                                     | - Member   |
| 7 | The Commissioner / Secretary,<br>(Technical Education),<br>Govt. of Nagaland,<br>Kohima-797 001, Nagaland  | - Member   |
| 8 | The Commissioner & Secretary,<br>(Higher & Technical Education),<br>Govt. of Manipur,<br>Imphal-795 001, Manipur   | - Member   |

- |    |  |          |
|----|--|----------|
| 9  | The Secretary,<br>Technical Higher Education,<br>Govt. of Tripura,<br>Agartala-799 001, Tripura  | - Member |
| 10 | Prof. Tamo Mibang,<br>Vice Chancellor,<br>Rajiv Gandhi University,<br>Rono Hills, Doimukh 791112   | - Member |
| 11 | The Commissioner and Secretary,<br>Govt. of Assam,<br>Higher & Technical Education,<br>CM Block, 1 <sup>st</sup> Floor, Dispur,<br>Guwahati – 781 005, Assam | - Member |
| 12 | The Commissioner & Secretary,<br>Technical & Higher Education,<br>Govt. of Arunachal Pradesh,<br>ITANAGAR: 791 111,<br>Arunachal Pradesh                     | - Member |
| 13 | Shri Lambert V. Hynniewta,<br>Sr. Manager (Consumer Sales)<br>India Oil-AOD,<br>Guwahati - 781020  | - Member |
| 14 | Prof. Samarendra Dandapat,<br>Department of EEE,<br>Indian Institute of Technology,<br>Guwahati - 781 039  | - Member |
| 15 | Prof. R.K. Prasad,<br>Dean (P&D),<br>NERIST, Nirjuli   | - Member |
| 16 | Prof. P. Parida,<br>Dean (Acad),<br>NERIST, Nirjuli.   | - Member |
| 17 | Prof. K.N. Dewangan,<br>Dean (Admin),<br>NERIST, Nirjuli   | - Member |
| 18 | Prof. H.S. Yadav,<br>Professor, Deptt of Chemistry,  | - Member |



NERIST, Nirjuli

- |    |   |                        |
|----|---|------------------------|
| 19 | Shri S.K. Sahu,<br>Associate Professor,<br>Department of Civil Engineering,<br>NERIST, Nirjuli – 791 109,<br>Arunachal Pradesh          | - Member               |
| 20 | Shri M. Deben Singh,<br>Assistant Professor,<br>Department of Electrical Engineering,<br>NERIST, Nirjuli – 791109.<br>Arunachal Pradesh | - Member               |
| 21 | Prof. H.S. Yadav,<br>Director, NERIST   | - Member               |
| 22 | Shri M. K. Camder,<br>Registrar, NERIST   | - Non-member Secretary |

**ANNEXURE – III**

**MEMBERS OF NERIST FINANCE COMMITTEE AS ON 31<sup>ST</sup> MARCH, 2019**

1	Prof. Umesh Chandra Ray, 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, New Delhi	- Member
7	Prof. H.S. Yadav, Director, NERIST	- Member
8	Shri M. K. Camder Registrar, NERIST	- Member
9	Dy. Registrar (Fin), NERIST	- Ex-officio Non- Member Secretary

**ANNEXURE – IV****MEMBERS OF ACADEMIC COUNCIL AS ON 31<sup>ST</sup> MARCH, 2019**

<b>Sl. No.</b>	<b>Name and Designation</b>	
1.	Prof. H.S. Yadav Director, NERIST &	Chairman
2.	Prof. P. Parida, Dean (Academic)	Member
3.	Prof. R.K. Prasad, Dean (Planning & Development)	Member
4.	Prof. P. Lingfa Dean (Students Affairs)	Member
5.	Prof. K.N. Dewangan, Dean (Administration)	Member
6.	Prof. N.S. Raghuwanshi, Deptt. of Agri. and Food Engg., IIT, Kharagpur	Member
7.	Prof. Sankar Chandra Deka, Deptt. of Food Engg & Tech., Tezpur University, Tezpur	Member
8.	Prof. D.N. Das, Dean, Faculty of Life Science, Rajiv Gandhi University, Doimukh	Member
9.	Prof. Dilip Kumar Saikia, Deptt. of Computer Science, Tezpur University, Tezpur	Member
10.	Prof. B.P. Mishra, Department of Environment Science, Mizoram University, Aizwal, Mizoram	Member
11.	Prof. Arbind Kumar Singh, Deptt. of Civil Engg, IIT, Guwahati	Member
12.	Mr. Talo Potom, ADM cum CEO, Govt. of A.P., Itanagar	Member
13.	Prof. K.N. Dewangan, Deptt. of Agri. Engg.	Member
14.	Prof. S.K. Shrivastava, Deptt. of Agri. Engg	Member
15.	Prof. S.K. Singh, Deptt. of Civil Engg.	Member
16.	Prof. R.K. Prasad, Deptt. of Civil Engg.	Member
17.	Prof. S. Mishra,	Member

