



**TEZPUR UNIVERSITY**

*A Central University*



# ANNUAL REPORT

**2019-2020**



## VISION

To develop human excellence and inculcate leadership through hard work and creativity.

## MISSION

To render Tezpur University one of the most preferred destinations of students, faculty and scholars and employees. To be in the Top 50 Universities of the world...



# ANNUAL REPORT

2019-20

(Approved by the Board of Management vide Resolution No.  
B.99/2020/3/2.1, dt. 13.11.2020)



**Specialized Knowledge Promotes Creativity**

**Tezpur University**

Napam, Tezpur 784028, Assam



# CONTENTS

❖ VC's Desk	
❖ Annual Report 2019-20: A Gist	5
❖ Tezpur University: An Overview	6
❖ Financial Profile	9
❖ Academic Profile	10
❖ Research and Development Profile	13
❖ Students' Activity Profile	15
❖ Training and Placement activities	21
❖ Statutory Bodies	27
❖ Academic Departments And Centres	35
❖ <b>School of Engineering</b>	
Dean's Report	39
Dept. of Applied Sciences	40
Dept. of Civil Engineering	44
Dept. of Computer Science and Engineering	49
Dept. of Electrical Engineering	65
Dept. of Electronics and Communication Engineering	69
Dept. of Energy	77
Dept. of Food Engineering and Technology	94
Dept. of Mechanical Engineering	104
❖ <b>School of Humanities and Social Sciences</b>	
Dean's Report	119
Dept. of Cultural Studies	120
Dept. of Education	127
Dept. of English and Foreign Languages	133
Dept. of Hindi	142
Dept. of Law	145
Dept. of Mass Communication and Journalism	150
Dept. of Social Work	156
Dept. of Sociology	160
Centre for Assamese Studies	166
Centre for Endangered Languages	168
Dr. Ambedkar Chair	183
❖ <b>School of Management Sciences</b>	
Dean's Report	189
Dept. of Business Administration	191
Dept. of Commerce	201
Centre for Disaster Management	204
Intellectual Property Rights Cell	206

❖ <b>School of Sciences</b>	
Dean's Report	211
Dept. of Chemical Sciences	212
Dept. of Environmental Science	240
Dept. of Mathematical Sciences	249
Dept. of Molecular Biology and Biotechnology	260
Dept. of Physics	284
Advanced Institutional Level Biotech Hub	298
❖ <b>Centre for Open and Distance Learning</b>	300
❖ <b>Teaching Learning Centre</b>	303
❖ <b>Central Facilities</b>	
Central Library	309
Centre for Inclusive Development	313
Centre for Innovation, Incubation and Entrepreneurship	315
Computer Centre	316
Engineering Cell	320
Health Centre	322
Horticulture Section	324
Internal Quality Assurance Cell	326
International Office	327
Sophisticated Analytical Instrumentation Centre	328
❖ <b>Programmes Organized by the University</b>	331
❖ <b>The Year in Figures</b>	333



**Prof. V.K.Jain**  
**Vice-Chancellor**



## Tezpur University

(A Central University)  
Tezpur - 784028  
Assam, India

- **Visitor's Best University Award - 2016**
- **NIRF India Rankings 2016 : 05**
- **Accredited with 'A' Grade by NAAC**
- **THE Asia Rankings 2018 : 100**
- **THE World Best Small Univ. 2018 - 20<sup>th</sup>**
- **QS Ranking 2019 : IND - 36, BRICS - 146**

Phone : 03712-267003 (o)

Fax : 03712-267006 (o)

E-mail : [vc@tezu.ernet.in](mailto:vc@tezu.ernet.in)

**Professor V. K. Jain**  
Vice-Chancellor

When Tezpur University was established on 21<sup>st</sup> January 1994, its founders had aspired to create an institution that would “Develop Human Excellence and Inculcate Leadership through Hard work and Creativity”.

The seed, that was sown two and a half decades ago, has become a fully-grown tree now. The University, which had a modest beginning with only 57 students in 03 Departments, has transformed into a prestigious Higher Education Institute and has been fast emerging as one of the most sought after universities in the country and especially in eastern region of India by attracting researchers, students and faculties.

With this backdrop, let me present Tezpur University's Annual Report for the year 2019-20. I am happy to mention some key points regarding our performance and achievements for the reported year.

The University successfully conducted National Level Entrance Examination (Tezpur University Entrance Examinations) for admission to almost all the programmes of study (except for MBA and B.Tech) at 26 designated centres across the country. The total number of students admitted to various programmes of study during the period was 1497. They were admitted in 68 different programmes in 22 academic departments. The total strength of the students on the campus was 4129, out of which 41.48% were female students. The total number of foreign students on the campus during the reported period was 33. Out of the total strength, 82.95% of the students were from Assam, and 16.25% students were from the rest of the country. The University follows Choice Based Credit System (CBCS) with Continuous Evaluation system by meticulously following the Academic Calendar prepared at the beginning of the Academic Year.

The University successfully conducted its 17th Convocation on December 23, 2019. A total of 1275 students were conferred upon Degrees and Diplomas during the Convocation. Amongst them, 82 students were awarded PhD degrees, 749 students received Masters degrees, 402 students were awarded Under Graduate degrees and 42 students were given Diplomas and Post Graduate Diplomas.

During this period, the University forwarded several research proposals for consideration of approval to various funding agencies. Among them 38 new research proposals were sanctioned in the fiscal year. At present, 274 externally funded research projects are ongoing with a financial outlay of ₹ 9471.62 lakhs. During this period, 11 departments were funded under UGC-SAP of which 03 departments are supported by DRS-I and 08 departments are supported by DRS-II. The University has generated revenue totaling ~ ₹ 1.02 crore through consultancy projects during 2019-2020.

The University is having a healthy number of publications per faculty every year (2.78 during the year reported) in UGC-CARE listed journals. Majority of the faculty members have high citation index. The current h-index of the University is 75 (Scopus). The University level Research Committee (RC), the IQAC and the Departmental Research Committees (DRC) continue to work for growth of research activities and keep constant watch on maintenance of academic integrity and quality in research. A good number of faculty members have received various recognitions for their academic work. To name a few, Dr. Pradyumna Kr. Choudhury of Dept. of Energy and Prof. Niranjana Karak, Dept. of Chemical Sciences (jointly with Dr. Bibekananda De) were granted patents for their inventions. Prof. Shashi Baruah of Dept. of Molecular Biology & Biotechnology was elected as a Council Member of the prestigious International Union of Immunological Societies (IUIS). A proposal from Dr. Mridul Dutta of Dept. of Business Administration has been selected for a STRIDE project titled “Reviving cultural artifact *Gamosa* through Intellectual Property Management in Assam and innovative supply chain” worth Rs. 43 Lakhs initial funding.

Our students during the period performed well in Academic, Co-curricular and Extension activities. A good number of students excelled at various zonal and national level competitions.

More than 300 students qualified this year in the NET, GATE and SLET examinations, many of whom have also chosen research as their next step of career progression. We are proud of our alumni, who are doing remarkably well in various fields in professional career. Several students have also presented papers in National/International seminars and conferences within the country and abroad.

The Training & Placement Cell of the University, despite facing an uphill task due to Covid-19 pandemic, made all out efforts to place students in various organizations. More than 70 organizations participated in the placement drive in the reported year and some of the prominent firms where our students have been placed are- Oil India Limited (OIL), Cognizant Technologies Solution, Cummins India Limited, Wipro Ltd, TCS, etc. The Training & Placement cell also has organised several campus placement drives along with skill development training programmes to groom the students to be industry -ready.

The University has been carrying out community engagement activities and other extension activities like conducting *gaon sabha*, flood relief camps, providing basic amenities in nearby villages, schools, etc. The National Service Scheme (NSS) and NCC have also been engaging in providing community services like blood donation, Swachh Bharat Abhiyan in collaboration with District Civil Hospital, Tezpur and some NGOs. Five villages viz., Aadabari, Amolapam, Napaam, Harigaon and Jhawani have been inducted under Unnat Bharat Abhiyan-2.0.

The University has continued to provide an excellent ambience for pursuit of education and research and this was possible due to hard work of our students, teachers and staff members. We must continue to work tirelessly to make our University a centre for high quality education, outstanding research, innovation and scholarship.

13 November  
Tezpur

  
(V. K. Jain)  
Vice-Chancellor

# TEZPUR UNIVERSITY

## ANNUAL REPORT 2019-20

### *A Gist*

#### UNIVERSITY PROFILE

Name of the University	:	Tezpur University
State	:	Assam
Address	:	Napam, Tezpur - 784028 Sonitpur District, Assam
Year of Establishment	:	1994
Type of University	:	Central and Unitary

#### HIGHLIGHTS OF THE YEAR 2019-20

Vice-Chancellor	:	Professor Vinod Kumar Jain
Pro Vice-Chancellor	:	Professor Dilip Kumar Saikia
Registrar	:	Dr. Biren Das

#### Total number of

Academic Departments	:	26
Academic Centres	:	5
Academic programmes	:	68
Students	:	4129
Female students	:	1713
Male students	:	2416
International students	:	33
Teachers	:	267
Female teachers	:	71
Male teachers	:	196
Teachers (General)	:	144
Teachers (SC/ST/OBC)	:	123(SC-36, ST-22,OBC-65)
Non-teaching employees	:	277
Female employees	:	30
Male employees	:	247
Non-teaching employees (General)	:	104
Non-teaching employees (SC/ST/OBC)	:	173 (SC-48, ST-27,OBC-98)
Total Departments under UGC-SAP DRS I	:	3
Total Departments under UGC-SAP DRS II	:	8
Total Departments under DST-FIST	:	5
Departments under Centre of Excellence	:	1
Sponsored ongoing projects	:	274
New projects sanctioned	:	38
International collaborative research projects (Ongoing)	:	20
Total amount earned through consultancy projects	:	~₹1.02 crore
Journal paper published	:	600+
h-index	:	75 (Scopus)
Books/Book chapters authored	:	17/101
Seminar/Workshops organized by various Departments/Centres	:	81
Total number of students qualified NET, SLET, GATE (Indicative)	:	300+

## **TEZPUR UNIVERSITY: AN OVERVIEW**

Tezpur University established on 21st January 1994 by an Act of Parliament of India, had completed 26 years on January 21, 2020. The University, which started with only 57 students in 03 Departments, has transformed into a prestigious Higher Educational Institution and fast emerging as one of the most sought after Universities in the eastern region of India by attracting researchers and students.

In order to attain outstanding research, innovation and excellence in teaching and learning, the academic programmes offered in the University have a distinct focus on science, technology, management, humanities and social sciences, reflecting the mandated objects of the University. During the year reported (2019-20), students were admitted in 68 different programs of study in 22 Departments. In addition to the 22 departments, 04 new departments, viz, Department of Foreign Languages, Department of Assamese and Department of Design are due to offer Academic Programmes in the next academic year. In addition, Department of Applied Sciences is established in the school of Engineering to support teaching of Science courses for Engineering students. The University also offered 07 programmes under ODL mode during the year reported. The University offered Academic programmes of study at the Under-Graduate (Degree/Diploma/Certificate), Integrated, Post-Graduate (Degree/Diploma) and Doctoral levels in four schools, viz. School of Engineering, School of Humanities & Social Sciences, School of Sciences and School of Management Sciences. The University timely conducted the Tezpur University Entrance Examinations (TUEE) for admission to all the programs of study, except for MBA and B.Tech through 26 designated examination centers across the country.

The number of candidates admitted to various programs of study was 1497. The University reserved seats for the OBC (NCL), SC, ST, EWS and PWD categories as per the Govt. of India rules. Eleven students were admitted under Defence Quota as per Govt. of India policy and 20 foreign students were admitted through ICCR sponsorship during the year. The total number of foreign students on the campus during the report period was 33.

During the mentioned period, 38 new projects were sanctioned to the University. The faculty members have published several quality research papers in peer-reviewed national and international journals with majority of the faculty members having high citation indices. The current h-index of the university is 75 (SCOPUS). Total amount earned through consultancy

projects during 2019-2020 was approximately Rs.1,02,55,612/-. This amount was earned as consultancy fee by some individual faculty members as well as by some of the departments.

The faculty members received number of project grants from various national and international agencies including UGC, DST, DBT, AICTE, DAE, DRDO, DRL, ICMR, MoES, ICSSR, UNICEF during the year reported. The amount of research grants (Extra-mural funding) during the period was Rs 17.56 Crore. A good number of faculty members were invited to foreign universities to deliver talks. During the year, our faculty members have filed seven patents and two patents were granted. The IPR Cell of the University consistently encouraged and guided researchers in filing of patents. A number of teachers were on study leave with fellowship from various agencies such as Fulbright, DBT overseas fellowship, SERB Overseas Postdoctoral Fellowship etc. However, due to Covid-19 pandemic, some of proposed visits of eminent International scholars and some visits of Tezpur University teachers on international assignments were suspended since beginning of 2020.

