

Annual Report 2015-16



NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR

Vision

The institute aims to provide the best infrastructure and amenities to the students. The institute envisions being one of the best technical institutions in South-East Asia. The institute aims to attract students from the neighbouring south-east Asian countries in view of the Look-East Policy of the Government of India. The institute strongly believes that the success of an institute lies in the faculty and will leave no stone unturned to attract the best faculty available in the country.

Mission

The institute being accorded the status of 'An Institute of National Importance' aspires to be a knowledge hub for the region. The institute through its academic and research activities would act as incubation centre for aspiring 'Technopreneurs'. The institute provides an ideal platform for national integration through emotional integration as half the students are from outside the state. It envisions being an institute producing human resource of world class standard who will contribute significantly in the well being of mankind.

Objectives

- *To nurture and develop talented young minds, encouraging creativity with academic excellence.*
- *To provide a platform to young entrepreneurs and technocrats to experiment their dreams and aspirations.*
- *To encourage faculty and students to conduct research of international standard.*
- *To produce students fulfilling the employability criteria of MNCs.*
- *To set up Laboratories with latest Equipment and other facilities.*
- *To set up international standard infrastructure for extra curricular activities.*

Foreword

It is deemed an honour for me to present before you the 6th Annual Report along with the Annual Accounts and the Audited Report of the National Institute of Technology Manipur, Imphal, Manipur for the year 2015-16.

NIT Manipur is one of the 10 new NITs set up by the Central Government in 2010 during the 11th Five Year Plan in the State/UTs which are not having NITs. Initially, the Institute offered only three B.Tech programmes in EEE, ECE and CSE streams.

NIT Manipur has introduced several new programmes during 2015-16. M.Tech programme in Civil Engineering was introduced from the academic session 2015-16. In addition PhD programme in CSE, EEE, ECE, CE, ME, Physics, Chemistry, Mathematics and English were also introduced. The institute has started shifting to the permanent campus. Administrative Block, Boys Hostel, Department of Basic sciences and humanities, Civil Engineering and Mechanical Engineering have also started functioning in the



permanent campus from the academic session 2015-16. The construction of a Multipurpose Building and Boys Hostel at permanent site was entrusted to CPWD, under an MOU signed between CPWD and NIT Manipur. New streams of PG courses will also be gradually added. Several regular faculty members and non-faculty members have also been recruited during 2015-16. All efforts are being made to fill all vacant positions at the earliest. The placement for the first two batches have been very encouraging. The institute has also setup Center of Excellence in collaboration with HP India and Powai labs, Mumbai for imparting industry standard training to the students.

In addition to the academic activities, the students have been actively involved in organizing several cultural, technical and sports activities. The Annual Report highlights the various activities and the present status of the Institute.

I would like to take this opportunity to express my sincere appreciation to all stakeholders of the Institute who has contributed in every possible way to make NIT Manipur an Institute of repute.

Dr. S. Birendra Singh
Director, NIT Manipur

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1. INTRODUCTION

1.1. Mission

The Institute being accorded the status of '*An Institute of National Importance*' aspires to be a knowledge hub for the region. The Institute through its academic and research activities would act as incubation centre for aspiring 'Technopreneurs'. The Institute provides an ideal platform for national integration through emotional integration as half the students are from outside the state. It envisions being an Institute producing human resource of world class standard who will contribute significantly in the wellbeing of mankind.

1.2 Vision

The Institute aims to provide the best infrastructure and amenities to the students. The Institute envisions being one of the best technical institutions in South-East Asia. The institute aims to attract students from the neighbouring south-east Asian countries in view of the Look-East Policy of the Government of India. The Institute strongly believes that the success of an Institute lies in the faculty and will leave no stone unturned to attract the best faculty available in the country.

1.3. Objectives

- To nurture and develop talented young minds, encouraging creativity with academic excellence.
- To provide a platform to young entrepreneurs and technocrats to experiment their dreams and aspirations.
- To encourage faculty and students to conduct research of international standard.
- To produce students of industry standard.
- To set up Laboratories with latest equipment and other facilities.
- To set up international standard infrastructure for extra curriculum activities.

1.4 The System

The Institute offers four years full time Bachelor of Technology degree courses in Computer Science Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Civil Engineering and Mechanical Engineering. The academic session is divided into two semesters, July-Dec and Jan-May. Five days week period with at least 90 working days in each semester.

2.0 AN OVERVIEW

2.1 Profile

National Institute of Technology, Manipur has been set up by the Ministry of Human Resource Development, Govt. of India to cater to the needs of the thousands of students from the North East and outside in the field of Technical Education. With the support from the Govt. of Manipur, NIT Manipur started its first session on 2nd August, 2010 in Government Polytechnic, Takyel Campus. The National Institute of Technology Act, 2007, amended in 2012 declared 20 existing and 10 new NITs as Institutes of National Importance. The National Institute of Technology Manipur was one of the new NITs established. The institute is governed by the NIT Act 2007 and its statutes, and under the overall guidance of the Board of Governors and the Hon'ble President of India functions as the Visitor of the Institute.

In status it is regarded equivalent to a Central University. Half of students admitted to NITs are reserved for the students from the state where they are located and the other 50% is taken from the rest of the country through Central Seat Allocation Board on the basis of their JEE (Main) ranking and marks obtained in Class XII Board examination.

2.2 Temporary Campus

The temporary campus is located at Government Polytechnic Campus, Takyel, Imphal. The campus has two Boys hostels, one Girls Hostel and an Academic Block. The campus is hardly 4 km from the main market. The Institute shares the existing facility of playgrounds, indoor stadium, basketball court etc. with Government Polytechnic College.

2.3 Permanent Campus

The first Boys Hostel with a capacity of 150 was inaugurated on 21st Feb 2014 by the hon'ble Chief Minister of Manipur. The campus is located at the foot hills of the picturesque Langol hills at Lamphelpat in the outskirts of Imphal measuring an area of 341 acres. The campus is around 4 km from the main market of Imphal.



The Imphal Tulihal International Airport is located at a distance of 7 km from the campus. It is just 15 minutes drive from the campus and is well connected by multiple daily flights with Delhi, Kolkata and Guwahati. Imphal can be reached through National Highways no.2 and 37. The nearest railway station is Dimapur in Nagaland. Imphal can also be reached through Silchar Railway Station in Assam and Jiribam in Manipur. It takes around 8 hrs by bus from Dimapur to reach Imphal. The academic block including library in the permanent campus will be fully functional by January 2015. The Administrative block will also be ready by April 2015.

2.4 Administration

National Institute of Technology is an autonomous Institute under the Ministry of Human Resource Development (MHRD), Govt. of India. The Institute functions under the overall guidance of the Board of Governors. The other statutory bodies are the Finance Committee, Building and Works Committee and the Senate. The Director is the principal academic and executive officer of the Institute.

Administrative Staff:

Sl. No.	Employee Name	Designation
1	Dr. S. Birendra Singh	Director
2	R.K. Lalit Singh	Registrar
3	Samarjit Singh	Executive Engineer
4	L. Dorendro Singh	Assistant Registrar (Admn & Estt)
5	Dr. I. Bidhanchandra	Assistant Registrar (Acad)
6	Kh. Saikya Singh	Technical Officer
7	H. Somorendro Singh	Accountant
8	Suchitra Wangkhem	Superintendent
9	L. Somokanta	Technical Assistant
10	Th. Robita Devi	Stenographer
11	Amir Hussain	Junior Assistant
12	Richard Mareem	Junior Assistant
13	Ngaihlun Tonsing	Junior Assistant
14	Fanny Khangembam	Junior Assistant
15	L. Jenifer	Junior Assistant
16	Kh. Narmada Devi	Junior Assistant
17	Ng. Binoi Singh	Junior Assistant
18	H. Monorama Devi	Account Assistant
19	G. Ranita Devi	Store Keeper



2.5 Academic Programmes

The Institute at present offers Undergraduate programmes, Postgraduate programmes and PhD programmes. The Institute offers four years full time Bachelor of Technology degree courses in Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Civil Engineering and Mechanical Engineering. M.Tech programmes are also offered in CSE, EE, ECE and CE. In addition the Institute offers M.Sc programme in Physics, Chemistry and Mathematics. The academic session is divided into two semesters, July-Dec and Jan-May. Five days a week working with at least 90 working days in each semester.

2.6 Admission Procedure

All admissions to National Institute of Technology Manipur are through Joint Entrance Examination (JEE) Main. Candidates interested in seeking admission in any NITs have to appear in JEE (Main) conducted by Central Board of Secondary Education (CBSE) on behalf of Government of India and fulfill all formalities of the CBSE. Counseling centres are set up throughout the country so that every aspirant is provided equal opportunity. The counselling takes place in a very transparent system. The Government of India has fixed 50% quota of seats for Manipur and 50% quota for other states based on their JEE (Main) ranks, normalized by taking into account marks obtained in the Class XII Board examination.

2.7 Examination

The Under graduate examinations of the Institute are conducted centrally by the Examination Cell of the Institute. Students are continuously evaluated through a continuous grading process. The academic performance of a student is assessed in terms of two indices viz; the Semester Performance Index (SPI) for a semester and Cumulative Performance Index (CPI) which is the Grade Point index for all the completed semesters at any point of time.

2.8 Training and Placement

The Institute's Training and Placement Cell (T&P Cell) handles all issues related to students internship and final placements. The T&P Cell regularly organized industrial tour for the students thereby providing an opportunity to relate classroom teachings with reality. Workshops are also organized on regular basis thereby providing an interface between academic and industry.

2.9 Academic Calendar

The Academic Calendar prepared by the Institute and approved by the BOG is notified for the students and staff. The Academic Calendar reflects the various activities that are conducted in the Institute in an academic year

ACADEMIC CALENDAR, 2015-16

Sl. No.	Name of the academic function	Date/month/Year
1	Registration in Even Semesters	1-7 January 2015
2	Commencement of class	8 January 2015
3	Assignment I	2 February 2015
4	Project Presentation I of B.Tech VIII Sem	4 February 2015
5	Unit test I	6 February 2015
6	Assignment II	23 February 2015
7	Unit Test II	2 March 2015
8	Project Presentation II of B.Tech VIII Sem	5 March 2015
9	Mid Semester Examination	16-20 March 2015
10	Result of MSE	25 March 2015
11	Assignment III	27 March 2015
12	Unit Test III	1 April 2015
13	Last date of practical examination	15 April 2015
14	Project Demonstration and Grand Viva of B.Tech VIII	22 April 2015
15	End Semester Examination	1-15 May 2015
16	Semester Result Declaration	30 May 2015
17	Summer vacation (Students)	1 June-July 31 2015
18	Summer vacation (Faculty)	1-30 June 2015
19	Re-Evaluation	3-7 August 2015
20	Registration in Odd Semester	3-7 August 2015
21	Registration in B.Tech I Semester	As per JEE Guideline
22	Registration in M.Tech I Semester	Through Central Counseling
21	Commencement of Odd Semester Class	6 August 2015
22	Assignment I	28 August 2015
23	Project Literature survey presentation I of B.Tech VII	1 September 2015
24	Thesis Literature Survey of MSc/M.Tech III Semester	1 September 2015
25	Unit test I	4 September 2015
26	Assignment II	24 September 2015
27	Unit Test II	29 September 2015
28	Project Progress Seminar Presentation of B.Tech VII	1 October 2015
29	Thesis State of Art Seminar of MSc/M.Tech III Semester	1 October 2015
30	Mid Semester Examination	5-12 October 2015
31	Durga Puja Vacation	16-25 October 2015
32	Result of MSE	20 October 2015
33	Assignment III	30 October 2015
34	Unit Test III	6 November 2015
35	Last date of practical examination	10 November 2015
36	Project Progress Seminar Presentation of B.Tech VIII	12 November 2015
37	Thesis State of Art Seminar of MSc/M.Tech III Semester	12 November 2015
38	End Semester Examination	18-30 November 2015
39	Semester Result Declaration	11 December 2015
40	Winter vacation (Students)	1-31 December 2015
41	winter vacation (Faculty)	16-31 December 2015
42	Re-Evaluation	1-6 January 2016
43	Registration in Even Semester	1-6 January 2016
44	Commencement of Even Semester Class	7 January 2016

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National Institute of Technology Manipur

	No. of Non-Faculty post sanctioned	Sanctioned Post of NIT Manipur as on 01-03-2015								
Sl. No .	Post	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Total	Filled Position	Vacant Position
1	Registrar	1	0	0	0	0	0	1	1	0
2	Asst. Registrar	1	0	0	0	0	1	2	1	1
3	Deputy Librarian/ Asst. Librarian	0	1	0	0	0	0	1	1	0
4	Nurse	0	1	0	0	0	0	1	0	1
5	Sports Officer	0	1	0	0	0	0	1	1	0
6	Executive Engineer	0	1	0	0	0	0	1	1	0
7	Technical Assistant	1	1	0	0	0	0	2	0	2
8	Technical Assistant (System)	0	1	0	0	0	0	1	0	1
9	Technical Assistant/Junior Engineer	0	0	1	2	5	5	13	0	13
10	Superintendent/ Accountant	1	0	1	0	0	2	4	0	4
11	Stenographer	1	0	0	0	0	0	1	1	0
12	Junior Assistant	2	0	2	1	2	0	7	4	3
13	Technician	2	2	0	0	0	0	4	0	4
14	Technician/Laborat ory Assistant/ Lab Work Assistant	0	0	1	2	6	3	12	1	11
15	Multitasking Staff	0	0	2	1	3	2	8	0	8
	Total	9	8	7	6	16	13	59	11	48

3.0 ACADEMIC STATISTICS

3.1 Courses Offered

(i) A four years B.Tech programmes in the following branches of Engineering and Technology were offered during the period:

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

(ii) A two years M.Tech programmes in the following branches of Engineering and Technology were also offered:

Computer Science & Engineering
Electrical & Electronics Engineering
Electrical & Communication Engineering
Civil Engineering

(iii) A two years M.Sc programmes in the following branches of Science were also offered:

Physics
Chemistry
Mathematics

(iv) In addition PhD programmes in English, Chemistry, Physics, Mathematics, CSE, ECE, ME were also offered.

3.2 Admission Details

Branch-wise Strength:

B.Tech.

Sl. No.	Batch	CSE	EEE	ECE	ME	CE	Total
1	2012-13	21	22	25	0	0	68
2	2013-14	25	19	18	29	27	118
3	2014-15	46	22	24	25	30	147
4	2015-16	43	24	21	26	25	139
Grand Total		135	87	88	80	82	472

M.Tech.

Sl. No.	Batch	CSE	EEE	ECE	ME	CE	Total
1	2014-15	15	13	14	0	0	42
2	2015-16	15 + 3 PT*	14 + 1 PT*	15 + 5PT*	0	15 + 2PT*	70
Grand Total		115	90	89	54	57	112

*PT = Part Time

M.Sc.