	Deptt. of Civil Engg	
18.	Prof. S. Baishya, Deptt. of Civil Engg.	Member
19.	Prof. Md. A. Hussain, Deptt. of Electronics & Comm. Engg.	Member
20.	Prof. O.P. Roy, Deptt. of Electrical Engg	Member
21.	Prof. Sarsing Gao, Deptt. of Electrical Engg.	Member
22.	Prof. R.K. Mehta, Deptt. of Electrical Engg.	Member
23.	Prof. S.K. Bhagat, Deptt. of Electrical Engg	Member
24.	Prof. A.K. Singh, Deptt. of Electrical Engg	Member
25.	Prof. M. Muralidhar, Deptt. of Mechanical Engg	Member
26.	Prof. P. Lingfa, Deptt. of Mechanical Engg	Member
27.	Prof. M. Chandrasekaran, Deptt. of Mechanical Engg	Member
28.	Prof. A. Giri, Deptt. of Mechanical Engg.	Member
29.	Prof. S. Mahto, Deptt. of Mechanical Engg.	Member
30.	Prof. H.S. Yadav, Deptt. of Chemistry	Member
31.	Prof. P.K. Tripathy, Deptt. of Chemistry	Member
32.	Prof. M.F. Hussain, Deptt. of Chemistry	Member
33.	Prof. N. Deb, Deptt. of Chemistry	Member
34.	Prof. A.K. Gupta, Deptt. of Chemistry	Member
35.	Prof. T. Karlo, Deptt. of Physics	Member
36.	Prof. L.K. Arora, Deptt. of Mathematics	Member
37.	Prof. B.K. Singh, Deptt. of Mathematics	Member
38.	Prof. B.D. Nayak, Deptt. of Humanities & Social Science	Member
39.	Prof. P. Parida, Deptt. of Humanities & Social Science	Member
40.	Prof. Binay Singh,	Member

	Deptt. of Forestry	
41.	Prof. C.L. Sharma, Deptt. of Forestry	Member
42.	Prof. (Mrs.) M. Sharma, Deptt. of Forestry	Member
43.	Prof. (Mrs.) K. Shrivastava, Deptt. of Forestry	Member
44.	Prof. S.Mishra HoD (Civil Engg.)	Member
45.	Prof. M. Chandrasekharan HoD (Mechanical Engg.)	Member
46.	Prof. S.K. Bhagat HoD (Electrical Engg.)	Member
47.	Prof. S.K. Shrivastava HoD (Agricultural Engg.)	Member
48.	Dr. Rajesh Kumar HoD (Electronics and Communication Engg.)	Member
49.	Dr. M. Marjit Singh HoD (Computer Science and Engg.)	Member
50.	Dr. Arvind Pandey HoD (Physics)	Member
51.	Prof. A.K. Gupta HoD (Chemistry)	Member
52.	Prof. L.K. Arora HoD (Mathematics)	Member
53.	Prof.(Mrs.) K. Shirvastava HoD (Forestry)	Member
54.	Mr. R. Prasad HoD (Humanities and Social Sciences)	Member
55.	Dr. S. Choudhury HoC (Management Studies)	Member
56.	Prof. S.K. Shrivastava HoC (CATARD)	Member
57.	Dr. Ajay Bharati, Associate Prof., Deptt. of CE	Member
58.	Mr. Ranendra Prasad, Associate Prof., Deptt. of HSS	Member
59.	Dr. S. Samanta, Associate Prof., Deptt. of ME	Member
60.	Shri G. Pangging, Assistant Prof., Deptt. of FO	Member
61.	Mrs. Mudo Puming Assistant Prof., Deptt. of CE	Member
62.	Shri Ashok Kr. Ray Assistant Prof., Deptt. of ECE CE	Member
63.	Prof. S. Gao	Invitee

Controller of Examinations

67. Mr. M.K. Camder, Registrar

Non-Member Secretary

**ANNEXURE - V**

**MEMBERS OF BUILDING AND WORKS COMMITTEE AS ON MARCH, 2019**

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	Sr.Architect, PWD, Govt. of A.P	-	Member
7	HoD (EE), NERIST	-	Member
8	Deputy Registrar (Fin), NERIST	-	Member
9	Registrar, NERIST	-	Member
10	Executive Engineer (Civil), NERIST	-	Non Member Secretary

