

## SECTION-1

### DIRECTOR'S SUMMARY

It is a privilege to write a foreword to this 28<sup>th</sup> Annual Report 2014-2015 of NERIST which gives a glimpse of various activities of this Institute during the last one year. In this period, we have worked together to develop and improve the infrastructure and strived hard to give a responsive and transparent administration.

In this endeavour, the Institute shall always remain indebted to the out going President of the Society for NERIST, Lt. Gen (Retd.) Nirbhay Sharma, PVSM, UVSM, AVSM, VSM, His Excellency the Ex. Governor of Arunachal Pradesh for his guidance and support, since 29.05.2013. The Institute is also indebted to its Chairman of Board of Management, Shri Pranab Kumar Barbora, Air Marshal (Retd.). PVSM, VSM, who is a constant source of inspiration and guidance since 13<sup>th</sup> December, 2013. In this connection, the Institute shall also like to thank the Technical Bureau, IFD and other offices of MHRD for their support and cooperation from time to time.

During the period of the year 2014-15, a number of academic initiatives and infrastructural development have been taken up, with support from all concerned. TEQIP activities with World Bank funding are going on in full-swing and the administration is ever alert to offer transparency and support growth. However, there is no room for complacency and the Institute shall work even harder to achieve a still higher standard and try to meet targets for more than what has been expected of it so far.

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

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

**Director**

## SECTION-2 INTRODUCTION

### 2.1 The Institute

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

The Institute came under the direct control of Ministry of Human Resource Development (MHRD), Government of India, from 1<sup>st</sup> April, 1994. It has been conferred with the “Deemed to be University” status on 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 a multiple entry and exit system and is producing skilled man-power in different levels, i.e., Certificate, Diploma and Degree, through its innovative educational programmes. The system of education adopted at NERIST is aimed at enabling the region consisting of eight states comprising of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, to bridge the technology gap with the rest of the country, and also to increase the pace of socio-economic development in the region. Sikkim has been included as the eight beneficiary state of the Institute in the year 2006.

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

The Post-Graduate academic programmes were started in 1996-97 in two subjects viz., Information and Technology and Environmental Science & Engineering with due approval of AICTE and MHRD. After acquiring ‘Deemed University’ status in 2005, PG and Ph.D. programmes, both part time and regular basis, in all Engineering departments, M.Sc. in Forestry w.e.f. 2007-08 and M.Sc. in Physics, Chemistry and Mathematics, w.e.f., 2009-10 sessions have also started. Full time, as well as part time Ph.D programmes has been started in all 11 departments since 2006 including MBA. NERIST has the distinction of being the first institute in the state of Arunachal Pradesh to start M.Tech and MBA programmes.

## **VISION OF THE INSTITUTE**

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

## **MISSION OF THE INSTITUTE**

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

## **2.2 Administrative set up**

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

## **2.3 Salient Features**

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

## **SECTION – 3**

### **ACADEMIC PROGRAMMES**

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

Academic Section is the backbone of the University /Institute. Present Academic Branch is divided into three cells, viz., Undergraduate, Postgraduate and Ph.D Cell for smooth and effective 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. 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. Matters relating to Convocation, AC Meeting, RTI, correspondences with AICTE, UGC etc and other miscellaneous academic matters are being dealt by an Assistant and stenographer. Besides these, the Academic Section also deals with all other matters related to academic affairs of the institute with MHRD/UGC/AICTE and other miscellaneous academic matters. The branch is headed by Assistant Registrar (Academic). As on July-December, 2015, the institute has 1292 UG students, 270 PG students and 174 registered PhD scholars. The total strength of students at present is **1736**, which reflects an appreciable increase in number as compared to the previous years.

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

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

##### **(a) Engineering & Technology Stream**

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

##### **(b) Forestry Stream**

1. Degree Module

In the Engineering and Technology stream, the Institute runs three modules, viz., Base (admitted after Class X), Diploma (admitted after Class 10+2/NERIST Base Module Course) and Degree Module (admitted after Diploma with requisite CGPA/Polytechnic Diploma with 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.

As per the recommendation of Academic Council in its 8<sup>th</sup> Meeting and approval of Board of Management the admission of Forestry discipline in Base Module Course was withdrawn from the academic session of 2010-2011 and the total seats were equally distributed in five engineering disciplines i.e. Agricultural, Civil, Electrical, Electronics & Communication and Mechanical Engineering. However, the 4 years Degree Programme (after class 10+2/NERIST Base Module Certificate Course) in Forestry stream exists in this Institute.

### 3.3 Courses offered for Under Graduate Programme

During 2014-15, the Institute offered the following courses in each module:

#### Base (Certificate) Module

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

#### Diploma Module (E&T Stream)

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

#### Degree Module (E&T Stream)

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

#### Degree Module (4-year programme in Forestry)

### 3.4 Course Offered in Post Graduate Programme

The Institute started its Post Graduate Courses and the following programmes are currently being run.

#### M.Tech.

- 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 Aided Manufacturing & Automation under the Department of Mechanical Engineering.
- g) M.Tech. in Thermo-fluid Engineering under the Department of Mechanical Engineering.
- h) M.Tech. in VLSI under the Department of Electronics & 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. (Part time) & Ph.D. (Full 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

### **3.5 Any other relevant information/data**

Number of Students enrolled in July-December Semester, 2014-15 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)

DISCIPLINE	BASE	DIPLOMA	DEGREE
Agricultural Engineering (AE)	27	30	12
Civil Engineering (CE)	41	39	36
Computer Science & Engineering (CS)	-	08	20
Electrical Engineering (EE)	40	44	40
Electronics & Communication Engg. (EC)	22	38	36
Mechanical Engineering (ME)	40	44	46
<b>Total</b>	<b>170</b>	<b>203</b>	<b>190</b>

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

DISCIPLINE	BASE	DIPLOMA	DEGREE
AE	25	30	14
CE	37	40	38
CS	-	04	16
EE	38	37	36
EC	29	37	38
ME	34	42	35
<b>Total</b>	<b>163</b>	<b>190</b>	<b>177</b>

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

Year	No. of students
First	15
Second	12
Third	17
Fourth	28
<b>Total</b>	<b>72</b>

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

Discipline	No. of students
AE	-
CE	15
CS	10
EE	10
EC	10
ME	08
<b>Total</b>	<b>53</b>

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

DISCIPLINE	BASE	DIPLOMA	DEGREE
AE	06	06	03
CE	07	15	06
CS	-	01	01
EE	07	02	02
EC	02	03	04
ME	03	04	01
FO	-	-	01
<b>Total</b>	<b>25</b>	<b>31</b>	<b>18</b>

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

Discipline	1 <sup>st</sup> Year		2 <sup>nd</sup> Year		Repeater		Total
	Male	Female	Male	Female	Male	Female	
AE	19	08	13	12	04	02	58
CE	31	10	26	11	07	-	85
EE	36	04	32	06	04	03	85
EC	19	03	21	08	02	-	53
ME	37	03	30	04	03	-	77
<b>Total</b>	<b>142</b>	<b>28</b>	<b>122</b>	<b>41</b>	<b>20</b>	<b>05</b>	<b>358</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	
AE	20	10	20	10	03	-	63
CE	30	09	33	07	14	01	94
CS	07	01	04	-	01	-	13
EE	35	09	28	09	02	-	83
EC	27	11	31	06	02	01	78
ME	43	01	38	04	04	-	90
<b>Total</b>	<b>162</b>	<b>41</b>	<b>154</b>	<b>36</b>	<b>26</b>	<b>02</b>	<b>421</b>

**Table 8: Gender-wise Detail of Students (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	07	05	09	05	-	-	-	-	26
CE	30	06	32	06	12	03	05	01	95
CS	12	08	13	03	06	04	-	01	47
EE	27	13	30	06	07	03	02	-	88
EC	28	08	30	08	08	02	03	01	88
ME	43	03	34	01	07	01	01	-	90
<b>Total</b>	<b>147</b>	<b>43</b>	<b>148</b>	<b>29</b>	<b>40</b>	<b>13</b>	<b>11</b>	<b>03</b>	<b>434</b>



**Table 9: Gender-wise Detail of Students (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	08	07	06	06	11	06	15	13	72
<b>Total</b>	<b>08</b>	<b>07</b>	<b>06</b>	<b>06</b>	<b>11</b>	<b>06</b>	<b>15</b>	<b>13</b>	<b>72</b>

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

Discipline	GE	OBC	SC	ST	PH	Total
AE	05	04	01	41	-	52
CE	16	11	05	42	01	75
EE	22	14	01	40	01	78
EC	25	03	03	19	01	51
ME	38	08	05	22	01	74
<b>Total</b>	<b>107</b>	<b>40</b>	<b>15</b>	<b>164</b>	<b>04</b>	<b>330</b>

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

Discipline	GE	OBC	SC	ST	PH	Total
AE	10	03	02	45	-	60
CE	21	07	06	42	03	79
CS	02	02	-	03	01	08
EE	24	12	03	40	01	80
EC	43	09	04	15	03	74
ME	38	15	05	27	01	86
<b>Total</b>	<b>138</b>	<b>48</b>	<b>20</b>	<b>172</b>	<b>09</b>	<b>387</b>

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

Discipline	GE	OBC	SC	ST	PH	Total
AE	05	02	01	17	01	26
CE	29	09	06	44	01	89
CS	09	06	01	22	-	38
EE	16	17	07	45	02	87
EC	48	13	04	17	02	84
ME	35	17	06	29	02	89
FO	18	09	24	39	02	72
<b>Total</b>	<b>160</b>	<b>73</b>	<b>29</b>	<b>213</b>	<b>10</b>	<b>485</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	04	18	02	07	03	06	08	01	03	52
CE	07	16	08	07	07	08	08	08	08	77
EE	09	15	08	08	08	05	08	08	09	78
EC	09	08	07	06	08	01	04	01	07	51
ME	09	12	12	08	08	07	03	06	09	74
<b>Total</b>	<b>38</b>	<b>69</b>	<b>37</b>	<b>36</b>	<b>34</b>	<b>27</b>	<b>31</b>	<b>24</b>	<b>36</b>	<b>332</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	07	27	03	05	04	02	09	01	02	60
CE	09	14	12	07	09	04	09	07	08	79
CS	02	01	-	01	01	01	01	01	-	08
EE	10	17	06	06	10	03	09	08	12	81
EC	11	15	05	07	10	08	08	06	05	75
ME	10	12	15	07	10	04	07	11	10	86
<b>Total</b>	<b>49</b>	<b>86</b>	<b>41</b>	<b>33</b>	<b>44</b>	<b>22</b>	<b>43</b>	<b>34</b>	<b>37</b>	<b>389</b>

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

Discipline	AI	AL	AM	MG	MN	MZ	NL	SK	TR	TOTAL
AE	04	04	02	01	04	01	06	02	02	26
CE	09	19	13	06	12	04	05	05	15	88
CS	06	06	08	03	05	08	04	01	05	46
EE	09	15	11	10	11	03	06	06	15	86
EC	11	10	15	05	13	04	07	03	15	83
ME	10	15	16	05	11	04	10	03	13	87
FO	04	15	06	09	12	09	04	07	06	72
<b>Total</b>	<b>53</b>	<b>84</b>	<b>71</b>	<b>39</b>	<b>68</b>	<b>33</b>	<b>42</b>	<b>27</b>	<b>71</b>	<b>488</b>

**(b) Post-Graduate Programmes**

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

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Repeater	
1	AE	Soil & Water Conservation Engg.	06	10	-	16
		Farm Machinery & Power	04	02	-	06
2	CE	Environmental Science & Engg.	11	10	03	24
		Geotechnical Engg.	10	08	03	21
3	CS	Computer Science & Engineering	06	04	-	10
		Information Technology	04	04	02	10
4	EE	Power System Engineering	11	13	-	24
5	EC	Electronics & Comm. Engg.	-	-	01	01

		Very Large Scale Integrated	08	07	02	17
6	ME	Computer Aided Manufacturing & Automation	10	08	-	17
		Thermo Fluid Engg.	07	08	-	15
<b>Total</b>			<b>77</b>	<b>74</b>	<b>11</b>	<b>162</b>

**Table 17: No. of Students enrolled in M.Tech. (Part Time)**

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Repeater	
1	CSE	Computer Science & Engineering	-	-	02	02
2.	EE	Power System Engineering	-	-	-	-
3.	ME	Computer Aided Manufacturing & Automation	-	-	-	-
<b>Total</b>			<b>-</b>	<b>-</b>	<b>02</b>	<b>02</b>

**Table 18: No. of Students enrolled in M.Sc.**

Sl. No.	Name of the Dept.	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	3 <sup>rd</sup> Year	
1	PH	M.Sc. in Physics	07	08	01	16
2	CH	M.Sc. in Chemistry	07	05	02	14
3	MA	M.Sc. in Mathematics	03	05	-	08
4	FO	M.Sc. in Forestry	12	09	-	21
<b>Total</b>			<b>29</b>	<b>27</b>	<b>03</b>	<b>59</b>

**Table 19: No. of Students enrolled in MBA**

Sl. No.	Name of the Center	Name of the Programme	No. of students admitted			Total
			1 <sup>st</sup> Year	2 <sup>nd</sup> Year	Repeater	
1	CMS	MBA	18	16	13	47
<b>Total</b>			<b>18</b>	<b>16</b>	<b>13</b>	<b>47</b>

**Table 20: 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>	
1	AE	02	08	10
2	CE	12	03	15
3	CS	03	04	07
4	EE	10	14	24
5	EC	07	01	08
6	ME	05	08	13
<b>Total (A)</b>		<b>39</b>	<b>38</b>	<b>77</b>
<b>Science, Humanities &amp; Management Studies disciplines (B)</b>				
7	Physics	07	08	15
8	Chemistry	01	01	02
9	Mathematics	07	07	14
10	Forestry	15	28	43
11	Humanities & Social Sciences	07	09	16
12	Management Studies	06	01	07
<b>Total (B)</b>		<b>43</b>	<b>54</b>	<b>97</b>
<b>Total (A) + (B)</b>		<b>82</b>	<b>92</b>	<b>174</b>

## MEMBERS OF ACADEMIC COUNCIL AS ON 31.03.2015

1. Prof. P.K. Das, Director, NERIST	-	Chairman
2. Dean (Admn.)	-	Member
3. Dean (Acad)	-	Member
4. Dean (P&D)	-	Member
5. Dean (SA)	-	Member
6. Prof. N.S Raguwanshi, Dept. of Agri.IIT Kharagpur	-	Member
7. Prof. S.C.Deka Dept. Food Eng. & Tech., Tezpur Univ.	-	Member
8. Prof. D.N.Das,Dean, Faculty of Life Science, RGU, Doimukh, AP	-	Member
9. Prof. D Das, Hed, Deptt. of Business Administration, Tezpur University, Assam	-	Member
10. Prof. Tomo Riba,Dean of Faculty of Env.Science RGU,Doimukh,AP	-	Member
11. Prof Anjan Dutta,Dept.of Civil Eng.,IIT Guwhati	-	Member
12. Er. Talo Potom,ADM cum CEO, Itanagar	-	Member
13. Prof. J. Choubey, Deptt. of Mathematics	-	Member
14. Prof. S.K. Singh, Deptt. of Civil Engg	-	Member
15. Prof. Mubarak Husain, Deptt. of Chemistry	-	Member
16. Prof. P.K. Das, Deptt. of Mathematics	-	Member
17. Prof. L.S. Yadav, Deptt. Agril. Engg.	-	Member
18. Prof. H.S. Yadav, Deptt. of Chemistry	-	Member
19. Prof. M. Muralidharan, Deptt. of Mech. Engg	-	Member
20. Prof. S.K.Pandey,Dept. of Mathematics	-	Member
21. Prof(Mrs) P Rethy,Dept Of Forestry	-	Member
22. Prof. P.R.Alapati,Dept. of Physics	-	Member
23. Prof.P.P.Dabral,Dept. of AE	-	Member
24. Prof L.K.Arora,Dept. of Mathematics	-	Member
25. Prof P.K.Tripathy,Dept of Chemistry	-	Member
26. Prof. M.F.Hussain, Dept of Chemistry	-	Member
27. Prof.Md. Anwar Hussain, Deptt. of ECE	-	Member
28. Prof. K.D. Ram, Deptt. of Chemistry	-	Member
29. Prof. Binay Singh, Deptt. of Forestry	-	Member
30. Prof K.N.Dewangan,Dept. AE	-	Member
31. Prof Saibal Chatterjee,Dept. of EE	-	Member
32. Prof B.D Nayak,Dept. of HSS	-	Member
33. Prof C.L.Sharma,Dept. of Forestry	-	Member
34. Prof A.S.Rai,Dept. of Mathematics	-	Member
35. Prof. N Deb,Dept. of Chemistry	-	Member
36. HoD, Agricultural Engineering	-	Member
37. HoD, Civil Engineering	-	Member
38. HoD, Computer Sc. and Engg.	-	Member
39. HoD, Electrical Engineering	-	Member
40. HoD Electronics & Communication Eng.	-	Member
41. HoD, Mechanical Engineering	-	Member
42. HoD, Physics	-	Member
43. HoD, Chemistry	-	Member
44. HoD, Mathematics	-	Member

45. HoD, Forestry	-	Member
46. HoD, Humanities & Social Sciences	-	Member
47. HoC, Centre for Management & Studies	-	Member
48. HoC, CATRD	-	Member
49. Dr. S.K.Srivastava Associate Professor, Dept. of AE	-	Member
50. Shri D.K.Shymal, Associate Professor, Dept. of AE	-	Member
51. Dr. R.K.Mehta, Associate Professor, Dept. of EE	-	Member
52. Dr.T.P.Thaddues, Asstt. Pofessor, Dept. of ME	-	Member
53. Shri T.V.P.Singh, Asstt. Professor, Dept. of EE	-	Member
54. Shri K Legoh, Asstt. Professor, Dept. of CSE	-	Member
55. Dr. R.P. Bhattacharjee, Registrar, NERIST		Non-Member Secretary

## SECTION – 4

### DEPARTMENTS

#### 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 objective to impart forestry education to the younger generations of eight northeastern states of India. The department currently offers programmes at degree (4 years B. Sc), Post graduate (2 year M. Sc) and Ph. D levels. The department 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 summer training, 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 45 doctoral theses leading to Ph.D. degrees.

##### List of Faculty member with their designation and field of specialization

Sl. No.	Name	Designation	Area of specializations
1.	Dr. (Mrs.) P. Rethy	Professor	Biosystematics & Ethnobotany
2.	Dr. B. Singh	Professor	Horticulture & Agroforestry
3.	Dr. C. L. Sharma	Professor	Wood Science & Technology
4.	Dr. (Mrs.) Mary P. P.	Associate Prof.	Fish Microbiology / Entomology
5.	Dr. (Mrs.) M. Sharma	Associate Prof. & Head	Wood Science & Forest Products
6.	Dr. (Mrs.) K. Shrivastava	Associate Prof.	Microbial Molecular Biology
7.	Dr. P. R. Gajurel	Associate Prof.	Taxonomy, Ethnobotany & Medicinal Plants
8.	Dr. S. Sureshkumar Singh	Associate Prof.	Biotechnology, Microbial Ecology & Bioinformatics

9.	Dr. A. Kumar	Associate Prof.	Wildlife Management
10.	Dr. O. P. Tripathi	Assistant Prof.	Forest Ecology, Biodiversity Conservation & Remote sensing & GIS
11.	Dr. L. B. Singha	Assistant Prof.	Forest Ecology, Biochemistry & Stress Physiology
12.	Mr. G. Pangging	Assistant Prof.	Forest Economics & Management

#### 4.1.2 Academic activities

The Institute is located in Eastern Himalayan region which happens to be one of the biodiversity hotspots. In view of the richness of natural resources and increasing threat from rampant habitat and ecosystem destruction, it is in fitness of things to give the education where one biodiversity hot spot of the world is located. Therefore, offered programme will lead to increase highly potential manpower having capabilities of utilization, management, policy making, cultivation and conservation of the forest resources most needed by the nation for socio-economic development. Education 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	Present enrollment
1	B. Sc. Forestry (4 Years)	73
2	M. Sc. (2 years)	21
3	Ph.D. programme (minimum three years with one year course work)	41

All the important aspects of Forestry viz., Forest management, conservation, protection and utilization, Forest policy and planning, Forest Biology, Wildlife management, Silviculture, Wood Sciences & Technology, Application of GIS and Remote Sensing, Soil biology and management, Microbiology and Biotechnology etc have been covered along with related interdisciplinary subjects like Biochemistry, Bio-statistics, Surveying, Marketing etc. particularly in B. Sc. Forestry. The department has the potential to do justice with the Forestry education in NERIST. Extensive field training for B. SC. final year students is an integral component of B.Sc. forestry course wherein students are attached with forest departments of various states and undertake training cum research activities. The major topics undertaken in industrial training are forest nursery and plantation management, natural resource management, wildlife management and captive breeding, forest conservation and management, remote sensing, Biodiversity conservation, forest ecology, etc.

The Department has to its credit of more than 55 completed projects and about 12 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 and the department has already produced more than 48 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 Institution has a strong collaboration at national and international level with leading institutes.



### 4.1.3 Laboratories and Laboratory development:

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

#### Existing Laboratories:

Lab No.	Name of lab and facilities	In-charge
Lab 1	Wood science & Forest products	Dr. M. Sharma
Lab 2	Plant Microbe Interaction and Microbial Biotechnology	Dr. K. Shrivastava
Lab 3	Forest Systematic Ethnobotany & Horticulture	Dr. P. R. Gajurel
Lab 4	Environment, NRM and Restoration Ecology	Mr. G. Pangging
Lab 5	Silviculture, Forest Ecology and Biodiversity	Dr. O. P. Tripathi
Lab 6	Wildlife conservation	Dr. A. Kumar
Lab 7	Remote sensing and GIS lab	Dr. O. P. Tripathi
Facility 1	Computing Facility	Dr. 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 completed by PG / Ph. D students

##### (i) Project report of PG students:

Name of Student / Roll. No.	Dissertation title	Supervisor(s)
Ms.T. Sonia Devi MS/12/FO/01	<i>In-Vitro</i> screening and evaluation of antidiabetic potential of ethnomedicinally important plants from north east India	Dr. S. Suresh Kumar Singh and Dr. K. Shrivastava
Mr. Krishna Dahal MS/12/FO/02	Exploration on status of Hornbill species and its habitat in Sikkim, Eastern Himalayas	Dr. A. Kumar
Mr. Hano Obing MS/12/FO/03	Studies on existing Agroforestry system of Apatani tribes of Lower Subansiri district Arunachal Pradesh	Dr. P. Rethy
Ms. Bhanu Riba MS/12/FO/04	Status of Red Panda ( <i>Ailurus fulgens</i> ) & other wildlife in selected areas of Pangchem Lumpo Muchat Community Conserved Area, Tawang district, Arunachal Pradesh	Dr. P.P. Mary
Ms. Jaba Debbarma MS/12/FO/005	Ethnobotany of some sacred and magico-religious plants used by TripuriTribe, in Tripura, North East India.	Dr. M. Sharma and Dr. C. L. Sharma
Mr. Bakorlang Rupsi MS/12/FO/06	Diversity, community characteristics and above ground biomass of woody species in Daying Ering wildlife sanctuary, Arunachal Pradesh	Dr. O.P. Tripathi
MS. S YAIPHABI MS/12/FO/007	Studies on present status of occurrence, utilization pattern, market potential and management practices in Tree Bean <i>Parkia roxburghii</i> G. Don. in Manipur, North East India	Dr. B. Singh
Mr. Aosanen Ao MS/12/FO/08	Plant diversity and community characteristics of Sigphan Wildlife Sanctuary, Nagaland	Mr. G. Pangging

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

Name, Regn. No./Roll No.	Supervisor (s)	Status	Title of Ph.D. Thesis
Mr. Rajib Kagyung Ph.D.R/06(II)/FO/03	Dr. P. Rethy and Dr. P. R. Gajurel	Awarded	“Ethnobotanical studies on Tribes of Dehang Debang Biosphere Reserve in Arunachal Pradesh with special reference to medicinal plants”
Mrs. Jayashree Dutta Ph.D.(P)/07/FO/07	Dr. S. Sureshkumar Singh	Awarded	“Carbon flux in traditional agro–ecosystems practiced by Apatanis in Arunachal Pradesh”
Ms. Moitreyee Saikia Ph.D. FT)/08/FO/01	Dr. K. Shrivastava	Awarded	“In Vitro regeneration of <i>Aquilaria malaccensis</i> Lam. And acclimatization with endomycorrhizal symbiosis for enhanced field establishment”
Mr. Bipul Saikia Ph.D.(P)/08/FO/02/02	Dr. P. Rethy	Awarded	“Taxonomic diversity, utilization and market potential of wild edible plant of Sonitpur district, Assam”

Mr. Rubul Buragohain Ph.D. (FT)/FO/09/1/03	Dr. P. R. Gajurel	Awarded	“Taxonomic diversity and socio economic importance of Moraceae family in Arunachal Pradesh”
Mr. Salam Dilip Ph.D.R/06(II)/FO/05	Dr. M.L. Khan and Dr. L. B. Singha	Awarded	“Physico-chemical properties of soils and nutrient content in the culms during pre-flowering, flowering and post-flowering phases of <i>Dendrocalamus hamiltonii</i> Nees in Arunachal Pradesh and <i>Melocanna baccifera</i> (Roxb) Kurz in Mizoram”
Mr. H S. Gangwar Ph.D.R/06(II)/FO/04	Prof. P. Rethy	Awarded	Studies on Production and nutritional quality of selected fruits and vegetable in Arunachal Pradesh
Ms. Jahnovi Brahma Ph.D(PT)/FO/09/1/05	Dr. B. Singh	Submitted	“Study on the Wild Edible Plants and analysis of Nutritional value of certain species occurring in Kokrajhar district of Assam”
Ms. Bamin Yakang Ph.D(P)/07/FO/01	Dr. P.R. Gajurel	Submitted	“Studies on Non-Timber Forest Products and Associated Indigenous Knowledge System of Apatanis in Arunachal Pradesh”
Mr. Kuladip Sarma Ph.D(FT)/10/FO/07	Dr. A. Kumar	Submitted	“Studies on population status, behavioural and habitat ecology of Eastern Hoolock gibbon ( <i>Hoolock leuconedys</i> ) in Arunachal Pradesh, India”
Mr. Hemen Hazarika	Dr. P.R. Gajurel	Submitted	Distribution pattern, population structure and Phenology of <i>Piperbetleoides</i> C. DC.

#### 4.1.5 Short-term Courses/workshop organized:

	<b>Title</b>	<b>Funding</b>	<b>Venue</b>	<b>Period</b>
Dr. O.P. Tripathi	World Forestry Day Celebration	RC-NAEB, NEHU, Shillong	Dept. of Forestry and KV, NERIST	21.03.2014 & 28.03.2014
	Management, Processing and Value Addition of Non-Timber Forest Products based Income Generating Activities in Arunachal Pradesh	RC-NAEB, NEHU, Shillong	NERIST	29.01.2014 to 31.01.2014
Dr. M. Sharma & Dr. O.P. Tripathi	“Forest, Wildlife and Ecotourism: Challenges and Opportunities”	IIFM, Bhopal	NERIST, Itanagar	21.08.2014 to 24.08.2014
Dr. S. Suresh Kumar Singh	“1-Day Worksop on Ion Chromatography and Pure water systems”	NERIST	Dept. of Forestry, NERIST	17.09. 2014
	“1-Day E-Journal End User Orientation Programme at NERIST”	DBT-BIF NERIST	NERIST	25.11.2014
	“2-Days hands on Training on Bioinformatics: Biological Sequence Analysis”	BTISNet (DBT, Govt. of India)	Dept. of Forestry, NERIST	22.11.15 to 23.11.15

#### 4.1.6 Short-term Courses/workshop, etc. attended:

Dr. C. L. Sharma	<ul style="list-style-type: none"> <li>i) Attended Short term course on “Appropriate Technology for Rural Development” from 25<sup>th</sup> August, 2014 to 29<sup>th</sup> August, 2014 in the Deptt. of Mechanical Engineering NERIST, Nirjuli, A. P.</li> <li>ii) Attended an International Conference on Wood is Good: Current Trends and Future Prospects of Utilization held on 21<sup>st</sup> to 23<sup>rd</sup> November, 2014 at JN Tata Auditorium, National Science Seminar Complex (NSSC), Indian Institute of Science Campus, Bangalore- 560 012, organized by Institute of Wood Science and Technology, Bangalore</li> </ul>
Dr. P.P. Mary	<ul style="list-style-type: none"> <li>i) Participated in BTISNet, DBT, G.o.I. sponsored “2-Days Hand-on Training Course on Bioinformatics: Biological Sequence Analysis” organized by Bioinformatics centre, Dept. of Forestry, NERIST from 22<sup>nd</sup> to 23<sup>rd</sup> November 2014</li> <li>ii) Attended and presented a paper in National Symposium on Emerging Trends in Eco-friendly Insect Pest Management, 22<sup>nd</sup> to 24<sup>th</sup> January 2014 in Tamil Nadu Agricultural University, Coimbatore.</li> <li>iii) Participated and presented a paper in International Conference on Innovative Insect Management Approaches for Sustainable Agro-Eco System, Department of Agricultural Entomology, Agricultural College and Research Institute (TNAU), Madurai, 27th-30th January 2015</li> </ul>
Dr. M. Sharma	<ul style="list-style-type: none"> <li>i) Attended Short term course on “ Appropriate Technology for Rural Development” from 25<sup>th</sup> August, 2014 to 29<sup>th</sup> August, 2014 in the Deptt. of Mechanical Engineering NERIST, Nirjuli, A. P.</li> <li>ii) Attended International Conference on Wood is Good: Current Trends and Future Prospects of Utilization held on 21<sup>st</sup> to 23<sup>rd</sup> November, 2014 at JN Tata Auditorium, National Science Seminar Complex (NSSC), Indian Institute of Science Campus, Bangalore- 560 012, organized by Institute of Wood Science and Technology, Bangalore</li> </ul>
Dr. K. Shrivastava	<ul style="list-style-type: none"> <li>i) Attended and presented paper in International Conference on “Chemical, Environmental and Biological Sciences (CEBS-2015)” held at Dubai (UAE) from March, 18<sup>th</sup> -19<sup>th</sup>, 2015.</li> <li>ii) Attended and delivered a lecture in training programme on “Forest, Wildlife and Ecotourism: Challenges and Opportunities” sponsored by Ministry of Environment and forest, Govt. of India, New Delhi organized by IIFM, Bhopal &amp; NERIST, Nirjuli held at NERIST from 21<sup>st</sup> to 24<sup>th</sup> August, 2014.</li> <li>iii) Attended hand-on “Training Course on Bioinformatics: Biological Sequence Analysis” held at NERIST from 22<sup>nd</sup> – 23<sup>rd</sup> November, 2014</li> <li>iv) Attended MFPI (DST) meeting and presented new project proposal on “Standardization of Production of Pineapple Wine from North East and Western Ghats Region” held at IIT, New Delhi on 06/06/2014.</li> </ul>
Dr. P.R. Gajurel	<ul style="list-style-type: none"> <li>i) Attended national conference of EHSST on Aspects and Prospects of Spermatophyte taxonomy held at Assam University from 26<sup>th</sup> to 27<sup>th</sup> Feb. 2015.</li> <li>iii) Attended 2-Days Hands-on Training Course on Bioinformatics: Biological Sequence Analysis from 22<sup>nd</sup> to 23<sup>rd</sup> Nov. 2014 held at NEHU, and presented a paper.</li> </ul>

Dr. S. Sureshkumar Singh	<ul style="list-style-type: none"> <li>i) Attended Brainstorming Workshop on Culture collection of microbial resources from unique ecological niches of NE India on 18/06/14, organized by IBSD (DBT), Imphal</li> <li>ii) Attended National Symposium on Himalayan Biodiversity: Prospects and Challenges from 20/03/14 to 21/03/14, organized by Dept.of Botany, NEHU, Shillong</li> </ul>
Dr. A. Kumar	<ul style="list-style-type: none"> <li>i) Attended four days workshop from 21-24<sup>th</sup> August 2014 on “<i>Forest Wildlife and Ecotourism</i>” and presented a paper on “<i>Human-wildlife conflict: challenges for species conservation and management</i>” being organized by Indian Institute of Bhopal and Department of Forestry, NERIST, at Nirjuli, Arunachal Pradesh, India.</li> <li>ii) Attended two days workshop from 2-3<sup>rd</sup> April 2014 on “<i>Capacity Development for Forest Management and Training of Personnel</i>” being organized by Forest Department of Arunachal Pradesh and TERI, New Delhi at Itanagar, Arunachal Pradesh.</li> <li>iii) Attended two days short-term course on “<i>Pedagogical Training for Engineering Teachers</i>” organized by IIT, Guwahati at NERIST from March 21-23<sup>rd</sup> , 2014.</li> <li>iv) Attended two days workshop on “<i>National Consultation for Delineation of Boundary and Preparation of feasibility document on Brahmaputra-Salven Landscape (BSL), India</i>” organized by GBPIHED, North East Unit, Itanagar, Arunachal Pradesh, India at Itanagar from 3<sup>rd</sup>-4<sup>th</sup> January, 2014</li> </ul>
Dr. O.P. Tripathi	<ul style="list-style-type: none"> <li>i) Attended Workshop on Capacity development for Forest Management and Training of Personals, organized by PCCF office, Dept. Env. &amp; Forests, Itanagar from 2<sup>nd</sup> march- 3<sup>rd</sup> march 2014</li> </ul>
Dr. L.B. Singha	<ul style="list-style-type: none"> <li>i) Attended Workshop cum training programme on Management, processing and value addition of NTFPs based income generating activities in Arunachal Pradesh during 29-31<sup>st</sup> January 2014 organized by Dept. of Forestry, NERIST, Nirjuli, Arunachal Pradesh and regional centre, NAEB, Shillong</li> <li>ii) Attended Workshop cum training programme on forest, wildlife and eco-tourism: challenges and opportunities during 21-24 Aug 2014, Organized by Dept. of Forestry, NERIST, Nirjuli, Arunachal Pradesh, and IIFM, Bhopal, India.</li> </ul>
Mr. G. Pangging	<ul style="list-style-type: none"> <li>i) Attended 2 days Hands on training course of Bio-informatics: Biological sequences Analysis organized by Bioinformatics Centre, Dept. of Forestry held on 22<sup>nd</sup> to 23<sup>rd</sup> November 2014.</li> <li>ii) Attended 2 weeks orientation programme on Pedagogy organized by NITTTR, Kolkata in NERIST from 8<sup>th</sup> to 17<sup>th</sup> September 2014.</li> <li>iii) Attended Appropriate Technology for Rural Development under TEQIP organized by Mechanical Engineering Department, NERIST from 25<sup>th</sup> to 29<sup>th</sup> August 2014.</li> <li>iv) Attended Short term course on “Pedagogical Training for Engineering Teachers” under TEQIP organized by IITG during 21<sup>st</sup> to 23<sup>rd</sup> March 2014 at NERIST.</li> </ul>

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

Dr. P. Rethy	Awarded the Fellow of EHSST Executive committee member of <i>Pleione</i> official journal of EHSST
Dr. C. L. Sharma	Life member of Indian Academy of Wood Science.
Dr. P.P. Mary	i) Life member of the Indian Society of Technical Education (AICTE) ii) Life member of World Wide Fund for Nature (WWF), India. iii) Life-member of Entomology Academy of India (EAI)
Dr. M.B. Sharma	i) Life member of International Association of Wood Anatomists, Netherland ii) Life member of Indian Academy of Wood Science.
Dr. P. R. Gajurel	i) UGC nominated member for Project Advisory committee for SAP programme implemented by Department of Botany, Shivaji University, Kohlapur , MH (2013-16) ii) Awarded Singapore Botanic Garden Research Fellowship by National Park Board, Singapore iii) Executive committee member of <i>Pleione</i> official journal of EHSST. v) Awarded the Fellow of EHSST, India
Dr. S.S. Singh	i) Biotechnology Ignition Grant (BIG) Award 2014, under BIRAC (DBT) ii) Annual Member, Mycological Society of India iii) Research collaboration with Dr. K. Surjit Singh, Asst. Prof., Dept. of Chemistry, NIT, Agartala on biological activity screening of synthetic compounds.
Dr. A. Kumar	i) Member, IUCN SSC Primate Specialist Group-2013-2016. ii) Range Management Society of India, Jhansi, U.P. India [Life Member] iii) National Institute of Ecology, Jaipur, Rajasthan, India, [Life Member] iv) International Society for Tropical Ecology, Vanaras, U.P. India, [Annual Member]
Dr. O.P. Tripathi	i) Life member of International Society for Environmental Botanists (ISEB), Lucknow ii) <i>Associate Editor</i> : Asian Journal of Agriculture Sciences iii) <i>Associate Editor</i> : Research Journal of Environmental and Earth Sciences iv) Fellow-International Society for Research and Development
Dr. L.B. Singha	Annual member Society for Conservation Biology, USA.

#### 4.1.8 Research projects with amount, agency, etc. (ongoing projects during the period)

Name of PI / Coordinator	Title of project	Funding agency with order No.	Period	Amount (Lakhs)
Dr. C.L. Sharma	Evaluation of <i>Taxus wallichiana</i> from North Eastern and North Western Indian Himalayas for the selection of Elite clone for artificial propagation	DBT under Twinning programme with HRG, Shimla BT/194/NE/TBP/2011 dated May 24, 2012	3 years	Rs. 32.69 Lakhs
Dr. M.Sharma	“Studies on contribution of Agroforestry systems in wildlife and biodiversity conservation in Northeast India”	CSIR, New Delhi 37(1585)/13/EMR-II dated 11-04-2013	3 years	Rs. 28,10,720
Dr.P.R.Gajurel,	Development of a digital database on Bio-Resources of North-East India-Through a network among North Eastern	DBT, New Delhi	3 years	Rs. 27.00 Lakhs

	States			
Dr. B. Singh	Mapping Management & Analysis of Medicinal and Aromatic Plants in Arunachal Pradesh using GIS and Phytochemical & Molecular Techniques	NEC, Shillong	3 years	Rs. 212.00 Lakhs (2012-13)
Dr. P.R. Gajurel	Preventing extinction and improving conservation status of threatened plants through application of biotechnological tools (Dr. P.R.Gajurel (PI) and Dr. P. Rethy (Co- PI)	DBT, New Delhi	3 years	Rs. 8.41 Lakhs (2012-13)
Dr. O. P. Tripathi	HIMADRI-Alpine Forest of Arunachal Pradesh (PI)	ISRO-SAC, Ahmedabad	4 years	Rs.24.00 Lakhs
	Ecological Analysis of traditional and developed AFS for sustainable livelihoods and improved land management in Arunachal Pradesh, Northeast India (Co-PI)	DST, New Delhi	2 years	Rs. 18.702 Lakhs
Dr. O. P. Tripathi	Exploration and conservation of ecologically and economically important threatened (rare, endangered and vulnerable) plant species occurred in sacred groves of Assam.	G. B. Pant Inst. of Him. Env. & Dev.	3 years	Rs. 9,96000/-
Dr. A. Kumar	Studies on distribution, behavioural ecology, habitat structure and conservation of newly discovered Arunachal Macaque ( <i>Macaca munzala</i> ) in Western Arunachal Pradesh, India	DST, New Delhi	3 years	Rs. 23.98 Lakhs
Dr. L. B. Singha	“Studies on the reproductive biology of selective bamboo species in the Eastern Himalayas of Northeast India”	DBT, New Delhi		Rs. 353,600/-) (Ref. FIN/227
Dr. S. S Singh	Establishment of Institute Level Biotech Hub (IBTHub)	DBT, Govt. of India	3 Years	Rs. 39.5 Lakhs
Dr. S. S Singh	“Development of food colourants and textile dyes from natural pigments of microbial origin”	BIRAC (DBT), Govt. of India	18 months (2014-2016)	Rs. 25 lakhs
Dr. S. S Singh	Isolation, characterization and identification of natural pigments of food and industrial values from filamentous fungi.	DBT, Govt. of India	3 years 6 months (2011-2014)	Rs. 36.90
Dr. S. S Singh	Infrastructure developmental Project on <i>Establishment of Bioinformatics Infrastructure Facility (BIF)</i>	DBT, Govt. of India	8 years (2008-2017)	Rs. 30.5 Lakhs
Dr. S. S Singh	DBT-Electronic Journal Consortium (DeLCON) in Life Sciences and Biotechnology at NERIST	DBT, Govt. of India	6 years (2009-2015)	
Dr. K. Shrivastava	“Exploration of microbial diversity from unique habitats of Arunachal Pradesh”	DBT, New Delhi sanctioned through IBSD, Manipur.	3 Years (2014-2017)	Rs. 25.16 Lakhs

#### 4.1.9 Publications (2014-15)

##### **(a) Refereed Research Journal:**

- Awadhesh Kumar and G.S. Solanki 2014. Observation of grooming behaviour in Capped langur *Trachypithecus pileatus*. *Journal of Primatology*, 3 (2): 1-5,
- Awadhesh Kumar, K Sarma, J Panvor, K J Mazumdar, A Devi, M Krishna and P C Ray 2014. Threats to the Bengal slow loris *Nycticebus bengalensis* in and around Itanagar Wildlife Sanctuary, Arunachal Pradesh, India: impediments to conservation. *Endangered Species Research*, 23: 99-106.
- Bawri, A., Gajurel, P. R. & Khan, M. L. 2014. New distributional records of *Primula* species in Arunachal Pradesh, India. *Bioscience Discovery* 5(2): 6-10
- Bawri, A., Gajurel, P. R., & Khan, M. L. (2014). *Primula lacerata* (Primulaceae)-a rare species and addition to the flora of India from East Himalayan Region. *Rheedea*, 24(1), 63-66.
- Bawri, A., Gajurel, P. R., & Khan, M. L. 2014. *Primula lacerata* (Primulaceae)-a rare species and addition to the flora of India from East Himalayan Region. *Rheedea*, 24(1), 63-66.
- Bawri, A., Gajurel, P. R., Paul, A., & Khan, M. L. 2015. Diversity and distribution of *Primula* species in western Arunachal Pradesh, eastern Himalayan region, India. *Journal of Threatened Taxa*, 7(1), 6788-6795
- Bhanu Riba and Awadhesh Kumar 2015. Assessment of Effectiveness of Conservation Action adopted for Hornbill Species Conservation in Arunachal Pradesh, India: With reference to Great-Pied Hornbill. *International Journal of Conservation Science*, 6 (1): 125-134.
- Bhuyan S.I., Tripathi O.P. and Khan M.L. 2014. Agricultural systems and Rural development: An overview of Arunachal Pradesh, Eastern Himalaya. Concept Publishing Company, New Delhi. (in Press)
- Bhuyan S.I., Tripathi O.P. and Khan M.L. 2014. Effect of season, soil and land use pattern on soil N-mineralization, Ammonification and Nitrification: A study in Arunachal Pradesh, Eastern Himalaya *International Journal of Environmental Sciences*, 5 (1): 88-97. ISSN 0976 – 4399, July 2014
- Bhuyan S.I., Tripathi O.P. and Khan M.L. 2014. Measurement of N-mineralization, nitrification and ammonification rates in agricultural soils of Arunachal Pradesh, North East India. *International Journal of Research Studies in Science, Engineering and Technology*, 1(1): 65-73.
- Bhuyan S.I., Tripathi O.P. and Khan M.L. 2014. Soil characteristics in addition to microbial biomass dynamics: a study in hill agro-ecosystems, Eastern Himalaya. *International Journal of Current Science*, 79-86.
- Bhuyan S.I., Tripathi O.P. and Khan M.L. 2014. Soil N-mineralization dynamics under four major land use patterns in Eastern Himalaya. *Journal of Tropical Agriculture* 52(2): 162-168.
- Brahma, J., Singh, B., Rethy, P. & Gajurel P. R. 2014. Nutritional analysis of some selected wild edible species consumed by the boro tribes of Kokarajhar district, BTC, Assam. *Asian J. of Pharmaceutical & Clinical Research*, 7(3): 34-38
- Buragohain, R., Gajurel, P. R. & Rethy, P. 2014. *Ficus geocarpa* (Moraceae) A new record for India. *Rheedea*
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- W. Robindro Singh, S. Sureshkumar Singh and K. Shrivastava 2014. Analysis of banana genome groups of wild and cultivated cultivars of Manipur, India using score card method, *Advances in Applied Science Research* 5(1):35-38

#### **(b) Research articles in Books, Conference Proceedings, Presented papers, etc.**

- Awadhesh Kumar 2014. “*Human-wildlife conflict: challenges for species conservation and management*” Presented paper in four days workshop from 21-24<sup>th</sup> August 2014 on “*Forest Wildlife and Ecotourism*” organized by Indian Institute of Bhopal and Department of Forestry, NERIST, at Nirjuli, Arunachal Pradesh, India.
- Bawri, A. Gajurel, P. R. & Khan, M. L. 2014. Diversity of Primula Species in Eastern Himalaya in National. Symposium on Himalayan biodiversity: Prospects & Challenges. 20<sup>th</sup>-21<sup>st</sup> March, 14 North Eastern Hill University
- Bhuyan SI, Laskar I, Momin KG, Tripathi OP and Khan ML 2014. Role of soil physical properties in ecological succession of restored mine land- a case study in Meghalaya. . In: Tropical Ecology Congress 2014 on 10-12 December 2014 at SES Jawaharlal Nehru University, New Delhi, pp.71-72.