The students and faculty members continued their good work by bringing laurels to the University. Prof Ashok Kumar, Dept. of Physics was admitted to Fellow of the Royal Society of Chemistry (FRSC). Dr. Pradyumna Kr. Choudhury of Dept. of Energy was granted a patent for his invention titled "Digital Occupancy Meter for Commercial Passenger Vehicles". Prof. Niranjana Karak, Dept. of Chemical Sciences (jointly with Dr. Bibekananda De) was granted a patent for their invention titled "A tough synthetic low dielectric hyperbranched epoxy thermoset and a process of preparation thereof". Prof. Shashi Baruah of Dept. of Molecular Biology & Biotechnology was elected as a Council Member of the prestigious International Union of Immunological Societies (IUIS). A proposal from Dr. Mridul Dutta of Dept. of Business Administration has been selected for a STRIDE project titled "Reviving cultural artifact GAMOSA through Intellectual Property Management in Assam and innovative supply chain" worth Rs. 43 Lakhs initial funding.

Our students during the period performed well in Academic, Co-curricular and Extension activities. More than 300 hundred students have cleared NET/ GATE/SET/ SLET and other competitive exams during the period. The students displayed their talents at various Zonal/State and National level tournaments/competitions. The University maintained a healthy male/female ratio of 59:41 and student-teacher ratio of 15.46:1. As on 31.03.2020, the University has 312 teaching positions sanctioned by UGC. Out of these, 05 positions are unassigned and waiting for UGC's order. 267 teaching positions are already filled. The University has conducted one round of recruitment for faculty positions

during October 2019 to February 2020. In case of non-teaching positions, out of 287 sanctioned posts, the University, as on 31.03.2020, had filled 277 positions.

In the NIRF ranking, the University maintained its position within the top 50 Higher Educational Institutions in India. The University ranked 48 (Overall) and amongst universities it ranked 29. In global ranking, the University featured in the 801-1000 position in Times Higher Education (THE) University Rankings.

During the last fiscal year, the University received 09 building projects, which included Academic Buildings & Hostels under HEFA funding. The tendering process has started under Assam PWD. The University completed construction of an RCC 3 storied 100 capacity SC Girls Hostel during the year with funding from the Ministry of Social justice & Empowerment, Govt. of India. Construction of an RCC 3 storied 180 capacity Girls Hostel and renovation of Academic Building No. I & II are under process as per approval of UGC.

The 1000KWp capacity Solar Power Plant installed at the University continues to yield ecologically sustainable energy needs of the University. The Rooftop Power Plant contributed 24% electricity consumption of the University during the last fiscal. Currently, the Plant is installed in 15 buildings of the University.

In terms of other activities like extension and outreach, skill development efforts, placement report, achievements, etc. carried out by the University and its brief accounts have been reported in different sections of this annual report.

## FINANCE AND ACCOUNTS

The Annual Accounts of the University are maintained in five parts: **Part-I** deals with **Recurring and Salary Funds**, **Part-II** for transactions related to Funds under Non-Recurring and Other Schemes, **Part-III** for **Earmarked Funds and Extramural Research Projects**, **Part-IV** for transactions related to **Debts and Deposits Account** and **Part-V** for maintenance of **Provident Funds**. The accounts for the year 2019-20 have been prepared in such formats as prescribed by the Ministry of HRD, Govt. of India, on double entry book-keeping system of accounting on accrual basis with relevant Indian Accounting Standards.

Opening balance at the beginning of the year **2019-20** was **Rs. 3681.49 lakh**. During the year 2019-20, the University received a total amount of **Rs. 13596.60 lakh** under all the schemes, viz., Recurring, Salary, Creation of Capital Assets and Research Projects. The University also generated an amount of **Rs. 1953.87 lakh** as Internal Receipts/Revenue forming part of Grants-in-Aid: Recurring. Thus, the total fund available during the year was **Rs. 19231.96 lakh**. Against the same, an amount of **Rs. 14765.70 lakh** was sent during the year 2019-20, leaving an unspent balance of **Rs. 4466.26 lakh** as on 01.04.2020.

The following statement represents the Receipts and Expenditure for the year 2019-20 at a glance.

**(Rupees in Lakh)**

RECEIPTS			EXPENDITURE		
Particulars	Amount	Total Amount	Particulars	Amount	Total Amount
<b>A) Opening Balance</b>	3681.49	3681.49	<b>A) Expenditure</b>		
<b>B) Grants Received</b>			<b>I. Recurring Expenditure</b>	3617.77	
<b>I. Grants-in-Aid (Recurring)</b>	1974.01		<b>II. Salary Expenditure</b>	7960.07	
<b>II. Grants-in-Aid (Salary)</b>	7801.51		<b>III. Expenditure for Creation of Capital Assets</b>	643.58	
<b>II. Grants-in-Aid (Creation of Capital Assets)</b>	1150.00			2544.28	14765.70
<b>IV. Grants for Research Projects</b>	2671.08	13596.60	<b>IV. Expenditure on Research Projects</b>		
<b>C) Internal Receipts</b>				4466.26	4466.26
	1953.87	1953.87	<b>Closing Balance</b>		
<b>Grand Total:</b>		<b>19231.96</b>	<b>Grand Total:</b>		<b>19231.96</b>

## ACADEMIC PROFILE

### Officers and staff of the O/o the Controller of Examinations

1. Dr. Lakhi Boral, Controller of Examinations
2. Ms. Anamika Pegu, Assistant Registrar (Snr. Scale)
3. Mr. Sobhan Mahanta, Assistant Registrar
4. Mr. Biren Sharma, Section Officer
5. Mr. Ajanta Pathak, Assistant
6. Mr. Dwipendra Ch. Das, Assistant
7. Ms. Prahelika Hazarika, UDC
8. Mr. Arunjyoti Das, Steno (Gr. III)
9. Mr. Jagat Bhuyan, MTS

The office of the Controller of Examinations takes care of the academic matters related to admission of students, examinations, declaration and publication of results, and issue of grade cards, transcripts and certificates. All academic activities are adhered to Academic calendar. This office also takes up some welfare matters of the students such as, online as well as offline verification and forwarding of applications for scholarships and fellowships to various funding agencies, issue of required documents to the students for the bank loan, etc.

During the year, students were admitted in 68 different programmes of study of 22 Departments. The programs are:

#### 1. Ph.D Programmes:

**Departments under School of Sciences:** Chemical Sciences, Environmental Science, Molecular Biology & Biotechnology, Mathematical Sciences, Physics.

**Departments under School of Engineering:** Computer Science & Engineering, Civil Engineering, Electronics & Communication Engineering, Energy, Food Engineering & Technology, Mechanical Engineering.

**Departments under School of Management Sciences:** Department of Business Administration.

**Departments under School of Humanities and Social Sciences:** English & Foreign Languages, Cultural Studies, Hindi, Mass Communication and Journalism, Education, and Sociology, Social Work.

#### 2. M.Tech. Programmes:

Information Technology, Electronics Design & Technology, Bioelectronics, Food Engineering & Technology, Mechanical Engineering, Civil Engineering, Energy Technology, Computer Science & Engineering.

#### 3. M.Sc. Programmes:

Physics, Chemistry, Mathematics, Molecular Biology & Biotechnology, Environmental Science

#### 3. M.A. Programmes:

English, Linguistics & Language Technology, Cultural Studies, Mass Communication & Journalism, Sociology, Hindi, Social Work, Education, Communication for Development

**4. Integrated M.Sc (5-year):**

Physics, Chemistry, Mathematics and Life Science.

**5. Integrated M. Com. (5-year):** Commerce.

**6. Integrated M.A.(5-year):** English.

**7. Integrated B.Sc. B.Ed. (4-year):** Major in Physics, Chemistry & Mathematics programmes.

**9. B.Tech. Programmes:**

Computer Science & Engineering, Electronics & Communication Engineering, Electrical Engineering, Mechanical Engineering, Civil Engineering, Food Engineering & Technology. Provision for lateral admission to the 3<sup>rd</sup> semester of B. Tech in Civil Engg., Computer Science & Engineering /Electronics & Communication Engineering /Electrical/ Mechanical Engg./Food Engineering & Technology.

**10. Other Professional programmes offered:**

MBA, MCA, LLM, M.Com, MTTM (Master of Tourism and Travel Management) and B.Ed.

**11. PG Diploma Programmes:**

P.G. Diploma in Translation (Hindi), P.G. Diploma in Women's Studies, P.G. Diploma in Child Rights and Governance.

**12. Certificate Programmes:**

Two semesters program in Chinese and one semester program on NSE Certified Capital Market Professional (NCCMP) were also offered. The NCCMP program was offered as self-financing Part Time course.

**Admission procedure:**

National level entrance examination was conducted through Tezpur University Entrance Examinations ( TUEE) Committee for admission to all the programmes of study, except for MBA and B.Tech., during 31<sup>st</sup> May, 1<sup>st</sup> & 2<sup>nd</sup> June, 2019. There were 26 designated examinations centers across the country where the entrance examinations were conducted.

For B. Tech., selection for admissions were based on All India Rank (CRL) of the JEE (Main) conducted by the NTA. Sixty percent of the total seats were filled up from the candidates of NE states on production of Permanent Residence Certificate (PRC) issued by the Competent Authority of any NE state. Counseling and admission of the shortlisted candidates were held at Tezpur University. Admission to the remaining seats were made through the Central Counseling conducted by the JoSAA.

For MBA program, admission is based on National tests such as MAT/CAT/XAT/ATMA/GMAT/CMAT, and Personal Interview.

The University also admitted 05 Rank holder candidates, whose positions were within top 5 in the 10+2 examinations conducted by the Board / Council of the NE states, directly to the B.Tech. and 5-year Integrated programmes.

During the year 2019-20, a total of 23916 applications (including MBA program) were received through online mode for various programmes of studies. The number of candidates admitted to various programmes was **1497 out of intake 1737**, of which **43.01%** were female students. The

University reserved seats for the OBC (NCL), SC, ST, EWS and PWD categories as per the Govt. of India rules. Eleven students were admitted under **Defense Quota** as per Govt of India policy and 20 foreign students were admitted through ICCR during the year. The total number of foreign students during the report period was 33.

As on September 2019 the total strength of the students on the campus was **4129**, out of which 41.48% were female students. The percentage of students for different reserved categories were 25.06% (OBC-NCL), 12.27% (SC), 8.16% (ST), 1.86% (EWS) and 1.16% (PWD).

The University tried to provide hostel accommodation on the campus to all the students. However, some students could not be accommodated due to shortage of hostel seats.

In all, 82.95 % of the students were from the state of Assam, while 16.25% students were from the rest of the country.

The University followed Choice Based Credit System with Continuous Evaluation system. The Semester End Examinations of the Spring Semester, 2019 were conducted, as per the Academic Calendar, during the period from 17.05.2019 to 30.05.2019 and the Examinations of the Autumn Semester, 2019 were conducted during 02.12.2019 to 13.12.2019. Results of the Spring Semester End Examinations of all the programmes were declared on 14th June, 2019 for the outgoing batches of students and on 28th June, 2019 for continuing batches of students. The Autumn Semester Results were declared on 30<sup>th</sup> December 2019.

The 17th Convocation was held on 23.12.2019. A total of 1275 students, who passed out in the examinations conducted in May 2019 along with some students of earlier batches who completed the program in December 2018 (after earlier Convocation), were awarded their degrees/diplomas in the Convocation by His Excellency, Prof. Jagdish Mukhi, Governor of Assam & Chancellor of the University.

Ms. Shristi Kumari, (Roll No. CIB15040) of B. Tech. in Civil Engineering and Mr. Snehashis Parashar (Roll No. PHI14001) of Integrated M.sc in Physics were awarded Best Graduates, 2019 and Best Postgraduate, 2019 respectively based on their academic as well as co-curricular activities. In addition to this, 43 students of different UG and PG programmes were awarded Gold medals in the Convocation.