**ANNEXURE – VI****INSTITUTE ADMINISTRATION AS ON 31<sup>ST</sup> MARCH, 2019**

## INSTITUTE ADMINISTRATION AS ON 31.03.2019

- |                                   |   |                              |
|-----------------------------------|---|------------------------------|
| 1. Director                       | : | Prof.H.S. Yadav              |
| 2. Deans:                         |   |                              |
| Administration                    | : | Prof. K.N. Dewangan          |
| Academic                          | : | Prof. P. Parida              |
| Student's Affairs                 | : | Prof. P. Lingfa              |
| Planning & Development            | : | Prof. R.K. Prasad            |
| 3. Group – A Officers:            |   |                              |
| Registrar                         | : | Shri M.K. Camder (in-charge) |
| Deputy Registrar (Fin)            | : | Shri M.K. Camder             |
| Assistant Registrars:             |   |                              |
| Academic                          | : | Dr. K.K. Rajesh              |
| Examination Cell                  | : | Shri Gautam Kumar Roy        |
| Store & Purchase                  | : | Shri Toko Shama              |
| Hostel Manage Council             | : | Shri Animesh Basu            |
| Medical Officers:                 | : | Dr. P. Camdir Tok            |
|                                   | : | Dr. Sushmita P. Taggu        |
|                                   | : | Dr. Gyamar Inja              |
| Technical Officers:               | : | Shri P. Valmiki              |
|                                   | : | Smti G.J. Laxmi              |
| Scientific Officer:               | : | Dr. H.S. Gangwar             |
|                                   | : | Sjri T. Ghosh                |
| Assistant Workshop Superintendent | : | Shri Harshendra Misra        |
| Net Work Administrator            | : | Shri Dewan Rasidul Alam      |
| Executive Engineer (Civil)        | : | Shri Toko Lento (in-charge)  |
| 4. Group – B Officers             |   |                              |
| Security Officer                  | : | Shri Toko Shama (in-charge)  |
| Section Officers:                 |   |                              |
| Establishment                     | : | Shri Doge Kamduk             |
| Store & Purchase                  | : | Shri Rabindra Deb            |
| Finance                           | : | Shri P. Goswami              |
| Examination Cell                  | : | Shri Srijit Chattopadhyay    |
| Academic                          | : | Shri Radhe Tadu              |
| Hostel Management Council         | : | Smti. Pratibha Saikia        |
| 5. Chief Vigilance Officer        | : | Prof. K.N. Dewangan          |
| 6. Estate Officer                 | : | Shri Gautam Kumar Roy        |



7. Liaison Officer (SC/ST)	:	Dr. G. Pangging
8. Hindi Officer	:	Shri Ratan Singh
9. Head of the Departments:		
Agriculture Engineering	:	Prof. S.K. Shrivastava
Civil Engineering	:	Prof. S. Misra
Computer Science & Engineering	:	Ms. Margaret Kathing
Electrical Engineering	:	Prof. S.K. Bhagat
Electronics & Communication Engineering	:	Dr. Rajesh Kumar
Mechanical Engineering	:	Prof. M. Chandrasekhran
Forestry	:	Prof. (Mrs.) K. Shrivastava
Physics	:	Dr. A. Pandey
Chemistry	:	Prof. A.K. Gupta
Mathematics	:	Prof. L.K. Arora
Humanities & Social Sciences	:	Shri R. Prasad
Centre for Management Studies	:	Dr. S. Choudhury
10. Head of Centre (CATRD)	:	Prof. S.K. Shrivastava
11. Chairman:		
NEE Committee	:	Dr. Mukesh Upadyay
Hostel Management Council	:	Shri Radak Blange
Gymkhana	:	Dr. L.B. Singha
Telecom	:	Dr. Rajesh Kumar
Transport	:	Prof. S. Mahto
Library	:	Shri N.G. Sorum
HAC	:	Dr. O.P. Tripathy
12. Training & Placement Cell in-charge	:	Dr. Arnab Bandopadhyay
13. ET Cel in-charge	:	Shri Amar Taggu
14. Co-ordinators:		
SRIC	:	Dr. Arvind Pandey
NSS	:	Dr. A. Dinamani Singh
CEP	:	Dr. Pankaj Kr. Pandey
CRF	:	Dr. Jagannath Bhuyan
ACCF	:	Shri Amar Taggu
15. Controller of Examination in-charge	:	Prof. Sarsing Gao
16. Secretary NEE Committee	:	Dr. K.K. Rajesh
17. NCC Officer	:	Mr. Anubhav Pal

**ANNEXURE – VII****MEMBERS OF THE LIBRARY COMMITTEE AS ON 31<sup>ST</sup> MARCH, 2019**

<b>Sl</b>	<b>Name</b>	<b>Deptt</b>	<b>Member</b>
1. 1	Mr. N.G. Sorum	Civil Eng.	Chairman
2.	Mr. D.M.Sahu	Central Library	Member Sec.
3.	Dr. S.L.Bharati	Chemistry	Member
4.	Dr. K. Saharia	Physics	Member
5.	Ms. Piyali Das	Electrical Eng.	Member
6.	Mr. S.M. Khan	Mechanical Eng.	Member
7.	Dr. K. Hera Singh	Mathematics	Member
8.	Dr. Raju Borthakur	HSS	Member
9.	Dr. S. Choudhury	CMS	Member
10.	Dr. P.K. Pandey	Agriculture Eng.	Member
11.	Dr. Awadesh Kumar	Forestry	Member
12.	Mr. R.K. Mangang	Electronic Eng.	Member
13.	Dr. A.K. Singh Yadav	Computer Sc.	Member

**ANNEXURE – VIII**

**MEMBERS OF NERIST ENTRANCE EXAMINATION COMMITTEE AS ON 31.3.2019**

1	Dr. Mukesh Upadhyay	Associate Professor	Chairman
2	Dr. M. Marjit. Singh	Assistant Professor	Member
3	Dr. Pankaj Kumar Pandey	Assistant Professor	Member
4	Dr. Jagannath Bhuyan	Assistant Professor	Member
5	Dr. A. Paul	Assistnt Professor	Member
6	Dr. K. K. Rajesh	Assistant Registrar (Acad)	Member Secretary