- Bhuyan SI, Laskar I, Tripathi OP and Khan ML 2014. Effect of different hill agro-ecosystems on soil CO<sub>2</sub> emission: a study of eastern Himalaya. In: Tropical Ecology Congress 2014 on 10-12 December 2014 at SES Jawaharlal Nehru University, New Delhi, pp.71-72.
- G. Ranibala, S. Sureshkumar Singh and M. L. Khan 2014. Diversity of ornamental bananas (*Musa* spp.) in Arunachal Pradesh, North Eastern India. In: Proc. National Symposium on Himalayan Biodiversity: Prospects and Challenges, NEHU, Shillong, 20-21, March, 2014.
- Gajurel, P. R., Shivakanta P., Singh B., Rethy, P. 2014. Non Timber Forest products of Arunachal Pradesh: A Review in National. Symposium on Himalayan biodiversity: Prospects & Challenges. 20<sup>th</sup>-21<sup>st</sup> March, 14 North Eastern Hill University
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- Karuna Shrivastava, Greeshma A. G., and Brijesh Srivastava 2015. "Improvement in Traditional Technology of Rice and Millet Based Fermented Beverages of Arunachal Pradesh, North East, India through Scientific Approach". In the proceedings of International Conference on Chemical, Environmental and Biological Sciences (CEBS-2015), R. Ahmadi & M. Gaidamashvii (Editor), Pp. 158-164. (ISBN 978-93-84422-11-0)
- Kikhi S, Tripura A and Tripathi OP 2014. Species diversity, community characteristics and population structure in forest of Sepahijala Wildlife Sanctuary, Tripura. In: Tropical Ecology Congress 2014 on 10-12 December 2014 at SES Jawaharlal Nehru University, New Delhi, pp.68-69.
- Khanikar, Ch. and S. Sureshkumar Singh 2014. Seasonal variation of microfungus population and diversity in the rhizosphere soil of four medicinal plants in Assam. In: National Symposium on Himalayan Biodiversity: Prospects and Challenges, NEHU, Shillong, 20-21, March, 2014
- Mary P.P. *et. al.* 2014. "Population density and conservation status of Indian Gaur (*Bos gaurus gaurus*) in Trishna Wildlife Sanctuary, Tripura, Northeast India", Chapter 8 in e-Book entitled, "Biodiversity Conservation – Challenges for Future" published by Bentham Science Publishers, Sharjah, Chennai, Beijing & edited by Laladhas K.P., Oommen V. Oommen and Sudhakaran P.R. eISBN:9781
- Ronald, Kh, Gajurel, P.R., Rakesh, K., Singh, B. & Rethy, P. 2015. Diversity and Phyto-sociological status of medicinal plants in Talle wildlife sanctuary. A poster paper presented in International conference on Harnessing the sub-Himalayan Plant Diversity for Human welfare held on 11<sup>th</sup> to 13<sup>th</sup> March 2015 at Dibrugarh University, Assam, India.
- S. Sureshkumar Singh, N.C. Talukdar, G.K. Saini, M.L. Khan, K. Shivastava and J.C. Bohra (2014). Bioprospecting microbial pigments of food and industrial values from filamentous fungi. In: National Symposium on Himalayan Biodiversity: Prospects and Challenges, NEHU, Shillong, 20-21, March, 2014
- Saikia P, Deka J., Bharali S, Tripathi OP and Khan ML 2014. Study on tree population status and diversity in West Kameng district of Arunachal Pradesh in Eastern Himalaya. In: Tropical Ecology Congress 2014 on 10-12 December 2014 at SES Jawaharlal Nehru University, New Delhi. pp.69.
- Sharma, M. 2014. Potential of Ecotourism in Arunachal Pradesh. A paper presented in the training program on "Forest, Wildlife and Ecotourism: Challenges and Opportunities" held at NERIST, Itanagar during 21-24 August, 2014 jointly organized by IIFM, Bhopal and Department of Forestry, NERIST, Nirjuli, Arunachal Pradesh

- Sharma, M., Shylla, W. and Sharma, C. L. 2014. Wood anatomy of some members of family Fagaceae from North East India. A poster paper presented in International Conference on Wood is Good: Current Trends and Future Prospects of Utilization held on 21<sup>st</sup> to 23<sup>rd</sup> November, 2014 at JN Tata Auditorium, National Science Seminar Complex (NSSC), Indian Institute of Science Campus, Bangalore- 560 012, organized by Institute of Wood Science and Technology, Bangalore, Karnataka, India.
- Singh, M. K., Sharma, C. L. and Sharma, M. 2014. Comparative wood anatomy of *Artocarpus* species of North East India with reference to their identification. A poster paper presented in International Conference on Wood is Good: Current Trends and Future Prospects of Utilization held on 21<sup>st</sup> to 23<sup>rd</sup> November, 2014 at JN Tata Auditorium, National Science Seminar Complex (NSSC), Indian Institute of Science Campus, Bangalore- 560 012, organised by Institute of Wood Science and Technology, Bangalore, Karnataka, India.
- Singha L.B. and S. Dayanandan. 2014. “A molecular approach for the Systematics of Bamboos of Northeast India” presented in National seminar on “Recent advances on bamboo research and development in India during 6-7 February, 2014, organized by Rain Forest Research Institute, Jorhat, Assam, India.
- Thungon, L.T., Angu, I. and Tripathi, O.P. 2014. Floristic diversity and community characteristics of Zengbulok sacred groves, West Kameng district, Arunachal Pradesh. In: National symposium on Himalayan Biodiversity-Prospects and challenges, CAS Botany, NEHU, Shillong, March 20-21, 2014., pp. 22.
- Yam, G., Zimik L., Thungon, L.T., Angu, I. and Tripathi, O.P. 2014. Floristic diversity and aboveground woody biomass in Itanagar Wildlife sanctuary, Arunachal Pradesh. In: National symposium on Himalayan Biodiversity- Prospects and challenges, Botany, NEHU, Shillong, March 20-21, 2014.

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

##### **I. Interaction for research**

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

- Botanical Survey of India (BSI), Kolkata, Shillong and Itanagar
- Department of Biotechnology (DBT), Delhi
- Department of Science and Technology (DST), Delhi
- Research collaboration with Dr. K. Surjit Singh, Asst. Prof., 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
- Universities like NEHU, Gauhati University, Manipur University, Delhi University, Tezpur University, Rajiv Gandhi University, etc.

## II. Other interaction

Many faculty members acted as External expert for B. Sc. and M. Sc. practical examination (Botany/Forestry) in Rajiv Gandhi University, Central Agricultural University, Tripura University, etc.

**4.1.11 Consultancy project undertaken:** Nil

### 4.1.12 Achievements of the students:

Many M. Sc. and Ph. D. degree awarded students have joined various academic and research organizations.

### 4.1.13 Any other information

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

#### I. Developmental works-

- a) Repairing of the main shade house of the nursery.
- b) Plantation and management of some selected plants in nursery.

#### II. New equipment added

Sl.No.	Name of equipment	Lab No
1.	Electrophoresis power supply unit (Tarson make) – 01 no.	Lab. 2
2.	Spinix Multiwell Plate Shaker (Tarson make) – 01 no.	Lab. 2
3.	Spinwin Microcentrifuge MC 03 (Tarson make) – 01 no.	Lab. 2
4.	Plant growth chamber	Lab. 4
5.	Multi channel Pipette (8 channel)	Lab. 4
6.	20KVA Silent DG Set (Mahindra)	Lab. 2
7.	Multiskan Spectrophotometer cum plate reader (Thermo-Scientific)	Lab. 2
8.	Type I & II Water Purification System (Millipore)	Lab. 2
9.	BOD Incubator (OPTIC)	Lab. 2
10.	Herbarium dryer	Lab. 3

## 4.2 DEPARTMENT OF AGRICULTURAL ENGINEERING

### 4.2.1 A Brief Profile of the Department

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

The Agricultural Engineering Department started its B. Tech. program in Agricultural Engineering in the year 1986. The department adopts modular pattern of education leading to the degree of B.Tech. in Agricultural Engineering, in three modules viz., base (in two separate trades of (i) Food Processing and (ii) Tractor Mechanic), diploma and degree. Each module provides terminality corresponding to an occupational level and at the same time provides entry to the next higher module finally leading to degree in Agricultural Engineering. After B.Tech they join postgraduate programmes and Ph.D. At present 05 students are registered in M. Tech in Farm machinery and Power, 15 in Soil and Water Conservation Engineering and 07 in PhD programme offered by the department.

At present department have 14 faculty members. Department runs 05 sponsored research projects (SAC ISRO, MoEF, CSIR) on emerging areas of Agricultural Engineering. Presently one All India Coordinated Research Projects viz; AICRP on Human Engineering and Safety in Agriculture, ICAR, New Delhi are operative under the Department.

### 4.2.2 Academic Activities

1. **Modification of existing courses** : Nil
- (b) Introduction of new elective : Nil
- (c) Laboratory Works Sheets designed : Nil
- (d) Modification in the course structures : Nil

### 4.2.3 Laboratories and Laboratory Development:

Following equipments were purchased for the laboratories:

### 4.2.4 Project completed by the Ph.D., PG and UG students (completed in May, 2014).

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

S.No	Title of the project	Name of the guide	Name of the student
1	A comparative study on requirement and conservation of energy in Tea production in modernized and un-modernized factories located in Assam	Prof. L.S. Yadav	Mr. Sanjay Prasad
2.	Time series modeling of rainfall for Doimukh (Itanagar), Arunachal Pradesh	Prof. P.P. Dabral	Ms. L. Hangshing

3.	Ergonomic investigation among workers in weaving industries of Arunachal Pradesh	Prof. K. N. Dewangan	Ms. Kengam Sora
4.	Effect of climate change on depletion pattern of snow dominated Mago Basin	Dr. A. Bhadra and Dr. A. Bandyopadhyay	Ms. Pooja Misra
5.	Temporal variation of snow albedo in different elevation zones of glaciated Mago basin	Dr. A. Bandyopadhyay and Dr. A. Bhadra	Mr. N. Chiphang
6.	Effect of variable hitch height in operation of 2 WD Tractors	Dr. P.K. Pranav	Mr. Tage Tapang
7.	Hybrid SARIMA- GARCH modelling of monthly rainfall time series	Mr. P. K. Pandey and Prof. P. P. Dabral	Mr. Hemendra Tripura

### B. Degree projects

S.No	Title of the project	Name of the guide	Name of the student
1.	Requirement and management of energy in tea production in Lakhimpur and Sonitpur Dist. Assam	Prof. L.S. Yadav	Mr. B. Hazarika and Mr. Hage Tapu
2.	Noise exposure and health effects among workers of agro-industries	Prof. K.N. Dewangan	Duge Lollen and Inya Riba
3.	Determination of surface drainage coefficient for Doimukh(Itanagar), Arunachal Pradesh	Prof. P.P. Dabral	Mr. Amardeep Kumar Mr. Gayamar Tana
4.	Variability of precipitation concentration index over central north east and north east India	Dr. S.K. Shrivastava	Mr. A.B. Zamir and Mr. W.A. Singh
5.	Snow accumulation and depletion patterns of an Eastern Himalayan basin using MODIS	Dr. A. Bhadra and Dr. A. Bandyopadhyay	Ms.Mungleppam Monica and Visavinka Victoria Zapher
6.	Dry and wet snow cover mapping using IRS multispectral imagery and evaluation of MODIS daily snow albedo products for Nuranang river basin	Dr. A. Bandyopadhyay and Dr. A. Bhadra	Mr. Avinash Kumar & Ms. Sneha Tripathy
7.	Determination of Field efficiency using global postioring system	Dr. P.K. Pranav and Dr. A. Bandyopadhyay	Mr. V. Pucho and Mr. S. Pariat

### C. Diploma projects

S.No	Title of the project	Name of the guide	Name of the student
1.	A study on performance of selected tea leaf driers installed	Prof. L.S. Yadav	Mr. T.N. Gumsai Mr. T. Dupit

	in the factories		
2.	Determination of erodibility under different land uses in the vicinity of Nirjuli	Prof. P. P. Dabral and Mr. P.K. Pandey	Mr. Ashish Choudhury Ms. Mridusmita Barman
3.	Investigation of isometric strength among the youths of northeastern region	Prof. K. N. Dewangan	Ms. Jandeno Humtsoe and Ms. Bhawana
4.	Assessment of Vulnerability to Floods using Unequal Weights	Dr. A. Bandyopadhyay and Dr. A. Bhadra	Mr. Y.Yimchunzu Mr. R. Debbarma
5.	Energy potential of Industrial tea waste	Dr. P.K. Pranav	Mr. L. Imchen Ms. P.L. Bhutia

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

Dr. P. K. Pranav, Dr. A. Bhadra, Dr. A. Bandyopadhyay organised MHRD & World Bank (TEQIP-II), NABARD “Emerging Technology Trends in Agricultural Engineering” during November 07–09, 2014, at NERIST

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

1. L.S. Yadav, P.P. Dabral, K.N. Dewangan, D.K. Syamal, A. Bhadra, A. Bandyopadhyay and P.K. Pranav, attended national Conference on Emerging Technology Trends in Agricultural Engineering organized by Department of Agricultural Engineering at NERIST, Nirjuli during 7<sup>th</sup> – 9<sup>th</sup> November 2014.
2. K.N. Dewangan attended International Ergonomics Conference “Humanizing Work and Work Environment 2014” organized by Department of Design, Indian Institute of Technology Guwahati during 3<sup>rd</sup> – 5<sup>th</sup> December, 2014.
3. L.S. Yadav and K.N. Dewangan attended International Symposium on Aspects of Mechanical Engineering and Technology for Industry organized by Department of Mechanical Engineering at NERIST, Nirjuli during 6<sup>th</sup> – 8<sup>th</sup> December 2014.
4. K.N. Dewangan attended 5<sup>th</sup> American Conference on Human Vibration organized by University of Guelph, Canada during 10<sup>th</sup> – 13<sup>th</sup> June 2014.
5. K.N. Dewangan, S. K. Shrivastava and P.K. Pranav attended Short term training programme “CADD Excellence (Computer Aided Design and Drafting)” organized by Department of Mechanical Engineering at NERIST, Nirjuli during 30<sup>th</sup> July – 9<sup>th</sup> August 2014.
6. S. K. Shrivastava presented a paper in the 5<sup>th</sup> International Conference on Food and Agricultural Engineering held at Abu Dhabi during March 16-17, 2015.
7. Bhadra attended Fifth Indo-American Frontiers of Engineering Symposium jointly organized by Indo-US Science and Technology Forum and National Academy of Engineering, Mysore, India, May 19-21, 2014.
8. Bandyopadhyay attended 11th Int. Conference on Hydroinformatics (HIC 2014) – Informatics and the Environment: Data and Model Integration in a Heterogeneous Hydro World, New York, USA, August 17-21, 2014.



9. Jhajharia attended International Summer School on Hydrology and Climate Change at Dept of Food and Agricult. Eng., IIT Kharagpur, Kharagpur (West Bengal) from 1 July to 11 July 2014.
10. P.K. Pranav attended 03 days short-term Training Programme on Pedagogy Training for Engineering Teachers, organised by the Department of Mechanical Engg. and IIT Guwahati.
11. P.K. Pranav and Arun Choudhary attended one week short-term Training Programme on Recent advances in microprocessor, microcontroller and their application, sponsored by TEQUIP and organized by Department of Electrical Engineering at NERIST, Nirjuli during 17<sup>th</sup> – 21<sup>th</sup> February 2015.
12. Arun Choudhary attended National seminar cum Workshop on “Innovative Prospects in Food Processing: Integration of Engineering and Technology” at Tezpur University, Tezpur Assam during 27<sup>th</sup> – 28<sup>th</sup> March 2015.

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

Nil

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

1. K.N. Dewangan and S.K. Shrivastava Chaired the session in the National Conference on Emerging Technology Trends in Agricultural Engineering organized by Department of Agricultural Engineering at NERIST, Nirjuli during 7<sup>th</sup> – 9<sup>th</sup> November 2014.
2. K.N. Dewangan Chaired the session in the International Symposium on Aspects of Mechanical Engineering and Technology for Industry organized by Department of Mechanical Engineering at NERIST, Nirjuli during 6<sup>th</sup> – 8<sup>th</sup> December 2014

#### **4.2.9 Projects sanctioned by outside agencies to the faculty of the department (2014)**

1. Bhadra (PI) and A. Bandyopadhyay (Co-PI), Development of Hydrological Module for Snowmelt Runoff in the Himalayan Region under Pracriti-II Hydrology Project, SAC ISRO, Ministry of Space, ₹19,60,000/-, Fund received during the review year: ₹10,50,000/-.
2. A. Bandyopadhyay (PI) and A. Bhadra (Co-PI), Development of a hydro-ecological model to evaluate sustainability of agriculture and forest ecosystems, ITRA-Water, Fund sanctioned during the review year: ₹33,91,000/-.
3. O.P. Tripathi (PI) and P.K. Pandey (Co-PI), Alpine ecosystem dynamics and impact of climate change in Indian Himalaya (Arunachal Pradesh), SAC ISRO, (2013-2016), ₹23,10,000
4. O.P. Tripathi (PI) and P.K. Pandey (Co-PI), AICRP on Sacred Grove Ecosystem Services Assessment in Arunachal Pradesh, MoEF New Delhi, (2011-16), ₹34,28,800
5. O.P. Tripathi (PI) and P.K. Pandey (Co-PI), Impact analysis of spatio-temporal changes in land use/cover and plant diversity of Itanagar, Arunachal Pradesh, CSIR New Delhi, (2011-2014), ₹12,00,000
6. P.K. Pranav, All India coordinated research project on ergonomics and safety in Agriculture.

#### 4.2.10 Publications:

##### (a) Referred Journal

1. Yadav L.S., 2014 Field performance of tractor attached with winch on tea farms in north east India, *International Journal Crop Research* (48)3: 98-104
2. Yadav, L.S. 2014 Drying parameters of fermented leaf and strategy to check pollution from coal ignition in tea industries. *International Journal Bioherald* (4) 1: 38-42
3. Dabral, P. P. Purkayastha, K. and Aram, M. (2014). Dry and wet spell probability by Markov chain model-a case study of North Lakhimpur (Assam), India. *International Journal of Agri & Biological Engg.*, 7(6) :8-13.
4. Dabral, P. P., Jhajharia, D., Mishra, P., Hangshing, L. and Doley, L. (2014). Time series modelling of evaporation: A case study o in the north east India. *Global Nest Journal*, 16(2):281-293
5. Dabral, P. P., Pandey, P. K., Kumar, T. and Chakraborty, S. (2014). Determination of discharge coefficient and head –discharge relationships of different hydraulic structures. *Journal of Indian Water Resources Society*, 34(1): 40-52.
6. Dabral, P. P., Pandey, P. K., Kumar, T. and Chakraborty, S. (2014). Determination of discharge coefficient and head–discharge relationships of different hydraulic Structures. *Journal of Indian Water Resources Society*, 34(1): 40-52.
7. Dabral P.P., Jhajharia D., Mishra P., Hangshing L. and Doley B.J. (2014), Time Series Modelling of Pan Evaporation: A Case Study in the Northeast India, *Global NEST Journal*, 16(2), 280-292.
8. Jhajharia, D. Kumar, D., Dabral, P. P. and Singh, V. P., Choudhary and Dinpashoh, Y. (2014). Reference evapotranspiration under changing climate over the Thar Desert in India. *Metrological Applications*. Published in Wiley Online Library ( [Wileyonlinelibrary.com](http://Wileyonlinelibrary.com)) DOI:10.1002/met.147.
9. Jhajharia D., Singh V.P., Kumar R. and Choudhary R.R. (2015) Searching evidence for the existence of evaporation paradox in arid environments of northwest India, *Global NEST Journal*, 17(1), 3-11.
10. Jhajharia D., Kumar R., Dabral P. P., Singh V. P., Choudhary R. R. and Dinpashoh Y. (2015). Reference evapotranspiration under changing climate over the Thar Desert in India. *METEOROLOGICAL APPLICATIONS*. DOI: 10.1002/met.1471
11. Bandyopadhyay, A., Bhadra, A., Maza, M. Shelina, R.K. 2014. Monthly Variations of Air Temperature Lapse Rates in Arunachal Himalaya. *Journal of Indian Water Resources Society*, 34(3): 16-25. ISSN: 0970-6984.
12. Nag, A., Adamala, S., Raghuwanshi, N.S., Singh, R., Bandyopadhyay, A. 2014. Estimation and Ranking of Reference Evapotranspiration for Different Spatial Scales in India. *Journal of Indian Water Resources Society*, 34(3): 45-55. ISSN: 0970-6984.

##### (b) Conference papers

1. Yadav L.S. (2014) Strategy for raising energy efficiency of available resources for sustainable growth of tea industries in north east India. *Proceeding of the International*

- Conference on “Aspects of Mechanical Engg, and Technology for Industry organized by Mechanical Engg. Deptt. of NERIST on 6-8 November 2014 at NERIST, Itanagar: 245-250.
2. Yadav L.S. (2014) Potential for development in machineries and automation on tea industry of north east India. Proceedings of the International Conference on “Aspects of Mech. Engg. and Technology for Industry organised by Mechanical Engg. Deptt. of NERIST on 6-8 November, 2014 at NERIST( Itanagar): 251-257
  3. Dewangan, K.N., Lollen, D., Riba, I. and Rakheja, S. (2014). Noise exposure and health effects among workers of agro-industry. In: User Centred Design and Occupational Wellbeing (ed: Chakrabarti, D), proceeding of International Ergonomics Conference (HWWE-2014) , McGraw Hill Education (India) Private Limited, New Delhi, pp 556–561
  4. Sora, K. and Dewangan, K.N. (2014). Work stress among female weavers in Arunachal Pradesh. In: User Centred Design and Occupational Wellbeing (ed: Chakrabarti, D), proceeding of International Ergonomics Conference (HWWE-2014) , McGraw Hill Education (India) Private Limited, New Delhi, pp 366–370
  5. Rakheja, S. and Dewangan, K.N. (2014). Whole-body vibration biodynamics of the seated human coupled with the visco-elastic seat. In: User Centred Design and Occupational Wellbeing (ed: Chakrabarti, D), proceeding of International Ergonomics Conference (HWWE-2014), McGraw Hill Education (India) Private Limited, New Delhi, pp 13–19
  6. Dewangan, K.N. and Tewari, V.K. (2014). Vibration transmission characteristics of a glove during field operation of a power tiller. In: proceeding of the International Conference on Aspects of Mechanical Engineering and Technology for Industry (AMETI2014), Vol-II (eds: Lingfa, P. and Gautam, S.S.), Excel India Publishers, New Delhi, pp 283–288
  7. Dewangan, K.N., Chakraborty, Ujjwal and Prasad, Kunal (2014). Ergonomic evaluation of cono weeder. In: proceeding of the National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE2014) (eds: Pranav, P.K., Bhadra, A. and Bandyopadhyay, A.), Excel India Publishers, New Delhi, pp 31–37
  8. Dewangan, K.N., Rakheja, S. and Marcotte, P. (2014). Gender effect on absorbed power of seated body to vertical whole body vibration. In: proceeding of the 5<sup>th</sup> American Conference on Human Vibration, University of Guelph, Canada, pp 4–5
  9. Dewangan, K.N., Rakheja, S., Marcotte, P. and Boileau, P.E. (2014). Effects of seat stiffness on the vertical apparent mass responses of the seated body. In: proceeding of the 5<sup>th</sup> American Conference on Human Vibration, University of Guelph, Canada, pp 56–57
  10. Marcotte, P., Rakheja, S., Kalra, M. and Dewangan, K.N., (2014). Evaluation of coupling forces on power tool handles using a thin film resistive pressure sensor. In: proceeding of the 5<sup>th</sup> American Conference on Human Vibration, University of Guelph, Canada, pp 45–46
  11. Shrivastava, Salil K., Taggu, Annu (2014). Precipitation Concentration variability and trend in Humid Northeast India – a case study of Arunachal Pradesh. P.K. Pranav, A. Bhadra and A. Bandyopadhyay (eds). Proceedings of the National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE, 2014), Deptt. of Agril. Engg., NERIST from November 7-9, 2014, pp 394-402.
  12. Bhadra, A., Bandyopadhyay, A., Senzeba, K.T. 2014. Changes in Snow Depletion Pattern and Melt Runoff Contribution of Nuranang River Basin in Eastern Himalayan Region under Projected Climatic Scenarios. Poster presented in Fifth Indo-American Frontiers of

- Engineering Symposium jointly organized by Indo-US Science and Technology Forum and National Academy of Engineering, Mysore, India, May 19-21, 2014.
13. Bandyopadhyay, A., Bhadra, A., Rukbo, T., Sanayanbi, H. 2014. Change in Depletion Curve under Projected Climatic Scenarios for a Snow Covered Catchment in Arunachal Himalaya (India). Proc., 11th Int. Conference on Hydroinformatics (HIC 2014) – Informatics and the Environment: Data and Model Integration in a Heterogeneous Hydro World, New York, USA, August 17-21, 2014.
  14. Chiphang, N., Senzeba, K.T., Bhadra, A., Bandyopadhyay, A. 2014. Assessment of snowmelt runoff in the eastern Himalayan region under climate change scenarios. Abstract Volume, National Conference on Himalayan Glaciology, Org. by SERB, DST and Himachal Pradesh State Centre on Climate Change, Shimla, October 30-31, 2014: 35-36.
  15. Chiphang, N., Mishra, P., Bandyopadhyay, A. 2014. Generation of average snow accumulation and depletion pattern for Mago basin in Arunachal Pradesh. Proc. National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014), Org. by Dept. of Agril. Engg. NERIST, Nirjuli, November 07-09, 2014: 379-385. ISBN: 978-93-83842-79-7.
  16. Mishra, P., Chiphang, N., Bandyopadhyay, A. 2014. Spatial variation of snow albedo on recent time in an eastern Himalayan river basin using MODIS. Proc. National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014), Org. by Dept. of Agril. Engg., NERIST, Nirjuli, November 07-09, 2014: 411-419. ISBN: 978-93-83842-79-7.
  17. Senzeba, K.T., Monica, N., Zaphu, V.V., Bhadra, A. 2014. Generation of snow cover depletion curve using temperature data with the help of remote sensing. Proc. National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014), Org. by Dept. of Agril. Engg., NERIST, Nirjuli, November 07-09, 2014: 348-354. ISBN: 978-93-83842-79-7.
  18. Hangshing, L., Mishra, P., Bhadra, A. 2014. Estimation of optimum number of raingauges for Arunachal Pradesh. Proc. National Conference on Emerging Technology Trends in Agricultural Engineering (ETTAE 2014), Org. by Dept. of Agril. Engg., NERIST, Nirjuli, November 07-09, 2014: 428-436. ISBN: 978-93-83842-79-7.
  19. Jhajharia D. as Resource Person: Presented a paper on “Climate Change in northeast India” in two-days Course on Disaster Management at Dept of Civil Eng., NERIST.
  20. Jhajharia D. Presented a paper in 19th IGC Convention and International Conference on “Climate Change and Natural Resources Development Strategies: Risk Management and Governance of Mountainous Region”, Nov. 27-29, 2014, RGU (Itanagar).
  21. Tapang, T. and Pranav, P. K., 2014. Effect of lowered hitch height on longitudinal stability of 2WD tractor. Proceeding of National conference on emerging technology trends in Agricultural Engineering, 99-106.
  22. Kumar, A., Kumar, S., Hazarika, B., and Pranav, P. K., 2014. Locus of virtual hitch point with respect to depth of operation of tractor. Proceeding of National conference on emerging technology trends in Agricultural Engineering, 116-120.
  23. Kumar, S., Nilling, J. J., Imchen, L., Bhutia, P. L. and Pranav, P. K., 2014. Estimation of waste and its energy potential in tea estate of Assam. International symposium on Aspects of mechanical Engineering & technology for industry, 314-319.

(c) **Chapters in Books:** Nil

(d) **Books:**

Pranav, P.K., Bhadra, A., Bandyopadhyay, A. (Eds.). 2014. Emerging Technology Trends in Agricultural Engineering, Excel India Publishers, New Delhi. ISBN: 978-93-83842-79-7.

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

1. K.N. Dewangan visited CONCAVE Research Centre in Concordia University, Montreal and worked there as visiting scientist from 26.05.2014 to 18.07.2014 with Prof. S. Rakheja.
2. A. Bandyopadhyay is a Member of Governing Council, Meghalaya Water Resources Development Agency
3. A. Bandyopadhyay has undertaken joint projects with IIT Kharagpur, IISc Bangalore, IIT Gandhinagar, and IIT Guwahati

**4.2.12 Consultancy projects undertaken:**

P.P. Dabral performed consultancy work of preparation of evaluation report and supervision of sustainable development (SD) activity at RHEP, NEEPCO, Yazali, A.P. for the year 2013-14. Honorium of the consultancy work Rs. 74,000/-

## **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 grown and is recognized as one of the major engineering departments in the north-eastern region of the country. The main objectives of the department are to develop high quality technical manpower at Certificate, Diploma and Degree levels and to cater to the needs of the north-eastern region in particular and the nation in general. After the Institute attained the deemed-to-be-university status, the department started offering PG programmes and research activities leading to M. Tech and Ph. D. degree.

The department has capability of imparting quality education to the students through well-qualified faculty and staff. Presently, the department has 16 faculty members with specialization in different areas of Civil Engineering. Two faculty members are on lien. The department has two senior instructors GR-II, three laboratory assistants, two skilled workers and five laboratory attendants. The staff members are well trained to assist the faculty members in conducting drawing as well as practical classes. Sri P Sivakumar, Lab Assistant, after passing AMIE examinations, and M. Tech in Hydraulics and Water Resources Engineering from IT, BHU, Varanasi, has now submitted his Ph. D. thesis.

The laboratories of the department are well equipped to meet the requirements of undergraduate as well as post-graduate courses. The department offers courses in Structural Engineering, Geotechnical Engineering, Structural Dynamics, Earthquake Engineering, Computational Methods in Civil Engineering, Advanced Mechanics of Solids, Hydraulics and Water Resources Engineering, Fluid Mechanics, Environmental Engineering, Transportation Engineering, Geodetic Surveying, Engineering Graphics and Drafting,

Building Science, Town Planning, Estimation and Valuation, etc. Keeping in view the advances in Civil Engineering, requirements of the industry as well as the local needs, projects are offered to the Diploma and Degree final year students. The department has the competency of carrying out challenging consultancy works and sponsored research projects. The department organizes workshops and short-term courses to disseminate the knowledge to the teaching community, Government officials particularly of Arunachal Pradesh, NGOs as well as village level community of the state.

#### 4.3.2 Academic Activities - Curricular Development

- (A) Modification of existing courses / course structure
- (B) Introduction of new electives
- (C) Introduction of new programmes

#### 4.3.3 Laboratories and Laboratory Development:

The department at present has thirteen laboratories, viz. (i) Computer Lab, (ii) Drawing and Drafting Section, including CAD facilities, (iii) Engineering Geology Lab, (iv) Environmental Engineering Lab - I, (v) Environmental Engineering Lab - II, (vi) Geotechnical Engineering Lab - I, (vii) Geotechnical Engineering Lab - II, (viii) Material Testing Lab, (ix) Highway Engineering Lab, (x) Field Engineering Lab, (xi) Structure Lab, (xii) Surveying Lab, (xiii) Water Resources Engineering Lab and a (xiv) Seminar Hall equipped with facilities for audio visual presentation. All the laboratories are equipped with modern equipments used for both teaching and research and rendering consultancy services.

(A) List of new equipments procured:

Sl.No.	Name of Laboratory	Name of Equipment	Quantity	Make	Total Cost (Rs.)
1.	Geotechnical Engineering Lab -I	Automatic Free Fall Hammer	01	AIMIL	Rs. 1,39,285/-
		Large Direct Shear Apparatus	01	AIMIL	Rs. 3,56,990/-
		Digital Triaxial Testing Machine	01	AIMIL	Rs. 6,49,490/-
		Sensitive Volume Change Gauge	01	AIMIL	Rs. 13,050/-
		De-Aired Water Apparatus	01	AIMIL	Rs.86,645/-
		Lateral Pressure Assembly	01	AIMIL	Rs. 19,275/-
		HP Computer	01	AIMIL	Rs. 35,000/-
2.	Water Resources Engineering Lab	Automatic Water Level Recorder (Model DWLR-G-P)	02	Virtual	Rs. 1,70,000/-
		Self Recording Raingauge	02	Virtual	Rs. 60,000/-
		Rainfall Event Logger			
Total					Rs. 15,29,735/-

(B) Laboratory Manuals prepared.

#### 4.3.4 Projects completed by the UG/PG students:

<b>B.Tech. Projects</b>
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Sl.No.	Title	Submitted in	Name of Supervisor
1	Quantification and Characterization of MSW from NERIST Campus	May 2014	Dr. Ajay Bharti
2	Estimation of Passenger Car Equivalence(PCE) for Non Lane Based Traffic	May 2014	Mr. Dibyendu Pal
3	Analysis and Earthquake Resistant Design of G+3 Residential Building located at Indian Seismic Zone V	May 2014	Dr. SukumarBaishya
4	To study the effect of shape and crack parameters on the ultimate strength of cracked lean duplex stainless steel(LDSS) Hollow stub or short columns	May 2014	Mr. K. Kiran Singh
5	Determination of Ground Water flow Direction and transmissibility	May 2014	Mr. K. James Singh
6	To design M20 grade flow concrete with Fly-Ash & Superplasticizer		Dr. Sudisht Mishra
7	Geotechnical and Structural Analysis and Design of Nirjuli Mosque	May 2014	Dr. MonowarHussain

#### M.Tech. Projects

M. Tech (GTE)	1	NabamBudh 2012-2014	Influence of Lime on Strength Characteristics of Fly Ash Stabilized Expansive Soil	Dr. MonowarHussain
	2	RekhaNyokir 2012-2014	Geotechnical properties of Soil/Fly Ash-Bentonite Mixtures for Landfill liner	Dr. MonowarHussain
	3	Taku Muni 2012-2014	Strength and Stiffness response of Betel Nut Husk Fiber reinforced soil	Dr. H.P. Singh
	4	LiyirBasar 2012-2014	A case study of Landslide along the proposed Trans-Arunachal Highway at Yupia and some Remedial Measures	Prof. S.K. Singh
	5	DhonBagang 2012-2014	A study on Strength Behavior of Fly Ash Stabilized Expansive Soil with inclusion of Plastic Fiber	Dr. MonowarHussain

#### M.Tech. Projects

	Sl.No.	Name of Student	Title of Dissertation	Name of Supervisor
M. Tech (ESE)	1	KalingTasing 2012-2014	Study of Anaerobic Digestion of Municipal Solid Waste by Batch Reactor	Dr. Ajay Bharti

#### 4.3.5 Short-term Courses / Seminars / Workshops organized:

**S. Mishra** and **K. Kiran Singh** coordinated “National workshop on Disaster Management” held at NERIST during 29th to 30th August 2014.

#### 4.3.6 Short-term Courses / Seminars / Workshops attended by the faculty:

**K. James Singh, Ajanta Kalita, and YamemTamut** attended STTP on “CADD Excellence”- organised by NERIST, 30th July to 9th August, 2014.

**K. James Singh, Ajanta Kalita, and YamemTamut** attended Orientation Programme on “Pedagogy”- organised by NIIITR Kolkata, 8-17 September, 2014.

**Ajanta Kalita** and **YamemTamut** attended short term course on “Appropriate Technology for Rural Development” held at NERIST during 25th to 29th August 2014.

**Ajay Bharti** and **D. Pal** attended “Solid Waste Management-Challenges and Opportunities” – Faculty Development Programme organised by Civil Engineering Department, IIT Guwahati, 12-14 January, 2015.

**D. Pal** attended “Advances in Environmental health” QIP short term course organized by IIT Guwahati, 09-13 February, 2015.

**D. Pal** attended “Innovative Technologies in Transportation Engineering” QIP short term course organized by IIT Guwahati, 23-27 February, 2015.

**D. Pal, Ajanta Kalita, and YamemTamut** attended “Challenges and Recent Advances in Geotechnical Engineering Research and Practices” QIP short term course organized by IIT Guwahati, 09-13 March, 2015.

**Dipika Devi, Ajanta Kalita, and YamemTamut** attended “National workshop on Disaster Management” held at NERIST during 29th to 30th August 2014.

**Ajanta Kalita, and YamemTamut** attended UKIERI Workshop on “Seismic Requalification of Pile Supported Structures” organized by IIT Guwahati, 07-09 January, 2015.

**Ajay Bharti** participated the 3rd International Brainstorming Workshop on “Sustainable Municipal Solid Waste Management in India”, organised by WTERT (Waste to Energy Research and Technology) at CSIR IICT, Hyderabad as an invitee, 29-30 January, 2015.

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

**K. Kiran Singh** was awarded M. Tech degree in Structural Engineering from IIT Guwahati in May 2014.

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

None



#### 4.3.9 Projects sanctioned by outside agencies to the faculty of the department:

None

#### 4.3.10 Publications:

##### (A) Referred Journals:

Sivakumar, P., and **Prasad, R. K.** (2014). Simulation of water distribution network under pressure deficient condition, *Water resources management*, 28(10),3271-3290.

Sivakumar, P., and **Prasad, R. K.** and Chandamoulli, S. (2014). Effect of Booster Disinfection on Water Quality Behaviour in Distribution Networks, *International Journal of Innovative Research in Science, Engineering and Technology*, 3(4), 93-101.

**Mishra, S.**, and **Pal, D.** (2014).Requirement of Different Grades of Cement for Nominal and Design Mix M20 Grade concrete.*International Journal of Innovative Research in Science, Engineering and Technology* (ISSN: 2319-8753), Vol. 3, Special Issue 3, 319-322.

Omeme Paron, Mongam Bole, Rita Tiwari and **Ajay Bharti** (2014), “Probability of Aluminium Toxicity in Water Treatment Plant Itanagar: A Case Study”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.139-143.

Jacklin J. Nilling, Manabjyoti Deka, Sanjeev Prasad, Sony Tungi and **Ajay Bharti** (2014), “Performance Evaluation of Laboratory Scale RBC to Treat Wastewater from Hostels”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.168-175.

Mongam Bole, Omeme Paron, Rita Tiwari and **Ajay Bharti** (2014), “Quantification and Characterization of the Bio-Medical Waste in Arunachal State Hospital, Naharlagun” *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.176-183.

Kenli Bagra and **Ajay Bharti** (2014), “Quantitative and Qualitative Study of MSW from Papumpare District in Arunachal Pradesh”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.200-206.

Kirki Ori, Sunil Kumar and **Ajay Bharti** (2014), “Juvenile Home: A Novel Technique in Vermicomposting”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.207-213.

Omeme Paron, Sunil Kumar and **Ajay Bharti** (2014), “Home Composting: A Sustainable Approach for MSW Management in Itanagar Capital Complex”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.214-223.

Takum Nalo, Kaling Tasing, Sunil Kumar and **Ajay Bharti** (2014), “Anaerobic Digestion of Municipal Solid Waste: A Critical Analysis”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.224-234.

Nabam Rich, Sunil Kumar and **Ajay Bharti** (2014), “Changes in Characteristic of Municipal Solid Waste by Bulking Agent In-vessel Composting: Critical Review”, *International Journal of Innovative Research in Science, Engineering and Technology*, Volume 3, Special Issue 4, March 2014, pp.235-249.

**Dipika Devi** (2014). “On the determination of modified cam clay model parameters”, *International Journal of Innovative Research in Science, Engineering and Technology* (ISSN: 2319-8753), Volume 3, Special Issue 4, March 2014, pp.250-253. (Presented in National conference on Recent Advances in Civil Engineering, November 15th and 16<sup>th</sup>, 2013)

Tarh Reema and **Ajanta Kalita** (2014)“Strength Characteristics of red soil blended with fly ash and Lime”, *International Journal of Innovative Research in Science, Engineering and Technology*, Vol-3, Special Issue 4, March 2014.

#### **(B) Conference Papers:**

Sivakumar, P., and **Prasad, R. K.** (2014). Analysis of looped water distribution network with different head loss formula, International Symposium on Aspects of Mechanical Engineering for Industry (AMETI 2014), organized by Department of Mechanical Engineering, NERIST, Nirjuli, 6-8 Dec. 2014.

**Pal, D.**, and Mallikarjuna, C. (2014).Correction of Vehicle’s Trajectory Extracted from Video Image Processing. 19th International Conference of HKSTS (Poster), Hong Kong, December 13-15, 2014.

**Prasad, R. K.** and Talley, Bamin (2014). Estimation of Aquifer Parameters by Graphical and Numerical Methods: a case study, International Conference on Modeling Tools for Sustainable Water Resources Management (MTSWRM ) 2014, held at IIT Hyderabad, 26-29, December 2014.

B. N. Patel, **A. Kalita**, A. Chetri and K. Tate (2015) “Compaction and Strength Characteristics of red soil blended with fly ash and Lime”, Proceeding of Advances in Civil and Infrastructure Engineering (ACIE), pp 114-119.

#### **(C) Books:**

##### **4.3.11 Interaction of faculty / department with outside agencies:**

The Department has several interactions with state government/other agency officials like PWD, RWD, Water Resources Department, NEEPCO, NHPC, NITAP-Yupia etc.

##### **4.3.12 Consultancy projects undertaken:**

The Department at present has thirteen laboratories,

##### **4.3.13 Achievements of Students.**

#### **4.3.14 Any other relevant information:**

Two days Mason's training programme was conducted during November 15-16, 2014, sponsored by Star Cement.

### **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 2008-09.

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 2MBPS leased line internet connectivity

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

#### **4.4.2 ACADEMIC ACTIVITIES**

The department offers Diploma, Degree and M.Tech 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, Dbase, LOTUS, 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 Pentium III PC's (866MHz, 64MB RAM, 20GB HDD, CD ROM drive), Celeron PCs (300 Mhz, 32 MB RAM, 4.1 GB HDD), AMD-6 PCs (32 MB RAM, 4.1 GB HDD), Digital Cameras, Laserjet printers, Deskjet printers, Dotmatrix Printers etc.

#### **System Lab I**

The Systems Laboratory - I is well equipped with servers and terminals basically for working in UNIX/LINUX and Windows environment as well. However Practical classes for Diploma and Degree students are held here. Hands on exposure to various programming Software such as C, C++, FORTRAN etc and RDBMS software like Oracle and SQL Server, Visual Studio.NET are available in this lab., several HCL Infinity Global Line Servers, HP Compaq PIV and Pentium III PC's, Laserjet printers, Deskjet 840 printer, Line matrix printer, Dotmatrix printers, AS/A4 Multipen Plotter 4100, Scanners 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**

The System laboratory II is well equipped with a HCL Infinity Global Line Server running on Red Hat Linux 4.0 Enterprise Edition, a SUN ULTRA SPARC 10S SERVER and several HP Thin clients for working purely in UNIX/LINUX environment. 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..