Sl. No.	Batch	Physics	Chemistry	Mathematics	Total
1	2014-15	13	13	10	36
2	2015-16	14	15	7	36
Grand Total		27	28	17	72

Ph.D.

Sl. No.	Batch	CSE	ECE	EEE	CE	ME	Phys ics	Chemis try	Mathematics	English	Total
1	2012-13	1	1	1	0	0	1	1	1	1	7
2	2013-14	6	3	2	0	0	3	0	3	0	15
3	2014-15	2	0	0	3	4	1	6	1	3	20
4	2015-16	2	0	0	2	2	0	1	0	0	7

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NIT MANIPUR ANNUAL REPORT, (2015-2016)

1. Academic Department:

- | | |
|--------------------------------|--|
| (a) Name of the Department | : Computer Science and Engineering |
| (b) Year of establishment | : 2010 |
| (c) Phone No. (Dept. / Office) | : 09774137312, 09856753856 |
| (d) E – mail address | : hodcse@nitmanipur.ac.in ,
thongam@gmail.com ,
manglem@gmail.com |

2. Brief Introduction of the Department:

Department of Computer Science and Engineering offers 4 years BTech programme with annual intake of 60 since the inception of NIT Manipur in the year 2010. It had already graduated 3 batches of B.Tech programme. Other than B.Tech programme the department offers 2 years M.Tech programme in Computer Science and Engineering with annual intake of 15 and 12 research scholars are currently pursuing Doctoral Programme in Computer Science and Engineering. The departmental research is focused in the areas of Image Processing and Computer Vision, Information Security (Cryptography, Watermarking, Steganography, Cyber Security), Artificial Intelligence & Robotics, Pattern Recognition. The department has state of the art laboratory and research facilities. The department attracts various talented students from all parts of the country. Placements for our graduates are the best sought in the Institute.

Most of the Alumni are pursuing successful career in the industry and some have opted for higher studies. For further development of the department, our alumni remain in constant touch with us and are contributing actively. The department has 11 experienced and sincere faculty members and 5 non faculty members.

3. Highlight of research activities:

Image Processing, Cryptography, Watermarking, Steganography, Artificial Intelligence, Machine Learning, Intelligent System Design, soft Computing, Networking, Network Security, Pattern Recognition, NLP.

4. Faculty Details:

Sl.No.	Name of Faculty	Designation	Date of joining	Degree & University/Institute	Subject Specialization
1.	Dr. Khumanthem Manglem Singh	Associate Professor	21/08/2010 (Deputation) 22/09/2014 (Regular)	B.Tech- DEI, Agra M.E.- DU M.S.- BITS Ph.D- IIT Guwahati	Image Processing, Digital Watermarking, Cryptography, Steganography
2.	Dr. Khelchandra Thongam	Assistant Professor	03/08/2011 (Contract) 04/12/2013 (Regular)	B.Tech- CSE, NERIST M.Tech- CSE, University of Aizu, Japan Ph.D- CSE, University of Aizu, Japan	Intelligent System Design, soft Computing, Hybrid Intelligent System
3.	Dr. Jina Yambem	Assistant Professor	02/08/2012 (contract) 21/1/2015 (Regular)	B.Tech- IT, Anna University, Chennai M.Tech- IT, Vellore Institute of Technology University Ph.D- CSE, NERIST	Image Processing, Steganography
4.	Dr. Prakash Choudhary	Assistant Professor	30/12/2013 (Regular)	B.Tech- IT, Rajasthan University M.Tech- CSE, NIT Nagpur Ph.D- CSE, NIT Jaipur	Image Processing, Pattern Recognition, Computer Vision
5.	Khundrakpam Johnson Singh	Assistant Professor	14 th January 2013 (contract)	B.E.- CSE, KBNCE, Karnataka M.Tech- CSE, Dayananda Sagar College of Engineering, Bangalore Ph.D- CSE, NIT Durgapur (Pursuing)	Network and Cyber Security, Machine Learning

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6.	<u>Chingakham Neeta Devi</u>	Assistant Professor	1 st January, 2013 (contract)	B.E.- CSE, Manipur University M.Tech- CSE, Visvesvaraya Technological University Ph.D- CSE, Assam University (Pursuing)	Parallel Computing, Image Processing
7.	<u>Anuradha Laishram</u>	Teaching Assistant	15 th January 2014 (contract)	B.E.- CSE, VTU, Belgaum, Karnataka M.E.- CSE, Bangalore University Ph.D- CSE, NIT Manipur (Pursuing)	Network Security
8.	<u>Sanabam Bineshwor Singh</u>	Teaching Assistant	4 th September 2014 (contract)	B.Tech- IT, Anna University, Coimbatore, Tamil Nadu M.Tech- CSE, SRM University, Kattankulathur, Chennai University	Networking
9.	<u>Maibam Mangalleibi Chanu</u>	Teaching Assistant	15 th January 2014 (contract)	B.E.- CSE, Anna University, Chennai M.E.- CSE, Anna University, Chennai Ph.D- CSE, NIT Manipur (Pursuing)	Networking
10.	<u>Khumanthem Jayanta Singh</u>	Teaching Assistant	15 th January 2014 (contract)	B.E.- VTU M.Tech- Manipal Institute of Technology, Manipal University	Information Security

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11.	<u>Teresa Longjam</u>	Teaching Assistant	15 th September 2014 (contract)	B.E.- CSE, Manipur University M.Tech- CSE, Rajasthan Technical University Ph.D- CSE, NIT Durgapur (Pursuing)	Networking, NLP
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5. Staff Details:

Sl.No.	Name of Staff	Designation	Date of joining	Degree & University/Institute	Subject Specialisation
1.	Ksh Merina Devi	Technical Assistant	3 rd August 2011 (contract)	B.E.- CSE, North Maharashtra University, Jalgaon M.S.- CSE, BITS Pilani	Information Security, Graph theory
2.	<u>Ngangbam Herojit Singh</u>	Technical Assistant	16 th September 2013 (contract)	B.E.- Anna University, Chennai M.Tech- CSE, Anna University Chennai Ph.D- CSE, NIT Manipur (Pursuing)	Machine Learning, Networking
3.	<u>Nirvana Thokchom</u>	Technical Assistant	9 th October 2013 (contract)	B.Tech- CSE, Sikkim Manipal Institute of Technology, Sikkim Manipal University M.Tech- CSE, BITS Pilani (Pursuing)	Image Processing, Data Mining
4.	<u>Sanasam Renubala Devi</u>	Technical Assistant	1 st September, 2014 (contract)	B.E.- CSE, MANIPUR UNIVERSITY M.Tech- CSE, NIT Manipur (Pursuing)	Computer Network, Data Mining

6. Publications:

Conferences

1. L. Dolendro Singh and Kh. Manglem Singh, Implementation of Text Encryption using Elliptic Curve Cryptography, Elsevier Procedia Computer Science- IMCIP, vol. 54, pp. 73-82, 2015
2. L. Dolendro Singh and Kh. Manglem Singh, Image Encryption using Elliptic Curve Cryptography, Elsevier Procedia Computer Science- IMCIP, vol. 54, pp. 472--481, 2015
3. N. Dhanachandra Singh, Kh. Manglem Singh and Y. Jina Chanu, Image Segmentation using K-means Clustering Algorithm and Subtractive Clustering Algorithm, Elsevier Procedia Computer Science- IMCIP, vol. 54, pp. 764-771, 2015
4. Sudipta Roy, A. S. Gupta, Kh. Manglem Singh and Dalton Meitei, Video Shot Boundary Detection: A Review, Proc ICECCT, vol. 2, pp. 920-926, 2015.
5. Singh, K.J.; De, T., "DDOS Attack Detection and Mitigation Technique Based on Http Count and Verification Using CAPTCHA," *2015 International Conference on Computational Intelligence and Networks (CINE)*, IEEE, vol., no., pp.196-197, 12-13 Jan. 2015
6. Singh, Khundrakpam Johnson, De, Tanmay, "An Approach of DDOS Attack Detection Using Classifiers" 2015 International Conference on Emerging Research in Computing, Information, Communication and Applications, Springer, vol., no., pp. 1, 429-437, 30-31 Aug 2015.
7. Khundrakpam Johnson Singh, Tanmay De, "A Novel Approach of Detection and Mitigation of DDOS Attack" Int'l Conference on Computer Science, Data Mining & Mechanical Engineering (ICCDMM'E'2015) , Bangkok (Thailand), pp. 61-66, April 20-21, 2015
8. Prakash Choudhary, Neeta Nain and Mushtaq Ahmed, "A Structure for Annotation and Ground-truthing of Urdu Handwritten Text Image Corpus", Proceeding of 7th International Conference on Corpus Linguistics (CILC2015), Elsevier, University of Valladolid Spain, Page(s) 84-88. 2015.
9. Prakash Choudhary, Neeta Nain, "Adaptive Semantics Web-based Approach for E-education using the Static Annotated Corpus", Proceeding of the 2nd International Conference on Education Technologies and Computers (ICETC2015), IEEE, University of the Thai Chamber of Commerce Thailand. (Forthcoming) 2015.
10. Irom Lalit Meitei, Khundrakpam Johnson Singh, Tanmay De, "Detection of DDoS DNS Amplification Attack Using Classification Algorithm" in Proc. ACM Digital Library, ICIA-2016, Pondicherry, India.
11. Ningombam Anandshree Singh, Khundrakpam Johnson Singh, Tanmay De, "Distributed denial of service attack detection using Naïve Bayes Classifier through Info Gain Feature Selection", in Proc. ACM Digital Library, ICIA-2016, Pondicherry, India.
12. Naoram Nalani Devi, Khundrakpam Johnson Singh, Tanmay De, "ICMP-DDoS Attack Detection Using Clustering-Based Neural Networks Techniques" in Proc. FOTA-2016, Kolkata, India

13. Chingakham Neeta Devi, Haobam Mamata Devi, Debaprasad Das, **Text Detection from Natural Scene Images for Manipuri Meetei Mayek Script**, IEEE International Conference on Computer Graphics, Vision and Information Security (CGVIS), Nov 2-3, 2015, 248-251.
14. Ch. Neeta Devi, Debaprasad D., H. Mamata Devi, Robust Text Detection in Meetei Mayek Script, 4th International Conference on Computing, Communication and Sensor Network, 24th & 25th December 2015, Kolkata, India.

Journals

1. Arambam Neelima and Kh. Manglem Singh, Perceptual Hash Function based on Scale Invariant Feature Transform and Singular Value Decomposition, The Computer Journal, Oxford University Press, September 2015 (**SCI Expanded**).
2. Dalton Meitei Thounaojam, Thongam Khelchandra, Kh. Manglem Singh, and Sudipta Roy, A Genetic Algorithm and Fuzzy Logic Approach for Video Shot Boundary Detection, Computational Intelligence and Neuroscience, Volume 2016, Article ID 8469428, 1-11 (**SCI Expanded**).
3. Prakash Choudhary and Neeta Nain, "A Four Tier Annotated Urdu Handwritten Text Image Dataset for Multidisciplinary Research on Urdu Script", ACM Transaction on TALLIP, Volume 15, Issue 4, 2016. (**SCI Expanded**).
4. B. Pushpa Devi, Kh. Manglem Singh and Sudipta Roy, A Copyright Protection Scheme for Digital Images based on Shuffled Singular Value Decomposition and Visual Cryptography, SpringerPlus (Accepted) (**SCI Expanded**).
5. Khundrakpam Johnson Singh, Thongam Khelchandra, Tanmay De, Entropy-Based Application Layer DDos Attack Detection Using Artificial Neural Networks, Entropy, MDPI. (Accepted) (**SCI Expanded**).
6. Dalton Meitei Thounaojam, Sudipta Roy and Kh. Manglem Singh, Video Shot Boundary Detection using Gray Level Cooccurrence Matrix, Indian Journal of Science and Technology, Vol 9(7), 2016 (**SCOPUS**).
7. B. Pushpa Devi, Kh. Manglem Singh, Sudipta Roy, Y. Jina Chanu and T. Tuithung, A Watermarking Scheme for Digital Images Based on Visual Cryptography, Contemporary Engineering Sciences, Vol. 8, 2015, no. 32, 1517 - 1528 (**SCOPUS**).
8. U. Robinchandra Singh, Kh. Manglem Singh and Sudipta Roy, Energy Efficient Key Management Analysis using AVL Trees in Wireless Sensor Network, International Journal of Engineering Science Invention, vol. 4, no. 5, pp. 59-70, 2015.
9. Thongam Khelchandra, Jie Huang, "Robot Motion Planning with Neuro-Genetic-Fuzzy Approach in Dynamic Environment", International Journal of Information Technology, Singapore Computer Society, Volume 21, Number 1, 2015

7. Details of seminars/ conference/ workshop/symposium/STTP attended by teaching faculty.

Jina Yambem:

- Workshop on “**Regional Celebration of Women in Computing, East and North-East**”, organized by CSE Dept. ,IIT Guwahati with ACM India from 2-11- 2015 to 3-11-2015
- Short term course on “Matlab Exposure” organized by NITTR Kolkata from 22-12-2014 to 2-1-2016

Chingakham Neeta Devi:

- T10KT Two - Week ISTE Short Term Training Programme (STTP) on Pedagogy for Effective use of ICT in Engineering Education, Jan. 2015, organised by IIT Bombay.
- Chingakham Neeta Devi, Haobam Mamata Devi, Debaprasad Das, **Text Detection from Natural Scene Images for Manipuri Meetei Mayek Script**, IEEE International Conference on Computer Graphics, Vision and Information Security (CGVIS), Nov 2-3,2015, 248-251. (Paper Presentation)
- Ch.Neeta Devi, Debaprasad D., H. Mamata Devi, Robust Text Detection in Meetei Mayek Script, 4th International Conference on Computing, Communication and Sensor Network, 24th & 25th December 2015, Kolkata, India. (Paper Presentation)

Prakash Choudhary:

- National workshop on “National Board of Accreditation” at The Institute of Engineers (India) Udaipur from August 28 to 30, 2015.
- Present a seminar on “Support for Entrepreneurial and Managerial Development of SMEs through Incubators” at Nirmal Bhawan, New Delhi on 28/05/2015.
- Present paper in the Second International Conference on Education Technologies and Computers (ICETC2015), IEEE, University of the Thai Chamber of Commerce Thailand, 20th – 22th May 2015.