**ANNEXURE – IX****MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 31<sup>ST</sup> MARCH, 2019**

<b>Chairman/Chief Warden</b>	Mr. Radak Blange, Associate Professor, Department of Electrical Engineering.
<b>Assistant Registrar</b>	Mr. Animesh Basu
<b>Section Officer</b>	Mrs. Pratibha Saikia
<b>Office Staff</b>	Mrs. A. Adhikari, Assistant Mr. Thomas Mathew, Assistant, Hostel Block H (Part time in Office of HMC) Mr. B. Patir, LDC Mr. J. Milli, Mr. N. B. Thapa, Mrs. L. Ronya and Mrs. B. Hazarika

<b>Sl. No.</b>	<b>Hostel Block</b>	<b>Hostel Capacity</b>	<b>Mess Manager-cum-Caretakers/Assistants</b>	<b>Wardens</b>
1	<b>A</b>	124	Mr. Dorjee Shongmu	Dr. Kh. Hera Ch. Singh
2	<b>B</b>	124		Dr. M. Hassan
3	<b>C</b>	124	Mr. B. Patir	Mr. A. K. Chowdhury
4	<b>D</b>	124		Mr. Ajit Kr. Singh Yadav
5	<b>E</b>	250	Mr. A. Gogoi	Dr. K. Borah
6	<b>F</b>	250	Mr. E. N. V. Nair	Mr. Akhilesh Sharma
7	<b>G</b>	250	Mrs. M. Roy Choudhury	Mrs. Piyali Das
8	<b>H</b>	250	Mr. T. Mathew	Dr. M. Upadhaya
9	<b>Brahmaputra</b>	416		Dr. Ashsih Paul
10	<b>Subansiri</b>	250	Mrs. N. Siyum	Dr. (Mrs.) Deepika Devi

**ANNEXURE - X****NERIST ENTRANCE EXAMINATION****REPORT ON ADMISSI DURING 2018 – 19 SESSION THROUGH NERIST ENTRANCE EXAMINATION (NEE-I, II & III****Admission Notice:**

The admission notification was published in the following newspapers:

Sl. No.	Name of News Paper
1	Arunachal Times, Itanagar
2	Assam Tribune, Guwahati
8	Dainik Sambad, Tripura
4	Eco of Arunachal Pradesh
9	Mizoram Times
7	Nagaland Post
10	Sangai Express, Imphal
5	Shillong Times
6	Sikkim Express
3	The Telegraph: All editions including Orissa and Bihar

**Date of Examination:**      **22. 04. 2018: NEE – II & III**  
**23. 04. 2018: NEE – I**

**Candidates Appeared in NEE-2018 (State, Category & Module wise)**

Name of state	Module						Total
	NEE-I		NEE-II		NEE-III		
	Male	Female	Male	Female	Male	Female	
Arunachal Pradesh	1617	1231	1055	1095	136	45	<b>5179</b>
Assam	404	183	470	224	128	72	<b>1481</b>
Manipur	159	66	244	213	10	05	<b>697</b>
Meghalaya	79	31	121	153	26	29	<b>439</b>
Mizoram	25	06	22	08	10	01	<b>72</b>
Nagaland	84	36	242	208	31	25	<b>626</b>
Sikkim	06	02	14	11	14	08	<b>55</b>
Tripura	245	118	63	27	63	33	<b>549</b>
All India	112	41	61	26	22	03	<b>265</b>
PD	03	01	07	01	02	00	<b>14</b>
<b>Total</b>	<b>2734</b>	<b>1715</b>	<b>2299</b>	<b>1966</b>	<b>442</b>	<b>221</b>	<b>9377</b>

**State & Branch wise details of Candidates Appeared in NEE-III, 2018**

Name of state	AE		CE		ME		ECE		CSE		EE	
	M	F	M	F	M	F	M	F	M	F	M	F
Arunachal Pradesh	03	00	104	37	09	00	02	00	07	04	11	04
Assam	05	06	69	37	16	01	09	05	14	14	15	09
Manipur	00	00	07	00	00	00	00	03	02	02	01	00
Meghalaya	01	00	07	11	07	04	01	04	08	05	02	05
Mizoram	00	00	03	01	02	00	01	00	02	00	02	00
Nagaland	00	00	19	19	07	01	01	00	00	00	04	05
Sikkim	00	01	07	03	00	00	01	00	02	03	04	01
Tripura	01	00	20	09	16	00	10	04	03	13	13	07
All India	00	00	09	01	04	00	02	01	00	00	07	01
PD	00	00	02	00	00	00	00	00	00	00	00	00
<b>Total</b>	<b>10</b>	<b>07</b>	<b>247</b>	<b>118</b>	<b>61</b>	<b>6</b>	<b>27</b>	<b>17</b>	<b>38</b>	<b>41</b>	<b>59</b>	<b>32</b>

**RESULT ANNOUNCEMENT**

- 1) Result approved on : 08-05-2018  
 2) Declaration on notice boards : 08-05-2018  
 3) Result given in NERIST website : 08-05-2018