## R & D Cell

This Cell has been developed to carry out researches that are funded by external agencies, through student projects and for faculty research. Three projects, one in Thrust Area and two in R & D scheme are presently being carried out in this cell. The cell is equipped a HP Proliant ML150 Server and a HP Laserjet 3015 multifunction device, Pentium IV PC (2.5 GHz, 256 DDDR SDRAM, 40 GB HDD, 17" Color monitor), a Pentium IV PC (1.5 GHz, 256 SD RAM, 20 GB HDD, 17" Color Monitor), a Pentium III PC (800Mhz, 20.4 Gb HDD, 256 SD RAM). It also has a HP – Color Laser jet (4550N Networking printer), Multipurpose Office Jet ( G55, Scanner cum copier cum printer).

## Embedded Systems Lab

Embedded Systems laboratory was set up with equipments like Microcontroller student Learning Kit, Code Warrior Developer Studio HCO8 Acad. Edition, Code Warrior Developer Studio HCS12(X) Acad. Edition, 16 Bit HCS12 Student Learning Kit, 16 Bit HCS12C32 Student Learning Kit, Platform Creation suite for Linux Embedded, ARM processor based 1MXL ADS with LCD.

## Network Lab

The department has set up Networking Lab and it has equipment like LAN T consisting LANT – NIU, LANT Software, LAN-T PS. It also has ISECURIT - a network and data security training system and a few number of PCs.

## NEW LAB SET UP:

**PC Lab 2:** The PC Lab 2 was set up as an extension of PC Lab 1 to cater to the enhanced computer needs of the students. This lab is well equipped with the latest Intel i7 PCs and Server.

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

### Ph. D.

Name of Student	Title	Name of guide
Yambem Jina Chanu	Development of New Techniques for Steganography and Steganalysis	Dr. Mrs. T. Tuithung

### M.TECH CSE

	Title of Project	Name of guide
1.	Privacy of Source Location in Wireless Sensor Network.	Dr. (Mrs.)N.Marchang
2.	Theoretical Study and FPGA Implementation of Efficient Arithmetical Units in Residue Number System (RNS) for Elliptic Curve Cryptography	Mr. Monjul Saikia
3.	A Collaborative Detection Strategy for SSDF attacks in Cognitive Radio Networks	Mr. Amar Taggu

## M.TECH IT

	Title of Project	Name of guide
1.	Matrix projection Secret Image Sharing Scheme Using Discrete Haar Wavelet Transformation	Dr. (Mrs.)T. Tuithung
2.	Detection of Spectrum Sensing Data Falsification Attack in Cognitive Radio N/W Using Hard Clustering Technique	Dr. (Mrs.)N.Marchang
3.	Attacks on Biometrics and its Countermeasure: A Bio-cryptosystem Approach	Mrs. M. Kathing
4.	Theoretical Study and FPGA Implementation of Efficient Arithmetical Units in Residue Number System (RNS) for Elliptic Curve Cryptography.	Mr. Monjul Saikia

## DEGREE

	Title	Faculty
1.	Classification of regions using image segmentation	Dr. Mrs. T. Tuithung
2.	Detecting colluding attacks using data mining in collaborative spectrum sensing in cognitive radio	Dr. Mrs. N. Marchang
3.	Phoneme recognition using feed-forward neural network	Mr. Kapang Legoh
4.	Biometric authentication system using face recognition	Mrs. M. Kathing
5.	Manet performance in presence of black hole attack	Mr. M. Marjit Singh
6.	Design and Implementation of a Homomorphic Encryption Scheme towards the Application of Cloud Computing	Mr. Monjul Saikia
7.	A fusion centre based detection mechanism of ssdf attacks in cognitive radio network	Mr. Amar Taggu

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

1. Organized 2hours Spoken-tutorial session on Java for CSE students on 07/04/2014 at CSE Department, NERIST under Spoken-tutorial Project, IIT Bombay Coordinator: M. Saikia
2. North East Quality Improvement Programme (NEQIP) sponsored Staff development programme on “Desktop Publishing (DTP) for Office Staff” from 2<sup>nd</sup> to 5<sup>th</sup> December, 2014 organised by Department of Computer Science and Engineering. Coordinators O.P.Shiji Kumar & Y.Usha
3. Mr. Naba Kumar, ex-student of NERIST, 1995 batch, and CEO, Stramos Oy, Finland delivered a talk on “Engineering challenges involved in developing a full hardware + software marketable product” on 2<sup>nd</sup> March 2015.

4. North East Quality Improvement Programme (NEQIP) sponsored by AICTE, Staff Development Programme on “WEB PAGE DESIGNING” from 10<sup>th</sup> to 13<sup>th</sup> March , 2015, organized by Department of Computer Science and Engineering. Coordinators O.P.Shiji Kumar & Y.Usha.

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

##### **Dr. (Mrs.) N. Marchang, Associate Professor**

1. Attended TEQIP-sponsored Faculty Development programme on "Appropriate Technology for Rural Development", NERIST, August 25-29, 2014.
2. Attended "TEQIP-II Regional Workshop for Student, Faculty and Non-teaching staff Satisfaction Survey" Salt lake Campus of Jadavpur University, September 25, 2014.
3. Attended One-Week ISTE STTP for Coordinators on "Introduction to Algorithms", Indian Institute of Technology, Kharagpur, March 16-20, 2015.

##### **Mrs. M.Kathing, Assistant Professor**

1. Faculty Development Programme on “**Appropriate Technology for Rural Development**”, organized by Department of Mechanical Engineering under Technical Education Quality Improvement Programme (TEQIP) sponsored Sponsored by MHRD-World Bank Project,

##### **Mr. Manjul Saikia, Assistant Professor**

1. TEQIP sponsored Faculty Development Programme on “**CADD Excellence (Computer Aided Design & Drafting)**” organized by department of Mechanical Engineering, NERIST during July 30<sup>th</sup>-August 9<sup>th</sup>, 2014.
2. TEQIP sponsored Faculty Development Programme on “**Appropriate Technology for Rural Development**” organized by department of Mechanical Engineering, NERIST during August 25-29, 2014

##### **Mr. Amar Taggu, Assistant Professor**

1. TEQIP-sponsored course on "**Faculty Orientation Programme on Pedagogy**", jointly organised by NITTTR and NERIST, 8<sup>th</sup> Sept.-17<sup>th</sup> Sept., 2014.

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

ACM Membership - **Dr. (Mrs.) N. Marchang**

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

**Mr. M. Marjit Singh** - Awarded the “*IEI Young Engineers Award 2014-2015*” in *Computer Engineering Discipline by The Institution of Engineers (India)*.

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

#### 4.4.10 PUBLICATIONS : -

##### A. Referred Journal

1. **Margaret Kathing**, Rima Rani Chutia, "Biometric based Authentication Techniques: A comparative Study", International Journal of Advanced Research in Computer Science and Software Engineering Volume 4, Issue 3, March 2014, ISSN: 2277 128X
2. **Margaret Kathing**, Pallabi Saikia, "Biometric Authentication Approach using Face Recognition System", International Journal of Advanced Research in Computer Science and Software Engineering Volume 4, Issue 3, March 2014, ISSN: 2277 128X
3. **M. Marjit Singh**, "Modified PCT on Variable Cipher Block Chaining Mode", Springer AISC 340, DOI: 10.1007/978-81-322-2247-7\_47, pp 457-465, 2015.
4. **M. Marjit Singh**, "Towards Techniques of Detecting Node Replication Attack in Static Wireless Sensor Networks", International Journal of Information and Computation Technology, Vol 4, Number 2(2014), ISSN: 0974-2239, pp 153-164, 2014.

##### B. Conference papers:

- 1) **Ningrinla Marchang**, Suchismita Bhattacharjee, Roshni Rajkumari, "Cognitive Radio Networks Security Threats and Attacks: A Review", In Proc. International Conference on Information and Communication Technologies, PESITM, Shimoga, May 5-6, 2014.
- 2) **Ningrinla Marchang**, **Amar Taggu**, Roshni Rajkumari and Suchismita Bhattacharjee Brahmacharjee, "*Dynamic Decision Rule for Cooperative Spectrum Sensing in Cognitive Radio Network*", IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT'15), 5<sup>th</sup>-7<sup>th</sup> March 2015.
- 3) **Ningrinla Marchang**, Suchismita Bhattacharjee, Roshni Rajkumari, "Effect of Colluding Nodes in Collaborative Spectrum Sensing" , IEEE 2<sup>nd</sup> International Conference on Signal Processing and Integrated Networks (SPIN'15), 19<sup>th</sup>-20<sup>th</sup> Feb 2015.
- 4) **Monjul Saikia**, Hazarika Nitumoni;, "A novel partial image encryption using chaotic logistic map," *International Conference on Signal Processing and Integrated Networks (SPIN-2014)* 20-21 Feb. 2014 , vol., no., pp.231,236, doi: 10.1109/SPIN.2014.6776953.
- 5) **Monjul Saikia**, Choudhury, Hussain Ahmed; "Reduced three steps logarithmic search for motion estimation," *International Conference on Information Communication and Embedded Systems (ICICES), 2014*, vol., no., pp.1,5, 27-28 Feb. 2014 doi: 10.1109/ICICES.2014.7033946.
- 6) **Monjul Saikia**, Boruah Debabrat;, "Implementation of ElGamal Elliptic Curve Cryptography over prime field using C," *Information Communication and Embedded Systems (ICICES), 2014 International Conference on* , vol., no., pp.1,7, 27-28 Feb. 2014
- 7) **Monjul Saikia**, Margaret Kathing, Nitumoni Hazarika , "Partial Image Encryption using Peter De Jong Chaotic Map based Bit-Plane Permutation and it's Performance Analysis" published in ACEEE Fifth International Conference on Recent Trends in Information, Telecommunication and Computing ITC 2014 on Mar 21<sup>st</sup> at Chandigarh, India ISBN: 978-94-91587-21-3 SearchDL ID: 02.ITC.2014.5.5 Page(s): 1 – 10 URL: <http://searchdl.org/index.php/conference/view/751>
- 8) **Monjul Saikia**, Choudhury, Hussain Ahmed; "Survey on block matching algorithms for motion estimation," IEEE international conference on *Communications and Signal Processing (ICCSP), 2014 International Conference on* , vol., no., pp.036,040, 3-5 April 2014 doi: 10.1109/ICCSP.2014.6949794



- 9) **Monjul Saikia**, Hussain Ahmed Choudhury, "Cross Three Steps Logarithmic Search For Motion Estimation" Published in IEEE International Conference on Convergence of Technology 6th – 8th April 2014 at Pune, India. ISBN: 978-1-4799-3759-2/14 page
- 10) **Monjul Saikia**, Hazarika, N.; Borah, S.; "A wavelet based partial image encryption using chaotic logistic map," *Advanced Communication Control and Computing Technologies (ICACCCT), 2014 International Conference on* , vol., no., pp.1471,1475, 8-10 May 2014 doi:10.1109/ICACCCT.2014.7019347
- 11) **Amar Taggu** "A Comprehensive analysis of DoS attacks in Mobile Adhoc Networks", K. Das, IEEE ICACCI 2014 (International Conference), 24th-27th September 2014.
- 12) **M. Marjit Singh**, "Preventing Node Replication Attack in Static Wireless Sensor Networks", IEEE Xplore, DOI:10.1109/ICRITO.2014.7014687, 2014.
- 13) **M. Marjit Singh**, "Reliability Computation of Mobile Adhoc Network Using Logistic Regression", IEEE Xplore, DOI: 10.1109/WOCN.2014.6923060, 2014.

#### 4.4.11 ACHIEVEMENT OF STUDENTS:

##### PLACEMENT

Name		Organization
Manish Ranjan	DE/13/CS/002	ZALONI
Himanshu Das	DE/12/CS/107	ZALONI
Mohita Saha	DE/13/CS/003	WIPRO

##### GATE

1. Joseph Pachuau
2. Swmdwm Basumatry

## 4.5 DEPARTMENT OF ELECTRONICS & 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 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 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 has running PG programme (M. Tech in VLSI) since 2012. The department of Electronics and Communication Engineering also runs PhD (part time and full time) in the fields of Electronics and Communication Engineering, VLSI and Information Technology. There are 10 regular faculty members in the department of which two are on QIP leave and pursuing Ph. D. at Jadavpur University and MNIT Allahabad, respectively.

#### 4.5.2 Academic Activities

The department conducts academic activities based on the modular pattern of NERIST- certificate in Maintenance Engineering, Diploma and Degree in Electronics and Communication Engineering. The students of M.Tech and Ph.D students are encouraged to attend and present their published papers across the country. Its NERIST Electronics Society (NES) is a pioneer body in many student academic activities. 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 13 numbers of laboratories to conduct practical classes for various courses. The department has modernized DSP laboratory with funds from MHRD. The department is also further developing the existing VLSI and Computer Networking laboratories. The department has taken up steps to develop labs for M.Tech (VLSI) courses for which Xilinx ISE series along with VHDL based kits, TI 6713 series DSP kits, etc. have been procured along with ORCAD and Microwind Design Software and cadence. Procurement of online UPS and batteries has been made for DSP and computer lab for uninterrupted power supply.

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

##### a. Under-graduate Projects:

##### Diploma Project 2014

1. Password based locking system using ATMEGA8L microcontroller by Hmingthanmawia, J. Cherian, S. Supoh, and N.Kumar under the guidance of Mr. R. K. Mangang.
2. Fan on/off control by light by S. S. Mishra, Pragya, D. D. Roy, S. Kumari under the guidance of Mrs. J. Bora.
3. Electronic letter box with security alarm by P. Singh, S. Chamling, N. Joshi, M. Kesiezie, and R. P. Bhattacharya under the guidance of Mr. Manish Kumar.
4. Remote control for devices using cell phone by A. Sarkar, D. Gangmei, S. D. Deb, and S. Malakar under the guidance of Mr. A. K. Ray.
5. Automatic street light controller using 555 timer IC by L. M. Meitei, P. Srivastava, A. B. Meitei, and L. D. Meitei under the guidance of Mr. A. D. Singh.
6. Mobile phone signal detector by C. G. Paulthanglen, J. Borah, A. K. Gupta, and P. Bhandari under the guidance of Mr. S. Majumder.

**B.Tech Degree Project 2014 (students who have passed out in May 2014)**

<b>Group</b>	<b>NAME</b>	<b>GUIDE</b>	<b>Project Tittle</b>
1	ANKITA RAJ	MRK	1. Design of low-power high speed flip-flop using 65nm technology.
	UDITA GHOSE		
	SARBARI CHAKRABORTY		
	EUREKHA		
	RANCHA MATEY		
2	RUPTANU PAL	JB	2.BER performance analysis of multi-user MIMO TAS/MRC Nakagami-m channel
	TANYA SINGH		
	RUBINA KHONGSHIT		
	VIKAS PANDEY		
	K NONGPOKNGANBA MEITEI		
	RENJI THOMAS		
3	RUPJYOTI KALITA	SMD	3.Fingerprint recognition system using Matlab.
	TASSO TADI		
4	BHASKARJYOTI PATHAK	SMD	4.Gene Expression Programming and Neural Network based Classification of Genus Ficus
	ABHIJIT GOGOI		
5	PRAKASH B GOHAIN	SMD	5. ECG Biometric for Personal Identification using Wavelet and Neural Network.
	TADAR BARO		
6	NABAJIT CHATTERJEE	ADS	6.A study of the effect of diversity order on the performance of SC receiver
	K BIJEN SINGH		
	W HEMCHANDRA SINGH		
7	ANINDITA DAS	ADS	7. A study of the effect of diversity order on the performance of SC receiver over TDWP fading channels.
	L BISANTA KHUMAN		
	LALCHHANTLUANGA		
8	BARNAJIT GHOSH	MMS	8.Glaucoma detection using Colour Fundus Image analysis.
	MANISH GUPTA		
	BIGYAMAN MAAHANTA		
	TIASANEN PONGENER		
	JEROME		
9	SUKANNYA CHETRY	AH	9. Video watermarking using extended anti-collusion codes.
	KUMARI HANSA		
10	RIMA KAUSHIK	AH	10. Data hiding using encryption encoded Technique.
	KRITHIKA SUNDARESAN		
11	NIVEDITA SRIVASTAVA	AKR	11.Detecting Cardiac Murmur using Heart Sounds.
	SHUPARNA DEB		
	TINGPILHING SITLHOU		
	PAWAN SIWAKOTI		
	ANJALI S		
	PREETI KUMARI		

12	SUSHIL KR JOSHI	MKR	12. Multipliers comparison for fast 32-bit design.
	DEEPAK KUMAR		
	SUDHANSHU B RAO		
	ARINDAM CHAUDHURY		
	ANUP KUMAR		

**a. Post Graduate (M.Tech) Projects:**

Student List M Tech ECE May'2014 passouts:

SI	Student Name	Supervisor	Project Title
1	MS. LAXMI MIZE	JB	Performance Study of Multiuser MIMO system for different wireless channels using UCD
2	MR. HIRANYA RANJAN THAKUR	AH	MIMO Spatial Multiplexing based Cellular Mobile Data Communication
3	MS. RAJASHREE DAS	SMD	ECG Biometric for person Identification
4	MS. ARIFA AHMED	AH	Joint Routing and Scheduling for Wide Area Wireless Mesh Network
5	MR. PASANG TSERING	SMD	Implementation of 2D Empirical Mode Decomposition in biometric fingerprint recognition
6	MR. DEBASHISH PAL	MMS	Content based Image Retrieval
7	MR. ASHIM JYOTI GOGOI	JB	Bit Error Rate Performance Analysis of Multiuser MIMO Systems Using Geometric Mean Decomposition over fading channel
8	MR. INDRAJIT BISWAS	ADS	Calculation of Outage probability (Pout) and Average Symbol Error Rate(ASER) for alpha mu channel
9	MS. SUPARNA GOSWAMI	ADS	Performance Analysis of Digital Modulation over Kappa Mu Fading Channel
10	MS PUKHRAM GANGARANI DEVI	AH	Increasing Channel Capacity of a Cellular System with Unequal Sectorization

Student List MTech VLSI May'2014 passouts:

Student Name	Supervisor	Project Title
MR. SARFRAZ HUSSAIN	AKR	8-bit 1GSPS Flash ADC for Optical Communication
MS. CHANDNI PANDEY	AKR	Off chip communication (on chip antenna)
MS. PURNIMA KUMARI SHARMA	MKR	Power Efficient Digital Design Based on BDD
MR. NIKHIL DEO	MRK	Low Power VLSI Digital circuit design using Quasi-Adiabatic Techniques
MR. KAMAL JYOTI PATHAK	SMD	GEP based Classification of Biological Data
MR. RAMESH KUMAR SAH	MMS	To enhance the performance of VLSI Dynamic Circuit by Improving the Noise Tolerance for Low Power Application

MR. NEERAJ KUMAR SINGH	MKR	Design and Simulation of Low Power High Speed 1 Bit Full Adder
MR. TRIDEEP RANJAN LAHON	MMS	VLSI Implementation of Digital Lattice Filter for Speech Processing
MR. PRAGYAN JYOTI BORAH	AKR+ TVPS	An energy efficient Hardware Implementation of DWT for JPEG 2000 standard Image
MR. ABHIJEET DUTTA	MRK	Design and Analysis of Analog to Information Converters based on Compressive Sensing

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

Department of Electronics and Communication Engineering have organized various programs, which are listed below:

- The Department of ECE along with CMS has organised TEQIP sponsored workshop on Management Development Programme - "Getting Ready for Corporate World" for the final year students of PG and UG modules during weekend days (7<sup>th</sup> – 22<sup>nd</sup> February 2015), coordinated by Madhusudhan Mishra and Shibabrata Choudhury.
- NEQIP sponsored workshop "TECHNISIA-2015 on Embedded Systems, VLSI and MATLAB" organized by NERIST ELECTRONICS SOCIETY (NES), Department of Electronics and Communication Engineering for B.Tech students during February 24 -01 March 2015.

The approximate numbers of participants were more than 50 from various departments in the mentioned workshops and the experts were from various reputed Institutes and industries.

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

##### Courses attended by Mr. Madhusudhan Mishra

Sl. No.	Programme	Duration, Year and date	Organized by
1.	Short term training programme on "CADD EXCELLENCE (COMPUTER AIDED DESIGN AND DRAFTING)"	30 <sup>th</sup> July-9 <sup>th</sup> August, 2014	TEQIP & Deptt. of ME NERIST, Nirjuli, A.P.
2.	Short term course on " Appropriate technology for Rural Development"	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	TEQIP & Deptt. of ME, NERIST, Arunachal Pradesh
3.	National course on "Recent Advances in Communications and Signal Processing"	12 <sup>th</sup> -16 <sup>th</sup> January 2015	TEQIP & MHRD, IIT Guwahati
4.	Recent advances in Microprocessors, Microcontrollers And their applications	17 <sup>th</sup> -21 <sup>st</sup> February 2015	TEQIP-(MHRD-World Bank Project) organised by Dept. of Electrical Engg. NERIST, Arunachal Pradesh.

Courses attended by Mr. A. D. Singh

1.	TEQIP Sponsored FDP on "CADD Excellence" (Computer Aided Design and Drafting)	30 <sup>th</sup> July to August 9 <sup>th</sup> , 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
2.	TEQIP Sponsored FDP on Appropriate Technology for Rural Development.	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh

Courses attended by Mrs. Joyatri Bora

Sl. No.	Programme	Duration, Year and date	Organized by
1.	Recent advances in Microprocessors, Microcontrollers And their applications	17 <sup>th</sup> -21 <sup>st</sup> February 2015	TEQIP-(MHRD-World Bank Project) organised by Dept. of Electrical Engg. NERIST, Arunachal Pradesh.

Courses attended by Mr. Swanirbhar Majumder

1.	TEQIP Sponsored FDP on "CADD Excellence" (Computer Aided Design and Drafting)	30 <sup>th</sup> July to August 9 <sup>th</sup> , 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
2.	TEQIP Sponsored FDP on Appropriate Technology for Rural Development.	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
3.	Orientation Programme on Pedagogy	8 <sup>th</sup> to 17 <sup>th</sup> Sep, 2014	At NERIST organized in collaboration with ITTTR Kolkata's
4.	Recent advances in Microprocessors, Microcontrollers And their applications	17 <sup>th</sup> -21 <sup>st</sup> February 2015	TEQIP-(MHRD-World Bank Project) organised by Dept. of Electrical Engg. NERIST, Arunachal Pradesh.

Courses attended by Mr. A.K.Ray

1.	TEQIP Sponsored FDP on "CADD Excellence" (Computer Aided Design and Drafting)	30 <sup>th</sup> July to August 9 <sup>th</sup> , 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
2.	TEQIP Sponsored FDP on Appropriate Technology for Rural Development.	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
3.	Course: Emerging Research Issue in Speech and Natural Language Processing.	30 <sup>th</sup> Sep. to 4 <sup>th</sup> Oct., 2014	TEQIP-(MHRD-World Bank Project) organised by Dept. of CSE, NERIST, Arunachal Pradesh.
4.	Recent advances in Microprocessors, Microcontrollers And their applications	17 <sup>th</sup> -21 <sup>st</sup> February 2015	TEQIP-(MHRD-World Bank Project) organised by Dept. of Electrical Engg. NERIST, Arunachal Pradesh.

Courses attended by Mr. Manish Kumar

1.	TEQIP Sponsored FDP on "CADD Excellence" (Computer Aided Design and Drafting)	30 <sup>th</sup> July to August 9 <sup>th</sup> , 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
2.	TEQIP Sponsored FDP on Appropriate Technology for Rural Development.	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
3.	Recent advances in Microprocessors, Microcontrollers And their applications	17 <sup>th</sup> -21 <sup>st</sup> February 2015	TEQIP-(MHRD-World Bank Project) organised by Dept. of Electrical Engg. NERIST, Arunachal Pradesh.

Courses attended by Mr. R. K. Mangang

1.	TEQIP Sponsored FDP on "CADD Excellence" (Computer Aided Design and Drafting)	30 <sup>th</sup> July to August 9 <sup>th</sup> , 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
2.	TEQIP Sponsored FDP on Appropriate Technology for Rural Development.	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	Department of Mechanical Engineering, NERIST, Nirjuli, Arunachal Pradesh
3.	Orientation Programme on Pedagogy	8 <sup>th</sup> to 17 <sup>th</sup> Sep, 2014	At NERIST organized in collaboration with ITTTR Kolkata's
4.	Summer Research Program on " Channel Estimation" at ECE Dept IISc Bangalore	1 <sup>st</sup> to 25 <sup>th</sup> July, 2014	ECE Department, IISc Bangalore.
5.	INUP Familiarization Programme, IISc and IITB	25 – 26 April 2015	ECE Department, Tezpur University

Courses attended by Mr. Anil Kumar Gautam

1.	Short term training programme on "CADD EXCELLENCE (COMPUTER AIDED DESIGN AND DRAFTING)"	30 <sup>th</sup> July-9 <sup>th</sup> August, 2014	TEQIP & Deptt. of ME NERIST, Nirjuli, A.P.
	Short term course on " Appropriate technology for Rural Development"	25 <sup>th</sup> -29 <sup>th</sup> August, 2014	TEQIP & Deptt. of ME, NERIST, Arunachal Pradesh
	National course on "Recent Advances in Communications and Signal Processing"	12 <sup>th</sup> -16 <sup>th</sup> January 2015	TEQIP & MHRD, IIT Guwahati
	IEEE ARM workshop on Embedded Systems	19 <sup>th</sup> -20 <sup>th</sup> January, 2015	IIT Guwahati

#### 4.5.7 Achievements/Awards/recognition by the faculty

- i. Dr. Manish Kumar has been awarded with PhD Degree from ISM Dhanbad.
- ii. Mrs. Joyatri Bora and Mr. A. Dinamani Singh have successfully defended their Ph.D theses on 30 April 2015.

#### 4.5.8 Publications

1. Gangadhar Tiwari, Debashis Nandi, Madhusudhan Mishra, *Non-Invertible Wavelet Domain Watermarking using Hash Function*, ICGST GVIP Journal, ISSN 1687-398X, Volume 14, Issue 1, pp-11-19, August 2014.
2. Gangadhar Tiwari, Debashis Nandi, Abhishek Kumar, Madhusudhan Mishra, *Secure Image Encryption using Two Dimensional Logistic Map* ICGST GVIP Journal, ISSN 1687-398X, Volume 14, Issue 1, pp-1-9, August 2014.
3. Presented paper *Secret Communication using Public key Steganography* in IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE - 2014), May 09 -11, 2014, Jaipur, India.
4. Debashish Pal, Ashim Jyoti Gogoi, Madhusudhan Mishra, *Literature Survey On Content Based Image Retrieval (Cbir) Technology*, Proceedings of 3rd International Conference on Quality Up gradation in Engineering, Science & Technology, IC-QUEST 2014,19 April 2014.
5. Rupaban Subadar and Aheibam Dinamani Singh, *Performance of M-MRC receivers over TWDP fading channels*, International Journal of Electronics and Communications (AEÜ), Vol. 68, No. 6, pp 569-572, June 2014.
6. Baddrud Z Laskar, Ashutosh Pandey, Sunil Kumar, Swanirbhar Majumder, *Artificial Neural Networks and Gene Expression Programming Based Age Estimation Using Facial Features*, Elsevier International Journal of King Saud University - Computer and Information Sciences, 2014.
7. V. Kumar, A.Laskar, Y. S. Singh, S. Majumdar, S. K. Sarkar, *ANN Based Adaptive Detection of ECG Features from Respiratory, Pleythsmographic and ABP Signals*, proceedings of 3rd International Conference on Frontiers of Intelligent Computing: Theory and applications (FICTA ) 2014, held in Bhubaneswar on 14<sup>th</sup>-15<sup>th</sup> November'2014 in Springer ASIC, ".
8. P. K. Sharma, and M. Kumar, *Implementation of BDDs by various techniques in Low power VLSI design”* International Journal on Recent Trends in Engineering & Technology, Vol.10, No.2, pp. 221-228, 2014.
9. M. Kumar, *Low Power VLSI Design* 17<sup>th</sup> Workshop on Computational Information Processing, National Institute of Technology, Sikkim & ISI, Kolkata, 10.9.2014 to 13.9.2014.
10. M. Kumar, *Reduction of Standby Subthreshold Leakage Power by using Improved Circuit Technique*, 17<sup>th</sup> Workshop on Computational Information Processing, National Institute of Technology, Sikkim & ISI, Kolkata, 10.9.2014 to 13.9.2014.
11. *Design of Cache Memory Cell for Leakage Power Reduction*, International Journal of Engineering Research and General Science (IJERGS), Vol2 154-161, June-July, 2014.
12. S. Majumder, S. Pal, *Trends of ECG Analysis and Diagnosis*, Book Chapter in “Handbook of Research on Trends in the Diagnosis and Treatment of Chronic Conditions”, published by IGI Global Publications, January, 2015.
13. J.Bora and Md.A.Hussain, *Novel Scheduling Techniques with Minimal Feedback Load for Multiuser Diversity MIMO-SM Systems*, In Proc. of the IEEE Int. Conference on Information Science and Applications (ICISA2014),” Seoul, Korea., DOI: 10.1109/ICISA.2014.6847438, May, 2014.



14. J.Bora and Md.A.Hussain, *Novel Scheduling Techniques for Multiuser Diversity MU-MIMO TDD Communication system*, 4th International Conference on Electronics, Communications and Networks, CECNet2014, Beijing, China, December, 2014.
15. A.J.Gogoi, D.Pal and J.Bora, *Bit Error Rate Performance Analysis Of MU- MIMO Systems Using GMD Over Rayleigh Fading Channel*, International Conference on Quality Up-gradation in Engineering, Science and Technology, IC-QEST 2014.

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

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.

#### 4.5.10 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 IITs and reputed Institutes. One of the final year students of B.Tech has secured All India Rank-32 in GATE-2015.

#### 4.5.11 Any other information

**Mr. M. Edison Singh** has joined as a faculty member in the department of Electronics and Communication engineering, NERIST in year Jan 2015. Five contractual faculty members were appointed for the smooth conduction of classes for the present Session Jan-May 2015.

### 4.6 DEPARTMENT OF ELECTRICAL ENGINEERING

#### 4.6.1 A Brief Profile of the Department

The Department of Electrical Engineering has been playing a pivotal role in producing scientists and technologists of highest calibre ever since the institute was established. The first batch of students graduated in 1992. The Department follows a two-year modular structure of the institute in undergraduate programmes namely, 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 is offering Postgraduate (M. Tech) programme with specialization in Power System Engineering and Ph. D programme in all fields of Electrical Engineering to cater to the ever increasing needs of highly skilled technical manpower in the country.

The Department has distinguished and 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 researches to learn and innovate. The Department also undertakes many research projects sponsored both by the government and the industry.

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

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

#### **4.6.2 Activities**

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

#### **4.6.3 Facilities**

The Department has over 12 well equipped laboratories and operates its own library offering facilities to work in all areas of Electrical Engineering. The laboratories are well equipped with number of high end PCs, servers and workstations hosting several software packages and linked through a local area network. Internet Services are available for the students and faculty members.

#### **4.6.4 Programs**

The Department offers the following programmes:

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

#### **4.6.5 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. The objectives are:

- Preparation and review of curriculum.
- Organizing seminars/workshops/conferences.

- Supervision of B. Tech/M. Tech/PhD Projects/Dissertations/Theses.
- Provide consultancy services.
- Facilitate Institute-Industry interaction.
- Publication in national and international journals/conferences.

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

Sl. No.	Name	Designation	Areas of specialization
1.	Dr. S. Chatterjee Ph. D (Jadavpur University)	Professor	High Voltage, Power System
2.	Dr. S. K. Bhagat Ph. D (IIT (BHU), Varanasi)	Associate Professor	Control Systems
3.	Dr. R. K. Mehta Ph. D (Jadavpur University)	Associate Professor	Control Systems
4.	Dr. O. P. Roy Ph. D (ISM, Dhanbad)	Associate Professor	Microprocessor based Control & Instrumentation, Power System Reliability
5.	Dr. Sarsing Gao Ph. D (IIT, Delhi)	Associate Professor	Electrical Machines, Energy & Distributed Generations
6.	Dr. A. K. Singh Ph. D (Tezpur University)	Associate Professor	Power System, Electrical Machines & Drives
7.	Mr. Radak Blange M. Tech (NERIST, Nirjuli)	Assistant Professor	Control Systems, Energy, Electrical Machines & Drives
8.	Mr. T. V. P. Singh M. Tech (MNNIT, Allahabad)	Assistant Professor	Control Systems, VLSI Design
9.	Mr. M. D. Singh M. Tech (Tezpur University)	Assistant Professor	Power Electronics, Digital Systems
10.	Mr. A. K. Parida M. Tech (MITS, Gwalior)	Assistant Professor	Industrial Drives, Power Electronics & Energy Audit
11.	Mr. Anu K. Das M. Tech (NIT, Silchar)	Assistant Professor	Power System Stability, FACTS & Renewable Energy
12.	Mr. N. L. Meitei M. Tech (Tezpur University)	Assistant Professor	Energy Management
13.	Ms. Somila Hashunao M. Tech (Jamia Milia Islamia, Delhi)	Assistant Professor	Electrical Power System Management
14.	Mr. Akhilesh Sharma M. Tech (MMMEC, Gorakhpur)	Assistant Professor	Power Electronics and Drives
15.	Ms. Piyali Das M. E (Jadavpur University)	Assistant Professor	Illumination Engineering, Control System
16.	Mr. P. Devachandra Singh M. Tech (NERIST, Nirjuli)	Assistant Professor	Power System Engineering

#### 4.6.7 Laboratories

The theoretical knowledge imparted to the students is further supplemented by the practical classes. The infrastructure of the Department includes well equipped Power System Lab, High Voltage Engineering Lab, Electrical Machine Lab, Power Electronics Lab, Digital and Microprocessor Lab, Maintenance Lab, Electrical Workshop, Circuits and Measurement Lab, Control and Instrumentation Lab, PC Lab with internet connectivity, Energy Systems Lab and Project and Research Lab. Some of the equipment and software available in the various laboratories are detailed as under :

##### **(a) Power System and Protection Lab**

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

##### **(b) 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.

##### **(c) Electrical Machine Lab**

The 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.

##### **(d) Power Electronics Lab**

This lab has 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.

### **(e) Digital Electronics & 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.

### **(f) 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.

### **(g) 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.

### **(h) Circuits and Measurement Lab**

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

### **(i) 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).

### **(j) 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, PSCAD, etc. are installed in all the computers.

### **(k) Energy Lab**

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

### **(l) Project and Research Lab**

Modeling and simulation works are carried out in this lab mainly by postgraduate students and research scholars. Twenty PCs with 4 GB RAM has been provided in the lab. Uninterrupted internet connectivity is made available so that the students can browse and download journal/conference papers from institutionally subscribed site such as IEEEExplore, ScienceDirect, Elsevier, etc. The lab has a printer, LCD projector and a Scanner to facilitate students like project seminar presentation, etc.

#### **4.6.8 Theses/Dissertations/Projects completed by PhD/PG/UG students**

##### **(a) PhD Theses completed**

Sl. No.	Name	Roll No.	Title	Supervisor
1.	Mr. Krishna Chandra Roy	PhD (PT)/10/EE/02	Design, Development and Performance Evaluation of Frequency Shift Keying (FSK) for Nakagami and Rician Fading Channel in Communication System	Dr. O. P. Roy
2.	Ms. Kaveri Bhuyan	PhD (PT)/10/EE/01	Study of Effects of Standard and Non-standard Impulse Waveforms on Power Equipment	Dr. S. Chatterjee

**(b) M. Tech Dissertations completed**

Sl. No.	Name	Roll No.	Title	Supervisor
1.	Ms. Himadri Das	MT/12/PSE/01	Electric field calculation using Charge Simulation Method	Dr. S. Chatterjee
2.	Mr. Binod Rai	MT/12/PSE/04	Application of Model Order Reduction in Power System	Dr. S. K. Bhagat
3.	Ms. Likha Jully	MT/12/PSE/06	Extended State Estimator based Two Area Load Frequency Control	Dr. R. K. Mehta
4.	Mr. Kamal J. Gogoi	MT/12/PSE/07	North Eastern Grid Analysis using PSS@E	Dr. S. Chatterjee
5.	Ms. Rinchin W. Mosobi	MT/12/PSE/08	Power Quality studies in Integrated Renewable Energy Sources	Dr. S. Gao

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

Sl. No.	Title of project	Name of project Guide	Name of Students
1.	Design of Cast Resin Transformer	Dr. Saibal Chatterjee	Dhrubajyoti Bhattacharjee DE/12/EE/005 Wangjat Hosai DE/12/EE/007
2.	DIGSILENT based power system analysis	Dr. Saibal Chatterjee	Diganta Mishra DE/12/EE/003 Nrihanjal Debnath DE/12/EE/009
3.	Study of HVDC Test Bench	Dr. Saibal Chatterjee	Aditya B. Chandran DE/12/EE/002 Saumya Bhushan DE/12/EE/004
4.	Design of Traffic Light Indicator using Microprocessor	Dr. O. P. Roy	Jitendra Leishanghem DE/12/EE/016 Thiyam Martin Singh DE/12/EE/018
5.	Stepper Motor Control using Microprocessor 8085	Dr. O. P. Roy	Hobito Z. Yephomi DE/11/EE/102 Duyir Game DE/11/EE/109
6.	Modelling and Simulation of Shunt Passive Filter for Harmonic Mitigation and Reactive Power Compensation	Dr. Sarsing Gao	Rikgam Riba DE/12/EE/020 Nich Serbi DE/11/EE/110
7.	Computation of 3 phase IM performance	Dr. Sarsing Gao	Kago Yaka DE/12/EE/008 Jyoti Beyong DE/12/EE/024
8.	State Feedback Optimal Controller Design for the rotary pendulum system	Dr. R.K. Mehta	Gretelleda Shylla DE/12/EE/006 R. K. Bipu Singh DE/12/EE/108
9.	Study and Simulation of UPFC	Mr. M. D. Singh	Aghanmayum Rajesh Roy DE/12/EE/023 Dani Happy DE/12/EE/012
10.	Controller Design via Reduced Order Modelling	Dr. S. K. Bhagat	Tanujit Saha DE/12/EE/011 Deep Chamuah DE/12/EE/013 Subhrajit Saha DE/12/EE/015 Hirak J Sinha DE/12/EE/025
11.	Speed Control of Induction Motor Using Artificial Neural Network	Mr. N.L.Meitei	Ajay Singh DE/12/EE/001 Suraksha Sapkota DE/12/EE/010 Michi Tajo DE/12/EE/022
12.	Environmental Impact Assessment of Hydroelectric power projects at Arunachal Pradesh using RETScreen	Mr. A. K. Das	Johnson Yumnam DE/12/EE/017 Habung Delyang DE/11/EE/111
13.	Modelling and simulation of nano-structured materials	Mr. A. K. Das	Kanderpa Kumar Bashtya DE/11/EE/101 Uday Pratap Singh DE/11/EE/105
14.	Fabrication of Water Level Alert	Ms. Somila Hashunao	Sunil Kumar Leimapkam DE/12/EE/019 Y. Rony Singh DE/11/EE/103 Satyajit Paul DE/11/EE/104

#### **4.6.9 Short term courses/seminars/workshops/conference attended by faculty members**

- Dr. R. K. Mehta attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Dr. S. K. Bhagat attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Dr. S. Chatterjee attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Dr. A. K. Singh attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. M. D. Singh attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. T. V. P. Singh attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Ms. Somila Hashunao attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Ms. Piyali Das attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. Akhilesh Sharma attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. P. Devachandra Singh attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. N. L. Meitei attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Dr. S. Gao attended a TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015.
- Mr. T. V. P. Singh attended a “National Workshop on GPU Programming and Applications”, during Sep. 12-14, 2014, IIT Guwahati.

#### **4.6.10 (10) Short term courses/workshops/conferences conducted**

- 1<sup>st</sup> IEEE Conference on Power, Dielectric and Energy Management at NERIST, 2015 (ICPDEN 2015) January 10<sup>th</sup> & 11<sup>th</sup> 2015 coordinated by Dr. S. Chatterjee.
- TEQIP sponsored FDP on “Recent advances in microprocessor, microcontroller and their applications” during Feb 17-21, 2015 coordinated by Dr. O. P. Roy.

#### **4.6.11 New Degrees/Professional Memberships obtained by Faculty members**

- Dr. S. Chatterjee is a Senior Member of IEEE.
- Dr. S. Gao is a Senior Member of IEEE.
- Dr. R. K. Mehta is a Member of IEEE.
- Dr. S. K. Bhagat is a Member of IEEE.
- Dr. O. P. Roy is a Member of IEEE.
- Dr. A. K. Singh is a Member of IEEE.
- Mr. M. D. Singh is a Member of IEEE.
- Mr. T. V. P. Singh is a Member of IEEE.
- Ms. Somila Hashunao is a Member of IEEE.



- Ms. Piyali Das is a Member of IEEE.
- Mr. Anu Kr. Das is a Member of IEEE.
- Mr. P. Devachandra Singh is a Member of IEEE.
- Mr. A. K. Parida is a Member of IEEE.
- Mr. Radak Blange is a Member of IEEE.
- Mr. Akhilesh Sharma is a Member of IEEE.
- Mr. N. L. Meitei is a Member of IEEE.

#### 4.6.12 Achievements/awards/recognition earned by faculty members

- Dr. S. Chatterjee, Professor is elected to Senior Member, IEEE.
- Dr. S. Gao, Associate Professor is elected to Senior Member, IEEE.

#### 4.6.13 Achievements of students

- Mr. Rajen Pudur, PhD student became a Member of IEEE.
- Ms. Rinchin W. Mosobi, PhD student became a Student Member of IEEE.
- Mr. Kamal Jyoti Gogoi, PhD student became a Student Member of IEEE.

#### 4.6.14 Research Projects undertaken by faculty members

- R&D project entitled, ‘Study of Non-parametric Estimation Using Wavelet Transform sponsored by MHRD, Government of India, Amount: Rs. 9.50 lakhs. PI: Dr. S. Chatterjee
- FIST (Fund for Improvement of S & T) project to strengthen the PG Teaching and Research in Electrical Engineering Department – Funded by DST, Ministry of S&T, GOI, Amount : 75.6 lakh. PI: Dr. Saibal Chatterjee

#### 4.6.15 Recent Publications

##### (a) Journal

- Rinchin W. Mosobi, Toko Chichi and Sarsing Gao, “Power quality analysis of hybrid renewable energy system” *Cogent Engineering, Taylor and Francis*, vol. 2, no. 2, pp. 1-15, 2015.
- Sarsing Gao, G. Bhuvaneswari, S. S. Murthy and Ujjwal Kalla, “Efficient voltage regulation scheme for three-phase self-excited induction generator feeding single-phase load in remote locations”, *IET Renewable Power Generation*, vol. 8, issue 2, pp. 100-108, 2014.
- S. K. Bhagat, Binod Rai and Amresh Kumar, “GA based Internal Model Controller design for load frequency control in power system vis reduced order model”, *Intl. J. of Eng. Sci. Invention*, vol. 3, no. 3, pp. 17-26, 2014.
- Kaveri Bhuyan and Saibal Chatterjee, “Electric Stresses on Transformer Winding Insulation under Standard and Non-Standard Impulse Voltages”, *Journal of Electric Power Systems Research, Elsevier*, 2014 – accepted for publication.
- Load Tapin and R. K. Mehta, “An Integral with Feed forward Control for Primary Load Frequency Control Loop using Pole-placement Design,” *Intl Conf. on Electrical, Electronics & Instr. Eng.*, Jan., 2014.