## **RESEARCH AND DEVELOPMENT PROFILE**

The office of the Dean, R&D facilitates the implementation and smooth creation of extramural research projects funded by the various Government and non-Government funding agencies like UGC, MHRD, DST, DBT, DeitY, AICTE, DAE, DRDO, DRL, ISRO, ICMR, ICAR, CSIR, INSA, UNICEF, Ministry of Earth Science, Ministry of Food Processing Industries, MNRE, ONGC and others. This office takes the responsibility of advertisement and appointment of project staff; permits conduct of field trips/visits as required by the project staff and PIs and/or Co-PIs; grants permission to attend workshops/seminars/symposiums/ conferences as well as to visit different research laboratories by using the project grant. In addition to management of extramural research projects sanctioned to individual PI, this office also manages the Departmental and institutional research projects such as UGC-SAP, UGC-BSR start up grants, DST-FIST and DBT funded schemes such as Establishment of Institutional Level Biotech Hub. Dean R&D also conducts the Tezpur University Ethical Committee, Tezpur University Animal Ethical Committee, Tezpur University Biosafety Committee, and Bioinformatics Infrastructure Facility meetings. This office has also been involved in implementation of projects approved by ONGC-CPBT, an example of Academy-Industry collaboration at Tezpur University.

It may be mentioned that the Dean R&D keeps the account of R&D activities of the University, liaisons between the researchers of the University and the funding agencies, facilitates R&D activities and also contributes towards creating a conducive atmosphere for research activities. During the year 2019-2020 this office has forwarded several research proposals for consideration of approval to the funding agencies. At present a total of 274 externally funded research projects are ongoing with a financial outlay of Rs. 9471.62 lakhs. During the year 2019-2020, 38 new projects were sanctioned. The ongoing research projects include 20 international collaborative projects of which 3 projects are under Indo-UK, 1 with Indo-Finland, 2 with Indo-Russian, 1 with Indo-Brazil, 2 with Nottingham University, 2 with Indo-Japan, 1 with CEFIPRA (Indo-French), 2 with Indo-German, 1 with Indo-Hungary, 2 with Indo-ASEAN, 1 with Indo-Sweden, 1 with Indo-Greece-Italy and 1 with Indo-Bulgaria. During this period, eleven departments were funded under UGC-SAP of which 3 departments are supported by DRS-I and 8 departments are supported by DRS-II. The faculty members have published several research papers in peer-reviewed national and international journals. Further, these projects have augmented the research skills of the project staff and have created trained manpower to cater to the need of the society.

The office also facilitates consultancy projects of faculty as per the TU guidelines. Total amount earned through consultancy projects during 2019-2020 was approximately INR 1,02,55,612/-. This amount was earned as consultancy fee by individual faculty as well as by the departments of various Schools.

In addition, the office also deals with various fellowship matters such as UGC-NET JRF, NFOBC, NFST, RGNFST, MANF, DS Kothari, SVSGC, CSIR-JRF/SRF, DST-INSPIRE, DBT-JRF etc. Different fellowships received during 2019-20 are as under.

(1) Dr. D.S. Kothari	:	03
(2) UGC-NET (JRF)	:	10
(3) NFST	:	04
(4) CSIR-JRF	:	06

## **THE PERSONNEL OF THE OFFICE OF THE DEAN**

### **Dean, Research & Development**

Niranjan Karak, Ph.D. (IIT Kharagpur)  
Professor, Dept. of Chemical Sciences  
E-mail: [nkarak@tezu.ernet.in](mailto:nkarak@tezu.ernet.in)

### **Office Staff**

H. Das  
Section Officer  
E-mail: [himdas@tezu.ernet.in](mailto:himdas@tezu.ernet.in)

S. Kakati (Up to 28/02/2020)  
Section Officer  
E-mail: [sk@tezu.ernet.in](mailto:sk@tezu.ernet.in)

Raj Kumar Das (w.e.f. 06/03/2020)  
Assistant  
E-mail: [raj@tezu.ernet.in](mailto:raj@tezu.ernet.in)

D. Bania  
MTS  
E-mail: [baniad2@tezu.ernet.in](mailto:baniad2@tezu.ernet.in)

## **STUDENTS' ACTIVITY CENTRE**

The duty of the office of the Dean Students' Welfare is to make all possible efforts for providing necessary opportunities and facilities to the students for the development of their personalities and leadership qualities as well as sports/games, and this office has been leaving no stone unturned in this regard. The University can boast of such a student community which are multi-talented in different fields and are actively pursuing sports, cultural, literary and other extra-curricular activities. Highlights of some major events during April 2019 - March 2020 are as follows:

### **Students Discipline**

The office of the Dean, Students' Welfare looks after the matters of students' discipline. The Anti-Ragging committees, Anti Ragging squads were constituted as per the rule and they had put their best efforts to ensure that there is no incidence of ragging in the University. It is also a matter of joy and pride for us that during the period of this report, the University did not witness any incidence of disruption of academic activities due to protest by the students. All of these were made possible because of active and highly dedicated grievance redressal mechanism which is put in place and available both online as well as offline.

### **Students' Activities**

Student community of the University is in the forefront in pursuing sports, cultural, literary and other extra-curricular activities during their leisure time. Sports and cultural events have been organized frequently in the campus and the students participate in these events wholeheartedly in large numbers. Cultural and sports activities in nutshell are as follows:

Cultural section of the University takes a quite proactive role to help the students in achieving their cultural goals by providing the best possible facilities. Music Practice Rooms available at the Students' Activity Centre. Kalaguru Bishnu Prasad Rabha Auditorium, Community Hall, Chandra Prabha Saikiani Bhawan are some of the facilities for practice and performance. There are different instruments like Guitar, Drum Set, Synthesizer, Dhol, Bor Dhol, Kobi Dhol, Madol, Doba, Pepa, Bahi, Gogona, Kham, Khol etc. are available for the use of the interested students.

## **SPORTS ACTIVITY**

### **The Inter Departmental Tournament**

The Inter Departmental Tournament for the year 2019 was held from 5<sup>th</sup> April to 11<sup>th</sup> May 2019. Total 8 sports disciplines were organized for this event. The disciplines are Football, Volleyball, Basketball, Archery, Cricket, Kabaddi, Swimming and Badminton. A total of 15 departments from the University have participated in both boys' and girls' categories.

### **Sports Talent Hunt Tournament**

Sports talent hunt tournament was conducted during 1-11 August, 2019 for newly enrolled students of the University in 10 different games these are Swimming, Archery, Table Tennis,

Athletic, chess, cricket, Football, Yoga, Arm wrestling and Badminton. More than 300 students participated in the tournament.

### **The 23<sup>rd</sup> Annual Meet, 2019-20**

The 23<sup>rd</sup> Annual Meet, 2019-20 of Tezpur University was started in the month of August 2019 with Football, Cricket, Archery, Volleyball, Basketball, Badminton, Table Tennis, Chess, Kho Kho, Kabaddi, Carrom and Lawn Tennis Competitions. Finally, the concluding session was held during 21-23 February 2020 with Track & Field events, Weightlifting, Powerlifting, Best Physique, Arm Wrestling, Tug of War, Cycling and Half Marathon as well as March Past Competitions.

Vice Chancellor, Prof. Vinod Kumar Jain lighted the main lamp followed by hoisting of the University flag. Earlier the Assistant Director of Physical Education, Mr. R.R Singh handed over the torch to Professor Jain, which was carried by the ADPE along with the captains of the winning teams, Outdoor and Indoor Games Secretary.

Miss Jamuna Boro, International Boxer and World Championship medalist, from Sonitpur district graced the occasion as Chief Guest and he was felicitated by the University fraternity in this occasion. Mr. Manvendra Pratap Singh, Deputy Commissioner, Sonitpur District attended the ceremony as Distinguished Guest and Mr. Gautam Choudhury, CEO of Assam Olympic Association, Guwahati as Guest of Honor.

Prof. Vinod Kumar Jain took salute of the march past contingent, where teams from all hostels of the University participated. The oath was administered by the Professor D. Deka, Dean, Students Welfare, Tezpur University.

### **Participation of Teams of Tezpur University in Various Sports Events**

<b>Year</b>	<b>Date</b>	<b>Event</b>	<b>Venue</b>	<b>Name of the Tournament</b>	<b>Achievement</b>
2019	10-12 May	Sports Festival	Tezpur	Surjit Kr. Baishya Memorial Sports Festival 2019	Gold-2 Bronze-2
2019	24-25 August	Bench Press Championship	Morigaon, Assam	All Assam Inter District Bench Press Championship 2019	1 Gold & 1 Bronze
2019	13-16 September	Weightlifting	Nazira, Shivsagar	47 <sup>th</sup> All Assam State inter District Wg. Lifting Championship 2019	1 Silver
2019	23-24 November	Iron Games	Tezpur	36 <sup>th</sup> Sonitpur District Annula Iron Games 2019	Gold-7 Silver-4 Bronze-2 Overall Champion-1
2019	26-30 December	Chess	Barpeta	42 <sup>n</sup> All Assam Chess Championship 2019	Participated
2020	25-26 January	Bodybuilding	Sarupathar, Assam	47 <sup>th</sup> Assam State Inter District Bodybuilding Championship 2020	Gold-1
2020	1-2 March	Tug of War	Samoguri, Nagaon	All Assam Tug of War Championship 2020	Bronze-1

**AIU/National Participation**

Year	Date	Event	Venue	Name of tournament	Achievement
2020	10-11 January	Bench Press Championship	Raipur, Chhattisgarh	National Bench press & Deadlift Championship 2020	Gold-1 Bronze-1 No. of participants 1
2020	18-19 February	Men's Model Physique	Bhubaneswar, Odisha	Eastern India Bodybuilding championship 2020	Participated (1 boy)
2019	6-9 October	Volleyball	KIIT University, Bhubaneswar	AIU East Zone Volleyball Tournament 2019-20	Participated (10 Boys)
2019	2 -6 November	Basketball	MGK Vidyapith, Varanasi	AIU East Zone Basketball Tournament 2019-20	Participated (10 Boys)
2019	2 -8 November	Football	Ravenshaw University, Cuttack, Odisha	AIU East Zone Football Tournament 2019-20	Participated (18 Boys)
2019	26-29 December	Badminton	Atal Bihari Vajpayee Vishwavidyalaya, Bilaspur, Chhattisgarh	AIU East Zone Badminton Tournament 2019-20	Participated -5 nos.
2019	26-29 December	Archery	KIIT University, Bhubaneswar	AIU All India Inter University Tournament 2019-20	Participants (4 boys & 4 girls)
2020	5 <sup>th</sup> January 2020	Cricket	Ravenshaw University, Cuttack, Odisha	AIU East Zone Cricket Tournament 2019-20	Participated

**Participation of Teams of Tezpur University in Various Cultural & Other Events**

Year	Date	Event	Venue	Achievement
2019	11-15 November 2019	Quiz Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	1 <sup>st</sup> Position by Mr. Munindranath Hazarika, Mr. Probit Jyoti Kalita & Mr. Simanta Barman
2019	11-15 November	Western Vocal (Solo) Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	1 <sup>st</sup> Position by Ms. Raina Roy
2019	11-15 November	Classical Vocal (Solo) Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	2 <sup>nd</sup> Position by Ms. Sreeja Chakraborty

2019	11-15 November	Folk Orchestra Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	2 <sup>nd</sup> Position by Mr. Partha Pratim Saikia, Mr. Bipul Sarkar, Mr. Manash Protim Borah, Mr. Pradyot Protim Moran, Mr. Birinchi Arandhara, Ms. Ishita Goswami, Ms. Susmita Hazarika, Mr. Abhinav Sarmah
2019	11-15 November	Western Song (Group) Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	2 <sup>nd</sup> Position by Mr. Aditya Nath, Mr. Daniel Basumaotary, Mr. Akash Das, Mr. Bhupendra Das, Ms. Monmayuri Gogoi, Ms. Raina Rai
2019	11-15 November	One Act Play Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	3 <sup>rd</sup> Position by Mr. Manas Jyoti Gogoi, Mr. Akshit Goswami, Mr. Bishal Baruah, Mr. Abhijit Deka, Ms. Mousumi Pathak, Ms. Shreya Chakraborty, Ms. Poulume Ghosh, Ms. Shilpika Bordoloi,
2019	11-15 November	Mehendi Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	3 <sup>rd</sup> Position by Ms. Khusboo Rajak
2019	11-15 November	Indian Song (Group) Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	4 <sup>h</sup> Position by Ms. Rajnandinee Biswas, Ms. Rimpi Saikia, Mr. Partha Pratim Saikia, Mr. Bhupendra Das, Ms. Monmayuri Gogoi,
2019	11-15 November	Light Vocal Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	4 <sup>th</sup> Position by Ms. Sreeja Chakraborty
2019	11-15 November	Debate Competition at AIU East Zone Inter University Youth Festival	Royal Global University, Guwahati	5 <sup>th</sup> Position by Ms. Bhuysahi Talukdar and Mr. Bitopan Das
2020	3-7 February	Folk Orchestra Competition at AIU National Youth Festival	Amity University, Noida	2 <sup>nd</sup> Position by 2 <sup>nd</sup> Position by Mr. Partha Pratim Saikia, Mr. Bipul Sarkar, Mr. Manash Protim Borah, Mr. Pradyot Protim Moran, Mr. Birinchi Arandhara, Ms. Ishita Goswami, Ms. Susmita Hazarika, Mr. Abhinav Sarmah
2020	3-7 February	Quiz Orchestra Competition at AIU National Youth Festival	Amity University, Noida	2 <sup>nd</sup> Position by Mr. Munindranath Hazarika, Mr. Probit Jyoti Kalita and Mr. Simanta Barman