**Candidates selected (State and module wise) 2018**

Name of state & category	MODULE				
	NEE-I	NEE-II		NEE-III	Total
		Technology	Forestry		
PRC	16	05	02	06	<b>29</b>
Physical Handicapped	04	03	01	01	<b>09</b>
Arunachal Pradesh	20	08	03	06	<b>37</b>
Assam	20	08	03	07	<b>38</b>
Manipur	20	08	03	04	<b>35</b>
Meghalaya	20	08	03	04	<b>35</b>
Mizoram	20	08	03	06	<b>37</b>
Nagaland	20	08	03	05	<b>36</b>
Sikkim	04	04	03	05	<b>16</b>
Tripura	20	08	03	06	<b>37</b>
All India	20	08	03	05	<b>36</b>

Floating	00	00	00	02	<b>02</b>
<b>Total</b>	<b>184</b>	<b>76</b>	<b>30</b>	<b>57</b>	<b>347</b>

### Candidates wait-listed (State & module-wise) 2018

Name of state & category	MODULE				
	NEE-I	NEE-II		NEE-III	Total
		Technology	Forestry		
PRC	40	12	06	13	<b>71</b>
Physical Handicapped	00	04	00	01	<b>05</b>
Arunachal Pradesh	40	16	06	10	<b>72</b>
Assam	40	15	05	10	<b>70</b>
Manipur	40	16	06	03	<b>65</b>
Meghalaya	40	16	06	04	<b>66</b>
Mizoram	07	11	06	04	<b>28</b>
Nagaland	40	16	06	07	<b>69</b>
Sikkim	02	04	04	03	<b>13</b>
Tripura	40	16	06	12	<b>74</b>
All India	37	14	06	06	<b>63</b>
Floating	-	-	-	04	<b>04</b>
<b>Total</b>	<b>326</b>	<b>140</b>	<b>57</b>	<b>77</b>	<b>600</b>

### COUNSELLING SCHEDULE OF NEE-2018

1	18.07.2018	Selected List of NEE – I (Base) (Excluding Arunachal Pradesh)
2	19.07.2018	Waiting List of NEE – I (Excluding Arunachal Pradesh)
3	20.07.2018	Selected & Waiting List of NEE – I ( <b>for the candidates of Arunachal Pradesh state Quota for Base Module</b> )
4	21.07.2018	Selected & Waiting List of NEE – II, (Excluding Arunachal Pradesh)
5	23.07.2018	Selected & Waiting List of NEE – III, (Excluding Arunachal Pradesh)
6	24.07.2018	Selected & Waiting List of NEE – II & III ( <b>for the candidates of Arunachal Pradesh state Quota</b> )

**Candidates admitted in the year 2018 (State and module wise):**

Name of state & category	MODULE				
	NEE-I	NEE-II		NEE-III	Total
		Technology	Forestry		
PRC	15	06	01	08	<b>30</b>
Physical Handicapped	05	02	01	01	<b>09</b>
Arunachal Pradesh	20	07	00	09	<b>36</b>
Assam	20	07	02	08	<b>37</b>
Manipur	20	07	02	05	<b>34</b>
Meghalaya	20	07	03	06	<b>36</b>
Mizoram	20	06	01	05	<b>32</b>
Nagaland	20	06	02	06	<b>34</b>
Sikkim	20	03	01	05	<b>29</b>
Tripura	18	05	03	07	<b>33</b>
All India	18	07	01	05	<b>31</b>
<b>Total</b>	<b>196</b>	<b>63</b>	<b>17</b>	<b>65</b>	<b>341</b>

**CANDIDATES ADMITTED IN BASE MODULE (NEE-I) AS PER COUNSELLING REPORT – 2018 (Branch wise):**

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	Total
AE	01	03	04	04	04	04	04	04	04	02	02	<b>36</b>
CE	01	03	04	04	04	04	04	04	04	04	04	<b>40</b>
EC	01	03	04	04	04	04	04	04	04	04	04	<b>40</b>
EE	01	03	04	04	04	04	04	04	04	04	04	<b>40</b>
ME	01	03	04	04	04	04	04	04	04	04	04	<b>40</b>
<b>Total</b>	<b>05</b>	<b>15</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>18</b>	<b>18</b>	<b>196</b>

**CANDIDATES ADMITTED IN DIPLOMA MODULE (NEE-II) AS PER COUNSELLING REPORT – 2018 (Branch wise):**

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	Total
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<b>AE</b>	00	01	00	00	01	01	01	01	00	00	00	<b>05</b>
<b>CE</b>	01	00	01	01	01	01	01	01	01	01	01	<b>10</b>
<b>CS</b>	01	02	03	03	02	02	01	01	00	02	03	<b>20</b>
<b>EC</b>	00	01	01	01	01	01	01	01	00	00	01	<b>08</b>
<b>EE</b>	00	01	01	01	01	01	01	01	01	01	01	<b>10</b>
<b>ME</b>	00	01	01	01	01	01	01	01	01	01	01	<b>10</b>
<b>FO</b>	00	01	00	02	02	03	01	02	01	03	01	<b>17</b>
<b>Total</b>	<b>03</b>	<b>07</b>	<b>07</b>	<b>09</b>	<b>09</b>	<b>10</b>	<b>07</b>	<b>08</b>	<b>04</b>	<b>08</b>	<b>08</b>	<b>80</b>