## (b) Conference

- Rajen Pudur and Sarsing Gao, "Performance of Savonius rotor on different aspect ratio for hydropower generation", *IEEE ICPDEN*, pp. 1-6, Jan. 2015.
- Rinchin W. Mosobi, Toko Chichi and Sarsing Gao, "Modeling and power quality analysis of integrated renewable energy system" *IEEE NPSC*, pp. 1-6, Dec. 2014.
- Rajen Pudur and Sarsing Gao, "Savonius rotor based hydropower generation", *Proc. AMETI 2014*, vol.2, pp. 104-111, 2014.
- S. K. Bhagat, Binod Rai and Amresh Kumar, "Load frequency control in power systems via GA based IMC and model order reduction", *IEEE ICRAIE*, May 9-11, Jaipur, India, 2014.
- Amresh Kumar and S. K. Bhagat, "Voltage stability analysis using Lyapunov energy function", *IEEE ICPDEN*, pp. 1-6, Jan. 2015.
- Saibal Chatterjee, "Simulation of Synchronous Reference Frame PLL based Grid Connected Inverter for Photovoltaic Application", *IEEE ICPDEN*, pp. 1-6, Jan. 2015.
- Saibal Chatterjee, "Simulation of lightning impulse residual voltage test of surge arresters in Matlab Simulink", *IEEE ICPDEN* pp. 1-6, Jan. 2015.
- Saibal Chatterjee, "Analysis of the effect of Electric field due to High Voltage Transmission Lines on Humans", *IEEE ICPDEN* pp. 1-6, Jan. 2015.
- Bhuyan, K. Bhuyan and Saibal Chatterjee, "Vulnerability analysis and PMUs as next generation protection system in Smart Grid," *IEEE PEDES*, vol., no., pp.1-5, Dec. 2014.
- R. K. Mehta, Likha Jully and Lod Tapin, "Extended State Estimator Based Two Area Load Frequency Control," *IEEE ICPDEN*, pp. 1-6, Jan. 2015.
- A. K. Singh, O. P. Roy and H. K. Singh, "Power System Disturbances identification Using Variance of wavelet Coefficients", *Proc. AMETI*, Vol.1, pp. 416-421, Dec.'2014.
- O. P. Roy, A. K. Singh, et al, "Reactive Power Control by Using STATCOM", *Proc. AMETI*, Vol.1, pp. 416-421, Dec.'2014.
- Rajen Pudur and Sarsing Gao, "Single phase power for remote area using Savonius rotor based hydropower generation", *IEEE ICEPE 2015* - accepted.
- Rinchin W. Mososbi and Sarsing Gao, "Modeling and simulation of integrated renewable energy sources feeding three-phase load", *IEEE ICEPE 2015* - accepted.
- Kamal Jyoti Gogoi and Saibal Chatterjee, "Modelling and Study of Steady State Analysis and Fault Parameters in 400 kV and 220kV Buses of Indian North Eastern Regional Grid", *IEEE ICEPE 2015* - accepted.
- Radak Blange, "MPPT of Solar Photovoltaic Cell Using Perturb & Observe and Fuzzy Logic controller Algorithm for Buck-Boost DC-DC Converter", *IEEE ICEPE 2015* - accepted.
- A. K. Parida, "An Improved Rotor Speed and Position Computation Scheme for Grid-Isolated Operation of DFIG", *IEEE ICEPE 2015* - accepted.
- A. K. Parida, "A Novel Control Scheme for Standalone DFIG Based WECS with Cogeneration Topology", *IEEE ICEPE 2015* - accepted.

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

- Dr. S. Chatterjee is the reviewer for the Journal of IET, Science and Measurement. He is also the reviewer of many IEEE conferences.
- Dr. S. Chatterjee is the Conference Chair and Publication Chair for IEEE Conference ICPDEN 2015 at NERIST from 10<sup>th</sup> to 11th Jan 2015.
- Dr. S. Chatterjee is the PhD reviewer of NIT Allahabad, NIT Durgapur and Jadavpur University, Kolkata.

- Dr. S. Gao is the reviewer of IEEE Trans. on Industry Applications.
- Dr. S. Gao is the reviewer of IEEE Trans. on Industrial Electronics.
- Dr. S. Gao is the reviewer of IEEE Trans. on Energy Conservation.
- Dr. S. Gao is the reviewer of IEEE Journal of Emerging and Selected Topics in Power Electronics.
- Dr. S. Gao is the reviewer of Electric Power Components and Systems, Taylor & Francis.
- Dr. S. Gao is a member of High Power Committee on Hydro Power Development constituted by Govt. of Arunachal Pradesh.
- Dr. S. Gao is a member of curriculum development on Energy Conservation for Polytechnics of Arunachal Pradesh initiated by APEDA, Govt. of Arunachal Pradesh.

## 4.7 DEPARTMENT OF MECHANICAL ENGINEERING

### 4.7.1 A Brief Profile about the Department

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

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

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

A series of quality U.G. projects and P.G projects/thesis have been completed. Alumni of the department are placed in reputed organizations in India and abroad. In view of the worldwide economic recession, in the period under review, the department achieved about 20% placement

for the outgoing students. Some students have also qualified for higher studies in India. During this period, the Department of Mechanical Engineering had an all-round achievement in terms of several academic as well as developmental criteria and would like to look forward for higher laurels within the scope.

### **Vision and Mission of Department**

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

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

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

To create technical manpower at different levels for the North Eastern States in particular, and for the nation 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 and Automation (CIMA) and (ii) M. Tech. in Thermo-Fluid Engineering. Besides conventional teaching methodology, the department provides facility of **audio-visual sessions** on selected areas conducted in the departmental seminar hall through e-learning CDs. Several proposals have been processed to streamline the course contents or credit distribution of a course. New and emerging elective courses are offered to the students.

**Curriculum review process** for all the modules have been completed and implemented. The curriculum has been approved by Academic Council and the new curricula have been implemented since 2010-2011 academic session.

**Vocational Training** is included as a part of the curriculum for certificate and degree modules. Students of Certificate module are sent to the relevant reputed industries or repairing & maintenance shops, all over the India, for hands on training & experience on the principles they study. Job training is also a part of the curriculum for certificate module students where the repairing and maintenance of equipment are carried out by the students under the supervision of faculty members and technical staffs. Degree module students have undergone training in various reputed public sector and private organizations as a part of their curriculum requirement for the award of their degrees.

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

The Mechanical Association of NERIST (MAN), jointly officiated by faculty, staff and students of the department, provides a platform to resolve academic issues solely related to the departments. MAN also organizes lecture series, mock interviews, technical competitions etc.

for the students of NERIST in general and students of mechanical engineering department in particular. Students of the department take active role in organizing and participating in various academic, cultural and sports activities at the Institute level such as RACAF, SHRISHTI etc. Students are also encouraged to participate in technical events organized by various other Institutions of India.

### 4.7.3 Laboratories and Laboratory Development

Internal Combustion Engine being the important area for the Mechanical Engineering student. IC Engine Laboratory is equipped with two strokes and four strokes petrol and diesel engine, 5-gas analyzer and smoke meter etc. A separate Biodiesel lab has been installed and developed under the supervision of Dr. P. Lingfa. The Biodiesel lab is well equipped with Integrated Biodiesel Reactor System consisting of mechanical oil expeller, decorticator, baby bath boiler and oil filtering unit. The other laboratories equipment such as magnetic oil stirrer, 1-litre capacity biodiesel reactor, Gas chromatograph (GC), bomb calorimeter, Centrifuge, Viscometer, flash and fire point apparatus, cloud, pour point apparatus, and Setavis viscometer etc. are available. The students of UG/PG/PhD scholars avail the facilities for their projects and other research and development work.

An Audio-Visual lab (Seminar Hall) is under development and the equipment were indented on priority basis during the year. Now Mr.N.Teyi is in-charge of seminar hall. Presently, seminar hall is equipped with LCD projector, P-IV Computer. The procurement of new PA system is under process. Computational Fluid Dynamics lab was developed, since the engineering analysis of thermal fluid systems CFD techniques plays an important and major role now-a-days. The lab is used for UG/PG/PhD scholar works in the Mechanical Engineering Department. The Computer and CFD lab are well equipped with good number of pentium-IVs, peripherals, printers and software's.

CADD laboratory is undergoing development with the initiative of Mr. S. Mahto. Two new software, one being PRO-E and another being ANSYS, are procured to provide huge boost to the CADD/CAM laboratory during this year. Dr. M. Chandrasekaran as in-charge of fluid power control laboratory initiated the procurement of PLC system for demonstration of Traffic lighting, Lift control, Water level control, linear and rotary actuator. It was successfully installed and used for practicals for M.Tech scholars.

### 4.7.4 Projects completed by the UG/PG/Ph.D. Students (Completed in May, 2014)

#### LIST OF Ph.D PROJECTS, 2014-2015

- Biplab Das, Roll No-PhD (PT)/10/ME/01, Ph.D. completed in December 2014 under the supervision of Dr. Asis Giri. Thesis title: “*Mixed Convection Heat Transfer with and without vortex generator*”.

#### LIST OF M.TECH (CIMA) PROJECTS, 2013-2014

Roll No.	Name of the student	Project Title	Name(s) of Supervisor(s)
CIMA/02	Michi Anju	Process Parametric Optimization of Wire EDM	Dr. S. Samanta & Dr. M. Chandrasekaran

CIMA/03	Shiv Kumar Sharma	Modeling and optimization of machining Glass Fiber reinforced Plastics (GFRP) using PCD Tool	Dr. M. Chandrasekaran
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**LIST OF M.TECH (TFE) PROJECTS, 2013-2014**

<b>Roll No.</b>	<b>Name of the student</b>	<b>Project Title</b>	<b>Name(s) of Supervisor(s)</b>
TFE/01	Raushan Krishnan	To enhancement of efficiency and modification in design of wood based room heater	Mr. M. Dabi
TFE/02	Swastika Patel	Electronic chip cooling	Dr. Asis Giri
TFE/03	Michi Yapa	Laminar combined forced convection in circular channel with elliptical inner rod	Mr. S. Mahto
TFE/04	Sikha Rani Patgiri	Combustion and evaporation of fuel droplet	Dr. Asis Giri
TFE/05	Dipanka Bhuyan	Condensation between two parallel plates	Dr. Asis Giri & Dr. Biplab Das
TFE/06	Kankan Kishore Pathak	Mixed convection studies from extended surfaces under combined heat and mass transfer	Dr. Asis Giri & Dr. Biplab Das

**List of B. TECH. PROJECTS, 2014**

<b>Project Number</b>	<b>Supervisor(s)</b>	<b>Title of the Project</b>
DE/PROJ/ME/01	Dr. Pradip Lingfa	Experimental investigation of engine performance using biodiesel obtained from waste cooking oil in a single cylinder diesel engine
DE/PROJ/ME/02	Dr. S. Samanta	Numerical and experimental analysis of a vertical- axis wind turbine
DE/PROJ/ME/03	Mr. S. Mahto	Shape optimization of a fixed-fixed flexible beam.
DE/PROJ/ME/04	Dr. M. Theddeus	"Solar energy heat" concession system.
DE/PROJ/ME/05	Dr. Asis Giri	Exergy analysis of power plant
DE/PROJ/ME/06	Dr. S. Samanta & Dr. M. Chandrasekaran	Optimization of machining parameters using GRAY, ANOVA and RSM analysis in wire EDM.
DE/PROJ/ME/07	Mr. M. Dabi	1 <sup>st</sup> law and 2 <sup>nd</sup> law analysis of dual fuel engine
DE/PROJ/ME/08	Dr. Pradip Lingfa	Production process optimization and characterization of methyl ester derived from Nahar oil

DE/PROJ/ME/09	Mr. M. Dabi	Gasifier
DE/PROJ/ME/10	Mr. M. Dabi	Study and development of mini-biogas plant
DE/PROJ/ME/11	Dr.M. Chandrasekaran	Modeling and optimization of machining process
DE/PROJ/ME/12	Dr. M. Theddeus	Estimation of solar distillation
DE/PROJ/ME/13	Dr. A. Giri & Dr. B. Das	A study of solar collector

#### 4.7.5 Short-term courses/ Seminars/ Workshops/ Conferences organized

1. P. Lingfa and S. S. Gautam, Organized International Symposium on “*Aspect of Mechanical Engineering and Technology for Industry*” during 6<sup>th</sup> to 8<sup>th</sup> December, 2014.
2. P. Lingfa, A. Giri and B. Das are going to organize a National conference on “*Advances in fluid flow and thermal science*” during 20<sup>th</sup> to 22<sup>th</sup> March 2015, under NEQIP.
3. P. Lingfa, M. Dabi and B. Das organized short term course on “*Appropriate Technology for Rural Development*” during 25<sup>th</sup> to 29<sup>th</sup> August 2014 under TEQIP.
4. S. Mahto and M. Chandrasekaran conducted two weeks short term training programme (STTP) on “*CADD Excellence*”, during 30<sup>th</sup> July to 9<sup>th</sup> August, 2014.
5. N. Teyi and A. Taggu conducted two weeks Orientation Programme entitled “Orientation Course on Pedagogy” from 08-09-14 to 17-09-14 in NERIST.

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

1. P.Lingfa, Associate Professor, participated in a STTP on 'Renewable in Science and Engineering (RISE-2014) held at NIT Silchar, during 10<sup>th</sup>-14<sup>th</sup> January, 2014.
2. M. Chandraekaran, Associate Professor, participated in a STTP on “Appropriate Technology for rural development” held at NERIST, Nirjuli, during 25<sup>th</sup>-29<sup>th</sup> August, 2014.
3. S. Samanta, Associate Professor, participated in a STTP on “Prospect of cloud computing in Education” organized by Computer Science and Engineering Department, NERIST during 3<sup>rd</sup> – 7<sup>th</sup> February, 2014.
4. S. Samanta, Associate Professor, participated in a STTP on the title, “CADD Excellence” organized by Mechanical Engineering Department, NERIST during 30<sup>th</sup> July to 9<sup>th</sup> August 2014.
5. S. Samanta, Associate Professor, participated in a STTP on “Appropriate Technology for Rural Development” organized by Mechanical Engineering Department, NERIST during 25<sup>th</sup> – 29<sup>th</sup> August 2014
6. S. S. Gautam, Associate Professor, participated in a STTP on “Pedagogical Training for Engineering Teachers” organized by Mechanical Engineering Department, NERIST during 21<sup>st</sup> – 23<sup>rd</sup> March, 2014.
7. N. K. Rana, Assistant Professor Participated in a STTP on “Appropriate Technology for Rural Development” held at NERIST, Nirjuli, during 25<sup>th</sup>-29<sup>th</sup> August, 2014.
8. P. Lingfa, Associate Professor, participated in a STTP on “CADD Excellence” organized by Mechanical Engineering Department, NERIST during 30<sup>th</sup> July to 9<sup>th</sup> August 2014.

9. S. S. Gautam, Associate Professor, participated in a STTP on “CADD Excellence” organized by Mechanical Engineering Department, NERIST during 25<sup>th</sup> – 29<sup>th</sup> August, 2014.
10. D. Maji participated in TEQIP-II (MHRD-World Bank Project) sponsored Short Term Training Programme on “Desktop Publishing (DTP) for Office Staff” organized by Computer Science and Engineering Department, NERIST, Nirjuli, Arunachal Pradesh during March 19-24, 2014.
11. D. Maji participated in TEQIP-II (MHRD-World Bank Project) sponsored Short Term Course on “Appropriate Technology for Rural Development” organized by Mechanical Engineering Department, NERIST, Nirjuli, Arunachal Pradesh during August 25-29, 2014.
12. D. Maji participated in TEQIP-II (MHRD-World Bank Project) sponsored International Symposium on “Aspects of Mechanical Engineering and Technology for Industry” organized by Mechanical Engineering Department, NERIST, Nirjuli, Arunachal Pradesh during December 6-8, 2014.
13. D. Maji participated in AICTE sponsored NEQIP (North East Quality Improvement Programme) Staff Development Programme on “Web Page Designing” organized by Computer Science and Engineering Department, NERIST, Nirjuli, Arunachal Pradesh during March 10-13, 2015.
14. S. Samanta, Associate Professor, participated in a quality improvement programme on “Micro manufacturing for Biomedical Application” at IIT Guwahati, Guwahati, Assam during 23.02.2015 to 27.02.2015.
15. S. Samanta, Associate Professor, participated in a short term course on “Microprocessors, Microcontrollers and their Applications,” at NERIST, Nirjuli, Arunachal Pradesh during 17.02.2015 to 21.02.2015.
16. S. S. Gautam, Associate Professor, participated in a quality improvement programme on “Micro manufacturing for Biomedical Application” at IIT Guwahati, Guwahati, Assam during 23.02.2015 to 27.02.2015.
17. S. S. Gautam, Associate Professor, participated in a short term course on “Microprocessors, Microcontrollers and their Applications,” at NERIST, Nirjuli, Arunachal Pradesh during 17.02.2015 to 21.02.2015.

#### **4.7.7 New Degrees/Professional Memberships obtained by the faculty**

- M. Chandrasekaran, Associate Professor, obtained his Ph.D. from IIT Guwahati in May 2014.
- Thesis title: “*Cloud Computing Based Machining Optimization*”.
- P. Lingfa, Associate Professor, obtained his Ph.D. from IIT Delhi in June, 2014.
- Thesis title: “*Production of Biodiesel from Tung Oil and its Utilization in Compression Ignition Engine*”.
- Biplab Das, Assistant Professor, obtained his Ph.D. from NERIST, Nirjuli, in December 2014.
- Thesis title: “*Mixed Convection Heat Transfer with and without vortex generator*”.



#### 4.7.8 Achievements/awards/recognition earned by the faculty

- D. Maji conferred with Fellow Membership (FUWAI), United Writers' Association, Chennai, Tamil Nadu, July 15, 2014.
- D. Maji conferred with India Achievement Awards by Indian Journalists Welfare Foundation and Maiher Times, Lucknow, February 20, 2014.
- D. Maji conferred with UWA Effulgent Star of the Decade Award 2014-2015 by United Writers' Association, Chennai, Tamil Nadu, June 14, 2014.

#### 4.7.9 Publications

##### International Journals

1. P. Lingfa: Effect of injection opening pressures and injection timings on the engine performance and exhaust emissions on single cylinder diesel engine operating with Tung biodiesel blends, *SAE technical paper*, 2014-01-2762.
2. Biplab Das and A. Giri: Mixed convection heat transfer from a vertical fin array in the presence of vortex generator, *International Journal of Heat and Mass Transfer*, Vol. 82, 2015, pp. 26–41.
3. Biplab Das and Asis Giri: Conjugate conduction and convection underneath a downward facing non-isothermal extended surface: A numerical study, *Energy Conversion and Management*, Vol. 88, 2014, pp. 15–26.
4. Biplab Das and Asis Giri: Non-Boussinesq laminar mixed convection in a non-isothermal fin array, *Applied Thermal Engineering*, Vol. 63, 2014, pp. 447-458.
5. M. Chandrasekaran, M. Muralidhar and U.S.Dixit: Online optimization of a finish turning process: Strategy and experimental validation, *International Journal of Advanced Manufacturing Technology*, 2014. DOI: 10.1007/s00170-014-6171-2.
6. S. Tamang and M.Chandrasekaran: Experimental investigation and development of multi response ANN modeling in turning Al-SiCp MMC using polycrystalline diamond tool, *International Journal of Current Engineering and Technology*, Vol.4, No.1, 2014, pp. 1-8.
7. Shiv Sharma, M. Chandrasekaran and R.Thirumali: Application of Taguchi Desirability Function Analysis (TDFFA) for optimizing multiple responses in turning Inconel 718, *Manufacturing Technology Today (MTT)*, Vol. 13, No.6, 2014, pp. 20–29.
8. Shiv Sharma, M. Chandrasekaran and R.Thirumalai: Multi-objective optimization of surface roughness and tool wear in turning Inconel 718: A desirability analysis, genetic algorithm and firefly algorithm, *Applied Mechanics and Materials*, Vols. 592-594, 2014, pp. 545-549.
9. S. Tamang and M. Chandrasekaran: Desirability fuzzy approach for optimizing multiple performance characteristics in machining metal matrix composites, *Applied Mechanics and Materials*, Vol. 592-594, 2014, pp. 128-133.
10. M. Chandrasekaran and D. Devarasiddappa: Artificial neural network modeling for surface roughness prediction in cylindrical grinding of Al-SiCp metal matrix composites and ANOVA analysis, *Advances in Production Engineering & Management*, Vol. 9, No. 2, 2014, pp. 59–70.

11. Shiv Sharma, S. Tamang, D. Devarasiddappa and M. Chandrasekran: Fuzzy logic modeling and multiple performance optimization in turning GFRP composites using desirability function analysis, Presented in ICMPC-2014 and Available online on Procedia Materials Science, Vol. 6, 2014, pp.1805-1814.
12. M. Chandrasekaran and Shiv Sharma: Sustainable Production: Selection of optimum cutting condition with trade-off between product quality and economic aspects in turning Inconel 718, *Journal of Mechatronics and Intelligent Manufacturing*, Vol. 3, Issue 1-2, 2014.
13. S. Mahto: Shape optimization of revolute-jointed single link flexible manipulator for vibration suppression, *Mechanism and Machine Theory*, Vol. 75, 2014, pp. 150–160.
14. S. Mahto and U. S. Dixit: Shape optimization of revolute-jointed rigid-flexible manipulator, *Journal of The Institute of Engineers (India): Series C*, Vol. 95, Issue 4, 2014, pp. 335–346.
15. S. Mahto and U. S. Dixit: Parametric study of double link flexible manipulator, *Universal Journal of Mechanical Engineering (HR Pub., USA)*, Vol. 2(7), 2014, pp. 211-219.
16. K. S. Singh, M. K. Meitei and S. Mahto: Shape optimization of flexible fixed beam, *International Journal of Innovative Research in Science, Engineering and Technology*, Vol. 3 (Special Issue 4), 2014, pp. 7-12.
17. N. K. Rana, S. S. Gautam and S. Verma: Static characteristics of conical hydrostatic journal bearing under micropolar lubrication, *Journal of The Institute of Engineers (India): Series C*, Vol. 95 (4), 2014, pp. 375-381.
18. N. K. Rana, S. S. Gautam and S. Samanta: Approximate analysis of dynamic characteristics of short journal bearings in turbulent micropolar lubrication, *Journal of The Institute of Engineers (India): Series C*, Vol. 95 (4), 2014, pp. 383-388.
19. S. K. Dey, D. Datta and S. Samanta: Ultrasonic Imaging of ballistically impacted plates using DIVFRP clustering method, *Journal of The Institute of Engineers (India): Series C*, Vol. 95 (4), 2014, pp. 367-374.
20. S. Samanta, A. Mandal and T. J. Singh: Application of ANN in identifying defects in impacted composite, *Procedia Materials Science*, Vol. 6, 2014, pp. 926-930.
21. T. J. Singh and S. Samanta: Characterization of natural fiber reinforced composites-Bamboo and Sisal: A Review, *International Journal of Research in Engineering and Technology*, Vol. 03, special issue: 07, 2014, pp. 187-195.
22. K. K. Mandal: Development of an ANN model to predict surface roughness during cryogenic machining operation, *International Journal Research in Engineering & Technology*, Special Issue No.7, May, 2014, pp. 393-397.
23. D. Maji: 'Sustainable Rural Livelihood' An Approach, in *Recent Trends in Post-Harvest Technology and management*, Ed. Kumari Aloka, Mangalam Publication India: Pvt. Ltd., New Delhi, ISBN : 978-93-82983-53-8, 2015, pp. 126-140.
24. N. Yadaiah and S. Bag: Development of egg-configuration heat source model in numerical simulation of autogeneous fusion welding processes, *International Journal of Thermal Sciences*, Vol. 86(12), 2014, pp. 125-138. **(One of the most downloaded article (Article Ranked # 15) from 'Science Direct' in the last 90 days, dated on 28-11-2014).**

25. S. Singh, N. Yadaiah, S. Pal and S. Bag: Numerical simulation of welding induced residual stress in fusion welding using adaptive volumetric heat source, *Proceedings of IMechE, Part C: Journal of Mechanical Engineering Science*, Vol. 228(16), 2014, pp. 2960-2972.

### Conference Proceedings

1. M. Muralidhar and G. L. Datta: Development of global holonic casting manufacturing concepts and principles: A Study: Published in 71<sup>st</sup> World Foundry Congress, Bilbao, Spain, and 19<sup>th</sup> - 21<sup>st</sup> May, 2014.
2. M. Chandrasekaran, Santosh Tamang, Sumit Kumar and Manish Sharma: Modeling and optimization of machining parameters in milling Al-SiCp metal matrix composites using Taguchi method and regression based GA, Presented and published in *International Conference on Mechanical Engineering: Emerging Trends for Sustainability (ICMEETS'14)* held at MNIT, Bhopal, India, during 29<sup>th</sup> to 31<sup>st</sup> January, 2014.
3. Shiv Sharma and M. Chandrasekaran: Sustainable production: selection of optimum turning condition with the trade-off between product quality and economic aspects, Published in *International Conference on Mechanical Engineering: Emerging Trends for Sustainability (ICMEETS'14)* held at MNIT, Bhopal, India, 29<sup>th</sup> to 31<sup>st</sup> January, 2014.
4. Rahul Singh, Vikash Kumar, Shiv Sharma and M. Chandrasekaran: Regression modelling and simultaneous optimization  $R_a$ ,  $F_z$  and  $F_y$  in turning Inconel 825 super alloy using carbide insert, Published in *International Mechanical Engineering Congress 2014 (IMEC 2014)*, NIT, Trichirapalli, Tamilnadu, June 13<sup>th</sup> to 15<sup>th</sup> June, 2014.
5. Debtanay Das, Parikshit Bhowmik, Nitesh Kumar Jha and M. Chandrasekaran: State of the art in machining hybrid metal matrix composites with an emphasis to EDM Process, Published in *Aspects of Mechanical Engineering and Technology for Industry (AMETI -2014)*, NERIST, Arunachal Pradesh, 6<sup>th</sup> to 8<sup>th</sup> December, 2014, pp. 364-371.
6. Shiv Sharma and M. Chandrasekaran: Modeling and optimizing multi performance characteristics in turning GFRP composites using polycrystalline diamond tool, Published in *Aspects of Mechanical Engineering and Technology for Industry (AMETI -2014)*, NERIST, Arunachal Pradesh, 6<sup>th</sup> to 8<sup>th</sup> December, 2014, pp. 291-298.
7. Arnab Sarmah, Avik Bal, M. Ravi Sankar, S. Samanta and M. Chandrasekaran: Experimental study and modeling of micro scratch based tribological characterization of Al Alloy-SiC metal matrix composite, Published in *Aspects of Mechanical Engineering and Technology for Industry (AMETI -2014)*, NERIST, Arunachal Pradesh, 6<sup>th</sup> to 8<sup>th</sup> December, 2014, pp. 184-190.
8. Jeet George and M. Chandrasekaran: Machining of aerospace alloys and MMC using different EDM processes: a literature review on process modeling and optimization, Published in *Aspects of Mechanical Engineering and Technology for Industry (AMETI -2014)*, NERIST, Arunachal Pradesh, 6<sup>th</sup> to 8<sup>th</sup> December, 2014, pp. 278-284.
9. M. Chandrasekaran and Santosh Tamang: Desirability analysis and genetic algorithm approaches to optimize single and multi-response characteristics in machining Al-SiCp MMC, *5<sup>th</sup> International & 26<sup>th</sup> All India Manufacturing Technology, Design and Research Conference (AIMTDR 2014)*, 12<sup>th</sup> – 14<sup>th</sup> December, 2014, IIT Guwahati, Assam, pp. 653-1 to 653-6.
10. Santosh Tamang and M. Chandrasekaran: Application of grey fuzzy logic for simultaneous optimization of surface roughness and metal removal rate in turning Al-SiCp metal matrix composites: *5<sup>th</sup> International & 26<sup>th</sup> All India Manufacturing Technology, Design and Research*

Conference (AIMTDR 2014), 12<sup>th</sup> – 14<sup>th</sup> December, 2014, IIT Guwahati, Assam, pp. 832-1 to 832-7.

11. P. Lingfa: Production of Jatropha oil methyl ester and its utilization in stationary engine to assess their suitability to meet emerging fuel quality and emission standards" accepted for publication at *International Symposium on 'Aspects of Mechanical Engineering and Technology for Industry'* to be held on 6<sup>th</sup> - 8<sup>th</sup> December 2014, at NERIST, Itanagar, Arunachal Pradesh.

12. Ojin Tatak and P. Lingfa: Study of performance characteristics of 2-stroke diesel engine using biodiesel obtained from Jatropha oil: A review, Publication at *International Symposium on 'Aspects of Mechanical Engineering and Technology for Industry'* held on 6<sup>th</sup> - 8<sup>th</sup> December 2014, at NERIST, Itanagar, Arunachal Pradesh.

13. N. K. Hina and P. Lingfa: Study of performance and emission characteristics of diesel engine using biodiesel blends from two or more fuels: A Review, published at *International Symposium on 'Aspects of Mechanical Engineering and Technology for Industry'* to be held on 6<sup>th</sup> - 8<sup>th</sup> December, 2014, at NERIST, Itanagar, Arunachal Pradesh.

14. S. Das and P. Lingfa: "NAHAR (Mesua Ferrea L.) A promising feedstock for biodiesel production and other industrial applications: A Review, published at International Symposium on *'Aspects of Mechanical Engineering and Technology for Industry'* to be held on 6<sup>th</sup> - 8<sup>th</sup> December, 2014, at NERIST, Itanagar, Arunachal Pradesh.

15. P. Lingfa: Non-edible vegetable oil-based biodiesel as a alternative fuel for diesel engine: A Review, presented during the one week short term course on *'Renewable in Science and Engineering (RISE-14)'* organised jointly by NIT Silchar and Solar Energy Society of India (SESI) on 10<sup>th</sup> - 14<sup>th</sup> January, 2014 held at NIT Silchar, Assam.

16. P. Lingfa: Biodiesel from (Mesua ferrea) Nahar oil: A sustainable renewable energy for rural development, National Conference on *Emerging Technology Trends in Agricultural Engineering*, 7<sup>th</sup> to 9<sup>th</sup> November, 2014, NERIST, Nirjuli, Itanagar, India.

17. P. Lingfa: Artificial Prediction of Performance of Biodiesel Fuelled Compression Ignition Engine, accepted for National Conference on *Emerging Technology Trends in Agricultural Engineering*, 7<sup>th</sup> to 9<sup>th</sup> November, 2014 NERIST, Nirjuli, Itanagar, India.

18. P. Lingfa: Experimental investigation of engine performance using biodiesel obtained from waste cooking oil in a single cylinder diesel engine, accepted for *National Conference on Emerging Technology Trends in Agricultural Engineering*, 7<sup>th</sup> to 9<sup>th</sup> November, 2014 NERIST, Nirjuli, Itanagar, India.

19. Priyankar P. Deka, Sweety Mahanta, T. J. Singh and S. Samanta: State of the art review of Basalt fiber composite, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries (AMETI)*, NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 1, 2014, pp. 334-339.

20. N. K. Rana, S. S. Gautam and S. Verma: Effect of geometric variations on the performances of conical hydrostatic journal bearing under micropolar lubrication, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries (AMETI)*, NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 1, 2014, pp. 197-201.

21. N. K. Rana, S. S. Gautam and S. Verma: Stability analysis of conical hybrid journal bearing under micropolar lubrication considering land width variations, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries (AMETI)*, NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 1, 2014, pp. 191-196.

22. A. K. Singh, C. R. Gautam and S. S. Gautam: Synthesis, UV and Raman spectroscopic analysis of (SrTiO<sub>3</sub>) Borosilicate glasses, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 1, 2014, pp. 141-147.
23. H. Singh, Piyush, T. Singh and S. S. Gautam: Analysis of time series models exponential forecasting and measurement and optimization of smoothing constants and errors for industrial products, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 2, 2014, pp. 207-213.
24. T. Singh, N. Khaira, R. Patel, D. Boolchandani, H. Singh and S. S. Gautam: Ribbed membrane design approach for buckling effect reduction and effective utilization of electrode contact area in RF MEMS switches, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 2, 2014, pp. 228-234.
25. S. S. Gautam and R. Krishanan: Steady state analysis of journal bearing in couple stress lubrication considering turbulent flow, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 2, 2014, pp. 258-264.
26. C. W. Manpoong, M. Tamuk, S. S. Gautam and C. R. Gautam: Preparation and microstructure of SrBiTiO<sub>3</sub> borosilicate glass ceramics doped with CeO<sub>2</sub>, *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, Vol. 2, 2014, pp. 344-349.
27. S. Kumar and M. Muralidhar: Studies on symptom based analysis for carpal tunnel syndrome in traditional and semi ergonomic shocker manufacturing assembly line workers in industries, presented and published in *International Symposium on Aspects of Mechanical Engineering and Technology for Industries* (AMETI), NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, pp. 148-155.
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29. K. K. Mandal, R. Biswas, A. S. Kuar and S. Mitra: Study of the effect of laser cutting parameters on surface finish of alumina-aluminium IPC, *International Symposium on Aspects of Mechanical Engineering and Technology for Industry* (AMETI 2014), NERIST, Arunachal Pradesh, 6<sup>th</sup> – 8<sup>th</sup> December, 2014, pp. 120-127.
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33. S. Kumar and M. Muralidhar: Studies on symptom based analysis for carpal tunnel syndrome in traditional and semi ergonomic shocker manufacturing assembly line workers in industries, presented and published in *International Symposium on Aspects of Mechanical*

*Engineering and Technology for Industries AMETI-2014*, NERIST, Itanagar, held during 6<sup>th</sup> - 8<sup>th</sup> December, 2014, pp. 148-155.

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35. D. Maji: Oil Extraction from Jatropha Seeds” in the Proc. of National Conference on Interdisciplinary Research in Engineering, Technology and Management (IDETM-2014), Amritsar, Punjab, December 17-18, 2014.

36. N. Yadaiah, S. Bag, C. P. Paul and L. M. Kukreja: An experimental investigation on fiber laser welding at controlled inert gas atmosphere, *5<sup>th</sup> International and 26<sup>th</sup> All India Manufacturing Technology, Design and Research Conference (AIMTDR)*, 12<sup>th</sup> – 14<sup>th</sup> December, 2014, IIT Guwahati.

37. N. Yadaiah, S. Bag, C. P. Paul and L. M. Kukreja: Prediction of weld induced distortions in fiber laser butt joint, IIW International Congress 2014 on "Advancement In Welding, Cutting And Surfacing Technologies For Improved Economy And Sustainable Environment" in New Delhi, from 9<sup>th</sup> - 11<sup>th</sup> April 2014, pp. 241-246.

38. N. Yadaiah and S. Bag: Egg-configuration heat source model in simulation of diode laser welding under conduction regime, IIW International Congress 2014 on "Advancement In Welding, Cutting And Surfacing Technologies For Improved Economy And Sustainable Environment" in New Delhi, from 9<sup>th</sup> - 11<sup>th</sup> April 2014, pp. 247-252.

39. N. Yadaiah, S. Bag, C. P. Paul and L. M. Kukreja: Efficient Finite Element Modeling of Fiber Laser Welding Process under Conduction Regime on 316 Stainless Steel Plate, International Conference on Advances in Mechanical Sciences 2014, Hyderabad, 9<sup>th</sup> - 11<sup>th</sup> January 2014, pp. 24-31. (**Awarded Best Research Paper**).

40. Rinchin Tashi, S. S. Gautam and S. Samanta: Stability analysis of journal bearings in couple stress lubrication considering turbulent flow, National Conference on Advancements in Simulation & Experimental Techniques in Mechanical Engineering (NCASEme 2015), held at Chandigarh University during 23<sup>rd</sup> & 24<sup>th</sup> March 2015, pp. 1 – 6.

41. N. K. Rana, S. S. Gautam and Suresh Verma: Performance of conical hybrid bearing with micropolar lubricant considering aspect ratio variations, National Conference on Advancements in Simulation & Experimental Techniques in Mechanical Engineering (NCASEme 2015), held at Chandigarh University during 23<sup>rd</sup> & 24<sup>th</sup> March 2015, pp. 84-92.

42. S. Samanta and T. J. Singh: Characterization of Kevlar fibre and its composites: A Review” in 4<sup>th</sup> International Conference on Materials processing and characterization (ICMPC-2015) held at Hyderabad during 14-15<sup>th</sup> March’2015.

43. S. Samanta, M. Muralidhar, T. J. Singh and S. Das: Characterization of mechanical Properties of hybrid bamboo/GFRP and Jute/GFRP composites, in 4<sup>th</sup> International Conference on Materials processing and characterization (ICMPC-2015) held at Hyderabad during 14-15<sup>th</sup> March’2015.

### **Books and Book Chapters**

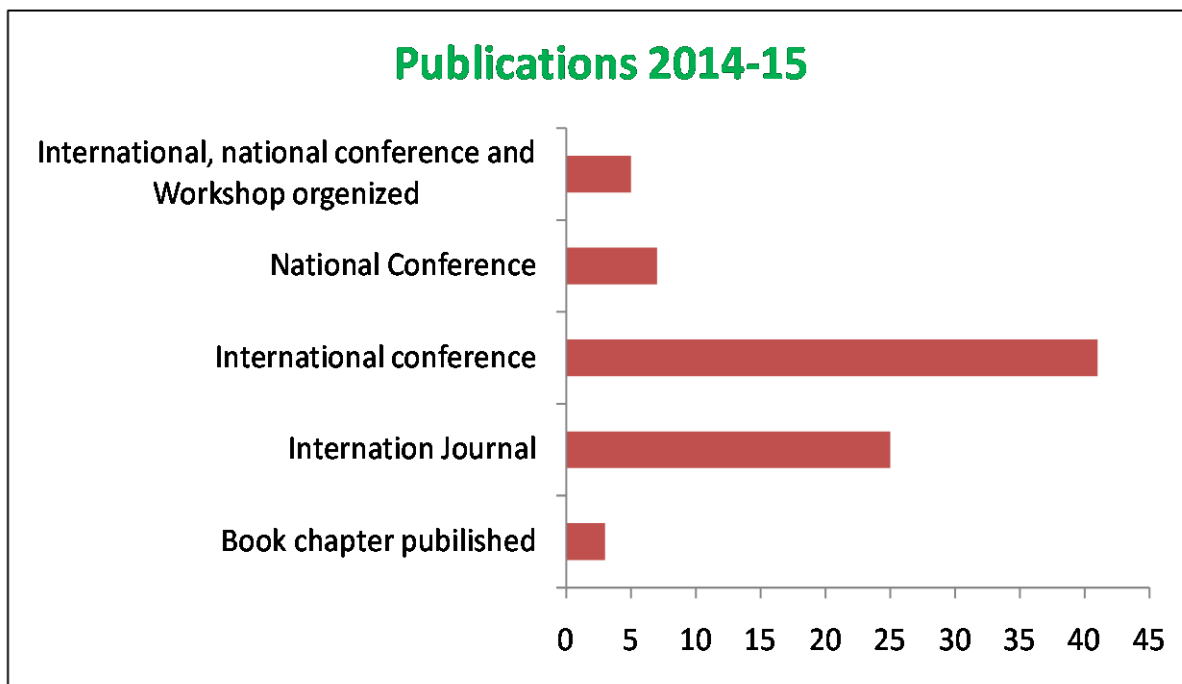
1. P. Lingfa and S. S. Gautam: Editors of Proceedings of International Symposium on Aspects of Mechanical Engineering & Technology for Industry, Volume-I & II, 2014.

2. D. Maji: Decentralization of Power through NGO/SHGs for Better Socio-economic Planning in Rural Areas’ in Sustainable Development and Livelihood Strategies in India with Special

Reference to North East States, Eds. Mandal R. K. and Singh A. I., ALP Books, New Delhi, ISBN: 978-93-83204-42-3, First Edition, 2015, pp. 224-233.

3. D. Maji: “Sustainable Rural Livelihood: An Approach” in Recent Trends in Post-Harvest Technology, Edited by Kumari Alok, Mangalam Publication India Pvt. Ltd., New Delhi, ISBN: 978-93-82983-53-8, 2015, pp. 126-140.

4. N. Yadaiah, S. Bag, C. P. Paul and L. M. Kukreja: Fiber laser welding in a controlled inert gas atmosphere: an experimental & numerical investigation, in Laser based manufacturing, Springer Publication, pp. 399-419, 2015. DOI: [10.1007/978-81-322-2352-8\\_20](https://doi.org/10.1007/978-81-322-2352-8_20)



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

Faculty members are engaged in joint research with faculty members from IIT Delhi (P.Lingfa), Jadavpur University (A. Giri), IIT Guwahati (M. Chandrasekaran, S. Mahto, S.Singh, M.Dabi), Jadavpur University (K.K.Mandal), Bengal Engineering and Science University (S. Samanta), IIT, BHU (S.S. Gautam).

#### 4.7.12 Consultancy Projects undertaken

- Institute of Excellence for Education, Research and Training in Mechanical Engineering (Investigator from NERIST)  
(Principal Investigator : Prof. U. S. Dixit, Mechanical Engineering Department, IIT, Guwahati)  
Sponsoring Agency : AICTE  
Amount : Rs. 25.0 Lakhs  
STATUS : **Completed**
  
- *Establishment and Demonstration of 250 Litre Capacity Integrated Biodiesel Reactor System at NERIST.*  
Sponsored by DST,(GOI)  
Amount: Rs.50.0 lacs:

STATUS: **Completed**

#### 4.7.13 Achievements of Students

Some UG students have achieved good scores in GATE 2014 and got admission in many reputed institutions like IITs, NITs and other institutions. In the last year 2014, six students' got placed in various organizations. Students are involved in design and development of proto type models such as a bio-gas plant, solar heaters in the part of their project work. Students have also been sending to other primer institutions such as IITs for summer internship training and for conducting experiments for their project work. M.Tech students and Research Scholars had a visit to IIT Guwahati for lab visit/practice for FMS system. IC engine run by Compressed air was designed and manufactured under projects by the students.

##### **The list of campus selected students (2013-2014):**

1	Mr. Sougata Choudhury	DE/12/ME/18	IBM
2	Mr. Purak Sharma	DE/12/ME/12	Tech Mahindra
3	Mr. Ripunjoy Baruah	DE/12/ME/14	Tech Mahindra
4	Mr. Abhijit Bhagawati	DE/12/ME/15	Tech Mahindra
5	Mr. Nur Alom	DE/12/ME/19	Srijan
6	Mr. Sandip Bhujel	DE/12/ME/07	Srijan

The MAN (Mechanical Association of NERIST) works with the broad objective of promoting technology through excellence. All the students, technical staff and faculty members of the department are members of the MAN. MAN organized a lecture on “**Matlab Applications on Mechanical Engineering**” on 9/4/14 & 16/4/14. Mr. S. Mahto delivered a lecture for the benefit of the students.



#### 4.7.14 Other relevant information

##### **Participation of Department Faculty/Staff members in the Institute Administration**

- ✓ Prof. M.Muralidhar is serving as TEQIP coordinator, MHRD-world Bank project, Rs 10.00 crores
- ✓ Dr. Asis Giri is serving as Jt. coordinator for NEQIP AICTE project of Rs 7 crores.
- ✓ Prof. M. Muralidhar is working as Dean (P&D), Member of Board of Management, Academic Council, Building and Works sub Committee, IQAC, and Chairman (NBA), Coordinator (TEQIP).
- ✓ Dr. P. Lingfa, Associate Professor, Head of the Department is working as Liaison Officer (SC/ST) and Chairman (EVC).
- ✓ Dr. M. Chandrasekaran, Associate Professor is functioning as Chairman TPT.
- ✓ Dr. S. Samanta, Associate Professor is functioning as Advisor T&P, Program officer (NSS UNIT, NERIST), Member (NEE).
- ✓ Dr. A. Giri, Associate Professor is functioning as Coordinator NEQIP, Member (State Level Technical Team for Coal Chain Development), Itanagar, Arunachal Pradesh.
- ✓ Dr. S. S. Gautam, Associate Professor, Adviser for Annual sports Athletic Meet, 2015, NERIST.
- ✓ Mr. N. Teyi, Assistant Professor is functioning as Chairman Gymkhana.
- ✓ Mr. B. Das, Assistant Professor is functioning as Warden and Member (NEE).
- ✓ Mr. M. Dabi, Assistant Professor, Member (State Level Technical Team for Coal Chain Development), Itanagar Arunachal Pradesh.
- ✓ Mr. H. Mishra, Assistant Workshop Superintendent is functioning as Transport Officer.