Teressa Longjam:

- TWO - WEEK ISTE Short Term Training Programme (STTP) on Pedagogy for Effective use of ICT in Engineering Education, Jan. 2015, organised by IIT Bombay.
- Two Week ISTE Short Term Training Programme (STTP) on Introduction to Design of Algorithms, May 2015, organised by IIT Kharagpur.
- ISEA STC Registration: Biometric Security: Theory and Applications: March 2016, Short Term Course on Biometric Security: Theory and Applications, 15-19 March 2016, NIT Rourkela

Sanabam Bineswor Singh:

- Participated in a two-week ISTE STTP workshop on *Introduction to Design of Algorithms*, May 2015, conducted by Indian Institute of Technology Kharagpur.

Ngangbam Herojit:

- Short Term Training Program on "**Networking Principles**" in NITTR Guwahati **Extension** from 5/01/2015 to 9/01/2015.

Khelchandra Thongam:

- National Conference for Awareness on “**National Academic Depository**” on 9th September, 2016 at Vigyan Bhawan, New Delhi.

Khundrakpam Johnson Singh:

- Singh, K.J.; De, T., "DDOS Attack Detection and Mitigation Technique Based on Http Count and Verification Using CAPTCHA," *2015 International Conference on*

National Institute of Technology Manipur

Computational Intelligence and Networks (CINE), IEEE, vol., no., pp.196-197, 12-13 Jan. 2015

- Two Week ISTE Short Term Training Programme (STTP) on Introduction to Design of Algorithms, May 2015, organised by IIT Kharagpur.

8. Any event organized by the Department during **(2015-16)** (seminar, symposia, conference, workshop etc.):

- Workshop on “*Basic and Advanced concepts of JAVA(JDK 8) and its applications*” GeeksLab Technologies Pvt. Ltd, on 4th and 5th of September 2015
- 5 days’ workshop on “SWEBOK contents (Software Engineering)” by **IEEE Computer Society** from **15-02-2016** to **19-02-2016** at NIT Manipur

9. Research projects:

Name of the project	Sponsoring agency	Amount (Rs in lakh)	Duration	Principal Investigator

10. Students enrolled

Degree	Intake Capacity	Year	ST		SC		OBC		Gen		Total	
			M	F	M	F	M	F	M	F	M	F
B.Tech	60	First Year	11	0	5	1	9	3	9	0	34	4
	60	Second Year	7	0	9	1	16	1	7	3	39	5
	60	Third Year	3	0	9	4	17	1	9	1	38	6
	30	Fourth Year	1	2	3	1	9	3	6	0	19	6
M.Tech	15	First Year	0	0	0	0	1	0	4	0	5	0
	05	First Year (Part Time)	0	0	0	0	0	0	0	0	0	0
	15	Second Year	1	0	4	0	4	0	2	4	11	4
	05	Second Year (Part Time)	0	0	0	0	1	0	0	3	1	3
Ph.D		Full Time									2	5
		Part Time									2	3

11. Ph.D. Scholars:

- Arambam Neelima
- Hidangmayum Saxena Devi
- L. Dolendro
- Angom Buboo
- Ngangbam Herojit Singh
- Babyna Nandeibam
- Sanasam Inunganbi
- Th. Korouhanbi Devi
- Anuradha Laishram
- Maibam Mangalleibi Chanu
- Rajkumari Bidyalakshmi Devi
- Ratishchandra Huidrom

Cou rse No.	Course Name	L	T	P	C	Course No.	Course Name	L	T	P	C
Semester – 2(G3)(G2)						Semester – 2(G4)(G1)					
CH1 01	Chemistry	3	0	0	6	CS101	Introduction to Computing	3	0	0	6
ME1 01	Engineering Mechanics	3	1	0	8	EE101	Basic Electrical & Electronics Sciences	3	1	0	8
MA 102	Mathematics - II	3	0	0	6	MA102	Mathematics - II	3	0	0	6
PH1 02	Physics - II	3	0	0	6	PH102	Physics - II	3	0	0	6
HS1 01	Communication Skills	2	0	0	4	CE101	Environmental Studies	2	0	0	4
CH1 11	Chemistry Laboratory	0	0	2	2	CS111	Computing Laboratory	0	0	4	4
ME1 11	Workshop/Physics Laboratory	0	0	3	3	ME111	Physics Laboratory/Workshop	0	0	3	3
ME1 12	Engineering Drawing	1	0	3	5	EE111	Basic Electrical & Electronics Sciences Laboratory	0	0	3	3
SA1 01	Extra-Curricular Activity	0	0	2	0	SA 102	Extra-Curricular Activity	0	0	2	0
		15	1	10	40			14	1	12	40
Cou rse No.	Course Name	L	T	P	C	Course No.	Course Name	L	T	P	C
Semester – 3						Semester – 4					
MA 201	Mathematics III	3	0	0	6	CS202	Formal Languages and Automata Theory	3	1	0	8
CS2 01	Data Structures	3	0	0	6	CS204	Algorithms	3	0	0	6

CS203	Discrete Mathematics	3	1	0	8	CS206	Computer Organization and Architecture	3	0	0	6
CS205	Digital Design	3	0	0	6	CS208	Object Oriented Programming	3	0	0	6
HS201	Engineering Economics & Accountancy	2	0	0	4	MA202	Probability and Random Processes	3	0	0	6
CS231	Data Structures Lab	0	0	3	3	CS242	Algorithms Lab	0	0	3	3
CS233	Digital Design Lab	0	0	3	3	CS244	Object Oriented Programming Lab	0	0	3	3
SA201	NCC/NSO/COS	0	0	2	0	CS246	Peripherals and Accessories Lab	0	0	3	3
						SA202	NCC/NSO/COS	0	0	2	0
		14	1	8	36			15	1	11	41

12. Course conducted:

Syllabus of B.Tech.

Course No.	Course Name	L	T	P	C	Course No.	Course Name	L	T	P	C
Semester – 1(G1)						Semester – 1(G2)					
CH101	Chemistry	3	0	0	6	CS101	Introduction to Computing	3	0	0	6
ME101	Engineering Mechanics	3	1	0	8	EE101	Basic Electrical & Electronics Sciences	3	1	0	8
MA101	Mathematics - I	3	0	0	6	MA101	Mathematics - I	3	0	0	6
PH101	Physics - I	3	0	0	6	PH101	Physics - I	3	0	0	6
HS101	Communication Skills	2	0	0	4	CE101	Environmental Studies	2	0	0	4
CH111	Chemistry Laboratory	0	0	2	2	CS111	Computing Laboratory	0	0	4	4
ME111	Workshop/Physics Laboratory	0	0	3	3	ME111	Physics Laboratory/Workshop	0	0	3	3

ME112	Engineering Drawing	1	0	3	5	EE111	Basic Electrical & Electronics Sciences laboratory	0	0	3	3
SA101	Extra-Curricular Activity	0	0	2	0	SA 102	Extra-Curricular Activity	0	0	2	0
		15	1	10	40			14	1	15	43

Course No.	Course Name	L	T	P	C	Course No.	Course Name	L	T	P	C
Semester – 5						Semester – 6					
MA301	Optimization	3	0	0	6	HS302	Management and Managerial Economics	2	0	0	4
CS301	Software Engineering	3	0	0	6	CS302	Databases	3	0	0	6
CS303	Operating Systems	3	0	0	6	CS304	Compilers	3	0	0	6
CS305	Data Communication	3	1	0	8	CS306	Computer Networks	3	0	0	6
CS307	Machine Learning	3	0	0	6	CS308	Information Storage and Retrieval	3	1	0	8
CS351	Software Engineering and System Software Lab	0	0	3	3	CS362	Databases Lab	0	0	3	3
CS353	Operating Systems Lab	0	0	3	3	CS364	Compilers and System Programming Lab	0	0	3	3
CS355	Machine Learning Lab	0	0	3	3	CS366	Computer Networks Lab	0	0	3	3
		15	1	9	41			14	1	9	39

Course No.	Course Name	L	T	P	C	Course No.	Course Name	L	T	P	C
Semester – 7						Semester – 8					
CS401	Computer Graphics	3	0	0	6	CS5XX	Department Elective - IV	3	0	0	6
MA401	Numerical Methods	3	0	0	6	CS5XX	Department Elective - V	3	0	0	6
CS5XX	Department Elective - I	3	0	0	6	CS5XX	Department Elective - VI	3	0	0	6
CS5XX	Department Elective - II	3	0	0	6	CS482	Project - II	0	0	9	9
CS5XX	Department Elective - III	3	0	0	6						
CS471	Computer Graphics Lab	0	0	3	3						
CS473	Project - I	0	0	6	6						
		15	0	9	39			9	0	9	27

Total Credits: **303****Syllabus of M.Tech.****SEMESTER – 1**

Course No.	Course Name	L-T-P-C
CS501	Advanced data structure and algorithms	3-0-0-6
CS503	Mathematics for Computer Science	4-0-0-8
CS505	Computer Systems & Networks	3-0-0-6
CSxxx	Elective – 1	3-0-0-6
CS531	Programming Lab	0-0-3-3
Total		13-0-3-29

SEMESTER – 2

Course No.	Course Name	L-T-P-C
CS502	Theory of Computation	3-0-0-6
CSxxx	Elective – 2	3-0-0-6
CSxxx	Elective – 3	3-0-0-6
CSxxx	Elective – 4	3-0-0-6
CS532	Computer System Lab	0-0-3-3
Total		12-0-3-27

SEMESTER – 3

Course No	Course Name	L-T-P-C
CS631	Thesis	0-0-24-24
Total		0-0-24-24

SEMESTER – 4

Course No
CS632Course Name
Thesis
TotalL-T-P-C
0-0-24-24
0-0-24-24

Total Credit = 104

Annual Report – 2015-16

Name of Department: Electronics & Communication Engineering

**List of Publications (2015 to 2016)**

A. Publications in Journals of the faculty and technical staff (SCI, SCIE, AHCI, Scopus, SSCI, and Google Scholar) and Scopus indexed conferences:

- 1. Chitrlekha Ng.,** Anirudha Mondal and Bijit Choudhuri “Efficient photon management with Ag nanoparticles coated TiO₂ nanowire clusters for photodetector application” , The Journal Electronic Material Letter (Accepted on 15th Jan., 2015) (*SCI Expanded*).
- 2. Chitrlekha Ng., Shougaijam B.,** Anirudha Mondal “Dispersed Ag nanoparticles on TiO₂ nanowire clusters for photodetection ” IEEE International Conference, Bangkok, 22-25 Oct. 2014,pp:1-4, ISBN: 978-1-4799-4076-9.(*IEEE Explore*)
- 3. C.P. Singh, Rekha Sharma, V. Shukla, Pinky Kh.,** Rajneesh Misra, K.S. Bindra and Rama Chari “Optical limiting and nonlinear optical studies of ferrocenyl substituted calixarenes” The Journal of Chemical Physics Letters, Elsevier, Vol: 616-617 (2014), pp: 189-195.
- 4. Pinky Khundrakpam,** Arun Kumar “Design of a thermally tunable optical filter based on one-dimensional ternary photonic band gap material” Optik-International Journal for Light and Electron Optics,[doi:10.1016/j.ijleo.2015.07.046] (*SCI*)

5. Y. Shantikumar Singh, B. Pushpa Devi and Kh. Manglem Singh “*Image Compression with Haar Wavelet Transform*”, International Journal of Computer Applications (IJCA), Vol: 121(9), pp: 15-18, July, 2015.

5. Manoj Kumar, Aribam Balarampayari devi and Romesh Laishram, “*Design and Implementation of An Improved Carry Increment Adder*”, International Journal of VLSI design & Communication Systems (VLSICS) Vol.7, No.1, Febraury 2016.

7. K.P. Ghatak, L.S.Singh,K.Sarkar, N.Debbarma, and M.Debbarma, “*Light,EinstenRelation, Quantizatin And the Heavily Doped Opto-Electronic Materials*”,Materials Focus,Vo.4,pp.85-110, 2015.American Scientfic Publishers.

8. S Chakrabarti,L.S.Singh,KP Ghatak, “*Einstein’s Photoemission,Magnetic Quantization and Heavily Doped III-V Quantum well Superlattices with Grades Interfaces*”,Advances in Optical Science and Engineering ,Springer,Pages 17-23(2015).

9. H. Tarun Kumar, A. Ranjan, Ravi Kumar and P, Subramanyam, “*Operational Amplifier Based Fractional Device of order $s^{\pm 0.5}$* ” Proceeding of International Conference on Intelligent Communication, Control and Devices(ICICCD 2016), Dehradun, pp. 151-159, 2016.ISBN: 978-981-10-1707-0 (Print) 978-981-10-1708-7 (Online).

10. A. Ranjan, M. Ghosh and Sajal K. Paul, “*Third Order Voltage Mode Active-C Band Pass Filter*”, International journal of Electronics, Vol. 102, No. 5 , pp.781-791, 2015.