### Cultural Programmes organized at Tezpur University

Programmes	Participants, Invited Guests/Artistes
1-7 August 2019 Intra Hostel Cultural Competitions	Performances by students
7 August 2019 Death Anniversary of Kaviguru Rabindranath Tagore	Performances by students
15 August 2018 Celebration of Independence Day	Performance by students
23 August 2018 General Fresher's	Performance by students
1-2 September 2019 Tithi of Srimanta Sankardeva	<b>Professor Malini Goswami</b> , HoD Dept. of Assamese, Gauhati University along with performances by students
5 November 2019 Tribute to Dr. Bhupen Hazarika	<b>Dr. Mousumi Sahariah</b> , Noted Singer, along with performances by Students
17 January 2020 Shilpi Divas Celebration	<b>Dr. Shailaja Padmapati</b> , Former Principal, Tezpur College along with performances by Students
21 January 2020 Foundation Day Cultural Programme	Performance by students
26 January 2020 Republic Day Celebration	Performance by students
28 January - 23 February, 2020	Around 50 Cultural Literary and Fine art Competitions for students
21-23 February 2020 Annual Meet Cultural Night	Performance by the " <b>Progressive Brothers</b> " Band from New Delhi

### Deans, Officers and Staff

#### Dean and Associates Deans

Dhanapati Deka  
Dean, Students' Welfare

Manab Mandal  
Associate Dean, Students' Welfare (Sports)

Juri Gogoi Konwar  
Associate Dean, Students' Welfare (Culture)

**Officers and Staff**

R.R Singh  
Assistant Director of Physical Education

Mr. Partha S. Baruah  
Assistant Registrar

Bhupali Kashyap  
Cultural Officer

Saurav Jyoti Borah  
Office Assistant (Outsourced)

Uddhab Bharali  
MTS

Jiban Damai  
MTS

Dudu Tamuli  
MTS

Sahed Ali  
MTS (Outsourced)

**Others**

In the period of report, Mr. Ramit Pal was engaged as Cricket Coach (Contractual) and 04 Coaches (Outsourced) were engaged as Swimming Coach.

## TRAINING AND PLACEMENT ACTIVITIES

### A. ENGINEERING

The Placement Cell of the School of Engineering had another successful year of placement for the batch of 2020, wherein 38 organizations participated and the highest salary package offered was ₹12.94 Lakhs P.A by Synopsys India Ltd. Some of the prominent brands where our students got placed are Oil India Limited, Cognizant Technologies Solution, Cummins India Limited, Wipro Ltd, Zaloni Technologies, Addverb Technology Pvt. Ltd, Wi-Jungle, iNurture Education Solutions Pvt. Ltd, Infosys Limited, Sanmar Group, TCS, Betsol Software Pvt. Ltd, ITC Ltd., Capgemini Technology Services India Ltd, Rivi Venture Pvt. Ltd., Spectrum Eduventure Ltd., Teach for India and Amul Co-operative Ltd, etc. One of the major activities of the Cell is to groom the students to make them industry ready and increase their chances of employability. The Cell is also playing an active role in placing many students through Internship, initially with a stipend and later on regularized in the payroll of the company. The Cell arranges sessions addressed by various Industry professionals and successful UPSC aspirants working as IPS etc. to motivate them to build an illustrious career.

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES

Title	Date/Period, year
An interactive session with HR Manager, Factory Manager, ITC Ltd	4 September 2019
"Start Early Ph.D."and "Early -An interactive session by IIT Gandhinagar Faculty and Students.	16 September 2019
UPSC awareness training	16 October 2019
Basic on Six Sigma-An interactive session	21 October 2019
"How to start your UPSC Journey"-An interactive session.	30 October 2019
An outreach session for M. Tech Admission and Internship by BARC scientist.	14 November 2019
Language Communication and Personality Development- A Six days workshop.	11- 20 November
A training on "Etabs & Staadpro"	18- 02 February 2020
"Ansys CFD & Fluent"-A Training Programme.	18 January - February 2020
A "MATLAB" Phase-1 Technical training	24 - 26 January 2020
Training on "Core Java"	13 - 20 February 2020
A 15 days training on "Advanced Digital Design using Verilog HDL"	17 January- 25 February 2020
Training "Machine Learning with Python & R"	17February - 08 March 2020
" Challenging career & future prospects of the oil sector for an Engineering graduate with respect to Technical Learning"- An interactive session with Manager, Oil India Ltd.	24 February 2020
"MATLAB" Phase-2 Technical Training	28 February - 01March 2020

**Distinguished visitors**

Mr. Rupam Talukdar, HR Manager, ITC Ltd.

Mr. Abhay Kumar, Factory Manager, ITC Ltd.

Mr. Padmanabh Baruah, IPS, SDPO, Maibang, Dima Hasao, Assam

Prof. Tushar N Desai, Department of Mechanical Engineering, SVNIT Surat

Dr. S P Prabhakar, Scientific Officer, "H", BARC, Mumbai.

Er. Prasit Mandal, Scientific Officer, "F", BARC, Mumbai.

**NOTABLE PLACEMENTS**

<b>Name of the Organization</b>	<b>Designation Offered</b>	<b>No. of Students Placed</b>	<b>Discipline</b>
Spectrum Eduventure	Junior Faculty, Marketing Exec.	4	B-Tech ME, CSE
Cognizant Technologies	Programmer analyst Trainee	16	B-Tech ME, CSE, ECE
Sanmar Group	Technical Engineer	1	B-Tech ME
Oil India Limited	Senior Officers Engineers	1	B-Tech ME
Capgemini Technology Services India Ltd	ANALYST	4	B-Tech CSE, ECE, MCA
Wi-Jungle	Associate Tech - Kernel Development	1	B-Tech CSE
Betsol Technologies	Associate Software Engineer	5	B-Tech CSE, MCA, IT
Infosys	System Engineer	3	B-Tech CSE
TCS	Assistant System Engineer	5	B-Tech CSE, ECE
Zaloni Technologies	Software Engineer	3	B-Tech CSE
iNurture	Faculty IT	2	M-Tech IT
Addverb Technologies	System Trainee	1	B-Tech ECE
Wipro Limited	Project Engineer	2	B-Tech ECE
Teach for India	Fellowship	1	B-Tech EE
Amul Cooperative	Territorial sales in-Charge II	1	B-Tech FET
Techcovery	Internship cum Job	1	B-Tech CSE
ITC	Internship cum Job	5	B-Tech FET

Cummins India Ltd.	Internship	2	M-Tech FET
Threatlandscape	Internship	1	B-Tech CSE
Flowboard Technologies	Internship	1	B-Tech CSE
Rivi Venture Pvt. Ltd.	Software Engineer	1	B-Tech ECE
Gyrus	Internship	2	B-Tech ECE
Skill Ovate	Internship	1	B-Tech ECE
Stemrobo	Internship	1	B-Tech ECE

## **PERSONNEL OF THE CELL**

### **Professor-in-Charge-T&P (Engineering)**

**S.C. Deka** PhD (HAU)  
Professor, Dept. of Food Engineering and Technology  
E-mail: sankar@tezu.ernet.in

Deputy Director, Training & Placement

**P.C. Das** PhD (Gauhati)  
Deputy Director, Training & Placement  
E-mail: pijush@tezu.ernet.in

### **Office Staff**

**Nayan Jyoti Kalita**  
Multi Tasking Staff  
E-mail: nayank@tezu.ernet.in

## B. NON-ENGINEERING

Tezpur University's Training & Placement Cell strives to facilitate students in finding recruiters that fit their skill set. We help the students to define their career goals and try to fulfill their ambitions by providing them with the best available employment resources. Our globally-developed curriculum, real life projects, group discussions, debates, interactions with leaders of industry, institutes and alumni, all go a long way in helping our students prepare for their placements.

In a challenging environment of weak economic scenario augmented by the world wide Covid19 pandemic; our recruiters continue to have faith in our curriculum, faculty and selection process, which attracts the best minds to TU. We sincerely thank them for their continued support. 35 organizations have participated in our placement process and recruited our students across verticals and offered roles in the areas of equity research, analytics, social media analytics, media relations, digital marketing, content development, content writing, teaching, client servicing, marketing, branding, relationship management, business development, banking, consultancy, retail operations, development associates, human resources, social development, e-commerce, tourism, research & development, quality testing, project management, creatives etc.

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date / Period, year
Expert Session on Employment Training: Effective Resume Writing, Group Discussions, Interview Techniques etc. ” For all the interested students.	7 May 2019
Career opportunities for Linguistics and Language graduates. For the students of Department of EFL	5 September 2019
Pre-placement Grooming Programme. For the School of HSS, Sciences & Engineering	5 September 2019
Pre-placement Grooming Programme. For all MBA students.	6-7 September 2019
Mutual Fund Expert Speak session. For MBA & M.Com. Students.	8 November 2019
Pre-placement Talk & other process. For all the final year students.	8 November 2019
Placement Talk for final year students. Conducted by Gandhi Fellowship (Initiative of Kaivalya Education Foundation (KEF) - A Piramal Initiative).	15 November 2019
A Career Counseling workshop “Career Opportunities after education”	21 January 2020

### DISTINGUISHED VISITORS

- Dr. Ajit Kumar Naik, Sr. Learning & Development Consultant, Brainayan Inc.
- Mr. Arnab Mondal, College /Corporate Recruitment & Outreach Lead, East, Teach for India
- Mr. Bijoy Sankar Das, Leader - North Eastern States and J & K at Azim Premji Foundation

- Prof. Birendra Nath Singh, Former Dean, Doon Business School, Dehradun & Former CEO, Dr. Singh & Rao Associates
- Prof. B. Viswanathan – Professor of Chemistry, IIT Madras
- Mr. Nishant Kumar , Senior Vice President - Corporate HR, SBI Life Insurance
- Mr. Subhra Jyoti Bharali, MD, The Industrial Corp. Bank Ltd
- Mr. Sunil Naik, Director – HR, DHL Logistics

### NOTABLE PLACEMENTS

Name of the Organisation	Designation Offered	Number of student Placed
Montex Glass Fibre Industries Pvt Ltd	PGET	03
VKVAPT	Teacher- Secondary	06
Asomi Finance Pvt Ltd	Junior Executive	02
UNICEF	Intern	05
GSK Consumer Healthcare	Sales Officer Trainee	03
Blueberry Digital Labs	Content Writer	03
The Greenwood Hotel	Executive Trainee	02
Ramoji Film City	Executive Trainee	01
Teach for India	Fellow	01
ETV Kids channel	Programme Executive	01
SOTC	Executive Trainee	01
Experience Destination	Executive Trainee	01
My Voyage Tours & Travels	Travel Assistant	01
Siang Explorer	Travel Executive	01
WWF	Junior Research Assistant	01
EastMojo	Content Writer	01
Yes Foundation	Fellow	01
Pragya India	Project Consultant	01
Asian Paints	R& D Trainee, Management Trainee	01+01
SBI Life	Management Trainee	04
Chegg. Inc.	Subject Matter Expert	08
GCMMF (Amul)	Territory Sales in Charge	02

RBL FinServe	Business Trainee	01
Kent RO Systems Limited	Management Trainee	01
Bajaj Allianz	Sr. Relationship Manager	02
Berger Paints India Ltd.	Senior Sales Officer Trainee (SSOT)	01
Bandhan Bank	Area Manager (MT)	01
VKV Arunachal Pradesh Trust	Secondary Teacher	
PRADAN	Development Apprenticeship	04
Pratyaksha Agrotech Ltd.	Lab Technician / Supervisor	01
Ajmal Foundation	Faculty / Residential Faculty	05
DHL	Management Trainee	01
Kotak Life	Management Trainee	01
UTI Assets Management Co. Ltd.	MT-Relationship Manager Retail	02
TCS	Business Analyst	06

#### **PERSONNEL OF THE CELL**

##### **Professor-in-Charge-T&P (Non-Engineering)**

Papori Baruah, Ph.D (TU)

Professor, Department of Business Administration

Email: papori@tezu.ernet.in

##### **Training & Placement Officer**

Deena Davy, MA (CU), PGCHRM-XLRI

Email: deena@tezu.ernet.in

##### **Office Staff**

Jayanta Kr. Gogoi, M.Com. (DU)