**CANDIDATES ADMITTED IN DEGREE MODULE (NEE-III) AS PER COUNSELING REPORT – 2018 (Branch wise):**

<b>DISCIPLINE</b>	<b>PD</b>	<b>PRC</b>	<b>AP</b>	<b>AS</b>	<b>MN</b>	<b>MG</b>	<b>MZ</b>	<b>NL</b>	<b>SK</b>	<b>TR</b>	<b>AI</b>	<b>Total</b>
<b>AE</b>	00	01	01	01	00	01	00	00	00	00	00	<b>04</b>
<b>CE</b>	01	02	02	01	01	01	01	01	01	01	01	<b>13</b>
<b>CS</b>	00	01	02	01	01	01	01	01	01	01	00	<b>11</b>
<b>EC</b>	00	01	02	01	01	01	01	01	01	02	01	<b>12</b>
<b>EE</b>	00	02	01	02	01	01	01	01	01	02	01	<b>13</b>
<b>ME</b>	00	01	01	02	01	01	01	02	01	01	01	<b>12</b>
<b>Total</b>	<b>01</b>	<b>08</b>	<b>09</b>	<b>08</b>	<b>05</b>	<b>06</b>	<b>05</b>	<b>06</b>	<b>05</b>	<b>07</b>	<b>05</b>	<b>65</b>

**In-service candidate - 01**

**SUMMARY OF NEE-2018**

<b>POSITION</b>	<b>NEE-I</b>	<b>NEE-II</b>	<b>NEE-III</b>	<b>Total</b>
No. of candidates appeared	4449	4265	663	<b>9377</b>
No. of candidates selected (Technology)	184	76	57	<b>317</b>
No. of candidates selected (Forestry)	00	30	00	<b>30</b>
No. of candidates waitlisted (Technology)	326	140	77	<b>543</b>
No. of candidates waitlisted (Forestry)	00	77	00	<b>77</b>

**HIGHLIGHTS OF NEE-2018**

<b>Sl. No.</b>	<b>Events</b>	<b>2017</b>	<b>2018</b>	<b>Remarks</b>
1	No. of candidates appeared	<b>9367</b>	<b>9377</b>	<b>Increased by 10 Nos.</b>

2	No. of candidates taken admission through counseling	<b>NEE-I - 152</b> <b>NEE-II - 69</b> <b><u>NEE-III - 53</u></b> <b>274</b>	<b>NEE-I - 196</b> <b>NEE-II - 80</b> <b><u>NEE-III - 65</u></b> <b>341</b>	<b>Increased by 67 Nos.</b>
3	The most preferred branch	<b>CE with 63</b>	<b>CE &amp; EE with 63, respectively</b>	-
4	Less preferred branch	<b>CS with 20</b>	<b>CS with 31</b>	<b>Increased by 11 Nos.</b>

Adoption of online application process through [www.neeonline.ac.in](http://www.neeonline.ac.in) and [www.nerist.ac.in](http://www.nerist.ac.in). Online process has helped the NEE Cell to publish the NEE result in time as per the schedule. Payment mode for application was also available to the candidates via online banking, debit cards and credit cards. All the information relating to the online application, result declaration and schedule for counseling were made available in the institute website for the information to the candidates and parents in particular and for general information at large.

Thus, the total process of NEE-2018 was completed successfully.

**ANNEXURE - XI****LIST OF FACULTY AS ON 31<sup>ST</sup> MARCH, 2019**

<b>Sl.No</b>	<b>Name of Faculty Members</b>	<b>Post Holding</b>	<b>Department</b>
1	Dr. Binay Singh	Professor (CAS)	<b>Forestry</b>
2.	Dr. C. L. Sharma	Professor (CAS)	-do-
3.	Dr.(Mrs) M. sharma	Professor (CAS)	-do-
4.	Dr. (Mrs.) K. Shrivastava	Professor (CAS)	-do-
5.	Dr. S. Suresh Kumar Singh	Associate Professor	-do-
6.	Dr. Awadhesh Kumar	Associate Professor	-do-
7.	Dr. P. R. Gajurel	Associate Professor	-do-
8.	Dr. O. P. Tripathi	Associate Professor	-do-
9.	Dr. L. B. Singha	Associate Professor	-do-
10.	Dr. Gobinda Pangging	Assistant Professort	-do-
11.	Dr. Ashish Paul	Assistant Professor	-do-
12.	Dr. (Ms) Madhu Kamle	Assistant Professor	-do-
13.	Dr. Pradeep Kumar	Assistant Professor	-do-
<b>DEPARTMENT OF AGRICULTURAL ENGINEERING</b>			
1.	Dr. P.P. Dabral	Professor	<b>Agril.Engg.</b>
2.	Dr. K. N. Dewangan	Professor (CAS)	-do-
3.	Dr. S. K. Shrivastava	Professor (CAS)	-do-
4.	Shri D. K. Shyamal	Associate Professor	-do-
5.	Dr. (Ms) Aditi Bhadra	Associate Professor	-do-