B. Number of GATE/NET qualified students----

Number of GATE qualified students = 0

Number of NET qualified students =0

C. Number of students who have got job in placement, and in Govt jobs.

Total no. Placed students = 12

PLACEMENT REPORT

Sl.no.	Name	Company Name	Year
1	A.ATHIRI	INFOSYS	2015-16
2	RAKESH SHARMA	INFOSYS	2015-16
3	RAVI SHANKAR	L&T	2015-16
4	VINAY VISHWAKARAMA	Mu-Sigma	2015-16
5	HEMANTA	Carbon Software Solution & AAA	2015-16

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6	KHOIROM JOHNSON SINGH	Carbon Software Solution & AAA	2015-16
7	ANURUDRA SINGH	MPHASIS	2015-16
8	NONGTHOMBAM	HCL TSS	2015-16
9	AMAN KUMAR	HCL TSS	2015-16
10	ASHUTOSH KUMAR	HCL TSS	2015-16
11	SANJAY KUMAR	HCL TSS	2015-16
12	KHANGEMBAM	HCL TSS	2015-16

D. Number of students who have taken admission in PG studies = **30**

E. Number of faculty and staff who have attended and presented papers in conferences= **1**

Details---

(a).*K.Pritamdas, Kh. Manglem Singh "A new Adaptive Switching Approach for Impulse noise",International Conference on Man and Machine Interfacing,978-1-5090-0225-2/15©2015 IEEE.*

F. Number of faculty and staff who have given attended workshop and training in other institutes=**0**

G. Number of BTech ,MTech,MSc and PhD students who have been awarded degrees and pass percentages in BTech,MTech and MSc

Details of MTech students

MTech = 12

Admission Batch: 2014-2015

Scheme: VLSI AND EMBEDDED SYSTEM-2014-2015

Sr.no.	Roll.No.	Name of Student	CGPA
1	14MEC003	RAJKUMAR ANGAMBA SINGH	8.78
2	14MEC002	ROSY KIMNEITHEM HAOKIP	8.17
3	14MEC006	PHEIROI JAM POOJA	8.06
4	14MEC013	NGANGBAM MANOJKUMAR SINGH	7.94
5	14MEC008	KHURAI JAM NELSON SINGH	7.89

6	14MEC010	SIDDARTH SHARMA	7.83
7	14MEC012	SINAM AJITKUMAR SINGH	7.67
8	14MEC011	IMOISHAK THINGOM	7.50
9	14MEC001	ARIBAM BALARAM PYARI DEVI	6.94
10	14MEC007	PATRICK YUMNAM	6.89
11	14MEC014	MOHD. AZHARUDDIN	6.61
12	14MEC004	LONGJAM ABUNGCHA MEITEI	6.39

Details of BTech students**BTech = 40****Admission Batch: 2011-2012**

Sr.no.	Roll No.	Name of Student	CGPA
1	11UEC001	Akanksha Dixit	9.14
2	11UEC010	Haobijam Devshree Devi	9.05
3	11UEC017	Md Wahidur Rahaman	8.67
4	11UEC025	Soibam Aruna Chanu	8.57
5	11UEC004	Avishek Sahu	8.34
6	11UEC016	Md Farijuddin	8.19
7	11UEC005	Bha rat Gaurav	8.09
8	11UEC013	Khangheiba Moi rangthem	7.95
9	11UEC007	Dhanpati Kumar Dhani	7.78
10	11UEC011	Haobijam Sanathoi Devi	7.76
11	11UEC009	Gautam Kumar Ranjan	7.73
12	11UEC012	Heisnam Vi vek	7.74
13	11UEC018	Moi rangthem Kennedy Singh	7.15
14	11UEC028	Yurembam Swami Singh	6.86

15	11UEC020	Rakesh Khuraijam	6.77
16	11UEC027	Th Nanao	6.68
17	11UEC023	Rukhsana Bhuiya	6.60
18	11UEC008	Dipak Lal Mahatha	6.42
19	11UEC026	Su raj Raj Gautam	6.37
20	11UEC014	L SuraJ	6.32

Admission Batch: 2012-2013

Sr.no.	Roll No.	Name of Student	CGPA
1	12UEC014	KHOIROM JOHNSON SINGH	9.31
2	12UEC019	RAVISHANKAR KUMAR PATEL	9.13
3	12UEC013	KHANGEMBAM HEMANTA SINGH	8.97
4	12UEC003	ANANDI YENGKHOM	8.81
5	12UEC005	ANURUDRA SINGH	8.70
6	12UEC006	ASHUTOSH KUMAR GUPTA	8.61
7	12UEC026	WAIKHOM SYLVIA DEVI	8.51
8	12UEC012	JACINTA POTSANGBAM	8.42
9	12UEC027	YENGKHOM OMESH SINGH	7.85
10	12UEC023	SOKINA SOROKHAIBAM	7.83
11	12UEC008	DINAMANI KHOMDRAM	7.78
12	12UEC011	INDRAJIT ANGOM	7.75
13	12UEC001	A ATHIHRII	7.75
14	12UEC007	BRAHMACHARIMAYUM RAKESH SHARMA	7.56
15	12UEC015	M ROMI CHANU	7.51
16	12UEC004	ANGOM INAOCHA SINGH	7.38

17	12UEC025	VINAY VISHWAKARMA	7.29
18	12UEC002	AMAN KUMAR	7.04
19	12UEC024	SUMIT KUMAR JHA	7.00
20	12UEC016	MOIRANGTHEM STEPHEN SINGH	6.95

Details of PhD students**PhD = 0**

H. Amount of purchase in the department for major equipments, devices, instruments, software, hardware, PCs, computer based systems, etc.

Lab wise Budget for ECE Dept.

Sl. No.	Name of Labs.	Amount (Rs.)	Year
1	Model :ADC04	22,90,000.00	2015
2	PLC Training System	3,80,100.00	2015
3	Lab Equipment	6,76,620.00	2015
4	Communication Lab	3,89,05591.12	2015
5	Lab Components	485022.00	2015
6	Microprocessor Lab	310500.00	2015
7	VHDL&VERILOG Lab (FPGA Kits,etc.)	88,38,375.00	2016
8	VLSI Lab	1,33,21,875.00	2015
Grand Total		6,52,08,083.12	2015-2016

Annual Report 2015-16**Name of Department:** Electrical Engineering**A. Publications****a. Total number of Journal publications=6**

1. A. Ghosh, S. Banerjee, M. K. Sarkar and P. Dutta, "Design and Implementation of Type-II and Type-III Controller for DC-DC Switched-Mode Boost Converter by using K-Factor Approach and Optimization Techniques", IET Power Electronics, Volume 9, Issue 5, pp. 938 – 950, 2016. **(SCI)**
2. S. Banerjee, M. K. Sarkar and A. Ghosh, "System and Method for obtaining simultaneous levitation and rotation of a ferromagnetic object", Journal of The Institution of Engineers (India): Series B. Springer, pp 1-8, 2016. **(Google Scholar)**
3. Tayenjam Jeneetaa, Benjamin A.Shimray, Romesh Laishram, "artificial Bee Colony Tuned PID Controller for Vibration Control In Two Mass Drive Systems", Vol. 4., Issue.3., 2016. **(Google Scholar)**
4. Shuma Adhikari, Nidul Sinha., Optimal coordination of directional overcurrent relays using Bacteria Foraging Algorithm, Journal of Scientific & Industrial Research, Vol. 75, September 2016, pp.557-561. **(SCIE)**
5. Shuma Adhikari, Nidul Sinha, Thingam Dorendrajit. (2016). Fuzzy logic based on-line fault detection and classification in transmission line. Springerplus, DOI

10.1186/s40064-016-2669-4. (SCIE)

6. Shuma Adhikari, Nidul Sinha, Thingam Dorendrajit. (2016). Application of LabView as real time SCADA in power system transmission line, International Journal of Applied Engineering Research, Volume 11, Number 7, pp 5028-5031, 2016. (Google Scholar)

b. Number of Conferences=6

List of Conference Papers

1. M.K.Sarkar and S. Banerjee, "DSP Based Implementation of Piecewise Linear Control Scheme for wide air-gap control of an Electromagnetic Levitation System", IECON15, 41st Annual Conference of the IEEE Industrial Electronics Society, Yokohama, Japan, November 9-12, pp. 1223 - 1227, 2015.
2. Shuma Adhikari, Reshma Chingakham, Nidul Sinha, Arun Kumar, Atul Kumar (2015) Bacteria Foraging Algorithm for novel optimal coordination of Directional Overcurrent Relays. ESTER-2015. NIT Manipur.
3. Devakishore Phurailatpam, "Real time acquisition and analysis of PCQ and PPG signals", International conference on communication and signal processing, April 2-4, 2015
4. Devakishore Phurailatpam, "Multiple dimensional approaches for noise cancellation of ECG signal", International conference on communication and signal processing, April 2-4, 2015
5. Lukram Dhanachandra Singh, "Monitoring and Analysis of Multiple Power Quality Problems in the Power System in Single Platform", International Conference on Advances in Applied Engineering and Technology organized by Syed Ammal Engineering College, Chennai 2015.
6. Nitish Kumar, Benjamin A Shimray and K. Pritamdas, "A Holistic Approach for Harmonic Elimination in 1-phase PV system", International conference on microelectronics, computing and communication systems (MCCS-2015), organized by Indian Society for VLSI education, Ranchi, Jharkhand, India-(Presented)

B. Number of Project= Nil

C. Number of Patents= Nil

D. Number of Regular Faculty=3

a. Number of Regular Faculty with PhD=1

List of Regular Faculty with PhD

1. Dr. Mrinal Kanti Sarkar

b. Number of Regular Faculty without PhD=2

List of Regular Faculty without PhD

1. Mrs. Shuma Adhikari
2. Mr. Benjamin A Shimray

E. Number of Contract Faculty without PhD=7

List of Contract Faculty without PhD

1. Mr. Devakishore Phurailatpam
2. Ms. Laishram Khumanleima Chanu
3. Ms. Rajkumari Malemnganbi
4. Ksh.Priyalakshmi Devi
5. Lukram Dhanachandra Singh
6. Ingudam Chitrasen Singh
7. Simon Tongbram

F. Number of Contract Staff without PhD=3

List of Contract Staff without PhD

1. Paonam Shantibala Devi
2. Naorem Purnachandra Singh
3. Mexkumar Brahmacharimayum

G. Library Purchase:

- a. Books=Information not available

H. Number of GATE/NET Qualified Students

- a. B-Tech batch 2012-2013= 3

I. Number of Students Placed

1. Year 2015-2016
 - a. B-Tech batch 2012-2013 =18
 - i) Private Company =16
 - ii) Govt. =2

- b. M-Tech batch 2014-2015
 - i) Private Company =Nil
 - ii) Govt. =2

J. Number of Admitted PG Students

- a. Batch 2016-2017= 8

K. Number of Faculty/ Staff Attended to Present Conference Paper

- a. Year 2015-2016=Nil

L. Number of Faculty/ Staff Attended Workshop or Training to Other Institute

- a. Year 2015-2016=6

M. Number of Faculty/ Staff who have given invited Talk to Other Institute

- a. Year 2015-2016=Nil

N. Number of Ladies Faculty/ Staff As a member, heads, etc..= 1 (Departmental Head)

O. Number of Pass out B-Tech, M-Tech, PhD Students and Pass Percentage

- 1. Year 2015-2016
 - a. B-Tech batch (2012-2013) =18
 - b. M-Tech batch (2014-2015) =11
 - c. PhD = Nil

P. Departmental Total Purchase Amount.= 30, 77, 435

- a. Year 2015-2016 =30, 77, 435

Annual Report 2015-16**Name of Department:** Department of Civil Engineering**A. Academic Information****(1) Faculty**

Faculty	April, 2015 – March, 2016
Professor	NIL
Associate Professor	NIL
Assistant Professor (Regular)	5
Assistant Professor (on contract)	NIL
Lecturer	4
Total	9

(2) Non – Faculty Staff

Non – Teaching Data	April, 2015 – March, 2016
Regular	NIL
On Contract	7
Total	7

(3) B.Tech Program

No. of students Admitted	1 st year	2 nd year	3 rd year	4 th year
Admitted	23	29	29	29
Intake	30	30	30	30
Total	110			

(4) M.Tech Program

No. of students Admitted	1 st year	2 nd year
No. of full time Admitted	15	15
No. of full time Intake	15	15
No. of part time Admitted	2	2
No. of part time Intake	2	2
Total	34	

(5) Ph.D Program

No. of students Admitted	April, 2015 – March, 2016
No. of Part-time Admitted	1
No. of Full-time Admitted	11
Total	12
Degree Awarded	NIL

B. Research Information**(1) Faculty Visited Abroad**

	April, 2015 – March, 2016
No.	2

(2) Sponsored Research project from Govt. /Semi. Govt. Agencies

Sl.No.	Sponsored Research project	April, 2015 – March, 2016	
		No. 2	Rs.
1	DST-SERB (Young Scientist Grant)		19,76,900
2	PHFI, Public Health Foundation of India under the scheme: Public Health Research Initiative (PHRI) Research Grant		19,25,000

(3) Research Publications (SEE Annexure)

Publication	April, 2015 – March, 2016
National Journal	2
International Journals	10
National Conference	3
International Conference	4
No. of Book published	3

Industry Institute Interaction Information**(1) Short Term Course/ Workshop/ Seminar/Conference conducted by Faculty**

	April, 2015 – March, 2016
STTP	NIL
Workshop	1
Seminar	NIL
Conference	NIL
Symposia	NIL

(2)

Patents	April, 2015 – March, 2016
No. of patents acquired	Nil

(3)

Record of result in various competitive examination like (GATE/GRE/CAT , etc)	April, 2015 – March, 2016
• GATE	NIL
• GRE	NIL
• CAT	NIL

(4) Sponsored Research projects from Industry

Sponsored Research projects	April, 2015 – March, 2016	
	No.	Rs.
	NIL	NIL

Name of the faculty and non-faculty staff.

FACULTY	NON-FACULTY
Dr.P.Albino Kumar Assistant Professor	Mr. Ingudam Bigyananda Singh Technical Assistant
Dr.Mayengbam Sunil Singh Assistant Professor	Mr. Koroungamba Laishram Technical Assistant
Dr.BakimchandraOinam Assistant Professor	Ms. Naoroibam BidyamaniChanu Technical Assistant
Dr.NgangbamRomeji Singh Assistant Professor	Ms. PolemJesiada Devi Technical Assistant
Dr. ThiyamTamphasana Devi Assistant Professor	Ms. Khongbantabam Jayalalita Devi Technical Assistant

Dr. Waikhom Victory Lecturer	Mr. Thiyam Samson Singh Staff
Mr. Maisnam Nongthouba Singh Lecturer	Mr. Ayekpam Bijen Singh Staff
Mr. Khwairakpam Sachidananda Singh Lecturer	
Ms. Sarungbam Pipileima Lecturer	

Details of the publications

Sl.No.	International Journal
1	Kumari, M., Singh, C. K., Bakimchandra, O. and Basistha, A. (2016), Geographically weighted regression based quantification of rainfall–topography relationship and rainfall gradient in Central Himalayas. Int. J. Climatol.. doi:10.1002/joc.4777
2	Kumari M., Singh, C.K., Bakimchandra, O. and Basistha A. (2016) DEM-based delineation for improving geostatistical interpolation of rainfall in mountainous region of Central Himalayas, India. TheorApplClimatol.pp 1-8. doi: 10.1007/s00704-016-1866-y
3	ThiyamTamphasana Devi and Bimlesh Kumar - Design of Unbaffled Stirred tank with Curved Blade Impeller, Journal of Engineering Thermophysics, Springer, (Accepted for Publication).
4	ThiyamTamphasana Devi and Bimlesh Kumar - Vortex Depth Analysis in an Unbaffled Stirred Tank with Curved Blade Impeller, Chemistry and Chemical Technology, (accepted for publication)
5	ThiyamTamphasana Devi and Bimlesh Kumar - Optimal Impeller Clearance for Dual Stirred Unbaffled Tank with Curved Blade Impeller, Journal of Engineering Physics and Thermophysics, Springer, 89(4): 948-953, 2016.
6	ThiyamTamphasana Devi , Bimlesh Kumar and Ajay Kumar Patel - Detached eddy simulation of turbulent flow in stirred tank reactor, Procedia Engineering, Elsevier, 127: 87-94, 2015.
7	ThiyamTamphasana Devi and Bimlesh Kumar - Design of Gas-liquid Stirred tank with Curved Blade Impeller, Journal of Engineering Physics and Thermophysics, Springer, 88(1): 76-87, 2015.