Office Assistant

Email: jayanta@tezu.ernet.in

Mr. Tarani Das

**MTS**

**THE BOARD OF MANAGEMENT**  
(01-04-2019 to 31-03-2020)

Vice-Chancellor	Chairman
Pro Vice Chancellor	Member
Dr. A Nath, Assistant Professor Dept. of Chemistry, GC College, Silchar, Assam	Member
Dr. T David Singh, Assistant Professor Dept. of Chemistry, NIT Manipur, Imphal	Member
Dept. of Basic Science and Humanities, NIT Manipur, Imphal Shri O R Shallam, Professor & Head (Retd.), Dept. of History, KNG College, Jowai, Meghalaya	Member
Shri B S Nanda, Associate Professor Dept. of Political Science Charuchandra College, Kolkata, West Bengal	Member
Ms. Geeta Upadhyay Chandmari, Tezpur-784001	Member
Prof. Chandana Goswami Dean, School of Management Sciences	Member (till 30.05.2019)
Prof. P. K. Das Dean, School of Humanities & Social Sciences	Member (w.e.f. 31.05.2019)
Prof. Nashreen S Islam Department of Chemical Science	Member (till 16.05.2019)
Prof. M. K. Sarma Department of Chemical Science	Member (till 17.05.2019)
Dr. Sharat Saharia Department of Computer Science and Engineering	Member (till 27.11.2019)
Dr. Madhurima Goswami Department of Cultural Studies	Member (w.e.f. 28.11.2019)
Dr. Heera Barpujary Department of Business Administration	Member
Finance Officer	Permanent Invitee
Controllor of Examinations	Permanent Invitee
<b>Alumni representatives</b>	
Dr. Barnali Das Deka, Tezpur, Assam	Special Invitee
Dr. Dharma Saikia, Guwahati, Assam	Special Invitee
<b>Student Representatives</b>	
Rakhee Saikia, Research Scholar	Special Invitee (till 03.12.2019)
Tirtharaj Gohain, PG Student	Special Invitee (till 03.12.2019)
Mr. Raktim Aabha Saikia, Research Scholar	Special Invitee (w.e.f. 04.12.2019)
Mr. Jyotishpal Deka, President, TUSC	Special Invitee (w.e.f. 04.12.2019)
Registrar	Ex officio Secretary

**THE PLANNING BOARD**  
(01-04-2019 to 31-03-2020)

Vice-Chancellor	Ex-Officio Chairman
Pro Vice Chancellor	Ex-Officio Member
Dean, School of Humanities and Social Sciences	Ex-Officio Member
Dean, School of Sciences	Ex-Officio Member
Dean, School of Management Sciences	Ex-Officio Member
Dean, School of Engineering	Ex-Officio Member
Dean, Students' welfare	Ex-Officio Member
Dean, Research and Development	Ex-Officio Member
Dean, Planning & Development	Ex-Officio Member
Dean, Academic Affairs	Special Invitee
<b>Six teachers nominated by the Academic Council</b>	
Prof Chandan Kumar Sarma Department of Sociology	Member
Prof Manabendra Bhuyan Department of Electronics & Communication Engineering	Member
Prof. M. K. Sarma Department of Business Administration	Member
Dr. P. Anbarasan Department of Mass Communication & Journalism	Member
Dr. G.A.. Ahmed Department of Physics	Member
Dr. Heera Borpujari Department of Business Administration	Member
<b>One Representative of MHRD</b>	
Joint Secretary (Central University) Ministry of Human Resource Development Department of Higher Education, New Delhi	Member
<b>One Representative of UGC</b>	
Prof. (Mrs.) Paula Banerjee Department of South and South Asian Studies Calcutta University, Kolkata - 700027	Member (till 25.06.2019)
One Representative of NEC	
Prof. S. P. Singh Head, School of Energy & Environmental Sciences Devi Ahilya Vishwavidyalaya, Indore Madhya Pradesh	Member (w.e.f. 26.06.2019)
<b>One Representative of NEC</b>	
Director (HRD & E)	Member

NEC, Nongrim Hill,  
Shillong- 793003

**One Representative of State Govt. of Assam**

Commissioner and Secretary  
Department of Higher Education, Govt. of Assam  
Dispur, Guwahati-781006

Member

**Two Nominees by the Board of Management**

Prof. Sashindra K. Kakoti  
Department of Mechanical Engineering  
IIT Guwahati, Guwahati – 781 039

Member

Prof. Mohan Ch. Kalita  
Department of Biotechnology  
Gauhati University  
Guwahati – 781 014

Member

Controller of Examinations  
Finance Officer  
Librarian  
Registrar

Permanent Invitee  
Permanent Invitee  
Permanent Invitee  
Ex-officio Secretary

**THE ACADEMIC COUNCIL**  
(01-04-2019 to 31-03-2020)

**Vice Chancellor**

Ex-officio Chairman

**Pro Vice Chancellor**

Ex-officio Member

**Deans of Schools**

Dean, School of Management Sciences

Ex officio Member

Dean, School of Humanities and Social Sciences

Ex officio Member

Dean, School of Engineering

Ex officio Member

Dean, School of Sciences

Ex officio Member

Dean, Students' Welfare

Ex officio Member

Dean, Research and Development

Special Invitee

Dean, Academic Affairs

Special Invitee

**Two Professors nominated by the Vice Chancellor**

Prof. Tarun K Maji

Member

Department of Chemical Sciences

Prof. B K Danta

Member

Department of English

(till 09.06.2019)

Prof. Manabendra Bhuyan

Member

Department of Electronics and Communication Engineering

(w.e.f. 10.06.2019)

**All Heads of Departments / Centres**

Head, Department of English and Foreign Languages

Ex officio Member

Head, Department of Cultural Studies

Ex officio Member

Head, Department of Sociology

Ex officio Member

Head, Department of Mass Communication and Journalism

Ex officio Member

Head, Department of Education

Ex officio Member

Head, Department of Social Work

Ex officio Member

Head, Department of Hindi

Ex officio Member

Head, Department of Business Administration

Ex officio Member

Head, Department of Mathematical Sciences

Ex officio Member

Head, Department of Physics

Ex officio Member

Head, Department of Chemical Sciences

Ex officio Member

Head, Department of Molecular Biology and Biotechnology

Ex officio Member

Head, Department of Environmental Science	Ex officio Member
Head, Department of Computer Science and Engineering	Ex officio Member
Head, Department of Electronics & Communication Engineering	Ex officio Member
Head, Department of Food Engineering & Technology	Ex officio Member
Head, Department of Energy	Ex officio Member
Head, Department of Civil Engineering	Ex officio Member
Head, Department of Electrical Engineering	Ex officio Member
Head, Department of Commerce	Ex officio Member
Head, Department of Law	Ex officio Member
Head, Computer Centre	Ex officio Member
Head, Centre for Disaster Management	Ex officio Member
Head, Women Studies Centre	Ex officio Member
Head, Assamese Studies Centre	Ex officio Member
Head, Centre for Open and Distance Learning	Ex officio Member
Head, Centre for Inclusive Development	Ex officio Member

**Two Associate Professors Nominated by the Vice Chancellor**

Dr. M K Hazarika Department of Food Engineering and Technology	Member
Dr. T R Sarma Department of Business Administration	Member

**Two Assistant Professors Nominated by the Vice Chancellor**

Dr. Ng K Francis Department of Physics	Member
Dr. Rathijit Chakraborty Department of English and Foreign Languages	Member

**Three Nominees of the Board of Management**

Prof. D J Saikia TIFR Pune Pune University Campus, Pune 411 007 Maharashtra	Member
Prof. Desmond L Kharmawphlang Department of Culture & Creative Studies North-Eastern Hill University (NEHU) Umshing Mawkynroh Shillong 793022, Meghalaya	Member

<p>Prof. Anup Kumar Gogoi                  Department of Electronics and Electrical Engineering (EEE)                  IIT Guwahati                  Guwahati – 781039, Assam</p>	<p>Member</p>
<p><b>One Representative of UGC</b>                  Prof. S. P Singh                  Head, School of Energy &amp; Environmental Sciences                  Devi Ahilya Vishwavidyalaya, Indore                  Madhya Pradesh</p>	<p>Member</p>
<p><b>One Representative of MHRD</b>                  Prof. Harish K Sharma                  Director, NIT, Agartala,                  Tripura (W), 799 046</p>	<p>Member</p>
<p><b>One Representative of NEC</b>                  Director (HRD &amp; E)                  North Eastern Council (NEC)                  Shillong-793003</p>	<p>Member</p>
<p><b>One Representative of State Govt. of Assam</b>                  Commissioner &amp; Secretary / Principal Secretary In-charge                  Department of Higher Education                  Govt. of Assam, Guwahati-781006</p>	<p>Ex-officio member</p>
<p>Controller of Examinations</p>	<p>Ex-officio Member</p>
<p>Librarian</p>	<p>Ex-officio Member</p>
<p>Registrar</p>	<p>Ex-officio Secretary</p>

**THE FINANCE COMMITTEE**  
(01-04-2019 to 31-03-2020)

Vice Chancellor	Chairman
Pro Vice-Chancellor	Member
Joint Secretary and Financial Advisor, MHRD or his/her nominee from Finance Bureau of MHRD Not below the rank of Deputy Secretary	Member
Joint Secretary (CU&L) of MHRD or his/her nominee not below the rank of Joint Secretary to the Govt. of India	Member
Joint Secretary (CU), UGC or any other Joint Secretary level officer nominated by the Chairman, UGC	Member
Mr. S Vasum, IAAS Director (Finance) NEEPCO Ltd., Shillong-793003	Member
Shri B. Paul Muktiah Chairman and Managing Director North Eastern Development Finance Corporation ltd. NEDFi House, Dispur, Guwahati – 781 006	Member
Prof. N.S. Islam Department of Chemical Sciences Tezpur University	Member (till 16.05.2019)
Prof. M. K. Sarma Department of Business Administration	Member (w.e.f. 17.05.2019)
Finance Officer	Ex officio Secretary

**THE BUILDING COMMITTEE**  
(01-04-2019 to 31-03-2020)

Vice Chancellor	Ex officio Chairman
Pro Vice Chancellor	Member
Prof. Chandana Goswami Dean, School of Management Sciences	Member (till 21.08.2019)
Prof. S. K. Sinha Dean, School of Engineering	Member (w.e.f. 22.08.2019)
A representative of the User Department Prof. D K Bhattacharyya Dean, Academic Affairs	Member Member
Prof. M Bhuyan Department of Electronics and Communication Engineering	Member
Finance Officer Tezpur University	Ex officio Member
Head, Department of Civil Engineering Tezpur University	Ex officio Member
Chief Engineer, PWD (Bld), Assam or his/her nominee who is not below the rank of Supdt. Engineer	Ex officio Member
Sri B K Das Secretary (Retd), PWD (Blds & NHW) Assam	Member
Superintendent Engineer (Electric) PWD (Elect), Guwahati Electric Division Guwahati, Assam	Ex officio Member
Superintendent Engineer (PHE) Tezpur Circle, Assam	Ex officio Member
Executive Engineer Tezpur University	Ex officio Member
Smti Parmita Kakati Head, Dept. of Architecture PCPS Girls Polytechnic College Guwahati, Assam	Member
Mr. D Saikia Sr. Architect, PWD, Assam	Member
Assistant Horticulturist Tezpur University	Ex officio Member
Registrar, Tezpur University	Ex officio Member Secretary

# **Academic Departments and Centres**

**School of Engineering**

**School of Humanities and Social Sciences**

**School of Management Sciences**

**School of Sciences**

**Centre for Open and Distance Learning**

**Teaching Learning Centre**



# **School of Engineering**

**Dean's Report**

**Department of Civil Engineering**

**Department of Computer Science and Engineering**

**Department of Electrical Engineering**

**Department of Electronics and Communication Engineering**

**Department of Energy**

**Department of Food Engineering and Technology**

**Department of Mechanical Engineering**

**Department of Applied Sciences**



## **SCHOOL OF ENGINEERING**

The School of Engineering (SoE) of Tezpur University was established in the year 2006 with the introduction of B.Tech. programmes in three disciplines. There are now nine departments in the School of Engineering.

1. Civil Engineering (CE)
2. Computer Science and Engineering (CSE)
3. Electronics and Communication Engineering (ECE)
4. Electrical Engineering (EE)
5. Energy
6. Food Engineering and Technology (FET)
7. Design
8. Applied Science
9. Mechanical Engineering (ME)

Six constituents Departments (CE,CSE,ECE, EE, FET and ME) of the School are now offering B.Tech. programmes in the same way CSE, ECE, ME,FET and CE are offering Master of Technology programmes and a MCA programme are also being offered by the CSE department under the School. Except the Department of Electrical Engineering, Design and Applied Science all other departments also offer Ph.D. programmes. This school strives to produce skilled professionals at UG, PG as well as Doctoral levels. The Departments are actively pursuing externally funded research projects and both faculty and students are engaged in developing innovative technologies.