##### **Other Information**

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

#### **Appendix A: List of laboratories and equipment**

<b>Sl. No.</b>	<b>Name of the laboratory</b>	<b>Major Equipment</b>
1	Gas Dynamics	Wind Tunnel, Air Flow rig, Smoke tunnel, Nozzle testing apparatus, compressor, Three component balance, Data acquisition system
2	HMT and Thermal Engg.	Multi-purpose air duct, fluidized bed apparatus conductivity apparatus, convection and radiation apparatus, computer linked boiling apparatus
3	C.F.D	PC and related software(under development)
4	Fluid power	Centrifugal & reciprocating pumps, pelton wheel, Met centric height

	and Automation	apparatus, Hydraulic trainer, Simulators, Francis and Kaplan turbines
5	I.C Engines	Two strokes and four strokes petrol and diesel engines,5-gas analyzer, smoke meter
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 &AC	Computer linked R & AC unit, vapor compression unit, Gas charger, Ice maker, Refrigerator.
8	Dynamics and Kinematics	Universal vibration testing operators, CAM analysis machine, Reciprocating and Rotating mass balancing units, Gyroscope, Governor apparatus, function generator, digital oscilloscope, acoustic insulation test apparatus with amplifier
9	Strength of Material	UTM, Torsion testing unit, Impact testing unit, fatigue testing unit, hardness tester, lens polar scope with analyzer, polar scope and other accessories.
10	Tribology	Hertzian, Contact apparatus, Air bearing apparatus, Multi-purpose friction and wear tester
11	CADD	PC and relative software
12	CIM and Robotics (Tool Room)	Duet CNC-cum milling m/c. Max Turn CNC production, CNC machine with external turning carbide tool holder, Max Mill CNC production milling machine with tooling and holder adaptors
13	Computer Lab	PC analysis software
14	Metrology and Material Science	Measuring instrument, Microscope, Pit furnace, profile projector, polishing machine
15	Seminar Hall	LCD projector, digital camera, e-learning series on various subjects.
16	Workshops	Different metal forming and metal removing process and tool related to carpentry, pattern shops, machine and maintenance shop, fitting shop, welding shop, forging shop and sheet metal shop

## 4.8 DEPARTMENT OF CHEMISTRY

### 4.8.1 A Brief Profile of the Department of Chemistry

The Department undertakes teaching of chemistry in Under-Graduate and Post-graduate level courses of Engineering & Technology streams, i.e. Base/ Diploma/ Degree modules, and in the Degree module of Forestry stream. Post-Graduate courses in M.Sc (Chemistry), with organic chemistry as specialization, have been started from the session 2009-2010. Admission process for fresh batch in M. Sc (Chemistry), i.e., 6<sup>th</sup> batch for M.Sc (previous year) was conducted in July, 2014 through the Written Test conducted by the Department. Twenty six applications were received and 22 candidates were issued admit cards. Out of that, 17 candidates had appeared for the Test. Nine candidates were selected with 02 candidates in the wait-list. Finally, seven candidates took their admission in M.Sc Chemistry in the previous year for the session 2014-2015. Moreover, admission test (written) and interview were conducted for Ph. D admissions also. Out of 05 applicants, one candidate was called for the test and interview. He was found suitable for the admission. One Ph.D research scholar is continuing after completing the required courses under the Supervision of Prof. H. S. Yadav.

Committee for M.Sc Admission:

1. Prof. M. F. Hussain, HoD --- Chairman,
2. Prof. H. S. Yadav, ----- Member,
3. Prof. K. D. Ram, ----- Member,
4. Prof. N. Deb, ----- Member,
5. Dr. A. K. Gupta, ----- Member.

Committee for Ph.D Admission:

1. Prof. M. F. Hussain, HoD --- Chairman,
2. Prof. H. S. Yadav, ----- Member,
3. Prof. N. Deb, ----- Member,
4. Dr. A. K. Gupta, ----- Member.

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

1. Prof. M. Husain, being the senior-most faculty of the Department has acted as Chairman / Member over a number of committees constituted by the Director, NERIST.
2. Prof. H. S. Yadav had acted Dean (Administration) and Chairman / Members of several committees constituted by the Director.
3. Prof. P. K. Tripathy has taken the charge of Dean (Academic) since August 2014 and he is also acting as Chairman (nominee) for Vidyalaya Management Committee (VMC), K. V. NERIST. He had acted Chairman/ Members of various committees made by the Director.
4. Prof. M. F. Hussain was Head of the Department during the period. Prof. N. Deb has been promoted to the rank of Professor in CAS with effect from 01.11.2009 and took the charge of Head of the Department on 10-03-2015
5. Prof. K. D. Ram is looking after the Central Research Facility (CRF) of the Institute as In-charge

Participation of the Faculty members in the Departmental administration was also appreciable.

1. Prof. H. S. Yadav was the Laboratory in-charge of Chemistry Lab-II and PG Lab-I.
2. Prof. P. K. Tripathy was the in-charge of the Departmental Library as well as the representative of the Department to the Central Library Committee,
3. Prof. N. Deb was the representative of the Department to the Board of Postgraduate Studies (BPGS),
4. Dr. A. K. Gupta was Laboratory in-charge of PG Lab-II
5. Dr. K. T. Kamal was Laboratory in-charge of Chemistry Lab-I
6. Mr. N. G. Singh was Laboratory in-charge of PG Lab-III along with Instrumentation, Computation and internet facility Laboratories.

## 4.8.2 Academic activities

To meet the faculty requirement of teaching loads with nine regular faculty members for effective teaching in both undergraduate and postgraduate levels, the department had engaged Dr.(Ms) Joymoti Devi as Guest Lecturer in Jan-May'2014 semester. For July-Dec'2014 semester, three guest lecturers, Dr.(Ms) Joymati Devi, Shri Amon Sangma and Shri Tori Josam were engaged for effective teaching. The following faculty members were joined in the department in the month of January' 2015.

<u>Name of Faculty Members</u>	<u>Date of Joining</u>	<u>Designation</u>	<u>Specialization</u>
1. Dr. (Mrs) Meera Yadav	06- 01-2015	Assistant Professor (Regular)	Inorganic Chemistry

- |    |                             |                                   |                                   |                     |
|----|-----------------------------|-----------------------------------|-----------------------------------|---------------------|
| 2. | Dr. (Ms)Shashi Lata Bharati | 06-01-2015                        | Assistant Professor<br>(Regular)  | Inorganic Chemistry |
| 3. | Dr. Jagannath Bhuyan        | 13-01-2015                        | Assistant Professor<br>(Regular)  | Inorganic Chemistry |
| 4. | Dr.Md.Afzal                 | 15- 01-2015<br>(up to 26-05-2015) | Assistant Professor<br>(Contract) | Inorganic Chemistry |

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, quizzes, and summer courses examination of all the courses were prepared in time and submitted to the Controller of examination. The mapping of marks with the COs of required courses in regard to NBA were done and submitted to the concerned departments in time. The Department has Board of Studies (BoS) to revise the existing syllabi from time to time and to frame the new syllabi. It has been reconstituted in 2010 and it is under the process of reconstitution of the members for the BoS. There were several other committees such as DPGC, DC etc to look after the needs of the Department with regard to academic matters.

### 4.8.3 Laboratories and Laboratory Development

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

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

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

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

Some faculty members are also preparing the lab manual for M.Sc practical courses

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

The following projects for M. Sc final year students for the course CY-8299 were completed in March-May' 2014.

Sl. No.	Title of the Project	Name of the student	Roll Number	Name& Designation of the supervisor
1.	Preparation of 5 $\alpha$ -Cholestane-3, 6-dione from Cholesterol	Tori Josam	MS/12/CH/005	Prof. M. Husain, Professor
2.	One flask synthesis of esters of the corresponding 3-substituted -2-benzoylamino acrylic acid using 2-Oxazolin-5-ones as synthon.	Md.Mizanur Ahmed	MS/12/CH/004	Prof. P. K. Tripathy, Professor

3.	A fast and facile synthesis of N-Substituted 2-acylaminoprop-2-enamides using unsaturated azlactones as synthons.	Hironmayee Baruah	MS/12/CH/001	Prof. P. K. Tripathy, Professor
4.	Synthesis of novel pyrrolo [1,2- $\alpha$ ] imidazoles, pyrrolinones and pyrano [3,4-c] pyrroles by cyclocondensation using $\alpha$ -oxoketene S,N- and N,N-acetals.	Amon Sangma	MS/12/CH/003	Dr. A. K. Gupta, Associate Professor
5.	Synthesis of alkoxyamino-pyrimidines by direct cyclocondensation using $\alpha$ -oxo-ketene dithioacetals.	Debasish Roy	MS/12/CH/006	Dr. A. K. Gupta, Associate Professor
6.	Isolation of natural dye from Bee roots and its application on wool and thread with different mordants.	Hage Maria	MS/12/CH/007	Dr. K. T. Kamal, Associate Professor
7.	Isolation of betacyanin from Beet root and its identification.	Swanti Chetry	MS/12/CH/008	Dr. K. T. Kamal, Associate Professor

#### 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

The faculty members have also interacted with outside agencies in the form of attending seminars, giving the radio talks, etc.

- i) Prof H.S.Yadav attended the seminar on “Management of high education and Accreditation process” organized by DHTE, govt of Arunachal Pradesh.
- ii) Mr. N.G. Singh, Assistant Professor delivered a radio talk on “ Food Adulteration and Health Hazards” on 21-12-2014, Prasar Bharati, Regional News Unit, AIR, Imphal.
- iii) The following faculty members attended “7<sup>th</sup> Seminar on “Hydrocarbon Industry Growth : Prospects & Challenges in North East”, held on 5-6<sup>th</sup> Feb’2015 organized by NRL and Petrotech Society at Numaligarh Refinery Limited, Numaligarh, Assam.

- a) Prof. H.S.Yadav
- b) Prof. M.F. Hussain
- c) Prof. N.Deb

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

Dr. Jagannath Bhuyan became the member of the following bodies

- i) Member, American Chemical Society (ACS), Membership No. 39695936
- ii) Life member, Assam Science Society (Pichala Branch)

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

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

1. "Comparison between thermal behaviour of  $\gamma$ - $\text{MnC}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$  in oxidative and inert media", Borjana DONKOVA & Vilma PETKOVA, **Journal of Thermal Analysis and Calorimetry (Springer)**, Ms No. JTAC-D-14-00401 (07.06.2014)
2. "Thermal decomposition kinetics of  $\text{K}_2[\text{Cu}(\text{C}_2\text{O}_4)_2]$ ", K. Muraleedharan, Kripa. S, Darsana P.N., **Journal of Thermal Analysis and Calorimetry (Springer)**, Ms No. JTAC-D-14-00196 (29.06.2014)
3. "Thermal decomposition of yttrium(III)hexanoate in argon", J.C.Grivel, M.J.Suarez Guevara, F.Attique, Y.Zhao, X.Tang, P.G.P.A.Pallewatta, A.Watenpul and M.v. Zimmermann, **Journal of analytical & Applied Pyrolysis (Elsevier)**, Ms.No.JAAP-D-14-00473( 12.10.2014)
4. "Synthesis, Crystal Structure and Thermal decomposition of Novel Heterometallic Complex  $[\text{Sb}_2(\text{edta})_2 - \mu_4 - \text{Er}(\text{H}_2\text{O})_4]\text{NO}_3 \cdot 4\text{H}_2\text{O}$ ", Guo-Qing Zhong, Juan Shen, Qi-Ying Jiang, Di Li, **Journal of Thermal Analysis and Calorimetry (Springer)**, Ms No. JTAC-D-14-00744 (10.09.2014)
5. "Synthesis of rambutan-like  $\text{MnCo O}$  and its adsorption performance for methyl orange", kaituo Waang, Xuehang Wu, Wenwei Wu, Wen Chen, Liqin Qin, Xuemin Cui, **Journal of Thermal Analysis and Calorimetry (Springer)**, Ms No. JTAC-D-14-00915 (10.03.2015)
6. "Synthesis of rambutan-like  $\text{MnCo O}$  and its adsorption performance for methyl orange", kaituo Waang, Xuehang Wu, Wenwei Wu, Wen Chen, Liqin Qin, Xuemin Cui, **Journal of Thermal Analysis and Calorimetry (Springer)**, Ms No. JTAC-D-14-00915R1 (30.03.2015)

Mr.N.G.Singh acted as External Examiner (for Engg. Chem & Food Chemistry) at College of Agricultural Engg & Post Harvest Technology (Central Agricultural University, Gangtok, Sikkim on 18.12.2014

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

Mr. N.G. Singh is the Co-Investigator of the approved project of 2<sup>nd</sup> phase National Uranium Project titled "Spatial Distribution of Uranium and associated Water Quality Parameters in Western Arunachal Pradesh", Funded by BRNS-DAE, BARC (Project cost: 33.17 lacs, Duration: 2 years), approved on Dec'2014 (PI: Dr. Ajay Bharati and CI: Mr. K. James Singh of Civil Engg Deptt., NERIST)

#### 4.8.10 Publications:

In journals

1. cis-Dioxomolybdenum (VI) Complexes with Symmetrical Tetradentate Schiff bases and Their Antibacterial Activity. Devendra P. Rao, Hardeo S. Yadav and Anita Srivastava *Biointerface Res. Appl. Chem.*, 4(1), 678 – 684, **2014**.

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

**4.8.12 Consultancy Projects undertaken:** Nil

**4.8.13 Achievements of students:** N/A

**4.8.14 Any other relevant information:** Nil

## **4.9 DEPARTMENT OF PHYSICS**

### **4.9.1 Brief profile of the Department**

The Department of Physics has one Professor, four 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.

Eleven sponsored research projects funded by DST, CSIR, MHRD and Third World Academy of science (TWAS), Italy have been completed in the field of liquid crystals and solid state ionics. One in-House mini Research project has been completed. Currently, one research projects funded by CSIR (1) is ongoing. 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.

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

### **4.9.2 Academic activities**

(A) The Department of Physics, fully aware of its role in training students according to their needs in physics education, offers eight core courses for the undergraduate students at different levels (Base, Diploma, and Degree modules) of Engineering and Applied Science Streams. Details of these courses are:

Module	Course Code	L-T-P-Cr	Title of the course
Base	PH1101	4-0-2-5	Physics- I
Base	PH1201	4-0-2-5	Physics- II

Diploma	PH3101	4-0-2-5	Physics-III
Diploma	PH3201	3-0-2-4	Physics for CS, EC & EE
Diploma	PH3202	3-0-2-4	Physics for AE, CE & ME
Degree	PH3203	4-0-2-5	Comprehensive physics (Applied Science stream)
Degree	PH4301	4-0-2-5	Comprehensive physics (Bridge course)
Degree	PH5101	3-0-2-4	Modern physics

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

Module	Course Code	L.T. P .Cr.	Title of the course
M.Sc.	PH-7101	3-1-0-4	Classical Mechanics
-do-	PH-7102	3-1-0-4	Mathematical Physics
-do-	PH-7103	3-1-0-4	Computational Physics & Programming
-do-	PH-7104	3-1-0-4	Quantum Mechanics-I
-do-	PH-7151	0-0-6-3	General Physics Lab.(Expts related to G.Phy.)
-do-	PH-7152	0-0-6-3	Computer Lab.(Exercise related to operating system and programming)
-do-	PH-7201	3-1-0-4	Electrodynamics
-do-	PH-7202	3-1-0-4	Electronics
-do-	PH-7203	3-1-0-4	Atomic Molecular & LASER Physics
-do-	PH-7204	3-1-0-4	Quantum Mechanics-II
-do-	PH-7251	0-0-9-5	Optics & General Physics Lab.(Expts. Related to optics & other general expts not covered in General Physics Lab.)
-do-	PH-7252	0-0-9-5	Electronics Lab. (Expts related to the theory paper on Electronics)
-do-	PH-8101	3-1-0-4	Atomic & Molecular Physics
-do-	PH-8102	3-1-0-4	Electronics
-do-	PH-8103	3-1-0-4	Nuclear Physics
-do-	PH-810*	3-1-0-4	Special Paper-I
-do-	PH-8151	0-0-6-3	Optics & Nuclear Physics Laboratory
-do-	PH-8152	0-0-9-5	Electronics Laboratory
-do-	PH-8201	3-1-2-5	Group theory & Applications
-do-	PH-820*	3-1-0-4	Special Paper –II
-do-	Ph-825*	0-0-6-3	Special Paper Laboratory
-do-	PH-80**	3-0-0-3	Elective
-do-	PH-8299	0-0-16-8	Project

### 4.9.3 Laboratories & Laboratory Development

#### (a) Teaching Laboratories:

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



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

Base Module (Technology/Applied Science): PH 1101 and PH 1201  
Diploma Module (Technology) : PH 310 1  
Degree Module (Applied Science) : PH3203

New experiments have been introduced in the Diploma module.

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

Diploma Module (Technology) : PH 3201  
Diploma Module (Technology) : PH 3202  
Degree Module (Technology) : PH 4301 and PH 5101

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

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

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

**(c) Research Laboratories:**

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

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

**(ii) 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).

(iii) **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.

(iv) **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

(v) **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.

(vi) **LASER RAMAN spectroscopy laboratory** under Dr.Th G.Devi, is being set up.

#### 4.9.4 Short-term courses/seminars/workshops/conferences organized at NERIST

XIV<sup>th</sup> PANE conference was organized during Dec. 18-20, 2014.

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

NIL

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

NIL

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

Dr. P.R. Alapati continued as Executive council member of PANE.

Dr. Tado Karlo, Executive council member of PANE.

#### 4.9.8 Projects sanctioned by outside agencies to the faculty of the department (April, 2014 to March, 2015) : NIL

#### 4.9.9 Publications : NIL

#### 4.9.10 Interaction of faculty/department with outside agencies : NIL

#### 4.9.11 Consultancy projects undertaken: NIL

#### 4.9.12 Achievements of students: NIL

#### 4.9.13 Any other relevant information: NIL

#### 4.9.14 Name of HoD and other faculty members with Degree and area(s) of specialization

S/N	Name & Designation	Qualification & University	Specialization
1.	Dr. P. R. Alapati Professor	Ph.D. (1988) Nagarjuna	Condensed Matter Physics (Liquid Crystals)
2.	Dr. Manan Sengupta (HOD) Associate Professor	Ph.D. (1986) Calcutta University	Theoretical Physics
3.	Dr. Tado Karlo Associate Professor. & (HOD)	Ph.D. (1997) Delhi University	Mathematical Physics
4.	Dr. Arvind Pandey Associate Professor	Ph.D. (2000) Univ. of Rajasthan	Condensed Matter Superconductivity, Solid state Ionics
5	Dr. Th. Gombi Devi Associate Professor	Ph.D. (2005) NEHU, Shillong	Condensed matter Physics (laser Physics)
6.	Dr. Kamal Saharia Assistant Professor	Ph.D,2009 Gauhati University.	Theoretical Plasma Physics

7.	Dr.Kunal Borah Assistant Professor	Ph.D,2014 Tezpur University	Electronics , Microwave Electronics, Antenna
8.	Dr. S. Dhiren Meetei Assistant Professor	Ph.D,2014 Manipur University	Condensed Matter Physics
9.	Dr.Akbari Jahan Assistant Professor	Ph.D, 2014 Gauhati University	Theoretical Physics, High energy Physics, Phenomenology

## 4.10 DEPARTMENT OF MATHEMATICS

### 4.10.1 A 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. This is a rare combination even in most of the Universities of the country. 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 has started M.Sc. (Mathematics) programme and Ph.D. programmes. Five batches of M.Sc. (Mathematics) have passed out. At present, there are five Professors, two Associate Professors and five Assistant Professors.

### 4.10.2 Academic Activities

UG and P.G. Syllabus is under revision.

### 4.10.3 Laboratories and Laboratory Development

Lab work sheet designed for both UG & PG courses and Numerical Computation Laboratory is now fully established.

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

#### **Project Guide : Dr. A.S.Rai**

(i) M.Sc Project : Ms. Manogna Sahoo, Roll No.MS/13/MA/06 Project Title- Numerical Solution of Ordinary Differential Equation.

(ii) Priyadarsani Dash, Roll No.MS/13/MA/05 Topic- Numerical Solution of partial differential equation.

**Project Guide : Dr. K.H Singh** (i) M.Sc Project : Mr. Ajo Jonkey, Roll No.Ms/13/MA/04 Project Title “Extension of Semigroups and Monoids”.

**Project Guide : Dr.Pradip Debnath** (i) M.Sc Project : Oyem Siram, Roll No.MS/13/MA/03 Project Title : “Doimiation and Total Domination in Direct Product to Fuzzy Graphs”.

**Project Guide : Dr. Mohammad Hassan** (i) Bullo Marry, Roll No.MS/13/MA/01 Project Title: “Diffraction of water waves by a composite circular cylinder in water of finite depth”.

#### 4.10.5 Short-term courses/seminar/workshop/Conferences attended by the faculty -

**Dr. B.K. Singh**, Diganta Kalita and Sanjib Choudhury (2014), “Exponential Ratio Cum Exponential Dual to Ratio Estimator in Double Sampling”, 3<sup>rd</sup> Annual International Conference on Computational Mathematics , Computational Geometry & Statistics (CMCGS 2014), 3-4 February 2014, Singapore, pp.89-93. ISSN:2251-1911 doi: 10.5176/2251-1911-CMCGS14.05

#### 4.10.6 New Degrees/Professional Memberships obtained by the faculty

**P.K. Das:** Life member of Indian Mathematical Society.

**L.K. Arora:** Life member of India Science Congress Association.

**J.Borah:** Life member of Indian Mathematical Society.

#### 4.10.7 Publications

##### Referred journal

(1) W. Warseen Chanu and **B.K. Singh**,(2014), “An Efficient Class of Double Sampling Dual to Ratio Estimators of Population Mean in Sample Surveys”, International Journal of Statistics and Economics, Vol. 14, Issue No.2 , pp. 25-40  
ISSN: 0975-556X

(2) W. Warseen Chanu and **B.K. Singh** (2014), “Improved Class of Ratio-Cum Product Estimators of Finite Population Mean in two Phase Sampling”, Global Journal of Science Frontier Research: F Mathematics and Decision Sciences, Vol.14.(2), pp. 69-81, Online ISSN: 2249-4626 and Print ISSN: 0975-5896.

(3) Diganta Kalita and **B.K. Singh**, (2014) “ An Efficient class of Exponential Dual to Ratio-cum- Exponential Dual to Product Estimator in Double Sampling”, International Journal of Statistics and Analysis, Vol.4 (2). (2014), pp.169-179.ISSN: 2248-9959

(4) Bipan Hazarika, Karan Tamang & **B.K. Singh** (2014), “On paranormed Zweier ideal convergent sequence spaces defined by Orlicz function”, Journal of the Egyptian Mathematical Society, 22, pp. 413-419. ISSN: 1110-256X

(5) **B.K. Singh** and Yater Tato (2014), “Study of Generalised Class of Estimators in Presence of Non Response” “Research and Reviews: Journal of Statistics, Volume 3, Issue 3 pp. 1-7. ISSN: 2278-2273(Online), ISSN: 2348-7909 (Print).

(6) Sanjib Choudhury, **B.K. Singh** and Diganta Kalita (2014), “Improvement in MSE estimation in Estimating of Population Mean Using Auxiliary information” Int. J of Agricult. Stat. Sci, Vol.10.No.2 pp.325-332. ISSN: 0937-1903

(7) W. Warseen Chanu and **B.K. Singh** (2015), “ A Class of Ratio cum Dual to Ratio Estimator of Finite Population mean in Presence of Non-Response” International Journal of Mathematics and Computation, Vol.26. Issue No.3, pp.27-35 ISSN 0974-570X (Online), ISSN-0974-5718 (Print)

(8) W. W. Chanu and **B.K. Singh** (2015), “Improved Exponential Ratio cum Exponential Dual to Ratio Estimator of Finite Population Mean in Presence of Non Response” An international Journal of Statistics Applications & Probability, Vol.4 Issue No.1, pp 103-111. <http://dx.doi.org/10.12785/jsap/040110>

(9) **B.K.Singh**, W.W. Chanu and Manoj Kumar (2015) “Exponential Chain Ratio Cum Dual to Ratio Estimator of Finite Population Mean under Double Sampling Scheme” An international Journal of Statistics Application and Probability, Vol.4 Issue No.1, pp.37-51 <http://dx.doi.org/10.12785/jsap/040110>.

(10) Ashish Pathak, Prabhat Yadav and **M M Dixit** “Asymptotic Expansion of Wavelet Transform”. Advances in Pure Mathematics, 2015,5, 21-26.

(11) C.P. Pandey, Rajesh Kumar and **M.M. Dixit**, “Generalized Wavelet Transform Associated with Legendre Polynomials”. International Journal of Computers Applications (0975-8887) Volume 108-No.12, December 2014

(12) C.P. Pandey, **M.M. Dixit** and Rajesh Kumar, “Calderon’s Reproducing Formula for Fourier-Jacobi Convolution”. International Journal of Physics and Mathematical Sciences Vol 5, No.1 (2015) ISSN 2010-1791). International Journal of Physical and Mathematical Sciences.

#### **4.10.8 Interaction of faculty/department with outside agencies**

**Prof. P.K. Das:** Member, Board of Management, CIT, Kokrajhar.

### **4.11 DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES**

#### **4.11.1 A Brief of the Department**

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

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

#### **4.11.2 Academic Activities**

##### **Communication Skills Development Laboratory:**

Department of HSS has developed Language and communication Skills Development Laboratory recently under MHRD MODROB Scheme under the leadership of Prof. B.D. Nayak (P.I.) and Shri Ranendra Prasad, (Co-P.I.). This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 45 students.

Department of HSS has also developed a Seminar Hall under AICTE MODROB Scheme under the leadership of Prof. B.D. Nayak (P.I.) and Shri Raju Barthakur, (Co-P.I.). This laboratory is equipped with modern and latest equipment and audio system LCD TV, LCD Projector and Computer facility. This laboratory has the capacity of accommodation for 56 students.

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

##### **Prof. B. D. Nayak**

Attended a Short-term Course on “Appropriate Technology for Rural Development” organized by the Dept. of Mechanical Engineering, NERIST during 25-29, August, 2014

#### **4.11.4 New Degrees/Professional Memberships obtained by the faculty**

##### **Life membership awarded to Prof. B.D. Nayak**

- All Orissa Economic Association
- Indian Society of Agricultural Economics
- Indian Society of Technical Education (ISTE).
- North East Indian Council of Social Science Research.(NEICSSR)
- Social Science Research Institute of Arunachal Pradesh, ITANAGAR

#### 4.11.5 Publications

##### Conference papers

**Prof. B. D. Nayak** : A paper on “An Impact Study of SHGs and Financial Inclusion for Rural Development: A case study of Lakhimpur District of Assam” was presented in an International Conference on ‘Frontier of Infrastructure Finance’ organized by the Vinod Gupta School of Management, IIT Kharagpur during 13-15 November, 2014 and published in its proceedings volume.

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

Dr. B.D. Nayak

Arunachal State Co-operative Union, Naharlagun, Itanagar, A. P. and NABARD, Itanagar, A. P

#### 4.11.7 Any other relevant information

##### Ph.D. Degree Awarded under the Supervision of Prof. B. D. Nayak

- (i) To Mrs. Mrinmoyee Bhattacharyya for the thesis on “Socio-economic Condition of Hira Community of Assam: A case study of Kamrup District” in February, 2015
- (ii) To Mr. Bijaya Kumar Nayak for the thesis on “A study on Indian Made Foreign Liquor Market in Assam and its future Prospect” in March 2015
- (iii) To Mr. Sarat Hazarika for the thesis on “Impact of National Rural Employment Guarantee Scheme on Socio-economic Development of Assam: A case study of the northern districts of Upper Assam in February, 2015

##### Prof. B. D. Nayak

##### Key Note Address Delivered.

On “Importance of Thrift and Small Savings in Arunachal Pradesh” in the awareness programme on Small Savings by the Directorate of and Small Savings, Govt. of Arunachal Pradesh on 30<sup>th</sup> October, 2014.

Prof. B. D. Nayak

Chaired the Technical Session *in International Conference on “Frontiers of Infrastructure Finance-ICFIF-14” organized by Vinod Gupta School of Management, IIT Kharagpur November 13-15, 2014*

Mr. Ranendra Prasad,

Chaired the Technical Session *in International Conference on “Media’s Role in Facilitating Peace in Conflict situation in North East India and Neighbouring Countries” organized by Department of Mass Communication, Rajiv Gandhi University, Arunachal Pradesh, 9-10<sup>th</sup> October, 2014.*



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

Prof. B.D. Nayak		➤ In-charge Seminar Hall
Dr. P. Parida		➤ Head of the Dept. ➤ Controller of Examinations
Mr. Ranendra Prasad		➤ In-charge Computer Lab. ➤ In-charge Communication Skills Lab.
Dr. Shyamalee Sinha		➤ Chairperson of NERIST K.G. School.
Mr. Raju Barthakur		➤ In-charge, <i>Interface....</i> The NERIST News Letter ➤ Member of Library Advisory Committee. ➤ Member, INDEST Users Consultative Committee ➤ Advisor, Training and Placement.

## 4.12 CENTER FOR MANAGEMENT STUDIES

### 4.12.1 A Brief Profile of the Centre

Centre for Management Studies (CMS) came in to existence on 4th November, 2009 as an independent center to offer Management Programmes. Soon after acquiring Deemed University status in the year 2005, one of the cherished dreams of starting MBA program came closer to reality. Finally, in the year July, 2006, NERIST earned the distinction of being the first institute in Arunachal Pradesh to start MBA program under the department of Humanities and Social Sciences. The objective 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, Finance and Entrepreneurship. Besides a full time MBA programme, other activities of the centre are as follows:

- Ph D program in Management.
- Management Development Programs (MDPs) for Executives, government officers.
- Personality Development Programs (PDPs) for different target groups.
- Unit based Programs for industrial units at their locations.
- Motivational workshops.
- Consultancy in diverse areas of Management.

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

Some of the eminent speakers who delivered lectures in the centre during 2014-15 are as follow:

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

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

#### 4.12.2 Academic activities of the Centre:

Centre offers

- Two years MBA Program: 26 and 27 numbers of students enrolled for 1<sup>st</sup> year, and 2<sup>nd</sup> year respectively; Total 17 numbers of courses floated for the Session January-May and 18 numbers in July to December by the Centre.
- Ph.D. Program in Management. (04 numbers of students enrolled under Prof. R. M. Pant).
- Centre has already got approval for three year part time MBA program.
- Centre also offers two open elective courses for B. Tech students of all branches.

#### 4.12.3 Departmental administrative responsibilities details:

- *Dr. M Mall* is the *Head of Centre*, from March, 2015.
- *Mr. S. Choudhury* is *Computer Lab In charge*. CMS has computer lab with 07 computers in working condition and other accessories.

#### Administrative Responsibilities: (By Prof. R M Pant)

- Member Core Committee, National Rural Livelihood Mission, Arunachal Pradesh
- Observer DOE for 'A' & 'O' level Exams for Arunachal Pradesh
- Advisor, Indian Journal of Development Research, Varanasi
- Chairman, BPGS, NERIST
- Director, IQAC, NERIST
- Dean (Academic), NERIST
- Acted as Director In Charge from time to time in the absence of regular Director
- Member BOM, NERIST

#### Dissertation reports completed by PG students: MBA 2012-14

Sl. No.	Name of the students	Roll No	Topic	Name of Supervisors
1	Mr. Nongki Yirang	MBA/12/02	A study on Public hearing with respect to environment impact assessment (EIA) of Hydro-power projects in Arunachal Pradesh	SCH
2	Mr. Sange Tsering	MBA/12/03	Comparative study of Khadi and Village Industries of Arunachal Pradesh with Sikkim	SCH
3	Ms. Saroj Kumari	MBA/12/04	A study on student semester registration process in NERIST	RMP
4	Mr. Abu Tohsin Hussain	MBA/12/05	Problems and prospects of Mutual Funds in Itanagar Capital Complex	SCH

5	Mr. Sayed Sagir Rahman	MBA/12/06	A study of customer relationship Management of Maruti Suzuki in Arunachal Pradesh	RMP
6	Mr, Rupjuti Hazarika	MBA/12/09	Promoting Arunachalee Cuisine in India	RMP
7	Ms. Toku Ania	MBA/12/10	A study on how to popularize the local food of Arunachal Pradesh	RMP
8	Ms. Aparna Mandal	MBA/12/13	Online Marketing for Arunachal Pradesh on Handloom	RMP
9	Mr. Nikang Tilling	MBA/12/14	Consumer Behavior in buying cars in Capital Complex	BLS
10	Ms. Yumnya Riram	MBA/12/15	Hostel Administration of NERIST	SCH
11	Ms. Nuyang Mize	MBA/12/17	Accessibility of NERIST Library to the Students	RMP
12	Ms. Junmoyee Gogoi	MBA/12/18	A study report on Marketing Strategy of Traditional Ornaments of Arunachal Pradesh	RMP
13	Ms. Purnima Mahanta	MBA/12/19	A study on the Marketing of NGOs in Arunachal Pradesh	RMP
14	Mr. Prem Chandra Singh	MBA/12/20	Loan Schemes of Rural Bank in Arunachal Pradesh	SCH
15	Ms. Minni Mara	MBA/12/21	Marketing Strategy for Dao of Arunachal Pradesh	RMP
16	Ms. Chiging Rupa	MBA/12/22	The study of Leave Management of NERIST	RMP
17	Ms. Jonai Dususow	MBA/12/23	Evaluation of Training Programme in NERIST	RMP
18	Ms. Ranjeeta Dutta	MBA/12/25	Organizational Involvement in Corporate Social responsibility (CSR) or Corporate sustainability activities: a theoretical and practical approach of SBI and HDFC at the Capital complex of Itanagar.	BLS
19	Ms. Sheela Barailee	MBA/12/26	Comparison of Customer relationship management in Public and Private sector banks, within capital complex, Itanagar.	SCH

### Summary of Industrial Training of MBA from 1<sup>st</sup> June to 15<sup>th</sup> July, 2014

Sl No.	Name of Students	Roll No	Training Centre Allotted
1.	Ms. Deepshika Sharma Baruah	MBA/13/01	SBI, Guwahati
2.	Mr. Rakesh Kumar Mahato	MBA/13/02	Pure Diets India Ltd, New Delhi
3.	Mr. Japborsingh Lyngdoh Mawphlang	MBA/13/03	SBI, Guwahati
4.	Mr. Dipjyoti Roy	MBA/13/05	NTPC, Bongaigaon, Kokrajhar
5.	Mr. Rubu Duyu	MBA/13/07	NEEPCO, Shillong
6.	Ms Rohita Singh	MBA/13/08	V3S Infratech Limited, New Delhi
7.	Mr. Sharanga Kumar Nath	MBA/13/09	SBI , Guwahati
8.	Mr. Don Gao	MBA/13/10	SBI, Itanagar

9.	Mr. Bharat Sonam	MBA/13/11	M/S R.C.Roy & Association, Itanagar
10.	Mr. Jiban Chand Singh	MBA/13/12	NTPC, Bongaigaon, Kokrajhar
11.	Ms. P. Chandani Devi	MBA/13/13	Pure Diets India Ltd, New Delhi
12.	Ms. Dipa Sarkar	MBA/13/14	SBI, Guwahati
13.	Ms.Hage Onu	MBA/13/15	V3S Infratech Limited, New Delhi
14.	Mr Kaling Tali	MBA/13/16	M/S R.C.Roy & Association, Itanagar
15.	Mr. Hunwang Nokbi	MBA/13/17	M/S R.C.Roy & Association, Itanagar
16.	Mr. Eranbemo A. Kithan	MBA/13/18	NEEPCO, Shillong
17.	Mr. Nonglong Yanchang	MBA/13/19	NEEPCO, Shillong
18.	Mr. Lukmar Dubi	MBA/13/20	M/S R.C.Roy & Association, Itanagar

#### **4.12.4 a) Short term course/ seminars/workshop/conferences organized by the faculty:**

Prof R.M.Pant

- Chaired 02(two) days FDP on Disaster Management Programme along with Department of Civil Engineering during 29-30 August, 2014 sponsored by TEQIP.
- Chaired session at GB Pant Institute of Himalayan Environment and Development, Itanagar.
- Chaired a session in the International Conference, SAISE (Singapore), at IIE, Guwahati.

Mr. S. Choudhury

- With Technical sponsored ship from IEEE Kolkata Section, DEIS Kolkata Chapter and PES Kolkata Chapter; and financial sponsors from TEQIP, CPRI, NHPC organized “1<sup>st</sup> Conference on Power, Dielectric, and Energy Management at NERIST (ICPDEN-2015) “ as Conference Coordinator along with Department of Electrical Engineering, NERIST during 10-11 January, 2015.
- Member Advisory Committee in 02(two) days FDP on Disaster Management Programme along with Department of Civil Engineering during 29-30 August, 2014 sponsored by TEQIP.

#### **4.12.4 b) Short term course/workshop attended by the faculty:**

*Mr S. Choudhury,*

10 (ten) days “Orientation Program on Pedagogy” from September 08- 17, 2014 organized by NITTR, Kolkata.

#### **4.12.5 New degrees/ professional membership obtained by the faculty : Nil**

#### 4.12.6 *Ph.D. Thesis evaluated/ external expert:*

**By Prof R.M.Pant**

- Manipur University
- Anna University, Chennai
- Dibrugarh University
- Jayati Vidyapeeth, Jaipur (2 nos.)
- **PhD Guidance:** Guiding 08 PhD Scholars, Two scholars were awarded Ph. D degree under my supervision during 2014.

#### **PhD Proposals evaluation:**

- RGU, Rono Hills, A.P.
- Dibrugarh University, Dibrugarh

#### 4.12.7 a) *Papers presented in Conferences, Seminars, Workshops, Symposia:*

**By Prof. R.M.Pant**

- **Papers Published-** Journal-1, Book volume-02, Key Note Speeches-02, Conference Proceeding-03

#### **Invited Lectures/ Key note speakers:**

**By Prof R.M.Pant**

- Delivered Key Note Speech on the Topic ‘Entrepreneurship: Global Scenario’ in the 1<sup>st</sup> International Conference on Business Management, Economics, Tourism and Technology Management organized by SAISE at Indian Institute of Entrepreneurship, Guwahati (May 7-8, 2014).

#### **Delivered lectures as Resource Person by Prof R.M.Pant.**

- Training Programme for SHGs at Department of Tourism, Govt. of A.P.
- TEQIP Programmes at NERIST (03 nos.)
- Administration Training Institute, Naharlagan, Govt. of A.P.
- Joint Forest Management in Arunachal Pradesh: Analysis of Policies & Programmes, RCNAEDB, Shillong at NERIST.

#### **Conference Presentation by Mr S. Choudhury**

Sl. No	Conference / Seminar	Title of paper read (if any)	Organized by	Year
1.	XVIII Annual International Conference of Society of Operations Management	Customer’s migration behavior towards SBI internet banking in Guwahati, Assam: A case study. (full paper accepted for presentation and publish in conference proceeding conformation email attached)	IIT, Roorkee	2014

2.	XVIII Annual International Conference of Society of Operations Management	Proposed hygieniv and scientific local fish sale booth in major cities of Assam as a value added distribution channel (full paper accepted for presentation and publish in conference proceeding conformation email attached)	IIT, Roorkee	2014
3.	ICBMETTM 2014	Digital Ecosystem through proposed assembly rules approach for North east India	Indian Institute of Entrepreneurship, Guwahati	2014
4.	ICBMETTM 2014	Conflicting role of liquor industry towards the economic and social development of Arunachal Pradesh, India	Indian Institute of Entrepreneurship, Guwahati	2014

#### 4.12.7 b) *Book chapters/Articles in Periodicals:*

*Mr. S. Choudhury*

- Conference Book chapters

Sl. No.	Title with page nos	Journal/ Book chapters	ISSN/ ISBN
1.	Digital Ecosystem through proposed assembly rules approach for North east India	International Proceedings of Economics Development and Research	ISBN : 978-981-09-0326-8 IPDER Vol. 79,2014
	<i>By Mr. S. Choudhury</i>		
2.	Conflicting role of liquor industry towards the economic and social development of Arunachal Pradesh, India	International Proceedings of Economics Development and Research	ISBN : 978-981-09-0326-8 IPDER Vol. 79,2014
3.	Sustainability of Cultural Heritage: A Case Study of Bell Metal Industry of Sarthebari Town, Assam	Research and Sustainable Business	ISBN: 978-93-83842-19-3

#### 4.12.8 *Achievement of Centre*

- Best Oral presentation in the South Asia Institute of Science and Engineering 2014 1<sup>st</sup>International conference on Business Management, Economics, Tourism, and Technology Management (ICBMETTM 2014) by S. Choudhury.
- Engaged in the development of question bank for national level test for Aptech limited, Mumbai by S. Choudhury.
- Resource person for NTPC ltd. for 1 day seminar on “Personality Development Program” to the Chief Engineers and Supertendent Engineers of Power Department of govt. of Arunachal Pradesh, 14<sup>th</sup> November, 2014.
- Resource Person for Department of Tourism, Govt. of Aruanachal Pradesh on several occasions.

#### 4.12.9 *Departmental Infrastructure development:*

- One new Conference room was constructed for MBA student through the sponsored by TEQIP

SECTION – 5

## CENTRAL FACILITIES, SERVICES AND ACTIVITIES

### 5.1 CENTRAL LIBRARY

1. **Staff structure**

a) Librarian	-01
b) Asstt. Librarian	-02
c) Sorter	-01
d) Ministerial	-01
f) Xerox Operator	- 02
g) Helper	- 02
h) Peon	<u>-03</u>
	12
  
2. **Books & Journals**

a) Books as on 31.3.15 =	60031
b) Journals as on 31.3.15	
Indian	– 96 (Annexure--I)
  
3. **E-Resources/Journals**
  - (a) Being a core member of 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. Nature
  
  - (b) NERIST library has subscribed E- resources, IEL/IEEE online, Science Direct, Springer & JSTOR website.
    - i) IEL/IEEE- 464 titles
    - ii) Science Direct- 579 titles
    - iii) Springer- 1400 titles
    - iv) JSTOR
  
4. **Book Bank:** In addition to above a Book Bank has been established in central library. It was initially funded by NEC. Later NERIST has provided the required funds for upgrading the collection with new editions and as per new syllabus. The students get a set of text books for the courses of the semester covering all courses of that semester.

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

1. Base Module	: 10522 vols. -- 154 titles
2. Diploma Module	: 12142 vols. – 208 titles
3. Degree Module	: 12324 vols. – 270 titles
4. Degree Forestry	<u>: 2650 vols. – 100 titles</u>
Total= <b>37638 vols.</b>	

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

i) Physics	= 29	ii) Chemistry	= 86	iii) Mathematics	= 632
iv) Humanities	= 252	v) Agri. Engg.	= 275	vi) Civil	= 111
vii) Electrical	= 118	viii) Electronics	= 434	ix) Comp.Sci	= 234
x) Mechanical	= 190	xi) Forestry	= 71		

6. **Library Automation:** Uses OPAC. Online public access is available.

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

8. **Current Awareness Service:** The library provides the new addition list, contents of periodical services, paper clippings etc to various deptt. of the Institute.

9. **A-V Materials:** 139 nos. DVD “Video Training Programme” has been purchased for different departments.