8	ThiyamTamphasana Devi and Bimlesh Kumar - Large Eddy Simulation of Turbulent Flow in Stirred tank with Curved Blade Impeller, Journal of Engineering Thermophysics, Springer, 24(2): 1-17, 2015.
9	SarungbamPipileima and P. Albino Kumar - Comparative Studies between Conventional and Polymer based Adsorption for Defluoridization for Drinking Water, Journal of Energy Research and Environmental Technology, 3(1): 34-37, 2016.
10	Sonia Longjam and Potsangbam Albino Kumar – Impact of Global Warming on Reinforced Concrete and High Rise Building Structures: A review, Journal of Civil Engineering and Environmental Technology, 3(4): 341-345, 2016.
	National Journal
1	Mehra, M., B. Oinam , B.C., & Singh, C.K., (2016) Integrated Assessment of Groundwater for Agricultural Use in Mewat District of Haryana, India Using Geographical Information System (GIS). Journal of the Indian Society of RemoteSensing. http://dx.doi.org/10.1007/s12524-015-0541-6
2	B.R. Parida and B. Oinam (2015). North Eastern region witnessed frequent unprecedented Drought than Western India. Current Science, Vol. 109, No. 11, 10.
	International Conference
1	ThiyamTamphasana Devi and Bimlesh Kumar - Computational Fluid Dynamics Simulation of Gas-Liquid Phase Stirred Tank, 19th International Conference on Mathematics and Computational Science, March 6-7, 2017, Phuket, Thailand. (Accepted)
2	ThiyamTamphasana Devi , NgangbamRomeji Singh , MaisnamBipinchandra Singh, Yashwant B. Katpatal- Modified SCS Infiltration Depth Prediction For Indian Watershed Condition-A Case Study of Bhandara District, Maharastra, India, 21 st International Conference on Hydraulics, Water Resources and Coastal Engineering, December 8-10, 2016, Pune, Maharastra (Accepted)
3	ThiyamTamphasana Devi and Bimlesh Kumar-Comparison of DES, LES and URANS Simulations in Stirred Tank Reactor, International Conference on Emerging Trends In Science And Engineering Research, December 2-4, 2015, NIT Manipur, Imphal, Manipur.
4	Sarungbam Pipileima, Longjam Anjali and P. Albino Kumar , and.- Assessment of Water Crisis & Management of Village Pond Water for Drinking Water at Nambol Village, Manipur, Youth Sustainable Water Resources Education and Hub Development in APEC Region, September 4-8, 2016, Chinese Taipei.
	National Conference
1	B.R. Parida and B. Oinam -Hydrological Analysis of Satellite derived Extreme Rainfall Events over Uttarakhand Himalayas, Advancements In Applications of Remote Sensing and Geospatial Technology AARSGT Conference, May 19-21, 2016, BIT Mesra.

2	B.R. Parida, P. Pathak, V. Chippa and B. Oinam - Geospatial Perspectives on Hydro-meteorological Hazards and Groundwater Hazard in India, IEEE Conference Publications: 39th National Systems Conference (NSC), 14th-16th December 2015, Dadri, India,
3	B.R. Parida and B.Oinam - Geospatial Perspectives on Drought in India and Agriculture, 16th Esri India User Conference, Dec 2- 4, 2015, New Delhi.
	Book Chapter
1	Bakimchandra Oinam , Prasad Pathak and Vaibhav Chhipa - Mapping ground water quality in tehsils of Jaipur district, Rajasthan, India using GIS. David J. Cowen (Ed.), STEM & GIS in Higher Education (In Press) (Accepted for Publication, 2016), David J. Cowen (Ed.), STEM & GIS in Higher Education. ESRI Press, USA
2	Madhuri Kumari, Ashoke Basistha, C. K. Singh and B. Oinam . Comparison of Univariate And Multivariate Geostatistical Methods for Interpolation of Rainfall in Indian Himalayas of Uttarakhand Region. pp 159-168. N. Janardhana Raju (Ed.), Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment (2016) Springer International Publishing, Cham, Switzerland. ISBN: 978-3-319-18662-7.
3	Thiyam Tamphasana Devi and Yashwant B. Katpatal- Surface Runoff Depth by SCS Curve Number Method Integrated with Satellite Image and GIS Techniques, Urban Hydrology, Watershed Management and Socio-Economic Aspects, Water Science and Technology Library 73, (eds. A.K. Sarma et al.), Springer International Publishing Switzerland, Springer (2016) (In Press). DOI 10.1007/978-3-319-40195-9_5

Department of Mechanical Engineering

Year of Establishment: 2013



Faculty and Staff with Shri. Mr. Huirem Neeranjana Singh, Head of the Department (from right Second person)

Highlights of Research activities:-

Manufacturing, Metal Matrix composites, Alternative Fuels, IC Engine Performance analysis, Computational Fluid Dynamics (CFD)

Head of the Department: Shri. Mr. Huirem Neeranjana Singh

Faculty & Staff

Name of the Teacher	Designation	Qualification	Subject specialization
Shri. Mr. Huirem Neeranjana Singh	Assistant Professor & Head of the Department	B. Tech, M. Tech, SVNIT, Surat, Ph. D(pursing from NIT Durgapur	Alternative Fuel, IC Engines, Energy system, Thermal systems
Dr. Anil Kumar Birru	Assistant Professor & Associate Dean (Research & Consultancy)	B. Tech, M. E., Shri. G.S.I.T.S.-Indor (M.P.) Ph. D, IIT Roorkee	Manufacturing, Composites Materials, Quality Function Deployment
Dr. T. N. Verma	Assistant Professor	B.Tech., M. Tech, Maulana Azad National institute of Technology, Bhopal (M.P.) PhD, NIT Raipur	Computational Fluid Dynamics (CFD)
Dr. Dushyant Singh	Assistant Professor	C. Tech, M. Tech, National Institute of Technology Hamirpur D. PhD, IIT Delhi	Computational Fluid Dynamics (CFD)
Mr. Khundrakpam Nimo Singh	Sr. Teaching Assistance	B. Tech. M. Tech, GNDEC, Ludhiana; PTU, Jalandhar-Punjab. Ph.D. (pursuing) in Mechanical Engineering; PTU, Jalandhar-Punjab.	Manufacturing, Non-traditional Machining, CAD/CAM
Miss. Maibam Bindya Devi	Lecturer	B. Tech, M. Tech, NIT Warangal	Materials Technology
Th. Subhaschandra	Lecturer	B.Tech, M.Tech (Thermal Engg)	Thermal Engg
Mrs L Gayatri	Lecturer	M. Tech. IIT Madras, Aeronautical Engg	FEM applications
Mr. Prabhat	Trainee Teacher	B. Tech, NIT Jamshedpur M. Tech, IIT Guwathi, (Pursing)	Machine Design

PhD Program Specialization: Manufacturing and Thermal Engineering

No. of Full Time Admitted	06
No. of Part Time Admitted	03
Total	09
Degree Awarded	NIL

B. Tech Program

	Semester				Total
No. of students	I	II	III	IV	All four Years
Intake	30	30	30	30	120 Students

M. Tech in Thermal and fluids Specialization

No. of students Intake			
	Full Time	Part Time and Sponsored	Total students Intake
	15	5	20

Research Information**Research publications**

International Journals	National Journals	International Conferences	National Conferences	Text Books
2	0			



Students with Dr. Anil
Kumar Birru, Assistant
professor, and O. Adeep
Meitei, Technical
Assistance in
Manufacturing Engg. Lab



Students with Ms. Maibam Bindya Devi, Teaching Assistant and Mr. O. Adeep Meitei, Technical Assistance in Strength of Materials Lab



Students with Mr. O. Adeep Meitei, Technical Assistance in workshop (welding Section).

Short Term Courses/ Workshops/Seminars/Conferences conducted by faculty

Name of Event	2015-2016
STTP	0
Workshop	0
Seminar	0
Conference	0
Symposia	0
Patents	0
Total	0

List of work Shops Attended by faculty and Staff

Name of the event	Sponsored by	Name of faculty	Year
“Mechanical Engineering Conclave: <i>Boosting for Academic, Research, Innovation and Socio-economic development in the region of all NITs of India</i> ”	NIT MANIPUR	Dr. TN. Verma	2015
“Mechanical Engineering Conclave: <i>Boosting for Academic, Research, Innovation and Socio-economic development in the region of all NITs of India</i> ”	NIT MANIPUR	Shri. Mr Shri. Mr. Huiem Neeranjana Singh	2015
3D Printing and Additive manufacturing	NIT MANIPUR	Dr. Anil Kumar Birru	2016
Essential techniques for Research problems in Manufacturing	NIT MANIPUR	Dr. Anil Kumar Birru	2016

Navel Research Board form Govt. Of India (2015-2016)

Name of the Principle Investigator	Dr. Anil Kumar Birru
Name of the Funding Agency	Navel Research Board, DRDO, Government of India
Amount in Rs:	9,60,000/-
Title of the Project	Development of New Hybrid Composite Material Based on Aluminium Matrix Composite by stir casting method.
Status	Approved

List of International Journals

Author (s)	Title	Name of the Journal	Volume	Page	Year
Anil Kumar Birru, D. BENNY KARUNAKAR	Effects of grain refinement and residual elements on hot tearing of A713 aluminium cast alloy.	Transactions of Nonferrous Metals Society of China (Elsevier)	26	1783-1790	2016
P. Arun Kumar, A. K. Birru, L. Dharam singh	Enhancement of Mechanical properties of recycled Green sand by addition of Bovine feces (Cow dung)	International Journal of Scientific & Engineering Research, (Scientific Research)	7	146-148	2016

LIST OF CONFERENCE PUBLICATIONS 2016-2017

S. No	Title	Author (s)	Publisher	Year of Publication
1	Applications of die casting in automotive industries – a comprehensive review	K. Ch. Apparao and Anil Kumar Birru	ICETSER-2015, NIT-Manipur	2015
2	Influence of process parameters on die casting process based on Taguchi approach	K. Ch. Apparao and Anil Kumar Birru	64 th IFC Coimbatore, India	2016
3	Potential Applications of Die Casting in Present Era – A Comprehensive Review	K. Ch. Apparao and Anil Kumar Birru	NCAMPC, NIT-Warangal	2016
4	Potential Applications of Die Casting in Present Era – A Comprehensive Review	K. Ch. Apparao and Anil Kumar Birru	Materials Today: Proceedings (Elsevier)	Accepted for Publication. (2016)
6	Enhancement of Mechanical properties of Green sand and Modified Green Sand: A Comprehensive Comparison	P. SrinivasaRao and Anil Kumar Birru	ICETiME CUSAT, Kochi, India	2015

7	Influence of molasses and fly ash additives on green sand mould properties	P. SrinivasaRao and Anil Kumar Birru	64 th IFC Coimbatore, India	2016
8	Effect of Mechanical Properties with Addition of Molasses and Fly Ash in Green Sand Moulding	P. SrinivasaRao and Anil Kumar Birru	Materials Today: Proceedings (Elsevier)	Accepted for Publication. (2016)
9	Mechanical Characterisation of Bamboo Leaf Ash on Al-Cu alloy.	B.P. Kumar and A.K. Birru	NCAMPC, NIT- Warangal	2016
10	Numerical & experimental analysis of Bearing characteristics number for hydrodynamic journal square bearing	Prabhat kumar, Prerana Nashine, Moon Banerjee & Verma T N	(ETSER-2015)	2015
11	Study of Particle Dispersion on One bed ICU using computational Fluid Dynamics	Verma T N, A K Sahu & S L Sinha;	(ICEMS-2016)	2016

Department of Physics

A. Academic Information

(1) Faculty

Faculty	
Professor	Nil
Associate Professor	Nil
Assistant Professor	4
Lecturer (On contract)	2
Visiting Professor	1
Total	7

Sl. No.	Name of faculty	Designation	Qualification	Subject Specialization
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1.	Dr. Ibetombi Soibam	Assistant Professor	M.Sc., Ph.D.	Condensed Matter Physics, Material Science
2.	Dr. Mamata Maisnam	Assistant Professor	M.Sc., Ph.D.	Particle Physics, Material Science
3.	Dr. Loushambam Herojit Singh	Assistant Professor	M.Sc., Ph.D.	Magnetic Nanoparticles, Cathode materials.
4.	Dr. Shagolsem Lenin Singh	Assistant Professor	M.Sc., Ph.D.	Soft Matter Physics
5.	Dr. Thoudam Diana	Lecturer	M.Sc., Ph.D.	Material Science
6.	Dr. Rajkumar Kamaljit Singh	Lecturer	M.Sc., Ph.D.	Satellite Remote Sensing

(2) Non-faculty Staff

Non-teaching Data	
Regular	Nil
On contract	3

Sl. No.	Name of staff	Designation	Qualification
1.	Mrs. Sujata Tongbram	Technical Assistant	M.Sc., PhD pursuing
2.	Mr. Angom Devadatta Mani	Technical Assistant	M.Sc., PhD pursuing

3.	Mr. Jimpaul Samukcham	Technical Assistant	M.Sc.
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(3) B.Tech. Program: Not applicable

No. of students admitted	1 st yr	2 nd yr	3 rd yr	4 th yr
Admitted				
Intake				

(4) M.Sc. Program

No. of students admitted	1 st yr	2 nd yr
Admitted	15	11
Intake	15	15

(5) Ph.D. Program

Item	
No. of part-time	2
No. of full-time	4

B. Research Information**(1) Faculty visited abroad**

No.	1
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(2) Sponsored research project from Govt./Semi-govt. agencies

No.	Rs. (in lakhs)
2	6.78 + 35 = 41.78

(3) Research publications (See annexure)

Publication	No.
National Journal	Nil
International Journal	7 (Accepted), 10 (Under review)
National Conference	2
International Conference	24

No. of book published	Nil
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Industry Institute Interaction Information**(1) Short-term Course/Workshop/Seminar/Conference conducted by Faculty**

April, 2014 to March, 2016	
STTP	1
Workshop	1
Seminar	1
Conference	1
Symposia	Nil

(2) Patents: Nil**(3) Records of result in various competitive examinations (GATE/GRE/CAT/NET/SLET etc.)**

GATE	1
GRE	Nil
CAT	Nil
NET	3

(4) Sponsored research projects from Industry: Nil**List of Ph.D. Scholars:**

1. Sanatombi Sorokhaibam
2. Elangbam Chitra Devi
3. Biju Thangjam
4. Angom Devadatta mani
5. Jankhohao Touthang
6. Huidrom Surjalata

ANNEXURE**List of publications:**

(I) Journals Published:

1. S. S. Pati, **L. Herojit Singh**, E. M. Guimaraes, J. Mantilla, J. A. H. Coaquira, Aderbal C. Oliveira, V. K. Sharma, V.K. Garg, 'Magnetic chitosan-functionalized Fe₃O₄@Au nanoparticles: Synthesis and characterization', *Journal of Alloys and Compounds*, 2016, **684**, pp. 68-74.
2. **L. Herojit Singh**, S.S. Pati, E. M. Guimaraes, P.A.M. Rodrigues, Aderbal C. Oliveira, V.K. Garg, 'Synthesis, structure, morphology and stoichiometry characterization of cluster and nano magnetite', *Journal of Magnetism and Magnetic Materials*, 2016, **178**, pp. 182-189.
3. **Shagolsem, Lenin S.**, and Yitzhak Rabin. 'Particle dynamics in fluids with random interactions', *The Journal of chemical physics*, 2016, **144**, 194504.
4. **Mamata Maisnam**, Maisnam Victory, Nandeibam Nilima and Sumitra Phanjoubam, "Low dielectric loss in Lithium-based Spinel Nano-ferrites Prepared by Sol-Gel Auto combustion Technique" *Bull. Mater. Sci.*, vol. 39, 249-254, 2016
5. Nandeibam Nilima, **Mamata Maisnam** and Sumitra Phanjoubam, "Structural and Electrical Properties of Sol-gel Prepared Li-Ni-Co nanoferrites sintered at Reduced Temperature" *IJIER*, Vol 3, 415-518, 2015.
6. Sanatombi Sorokhaibam, **Ibetombi Soibam**, Sumitra Phanjoubam. Dielectric studies of Li-Ni ferrite prepared by the citrate precursor method, *International Journal of Material Physics*. Vol.6, No.1 39-46, (2015).
7. **Ibetombi Soibam**, A study of microwave sintered Ni substituted lithium zinc ferrite synthesized by citrate precursor method, *International Journal of Material Science and Engineering*, Vol. 4, No. 1, 54-59, (2016).