6.	Dr. Arnab Bandopadhyay	Associate Professor	-do-
7.	Dr. P. K. Pranav	Assistant Professor	-do-
8.	Dr. Pankaj Kumar Pandey	Assistant Professor	-do-
9.	Dr. Thaneswar Patel	Assistant Professor	-do-
10.	Shri Ukil Singh	Assistant Professor	-do-
11.	Shri Arun Kumar Choudhary	Assistant Professor	-do-
12.	Shri Anubhab Pal	Assistant Professor	-do-
13.	Shri Tage Tapang	Assistant Professor	-do-
14.	Mrs. Vanita Pandey	Assistant Professor	-do-
<b>DEPARTMENT OF CIVIL ENGINEERING</b>			
1.	Dr. S. K. Singh	Professor	<b>Civil.Engg.</b>
2.	Dr. R. K. Prasad	Professor (CAS)	<b>-do-</b>
3.	Dr. S. Baishya	Professor (CAS)	<b>-do-</b>
4.	Dr. S. Mishra	Professor (CAS)	<b>-do-</b>
5.	Shri S. K. Sahu	Associate Professor	<b>-do-</b>
6.	Dr. Ajay Bharati	Associate Professor	<b>-do-</b>
7.	Dr. (Ms.) Dipika Devi	Associate Professor	<b>-do-</b>
8.	Mrs. Y. Bidyalaxmi Devi	Assistant Professor	<b>-do-</b>
9.	Ms. Mudo Puming	Assistant Professor	<b>-do-</b>
10.	Ms. Yamem Tamut	Assistant Professor	<b>-do-</b>
11.	Shri Nero Gumsar Sorum	Assistant Professor	<b>-do-</b>
12.	Shri K. James Singh	Assistant Professor	<b>-do-</b>
13.	Dr. (Ms) Ajanta Kalita	Assistant Professor	<b>-do-</b>

14.	Dr. Dibyendu Pal	Assistant Professor	-do-
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1.	Dr. (Ms.) N. Marchang	Associate Professor	<b>Com.Sc. &amp; Engg.</b>
2.	Ms. Margaret Kathing	Associate Professor (CAS)	-do-
3.	Dr. S. J. Borah	Associate Professor (CAS)	-do-
4.	Shri K. Leogh	Associate Professor (CAS)	-do-
5.	Dr. M. Marjit Singh	Assistant Professor	-do-
6.	Shri Aswinii Kumar Patra	Assistant Professor	-do-
7.	Shri Manul Saikiia	Assistant Professor	-do-
8.	Shri Amarr Taggu	Assistant Professor	-do-
9.	Shri Ajit Kumarr Singh Yadav	Assistant Professor	-do-
10.	Shri Yogendra Mohan	Assistant Professor	-do-
11.	Shri Pradeep Kamboj	Assistant Professor	-do-

**DEPARTMENT OF ELECTRICAL ENGINEERING**

1.	Dr. S. Chatterjee	Professor (CAS)	<b>Elect. Engg.</b>
2.	Dr. R. K. Mehta	Professor (CAS)	-do-
3.	Dr. O. P. Roy	Professor (CAS)	-do-
4.	Dr. Sarsing Gao	Professor (CAS)	-do-
5.	Dr. S. K. Bhagat	Professor (CAS)	-do-
6.	Dr. A. K. Singh	Professor (CAS)	-do-
7.	Shri R. Blange	Associate Professor (CAS)	-do-
8.	Shri T.V.P. Singh	Associate Professor (CAS)	-do-
9.	Dr. Adikanda Parida	Assistant Professor	-do-

10.	Shri Deben Singh	Assistant Professor	-do-
11.	Dr. Anu Kumar Das	Assistant Professor	-do-
12.	Shri N. L. Meitei	Assistant Professor	-do-
13.	Ms. Somila Hashunao	Assistant Professor	-do-
14.	Shri Akhilesh Sharma	Assistant Professor	-do-
15.	Ms. Piyali Das	Assistant Professor	-do-
16.	Shri P. Devachandrra Singh	Assistant Professor	-do-
<b>DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING</b>			
1.	Dr. Md. Anwar Hussain	Professor (CAS)	<b>Electronics</b>
2.	Dr. Aheiban Dinamani Singh	Associate Professor	<b>-do-</b>
3.	Dr. Rajesh Kumar	Associate Professor	<b>-do-</b>
4.	Dr. Tripurari Sharan	Assistant Professor	<b>-do-</b>
5.	Shri Madhusudan Mishra	Assistant Professor	<b>-do-</b>
6.	Dr. Pranab Kumar Dutta	Assistant Professor	<b>-do-</b>
7.	Dr. (Mrs) Joyatri Bora	Assistant Professor	<b>-do-</b>
8.	Dr. Swanirbhar Majumdar	Assistant Professor	<b>-do-</b>
9.	Shri Ashok Kumar Ray	Assistant Professor	<b>-do-</b>
10.	Shri Rusni Kima Mangang	Assistant Professor	<b>-do-</b>
11.	Shri Akho mJohan Richa	Assistant Professor	<b>-do-</b>
12.	Shri Anil Kumar Gautam	Assistant Professor	<b>-do-</b>
13.	Shri M. Edison Singh	Assistant Professor	<b>-do-</b>