The School has been proactive in strengthening the teaching learning experience of the students in order to enhance the knowledge and employability of its graduates. The School has judiciously used the fund received from AICTE-NEQIP grant in developing and augmenting class room and laboratory facilities and enhancing faculty quality so that the overall learning process is able to keep pace with the changing global scenario of technical education.

During the period, several significant works were performed and important events were organized in the including submission of application to AICTE for extension of approval of existing courses of Engineering, MBA and MCA.

### **The AICTE approved existing courses**

M. Tech. in Bioelectronics  
 M. Tech. Electronics Design and Technology  
 M. Tech. Energy Technology,  
 M. Tech. Food Engineering and Technology  
 M. Tech. Information Technology,  
 M. Tech. Mechanical Engineering,  
 M. Tech. Computer Science and Engineering  
 M. Tech. Civil Engineering  
 B.Tech. in Civil Engineering  
 B.Tech. Computer Science and Engineering  
 B.Tech. Electrical Engineering

B.Tech. Electronics and Communication Engineering  
B.Tech. Food Engineering and Technology  
B.Tech. Mechanical Engineering  
Master of Computer Application

### **Other Important Activities**

- Capacity enhancement in the all departments' class room to accommodate the EWS Quota. Upgradation of common facilities in class room and Smart class rooms with a sitting capacity of 180 students in Lecture Hall 1 & 2, Dean's building.
- Creation of independent Language Lab and upgradation of labs for non-engineering first year courses enhancement of Books in Central Library of common requirements of first year students.
- Provisional 03 year NBA Accreditation for B.Tech. programmes is extended up to 2021. Preparation for permanent accreditation of M. Tech. by NBA is underway.
- Total 72 M. Tech. (I and II year) students have received AICTE GATE linked Scholarship for the academic year 2019-20.
- 01 QIP scholars selected for carrying out pre-registration visit for the academic year 2018-19 for formal joining in the academic year 2019-20.
- Total 11 students have enrolled for National Doctoral Fellowship (NDF) of the academic year 2019-20
- An Office Document Management Workshop was organized during 22-26 October 2019 to develop an uniform model of file management system for SoE.

### **Training and Placement Activities**

- Total 113 students from the different streams of the School of Engineering 2019-20 batch have been recruited by 38 companies.
- Total 07 technical training session and 02 career counselling session were organized by the Training & Placement Cell of SoE.

### **Achievements of Students**

- Mr Pallab Jyoti Das of B.Tech Mechanical Engineering from the batch of 2020 has been selected for admission to MBA programme of IIM Amritsar.
- Mr. Bhumidhar Das of B.Tech Mechanical Engineering from the batch of 2020 has been selected for admission to MBA (Tourism & Hospitality) at IIM Sirmaur (H.P.).

### **PERSONNEL OF THE OFFICE OF THE DEAN**

#### **Dean, School of Engineering**

Prof. Smriti Kumar Sinha, Ph.D.  
Professor, Dept. of Computer Science and Engineering  
E-mail: deansoe@tezu.ernet.in

**Office Staff**

J. C. Das, Diploma (SCTE, Assam)  
Sr. Technical Assistant  
E-mail: djibon@tezu.ernet.in

Uttam Roy, MA (Tezpur University)  
UDC  
E-mail: uttamroy@tezu.ernet.in

Durlav Mahanta  
MTS

## DEPARTMENT OF APPLIED SCIENCES

### THE DEPARTMENT

The Department was established in 2019. Presently courses on Physics, Mathematics and Chemistry are being taught to students enrolled in B.Tech. programmes. Through high-quality teaching the faculty members strive to develop a strong foundation among the students to enable them to have a bright academic career. The faculty members are young and highly motivated with research experience from premier institutes of India and abroad. The Department aspires to pursue research in interdisciplinary areas of applied sciences.

### PUBLICATIONS

#### Journal Publications

1. Debnath B. K., Majumder P. & Bera U. K. A FEPQ model of sustainable items with time and stock dependent demand under trade credit policy. *International Journal of Operations Research*. 2020.
2. Juvaid M. M., Sarkar S., Gogoi P. K., Ghosh S., Annamalai M., Lin Y.-C., Prakash S., Goswami S., Li C., Hooda S., Jani H., Breese M. B. H., Rusydi A., Pennycook S. J., Suenaga K., Rao M. S. R. & Venkatesan T. Direct Growth of Wafer-Scale, Transparent, p-Type Reduced-Graphene-Oxide-like Thin Films by Pulsed Laser Deposition. *ACS Nano*. 14(3). 2020.
3. Sarkar B. & Rao A. Effect of magnetic flux advection on the dynamics of shock in accretion flow around a rotating black hole. *Research in Astronomy and Astrophysics*. 20(3). 2020.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
B. K. Debnath	Pedagogical Training for Mathematics Teachers	MTTS Trust	25-30 December 2019	Department of Mathematical Sciences, Tezpur University
P. K. Gogoi	12th Asia-Pacific Microscopy Conference (APMC-2020)	Electron Microscope Society of India (EMSI)	3-7 February 2020	Hyderabad International Convention Center (HICC), Hyderabad, India
Somnath Paul	Pedagogical Training for Mathematics Teachers	MTTS Trust	25-30 December 2019	Department of Mathematical Sciences, Tezpur University

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
P. K. Gogoi	12th Asia-Pacific Microscopy Conference (APMC-2020)	6 February 2020	Hyderabad International Convention Center (HICC), Hyderabad, India

**THE FACULTY MEMBERS****Professors**

Charu Lata Mahanta, Ph.D. (Central Institute of Food Technological Research Institute)

Head (in-charge)

*Research areas: Rice science and technology, functional foods, food quality, fruits and vegetables processing, food nanotechnology*

Email: charu@tezu.ernet.in

**Assistant Professors**

Bijoy Krishna Debnath, Ph.D. (National Institute of Technology, Agartala)

*Research Areas: Inventory Control, Optimization, Fuzzy Mathematics*

Email: bijoy91@tezu.ernet.in

Somnath Paul, Ph.D. (Tezpur University)

*Research Area: Spectral Graph Theory*

Email: som@tezu.ernet.in

Saona Seth, M.Sc., Ph.D. (Indian Institute of Technology Kanpur)

*Research Areas: Functional organic and metal-organic polymers, Energetic materials, Materials for energy and environmental applications*

Email: saonas@tezu.ernet.in

Pranjal Kumar Gogoi, Ph.D. (National University of Singapore)

*Research Areas: Low-dimensional material physics, optical spectroscopy, electron energy loss spectroscopy, transmission electron microscopy*

Email: pkgogoi@tezu.ernet.in

Biplob Sarkar, Ph.D. (Indian Institute of Technology Guwahati)

*Research Areas: Theoretical modeling of astrophysical flows, study of X-ray binaries, X-ray data analysis and interpretation*

Email: biplobs@tezu.ernet.in

## THE DEPARTMENT OF CIVIL ENGINEERING

### THE DEPARTMENT

The Department of Civil Engineering of Tezpur University was established in the year 2009 under the School of Engineering for offering B. Tech. Degree. Ph.D. programme was initiated in spring, 2011 and the M. Tech. programme of the department was started from Autumn 2018. The Department aims to provide quality education, research and professional experiences that enable its graduates to become leaders in their professional careers, to pursue excellence in research and to serve the profession, community and nation, and to be competitive in the international scene.

### Academic Programmes and Student intake

Programme	Intake
B.Tech. in Civil Engineering	60
M.Tech. in Civil Engineering	10
PhD in Civil Engineering	Variable, 0 in 2019-20

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
K. U. Ahamad	Lake Eutrophication model
U. K. Das	Response of Geocell Reinforced Soil Foundation under Static and Cyclic Loading

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Development of Eutrophication Model for Rural water Bodies of Assam, India	SERB	₹24.27 Lakhs	3 Years (2017-2020)	K. U. Ahamad
Response of Geocell Reinforced Soil Foundation under Static and Cyclic Loading	AICTE	₹20.75 Lakhs	3 Years (2019 – 2022)	U. K. Das

## PUBLICATIONS

### Journal Publications

1. Hatiboruah D., Das T., Chamuah N., Rabha D., Talukdar B., Bora U., Ahamad K. U. & Nath P. Estimation of trace-mercury concentration in water using a smartphone. *Measurement*. 154. 2020.
2. Narzary B. K. & Ahamad K. U. Equivalent Modulus for Fine-Grained Subgrade Soil. *Journal of Transportation Engineering, Part B: Pavements*. 146 (2). 2020.

### Conference Proceedings

1. Narzary, B. K. & Ahamad, K. U. Proceedings of the National Conference on Recent Developments in Civil Engineering Infrastructure (RDCI 2019). Department of Civil Engineering, Maulana Azad National Institute of Technology, Bhopal, 2019.

### Book Chapters

1. C. Doley, U. K. Das & S. K. Shukla. Effect of cell height and infill density on the performance of geocell-reinforced beds of Brahmaputra river sand. In V.S. Kanwar S. K. Shukla (Eds.). Sustainable civil engineering practices. Springer Publisher, Singapore, 2020.

## CONSULTANCY

Consultants	Title/Nature of the consultancy work	Client	Amount
<i>Civil Engineering group Consultancy</i>	Testing of Materials & Design of Concrete Mixes	Various Industry Clients	₹ 7.86 Lakhs

## SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
S. Deka	Erasmus+ Capacity Building in Higher Education Project (AdaptNET) for Climate Smart Crops in India	Milan State University	20-25 January 2020	Milan, Italy
		Polytechnic University of Marche	27 January - 1 February 2020	Ancona, Italy
		Academy of Athens	3 - 8 February 2020	Costa Navarino (Pilos), Greece
		International Crops Research Institute for the Semi-Arid Tropics	10 - 15 February 2020	Hyderabad, India

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
D. B. Sonowal	ASDMA Engineer's Training programme on Earthquake Resistant Structures and Retrofitting Techniques	19-20 November 2019	Civil Engineering Department, Tezpur University
	One week special training on Structural Design of Piped Water Supply Scheme	25-30 November 2019	PHE Dept. Govt. of Assam, Betkuchi, Assam
K. Bharadwaj	ASDMA Engineer's Training programme on Earthquake Resistant Structures and Retrofitting Techniques	19-20 November 2019	Tezpur University
R. Buragohain	Concept of Earthquake Response Spectrum in one day Training on Earthquake Resistant Structures and Retrofitting Techniques organised by the department of Civil Engineering and ASDMA.	19 November 2019	Tezpur University
U. K. Das	ASDMA Engineer's Training programme on Earthquake Resistant Structures and Retrofitting Techniques	20 November 2019	Tezpur University

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANIZED**

<b>Title</b>	<b>Date/Period, Year</b>
Engineer's Training programme on Earthquake Resistant Structures and Retrofitting Techniques	19-20 November 2019

## DISTINGUISHED VISITORS

- Prof. D. K. Baidya, Professor, IIT Kharagpur

## NOTABLE PLACEMENTS

Name	Designation	Organization
Abhinandan Kashyap	Assistant Engineer	Water Resource Dept., Govt. of Assam
Chandni Deb		
Aditya Pratim Sharma		
Dipjyoti Patowary		
Rupam Borah		
Barnali Nath		
Himanku Saikia		
Pratiksha Goswami	Graduate Trainee	LUIT MINERALS
LakhyajyotiGogoi		
Mrigakshee Goswami		
Hirani Deori		

## THE FACULTY MEMBERS AND STAFF

### Professors

Utpal Kumar Das, Ph.D. (Gauhati University)

*Specialization/Research area: Geotechnical Engineering/Landslides and Slope Stabilization, Unsaturated Soil Mechanics*

Email: ukrdas@tezu.ernet.in

### Associate Professors

Kamal Uddin Ahamad, Ph.D. (IIT Guwahati)

*Specialization/Research area: Environmental Engineering/Groundwater contamination, Potable water, Low Cost Drinking water treatment technology*

Email: kahamad@tezu.ernet.in

### Assistant Professors

Ankurjyoti Saikia, Ph.D. (Tezpur Univeristy)

*Specialization/Research area: Geotechnical Engineering/Soil Dynamics, Ground Improvement*

Email: asaikia@tezu.ernet.in

Binanda Khungur Narzary, M.Tech. (IIT, Guwahati)

*Specialization/Research area: Transportation Engineering/ Pavement Design, Concrete Technology, Remote Sensing and GIS*