(II) Under Review:

1. **Shagolsem, Lenin S.**, Kreer, T., Galuschko, A., Sommer, J.-U. 'Diblock copolymer thin-films under shear' (2016), *The Journal of chemical physics (currently under review)*.
2. Soumee Chakraborty, V. Sivasubramanian, **L. Herojit Singh**, T. R. Ravindran and R. Venkata Krishnan, "Anomalous variation in dynamical properties and correlations with intermediate range structure of lead borate glasses" (2016), *The Journal of chemical physics (currently under review)*.
3. **L. Herojit Singh**, Sudhanshu S. Pati, J. A. H. Coaquira, John Mantilla, A. C. Oliveira, Vijayendra K Garg, "Superpara-para-ferro magnetic transition in CoFe₂O₄@ZnO" (2016), *Journal of Alloys and Compound (currently under review)*.
4. A. Devadatta Mani, **Ibetombi Soibam**, Comparative study of the dielectric properties of 0.5BiFeO₃-0.5Ni_{0.8}Zn_{0.2}Fe₂O₄ multiferroic nanocomposites with their single phase BiFeO₃ and Ni_{0.8}Zn_{0.2}Fe₂O₄, *Physica B*, 2016 (*currently under review*)

5. Sanatombi S, **Ibetombi S**, Sumitra P, Investigation on the electrical and magnetic properties of Li-Cu ferrite prepared by the chemical method, *International Journal of Material Sciences and Engineering*, , SCIE , 2016, (**currently under review**)
6. Sanatombi S, **Ibetombi S**, Sumitra P, Effect of sintering step and technique on the structural and electrical properties of Li Ni ferrite, *Advanced in condensed matter physics*, SCIE, **2016** (**currently under review**)
7. Sanatombi S, **Ibetombi Soibam**, Sumitra Phanjoubam, FTIR studies of copper substituted lithium ferrite prepared by the citrate precursor method, *International Journal of Advances in Science, Engineering and Technology* , 2016 (**currently under review**)
8. Elangbam Chitra Devi, **Ibetombi Soibam** , A correlated structural and electrical study of manganese ferrite nanoparticles with variation in sintering temperature, *Modern Physics Letters B*, Sci indexed (**currently under review**)
9. Elangbam Chitra Devi, **Ibetombi Soibam**, Effect of doping Zn on the structural, electrical and magnetic properties of MnFe_2O_4 nanoparticles, *Indian Journal of Physics*.(Sci indexed), (**currently under review**)
10. Elangbam Chitra Devi, **Ibetombi Soibam**, Structural and electrical studies of Mn-Ni mixed nanoferrites, *International Journal of Nanoparticles*. (Scopus indexed), (**currently under review**)

(III) Conferences

1. Jagkhohao Touthang and Mamata Maisnam, “**Fine grain approach for Li-Mn-Ti ferrite spinel ceramics with V_2O_5 - Na_2SiO_3 addition and microwave processing**” National Conference in Recent Advances in Nanoscience and Nanotechnology(NCRANNT-16), Department of Nanoscience and Nanotechnology, NEHU, Shillong-793022, Meghalaya, India.
2. **Mamata Maisnam**, J. Touthang, Kshetrimayum Sangeeta and Sumitra Phanjoubam, “**Structural and Electrical Properties of Nanosized Yttrium Iron Manganites Synthesized by Sol-gel Autocombustion Method**” Second International Conference on Materials Science and Technology (ICMST 2016) 5 – 8 June 2016, St.Thomas College, Pala, Kerala.
3. M. Victory, M. Maisnam, and S. Phanjoubam, “**Synthesis and characterization of manganese nanoferrite by co-precipitation method for ferrofluid applications**” Second International Conference on Materials Science and Technology (ICMST 2016) 5 – 8 June 2016, St.Thomas College, Pala, Kerala.
4. N Nilima, **M Maisnam**, S Phanjoubam , “**Magnetic properties and A. c. conductivity of Li-Ni-Co ferrite/ SiO_2 nanocomposites prepared by Sol-Gel Method**”, Second International Conference on Materials Science and Technology (ICMST 2016) 5 – 8 June 2016, St.Thomas College, Pala, Kerala.

5. Nandeibam Nilima, **Mamata Maisnam**, Sumitra Phanjoubam, “**Structural, electrical and magnetic behavior of Sol-Gel derived SiO₂ and Li-Ni-Co nano composites**” International Conference on Materials Science & Technology (ICMTECH 2016), 1-4 March 2016, University of Delhi, Delhi
6. W. Surchandra, M. Victory, **M. Maisnam** and S. Phanjoubam, “**Electrical and magnetic characterization of sol-gel prepared Li-Co-Y ferrites**” International Conference on Materials Science & Technology (ICMTECH 2016), 1-4 March 2016, University of Delhi, Delhi.
7. M. Victory, **M. Maisnam**, W. Surchandra and S. Phanjoubam, “**Structural and magnetic properties of sol-gel derived Li-Co nanoferrites heated by conventional and microwave technique**” International Conference on Materials Science & Technology (ICMTECH 2016), 1-4 March 2016, University of Delhi, Delhi
8. Kshetrimayum Sangeeta, **Mamata Maisnam**, Sumitra Phanjoubam, “**A comparative studies of the structural and electrical properties of microwave and conventional sintered yttrium nickel manganites**” International Conference on Materials Science & Technology (ICMTECH 2016), 1-4 March 2016, University of Delhi, Delhi
9. Maisnam Victory, **Mamata Maisnam** and Sumitra Phanjoubam, “Magnetic properties of sol-gel synthesized Li-Co ferrite nanostructures” “International conference on emerging trends in science and engineering research (ETSER 2015), Department of Basic Sciences and Humanities, NIT Manipur, Langol, 2-4 December 2015.
10. Nandeibam Nilima, **Mamata Maisnam**, Sumitra Phanjoubam, “**Influence of substituent on the structural, electrical and magnetic properties of lithium ferrite**” International conference on emerging trends in science and engineering research (ETSER 2015), Department of Basic Sciences and Humanities, NIT Manipur, Langol, 2-4 December 2015.
11. W. Surchandra, M. Victory, **M. Maisnam** and S. Phanjoubam, “**Magnetic study of Y³⁺ substituted Li-Co ferrites**” International conference on emerging trends in science and engineering research (ETSER 2015), Department of Basic Sciences and Humanities, NIT Manipur, Langol, 2-4 December 2015.
12. Maisnam Victory, **Mamata Maisnam**, Waikhom Surchandra, Sumitra Phanjoubam, “**Structural And Magnetic Properties of Sol-Gel Derived Li-Co Nanoferrites Heated By Conventional And Microwave Technique**” Proceedings International Conference on Nanomaterials And Nanotechnology(Nano-15)07 – 10 Dec. , 2015 Centre For Nanoscience And Technology K.S.Rangasamy College Of Technology, Tiruchengode, Tamil Nadu, India
13. Chemical Sol-Gel Synthesis of Li-Co-Y ferrites and their characterization, Waikhom Surchandra, **Mamata Maisnam**, Maisnam Victory and Sumitra Phanjoubam, Proceedings International Conference on Nanomaterials And Nanotechnology(Nano-

- 15) 07 – 10 Dec. , 2015 Centre For Nanoscience And Technology K.S.Rangasamy College Of Technology, Tiruchengode, Tamil Nadu, India
14. **Th. Diana** , H. Nandakumar Sarma “**Interfacial mixing in Bi-Te thin films induced by thermal annealing**” in International Conference on Emerging Trends in Science and Engineering Research (ETSER-2015) in NIT Manipur, 2-4th December, 2015.
15. **L. Herojit Singh**, S. S. Pati, A. C. Oliveira and V. K. Garg, “Structural Transformation in Barbosalite on Li Insertion”, International Conference on Emerging Trends in Science and Engineering Research (ETSER-2015) in NIT Manipur, 2-4th December, 2015.
16. Elangbam Chitra Devi, **Ibetombi Soibam**, ‘ Effect of sintering on structural and dielectric properties of manganese ferrite nanoparticles’. ETSER-2015, 2-4 Dec. NIT Manipur.
17. Elangbam Chitra Devi, **Ibetombi Soibam** , Structural and optical characterization of MnFe₂O₄ nanoparticles, *International conference on material science & technology 2016*, -1-4 March, Delhi University
18. A. Devadatta Mani, **Ibetombi Soibam**, ‘Study of the optimization and the effect of addition of extra Bi on the dielectric and optical properties of BFO’ . ETSER-2015, 2-4 Dec. NIT Manipur.
19. A. Devadatta Mani, **Ibetombi Soibam** , Synthesis, characterization & application of pure phase bismuth ferrite (BFO) in photocatalysis. CHEMCON 2015, 27-31 Dec, IIT Guwahati.
20. Sanatombi S, **Ibetombi S**, Sumitra P , **Structural and magnetic studies of nickel substituted lithium ferrite** , ETSER , 2nd – 4th Dec. 2015, organized by **NIT Manipur, Langol Imphal, India**.
21. Sanatombi S, **Ibetombi Soibam**, Sumitra Phanjoubam , **Comparative studies of conventional and microwave sintered lithium nickel manganese zinc ferrite**, ICMtech , 1-4 march , 2016, organized by **Delhi university, Delhi**
22. Sanatombi S, **Ibetombi Soibam**, Sumitra Phanjoubam **FTIR studies of copper substituted lithium ferrite prepared by the citrate precursor method** , ICET-16 , 12th June 2016 . organized by the technoarete international **Bangalore, Karnataka, India (BEST ORAL PRESENTATION)**.
23. Biju Thangjam, **Ibetombi Soibam**, ‘A comparative study of the initial permeability of NiCuZn ferrites prepared by microwave and conventional sintering technique’ ETSER-2015, 2-4 Dec. NIT Manipur.
24. Biju Thangjam, **Ibetombi Soibam**, ‘FTIR study of Cu substituted NiZn ferrites prepared by citrate precursor method. ICMtech , 1-4 march , 2016, organized by **Delhi university, Delhi**

25. **Ibetombi Soibam**, ‘A Comparative study of substituted lithium ferrites sintered by the conventional and microwave sintering technique’. ICCMMP 2015, Dec 17-18. Thailand.
26. **Shagolsem, Lenin** ‘Copolymer nanocomposite thin-films under shear: A molecular dynamics simulations study’. National Conference in Recent Advances in Nanoscience and Nanotechnology (NCRANNT-16), Department of Nanoscience and Nanotechnology, NEHU, Shillong-793022, Meghalaya, India (**BEST ORAL PRESENTATION**).

(III) Workshop/Short-term course attended

1. **Th Diana**, “*Workshop on water and water analysis*” jointly organized by Metrohm India Limited and NIT Manipur on 4th August, 2015 (Attended).
2. **Th Diana**, “**Two week ISTE STTP on Engineering Physics**” organized by IIT Bombay and NIT Manipur, 8-18th December, 2015.
3. **L Herojit Singh**, “**Two week ISTE STTP on Engineering Physics**” organized by IIT Bombay and NIT Manipur, 8-18th December, 2015.
4. **R. K. Kamaljit Singh**, “**Two week ISTE STTP on Engineering Physics**” organized by IIT Bombay and NIT Manipur, 8-18th December, 2015.
5. **Coordinator’s Workshop on Engineering Physics**, conducted by IIT Mumbai, Sept. 07- 11, 2015.

(IV) Research projects undertaken

1. Ibetombi Soibam, ‘Processing (Microwave and Conventional) and characterization of substituted lithium ferrite nanoparticles’ (Oct. 2013-Sept. 2016)
2. Shagolsem Lenin Singh, “Thin Film of linear/cyclic copolymer mixtures under shear: Role of chain topology” 2016 – present.

(V) Short-term course organised

1. Mamata Maisnam, “**Two week ISTE STTP on Engineering Physics**” organized by IIT Bombay and NIT Manipur, 8-18th December, 2015.