10. **Institutional member:** 1.Indian Liquid crystal society, Bangalore, 2. Kaziranga Wild life society, Assam, 3. Association of Indian University, N.Delhi

1. Library Timings : 9 a.m. to 8 p.m. (Mon-Fri), Saturday 9.00-5.00 pm
2. Membership : All employees, Students

Number of library cards allotted to each members of the institute is as follows:

Employees

- |                    |                         |
|--------------------|-------------------------|
| a) Faculty members | 15 cards to each member |
| b) Technical staff | 5 cards to each member  |
| c) Officers        | 3 cards to each member  |

Students

- |                   |              |
|-------------------|--------------|
| a) Base module    | 3 cards each |
| b) Diploma Module | 4 cards each |
| c) Degree Module  | 5 cards each |
| d) M. Tech.       | 6 cards each |
| e) MBA            | 6 cards each |

11. **Average circulation Issue/Return**

400 – 600 books per day at the beginning of the semester (6 days) and renewal of 400-600 books per day after one month. 60-100 books issue/return per day on an average.

12. **Newspapers** 7 daily



### Library Advisory Committee Members

SI	Name	Deptt	Member
1	Prof. S.K.Singh	Civil Engg.	Chairman
2	Dr. T.Karlo	Physics	Member
3	Prof. P.K.Tripathy	Chemistry	Member
4	Dr. M.M. Dixit	Mathematics	Member
5	Dr.Awadhesh Kumar	Forestry	Member
6	Mr. Anu Kr. Das	Electrical Engg.	Member
7	Mr. Manish Kumar	Electronics & Comm Engg.	Member
8	Mr. M.M.Singh	Computer Science & Engg.	Member
9	Mr. D.Pal	Civil Engg.	Member
10	Dr. A. Bandyopadhyay	Agricultural Engg.	Member
11	Mr. Raju Barthakur	Humanities & Social Sciences	Member
12	Dr. S. Samanta	Mechanical Engg.	Member
13	Mr. A.K. Gupta	Librarian	Member Secretary

### INDEST COMMITTEE MEMBERS

SI	Name	Department	Member
1	Prof. S.K. Singh	Civil Engg	Chairman
2	Prof. P.K.Tripathy	Chemistry	Member
3	Dr.Saibal Chatterjee	Electrical Engg.	Member
4	Dr. A.Bandyopadhyay	Agricultural Engg.	Member
5	Mr.Raju Barthakur	Humanities & Social Sciences	Member
6	Mr. Amar Taggu	Computer Science & Engg.	Member
7	Mr. S.Majumder	Electronics & Comm. Engg.	Member
8	Mr. N.G.Sorum	Civil Engg	Member
9	Dr. Biplab Das	Mechanical Engg.	Member
10	Dr. M.M. Dixit	Mathematics	Member
11	Mr. S.Chowdhury	CMS	Member
12	Dr. Arvind Pandey	Physics	Member
13	Sri A.K.Gupta	Librarian	Member
13	Dr. Suresh Kr. Singh	Forestry	Member, Secretary

## 5.2 TRAINING & PLACEMENT CELL

### 5.2.1 Profile of the Section

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

### 5.2.2 Status report regarding activities

#### **Training :**

This Cell organized Industrial Training for a period of 30 days to the B.Tech. pre-final year students of AE,CS, EE, ECE & ME and 45 days for Civil Engineering & MBA students during 2<sup>nd</sup> June to 1<sup>st</sup> July, 2014 & 2<sup>nd</sup> June to 16<sup>th</sup> July '14 respectively, which is a compulsory requirement in partial fulfillment of the requirements of their curriculum. The organization where NERIST students have gone for their training during summer 2014 are : IIT Guwahati, NHPC, IOC (Kolkata, Digboi, Guwahati), ONGC, NTPC, BSNL, CFMTTI, NESAC, MeEcl, DRDO, NRFMTTI, Hissar, NERIM, NERIWALM, ICAR (Shillong), Power Grid Corporation of India td., CPWD, State PWDs and Power department, etc.

#### **Placement:**

This Cell also arranged in- campus and off- campus (Pool Campus) Interviews for the final year B.Sc./ M.Sc.(Forestry), B. Tech./M.Tech and MBA students. All facilities were provided to officials of companies to conduct campus interview at NERIST. Arrangements were also made for conducting Pool campus interview at Tezpur University, SIT, Siliguria and AEC, Guwahati. Some of the prominent organizations that conducted campus/pool campus interviews and selected our students during the period are: Indian Army, IBM, Wipro, Tech Mahindra, L&T Infotech, FACE, Zaloni, Axis Bank, etc. A total number of 26 students got placement in different reputed companies.

#### **Highlights:**

This Cell organized a Talk by our Alumni (Mr. Asif Khair) on 27<sup>th</sup> August'14 on "Personality Development and Soft Skills". A total of 78 students from B.Tech. final and pre-final year attended the programme.

Mr. Prasun Roy Barman, Associate Vice President and Head, IT Infrastructure Service and SI Delivery - APAC and MEA at HCL Technologies India, an alumnus of NERIST (1986 batch) interacted with the Final and Pre-final year students of engineering and management on Monday, the 29<sup>th</sup> of September 2014 at 10.30 a.m. in the New Seminar Hall. The interaction session was conducted by the T & P Cell as a 'Mentoring Programme' under the Alumni Connect Series.

This Cell organized a talk on ‘*Make it in Germany*’ on 15<sup>th</sup> November ’14. A total of 36 students from B.Tech. pre-final and final year attended the programme.

This Cell organized a Workshop on ‘**GATE preparation**’ for our pre-final year B.Tech. students on 28<sup>th</sup> March ’15. Four Resource persons from M/s Triumphant Institute of Management Education Pvt. Ltd. (TIME), Guwahati, conducted the programme. A total of 61 students attended the programme.

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

### **5.4.1 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, Agricultural Engineering, Civil Engineering, Mechanical Engineering etc. are being dealt by the Finance Section.

### **5.4.2 Status Report regarding activities**

Presently about 41 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.

## **5.5 CONTINUING EDUCATION PROGRAMME CELL (CEP)**

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

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

### 5.5.2 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.

## 5.6 KENDRIYA VIDYALAYA, NERIST

Many students of the school have excelled in different fields and showed their extraordinary talent. Our students are not only good at academics but also outstanding in other fields also. The following aspects or achievements prove the fact:

### 1. Our Vidyalaya has achieved 100% result in class-X.

In class X 48 students appeared and all 48 students passed and vidyalaya produced 100 % result for the year 2014-2015. It's noteworthy to mention that Mast.Rhitoshparsh Baishya has achieved 10 CGPA with A1 grade without up gradation.

### 2. The result for class-XII was 74.19%.

In class XII 35 students appeared and 23 students passed. Master Abhishek Kumar being the topper of class-XII with 91.6%.

3. Our students are extraordinary in Co Curricular Activities. Our students have participated in different activities and competitions at cluster level, regional level and National level camps such as Art Camp, Inspire Award, Jamboree, Divisional Rally, Science Olympiad, Social Science Exhibition, Kho-Kho and Football. Importantly, Mast.Srijan Dixit of class-IX stood first in cluster level social science exhibition held at KV Gerukhamukh, Assam.

4. Mast.Srijan Dixit of class IX has stood first in the regional level INSPIRE award of KVS Tinsukia region and participated KVS National level INSPIRE Award at KV INA Colony, New Delhi.

5. It is proud to know that our students have excelled in Bharat Scouts and Guides. There are 14 Scouts and 4 guides have passed Tiritiya Sopan, 6 Scouts and 8 Guides have passed Rajya Puruskar and 1 Scout Mast. Kumar Ashutosh has passed Rastrapati Purusakar.

6. Two teachers are trained as Nodal Teachers for Adult Education Programme.

7. Mast. Kumar Ashutosh stood first in All India National Mathematics Olympiad.

8. A noteworthy fact to mention that one of our Vidyalaya's teachers Mrs.Madhulika Madhu TGT(Skt) has been awarded with the National Award for the best teacher.

9. Spoken English through English Strokes has been implemented in the Vidyalaya for the improvement in spoken skills of all the students.

10. Sanskrit week and Rajbhasha pakhwada has been celebrated in the vidyalaya.

11. Annual Sports has been celebrated in the vidyalaya.

12. CMP implemented for primary classes to strengthen primary education.

## 5.7 NERIST K.G. SCHOOL

### 5.7.1 A Brief Profile:

NERIST KG School was established in the year 1992. It was started with a mission to provide pre-school education and to promote healthy peer group activity among children of the institution's employees. The school is self-financed for its recurring expenditure and is running on no profit no loss basis. Presently, the school is running three classes: Play class, Lower Kindergarten (LKG) and Upper Kindergarten (UKG).

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

Organization structure:

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

### 5.7.2 Status report regarding activities

During the academic session (April 2014 - March 2015), various activities, competitions and celebrations were organized in addition to Kindergarten level teaching in a view to children grow and develop all round. National festivals were celebrated to grow patriotic feelings right from early age. Various other activities were conducted to develop competitive skill in the wards of school which includes:

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

The School celebrated its Annual day on 14<sup>th</sup> of November, 2014 i. e. on Children's day. The School organized sports on Republic day (26<sup>th</sup> January 2015) for physical development of the children. A school picnic was also organized for entertainment. At times, parent-teacher meetings were organized for free interaction and conversation between parents/guardians and teachers.

### 5.7.3 Highlights

The basic infrastructure like space & building for school have been provided and maintained by the NERIST authority. School is well 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.

### 5.7.3 List of Committee Members

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.

Structure of School Management Committee:

- |                      |                        |
|----------------------|------------------------|
| 1. Dr. A. Bhadra     | – Chairperson          |
| 2. Dr. Deepika Devi  | – NFA representative   |
| 3. Mr. T. Debnath    | – NEA representative   |
| 4. Mr. NabamHari     | – NEA representative   |
| 6. Mrs. MeenaxiArora | – Principal, KG School |

## 5.8 TRANSPORT SECTION

### 5.8.1 A Brief Profile of the Section

Transport (TPT) section was established in the year 1987 for fulfilling various transport needs of the Institute. The TPT section presently has 03 numbers of HMTVs and 10 LMVs running on the road. The section provide round the clock services and support all institute's transport requirements such as transport services to important officials, students (for attending classes), medical services for students & employees, security patrolling, etc. The section looks after timely detailment of vehicles/ its POL needs/ possible services and maintenance for all institute vehicles. TPT section has Chairman (TPT), Transport Officer- 1 No, Drivers 12Nos, Handy man -3 Nos, LDC- 1 No, Peon- 1 No. The following are the list of vehicles available in TPT section.

<i>Sl. No.</i>	<i>Vehicle Name</i>	<i>Registration No.</i>	<i>Date of purchase</i>	<i>Seating capacity</i>	<i>Remarks</i>
1.	Optra LT	AR-01E-5806	14.02.2012	4+1	Vehicles are detailed for regular transport services
2.	Scorpio	AR-01C-4964	13.11.2008	6+1	
3.	Aveo LT	AR-01E-5444	16.01.2012	4+1	
4.	Aveo LT	AR-01E-5807	14.02.2012	4+1	
5.	Maruti Gypsy	AR-01C-7523	16.5.2009	4+1	
6.	Tata Mobile	AR-01E-5650	21.01.2012	1+1	
7.	VERSA	AR-01A-8290	28.02.2003	6+1	
8.	WINGER	AR-01C-7303	30.03.2009	13+1	
9.	TATA Bus	AR-01-3980		44+1	
10.	Tavera Ambulance	AR-01E-2114	23.05.2011	6+1	
11.	TATA STAR BUS	AR-01E-4865	18.02.2010	54+1	
12.	TATA BUS	ARC-2356	20.11.1989	27+1	Recommended for auction
13.	Omni Ambulance	AR-01A-5286	06.08.2001	2+1+1	Off road since Sept.2014
14.	Yamaha Gladiator	AR-01B-7520	26.07.2006	1+1	Off road since Oct.2013.

**5.8.2 Service offered :** In general TPT section provides in-campus and off-campus transport requirements for its officials/ students/ employees. The regular transport services are as follows:

- Transport service for the movement of Director, Registrar, and Deans.
- Round the clock ambulance service for NERIST students / employees and their family members.
- Transport service for physically handicap students for attending their classes.
- New transport service for NERIST students for attending classes in the 'Degree block' and back (From 7:45am to 5:05 pm).
- Transport service for students and employees of NERIST at subsidized rates for their satisfaction.
- Bus service for school children of wards of the employee for KV, KG and VKV schools, from Type I and main campus.

vii. Security night patrolling.

In addition to above services the TPT section also extends transport facilities for the following purposes based on the need.

- Transport services for movement of experts/ participant of various Seminars, conferences, Short term Training programs, Campus interviews, etc.
- Transport facilities also extended to students study tours, field visits, industrial visits, students' organised technical festivals/ workshops, etc.
- Transport services for organising various programmes/ functions such as NCC, NSS and Convocation, etc.

### 5.8.3 Activities of 2014-15:

- TPT section being one of the service oriented department, all required transport facility for the institute at various levels are carried out throughout the year. In addition, TPT section earns significant revenue to the institute through payment duties to employee and students community. 3
- The detailment of vehicle for different purpose, renewal of vehicle insurance and routine maintenance & service are performed throughout the year.
- In addition to regular transport services, new bus services has been initiated for transporting NERIST students from hostel to degree block for attending classes and back (From 7:45am to 5:05 pm). This enhances the academic environment in the campus and running successfully.
- This year TPT section condemned 01 No. HMs and 02 Nos. LMs as approved by CA. The vehicles (Bus, Tata Mobile& indigo GLX) are nearly More than 20 years old and could not give proper services and hence proposed for condemnation. The auction process was initiated to dispose-off. Totally 27 number of tenders were received. The vehicles were auctioned for the total auctioned amount of Rs 4,24,990.00

## 5.9 NERIST HEALTH UNIT

NERIST Health Unit is functioning with the following number of staff and Officers as under:-

Dr. Popi Camdir Tok	Chief Medical Officer
Dr. Susmita P Taggu	Medical Officer
Dr. N.Choudhury	Medical Officer on contract
Hareendran P M	Pharmacist
Mrs. Mary Biswas	Nursing sister
Mr. Dhiren Kr Nath	Dresser
Mrs. O.Barman	Xerox operator
Mr. Minyo Blange	Lab Assistance
Mr. E Deomari	Lab Attendant
Miss. Poornima Deb	Attendant
Mrs. Koj Yallo	Helper
Mrs. Tana Parbati	Peon
Mrs.T aba Yapi	A N M
Mr. Mahesh Mallick	Sweeper

During the above period, an approximate 2700 students and 20000 patients (including staff and relatives) were examined from the OPD. 140 patients were referred to nearby Hospital for further treatment from the NERIST Health Unit.



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 through out the year.

The unit provide facilities for blood donation camp for NERIST, NSS and AIDS Control Department, Naharlagun. And The NHU has also participated in Pulse Immunization programme as per the Schedule of GoI. The DOT counter also is running in full swing.

## **5.10 CENTRE FOR APPROPRIATE TECHNOLOGY & RURAL DEVELOPMENT**

### **5.10.1 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 programmed in future.

### 5.10.2 List of Committee Members

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

## SECTION – 6

### MANPOWER

#### I Teaching (Faculty)

Department wise break-up of faculty as on 31.03.2015 is given below:

1.	Forestry	12
2.	Agriculture Engineering	13
3.	Civil Engineering	16
4.	Computer Science & Engineering	09
5.	Electrical Engineering	16
6.	Electronics & Communication Engineering	13
7.	Mechanical Engineering	17
8.	Physics	09
9.	Chemistry	12
10.	Mathematics	12
11.	Humanities & Social Sciences	05
12.	Centre for Management Studies	04

**Total (I) = 138**

#### II Non-Teaching (Officers and Staff)

The break- up of Officers, Technical, Ministerial and Group-C staff in position as on 31.03.2015 is given below:

##### (i) Officers

a	Group 'A'	11
b	Group 'B'	04
<b>Total</b>		<b>15</b>

##### (ii) Technical/Vocational Staff (Non-teaching)

a	Group 'A'	-
b	Group 'B'	15
c	Group 'C'	71
<b>Total</b>		<b>86</b>

##### (iii) Ministerial Staff

a	Group 'B'	14
b.	Group 'C'	66
<b>Total</b>		<b>80</b>

(iv) Non Ministerial Staff-Group -C

a	Lab Attendants/Helpers/Pump Attendants	<b>38</b>
b	Security Guards	<b>10</b>
c	Malis, Labourers & Sweepers	<b>27</b>
d	Peons	<b>35</b>
e	Cook & Cook Helpers	<b>67</b>
	<b>Total</b>	<b>177</b>

**Total (II) = 358**

**GRAND TOTAL (I+II) = 496**

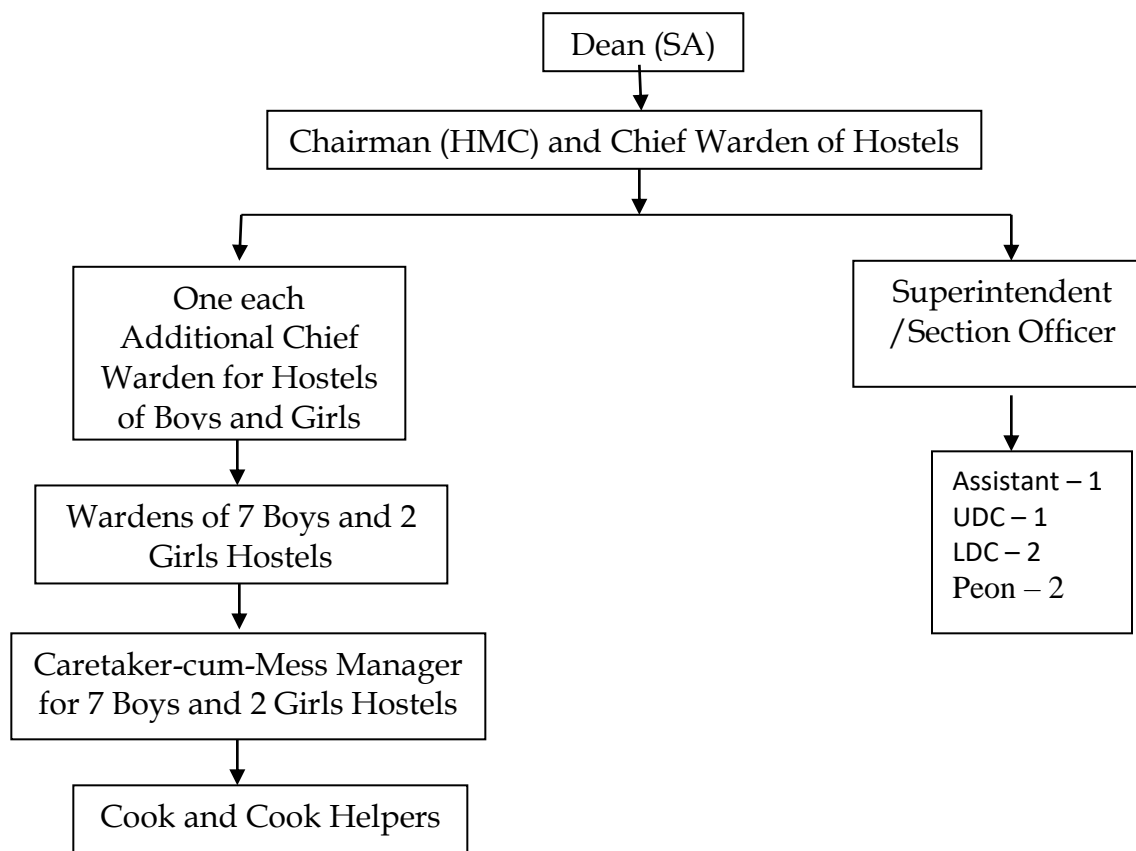
## SECTION – 7 CAMPUS LIFE AND EXTRA CURRICULAR ACTIVITIES

### 7.1 HOSTEL MANAGEMENT COUNCIL (HMC)

#### 7.1.1 A Brief Profile of the Section

NERIST is a residential technical institute and declared as Deemed University by Min. of Human Resource Development, Govt. of India in the year 2005. Students (both boys and girls) are required to stay in the Hostels situated in the Campus. This helps in the development of an integrated personality and enables the students to receive training in corporate living and continuous communication with fellow students and teachers. The Hostel Management Council (HMC) is an administrative body for the management of hostel accommodation and mess facilities of seven boys' hostel and two girls' hostel. Last year, a new girls' hostel, 'Subansiri,' with a capacity of 250 girls was inaugurated by Mr. Nabam Tuki, the Hon'ble Chief Minister of Arunachal Pradesh.

#### Organizational structure of Office of HMC



## **Status Report**

During the year 2014-2015, the Chairman of the Hostel Management Council and the Chief Warden of Hostels was Dr. T. Karlo, Associate Professor in the Department of Physics. Beside the Chief Warden, two additional Chief wardens, viz. Dr. L. B. Singh, Assistant Professor in Forestry Department and Dr.(Mrs.) Aditi Bhadra, Assistant Professor in Agricultural Engineering Department were also in HMC Office for Boys and Girls Hostel respectively.

A brief detail of the Hostels are given below:

<b>Hostel Block</b>	<b>Wardens</b>	<b>Caretaker-cum-Mess Manager</b>
A	Dr. Kh. Hera Chandra Singh	Mr. Prakash Ch. Das
B	Mr. Anil Kr. Gautam	Mr. Thomas Mathew
C	Mr. Akhilesh Sharma	Mr. Praneswar Barman
D	Mr. Akho John Richa	Mr. Ananda Gogoi
E	Mr. K. James Singh	Mr. Thomas Mathew
F	DR. A. Dinamoni Singh	Mr. Dorjee Shangmu
G	Dr. (Ms.) Yamen Tamut	Mrs. Mousumi Roy Choudhury
PG (BOYS)	Mr. M. D. Singh	Mr. E. N. V. Nair
PG (Girls/Subansiri)	Dr. (Ms.) Ajanta Kalita	Mrs. N. Siyum

## **Highlights**

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

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

The Boarders of Hostels have celebrated Block Day separately in each Hostel block. The Director, Deans, Registrar, Chief Warden, Hostel Wardens and other faculty members were invited in the said function. A token of Rs.1500/- was paid to each block from the Office of the Hostel Management Council for the above function.

ATM counter of State Bank of India was established in the Boys Hostel premises. Two stationery-cum-cold drinks shops and one saloon were also established by the Institute.

## 7.2 NATIONAL CADET CORPS (NCC)

### 7.2.1 A Brief Profile of the Section

NERIST is having two NCC wings one is SD (Boys), which is fully funded by Non-plan of NERIST, and another one is SW (Girls), which is centrally funded by Tezpur NCC unit directly. For the academic year 2014-15 total students enrolled is given below:

Cadets Enrolled	SD ( Boys )	SW ( Girls )
1 <sup>st</sup> Year	76	8
2 <sup>nd</sup> Year	87	19
3 <sup>rd</sup> Year	72	26
Total	235	53

#### Man power status

	PRESENT	REQUIREMENT	DEFICIENCY
ANO/CTO	01	02	01
Supporting staff	02	04	02

#### Infra-structure

	PRESENT	REQUIREMENT	DEFICIENCY
Office	01	01	NIL
Store room (Big )	01	02	01

#### Budget allocation

During the session 2014-2015 a total of Rs.1,19,132 (Rupees One One Nine One Three Twoonly)was spent,towards the Independence parade (Rs 10,000/-), Republic day parade (Rs 10,000/-), onecamps expenditure(Rs 30,966/-), Impreset (20,000), washing and refreshment allowance distribution for the students(Rs 48,166/-)were incurred .

### 7.2.2 STATUS REPORT REGARDING ACTIVITIES :

#### i) Parades Conducted

Total 37 parades

#### ii) Ceremonial Drill participated

- (i) Independence Day (15-08-2013) : 50 SD & 27 SW Cadets
- (ii) Republic Day (26-01-2014) : 54 SD & 27 SW Cadets

**iii) Camps Attended by the NCC cadets (Total 1 camps)**

(i) CATC, RGG, Polytechnic Govt. College Itanagar.

W.e.f : 3<sup>rd</sup> Feb 2015 to 12<sup>th</sup>Feb 2015.

No of students : SD 20, SW 10

**iv) ED Grades**

The following numbers of cadets were evaluated for the ED courses:

<b>Course</b>	<b>SD (Boys)</b>	<b>SW (Girls)</b>	<b>Total</b>
ED-2288	39 Cadets	10Cadets	<b>49</b>
ED-4288	15 Cadets	5 Cadet	<b>20</b>
ED-6288	16 Cadets	7 Cadet	<b>23</b>
Total	70	22	<b>92</b>

### 7.2.3 HIGHLIGHTS

i) List of B certificate appeared and result waiting : 35 (30SD+ 5SW)

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

### 7.2.5 ANY OTHER RELEVANT INFORMATION/DATA:

**Our Girls and Boys cadets outshined in various disciplines in CATC camps:**

#### **SW (Girls)**

- A. 1st in Group Song Competition
- B. 1st in Line Area Layout
- C. Best shooter (LarikyntiMassar)

#### **SD (Boys)**

- A. 2nd in Squad Drill

## 7.3 NATIONAL SERVICE SCHEME (NSS)

### 7.3.1 A Brief Profile of the Section

The NSS Cell in NERIST is managed by a Programme Co-Ordinator with the active participation and support of Programme Officers and group leaders. This year 1016 students

enrolled as NSS Volunteers. The Cell has one Group 'C' and one Group 'D' employee to assist in the office work.

1.	Total No. of Volunteers enrolled	: 016 Nos.
2.	Male	: 780 Nos.
3.	Female	: 236 Nos.
4.	No. of Male Volunteers (APST)	: 127 Nos.
5.	No. of Female Volunteer (APST)	: 35Nos
6.	Name of NSS Programme Co-Ordinator	: Dr.(Mrs) T.Tuithang
7.	No. of trees planted during year 2014-15	: 450 Nos.

### 7.3.2 Status Regarding Activities

NSS activities for the academic session 2014-15 took off with an orientation programme for the newly admitted volunteers on 17.8.2014. Using audiovisual demonstrations, volunteers were 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.P.R. Alapati, Dean (SA) about the aims and objectives of NSS. A lecture was also delivered by Dr. V.N. Sharma, Assistant Director-cum SLO, NSS, Directorate of Higher and Technical Education, Govt. of Arunachal Pradesh about the aims and objectives of NSS.

The National Service Scheme Cell of NERIST observed the NSS day on 24.09.2014. The occasion was marked by a function followed by plantation of tree and awareness campaign on Environment. The ceremony was attended by Program Officers, 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. She 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 17.8.2014, 03.10.2013, 25.2.2015 at NERIST main campus and Degree block. Approximately 400 number of volunteers participated in it. The campus cleaning along with plantation of 250 sapling at Degree block.

A Massive Blood donation camp was organised by NSS cell, NERIST, Nirjuli (A.P) in coordination with Naharlagun General Hospital and Medical Health Unit, NERIST on 24.8.2014, 08.2.2015. 100 Nos of NSS Volunteers, Programme Officer, donated blood out of which 10 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 20.2.2015 to 22.2.2015 at the Nirjuli Village -II (A.P). The camp was attended by around 200 student volunteers and Program officers of NERIST along with students and Villagers, Gambura of Nirjuli Village - II. Around 200 saplings of amla (*Embilica indica*) and jack fruit (*Artocarpus hetrophylus*) 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 free medical checkup for the villagers and the students was also conducted by Dr. Sushmita P.Taggu, Medical Officer NERIST Health Unit. Around 150 villagers and students availed this free medical facility. A community lunch

was also organized. This was followed by the interaction of the student volunteers with the villagers. Govt Middle School, Modern Village for all the possible help provided to make the camp a grand success.

### List of NSS Committee

1.	Dr. (Mrs). T. Tuithang	Coordinator (NSS)
2.	Dr. A. Pandey	Programme Officer
3.	Shri S. Samanta	Programme Officer
4.	Mrs. M. Kathingh	Programme Officer
5.	Dr. P.R. Gujeral	Programme Officer
6.	Shri A.D. Singh	Programme Officer
7.	Dr. A. Kumar	Programme Officer
8.	Shri K. K. Singh	Programme Officer
9.	Dr. (Mrs.) A. Kalita	Programme Officer
10.	Sri M. Dabi,	Programme Officer
11.	Mr. Manish Kumar	Programme Officer
12.	Mr. N.L. Meitei	Programme Officer

## **7.4 ESTATE OFFICE**

### **7.4.1 Profile of the Section**

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

Strength of existing staffs other than Estate Officers is:

1. Peon 01 no.
2. TS employees- 01 no.
3. Hand receipt employee 01 no.

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

### **7.4.2 Status Report Regarding Activities**

#### **1. Court case matter related to 240 Acres land**

Encroachment at 240 acres (Hill-top) land and notices issued to encroachers by the Additional District Magistrate – cum- Chief Estate Officer, Govt. of Arunachal Pradesh,



Itanagar. First hearing was conducted on 30<sup>th</sup> June, 2009 to 31<sup>st</sup> August 2009 and the case is still pending in the same court till now. The present status of 240 acres (Hill-top) land is that the entire 240 acres has been encroached by the outsiders and the institutes Authority needs to pursue the matter to the Chief Estate Officer- cum-Additional District Magistrate, Itanagar for early disposal of the case civil Appeal No. ADM/EO/CC-02/09 pertaining to encroachment at the 240 acres land. The District Authorities may be asked to demarcate the boundary of the area for construction of the boundary wall around the area.

**2. Matter related to 2.75 acres land along NH 52-A Road**

A notice No. LRB-096083/2001/279 since dated 23.05.2011 was received from the Executive Magistrate Itanagar, Capital Complex, Itanagar Govt. of Arunachal Pradesh in which NERIST was accused of grabbing land along NH 52-A opposite to the GREF Office, 2.75 land, by complainants Shri Takam Pario and others and the Institute Authority was asked to appear in the court on 31.05.2011. In this matter the court, in its order No. LRB-096083/2011, dated 01.6.2011, has directed that status quo be maintained by both the parties in the said location till the settlement of the case.

**3. Matter Related to NERIST Boys` Hostel` D` Boundary Area Land**

An FIR has been lodged by the Competent Authority of NERIST vide Office Order No. RR-41/2011/Vol .II, dated, 28.01.2014 to Shri Tana Bado Tara Nirjuli for unauthorized encroached the NERIST Land at back side of Boys` `D` Hostel Boundary land , NERIST about the 10 x 50 meters land by erecting brick wall at the back side of the NERIST `D` Hostel land .In this regards, the case is still pending in the honorable court, Govt. of Arunachal Pradesh.

**4. Matter Related to 64 acres Land**

An FIR has been lodged by the Competent Authority of NERIST to Shri Biki Lingri, Nirjuli for unauthorized encroached the NERIST 64 acres Land at back side of Nyikum Niya Hall, NERIST about the 8 x 4 meters land by erecting brick wall at the back side of the Nyikum niya ground .In this regards, the honorable Additional District Magistrate-cum Chief Estate Officer, Govt. of Arunachal Pradesh has directed to noticed to Mr. Biki Lingi for directed to attend his office to Show Cause his over the land where Mr. Biki Lingi has occupied the NERIST land vide the letter No. CEO/ICC/DAD-1250/14/185-92, dated 23<sup>rd</sup> April, 2014. Now, the case is disposed off and closed accordingly under the above order and direction.

**5. Matter Related to Institute main Campus land, C/o 105 Land**

A letter bearing Nos. AR (E&L)/ 26/2008-09, dated 26.8.2013 on the matter of Illegal dumping/throwing of debris/garbage regularly in side NERIST campus by outsider from multi storied building adjacent to IE/EE office near institute boundary walls, in this this regards, The Additional District Magistrate – cum Chief Estate Officer, Govt. of Arunachal Pradesh, Itanagar has issued a Public Notice vide his Office order No. CEO/ICC /Jud-978/2013 dated the Itanagar, the 30<sup>th</sup> August, 2013, under Section 133 of Cr. P.C. to avoid legal complicity and financial loss due to such public nuisance and directed to all concern to stop any illegal dumping of debris/garbage in the said premises and also informed that if anyone found violating these conditions, necessary

legal action shall be initiated against such violator. Now the case is disposed off and closed accordingly under the above order and direction.

**6. Matter Related to Institute Main Canteen / Shop.**

The date of deed of Agreement for running/operating of NERIST main Canteen is going to expire and the same has going to re-starting for advertising for Notice Inviting Quotation.

**7. List of Committee members, if any**

Estate Officer of this office is members of many important committees like House Allotment Committee, Space Allotment Committee, Eviction Committee condemnation Committee etc.

## **7.5 EDUCATIONAL TECHNOLOGY CELL**

### **7.5.1 Profile of the Section**

The ET cell was initially 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). Now, the Cell consists of a Seminar Room and Board Room 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. In addition to above facilities, the ET Cell is engaged in providing internet services in the institute. ET Cell is maintaining the website as well as email system of the institute. The facilities and activities of the Cell are detailed as under:

**(A) ICT Services :**

1. 155 Mbps NKN Active Link through BSNL OFC to the Institute.
2. 90 Mbps NKN fail-over Link through PGCIL OFC.
3. LAN Connectivity to all the Departments, Offices, and the Schools in the campus.
4. Wi-Fi LAN Connectivity to Hostels and Residential Areas.
5. Web-mail Services to Faculty members, Students, Research Scholars and Staff.

**(B) Status Report on Activities during 2014-2015:**

1. Wi-Fi LAN Set-up completed for the New PG Girls Hostel. This Wi-Fi LAN covers more than 200 users along with enforcing the security to Wi-Fi and Internet access.
2. Web and DNS Servers Public IP shifted from BSNL to NKN ISP, which leads minimum downtime of DNS and Institute Website globally.
3. Upgraded NERIST Campus Networks Gateway Firewall from Cyberoam CR-1000ia to Cyberoam CR-2500iNG, which is capable of handling high speed Internet traffic and large number of Internet Users.

4. Deployed Zimbra Open Source E-mail System, which facilitates latest E-mail system features. Presently, the system is holding 275 E-mail accounts.
5. Deployed the 90 Mbps NKN fail-over Link through PGCIL OFC. Earlier, NERIST had a single BSNL OFC Link from NIC, Itanagar to NERIST Campus. However, now the PGCIL 90 Mbps OFC Link facilitates a separate fail-over Link of NKN ISP from NIC, Itanagar NERIST Campus thereby ensuring internet connectivity in the event of BSNL OFC link failure.

## **SECTION – 8**

### **FUNDS AND AUDIT**

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

At the beginning of the financial year 2014-15, the Institute had an unspent balance of 780.59 lakhs. During the year, the Institute received 8936.12 lakhs as grant-in-aid and 329.41 as IRG. This included grant-in-aid of 0.00 lakhs sanctioned at the fag-end of 2013-14 but received in 2014-15. The unspent balance as on 31.03.2015 is 1384.40 lakhs which shall be utilized during 2015-16. Brief break-up of fund received and expenditure incurred is given as under:-

<b>Details of account</b>	<b>HEAD</b>			<b>Grand Total</b>
	<b>PLAN (Capital)</b>	<b>PLAN (General)</b>	<b>NON- PLAN</b>	<b>(2+3+4)</b>
(1)	(2)	(3)	(4)	(5)
Previous balance	134.11	175.29	471.19	780.59
Fund received during 2014-15	3903.00	422.00	4611.12	8936.12
IRG 2014-15	00	00	329.41	329.41
Expenditure incurred during 2014-15	3430.42	356.69	4874.61	8661.72
Unspent Balance as on 31.03.2015	606.69	240.60	537.11	1384.40

The detailed information related to the accounts of the Institute for the year 2014-15 and the audited accounts of the Institute is given in Annexure-XII.

**MEMBERS of NERIST SOCIETY as on 31.03.2015**

1. Lt. Gen. (Retd.) Nirbhay Sharma, PVSM,UYSM,AVSM,VSM H.E. the Governor of Arunachal Pradesh	-	President
2. The Hon'ble Minister, (Higher/Technical Education), Govt. of Assam	-	Member
3. The Hon'ble Minister (Higher/Technical Education), Govt. of Arunachal Pradesh	-	Member
4. The Hon'ble Minister (Higher/Technical Education), Govt. of Manipur	-	Member
5. The Hon'ble Minister (Higher/Technical Education), Govt. of Meghalaya	-	Member
6. The Hon'ble Minister (Higher/Technical Education), Govt. of Mizoram	-	Member
7. The Hon'ble Minister (Higher/Technical Education), Govt. of Nagaland	-	Member
8. The Hon'ble Minister (Higher/Technical Education), Govt. of Sikkim	-	Member
9. The Hon'ble Minister (Higher/Technical Education), Govt. of Tripura	-	Member
10. Joint Secretary (TEL), MHRD, Govt. of India,	-	Member
11. The Joint Secretary & FA, IFD, MHRD, New Delhi	-	Member
12. Air Marshal (Retd.) Pranab Kumar Barbora, Chairman, BoM, NERIST	-	Member
13. Dr. Neeraj Sharma, Head (TDT), DST, Technology Bhawan, New Mehrauli Road, New Delhi-16	-	Member
14. Prof. S.S. Mantha, Vice Chairman, AICTE, 7 <sup>th</sup> Floor, Chander Lok Building, Janpath, New Delhi-01	-	Member
15. Dr. (Mrs.) Seema Bawe, Head, Department of Computer Sciences, Thapar Institute of Engineering & Technology, Patiala, Punjab	-	Member
16. Shri Tsetan Chombey Kee, Village – Sela, Dist. Tawang, Arunachal Pradesh – 790 104	-	Member
17. Prof. P.K. Das, Director, NERIST	-	Member
18. Dr. R.P. Bhattacharjee, Registrar, NERIST	-	Non-member Secretary

**MEMBERS of NERIST BOARD OF MANAGEMENT as on 31.03.2015**

1.	Air Marshal (Retd.) Pranab Kumar Barbora, C-1201, Celebrity Homes, Palam Vihar, Gurgaon – 122017	-	Chairman
2.	Prof. Gautam Barua, Mentor Director, IIIT, Guwahati	-	Member
3.	Prof. P.K. Das, Director, NERIST	-	Member
4.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Assam	-	Member
5.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Arunachal Pradesh	-	Member
6.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Manipur	-	Member
7.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Meghalaya	-	Member
8.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Mizoram	-	Member
9.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Nagaland	-	Member
10.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Sikkim	-	Member
11.	The Commissioner/Secretary (Higher/Technical Education), Govt. of Tripura	-	Member
12.	Lt. Gen. D.D.S. Sandhu, Vice Chancellor, Kurushetra Univ., Kurushetra, Haryana	-	Member
13.	The Joint Secretary & FA, IFD, MHRD, New Delhi	-	Member
14.	Joint Secretary (TEL) ,MHRD, Govt. of India	-	Member
15.	Dr. L. Joyprakash Singh, Associate Professor Department of Electronics and Communication Engineering, NEHU, Shillong - 793022, Meghalaya	-	Member
16.	Prof. P.K. Tripathy, Dean (Acad), NERIST	-	Member
17.	Prof. Md. Anwar Hussain, Dean (P&D), NERIST	-	Member
18.	Prof. Binay Singh, Dean (SA), NERIST	-	Member
19.	Prof. M. Hussain, Deptt. of Chemistry, NERIST	-	Member
20.	Dr. S.K. Shrivastava, Asso. Prof. Deptt. of AE, NERIST	-	Member
21.	Ms. Margaret Kathing, Asstt. Prof., Deptt. of CSE, NERIST	-	Member
22.	Dr. R.P. Bhattacharjee, Registrar, NERIST		Non-Member Secretary

**MEMBERS OF NERIST FINANCE COMMITTEE AS ON 31.03.2015**

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

**MEMBERS OF ACADEMIC COUNCIL AS ON 31.03.2015**

1. Prof. P.K. Das, Director, NERIST	-	Chairman
2. Dean (Admn.)	-	Member
3. Dean (Acad)	-	Member
4. Dean (P&D)	-	Member
5. Dean (SA)	-	Member
6. Prof. N.S Raguwanshi, Dept. of Agri.IIT Kharagpur	-	Member
7. Prof. S.C.Deka Dept. Food Eng. & Tech., Tezpur Univ.	-	Member
8. Prof. D.N.Das,Dean, Faculty of Life Science, RGU, Doimukh, AP	-	Member
9. Prof. D Das, Hed, Deptt. of Business Administration, Tezpur University, Assam	-	Member
10. Prof. Tomo Riba,Dean of Faculty of Env.Science RGU,Doimukh,AP	-	Member
11. Prof Anjan Dutta,Dept.of Civil Eng.,IIT Guwhati	-	Member
12. Er. Talo Potom,ADM cum CEO, Itanagar	-	Member
13. Prof. J. Choubey, Deptt. of Mathematics	-	Member
14. Prof. S.K. Singh, Deptt. of Civil Engg	-	Member
15. Prof. Mubarak Husain, Deptt. of Chemistry	-	Member
16. Prof. P.K. Das, Deptt. of Mathematics	-	Member
17. Prof. L.S. Yadav, Deptt. Agril. Engg.	-	Member
18. Prof. H.S. Yadav, Deptt. of Chemistry	-	Member
19. Prof. M. Muralidharan, Deptt. of Mech. Engg	-	Member
20. Prof. S.K.Pandey,Dept. of Mathematics	-	Member
21. Prof(Mrs) P Rethy,Dept Of Forestry	-	Member
22. Prof. P.R.Alapati,Dept. of Physics	-	Member
23. Prof.P.P.Dabral,Dept. of AE	-	Member
24. Prof L.K.Arora,Dept. of Mathematics	-	Member
25. Prof P.K.Tripathy,Dept of Chemistry	-	Member
26. Prof. M.F.Hussain, Dept of Chemistry	-	Member
27. Prof.Md. Anwar Hussain, Deptt. of ECE	-	Member
28. Prof. K.D. Ram, Deptt. of Chemistry	-	Member
29. Prof. Binay Singh, Deptt. of Forestry	-	Member
30. Prof K.N.Dewangan,Dept. AE	-	Member
31. Prof Saibal Chatterjee,Dept. of EE	-	Member
32. Prof B.D Nayak,Dept. of HSS	-	Member
33. Prof C.L.Sharma,Dept. of Forestry	-	Member
34. Prof A.S.Rai,Dept. of Mathematics	-	Member
35. Prof. N Deb,Dept. of Chemistry	-	Member
36. HoD, Agricultural Engineering	-	Member
37. HoD, Civil Engineering	-	Member
38. HoD, Computer Sc. and Engg.	-	Member
39. HoD, Electrical Engineering	-	Member
40. HoD Electronics & Communication Eng.	-	Member
41. HoD, Mechanical Engineering	-	Member
42. HoD, Physics	-	Member
43. HoD, Chemistry	-	Member

44. HoD, Mathematics	-	Member
45. HoD, Forestry	-	Member
46. HoD, Humanities & Social Sciences	-	Member
47. HoC, Centre for Management & Studies	-	Member
48. HoC, CATRD	-	Member
49. Dr. S.K.Srivastava Associate Professor, Dept. of AE	-	Member
50. Shri D.K.Shymal, Associate Professor, Dept. of AE	-	Member
51. Dr. R.K.Mehta, Associate Professor, Dept. of EE	-	Member
52. Dr.T.P.Thaddues, Asstt. Pofessor, Dept. of ME	-	Member
53. Shri T.V.P.Singh, Asstt. Professor, Dept. of EE	-	Member
54. Shri K Legoh, Asstt. Professor, Dept. of CSE	-	Member
55. Dr. R.P. Bhattacharjee, Registrar, NERIST		Non-Member Secretary



**MEMBERS OF BUILDING AND WORKS COMMITTEE ON 31.03.2015**

- |   |                      |
|---|----------------------|
| 1. Prof. P.K. Das, Director, NERIST                   | : Chairman           |
| 2. Secretary, Education, Govt. of A.P                 | : Member             |
| 3. Chief Engineer (WZ), APPWD, Govt. of A.P           | : Member             |
| 4. Prof.Md. A Hussain, Dean (P&D), NERIST             | : Member             |
| 5. Mr. S.K.Sahu, HoD (Civil Engg.), NERIST            | : Member             |
| 6. Ar. Dawa Tsering, Sr.Architect, PWD, Govt. of A.P  | : Member             |
| 7. Er. Jilek Hiri, Executive Engineer (Civil), NERIST | Non-Member Secretary |

## INSTITUTE ADMINISTRATION AS ON 31.03.2015

1.	Director	-	Prof. P.K. Das
2.	Deans :		
	Administration	-	Prof. M.F. Hussain
	Academic	-	Prof. P.K. Tripathy
	Student's Affairs	-	Prof. Binay Singh
	Planning & Development	-	Prof. Md. Anwar Hussain
3.	Registrar	-	Dr. R.P.Bhattacharjee
4.	Deputy Registrar (Finance/Estt.)	-	Mr. M.K. Camder
6.	Assistant Registrars:		
	Academic	-	Dr. K.K.Rajesh
	Examination	-	Mr. Gautam Kr Roy
7.	Medical Officers:	-	Dr. Susmita P Taggu Dr. P.Camdir Tok Dr. N. Choudhury
8.	Librarian	-	Mr. Ashim Kr. Gupta
9.	Assistant Workshop Superintendent	-	Mr. Harshendra Mishra
10.	Security Officer	-	Mr. Passang Simi
11.	Liaison Officer, SC/ST	-	Dr. P.Lingfa
12.	Executive Engineer	-	Mr. Jilek Hiri
13.	Estate Officer	-	Mr. K.K. Rajesh
14.	Vigilance Officer	-	Prof. P.P. Dabral
15.	Sports Officer	-	Mr. B.S. Raja
16.	Hindi Officer	-	Mr. Ratan Singh
17.	Head of the Departments:		
	Forestry	-	Dr. (Ms) M.B. Sharma
	Agricultural Engineering	-	Prof. K.N. Dewangan
	Civil Engineering	-	Mr. S.K. Sahu
	Computer Science & Engg.	-	Dr. (Ms) N. Marchang
	Electrical Engineering	-	Dr. Sarsing Gao
	Electronics & Communication Engg.	-	Mr. Madhusudan Mishra
	Mechanical Engineering	-	Dr. P. Lingfa
	Physics	-	Dr. T. Karlo
	Chemistry	-	Prof. Nidhuban Deb
	Mathematics	-	Prof. S.K. Pandey
	Humanities & Social Sciences	-	Dr. P. Parida
	Centre for Management Studies	-	Dr. M. Mall
18.	Head of Centre (CATRD)	-	Dr. S.K.Shrivastava
19.	Chairman:		
	NEE Committee	-	Dr. D. Jhalaria
	HMC	-	Dr. Tado Karlo
	Gymkhana	-	Mr. Nabum Teyi
	Telecom	-	Mr. S. Majumder

	TPT	-	Dr. M. Chandrasekaran
	Library	-	Prof. S.K.Singh
	HAC	-	Dr. R.P. Bhattacharjee
20.	Training & Placement i/c	-	Dr. A. Bandhopadyay
21.	ET Cell i/c	-	Mr. Amar Taggu
22.	Coordinators:		
	SRIC	-	Prof. C.L. Sharma
	NSS	-	Dr. (Mrs.) T.Tuithung
	CEP	-	Dr. C.L. Sharma
	CRF	-	Dr. K.D. Ram
	ACCF	-	Dr. Sarsing Gao
	DOE	-	Mr. T.V.P. Singh
23.	Controller of Examinations	-	Dr. P. Parida
24.	Secretary NEE Committee	-	Dr. K.K. Rajesh
25.	NCC Officer	-	Ms. Somila Hashunao

**MEMBERS OF LIBRARY COMMITTEE AS ON 31.03.2015**

1.	Dr. S.K.Singh	:	Chairman
2.	Dr. Tado Karlo	:	Member
3.	Dr. P.K. Tripathy	:	Member
4.	Dr. M.M. Dixit	:	Member
5.	Dr. Awadhesh Kumar	:	Member
6.	Dr. S.K. Bhagat	:	Member
7.	Mr. Manish Kumar	:	Member
8.	Mr. M.M. Singh	:	Member
9.	Mr. N.G. Sorum	:	Member
10.	Dr. A. Bandyopadhyay	:	Member
11.	Mr. Raju Barthakur	:	Member
12.	Mr. S. Samanta	:	Member
13.	Shri A.K. Gupta	:	Member-Secretary

**MEMBERS OF NERIST ENRANCE EXAMINATION COMMITTEE AS ON 31.03.2015**

1. Dr. Deepak Jhajharia	-	Chairman
2. Dr. R.K. Mehta	-	Member
3. Dr. (Ms) K.T. Kamal	-	Member
4. Dr. Ajay Bharti	-	Member
5. Dr. P. R. Gajurel	-	Member
6. Dr.K K Rajesh Astd. Registrar (Acad)	-	Member Secretary

**MEMBERS OF HOSTEL MANAGEMENT COUNCIL AS ON 31.03.2015**

**Chairman-cum-Chief Warden**

Dr. Tado Karlo

**Addl. Chief Warden (Boys)**

Dr. L.B. Singha

**Addl. Chief Warden (Girls)**

Dr. Aditi Bhadra

**Wardens**

- |    |                          |                       |
|----|--------------------------|-----------------------|
| a) | Dr. K. Herachandra Singh | Hostel Block – A      |
| b) | Mr. A.K. Gautam          | Hostel Block – B      |
| c) | Mr. Akhilesh Sharma      | Hostel Block – C      |
| d) | Mr. Akho John Richa      | Hostel Block – D      |
| e) | Mr. K. James Singh       | Hostel Block – E      |
| f) | Dr. A.D. Singh           | Hostel Block – F      |
| g) | Ms. Y.M. Tamut           | Hostel Block – G      |
|    | Dr. Ajanta Kalita        | PG Hostel-Girls       |
| h) | Mr. M. D. Singh          | Hostel Block – H (PG) |

## NERIST ENTRANCE EXAMINATION

### 1. Admission notice:

The admission Notice was released in the following newspapers on 07.01.2014.