Email: binanda@tezu.ernet.in

Shailen Deka, Ph.D. (IIT Guwahati)

*Specialization/Research area: Geotechnical Engineering/ Soil Improvement with Admixtures, Soil Index Properties*

Email: deka.s@tezu.ernet.in

Debaraj Bailung Sonowal, M.Tech. (IIT Roorkee)

*Specialization/Research area: Structural Engineering/ Design and analysis of Multi Storey Building, Bridge Engineering*

Email: bailung@tezu.ernet.in

Jayanta Deori Bharali, M.Tech. (IIT, Guwahati)

*Specialization/Research area: Transportation Engineering/ Pavement Design & Evaluation, Sustainable Transportation, Climate Impact on Transportation*

Email: jdb@tezu.ernet.in

Rituraj Buragohain, M.Tech. (IIT, Guwahati)

*Specialization/Research area: Water Resources Engineering/ Ground Water Hydrology, Urban Flood Management, Sustainable Hydropower*

Email: rbgn@tezu.ernet.in

Karabi Bharadwaj, M.Tech. (NIT Silchar)

*Specialization/Research area: Structural Engineering/ Design and analysis of Multi Storey Building, Dynamics of Structures, Vibration Control*

Email: karabi@tezu.ernet.in

Arunav Chakraborty, Ph.D. (Gauhati University)

*Specialization/Research area: Geotechnical Engineering Land slides Mitigation, Soil Improvement Techniques*

Email: aru243@tezu.ernet.in

#### **Technical staff**

Chirajyoti Doley, M.Tech, (IIT Guwahati)

Email: chirajd@tezu.ernet.in

Iseng Thawmung, Diploma in Civil Engineering

Email: iseng@tezu.ernet.in

Puspajyoti Kalita. Diploma in Civil Engineering

Email: pj@tezu.ernet.in

Jahnu Baruah, Diploma in Civil Engineering

Email: jahnu@tezu.ernet.in

#### **Office Staff**

Parama Nanda Chauhan

Email: chauhan@tezu.ernet.in

Dipak Deka

Email: dipak2@tezu.ernet.in

## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

### **THE DEPARTMENT**

The vision of the Department is to be a dedicated centre of learning and research in computer science and engineering. It is committed to create competent professionals capable of taking leading roles in industry, academia and application areas of the field. A High Performance Computing Centre was established in the Department in June 2015 in order to provide high end computing facilities to the scientific researchers from the North-East region. The Department has been recently recognized as a Centre of Excellence in Machine Learning and Big Data Analytics by MHRD, Government of India under FAST. The Department is also recognized by UGC under Special Assistance Programme (SAP DRS Phase II). During 2005-2009 and 2018-2023 the Department received support from the Department of Science and Technology (DST), Govt. of India under its FIST- programme. The Department has also been recognized as ISEA member, MeitY, GoI and BRICS-NU Member. The B. Tech programme of the Department in Computer Science & Engineering is accredited by National Board of Accreditation.

The thrust areas of research for the Department have been the following:

- Computer and Network Security,
- Biomimetic & Cognitive Robotics,
- Bioinformatics,
- Machine learning and Soft computing,
- Big Data Analytics,
- Mobile and Wireless Networking,
- Image Processing & Pattern Recognition,
- Information Retrieval Systems,
- Natural Language Processing,
- Speech Processing,
- Workflow analysis,
- Computer Vision,
- Algorithms and Optimization Techniques,
- Software Defined Networking and Cloud Computing

### **Academic Programmes and Student intake**

<b>Programme</b>	<b>Intake</b>
M. Tech (IT)	28
M. Tech (Computer Science and Engineering)	18
MCA	45
B. Tech	60
Ph.D	Variable, 5 in 2019-20

### Major Facilities and Equipment Available

- High Performance Computing Centre (Super Computer "Param Shavak")
- Cluster Computing Facility With Storage
- Interactive Smart classroom
- Embedded System Trainer Lab (8085 & Arm) Processor Based (2 Nos)
- Bench Mark Lan Trainer/I-Security
- IBM X3550 M3 Server

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigaton	Salient Research Findings
D. K. Bhattacharyya	CoE: <ul style="list-style-type: none"> <li>• POPBic: Pathway-based Order Preserving Biclustering algorithm towards the analysis of gene expression data</li> <li>• A Complete Detection and Mitigation Framework to Protect a Network from DDoS Attacks</li> <li>• Active learning to detect DDoS attack using ranked features</li> <li>• BicBioEC: biclustering in biomarker identification for ESCC</li> <li>• X-Module: A novel fusion measure to associate co-expressed gene modules from condition-specific expression profiles</li> <li>• Detecting Gene Modules Using a Subspace Extraction Technique</li> <li>• DEGnet: Identifying Differentially Expressed Genes Using Deep Neural Network from RNA-Seq Datasets</li> </ul>
D. K. Bhattacharyya	ISEA: <ul style="list-style-type: none"> <li>• Secure: An Effective Smartphone Safety Solution</li> <li>• TUKNN: a parallel knn algorithm to handle large data</li> <li>• XSSD: A Cross-site Scripting Attack Dataset and its Evaluation</li> <li>• Singleton Flow Traceback (SFT) Mechanism</li> <li>• Implementation of Minimally Shared Blockchains using Big Data Applications</li> </ul>
D. K. Bhattacharyya	SAP DRS II: <ul style="list-style-type: none"> <li>• X-Module: A novel fusion measure to associate co-expressed gene modules from condition-specific expression profiles</li> <li>• Granger Causality in TCP Flooding Attack.</li> <li>• A fast self-similarity matrix-based method for shrew DDoS attack detection</li> <li>• Detecting Gene Modules Using a Subspace Extraction Technique</li> <li>• Identifying critical genes in esophageal squamous cell carcinoma using an ensemble approach</li> <li>• Improving Co-expressed Gene Pattern Finding Using Gene Ontology</li> </ul>

N. Sarma	<ul style="list-style-type: none"> <li>• A power allocation strategy for underlay Cognitive Radio Network was developed for throughput enhancement of the network.</li> <li>• An Opportunity prediction at MAC layer sensing for Ad-hoc Cognitive Radio Network was developed to improve data dissemination for different PU activities in a channel.</li> <li>• A coalition game framework of a constrain based Cooperative Spectrum Sensing scheme was developed to optimally decide the size of the coalition and dynamically detected the coalition head.</li> <li>• A distributed solution for cooperative spectrum sensing scheduling for multiband cognitive radio networks was developed that incorporated optimal user assignment strategy and enhanced the throughput of CRN.</li> <li>• A coalition game based Utility aware distributed spectrum sensing scheme in Cognitive Radio Network was developed to improve the opportunity detection and throughput of each user.</li> <li>• A sequential auction based spectrum sharing approach has been developed for single channel allocation where homogeneous channels are offered for auction in a cognitive radio network.</li> <li>• A double auction framework (DAMW), has been developed which allows both primary users and secondary users to participate in the auction to sell the channels with channel reuse in cognitive radio network.</li> <li>• A multi-winner concurrent bidding based auction has been developed to sell heterogeneous channels in a cognitive radio network where spectrum reusability is incorporated during spectrum allocation.</li> </ul>
S. Patra	<ul style="list-style-type: none"> <li>• Developed threshold-free attribute profile for classification of hyperspectral images.</li> <li>• Developed a novel threshold detection technique for the construction of attribute profile in hyperspectral images.</li> <li>• Developed a rough-GA based fast feature selection technique in attribute profile for classification of hyperspectral images.</li> </ul>
U. Sharma	<ul style="list-style-type: none"> <li>• Development of a Computational Grammar for the Manipuri Language.</li> </ul>

#### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Information Security Education and Awareness. MoU signed between TU and President of India to execute "Information	DeitY	₹ 65 Lakhs	5 Years (2015-2020)	D. K. Bhattacharyya

Security Education and Awareness" project.				
Center of Excellence on Machine Learning and Big Data Analysis	MHRD	₹ 400 Lakhs	6 Years (2014-2020)	D. K. Bhattacharyya
Big Data Analytics-Bioinformatics, Network Security and Robotics.	UGC SAP (DRS-II)	₹ 77 Lakhs	5 Years (2015-2020)	D. K. Bhattacharyya
DST-FIST	DST, Govt of India	₹ 44.0 Lakhs	5 Years (2018-2023)	N. Sarma, S. K. Deka, S. Saharia, S. S. Satapathy & U. Sharma
Methods for the automatic generation of attribute profiles from hyperspectral data.	AICTE	₹ 17.1 Lakhs	3 Years (2019-2022)	S. Patra
Development of Advanced Techniques for the analysis of remotely sensed images.	SERB-DST	₹ 21.51 Lakhs	4 Years (2016-2020)	S. Patra

## PUBLICATIONS

### Journal Publications

1. Baishya R. C. & Bhattacharyya D. K. A Complete Detection and Mitigation Framework to Protect a Network from DDoS Attacks. *IETE Journal of Research*. 65(1). 2019.
2. Bhardwaj K., Patra S. & Bruzzone L. Threshold-free attribute profile for classification of hyperspectral images. *IEEE Transactions on Geoscience and Remote Sensing*. 57(10). 2019.
3. Borah A. & Nath B. Incremental rare pattern based approach for identifying outliers in medical data. *Applied Soft Computing Journal*. 85(1). 2019.
4. Borah A. & Nath B. Tree based frequent and rare pattern mining techniques: a comprehensive structural and empirical analysis. *SN Applied Sciences*. 1(9). 2019.
5. Borah S. & Borah B. Prediction Error Expansion (PEE) based Reversible polygon mesh watermarking scheme for regional tamper localization. *Multimedia Tools and Applications*. 79. 2020.
6. Borah S. & Borah B. A Blind, Semi-Fragile 3D mesh Watermarking Algorithm Using Minimum Distortion Angle Quantization Index Modulation (3D-MDAQIM). *Arabian Journal for Science and Engineering*. 44(4). 2019.
7. Boro D., Haloi M. & Bhattacharyya D. K. A fast self-similarity matrix-based method for shrew DDoS attack detection. *Information security Journal: A global perspective*. 29(2). 2020.
8. Chutia D., Borah N., Baruah D., Bhattacharyya D. K, Raju P. L. N. & Sarma K. K. An effective approach for improving the accuracy of a random forest classifier in the classification of Hyperion data. *Applied Genomics*. 12(1). 2020
9. Das A., Bhardwaj K., Patra S. & Bruzzone L. A Novel Threshold Detection Technique for the Automatic Construction of Attribute Profiles in Hyperspectral Images. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*. 13. 2020
10. Das A. & Patra S. A rough-GA based optimal feature selection in attribute profiles for classification of hyperspectral imagery. *Soft Computing*. 24(2). 2020

11. Das D. & Bhattacharyya D. K. Defeating Cyber Attacks Due to Script Injection in *International Journal of Information Security*. 20(2). 2019
12. Das D., Sharma U. & Bhattacharyya D. K. Defeating SQL injection attack in authentication security: an experimental study. *International Journal of Information Security*. 18 (1). 2019.
13. Deka R. K., Bhattacharyya D. K. & Kalita J. K. Granger Causality in TCP Flooding Attack. *International Journal of Network Security*. 21 (1). 2019.
14. Deka R. K., Bhattacharyya D. K. & Kalita J. K. Active learning to detect DDoS attack using ranked features. *Computer Communications*. 145 (1). 2019.
15. Devi N. & Borah B. Refining the features transferred from pre-trained inception architecture for aerial scene classification. *International Journal of Remote Sensing*. 40 (24). 2019.
16. Hussain A., Deka S. K., Chauhan P. & Karmakar A. Throughput optimization for interference aware underlay CRN. *Wireless Personal Communications, Springer*. 107 (1). 2019
17. Jyoti P., Shree M., Joshi C., Prakash T., Ray S. K., Satapathy S. S. & Masakapalli S. K. The Entner-Doudoroff and nonoxidative pentose phosphate pathways bypass glycolysis and the oxidative pentose phosphate pathway in *Ralstonia solanacearum*. *Msystems*. 5 (2). 2020.
18. Kakati T., Bhattacharyya D. K. & Kalita J. K. X-Module: A novel fusion measure to associate co-expressed gene modules from condition-specific expression profiles. *Journal of Biosciences*. 45(1). 2020.
19. Kakati T., Bhattacharyya D. K., Barah P. & Kalita J. K. Comparison of Methods for Differential Co-expression Analysis for Disease Biomarker Prediction. *Computers in Biology and medicine*. 113(1). 2019.
20. Mandal K., Sarmah R. & Bhattacharyya D. K. POPBic: Pathway-based Order Preserving Biclustering algorithm towards the analysis of gene expression data. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. 17(1). 2020.
21. Mandal K., Sarmah R. & Bhattacharyya D. K. Biomarker Identification for Cancer Disease Using Biclustering Approach: An Empirical Study. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. 16(2). 2019.
22. Patowary P., Bhattacharyya D. K. & Barah P. Identifying critical genes in esophageal squamous cell carcinoma using an ensemble approach. *Informatics in Medicine Unlocked*. 18. 2020.
23. Patowary P., Sarmah R. & Bhattacharyya D. K. Developing an effective bi-clustering technique using an enhanced proximity measure in Network Modeling Analysis. *Health Informatics and Bioinformatics*. 9(1). 2020.
24. Rahman N. & Borah B. Improvement of query-based text summarization using word sense disambiguation. *Complex & Intelligent Systems*. 6. 2019.
25. Sahu A., Chowdhury H. A., Gaikwad M., Chongtham C., Talukdar U., Phukan J. K., Bhattacharyya D. K. & Barah P. Integrative network analysis identifies differential regulation of neuroimmune system in Schizophrenia and Bipolar disorder. *Brain, Behavior, & Immunity-Health*. 2(1). 2020.
26. Thokchom S. & Saikia D. K. Privacy preserving integrity checking of shared dynamic cloud data with user revocation. *Journal of Information Security and Applications*. 50(1). 2020.