Annual Report 2015-16 Department of Chemistry

1. Number regular faculty and staff with PhD and without PhD separately

Faculty : 4

Staff : NIL

Sl. No.	Name	Designation	Qualification	Category
1	Dr. Th. David Singh	Assistant Professor	M.Sc & Ph.D.	OBC
2	Dr. Mithun Roy	Assistant Professor	M.Sc & Ph.D.	General
3.	Dr. Chandi Charan Malakar	Assistant Professor	M.Sc & Ph.D.	General
4	Dr. Nagarajan S.	Assistant Professor	M.Sc & Ph.D.	General

2. Contract faculty and staff with PhD and without PhD separately

Contract Faculty (Lecturer) with Ph.D. : 3

Contract Faculty (Lecturer) without Ph.D. : 0

Contract Staff with Ph.D. : 0

Contract Staff with Ph.D. : 2

Details:

Sl. No.	Name	Designation	Year of joining	Present Consolidated pay per month	Category
1	Dr. H. Premananda Singh	Lecturer	2014	35,000	OBC
2	Dr. L. Ronibala Devi	Lecturer	2015	35,000	OBC
3	Dr. W. Sujata	Lecturer	2015	35,000	General
4	Ng. Bhogenjit Singh	Technical Assistant	2014	23,000	General
5	Longjam Reena Devi	Technical Assistant	2014	23,000	General

3. Publications in Journals of the faculty and technical staff (SCI, SCIE, AHCI, Scopus, SSCI, Google Scholar) and scopus indexed conferences:

SCI/SCIE : 1 +2=3

SCOPUS : 2

Dr. Th. David Singh :

1. Facile synthesis of biogenic gold nanocatalyst for efficient degradation of organic pollutants.
Henam Sylvia Devi, N. Rajmuhon Singh, Henam Premananda Singh and **Thiyam David Singh** (2015). *Journal of Environmental Chemical Engineering*, 39: 2042–2049 (Scopus, published by Elsevier).
2. A benign approach for the synthesis of silver nanoparticles and their application in treatment of organic pollutants.
Henam Sylvia Devi, N. Rajmuhon Singh and **Thiyam David Singh** (2015). *Arabian Journal for science and engineering*, 41:2249-2256. DOI 10.1007/s13369-015-2007-0.(SCIE, published by Springer).
3. Cu-Zn and Cu- Ni bimetallic particles fabricated using ascorbic acid and its role in photodegradation of methyl orange.
Henam Sylvia Devi and **Thiyam David Singh** (2016). *Asian Journal of Chemistry*, 28: 2255-2260.(Scopus)

Dr. Chandi Charan Malakar :

1. D. Singh, N. Devi, V. Kumar, S. S. Chimni, **C. C. Malakar**, S. Mehra, S. Rattan, S. Batra, V. Singh "Natural Product Inspired Designing and Synthesis of β -Carboline and γ -Lactones Based Molecular Hybrids" *Org. Biomol. Chem.* **2016**, 14, 8154-8166 (SCIE)
2. D. Singh, N. Devi, V. Kumar, **C. C. Malakar**, S. Mehra, S. Kumar, R. K. Rawal, V. Singh "A Metal-free 1,3-Dipolar Cycloaddition Approach towards Regio-selective Synthesis of Novel β -Carboline and Isoxazole Based Molecular Hybrids" *RSC Advances* **2016**, 6, 88066-88076 (SCIE)

4. Projects with amount:

Sl. No.	Principal Investigator/Mentor	Title of the Project	Funded By	Amount	Duration
	Dr. Chandi Charan Malakar	Synthesis and Decoration of Drug-like Molecules using Transition Metal-Catalyzed C(sp ²)–H/C(sp ³)–H Bond Activation Approach	Department of Science and Technology, SERB, Govt. of India	38,85,000/-	3 years
	Dr. Th. David Singh	Preparation of activated bamboo charcoal nanoparticles from <i>Bambusa Tulda (Saneibi Wa)</i> and its application for	Department of Science and Technology,	96,000/-	1 year

		purification of drinking water	Govt. of Manipur		
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5. Patents : NIL
6. Library purchase - hard copy, soft copy, journals, conference proceeding, ebooks with amount, software for plagiarism etc : NIL
7. Number of GATE/NET qualified students : NIL
8. Number of students who have got in placement, and in Govt jobs : NIL
9. Number of students who have taken admission in PG studies:

	No. of Students Admitted	Left the course	Pass Out	Pass Percent
2014-2015	12	2	10	100%
2015-2016	15	2	Continuing	-
2016-2017	14	0	Continuing	-

10. Number of faculty and staff who have attended and presented papers in conferences. : 6 nos.

Dr. Th. David Singh :

- Presented a paper entitled "Copper nanoparticles obtained from reduction of Cu²⁺ ions by ascorbic acid in matrix of starch; a green approach for fabrication" at 6th World congress on biotechnology held on October 5-7, 2015 in New Delhi, India.
- Presented a poster entitled "Monometallic Ni and bimetallic Ni-Ag nanoparticles from tannic acid and sodium hydroxide, for degradation of methylene blue" at International Conference on Nascent Developments in Chemical Sciences: opportunities for Academia-Industry Collaboration" organized by Department of Chemistry, Birla Institute of Technology & Science, Pilani, Pilani Campus during October 16-18, 2015
- Presented a paper entitled, "**Bamboo Charcoal and its Prospect in Modern Technology**" at First International Bamboo Conference cum Workshop (IBCCW-2015) during October 22-26, 2015 organised by Oriental College (Autonomous), Manipur.
- Participated in the International conference on Emerging Trends in Science and Engineering Research(ETSER)-2015 organised by Department of Basic Sciences and Humanities, NIT Manipur, Langol during December 2-4, 2015.
- Presented a paper entitled, "**Fabrication of iron oxide nanoparticle coated with tannic acid and its role in degradation of dye: A green approach**" Material Research Society of Indian Symposium-2016 on Advance materials for Sustainable Applications" organized by CSIR-North east Institute of Science and Technology, Jorhat, Assam during February 18-21, 2016.

11. Number of faculty and staff who have attended workshop and training in other institutes.

Dr. Chandi Charan Malakar attended an workshop on “Optimize Your Lab Productivity”, conducted by Agilent Technologies India Pvt Ltd, March 16, **2016** at Imphal

12. Seminar. Conference, workshop or training programme organised in department :

Sl. No.	Title	Sponsored by	Convenor/Coordinator	Date
1	Water and Water Analysis	Metrohm India Limited	Dr. Th. David Singh and Dr. Mithun Roy	4 th August, 2015
2	An Innovative Workshop on Essence of Scientific Software	NIT Manipur	Dr. Chandi Charan Malakar, Dr. Mithun Roy, Dr. Th. David Singh, Dr. Nagarajan S.	February 20-21, 2016

13. Number of faculty and staff who have given invited talks in other institutes and offices. : NIL

14. Number of ladies faculty and staff as members, heads, chairman etc in BOG, Senate, other administrative posts: NIL

15. Number of BTech, MTech, MSc and PhD students who have been awarded degrees and pass percentages in BTech, MTech and MSc

Course	Year	Pass Out	Pass Percent
M.Sc	2016	10	100%
Ph.D.	2016	1	

16. Amount of purchase in the department for major equipments, devices, instruments, software, hardware, PCs, computer:

Sl. No.	Equipment	Manufacturer	Qty	Rate	Equivalent INR
1	Deep Freezer	Godrej	1	26400	29,964/-

2	Ice Machine	Cole -Parmer	1	219000	2,48,565/-
3	DLS with zeta Potential ZETASIZER	Malvern	1	31294GBP	31,28,010/-
4	Viscometer	Core-Palmer	1	256000INR	2,90,560/-
5	Buchi Rotavapor with vacuum pump & Chiller	BUCHI	2	722400	16,25,400/-
6					
7	Nitrogen gas cylinder and regulator	Maverick Technologies	3	52920	1,58,760/-

Annual Report 2015-16

Department of Mathematics

E. Academic Information

(5) Faculty

Faculty	April, 2015 – March, 2016
Professor	NIL
Associate Professor	NIL
Assistant Professor	5
on contract	NIL
Teaching Assistant	2
Total	7

Sl. No.	Name of the Faculty	Designation	Qualification	Subject Specialization
MATHEMATICS				
1	Dr. Yumnam Rohen Singh	Assistant Professor	M.Sc., Ph.D.	Fixed Point Theory, Manifolds, Special Functions
2	Dr. Chanam Barchand Singh	Assistant Professor	M.Sc., Ph.D.	Complex Analysis, Space Dynamics, Dynamical System
3	Dr. B.B. Upadhyay	Assistant Professor	M.Sc., Ph.D.	Mathematical Optimization
4	Dr. Sanasam Surendra Singh	Assistant Professor	M.Sc., Ph.D.	Cosmology, Bio-Mathematics
5	Dr. Sunil Panday	Assistant Professor	M.Sc., Ph.D.	Finite element modelling, Numerical analysis, Computational Biology
6	Dr. L. Binashakhi Devi	Teaching Assistant	M.Sc., Ph.D.	Operation Research
7	Dr. Ashem Ingocha Singh	Teaching Assistant	M.Sc., Ph.D.	Differential Equation

(6) Non – Faculty Staff

Non – Teaching Data	April, 2015 – March, 2016
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National Institute of Technology Manipur

Regular	NIL
On Contract	0
Total	0

Sl. No.	Name of the Staff	Designation	Qualification
1			

(7) B.Tech Program

No. of students Admitted	1 st year	2 nd year	3 rd year	4 th year
Admitted				
Intake				

(8) M. Sc. Program

No. of students Admitted	1 st year	2 nd year
Admitted	15	4
Intake	15	15

(9) Ph.D Program

	April, 2015 – March, 2016
No. of part-time admitted	NIL
No. of Full-time admitted	5
Total	5
Degree Awarded	NIL

List of Ph. D Scholar**A. Mathematics:**

1. Th. Chhtrajit Singh
2. L. Shanjit Singh
3. Kh. Bulbul Singh
4. N. Priyobarta Singh
5. M. Saratchandra Singh

F. Research Information**(4) Faculty Visited Abroad**

	April, 2015 – March, 2016
Dr. Yumnam Rohen Singh visited Galatasaray University, Istanbul, Turkey to attend the conference ICFPTA 2015	July 20-24, 2015

(5) Sponsored Research project from Govt. /Semi. Govt. Agencies

Sponsored Research project	April, 2015 – March, 2016
	Nil
	Rs. (in lakhs)

(3) Research Publication (SEE Annexure)

Publication	April, 2015-March, 2016
National Journal	0
International Journals	8
National Conference	2 (presented)
International Conference	14 (presented)
No. of Book published	nil

Industry Institute Interaction Information**(1) Short Term Course/ Workshop/ Seminar/Conference conducted by Faculty**

	April, 2015-March, 2016
STTP	Nil
Workshop	1 (workshop on essence of scientific software at NIT Manipur during 20-21 February, 2016)
Seminar	Nil
Conference	1 (Emerging Trends in Science and Engineering Research (ETSER-2015))
Symposia	Nil

(2)

Patents	April, 2015-March, 2016
No. of patents acquired	Nil

(3)

Record of result in various competitive examination like (GATE/GRE/CAT, etc)	April, 2015-March, 2016
GATE	Nil
GRE	Nil
CAT	Nil

(4) Sponsored Research projects from Industry

Sponsored Research projects	April, 2015-March, 2016	
	No.	Rs.
		Nil

LIST OF PUBLICATIONS

International conference (Presented)

1. **Yumnam Rohen** and Laishram Shanjit, Fixed points of R-weakly commuting mappings in multiplicative metric space, presented in the International Conference on Fixed point Theory and Application (ICFPTA-2015) during July 20-24, 2015 at Galatasaray University, Istanbul, Turkey.
2. Thokchom Chhatrajit Singh and **Yumnam Rohen**, “Monotonicity and Fixed point Operators”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
3. Dr. L. Binashakhi Devi, “Qualitative analysis on the spread of infectious diseases in a population with two age groups”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
4. Laishram Shanjit Singh and **Yumnam Rohen**, “Common fixed point for compatible mappings of type (A) satisfying contractive condition in multiplicative metric space”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
5. S. Surendra Singh, “A New Class of Anisotropic Dark Energy Model in Lyra’s Manifold”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
6. B.B. Upadhyay, “Multiobjective Semi-Infinite Programming Involving Generalized Approximate Convexity and Quasi efficiency”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
7. Bulbul Khomdram and **Yumnam Rohen**, “Quadrupled Fixed Point Theorem in Gb-Metric spaces”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
8. B.B. Upadhyay, N. Priyobarta and **Yumnam Rohen**, “Optimality and duality via generalized approximate convexity and quasi efficiency using limiting sub-differential”, presented in ‘Emerging Trends in Science and Engineering Research (ETSER-2015)’ organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).
9. Barchand Chanam, Inequalities on Polar Derivative of a Polynomial, International Conference on Emerging Trends in Science and Engineering Research, held during 2-4 December, 2015 in National Institute of Technology Manipur.
10. **Yumnam Rohen**, Some quadrupled coincidence point theorem in ordered Gb-metric spaces, presented in the International Conference on Analysis and its Applications (ICAA-2015) during December 19-21, 2015 at Aligarh Muslim University, Aligarh.
11. B. B. Upadhyay, On relations between interval-valued vector optimisation problems and vector variational inequalities, presented in the International Conference on Analysis and its Applications (ICAA-2015) during December 19-21, 2015 at Aligarh Muslim University, Aligarh.

12. B. B. Upadhyay, N. Priyobarta and **Yumnam Rohen**, Optimality via generalised approximate convexity and quasi efficiency using limiting subdifferentials, presented in the International Conference on Analysis and its Applications (ICAA-2015) during December 19-21, 2015 at Aligarh Muslim University, Aligarh.
13. Laishram Shanjit and **Yumnam Rohen**, Tripled fixed point in ordered multiplicative metric spaces, presented in the CONIAPS XVIII during December 22-24, 2015 at Allahabad University, Allahabad.
14. B. B. Upadhyay, "Nonsmooth Multiobjective semi-infinite programming programming involving generalized approximate convexity and quasi efficiency" presented in 'National Conference on Analysis and Applications (NCOAA-2016, BHU)' organized by Department of Mathematics, Institute of Science, Banaras Hindu University (February 05-07, 2016).
15. Ashem Ingocha and Sunil Panday participated in the organization of the conference 'Emerging Trends in Science and Engineering Research (ETSER-2015)' organized by Department of Basic Sciences and Humanities, National Institute of Technology, Manipur (December 01-04, 2015).

National Conference

1. **Yumnam Rohen**, Some coupled fixed point theorems in partially ordered metric space presented in the conference on History and Development of Mathematics (CHDM) during November 14-16, 2015 at IIT Bombay, Mumbai.
2. Barchand Chanam, Some L^r Inequalities on Polar Derivative of a Polynomial, National Conference on Recent Developments in Mathematical Modelling and Fuzzillogy, held from 28-29th October, 2015 in Chandigarh University (Published).

International Journal

1. Th. Chhatrajit and **Yumnam Rohen**, Triple fixed point theorems for mappings satisfying weak contraction under F-invariant set, *International Journal of Pure and Applied Mathematics*, **105(4)** (2015) 811-822, (SCOPUS).
2. H. K. Nashine, **Yumnam Rohen** and Th. Chhatrajit, Common coupled fixed point theorems of two mappings satisfying generalised contractive condition in cone metric space, *International Journal of Pure and Applied Mathematics*, **106(3)** (2016) 791-799, (SCOPUS).
3. Th. Chhatrajit and **Yumnam Rohen**, Some results on T-stability of Picard's iteration, *Springer Plus* (2016) 5:284, (SCIE).
4. S. Surendra Singh, Bulk viscous cosmological models with linearly varying deceleration parameter in Lyra's manifold, *IJMSEA*, Vol. 9, No. II (June 2015) 299-306.
5. **B.B. Upadhyay**, S.K. Mishra and S.K. Porwal: Explicitly geodesic B-preinvex functions on Riemannian manifolds, *Transactions on Mathematical Programming and Applications*, 3(2), pp. 1-14, 2015.
6. Tadeusz Antczak, S.K. Mishra and **B.B. Upadhyay**: First order duality results for a new class of nonconvex semi-infinite minimax fractional programming problems, *Journal of Advanced Mathematical Studies*, 9(1) pp. 132-162, (2016).
7. Barchand Chanam, *Some Inequalities on Polar Derivative of Polynomial having No Zero in a Disc*, *Advances in Pure Mathematics*, 5, 2015, 796-803.
8. Barchand Chanam, *Polar Derivative Versions of Polynomial Inequalities*, *Advances in Pure Mathematics*, 5, 2015, 745-755.