<b>DEPARTMENT OF MECHANICAL ENGINEERING</b>			
1.	Dr. M. Muralidhar	Professor (CAS)	<b>Mech. Engg.</b>
2.	Dr. Asis Giri	Professor (CAS)	<b>-do-</b>
3.	Dr. Pradip Lingfa	Professor (CAS)	<b>-do-</b>
4.	Dr. M. Chandrasekhran	Professor (CAS)	<b>-do-</b>
5.	Dr. S. Mahto	Professor (CAS)	<b>-do-</b>
6.	Dr. S. Samanta	Associate Professor	<b>-do-</b>
7.	Dr. Satyam Shivam Gautom	Associate Professor	<b>-do-</b>
8.	Dr. Sandeep Singh	Associate Professor(CAS)	<b>-do-</b>
9.	Shri K. K. Mondal	Assistant Professor	<b>-do-</b>
10.	Dr. M. P. Thaddues	Assistant Professor	<b>-do-</b>
11.	Shri Maryom Dabi	Assistant Professor	<b>-do-</b>
12.	Dr. Narendra Kumar Rana	Assistant Professor	<b>-do-</b>
13.	Shri Nabam Teyi	Assistant Professor	<b>-do-</b>
14.	Dr. Santosh Kumar Tamang	Assistant Professor	<b>-do-</b>
15.	Md. S. Mujaheed Khan	Assistant Professor	<b>-do-</b>
16.	Dr. Yadaiah Nirsanmetla	Assistant Professor	<b>-do-</b>
<b>DEPARTMENT OF CHEMISTRY</b>			
1.	Dr. H. S. Yadav	Professor (CAS)	<b>Chemistry</b>
2.	Dr. P. K. Tripathy	Professor (CAS)	<b>-do-</b>
3.	Dr. M. F. Hussain	Professor (CAS)	<b>-do-</b>

4.	Dr. N. Deb	Professor (CAS)	<b>-do-</b>
5.	Dr. A. K. Gupta	Professor (CAS)	<b>-do-</b>
6.	Shri N. Ghanashyam Singh	Assistant Professor	<b>-do-</b>
7.	Dr. Shahi Lata Bharati	Assistant Professor	<b>-do-</b>
8.	Dr. (Ms) Meera Yadav	Assistant Professor	<b>-do-</b>
9.	Dr. Jagannath Bhuyan	Assistant Professor	<b>-do-</b>
10.	Dr. A. Murugan	Assistant Professor	<b>-do-</b>
11.	Dr. Nagendra Nath Yadav	Assistant Professor	<b>-do-</b>
<b>DEPARTMENT OF HSS</b>			
1.	Dr. B. D. Nayak	Professor (CAS)	<b>HSS</b>
2.	Dr. P. Parida	Professor (CAS)	<b>-do-</b>
3.	Dr. (Ms) S. Sinha	Associate Professor(CAS)	<b>-do-</b>
4.	Shri R. Prasad	Associate Professor (CAS)	<b>-do-</b>
5.	Dr. Raju Barthakur	Associate Professor (CAS)	<b>-do-</b>

<b>DEPARTMENT OF MATHEMATICS</b>			
1.	Dr. L. K. Arora	Professor (CAS)	<b>Mathematics</b>
2.	Dr. B.K. Singh	Professor (CAS)	<b>-do-</b>
3.	Dr. M. M. Dixit	Associate Professor	<b>-do-</b>
4.	Dr. Jayanta Bora	Assistant Professor	<b>-do-</b>
5.	Dr. Herachandra Singh	Assistant Professor	<b>-do-</b>
6.	Dr. Mohammad Hassan	Assistant Professor	<b>-do-</b>



7.	Dr. Chandra Prakash Pandey	Assistant Professor	-do-
<b>DEPARTMENT OF PHYSICS</b>			
1.	Dr. P. R. Alapati	Professor (CAS)	<b>Physics</b>
2.	Dr. Tado Karlo	Professor (CAS)	-do-
3.	Dr. Arvind Pandey	Associate Professor (CAS)	-do-
4.	Dr. ( Mrs) Th. Gomti Devi	Associate Professor	-do-
5.	Dr. Mukesh Upadhyay	Associate Professor	-do-
6.	Dr. Rajesh Kumar Yadav	Associate Professor	-do-
7.	DR. Kamal Saharia	Assistant Professor	-do-
8.	Dr. (Ms.) Akbari Jahan	Assistant Professor	-do-
9.	Dr. Kunal Borah	Assistant Professor	-do-
<b>DEPARTMENT OF CMS</b>			
1.	Dr. R. M. Pant	Professor (CAS)	<b>CMS</b>
2.	Dr. Shibabrata Choudhary	Assistant Professor	-do-
3.	Dr. (Mrs) Bijoylaxmi Sarmah	Assistant Professor	-do-
4.	Dr. Manhoman Mall	Assistant Professor	-do-
<b>Total : 133</b>			

ANNEXURE – XII

AUDIT REPORT & ANNUAL ACCOUNTS