The admission notification was published in the following newspapers :

1. Arunachal Times, Itanagar on 10.01.2014.
2. Assam Tribune, Guwahati on 10.01.2014.
3. All editions of Hindustan Times on 15.01.2014.  
(Education Horizon)
4. Arunachal Front on 10.01.2014.
5. Shillong Times on 10.01.2014.
6. Sikkim Express on 10.01.2014.
7. Nagaland Post on 10.01.2014.
8. Tripura Times on 10.01.2014
9. Mizoram Post on 10.01.2014
10. Sangai Express, Imphal on 10.01.2014

Date of Examination:      26. 04. 2014 - NEE – II & III  
27. 04. 2014 - NEE - I

### CANDIDATES APPLIED AND APPEARED IN NEE-2014 (STATE - WISE)

Name of state	Module						Total	
	NEE-I		NEE-II		NEE-III			
	Appld.	Apprd.	Appld.	Apprd.	Appld.	Apprd.	Appld.	Apprd.
<b>Arunachal</b>	3864	3343	2086	1785	349	262	6299	5390
<b>Assam</b>	1091	897	1129	916	208	190	2428	2003
<b>Manipur</b>	356	305	430	346	39	37	825	688
<b>Meghalaya</b>	184	138	229	178	62	48	475	364
<b>Mizoram</b>	61	50	102	208	16	13	179	271
<b>Nagaland</b>	294	233	388	286	35	28	717	547
<b>Sikkim</b>	35	31	78	68	11	10	124	109
<b>Tripura</b>	582	494	149	124	111	100	842	718
<b>All India</b>	400	305	249	192	59	44	708	541
<b>PD</b>	37	29	16	13	4	4	57	46
<b>Total</b>	6904	5825	4856	4116	894	736	12654	10677

**DETAILS OF THE CANDIDATES APPLIED CENTRE WISE IN NEE-III, 2014**

Name of centre	AE	CE	CSE	ECE	EE	ME	TOTAL
Agartala	1	26	24	21	31	9	<b>112</b>
Aizwal	1	7	4	0	2	2	<b>16</b>
Dibrugarh	0	6	0	2	14	24	<b>46</b>
Gangtok	0	4	1	5	7	1	<b>18</b>
Guwahati	3	47	16	25	27	25	<b>143</b>
Imphal	0	11	4	7	10	7	<b>39</b>
Tezpur	0	0	0	0	2	4	<b>6</b>
Kohima	0	10	13	4	0	4	<b>31</b>
Lakhimpur	1	0	0	1	0	0	<b>2</b>
Shillong	3	22	4	6	11	11	<b>57</b>
Silchar	0	17	0	13	2	10	<b>42</b>
Itanagar	2	262	33	5	55	25	<b>382</b>
<b>Total</b>	<b>11</b>	<b>414</b>	<b>99</b>	<b>89</b>	<b>162</b>	<b>122</b>	<b>894</b>

**RESULT ANNOUNCEMENT**

- |  |   |                   |
|--|---|-------------------|
| 1) Result approved on  | : | <b>05.05.2014</b> |
| 2) Declaration on notice boards  | : | <b>05.05.2014</b> |
| 3) Result uploaded in the NERIST website   | : | <b>05.05.2014</b> |
| 4) Result sent to all the Directorates<br>of Higher Education of Eight NE states by post | : | <b>16.05.2013</b> |

Candidates selected (state and category wise) : 2014

Name of state & category	MODULE				Grand total
	NEE-I	NEE-II		NEE-III	
		Technology	Forestry		
PRC	14	5	2	5+2=7	28
PHYSICAL HANDICAPPED	6	3	1	2	12
Arunachal pradesh	20	8	3	6	37
Assam	20	8	3	7	38
Manipur	20	8	3	6	37
Meghalaya	20	8	3	6	37
Mizoram	20	8	3	6	37
Nagaland	20	8	3	5	36
Sikkim		8	3	4	15
Tripura	20	8	3	6	37
All India	20	8	3	6	37
<b>Total</b>	<b>180</b>	<b>80</b>	<b>30</b>	<b>61</b>	<b>351</b>



**Candidates wait-listed (state & category-wise) 2014**

Name of state & category	MODULE				
	NEE-I	NEE-II		NEE-III	Grand total
		Technology	Forestry		
<b>PRC</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>5+2</b>	<b>28</b>
<b>PHYSICAL HANDICAPPED</b>	<b>6</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>11</b>
<b>Arunachal pradesh</b>	<b>20+20</b>	<b>8+8</b>	<b>3+3</b>	<b>6+6</b>	<b>74</b>
<b>Assam</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>37</b>
<b>Manipur</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>36</b>
<b>Meghalaya</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>36</b>
<b>Mizoram</b>	<b>19</b>	<b>8</b>	<b>3</b>	<b>2</b>	<b>32</b>
<b>Nagaland</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>5</b>	<b>36</b>
<b>Sikkim</b>	<b>9</b>	<b>8</b>	<b>3</b>		<b>20</b>
<b>Tripura</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>37</b>
<b>All India</b>	<b>20</b>	<b>8</b>	<b>3</b>	<b>6</b>	<b>37</b>
<b>Total</b>	<b>208</b>	<b>88</b>	<b>33</b>	<b>55</b>	<b>384</b>

**COUNSELLING SCHEDULE**

1	7.07.2014 (Monday)	Selected List of NEE – I (Base) (Excluding Arunachal Pradesh)
2	8.07.2014 (Tuesday)	Waiting List of NEE – I (Excluding Arunachal Pradesh)
3	09.07.2014 (Wednesday)	Selected & Waiting List of NEE – I <b>(for the candidates of Arunachal Pradesh state Quota)</b>
4	10.07.2014 (Thursday)	Selected List of NEE –II & III (Excluding Arunachal Pradesh)
5	11.07.2014 (Friday)	Waiting List of NEE-II & III (Excluding Arunachal Pradesh)
6	16.07.2014(Wednesday)	Selected & Waiting List of NEE – II & III <b>(for the candidates of Arunachal Pradesh state Quota)</b>

**Candidates admitted in the year 2014 (State and category wise):**

Name of State & category	Module											
	NEE-I (200 seats)			NEE-II (Technology) (80 seats)			NEE-II (forestry 30 seats)			NEE-III (72 seats)		
	Selected	Wait	Total	Selected	Wait	Total	Selected	Wait	Total	Selected	Wait	Total
<b>PRC</b>	8	4	<b>12</b>	2	2	<b>4</b>				6	1	<b>7</b>
<b>PD</b>	2	2	<b>4</b>	2		<b>2</b>				1	1	<b>2</b>
<b>Arunachal</b>	13	4	<b>17</b>	4	2	<b>6</b>	1		<b>1</b>	6		<b>6</b>
<b>Assam</b>	15	4	<b>19</b>	2	3	<b>5</b>				4	2	<b>6</b>
<b>Manipur</b>	14	4	<b>18</b>	4	2	<b>6</b>	2	1	<b>3</b>	3	2	<b>5</b>
<b>Meghalaya</b>	14	6	<b>20</b>	2	4	<b>6</b>	3		<b>3</b>	4	1	<b>5</b>
<b>Mizoram</b>	14	2	<b>16</b>	5	1	<b>6</b>	1		<b>1</b>	5		<b>5</b>
<b>Nagaland</b>	10	7	<b>17</b>	6		<b>6</b>		1	<b>1</b>	3	2	<b>5</b>
<b>Sikkim</b>	10	2	<b>12</b>	6	1	<b>7</b>	3		<b>3</b>	2	1	<b>3</b>
<b>Tripura</b>	12	6	<b>18</b>	2	1	<b>3</b>		1	<b>1</b>	4	2	<b>6</b>

All India	16	3	<b>19</b>	5	1	<b>6</b>	1	1	<b>2</b>	5	1	<b>6</b>
Floating										2		<b>2</b>
<b>Total</b>	108	64	<b>172</b>	40	17	<b>57</b>	11	4	<b>15</b>	45	13	<b>56</b>

**CANDIDATES ADMITTED IN BASE MODULE (NEE-I) AS PER COUNSELLING REPORT – 2014 (Branch wise):**

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE		1	4	4	2	4	4	4		2	3	<b>28</b>
CE	2	3	4	4	4	4	4	4	4	4	4	<b>41</b>
EC		2	1	3	4	4		1		4	4	<b>23</b>
EE	1	3	4	4	4	4	4	4	4	4	4	<b>40</b>
ME	1	3	4	4	4	4	4	4	4	4	4	<b>40</b>
<b>TOTAL</b>	<b>4</b>	<b>12</b>	<b>17</b>	<b>19</b>	<b>18</b>	<b>20</b>	<b>16</b>	<b>17</b>	<b>12</b>	<b>18</b>	<b>19</b>	<b>172</b>

**CANDIDATES ADMITTED IN DIPLOMA MODULE (NEE-II) AS PER COUNSELLING REPORT – 2014 (Branch wise):**

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE		1	1	1	1	1	1	1	1			<b>8</b>
CE		1	1	1	1	1	1	1	1	1	1	<b>10</b>
CS	1				1	1	1		2		2	<b>8</b>
EC		1	1	1	1	1	1	1	1		1	<b>9</b>
EE	1		1	1	1	1	1	1	1	1	1	<b>10</b>
ME		1	1	1	1	1	1	1	1	1	1	<b>10</b>
FO			1		3	3	1	1	3	1	2	<b>15</b>
<b>TOTAL</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>5</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>6</b>	<b>10</b>	<b>4</b>	<b>8</b>	<b>70</b>

**CANDIDATES ADMITTED IN DEGREE MODULE (NEE-III) AS PER COUNSELING REPORT – 2014 (Branch wise):**

DISCIPLINE	PD	PRC	AP	AS	MN	MG	MZ	NL	SK	TR	AI	TOTAL
AE												
CE		3	1	2	1	1	1	1	1	2	1	<b>14</b>
CS		1	1	1	1	1	2	1		1	1	<b>10</b>
EC		1	1	1	1	1		2	1	1	1	<b>10</b>
EE	1	1	2	1	1	1	1		1	1	2	<b>12</b>
ME	1	1	1	1	1	1	1	1		1	1	<b>10</b>
<b>TOTAL</b>		<b>7</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>6</b>	<b>6</b>	<b>56</b>

**Branch wise admission in NEE-2014**

Branch	NEE									Grand Total		
	I			II			III					
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
AE	19	9	<b>28</b>	7	1	<b>8</b>				26	10	<b>36</b>
CE	29	12	<b>41</b>	8	2	<b>10</b>	12	3	<b>15</b>	47	19	<b>66</b>
CS				7	1	<b>8</b>	6	4	<b>10</b>	13	5	<b>18</b>
ECE	20	3	<b>23</b>	5	4	<b>9</b>	9	1	<b>10</b>	34	8	<b>42</b>

<b>EE</b>	34	6	<b>40</b>	7	3	<b>10</b>	8	3	<b>11</b>	50	11	<b>61</b>
<b>ME</b>	36	4	<b>40</b>	10		<b>10</b>	9	1	<b>10</b>	55	5	<b>60</b>
<b>FO</b>				8	7	<b>15</b>				8	7	<b>15</b>
<b>Total</b>	138	34	<b>172</b>	52	18	<b>70</b>	44	12	<b>56</b>	233	65	<b>298</b>

### SUMMARY OF NEE-2014

POSITION	NEE-I	NEE-II	NEE-III	Total
<b>No. of application received</b>	<b>6904</b>	<b>4856</b>	<b>894</b>	<b>12654</b>
<b>No. of candidates appeared</b>	<b>5825</b>	<b>4116</b>	<b>736</b>	<b>10677</b>
<b>No. of candidates selected (Technology)</b>	<b>180</b>	<b>80</b>	<b>61</b>	<b>321</b>
<b>No. of candidates selected (Forestry)</b>		<b>30</b>		<b>30</b>
<b>No. of candidates waitlisted (Technology)</b>	<b>208</b>	<b>88</b>	<b>55</b>	<b>351</b>
<b>No. of candidates waitlisted (Forestry)</b>		<b>33</b>		<b>33</b>

### HIGHLIGHTS OF NEE-2014

Sl.No.	Events	2013	2014	Remarks
01.	Number of applicants	13025	<b>12654</b>	<b>Decreased by 371 numbers</b>
02.	No. of candidates appeared	10780	<b>10677</b>	<b>Decreased by 103 numbers</b>
03.	No. of candidates taken admission through counseling	NEE-I 190 NEE-II 69 NEE-III 57 316	<b>NEE-I 172 NEE-II 70 NEE-III 56 298</b>	<b>Decreased by 18 in NEE-I</b>
04.	No. of male candidates got registered	202	<b>233</b>	<b>Increased by 31 numbers</b>
05.	No. of female candidates got registered	67	<b>65</b>	<b>Decreased by 02 numbers</b>
06.	The most preferred branch	CE with 64	<b>CE with 66</b>	<b>Increased by 2 numbers</b>
07.	Less preferred branch	CS with 17	<b>CS with 18</b>	<b>Increased by 1 number.</b>
08.	No. of students admitted from selected list	223	<b>200</b>	<b>Decreased by 23 numbers</b>
09.	No. of students admitted From wait list	93	<b>98</b>	<b>Increased by 05 numbers</b>

Adoption of online registration [neonline.ac.in](http://neonline.ac.in) and OMR answer sheets has helped the NEE Cell to publish the NEE result in time as per the schedule. The Challan were made available to the applicants by the Axis Bank Branches throughout the country at major places of choice. Payment mode for application was also available to the candidates via debit cards and credit cards. For up to date information, NERIST website was used for the sell being of the applicants and general public.

Thus the total process of NEE-2014 completed successfully.

## LIST OF FACULTY AS ON 31.03.2015

Name of the faculty members	Date of joining	Specialization
<b>1. Department of Applied Science (Forestry)</b>		
<b>Professor</b>		
Dr. (Mrs.) P.Rethy, Ph.D	31.03.09	Biosystematics
Dr. Binay Singh, Ph.D	31.03.09	Horticulture
Dr. M.L. Khan, Ph.D	31.03.09	Biodiversity Cnsvrn. & Silviculture
Dr. C.L. Sharma, Ph.D	02.08.07	Wood Science
<b>Associate Professor</b>		
Dr. (Mrs.) Mary P.P., Ph.D	31.03.09	Fish Microbiology
Dr. (Mrs.) M. Sharma Ph.D & HoD	31.03.09	Wood Science
Dr. (Mrs.) K. Shrivastava, Ph.D.	31.03.09	Microbial Aerobiology & Plant
Dr. P.R. Gajurel, Ph.D	20.06.06	Botany Taxonomy Pathology
Dr. K.Suresh Kr. Singh, Ph.D	13.07.06	Social Microbial Ecology
Dr. Awadhesh Kumar, Ph.D.	29.06.06	Wild life Biology
<b>Assistant Professor</b>		
Dr. L.B. Singha, Ph.D	23.06.06	Botany Taxonomy
Dr. O.P. Tripathi, Ph.D	26.06.06	Forest Ecology
Shri Gobinda Pangging, M.Sc	23.06.06	Forestry Economics & Mngt
<b>2. Department of Agricultural Engineering</b>		
<b>Professor</b>		
Dr. P.P. Dabral, Ph.D & HoD	31.03.09	Process & Food Engg.
Dr. K.N. Dewangan, Ph.D.	09.12.09	Farm Machinery & Power
<b>Associate Professor</b>		
Shri S.K. Shrivastava, M.Tech.	26.12.01	Soil & Water Conservation
Shri D.K. Shyamal, M.Tech.	31.12.01	Post Harv Proc. & Food Engg
Dr. Deepak Jhalaria, M.Tech	02.08.07	Water Resource Engg
Dr. Aditi Bhadra, Ph.D.	28.08.06	Soil & Water Consvrn. Eng.
Dr. Arnab Bandopadhyay, Ph.D.	01.02.10	Thermal & spatial trends of ref. Evapotranspiration
<b>Assistant Professor</b>		
Shri Ukil Singh, M.Tech	04.07.06	Farm Machinery & Power
Shri Pankaj Kr. Pandey, ME	17.07.06	Irrigation & Water Mangt
Dr. P.K.Pranav, Ph.D.	18.07.06	Farm Machinery & Power
Shri Thaneswar Patel, M.Tech	24.07.06	Farm Machinery & Power
Dr. P. Anand Kumar, Ph.D.	28.08.06	Post Harvest Engg.
Shri Arun Kr. Choudhary	13.01.15	
<b>3. Department of Civil Engineering</b>		
<b>Professor</b>		
Dr. S.K. Singh, Ph.D	26.04.97	Geotechnical Engg.

**Associate Professor**

Dr. R.K. Prasad, Ph.D & HoD	10.12.09	Water Resource Engg.
Dr. S. Baishya, Ph.D	31.03.09	Geotechnical Engg.
Dr. S. Mishra, Ph.D	31.03.09	Town Planning
Shri S.K. Sahu, M.Tech	31.03.09	Hydraulic & Water Resource Engg.
Dr. H.P.Singh, Ph.D.	31.03.09	Soil Mechanics & Foundation Engg.
Dr. Ajay Bharti, Ph.D.	26.09.06	Environmental Engg.

**Assistant Professor**

Ms. Y. Bidyalaxmi Devi, M.Tech	20.06.06	Env. Science & Engg.
Ms. Mudo Puming, M.Tech	26.06.06	-
Dr.(Ms) Dipika Devi, Ph.D.	18.07.06	Social Mechanics & Fntn. Eng.
Dr. Monowar Hussain, Ph.D.	21.12.09	Soil Mechanic & Foundation Engg.
Ms. Yamen Tamut, M.Tech	09.12.09	Transportation Engg.
Mr. N.G. Sorum, M.Tech	09.12.09	Transportation Engg.
Shri K. James Singh, ME	28.01.10	Wastewater Management & Flood Control
Dr. (Ms.) Ajanta Kalita, ME	09.02.10	Soil Mechanic & Foundation Engg.
Shri Dibyendu Pal, M.Tech	09.02.10	Transportation Sys. Engg.

**4. Department of Computer Science & Engineering****Associate Professor**

Dr. (Ms.) T. Tuithung, Ph.D.	31.03.09	Image Processing
Dr. (Ms) Ningrinla Marchang, Ph.D.	02.08.07	Database Management System

**Assistant Professor**

Shri Satyajyoti Borah, M.Tech (HoD)	31.03.09	Image Processing
Shri Kapang Legoh, M.Tech	31.03.09	-
Ms. Margaret Kathing, M.Tech	03.12.09	-
Shri M. Marjit Singh, M.Tech	02.01.07	-
Shri Aswani Kr. Patra, B.Tech	23.01.09	-
Shri Manjul Saikia, M.Tech	11.07.07	-
Shri Amar Taggu, M.Tech	11.12.09	-

**5. Department of Electrical Engineering****Professor**

Dr. S. Chatterjee, Ph.D.	09.12.09	High Voltage Engg.
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**Associate Professor**

Dr. O.P. Roy, Ph. D	02.08.07	Electric Drive, Micro.
Dr. R.K. Mehta, Ph.D. & HoD	10.12.09	Control Engg.
Dr. S.K.Bhagat, Ph.D	31.03.09	Control System
Dr. Sarsing Gao, Ph. D.	02.08.07	Alternative Hydro-Energy System
Dr. Arvind Kr. Singh, Ph.D.	02.08.07	Power System

## Assistant Professor

Shri T.V. Prakash Singh, M.E	02.08.07	Control and Instrumentation
Shri Radak Blange, M.Tech	31.03.09	Control Engg.
Shri Deben Singh, M.Tech	20.06.06	Electronic Design & Tech.
Shri Adikanda Parida, M.E	17.07.06	Industrial System & Drives
Shri Anu Kr. Das, M.Tech	12.01.07	Power & Energy system Eng.
Shri N.L. Meitei, M.Tech	24.12.09	-
Ms. Somila Hashunao, M. Tech	15.01.10	-
Shri Akhilesh Sharma	23.06.14	
Ms. Piyali Das	01.09.14	
Shri P. Devachandra Singh	23.01.15	

## 6. Department of Electronics & Communication Engineering

### Professor

Dr. Anwar Hussain, Ph.D	31.03.09	Microwave Engg Fiber Optic Integration
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### Assistant Professor

Shri Tripurari Sharan, M.Tech	31.03.09	-
Shri M. Mishra, M.Tech & HoD	24.07.06	-
Shri A. Dinamani Singh, M. Tech	20.06.06	-
Ms. Joyatri Bora, M.Tech	22.06.06	Electronics Design & Tech.
Shri Ashok Kr. Ray, B.Tech	03.07.06	-
Shri S. Majumdar, M.Tech.	14.07.06	Instrumen. & Control Engg.
Shri Pranab Kr. Dutta, M.Tech	24.07.06	Electronics Design & Tech.
Shri Manish Kumar, M.Tech	09.03.07	-
Shri Rushni Kima Mangang, M.Tech	23.02.10	Applied Electronics
Shri Akho John Richa, M.Tech	17.06.14	
Shri Anil Kr. Gautam	15.07.14	
Shri M. Edison Singh	21.01.15	

## 7. Department of Mechanical Engineering

### Professor

Prof. M. Muralidhar, Ph.D	31.03.09	Foundary Engg.
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### Associate Professor

Dr. Asis Giri, Ph.D. & HoD	22.12.09	
Dr. Pradip Lingfa, M.Tech	31.03.09	Energy Studies
Dr. M. Chandrasekharan, M.Tech	31.03.09	Production Engg & System
Shri S. Mahto, M.Tech	31.03.09	CIDM
Dr. Sutanu Samanta, M.E	02.08.07	Production Engineering
Dr. Satyam Shivam Gautom, Ph.D.	03.08.06	Mechanical

### Assistant Professor

Dr. M.P. Thaddeus, Ph.D.	19.09.94	Industrial Engg.
Shri Kajal Kr. Mandal, M.Tech	02.08.07	Production Technology
Shri Sandeep Singh, M.Tech	02.08.07	Tribology
Shri Narendra Kumar Rana, M.E	05.07.06	Industrial Material & Metallurgy

Shri Maryom Dabi, B.Tech	06.07.06	-
Shri Biplab Das, M.Tech	22.12.09	
Shri Nabam Teyi, M.Tech	11.01.10	
Shri S.K. Tamang, M.Tech.	30.12.14	
Md. S. Mujahed Khan	19.01.15	
Shri Yadaiah Nirsanmetla	21.01.15	

## 8. Department of Physics

### Professor

Dr. P.R. Alapati, Ph.D.	31.03.09	Condensed matter (Liquid Crys)
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### Associate Professor

Dr. M. Sengupta, Ph.D. & HoD	02.08.07	Theoretical Nuclear Physics
Dr. Tado Karlo, Ph.D	31.03.09	Mathematical Foundation of Quantum Physics
Dr. Arvind Pandey, Ph.D	02.08.07	Superconductivity
Dr. (Mrs.) Th. Gomti Devi, Ph.D	06.07.06	Physics

### Assistant Professor

Dr. Kamal Saharia, Ph.D.	22.12.09	Electrostatic Parallel Electric Fields in Plasmas
Dr. S. Dhiren Mwwtei, Ph.D.	29.12.14	
Dr. (Ms) Akbari Jahan, Ph.D.	09.01.15	
Dr. Kunal Borah, Ph.D.	13.01.15	

## 9. Department of Chemistry

### Professor

Dr. Mubarak Husain, Ph.D	26.04.97	Synthetic Org. Chemistry
Dr. H.S. Yadav, Ph.D	01.09.01	Organic Chemistry
Dr. P.K. Tripathy, Ph.D & (HoD)	31.03.09	Organic Chemistry
Dr. M.F. Hussain, Ph.D	31.03.09	Physical Chemistry
Dr. K.D. Ram, Ph.D	31.03.09	Physical Chemistry
Dr. Nidhuban Deb, Ph.D	31.10.01	Physical Chemistry

### Associate Professor

Dr. A.K. Gupta, Ph.D	31.03.09	Organic Chemistry
Dr.(Mrs.) K.T. Kamal, Ph.D	31.03.09	Organic Chemistry

### Assistant Professor

Shri N. Ghanashyam Singh, M.Sc.	23.12.09	Physical Chemistry
Dr. (Ms) S.L. Bharati, Ph.D.	06.01.15	
Dr. (Ms) Meera Yadav, Ph.D.	06.01.15	
Dr. Jagannath Bhuyan, Ph.D.	13.01.15	



## 10. Department of Mathematics

### Professor

Dr. J. Choubey, Ph.D.	18.10.93	Theory of numbers
Dr.P.K. Das, Ph.D.	26.04.97	Graphtheory & combinatorics
Dr. S.K. Pandey, Ph.D	31.03.09	Continuum Mechanics & Sub-Surface Flow
Dr. L.K. Arora, Ph.D & (HoD)	31.03.09	Special Functions
Dr. A.S. Rai, Ph.D	01.09.93	Gasdynamics, Shock wave MHD

### Associate Professor

Dr. B.K. Singh, Ph.D	02.08.07	Sampling Technique
Dr. H.K. Nigam, Ph.D.	01.08.14	

### Asstt. Professor

Dr. M.M. Dixit, Ph.D	25.07.06	Cont. & Discr. Bessel Wave. Transforms
Shri Jayanta Bora, M.Sc	07.07.06	Pure Mathematics
Dr. K. Herachandra Singh, Ph.D.	18.06.14	
Dr. Pradip Debnath, Ph.D.	07.01.15	
Dr. Mohammad Hassan, Ph.D.	08.01.15	

## 11. Department of Humanities & Social Sciences

### Professor

Dr. Benudhar Nayak, Ph.D	02.08.07	Rural & Agri. Devp.Tribal Dev.& Proj. Mgmt.
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### Associate Professor

Dr. P.R. Parida, Ph.D. & HoD	11.01.01	Organisational Behaviour/ Managerial effectiveness
Dr. Shyamalee Sinha, Ph.D	31.03.09	Behavioural Science, HRM, Organisational Behaviour.
Shri Ranendra Prasad, M.Phil	31.03.09	Indian English fiction & literary theory

### Assistant Professor

Shri Raju Barthakur, MA	06.07.06	American Literature
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## 12. Centre for Management Studies

### Professor

Dr. R.M. Pant, Ph.D	02.08.07	Labour Economics, HRM, Business Policy
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### Assistant Professor

Shri S. Choudhury, MBA & HoC	18.08.06	MBA
Ms. Bijoylaxmi Sarmah, MBA	08.12.06	MBA
Dr. Manmohan Mall, Ph.D.	15.01.15	

**SEPARATE AUDIT REPORT  
OF THE  
COMPTROLLER AND AUDITOR GENERAL  
OF INDIA**

**ON THE ACCOUNTS OF THE  
NORTH EASTERN REGIONAL INSTITUTE  
OF SCIENCE AND TECHNOLOGY  
(NERIST)  
NIRJULI,  
ARUNACHAL PRADESH**

**FOR THE YEAR ENDED  
31 MARCH 2015**

Separate Audit Report of the  
Comptroller & Auditor General of India  
on the Accounts of the  
North-Eastern Regional Institute of Science & Technology,  
Nirjuli, for the year ended 31 March 2015

We have audited the Balance Sheet of North Eastern Regional Institute of Science & Technology (NERIST), Nirjuli, for the year ended 31 March 2015, the Income & Expenditure Account/and the Receipt & Payment Account for the year ended on that date under Section 20 (1) of the Comptroller and Auditor General's (Duties, Powers & Conditions of Service) Act, 1971, read with 5 (a) (xv) and Rule 33 (v) of NERIST, framed under the Memorandum of Association of NERIST (Under Section 3 of the UGC Act, 1956). The audit has been entrusted for the period up to 2016-17. These financial statements are the responsibility of NERIST's management and our responsibility is to express an opinion on these financial statements, based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller & Auditor General of India (C&AG) on the accounting treatment only with regard to their classification, conformity with the best accounting practices, accounting standards, disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules & Regulations (Propriety & Regularity) and efficiency-cum-performance aspects, etc., if any, are reported through Inspection Reports/CAG's Audit Reports separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform our audit to obtain reasonable assurance about whether the financial statements are free from material mis-statements. An audit includes examining, on a test-check basis, evidences supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

**4. Based on our audit, we report that:**

- i. We have obtained all the information and explanations, which to the best of our knowledge and belief, were necessary for the purpose of our audit;
- ii. The Balance Sheet and Income & Expenditure Account/Receipt & Payment Account dealt with by this report have been drawn up in the format approved by the Government of India, Ministry of Finance.
- iii. In our opinion, proper books of accounts and other relevant records have been maintained by the NERIST, as required under Rule 33 of NERIST, in so far as it appears from our examination of such books.
- iv. We further report that:

## A. Balance Sheet

### Assets

**Fixed Assets (Schedule 4) – ₹ 14,293.32 lakh**

#### *1. Capitalisation of Asset not yet received*

The Institute has made an advance payment of ₹ 6,00,000/- for procurement of Furniture & Fixture on 31<sup>st</sup> March 2015 and has taken the expenditure into accounts as fixed assets under Furniture & Fixture. However, it was found that no furniture & fixture was received on 31<sup>st</sup> March 2015. Therefore, addition of such value before actual receipt to the 'Fixed Assets' has resulted in over-statement of 'Fixed Assets' and under-statement of 'Current Assets' by ₹ 6,00,000/-.

#### *2. Misclassification of Assets*

The Institute has bought computer/peripherals amounting to ₹ 7,10,997/- and 2 UPS systems with SMF Batteries (10 KVA & 15 KVA) amounting to ₹ 4,16,212/-. The same has been kept as Fixed Assets under Lab & Scientific Equipment. As per instructions given under New Format of Accounts of Central Higher Educational Autonomous Bodies under MHRD the same should have been shown under Fixed Assets – Computer/Peripherals Account. This has resulted into overstatement of Fixed Assets – Lab & Scientific Equipment and understatement of Fixed Assets – Computer/Peripherals Account by ₹ 11,27,209/-.

### ***3. Replaced Asset not written off***

The Institute upgraded the existing UTM device (Cyberoam 1000ia) with a newer model (Cyberoam 2500iNG) from the same company at a net cost of ₹15,48,117/- (₹ 16,98,117/- with buy-back of the old device at ₹ 1,50,000/-). The Institute has wrongly capitalized the discounted price of ₹ 15,48,117/- to the fixed assets instead of the original price of ₹ 16,98,117/-. The older device procured for ₹ 10,02,999/- during 2011-12 were depreciated to ₹ 6,37,964/- has also not been withdrawn from the fixed assets. This has resulted into overstatement of fixed assets (old Cyberoam 1000ia) by ₹ 6,37,964/- and understatement of fixed assets (New Cyberoam 2500iNG) by ₹ 1,50,000/- and understatement of Expenditure by ₹ 4,87,964/-.

### ***4. Capitalisation of Entry Tax.***

During the year, the Institute paid an amount of ₹ 3,14,033 lakh towards entry tax for procurement of various Lab Equipment. The said equipment were not installed nor commissioned during the accounting period and the same was not taken to account as yet. But the entry fees paid towards this procurement were capitalised under Lab & Scientific Equipment in Fixed Assets (Schedule 4). Capitalisation of attributable costs without the actual Assets having been received has led to overstatement of Fixed Assets by ₹ 3,14,033 and understatement of Current Assets by the same amount.

## Current Assets

### 1. Pension and Retirement fund not accounted for

The Institute has received ₹ 43.20 lakh towards 'Pension and Retirement Benefits' during the year. However, the same was not reflected in the Balance Sheet and kept outside of the Institute's accounts.

This led to understatement of Current Assets and Current Liabilities in the Balance Sheet.

## B. Income and Expenditure Account

### Expenditure

#### Depreciation – ₹ 280.58 lakh

### 1. Additions to Assets not depreciated

The Institute stated that depreciation is provided for the whole year on additions during the year. However, depreciations on addition to assets during the year have not been provided for in Schedule 4: Fixed Assets. The details of additions to assets and applicable depreciation are given below:

Sl. No	Description	Addition during the year	Rate of depreciation applicable	Depreciation
1	Buildings	209840907	2	4196818.14
2	Lab & Scientific Equipment	7200513	8	576041.04
3	Furniture & Fixture	69458096	7.5	5209357.2
4	Office Equipment	1925868	7.5	144440.1
5	Sports Equipment	1439921	7.5	107994.075
6	Computer Peripherals	3172139	20	634427.8
7	Library Books	4222525	10	422252.5
8	Plant & Machinery	4795000	5	239750
9	Tubewell & Water supply	2844625	2	56892.5
	Total			1,14,79,979.28

Hence, there was understatement of depreciation by ₹ 1,14,79,979/-. This has resulted in overstatement of Assets-Fixed Assets in Balance Sheet and understatement of Expenditure in the Income and Expenditure Account by the stated amount.

### **C. General**

#### ***Land not accounted for in the Balance Sheet***

The Balance Sheet – Fixed Assets (Schedule 4) has not accounted for “Land” under Fixed Assets. Since, land is a valuable asset without which no activities of the Institute will be possible, appropriate and adequate valuation of the land as per accounting principles is required to be made and accounted for in the Balance Sheet of the Institute.

#### ***Retirement benefits***

The Institute has neither disclosed the accounting policy in respect of retirement benefits nor provided the provision as per actuarial valuation as required by the new format of accounts prescribed for Central Higher Educational Institutes under MHRD.

#### ***Unutilised Grant***

The Institute has not disclosed unutilized grant under Current Liability (Schedule 3(c)) as required by the new format of accounts prescribed for Central Higher Educational Institutes under MHRD.

## **D. Accounting Policy**

### **Accounting Policy and Notes on Accounts**

All significant accounting policies adopted in preparation of financial statements should be disclosed. Accounting policies as followed by the autonomous body shall be applied consistently from one financial year to the next and change may be made only in exceptional circumstances. And in case of changes, the financial implication of such change in accounting policy in the year shall be quantified as far as possible and disclosed in the financial statements.

The Institute, for the year, has adopted new rates of depreciation on Fixed Assets and has shifted to 'Straight line method' according to information furnished by the Institute. This has not been disclosed nor has the financial implication of the policy change been indicated.

Further, other Accounting Policies with regards to revenue recognition, valuation, contingent liabilities, assets, funds and treatment of employee retirement benefits, etc., were not disclosed.

## **E. Grants-in-Aid**

The Institute is financed mainly by grants received from the Government of India (GoI). During the year, the Institute had funds of ₹ 10,046.12 lakh, which included Grants-in-Aid of ₹ 8936.12 lakh (₹2115.00 lakh received during March 2015) received from the Government of India and an opening balance of ₹ 780.59 lakh. The Institute also generated ₹ 329.41 lakh as




internal revenue. From the total available funds of ₹ 10,046.12 lakh, the Institute spent ₹ 8661.72 lakh, leaving a balance of ₹ 1384.40 lakh, as on 31<sup>st</sup> March 2015.

- v. Subject to our observations in the preceding paragraphs, we report the Balance Sheet and Income & Expenditure Account/Receipt & Payment Account dealt with by this report are in agreement with the books of accounts.
- vi. In our opinion and to the best of our information and according to the explanation given to us, the said financial statements and subject to the significant matters stated above and other matters mentioned in Annexure to this Audit Report give a true and fair view in conformity with accounting principles generally accepted in India.
  - a. In so far as it relates to the Balance Sheet, of the state of affairs of the NERIST as at 31 March 2015; and
  - b. In so far as it relates to the Income & Expenditure Account of the surplus for the year ended on that date.

Place: **Itanagar**

Dated: **15<sup>th</sup> January 2016**

*for and on behalf of the C&AG of India*

  
**Accountant General  
Arunachal Pradesh**

## Annexure

### 1. **Adequacy of Internal Control and Internal Audit**

Regarding the Internal Control Mechanism of the Institute, the following shortcomings were noticed:

- I. The Institute did not have any Accounting or Administrative Manual.
- II. For Internal Audit purposes, the Institute appointed an auditor who performed the task of pre-checking of bills only. No Internal Audit was conducted till date of Audit (August-September 2015).

### 2. **Adequacy of Physical Verification of Fixed Assets and Inventories**

Though the Committees were formed on April, 2015, Physical verification of assets for 2014-15 has not been completed till date of audit (August-September 2015).

### 3. **Regularity in Payment of Statutory Dues.**

The Institute was regular in payment of Statutory Dues.

  
**Accountant General**  
**Arunachal Pradesh**

**NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
NIRJULI:: ITANAGAR :: ARUNACHAL PRADESH :: 791109**

**BALANCE SHEET AS ON 31<sup>ST</sup> MARCH, 2015**

Amount in Rs.