WORKSHOP/TUTORIALS ATTENDED

1. Barchand Chanam attended Workshop on 'Water and Water Analysis' organised by Metrohm India Limited and National Institute of Technology Manipur on 4th August, 2015.

2. Barchand Chanam, B. B. Upadhyay, S. Surendra, Sunil Pandey, Ashem Ingocha and L. Binashakhi attended the workshop an innovative technology workshop on essence of scientific software at NIT Manipur during 20-21 February, 2016.

VISIT

1. Yumnam Rohen Visited IIT Madras, Chennai during 23-26 March 2016 for joint research work with Prof. S. Verramani, Department of Mathematics, IIT Madras.
2. B. B. Upadhyay visited DST-Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi from July 1st to July 12th, 2015 and given a talk on "**Pseudolinear Functions and Its Applications in Optimization**" at 10th July 2015.

Annual Report 2015-16**Department of Humanities and Social Sciences****G. Academic Information****(10) Faculty**

Faculty	April, 2015 – March, 2016
Professor	NIL
Associate Professor	NIL
Assistant Professor	1
on contract	NIL
Teaching Assistant	2
Total	3

Sl. No.	Name of the Faculty	Designation	Qualification	Subject Specialization
1	Dr. Sangeeta Laishram	Assistant Professor	M.A. Ph.D	CommonWealth Literature
2	Dr. H.Soni Devi	Teaching Assistant	M.B.A., Ph.D.	MBA
3	Dr. R.K. Diana	Teaching Assistant	M.A., Ph.D.	Economics

(11) Non – Faculty Staff

Non – Teaching Data	April, 2015 – March, 2016
Regular	NIL
On Contract	NIL
Total	0

(12) Ph.D Program

	April, 2015 – March, 2016
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No. of part-time admitted	
No. of Full-time admitted	
Total	
Degree Awarded	NIL

List of Ph.D Scholar**A. English**

6. Longjam Bedana
7. Kh. Gunibala
8. Kh. Nirupama
9. Ksh. Momo

10. Faculty Visited Abroad

	April, 2015 – March, 2016
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(6) Sponsored Research project from Govt. /Semi. Govt. Agencies

Sponsored Research project	April, 2015 – March, 2016	
	Nil	Rs. (in lakhs)

(3) Research Publication (SEE Annexure)

Publication	April, 2015-March, 2016
National Journal	nil
International Journals	3
International Seminar	1 (Presented)
International Conferences	3 (Presented)
No. of Book chapters published	2

Industry Institute Interaction Information**(5) Short Term Course/ Workshop/ Seminar/Conference conducted by Faculty**

	April, 2015-March, 2016
STTP	Nil
Workshop	Nil
Seminar	Nil
Conference	Nil
Symposia	Nil

(6)

Patents	April, 2015-March, 2016
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No. of patents acquired	Nil
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(7)

Record of result in various competitive examination like (GATE/GRE/CAT, etc)	April, 2015-March, 2016
GATE	Nil
GRE	Nil
CAT	Nil

(8) Sponsored Research projects from Industry

Sponsored Research projects	April, 2015-March, 2016	
	No.	Rs.
		Nil

LIST OF PUBLICATIONS**International Journals:**

1. Bedana, Longjam, Sangeeta Laishram and M. Priyobarta Singh. "Representation of Motherhood in Buchi Emecheta's *The Joys of Motherhood*." In *Literary Insight: A Refereed International Journal*. VII. I. Jan., 2016: 54 – 59.
2. Nirupama, Khundrakpam and Dr. Sangeeta Laishram. "Impact of Insurgency: Violence against Women in Manipur as Represented in Short Stories by Ningombam Sunita and Nepram Maya." In *An International Journal in English*. The Criterion. VII.I. Feb., 2016: 115 – 118.
3. Devi, Khumanthem Gunibala and Dr. Sangeeta Laishram. "Narrative of Political Violence and Social realities: A Study of Temsula Ao's *These Hills Called Home: Stories From a War Zone*." *An International Journal of Advanced Research*. IV.IX. Sep., 2016: 917 - 920.

International Seminar (Presented):

1. Devi, Khumanthem Gunibala and Dr. Sangeeta Laishram. "Disruption of Culture and Identity Assertion in the Select Poetic Voices from Northeast India" in *International Seminar on Orality: The Quest for Meaning*. (26-27th May, 2016) organized by the Department of English, Bodoland University, Kokrajar, BTAD, Assam.

International conferences (Presented):

1. Bedana, Longjam and Sangeeta Laishram. "Quest for Black Woman's Identity in Buchi Emecheta's novel *Kehinde*." In *The International Conference on "Contesting 'Self' and 'Other': Identities of Caste, Tribe, Gender and Beyond"*. (27-28th March, 2015) organized by Department of History and Department of Anthropology, Assam University, Karbi Anglong, Assam.
2. Nirupama, Khundrakpam and Dr. Sangeeta Laishram. "Gender and Race in Toni Morrison's *Beloved*." In *International Conference on Literature, Culture and World Peace*. (23rd-24th Sep., 2016) organized by Dnyansagar Institute of Management and Research, Pune, Maharashtra.
3. Momo, Kshetrimayum and Dr. Sangeeta Laishram. "The Idea of Masculinity in Chinua Achebe's *Things Fall Apart*." In *International Conference on Literature, Culture and World Peace*. (23rd-24th Sep., 2016) organized by Dnyansagar Institute of Management and Research, Pune, Maharashtra.

Book Chapters:

1. Bedana, Longjam and Sangeeta Laishram. "Quest for Black Woman's Identity in Buchi Emecheta's novel *Kehinde*." *Contesting Gender: History, Politics and Identity*. Eds. Vulli Dhanaraju and Kh. Nagendra Singh. New Delhi: Dominant Publishers and Distribution Pvt. Ltd., 2016. 173 – 184.
2. Nirupama, Khundrakpam and Dr. Sangeeta Laishram. "Decriminalizing Sexual Minorities: Representation of Transgender in Manipuri Cinema." *The Invisible Minority in Literature and Society: Haunting Tragedies*. Eds. Dr. Mohd. Shamim and Dr. Noor Fatima. Aligarh: Vangmaya Books, 2016. 29 – 36.

1.2.1 Any other information not covered above (Industrial visit, extracurricular activities etc) for 2013-2014

- A Faculty of the department visited IIT Guwahati from 13th June to 17th June 2013, for the purpose of laboratories set-up of NIT Manipur.

5. SCHOLARSHIPS FOR SC, ST and HANDICAPPED

Scholarship and Assistance

SL. No.	Name of the Scholarship	Issuing authority
1	NEC	University and higher education, govt. of Manipur
2	Merit cum means	MOBC, govt. of Manipur

3	ST Post metric	Tribal Affairs and Hills
4	OBC post metric	MOBC, govt. of Manipur
5	IOCL	Indian Oil Cooperation Ltd.
6	Central Sector Top Class Scholarship for SC	Ministry of Social justice and empowerment, govt. of India
7	Central Sector Top Class Scholarship for ST	Ministry of Tribal Affairs, govt. of India
8	ST Scholarship post metric	State welfare Office, govt. of Bihar

6. CENTRALISED SERVICES

6.1 Training and Placements

The Institute's Training and Placement Cell (T&P Cell) handles all issues related to students internship and final placements. The T&P Cell regularly organized industrial tour for the students thereby providing an opportunity to relate classroom teachings with reality. Workshops are also organized on regular basis thereby providing an interface between academic and industry. The T&P Cell is all geared up provide all possible assistance to the students for final placement.

6.2 CENTRAL LIBRARY, NIT MANIPUR

Annual report for the year 2015-2016

Year of Establishment

: the 4th march, 2011

Strength of the staff

:08

(02- library professional,

02– non -professional)

: 04(Apprentice –professional)

Total no. of Volumes procured as on 27/09/16

- Entered in the Accession Register : 24286
- Yet to be entered : 500
- Yet to be arrived : 5000

Award Recieced

- (i) **Highest Usage of Science Direct amongst New NITs(2014)**
- (ii) **Wiley Library awards for upcoming Academic Library Award, January 20th 2016**

Subscription

- E-Journal and ebooks

ONLINE JOURNALS AND ONLINE BOOKS AVAILABLE IN NITM

Elsevier eBooks 2013	
Subject Collection	Number of Journals
Computer Science	415
Engineering	473
Total	888
Springer eBooks 2013	
Computer Science	2645
Engineering	1763
Total	4408
CRC eBooks 2013	
Chemistry netbase	125
Computer Science netbase	85
ENGnetbase	228
Mathematics	98
Physics	114
Total	640

PEARSON eBooks 2014	
Computer Science, Engineering, Mathematics, Physics, General, Environmental studies, Business & Economics	2173
ScienceDirect(5 subject collections) under NIT Consortium for year 2014	
Subject Collection	Number of Journals
Chemistry	113
Computer Science	138
Engineering	227
Mathematics	101
Physics and Astronomy	113
Total	692
Springer Online Journal Archive (5 Subject Collections)	
Chemistry & Materials Science	107
Physics & Astronomy	89
Mathematics & Statistics	125
Engineering	112
Computer Science	94
Chemistry & Materials Science	107
Total	527
WILEY	
E-journal	100
B-Books	1380
Grand Total	10808(EJOURNALS AND E BOOKS)

- Total number of online journal available in National Institute of Technology Manipur = **1319**
- Total number of online Books available in National Institute of Technology Manipur = **9489**

- Magazines : 22
- Newspapers : 06(both national and local)
- Internet connectivity : Available

Automation

Generate bar-code of available Resources in the Library and Membership database is in the process.

Staff in position- 03(on Contract)

Sl. No.	Name	Designation	Qualification	Remark
1.	Dr. Naorem Vidyavati Devi	Librarian	BSc, MLIS,CCCA,PGDCA, Ph.D	Published work- nearly 30 papers were published in Seminars/Conference Volumes, Journals (including both national and international), Local and Festschrift volume. Organized- 02 National Workshop Organized-7 Awareness programme (Institutional level)
2.	Moirangthem Rakesh Singh	Library Assistant	MLIS, CCCA	Published Work- 2 papers (01 in bulletin and 01 in Conference Volume)
3.	Chanambam Victoria Devi	Library Attendant	BSC, PGDCA	-
4.	Y.K. Katini	Library Attendant	XII, DCA	—
5.	R.K. Rajeshwori Devi	Library Apprentice	MLIS	Published work- 3 papers

6.	Kh. Hammerjit Singh	Library Apprentice	MLIS, DCA	Published work- 4 papers Organized 01 National Workshop as event Manager
7.	N. Bitankumar Singh	Library Apprentice	MLIS	Published work- 2 papers Organized 01 National Workshop as event Manager
8.	H. Ruvena Sharma	Library Apprentice	MLIS	—

At a Glance

- The Library, under the illuminating guidance of the Competent Authorities in this short period of time, the Library NIT, Manipur has procured most of the basic Library equipments, furniture and stationary items.
- Those in the higher authority in the Institute are whole heartedly committed in the development of the Library in all possible ways.
- Library, NIT, Manipur, has a large scope of developing its service and provides the same to the users.
- Though Saturday is a holiday for the Institution, the library functions on Saturday for 2-3 hrs, except 2nd Saturday, in the interest of the institution in general and of the student community in particulars.
- So far, NIT Manipur, Library has organized two days National Workshop, 7 User Awareness cum Demonstration Programme on access to e-resources with subject experts from outside the State to enable both faculty and students of the Institution to use this facilities.
- The NITM Library, under the illuminating guidance of the Director, NITM, had organized a “Three Days (3rd to 5th October, 2013) BOOK Exhibition Programme” at NITM campus in which 12 book firms participated.

6.3 Students Residential Facilities

The Institute is a fully residential Institute. NIT Manipur is able to provide hostel accommodation to every student on twin sharing basis. The Institute has three Boys Hostels of which one is a two storey Boys Hostel. In addition a Girls Hostel is also located inside the Campus. Games and Sports facilities are provided inside the campus.

6.4 Students Mess

The Institute runs two separate mess for the three boys' hostels and separate mess for the Girls' Hostel. Two boys' hotels at Temporary Campus share a common Mess.

7.0 BOG and Finance Committee

7.1 Board of Governors

- | | |
|---|------------------------------|
| 1. Professor Dr.Y.S Rajan
Distinguished Professor in ISRO, Antariksh Bhavan, New BEL Road,
Bangalore | Chairman |
| 2. Dr.S.Birendra Singh,
Director NIT Manipur | Ex-Officio
Member |
| 3. Joint Secretary
Technical Education, Depts. Higher Education MHRD | Member |
| 4. Financial Adviser
Department of Higher Education MHRD | Member |
| 5. Prof.Ch.Amuba Singh
Former Vice Chancellor, Manipur University | Member |

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| 6. Shri Khumanthem Devabrata Singh
Proprietor, M/S Bamboo & Allied Industries, Imphal | Member |
| 7. Prof. K.P Ghatak
Professor & HOD, NIT Agartala | Member |
| 8. Dr. A Aumudeswari
Director, Indo-French Centre for Advanced Research , Lodhi Road , New Delhi | Member |
| 9. Professor /Associate Professor/ Assistant Professor of the existing old NITs | Member |
| 10. Director IIT- Guwahati or his nominee, not below the rank of Professor | Member |
| 11. R.K.Lalit Singh,
Registrar, NIT Manipur | Secretary |

7.2 Finance Committee

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|---|-------------------------|
| 1. Professor Dr.Y.S Rajan
Distinguished Professor in ISRO, | Chairman |
| 2. Director NIT Manipur, Ex-Officio | Member |
| 3. Joint Secretary dealing with Technical Education, Department of Higher Education, MHRD, Govt. of India | Member |
| 4. Financial Advisor, Department of Higher Education MHRD, Govt. of India | Member |
| 5. Prof.Ch.Amuba Singh, Former Vice Chancellor, Manipur University
(Nominated Member BOG) | Member |
| 6. Shri Khumanthem Devabrata Singh, Proprietor, M/S Deva Bamboo & Allied Industries (Nominated Member, BOG) | Member |
| 7. Registrar, NIT Manipur | Member Secretary |