<b>CORPUS/CAPITAL FUND AND LIABILITIES</b>	<b>SCHEDULE</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
CORPUS/CAPITAL FUND	1	1574915812.72	1169267408.00
Earmarked/Endowment Funds	2	1945894.00	1727341.00
Current Liabilities & Provisions	3	36864038.75	35255169.75
<b>Total</b>		<b>1613725745.47</b>	<b>1206249918.75</b>

<b>ASSETS</b>	<b>SCHEDULE</b>	<b>CURRENT YEAR</b>	<b>PREVIOUS YEAR</b>
FIXED ASSETS	4	1429332360.04	1078679021.25
Investment from Earmarked/Endowment Funds	5	535009.00	469337.00
Current Assets, Loan, Advances etc.	6	183858376.43	127101560.50
<b>Total</b>		<b>1613725745.47</b>	<b>1206249918.75</b>

Sd/- Finance Officer  
NERIST

Sd/-Director  
NERIST

**NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
NIRJULI:: ITANAGAR :: ARUNACHAL PRADESH :: 791109**

**SCHEDULES FORMING PART OF BALANCE SHEET  
AS ON 31<sup>ST</sup> MARCH, 2015**

	<b>Amount in Rs.</b>	
SCHEDULE-1 CORPUS FUNDS/CAPITAL FUND	CURRENT YEAR	PREVIOUS YEAR
Balance at the beginning of the year	1169267408.00	994080901.18
Add: Contribution towards Corpus/Capital Fund:		
Grant-in-aid received from Ministry of Human Resource Development, Department of Education, Govt. of India, vide sanction order No.		
<b>a) Plan (Capital)</b>		
F No.9-8/2014-TS.VII dtd.05.06.2014.	23250000.00	5963000.00
F No.9-8/2014-TS.VII dtd.05.06.2014.	4500000.00	2981000.00
F No.9-8/2014-TS.VII dtd.05.06.2014.	2250000.00	30807000.00
F No.9-8/2014-TS.VII dtd.26.09.2014	2250000.00	1491000.00
F No.9-8/2014-TS.VII dtd.26.09.2014	4500000.00	15405000.00
F No.9-8/2014-TS.VII dtd.26.09.2014	23250000.00	2981000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	2250000.00	1491000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	4500000.00	2981000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	23250000.00	15400000.00
F No.9-8/2014-TS.VII dtd.31.12.2014	5812000.00	39020000.00
F No.9-8/2014-TS.VII dtd.31.12.2014	563000.00	7552000.00
F No.9-8/2014-TS.VII dtd.31.12.2014	1125000.00	3776000.00
F No.9-20/2014-TS.VII dtd03.02.2015	17700000.00	5960000.00
F No.9-20/2014-TS.VII dtd 03.02.2015	8850000.00	63338000.00
F No.9-20/2014-TS.VII dtd 03.02.2015	91450000.00	12323000.00
F No.9-20/2014-TS.VII dtd 30.03.2015	735000.00	--
F No.9-20/2014-TS.VII dtd 30.03.2015	125293000.00	---
F No.9-20/2014-TS.VII dtd 30.03.2015	1470000.00	--
F No.9-20/2014-TS.VII dtd 30.03.2015	7595000.00	--
F No.9-20/2014-TS.VII dtd 30.03.2015	26465000.00	--
F No.9-20/2014-TS.VII dtd 30.03.2015	13242000.00	--
<b>Total (a)</b>	<b>390300000.00</b>	<b>211469000.00</b>
<b>b) Plan (General)</b>		
F No.9-8/2014-TS.VII dtd.05.06.2014	562000.00	1125000.00
F No.9-8/2014-TS.VII dtd.05.06.2014	5813000.00	5812000.00
F No.9-8/2014-TS.VII dtd.05.06.2014	1125000.00	562000.00
F No.9-8/2014-TS.VII dtd.26.09.2014	1125000.00	282000.00

F No.9-8/2014-TS.VII dtd.26.09.2014	5813000.00	563000.00
F No.9-8/2014-TS.VII dtd.26.09.2014	562000.00	2913000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	562000.00	7362000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	1125000.00	1425000.00
F No.9-8/2014-TS.VII dtd.05.12.2014	5813000.00	713000.00
F No.9-20/2014-TSVII dtd31.12.2014	563000.00	7896000.00
F No.9-20/2014-TSVII dtd31.12.2014	5812000.00	842000.00
F No.9-20/2014-TSVII dtd31.12.2014	1125000.00	1484000.00
F No.9-20/2014-TSVII dtd03.02.2015	338000.00	---
F No.9-20/2014-TSVII dtd03.02.2015	675000.00	--
F No.9-20/2014-TSVII dtd03.02.2015	3487000.00	--
F No.9-20/2014-TSVII dtd30.03.2015	5967000.00	
F No.9-20/2014-TSVII dtd30.03.2015	1155000.00	
F No.9-20/2014-TSVII dtd30.03.2015	578000.00	
<b>Total (b)</b>	<b>42200000.00</b>	<b>30979000.00</b>
<b>Total</b>	<b>1601767408.00</b>	<b>1236528901.18</b>
Add/deduct: Balance of net (Income/ expenditure from Income & Expenditure Account)	(-)26851595.28	(-)67261493.18
<b>Total</b>	<b>1574915812.72</b>	<b>1169267408.00</b>

SCHEDULE – 2 EARMARKED /ENDOWMENT FUNDS	CURRENT YEAR	PREVIOUS YEAR
Opening balance of Funds donated by HE the Governor of Arunachal Pradesh:	274555.00	234256.00
Gold Medal : Topper of Diploma Module	101935.00	83977.00
Student Welfare Funds	1410885.00	1258004.00
Donation for SHRISTI -2009	158519.00	151104.00
<b>TOTAL</b>	<b>1945894.00</b>	<b>1727341.00</b>

SCHEDULE-3 CURRENT LIABILITIES & PROVISIONS	CURRENT YEAR	PREVIOUS YEAR
<b>A: Current Liabilities</b>		
1.Caution Money of Students	13801886.00	13040070.00
2.Security Deposits and others	15596126.75	20035099.75
<b>Total(A)</b>	<b>29398012.75</b>	<b>33075169.75</b>
<b>B. Provisions: Outstanding Expenses, Total (B)</b>		
	7466026.00	2180000.00
<b>Total (A+B)</b>	<b>36864038.75</b>	<b>35255169.75</b>

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**NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
NIRJULI :: ITANAGAR :: ARUNACHAL PRADESH**

**SCHEDULE FORMING PART OF BALANCE SHEET AS ON 31<sup>ST</sup> MARCH, 2015**

**SCHEDULE-4 FIXED ASSETS**

Sl. No	Description	GROSS BLOCK				DESCRIPTION				NET BLOCK	
		Cost/Valuation at the beginning of the year	Addition during the year	Deduction during the year	Total upto the year end	As at the beginning of the year	Addition during the year	Deduction during the year	Total upto the year end	As at the current year end	As at the previous year end
	<b>A. Fixed Assets</b>										
1.	Buildings	93 92 42 471.00	20 98 40 907.00	.00	1 14 90 83 378.00	31 99 59 845.58	1 23 85 652.51	.00	33 23 45 498.09	81 67 37 879.91	61 92 82 625.42
2.	Lab & Scintific Equipment	32 04 84 479.46	72 00 513.00	.00	32 76 84 992.46	20 99 62 560.36	88 41 753.53	.00	21 88 04 313.89	10 88 80 678.57	11 05 21 919.10
3.	Furniture & Fixture	6 94 58 096.43	1 30 33 683.00	.00	8 24 91 779.43	3 19 55 562.70	28 12 690.03	.00	3 47 68 252.73	4 77 23 526.70	3 75 02 533.73
4.	Vehicles	1 22 65 641.75	.00	.00	1 22 65 641.75	74 02 643.18	4 86 299.86	.00	78 88 943.04	43 76 698.71	48 62 998.57
5.	Office Equipment	2 98 89 777.23	19 25 868.00	.00	3 18 15 645.23	1 52 37 401.21	10 98 928.20	.00	1 63 36 329.41	1 54 79 315.82	1 46 52 376.02
6.	Sports Equipment	.00	14 39 921.00	.00	14 39 921.00	.00	.00	.00	.00	14 39 921.00	.00
7.	Medical Equipment	16 97 595.79	.00	.00	16 97 595.79	9 88 933.31	56 692.99	.00	10 45 626.30	6 51 969.49	7 08 662.48
8.	Hostel Equipment	5 32 381.08	.00	.00	5 32 381.08	5 07 489.77	3 484.78	.00	5 10 974.55	21 406.53	24 891.31
9.	Library Equipment	9 95 263.00	.00	.00	9 95 263.00	8 60 977.90	18 799.91	.00	8 79 777.81	1 15 485.19	1 34 285.10
10.	Computer /Peripherals	3 57 470.00	31 72 139.00	.00	35 29 609.00	.00	71 494.00	.00	71 494.00	34 58 115.00	3 57 470.00
11.	Guest House Equipment	1 06 705.00	.00	.00	1 06 705.00	99 659.05	986.43	.00	1 00 645.48	6 059.52	7 045.95
12.	Musical Instruments	63 593.00	.00	.00	63 593.00	62 569.08	143.35	.00	62 712.43	880.57	1 023.92
13.	Electri Installations	5 31 856.00	.00	.00	5 31 856.00	.00	26 592.80	.00	26 592.80	5 05 263.20	5 31 856.00
14.	Library Books	6 17 43 763.26	42 22 525.00	.00	6 59 66 288.26	3 92 85 935.76	22 45 782.75	.00	4 15 31 718.51	2 44 34 569.75	2 24 57 827.50
15.	Plant & Machinery	12 04 273.22	47 95 000.00	.00	59 99 273.22	10 78 384.62	6 294.43	.00	10 84 679.05	49 14 594.17	1 25 888.60
16.	Tubewell & Water supply	62 855.00	28 44 625.00	.00	29 07 480.00	.00	1 257.10	.00	1 257.10	29 06 222.90	62 855.00
17.	Canteen Utensils	25 842.00	.00	.00	25 842.00	22 979.41	286.25	.00	23 265.66	2 576.34	2 862.59
18.	Hostel Utensils	55 090.00	.00	.00	55 090.00	54 429.05	92.53	.00	54 521.58	568.42	660.95
19.	Other fixed assets	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20.	Club Equipment	90 200.60	.00	.00	90 200.60	86 116.59	571.76	.00	86 688.35	3 512.25	4 084.01
	<b>TOTAL OF CURRENT YEAR</b>	<b>1 43 88 07 353.82</b>	<b>24 84 75 181.00</b>	<b>.00</b>	<b>1 68 72 82 534.82</b>	<b>62 75 65 487.57</b>	<b>2 80 57 803.21</b>	<b>.00</b>	<b>65 56 23 290.78</b>	<b>1 03 16 59 244.04</b>	<b>81 12 41 866.25</b>
	<b>B. Building in Progress</b>	26 74 37 155.00	34 00 76 868.00	20 98 40 907.00	39 76 73 116.00	.00	.00	.00	.00	39 76 73 116.00	26 74 37 155.00
	<b>TOTAL</b>	<b>1 70 62 44 508.82</b>	<b>58 85 52 049.00</b>	<b>20 98 40 907.00</b>	<b>2 08 49 55 650.82</b>	<b>62 75 65 487.57</b>	<b>2 80 57 803.21</b>	<b>.00</b>	<b>65 56 23 290.78</b>	<b>1 42 93 32 360.04</b>	<b>1 07 86 79 021.25</b>
	<b>Previous Year</b>	<b>1 49 29 69 619.82</b>	<b>24 36 62 847.00</b>	<b>3 03 87 958.00</b>	<b>1 70 62 44 508.82</b>	<b>57 65 60 480.39</b>	<b>5 61 99 607.18</b>	<b>51 94 600.00</b>	<b>62 75 65 487.57</b>	<b>1 07 86 79 021.25</b>	<b>91 64 09 139.43</b>

Sd/- Finance Officer  
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SCHDULE-5 INVESTMENT FROM EARMARKED/ENDOWMENT FUNDS	CURRENT YEAR	PREVIOUS YEAR
1. Investment with SBI Nirjuli, Donation by HE, the Governor of Arunachal Pradesh – Gold Medal : Toppers: of Diploma Module	274555.00	234256.00
2. Investment with SBI, Nirjuli – Institute’s Gold Medal	101935.00	83977.00
3 Donation for Shristi	158519.00	151104.00
<b>Total</b>	<b>535009.00</b>	<b>469337.00</b>

SCHDULE-6 CURRENT ASSETS, LOAN ADVANCES ETC	CURRENT YEAR	PREVIOUS YEAR
<b>A:CURRENT ASSETS</b>		
1) Cash in Hand	0.27	0.27
2) Imprest	357650.00	352650.00
Total	357650.27	352650.27
<b>Bank Balance with Schedule Banks</b>		
a) On Current Account with SBI, Nirjuli (Society for NERIST)	142419881.29	93479027.23
b) NERIST Entrance Exam. A/c	14734.00	14889.00
c) AXIS BANK	13290336.87	6078577.00
Total	155724952.16	99572493.23
<b>Total (A)</b>	<b>156082602.43</b>	<b>99925143.50</b>
<b>B: LOANS, ADVANCES AND OTHERS</b>		
<u>1) Loan /Advances</u>		
a) Staff	9349846.00	9819157.00
2) advances and other amounts recoverable in Cash or kind or for value to be received		
<b>a) On Current Accounts</b>		
I) United India Insurance Co. Ltd.	20000.00	20000.00
II) Nodal Centre	185000.00	185000.00
III) Project account	104000.00	--
V) Out standing Shop Rent	90905.00	189993.00
VI) Short Term Deposit (AXIS Bank)	9987688.00	9103771.00
VII) Short Term Deposit (NEE Account)	2604887.00	2425048.00
VIII)Security Deposit by Institute To Executive Engineer ( Elect) Deptt of Power, Naharlagun, Govt Of Arunachal Pradesh	5433448.00	5433448.00
Total (B)	27775774.00	27176417.00
<b>Total A+B)</b>	<b>183858376.43</b>	<b>127101560.50</b>

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NORTH EASTERN REGIONAL INSTITUTE OF SCIENCE & TECHNOLOGY  
NIRJULI :: ARUNACHAL PRADESH

**Income & Expenditure Accounts for year ended 31<sup>st</sup> March, 2015**

(Amount in Rs.)

<b>A. Income</b>	<b>Schedule</b>	<b>Current Year</b>	<b>Previous Year</b>
Grant-in-Aid	7	461112000.00	402800000.00
Fees from Students	8	27587665.93	16905318.00
Interest earned	9	1953756.00	716486.00
Other Income	10	3300491.00	3272500.00
<b>Total (A)</b>		<b>493953912.93</b>	<b>423694304.00</b>
<b>B. Expenditure</b>			
<i>Establishment Expenses</i>	11	414237069.00	371658782.00
<i>Other Administrative Expenses</i>	12	78510636.00	62535034.00
<i>Fixed asset written off</i>		---	562374.00
<i>Depreciation</i>		28057803.21	56199607.18
<b>Total(B)</b>		<b>520805508.21</b>	<b>490955797.18</b>
<i>Balance being excess/deficit of Expenditure over income (A-B)</i>		(-)26851595.28	(-)67261493.18
<i>Balance being deficit/excess carried over to corpus fund</i>		(-)26851595.28	(-)67261493.18

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**Schedule Forming Part of Income and Expenditure Accounts for the Year  
ended 31<sup>st</sup> Mach 2015**

(Amount in Rs.)

<b>SCHEDULE 7 – GRANTS</b>	Current Year	Previous Year
Ministry of Human Resource Development, Deptt. Of Higher Education, vide Sanction order No Salary Components & Non Salary Components		
F No.9-9/2014-TS.VII dtd.03.06.2014	97948000.00	90700000.00
F No.9-9/2014-TS.VII dtd.24.07.2014	34800000.00	90700000.00
F No.9-9/2014-TS.VII dtd.05.09.2014	63148000.00	90700000.00
F No.9-9/2014-TS.VII dtd.18.11.2014	90000000.00	90700000.00
F No.9-9/2014-TS.VII dtd.21.01.2015	105896000.00	10000000.00
F No.9-9/2014-TS.VII dtd.03.06.2014	11080000.00	10000000.00
F No.9-9/2014-TS.VII dtd.05.09.2014	11080000.00	5000000.00
F No.9-9/2014-TS.VII dtd.31.12.2014	9080000.00	11000000.00
F No.9-9/2014-TS.VII dtd.21.01.2015	9080000.00	4000000.00
F No.9-9/2014-TS.VII dtd.26.03.2015	25000000.00	----
F No.9-9/2014-TS.VII dtd.26.03.2015	4000000.00	---
<b>Total</b>	<b>461112000.00</b>	<b>402800000.00</b>

**SCHEDULES 8 –FEES FROM STUDENTS**

1 Academic	8097225.00	7884975.00
2 Examination	2389480.00	1975275.00
3 Other fee	2858974.00	4045420.00
1. Entrance Fees /Sale of publication	14241986.93	2999648.00
<b>Total</b>	<b>27587665.93</b>	<b>16905318.00</b>

**SCHEDULES 9-INTEREST EARNED**

On Short Term Deposit with State Bank of India , Axis Bank ans other deposits	1953756.00	716486.00
<b>Total</b>	<b>1953756.00</b>	<b>716486.00</b>

**SCHEDULES 10- OTHER INCOME**

Income from Land & Building	2452942.00	2983553.00
Other Income/ Miscellaneous Income	847549.00	288947.00
<b>Total</b>	<b>3300491.00</b>	<b>3272500.00</b>

**SCHEDULES 11-ESTABLISHMENT EXPENSES**

a)	Salary & Wages	316292370.00	277352277.00
b)	Allowance & Bonus	1363116.00	1336698.00
c)	Contribution to Provident Fund	27945200.00	27094496.00
d)	Contribution to Other fund (Specify)		
i	NPS	9591960.00	9093418.00
ii	EPF	3158863.00	3617763.00
iii	GPF	81680.00	48960.00
e)	Staff Welfare Expenses	--	---
f)	Retirement and terminal benefits etc	6482426.00	4028303.00
g)	LTC facility	6555710.00	4599053.00
h)	Medical facility	16669812.00	15757780.00
i)	Children Educational Allowances	5227224.00	5426933.00
j)	Honorarium	5130850.00	6350900.00
k)	TA/DA Expenses	--	--
l)	Other (Specify)		
i)	Liveries & Uniforms	736395.00	311011.00
ii)	Professional Development Allowance to Faculty	4547463.00	2759964.00
iii)	Salary & Wages for Kendriya Vidyalaya	10454000.00	13881226.00
	<b>TOTAL</b>	<b>414237069.00</b>	<b>371658782.00</b>

**SCHEDULES 12-OTHER ADMINISTRATIVE /ACADEMIC EXPENSES ETC.**

(Amount in Rs.)

<b>SCHEDULE 12 A -- Academic Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Laboratory Expenses	4007148.00	1741471.00
ii)	Work/ Participation	--	---
iii)	Seminar/Workshop	--	---
iv)	Payment to visiting faculty	419669.00	260071.00
v)	Examination	530147.00	407683.00
vi)	Student Welfare Expenses	4823693.00	4022567.00
vii)	Admission Expenses	281070.00	210485.00
viii)	Convocation Expenses	2511995.00	---
ix)	Publications	--	---
x)	Stipend/means cum merit scholarship	9480132.00	4660888.00
xi)	Subscription expenses	--	--
xii)	Other Specy		---
xiii)	NCC/NSS"	170694.00	145031.00
<b>TOTAL</b>		<b>22224548.00</b>	<b>11448196.00</b>

(Amount in Rs.)

<b>SCHEDULE 12 (B)-- Other Administrative Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Entrance Examination	2686334.00	3710530.00
ii)	Printing & Stationary	3585192.00	1556149.00
iii)	Traveling Allowances	5007206.00	3549786.00
iv)	Advertisement/Publicity	346205.00	362444.00
v)	Postage, & Telephone	588048.00	584410.00
vi)	Telegram & Internet Charges	--	4194052.00
vii)	Electricity and Power	11321340.00	11062815.00
viii)	Water Charges	530355.00	495240.00
ix)	Insurance	--	---
x)	Rent,Rates and taxes (Including Property Tax )	--	---
xi)	Expenses on Seminar /Workshops	--	19000.00
xii)	Hospitality	--	---
xiii)	Auditors Remuneration	230000.00	88270.00
xiv)	Office Expenses/Misc. Expenses	8566163.00	4960612.00
xv)	Legal Charges/Professional charges	933240.00	873252.00
xvi)	Magazines & Journals	12789.00	31173.00
xvii)	Other specify	--	---
<b>Total</b>		<b>33806872.00</b>	<b>31487733.00</b>

<b>SCHEDULE 12 (C)-- Transportation Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i) Vehicles (owned by educational Institution)			
a)	Running Expenses	1731140.00	1565584.00
b)	Repair& Maintenance	347956.00	831890.00
c)	Insurance Expenses	262616.00	342402.00
2.Vehicles taken on rent/lease			
a)	Rent /Lease Expenses	20000.00	47500.00
<b>Total</b>		<b>2361712.00</b>	<b>2787376.00</b>

<b>SCHEDULE 12 (D) Repair and Maintainance</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Buildings	13013216.00	14255578.00
ii)	Furniture & Fixture	20000.00	4500.00
iii)	Plant & Machinery	297786.00	227054.00
iv)	Office Equipment	271350.00	225967.00
v)	Cleaning Material & services	2184151.00	2092120.00
<b>Total</b>		<b>15786503.00</b>	<b>16805219.00</b>

<b>SCHEDULE 12 (E)-- Finance Cost</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Interest on fixed loans	--	--
ii)	Interest on other loan	--	--
iii)	Bank Charges	11001.00	6510.00
iv)	Other	--	--
<b>Total</b>		<b>11001.00</b>	<b>6510.00</b>

<b>SCHEDULE 12 ( F)--</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Transferred to Pension and Pensionery account	4320000.00	--

<b>Total 12(A+B+C+D+E +F)</b>	<b>78510636.00</b>	<b>62535034.00</b>
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1. Fixed Asset written off	--	562374.00
2. Depreciation	28057803.21	56199607.18
<b> Total</b>	<b>28057803.21</b>	<b>56761981.18</b>

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**RECEIPTS & PAYMENTS ACCOUNTS FOR THE YEAR ENDED 31<sup>ST</sup> MARCH, 2015 (CASH FLOW STATEMENT)**

Opening Balance			Current Year	Previous Year			Current Year	Previous Year
a) Cash in hand			0.27	400.27	a) Establishment Expenses	16	40 92 31 043.00	37 09 48 782.00
b) Imprest	13		3 52 650.00	3 34 650.00	b) Administrative Expenses	17	7 82 30 636.00	6 24 55 034.00
c) Bank Balance			9 95 72 493.23	8 67 91 725.23				
					2. Expenditure on fixed Assets & on capital work in progress			
					a) Purchase of fixed Assets			
2. Grants In-Aid Received from Ministry of HRD					b) Expenditure on capital work in Progress	18	37 87 11 142.00	21 90 31 863.00
Deptt. Of Education. Govt. of India, New Delhi Vide Sanction Order No. Non Plan Salary & Non Salary )								
F No.9-9/2014-TS.VII dtd.03.06.2014			9 79 48 000.00	9 07 00 000.00	3. Other payments	19	7 03 12 054.00	5 45 24 718.00
F No.9-9/2014-TS.VII dtd.24.07.2014			3 48 00 000.00	9 07 00 000.00				
F No.9-9/2014-TS.VII dtd.05.09.2014			6 31 48 000.00	9 07 00 000.00	Closing Balance			
F No.9-9/2014-TS.VII dtd.18.11.2014			9 00 00 000.00	9 07 00 000.00	a) Cash in hand	20	.27	.27
F No.9-9/2014-TS.VII dtd.21.01.2015			10 58 96 000.00	1 00 00 000.00				
F No.9-9/2014-TS.VII dtd.26.3.2015			2 50 00 000.00					
F No.9-9/2014-TS.VII dtd.21.01.2015			1 10 80 000.00	1 00 00 000.00	b) Imprest		3 57 650.00	3 52 650.00
F No.9-9/2014-TS.VII dtd.05.09.2014			1 10 80 000.00	50 00 000.00				
F No.9-9/2014-TS.VII dtd.31.12.2014			90 80 000.00	1 10 00 000.00	Bank Balance		15 57 24 952.16	9 95 72 493.23
F No.9-9/2014-TS.VII dtd.21.01.2015			90 80 000.00	40 00 000.00	a) <u>In Current Accounts</u>			
F No.9-9/2014-TS.VII dtd.26.03.2015			40 00 000.00		Details of Bank Balance:			
Plan (Capital) ,Plan SC- Capital & Plan ST- Capital				12 98 48 000.00				
F. No.9-8/2014-TS.VII dtd 05.06.2014, 26.09.2014, 05.12.2014, 31.12.2014, 03.02.2015,& 30.03.2015			39 03 00		1. Plan Fund (Capital) -60669296.00 2. Plan Fund(General)- 24060161.00			

		<b>000.00</b>		-		
			<b>8 16 21 000.00</b>			
				<b>3. Non Plan Fund (Salary) -38610058.91</b>		
Plan -General ,Plan SC- General & Plan ST- General				<b>4. Non Plan Fund - 15100647.93</b>		
F. No.9-8/2014-TS.VII dtd 05.06.2014, 26.09.2014,			<b>2 07 57 000.00</b>	<b>(Non Salary )</b>		
05.12.2014, 31.12.2014, 03.02.2015,& 30.03.2015		<b>4 22 00 000.00</b>		<b>5. Students Cation Money -13801886.00</b>		
			<b>1 02 22 000.00</b>	<b>5. Secuirity Deposits, - 3482902.32</b>		
				<b>EMD and others</b>		

Sd/- Finance Officer  
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**SCHEDULE FORMING PART OF RECEIPTS AND PAYMENTS ACCOUNTS  
FOR THE YEAR ENDED 31<sup>ST</sup> MARCH, 2015**

(Amount in Rs.)

SCHEDULE 13A -- Opening Balance		Current Year	Previous Year
i)	Cash in hand	0.27	400.27
ii)	Imprest	352650.00	334650.00
iii)	AXIS Bank A/c	6078577.00	4448157.00
iv)	State Bank of India (NEE A/c)	14889.00	14889.00
v)	State Bank of India (Society for NERIST A/c)	93479027.23	82328679.23
<b>TOTAL</b>		<b>99925143.50</b>	<b>87126775.50</b>

SCHEDULE 13B -- GRANTS from MHRD		Current Year	Previous Year
<b>a) Plan (Capital)</b>			
	F No.9-8/2014-TS.VII dtd.05.06.2014.	23250000.00	5963000.00
	F No.9-8/2014-TS.VII dtd.05.06.2014.	4500000.00	2981000.00
	F No.9-8/2014-TS.VII dtd.05.06.2014.	2250000.00	30807000.00
	F No.9-8/2014-TS.VII dtd.26.09.2014	2250000.00	1491000.00
	F No.9-8/2014-TS.VII dtd.26.09.2014	4500000.00	15405000.00
	F No.9-8/2014-TS.VII dtd.26.09.2014	23250000.00	2981000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	2250000.00	1491000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	4500000.00	2981000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	23250000.00	15400000.00
	F No.9-8/2014-TS.VII dtd.31.12.2014	5812000.00	39020000.00
	F No.9-8/2014-TS.VII dtd.31.12.2014	563000.00	7552000.00
	F No.9-8/2014-TS.VII dtd.31.12.2014	1125000.00	3776000.00
	F No.9-8/2014-TS.VII dtd03.02.2015	17700000.00	5960000.00
	F No.9-8/2014-TS.VII dtd 03.02.2015	8850000.00	63338000.00
	F No.9-8/2014-TS.VII dtd 03.02.2015	91450000.00	12323000.00
	F No.9-8/2014-TS.VII dtd 30.03.2015	735000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	125293000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	1470000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	7595000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	26465000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	13242000.00	--
	<b>Total (a)</b>	<b>390300000.00</b>	<b>211469000.00</b>
<b>b) Plan (General)</b>			
	F No.9-8/2014-TS.VII dtd.05.06.2014	562000.00	1125000.00
	F No.9-8/2014-TS.VII dtd.05.06.2014	5813000.00	5812000.00
	F No.9-8/2014-TS.VII dtd.05.06.2014	1125000.00	562000.00
	F No.9-8/2014-TS.VII dtd.26.09.2014	1125000.00	282000.00
	F No.9-8/2014-TS.VII dtd.26.09.2014	5813000.00	563000.00

	F No.9-8/2014-TS.VII dtd.26.09.2014	562000.00	2913000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	562000.00	7362000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	1125000.00	1425000.00
	F No.9-8/2014-TS.VII dtd.05.12.2014	5813000.00	713000.00
	F No.9-8/2014-TSVII dtd31.12.2014	563000.00	7896000.00
	F No.9-8/2014-TSVII dtd31.12.2014	5812000.00	842000.00
	F No.9-8/2014-TSVII dtd31.12.2014	1125000.00	1484000.00
	F No.9-8/2014-TSVII dtd03.02.2015	338000.00	--
	F No.9-8/2014-TSVII dtd03.02.2015	675000.00	--
	F No.9-8/2014-TSVII dtd03.02.2015	3487000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	5967000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	1155000.00	--
	F No.9-8/2014-TS.VII dtd 30.03.2015	578000.00	--
	<b>Total (b)</b>	<b>42200000.00</b>	<b>30979000.00</b>

	<b>c) Non Plan ( Salary Components)</b>		
	F No.9-9/2014-TS.VII dtd.03.06.2014	97948000.00	90700000.00
	F No.9-9/2014-TS.VII dtd.24.07.2014	34800000.00	90700000.00
	F No.9-9/2014-TS.VII dtd.05.09.2014	63148000.00	90700000.00
	F No.9-9/2014-TS.VII dtd.18.11.2014	90000000.00	90700000.00
	F No.9-9/2014-TS.VII dtd.21.01.2015	105896000.00	----
	F No.9-9/2014-TS.VII dtd.26.03.2015	25000000.00	---
	<b>Total ( c )</b>	<b>416792000.00</b>	<b>362800000.00</b>
	<b>Total d) Non Plan (Non Salary Components</b>		
	F No.9-9/2014-TS.VII dtd.03.06.2014	11080000.00	10000000.00
	F No.9-9/2014-TS.VII dtd.05.09.2014	11080000.00	10000000.00
	F No.9-9/2014-TS.VII dtd.31.12.2014	9080000.00	5000000.00
	F No.9-9/2014-TS.VII dtd.21.01.2015	9080000.00	11000000.00
	F No.9-9/2014-TS.VII dtd.26.03.2015	4000000.00	4000000.00
	<b>Total ( d )</b>	<b>44320000.00</b>	<b>40000000.00</b>
	<b>Total Grants (a+b+c+d)</b>	<b>893612000.00</b>	<b>645248000.00</b>

**SCHEDULE 14A – (ACADEMIC RECEIPTS) Other Income**

		Current Year	Previous Year
<b>Fees from Students</b>			
a)Academic			
1	Tuition fee	7772275.00	7670790.00
2	Admission fee	94155.00	97895.00
3	Enrolment fee	--	--
4	Library admission fee	----	----
5	Laboratory fee	---	---



6	Art & Craft fee	--	--
7	Registration fee	150200.00	36235.00
8	Syllabus fee	80595.00	80055.00
<b>Total (a)</b>		<b>8097225.00</b>	<b>7884975.00</b>
<b>b) Examination</b>			
i)	Admission test fee	--	--
2)	Annual Examination fee	1309835.00	1081305.00
3)	Mark sheet, certificate fee	926545.00	776920.00
4)	Convocation fee	153100.00	117050.00
<b>Total (b)</b>		<b>2389480.00</b>	<b>1975275.00</b>

<b>c) Other fee</b>			
1	Identity Card fee	36840.00	35940.00
2	Fine/Miscellaneous fee	626884.00	693120.00
3	Medical fee	232120.00	224560.00
4	Transportation fee	--	---
5	Hostel fee	195170.00	798455.00
6	ECA fee	878740.00	850120.00
7	Other fee	889220.00	1443225.00
<b>Total (c)</b>		<b>2858974.00</b>	<b>4045420.00</b>

<b>d) Sale of publication</b>			
1	Sale of syllabus and Question Paper etc	--	---
2	Sale of prospectus including admission forms	14241986.93	2999648.00
<b>Total d)</b>		<b>14241986.93</b>	<b>2999648.00</b>
<b>Total 14 (A) (a+b+c+d)</b>		<b>27587665.93</b>	<b>16905318.00</b>

**SCHEDULE 14B – (MISC RECEIPTS) Other Income**

		Current Year	Previous Year
<b>a) Income from Land &amp; Building</b>			
1	Hostel Room Rent/ Guest house Seat Rent	611500.00	795500.00
2	License fee	--	---
3	Hire charges of Auditorium/Play ground/Convention Centre	----	28800.00
4	Electricity & Water Charges	1660539.00	2045493.00
5	Building and ATM rent	279991.00	92547.00
<b>Total (a)</b>		<b>2552030.00</b>	<b>2962340.00</b>

<b>b. Interest on term deposit / othr deposits</b>			
1	Interest on mobilization advance of Construction of Girl's hostel ( Society for NERIST A/c)	890000.00	---
2	NEE A/c	179839.00	231197.00
3	AXIS Bank A/c	883917.00	485289.00
<b>Tota (b)</b>		<b>1953756.00</b>	<b>716486.00</b>

<b>c .Other</b>			
1	Income from consultancy	--	---
2	RTI fee	3995.00	5670.00
3	Income from Royalty	---	---
4	Sale of application form (Recruitment)	239150.00	10400.00
5	Misc Receipt( Sale of tender form, waste paper, etc	24050.00	22230.00
6	Bus Fare / Hire charges	113897.00	192262.00
7	Profit on Sale/disposal Assets	4000.00	58385.00
8	Bond recovery from Faculty	462457.00	---
<b>Total ( c)</b>		<b>847549.00</b>	<b>288947.00</b>
<b>TOTAL 14 (B) (a+b+c)</b>		<b>5353335.00</b>	<b>3967773.00</b>

<b>TOTAL 14 (A) +14 (B)</b>	<b>32941000.93</b>	<b>20873091.00</b>
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#### **SCHEDULE 15--- Any Other receipts**

i)	Caution Money from Students	2973845.00	3270633.00
ii)	Advances Received from Staff	4204761.00	4236926.00
iii)	Security Deposit	5353053.00	4178765.00
iv)	Earnest Money Deposit	5000.00	800000.00
iv)	Students Welfare Fund	236780.00	232730.00
v)	Alumani association etc	149825.00	156360.00
vi)	Loan/ advance to Project A/c etc	30000000.00	30115297.00
vii)	Loan/ advance to Nodal Centre etc	--	265000.00
viii)	Other misc advance	11637250.00	93892.00
ix)	Investment	11528819.00	10288071.00
<b>TOTAL</b>		<b>66089333.00</b>	<b>53637674.00</b>

**SCHEDULE 16—Establishment Expenses**

a)	Salary & Wages	314033290.00	277352277.00
b)	Allowance & Bonus	1363116.00	1336698.00
c)	Contribution to Provident Fund	27945200.00	27094496.00
d)	Contribution to Other fund (Specify)		
i	NPS	9591960.00	9093418.00
ii	EPF	3158863.00	3617763.00
iii	GPF	81680.00	48960.00
e)	Staff Welfare Expenses	--	---
f)	Retirement and terminal benefit s etc	3485480.00	4028303.00
g)	LTC facility	6555710.00	4599053.00
h)	Medical facility	16919812.00	15047780.00
i)	Children Educational Allowances	5227224.00	5426933.00
j)	Honorarium	5130850.00	6350900.00
k)	TA/DA Expenses	--	---
l)	Other ( Specify)		
i)	Liveries & Uniforms	736395.00	311011.00
ii)	Professional Development Allowance to Faculty	4547463.00	2759964.00
iii)	Salary & Wages for Kendriya Vidyalaya	10454000.00	13881226.00
	<b>TOTAL</b>	<b>409231043.00</b>	<b>370948782.00</b>

(Amount in Rs.)

<b>SCHEDULE 17 A -- Academic Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Laboratory Expenses	4007148.00	1741471.00
ii)	Field Work/ Participation	--	--
iii)	Seminar/Workshop	--	---
iv)	Payment to visiting faculty	419669.00	260071.00
v)	Examination	530147.00	407683.00
vi)	Student Welfare Expenses	4823693.00	4022567.00
vii)	Admission Expenses	281070.00	210485.00
viii)	Convocation Expenses	2511995.00	----
ix)	Publications	--	---
x)	Stipend/means cum merit scholarship	9480132.00	4660888.00
xi)	Subscription expenses	--	---
xii)	Other Specy (NCC/NSS)	170694.00	145031.00
<b>TOTAL</b>		<b>22224548.00</b>	<b>11448196.00</b>

(Amount in Rs.)

<b>SCHEDULE 17 (B)-- Other Administrative Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Entrance Examination	2686334.00	3710530.00
ii)	Printing & Stationary	3585192.00	1556149.00
iii)	Traveling Allowances	5007206.00	3549786.00
iv)	Advertisement/Publicity	346205.00	362444.00
v)	Postage, & Telephone	588048.00	584410.00
vi)	Telegram & Internet Charges	--	4194052.00
vii)	Electricity and Power	11271340.00	10982815.00
viii)	Water Charges	530355.00	495240.00
ix)	Insurance	--	--
x)	Rent,Rates and taxes (Including Property Tax )	--	---
xi)	Expenses on Seminar /Workshops	---	19000.00
xii)	Hospitality	---	---
xiii)	Auditors Remuneration	---	88270.00
xiv)	Office Expenses /Misc. Expenses	8566163.00	4960612.00
xv)	Legal Charges/Professional charges	933240.00	873252.00
xvi)	Magazines & Journals	12789.00	31173.00
xvii)	Other specify	--	--
<b>Total</b>		<b>33526872.00</b>	<b>31407733.00</b>

<b>SCHEDULE 17 (C)-- Transportatio0n Expenses</b>		<b>Current Year</b>	<b>Previous Year</b>
i) Vehicles (owned by educational Institution)@			
a)	Running Expenses	1731140.00	1565584.00
b)	Repair& Maintenance	347956.00	831890.00
c)	Insurance Expenses	262616.00	342402.00
2.Vehicles taken on rent/lease			
a)	Rent /Lease Expenses	20000.00	47500.00
<b>Total</b>		<b>2361712.00</b>	<b>2787376.00</b>

<b>SCHEDULE 17 (D) Repair and Maintainance</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Buildings	13013216.00	14255578.00
ii)	Furniture & Fixture	20000.00	4500.00
iii)	Plant & Machinery	297786.00	227054.00
iv)	Office Equipment	271350.00	225967.00
v)	Cleaning Material & services	2184151.00	2092120.00
<b>Total</b>		<b>15786503.00</b>	<b>16805219.00</b>

<b>SCHEDULE 17 (E)-- Finance Cost</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Interest on fixed loans	--	--
ii)	Interest on other loan	--	--
iii)	Bank Charges	11001.00	6510.00
iv)	Other	--	--
<b>Total</b>		<b>11001.00</b>	<b>6510.00</b>

<b>SCHEDULE 17 ( F)--</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Transferred to Pension and Pensionery account	4320000.00	--

<b>Total 17 (A to F )</b>	<b>78230636.00</b>	<b>62455034.00</b>
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<b>SCHEDULE 18A -- Expenditure on Capital Works in Progress/ completed</b>		<b>Current Year</b>	<b>Previous Year</b>
<b>a)Plan (Capital) works</b>			
i)	Construction of Road	14999653.00	6277966.00
ii)	Construction of 24 no Class Rooms	15000000.00	10528618.00
iii)	Construction of CEP Building	5512000.00	30000000.00
iv)	Construction of Silver Jubilee Hall	40000000.00	70000000.00
v)	Construction of Girl's Hostel	9628886.00	27065423.00
vi)	Construction of Boy,s Hostel	25000000.00	26765671.00
vi)	Construction of Gallery in play ground	1081500.00	--
vii)	Construction of utility centre	12500000.00	--
viii)	Construction of Extension of admn building	10000000.00	--
ix)	Construction of Flood Protection works	50000000.00	--
x)	Construction of widening of road	8000000.00	--
xi)	Construction of permanent Admn building	40000000.00	--
xii)	Construction of library building	39000000.00	--
xiii)	Construction of residential quarters	23000000.00	--
xiv)	Other Construction works	10685618.00	5447219.00
<b>Total</b>		<b>304407657.00</b>	<b>176084897.00</b>

<b>SCHEDULE 18B -- Expenditure on the Purchase of Lab/Workshop/ office equipments</b>		<b>Current Year</b>	<b>Previous Year</b>
<b>Equipments</b>			
i)	Mechanical Engg. Department	305972.00	844200.00
ii)	Applied Science Department	943129.00	(-)145432.00
iii)	Electrical Engg. Department	113794.00	784911.00
iv)	Chemistry Department	--	97713.00
v)	Computer Science & Engg. Department	1146044.00	(-)37363.00
vi)	Agricultural Engg. Department	222687.00	(-)5979.00
vii)	Humanities & Social Science Department	---	(-)131273.00
viii)	Physics Department	909597.00	(-)777703.00
ix)	E.T.Cell	37949.00	100450.00
x)	CMS	150000.00	--

xi)	ACCF	---	--
xii)	Electronics & Commn. Engg.	474824.00	--
xiii)	Civil Engg. Department	71249.00	111343.00
xiv)	CRF	---	--
xv)	Maths	--	--
xvi)	CATARD	--	--
xvii)	Medical Equipment	---	55000.00
xviii)	LAN/WAN	2192808.00	15473652.00
xix)	Computer Peripherals	3172139.00	357470.00
xx)	Electrical appliance	632460.00	82840.00
xxi)	Plant & Machinery	4795000.00	673455.00
xxii)	Office Equipment	1925868.00	527357.00
xxiii)	Electrical Installation	--	531856.00
xxiv)	Tube well & Water supply system	2844625.00	62855.00
xxv)	Sport equipment	1439921.00	---
	<b>TOTAL</b>	<b>21378066.00</b>	<b>18605352.00</b>

<b>SCHEDULE 18C</b>		<b>Current Year</b>	<b>Previous Year</b>
Library Books/Journals			
i)	Library Books/Journals	<b>4222525.00</b>	<b>3961579.00</b>

<b>SCHEDULE 18D</b>		<b>Current Year</b>	<b>Previous Year</b>
Furniture & Fixtures		<b>13033683.00</b>	<b>2676562.00</b>

<b>SCHEDULE 18E</b>		<b>Current Year</b>	<b>Previous Year</b>
Vehicle		---	---

<b>SCHEDULE 18F</b>		<b>Current Year</b>	
Plan (General )Activities Expenditure			
Constn of C.C.Drain		901966.00	1414120.00
Constn of Retaining Wall		15911010.00	4009835.00
Renovation works for buildings		7595129.00	5353013.00
Recarpeting of road		3220190.00	--
Other campus development works		8040916.00	6926505.00
Total		35669211.00	17703473.00

<b>Total 18 ( A to F )</b>		<b>378711142.00</b>	<b>219031863.00</b>
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<b>SCHEDULE 19 -- Other payments</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Advances to Staff & others	3735450.00	3875850.00
ii)	Security Deposits to contractors	9346851.00	948759.00
iii)	Caution Money of Students	2212029.00	1854361.00
iv)	Investment (Short Term Deposit receipt of Axis Bank / SBI	12592575.00	11528819.00
vi)	Student Welfare fund	83899.00	391000.00
vii)	Alumani Association	--	365630.00
viii)	Loan to Project Account	30104000.00	30000000.00
ix)	Secuirity Deposit by Institute to EE(E), Deptt of Power, NLG	--	5433448.00
x)	Earnest money deposit	600000.00	--
x)	Other misc advance	11637250.00	126851.00
	<b>Total</b>	<b>70312054.00</b>	<b>54524718.00</b>

<b>SCHEDULE 20 -- Closing Balance</b>		<b>Current Year</b>	<b>Previous Year</b>
i)	Cash in hand	0.27	0.27
ii)	Imprest	357650.00	352650.00
iii)	AXIS Bank	13290336.87	6078577.00
iv)	State Bank of India (NEE A/c)	14734.00	14889.00
v)	State Bank of India (Society for NERIST)	142419881.29	93479027.23
	<b>Total</b>	<b>156082602.43</b>	<b>99925143.50</b>

Sd/- Finance Officer  
NERIST

Sd/-Director  
NERIST

## Accounting Policy and Notes

On Accounting Policy of the Institute, we follow the procedure as :-

### 1.

- a) The Institute followed accrual basis for maintaining its accounts. As per implementation of revised accounting standard in educational institutions many sub heads are included.
- b) The Institute have been following Bank accounts as
  - i. Society Account of NERIST
  - ii. Project Account of NERIST
  - iii. Contributory provident Fund Account of NERIST
  - iv. Scholarship Account of NERIST
  - v. NERIST Pension and pensionary account
  - vi. We maintained a separate NEE account/Axis bank account but it is a subsidiary of society Account of NERIST
- c) Account of the Institute are prepared based on GFR/CCS/CTR/ and other rules/guide lines of the Government of India.

### 2. Provision of out standing expenses/out standing dues

Provision of.out standing expenses/out standing dues under Income and Expenditure account are as follows :

Sl no.	Heads	Current year	Previous year	Remarks
1	Medicine	1000000.00	1250000.00	Outstanding expenses
2	electricity	850000.00	800000.00	-do-
3	Administrative Expenses (Audit fee)	360000.00	130000.00	-do-
4	Retirement benefit	2996946.00	--	Provision for financial year 2015-16
5	Leave Encashment	2259080.00	--	Provision for financial year 2015-16
6	Shop Rent	90905.00	189993.00	Outstanding Dues

**3. No. of students as on 31.03.2015 – 1727**

**4. No. of Teacher as on 31.03.2015 – 138**

**Sd/- Registrar, NERIST**

**Sd/- Director, NERIST**