### Conference Proceedings

1. Ahmed S. A. & Nath B. A Survey on FP-Tree Based Incremental Frequent Pattern Mining, Proceeding of the International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making. Odisha, 2019.
2. Baishya R. C. & Bhattacharyya D. K. Singleton Flow Traceback (SFT) Mechanism. Proceeding of the third ISEA International Conference on Security and Privacy. IIT Guwahati, 2020.

3. Baishya R. C., Sarmah R. & Bhattacharyya D. K. Improving Co-expressed Gene Pattern Finding Using Gene Ontology. Proceeding of the International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making. Odisha, 2019.
4. Bardalai P., Medhi N. & Chakraborty S. K. DoubleTrApp: A Weak Vertex Cover based DDoS Detection and Mitigation scheme using SDN approach. Proceeding of the IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS). BITS Pilani, 2019.
5. Bhowmick A., Saharia S. & Hazarika S. M. Encoding High-Order Statistics in VLAD for Scalable Image Retrieval. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.
6. Borah P., Teja A., Jha S. A. & Bhattacharyya D. K. TUKNN: a parallel knn algorithm to handle large data. Proceeding of the International Conference on Big Data, Machine Learning and Applications (BigDML 2019). NIT Silchar, 2019.
7. Chowdhury H. A., Ahmed H. A., Bhattacharyya D. K. & Kalita J. K. NCBI: A Novel Correlation Based Imputing Technique Using Bi-clustering. Proceeding of the 2nd International Conference on Computational Intelligence in Pattern Recognition. Kolkata, 2020.
8. Das A., Bhardwaj K. & Patra S. Automatic Attribute Profiles for Spectral-Spatial Classification of Hyperspectral Images. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.
9. Deka R. K., Kalita K. P., Bhattacharyya D. K. & Boro D. A Smart Feature Reduction Approach to Detect Botnet Attack in IoT. Proceeding of the International Conference EGTET-2020. Guwahati, 2020.
10. Devi M., Sarma N. & Deka S.K. Multi-Winner Heterogeneous Spectrum Auction Mechanism for Channel Allocation in Cognitive Radio Networks. Proceeding of the 16<sup>th</sup> International Conference on Distributed Computing and Internet Technology (ICDCIT-2020). Odisha, 2020.
11. Devi M., Sarma N. & Deka S. K. DAMW: Double Auction Multi-Winner Framework for Spectrum Allocation in Cognitive Radio Networks. Proceeding of the 20<sup>th</sup> International Conference on Innovations for Community Services (I4CS 2020). Odisha, 2020.
12. Hijam D. & Saharia S. Comparative Study of Different Classification Models on Benchmark Dataset of Handwritten Meitei Mayek. Proceeding of the International Conference on Intelligent Computing and Smart Communication. Tehri, 2019.
13. Hoque N., Ahmed H. A. & Bhattacharyya D. K. Empirical Analysis of Proximity Measures in Machine Learning. Proceeding of the 2nd International Conference on Computational Intelligence in Pattern Recognition. Kolkata, 2020.
14. Kakati T., Bhattacharyya D. K. & Kalita J. K. DEGnet: Identifying Differentially Expressed Genes Using Deep Neural Network from RNA-Seq Datasets. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.
15. Kalita K. P., Boro D. & Bhattacharyya D. K. Implementation of Minimally Shared Block-chains using Big Data Applications. Proceeding of the third ISEA International Conference on Security and Privacy. IIT Guwahati, 2020.
16. Kalita S. & Bhattacharyya D. K. Secure: An Effective Smartphone Safety Solution. Proceeding of the 2nd International Conference on Computational Intelligence in Pattern Recognition. Kolkata, 2020.
17. Kalita S., Karmakar A. & Hazarika S. M. Proceedings of the 2nd International Conference on Advanced Computational and Communication Paradigm. SMIT Sikkim, 2019.
18. Kharkongor C. & Nath B. A Survey of the Different Item set Representation for Candidate Generation. Proceeding of the International Conference on Biologically Inspired Techniques in Many-Criteria Decision Making. Odisha, 2019.

19. Nirmal Y. & Sharma U. A Grammar-Driven Approach for Parsing Manipuri Language. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.
20. Patowary P., Bhattacharyya D. K. & Barah P. Biomarker identification for escc using integrative idea. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.
21. Prasad R. K., Sarmah R. & Chakraborty S. Enhanced Partition-Based Method using Correlation Coefficient. Proceeding of the International Conference on Computing, Power and Communication Technologies. New Delhi, 2019.
22. Sarmah U., Bhattacharyya D. K. & Kalita J. K. XSSD: A Cross-site Scripting Attack Dataset and its Evaluation. Proceeding of the third ISEA International Conference on Security and Privacy. IIT Guwahati, 2020.
23. Sharma P., Bhattacharyya D. K. & Kalita J.K. Detecting Gene Modules Using a Subspace Extraction Technique. Proceeding of the International Conference on Intelligent Computing and Smart Communication. Tehri, 2019.

### Books

1. B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P. Bora & S. Pal. Pattern Recognition and Machine Intelligence: Part I and II. Springer, Cham, 2019.

### Book Chapters

1. A. Das, K. Bhardwaj & S. Patra. A Comparison of Different Filtering Strategies Used in Attribute Profiles for Hyperspectral Image Classification. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Intelligent Computing and Smart Communication. Springer, Singapore, 2019.
2. C. Kharkongor & B. Nath. Bit Representation for Candidate Itemset Generation. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Intelligent Computing and Smart Communication. Springer, Singapore, 2019.
3. C. Kharkongor & B. Nath. A Survey on Representation for Item sets in Association Rule Mining. In B. Pati, C. R. Panigrahi, R. Buyya & K. C. Li (Eds.). Advanced Computing and Intelligent Engineering. Springer, Singapore. 2020
4. D. Hijam & S. Saharia. Comparative Study of Different Classification Models on Benchmark Dataset of Handwritten Meitei Mayek Characters. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Intelligent Computing and Smart Communication. Springer, Singapore, 2019.
5. K. Bhardwaj, A. Das & S. Patra. Spectral-Spatial Active Learning with Attribute Profile for Hyperspectral Image Classification. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Intelligent Computing and Smart Communication. Springer, Singapore, 2019.
6. K. Ray, S. Shil, S. Saharia, N. Sarma & N. S. Karabasanavar. Detection and Identification of Parasite Eggs from Microscopic Images of Fecal Samples. In A. Das, J. Nayak, B. Naik, S. Pati & D. Pelusi (Eds.). Computational Intelligence in Pattern Recognition. Advances in Intelligent Systems and Computing. Springer, Singapore, 2020.
7. N. Devi & B. Borah. An Approach of Transferring Pre-trained Deep Convolutional Neural Networks for Aerial Scene Classification. In B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P. Bora & S. Pal (Eds.). Pattern Recognition and Machine Intelligence. Lecture Notes in Computer Science. Springer, Cham. 2019.

8. N. Medhi & D. K. Saikia. OpenFlow-Based Multi-controller Model for Fault-Tolerant and Reliable Control Plane. In A. Elçi, P. K. Sa, C. N. Modi, G. Olague, M. N. Sahoo & S. Bakshi (Eds.). Smart Computing Paradigms: New Progresses and Challenges. Springer, Singapore, 2020.
9. P. Sen, A. Waris, S. K. Ray & S. S. Satapathy. A Web Portal to Calculate Codon Adaptation Index (CAI) with Organism Specific Reference Set of High Expression Genes for Diverse Bacteria Species. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Intelligent Computing and Smart Communication. Springer, Singapore, 2019.
10. P. Sen, D. Tula, S. K. Ray & S. S. Satapathy. Estimating RNA secondary structure by maximizing stacking regions. In G. S. Tomar, N. S. Chaudhari, J. L. V. Barbosa & M. K. Aghwariya (Eds.). International Conference on Computer Communication and Internet of Things. Springer, Singapore, 2020.
11. R. C. Baishya, R. Sarmah & D. K. Bhattacharyya. Improving Co-expressed Gene Pattern Finding Using Gene Ontology. In S. Dehuri, B. Mishra, P. Mallick, S. B. Cho & M. Favorskaya (Eds.). Biologically Inspired Techniques in Many-Criteria Decision Making. Learning and Analytics in Intelligent Systems. Springer, Cham, 2020
12. R. Das & N. Medhi. Modular Rook (MR): A Modular Data Center Network Architecture Based on Rook's Graph. In A. Elçi, P. K. Sa, C. N. Modi, G. Olague, M. N. Sahoo & S. Bakshi (Eds.). Smart Computing Paradigms: New Progresses and Challenges. Springer, Singapore, 2020.
13. R. Joshi & R. Sarmah. Survey of Methods Used for Differential Expression Analysis on RNA Seq Data. In S. Dehuri, B. Mishra, P. Mallick, SB. Cho & M. Favorskaya (Eds.). Biologically Inspired Techniques in Many-Criteria Decision Making. Learning and Analytics in Intelligent Systems. Springer, Cham, 2020
14. R. K. Prasad, R. Sarmah & S. Chakraborty. Incremental k-Means Method. In: B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P Bora & S. Pal (Eds.). Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science. Springer, Cham, 2019.
15. S. A. Ahmed & B. Nath. Modified FP-Growth: An Efficient Frequent Pattern Mining Approach from FP-Tree. In B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P Bora & S. Pal (Eds.). Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science. Springer, Cham, 2019.
16. S. Borah & B. Borah. Three-Dimensional (3D) Polygon Mesh Authentication Using Sequential Bit Substitution Strategy. In H. Behera, J. Nayak, B. Naik & D. Pelusi (Eds.). Computational Intelligence in Data Mining. Springer, Singapore, 2020.
17. S. Rajbanshi, K. Bhardwaj, S. Patra. Spectral-Spatial Active Learning Techniques for Hyperspectral Image Classification. In H. S. Behera, J. Nayak, B. Naik & D. Pelusi (Eds.). Computational Intelligence in Data Mining. Springer, Singapore, 2020.

#### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
A. Karmakar	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
B. Nath	AICTE ATAL sponsored	Department of Computer	21-25 October 2019	Tezpur University

	Workshop on IoT and Applications	Science and Engineering, Tezpur University		
D. Boro	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
M. Devi	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
N. Medhi	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
N. Hoque	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
N. Hoque	Workshop in Artificial Intelligence and Machine Learning	Gauhati University	26-27 September 2019	Guwahati
R. Sarmah	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
S. Kalita	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
S. Kalita	Convergence II: A TLC Follow-up Program	Teaching Learning Centre, Tezpur	23 August 2019	Tezpur University

		University		
S. K. Deka	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
S. Nath	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
S. Patra	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University
S. S. Satapathy	AICTE ATAL sponsored Workshop on IoT and Applications	Department of Computer Science and Engineering, Tezpur University	21-25 October 2019	Tezpur University

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
A. Karmakar	AICTE ATAL Workshop (Cyber Security)	5 February 2020	NIT Arunachal Pradesh
D. Boro	AICTE ATAL Workshop (Cyber Security)	5 February 2020	NIT Arunachal Pradesh
D. K. Bhattacharyya	Invited Talk	7 May 2019	Assam Engineering College, Guwahati
D. K. Bhattacharyya	PREMI'19	20 December 2019	Tezpur University
D. K. Bhattacharyya	National Workshop on IoT Networks and Applications	21-15 October 2019	Tezpur University
D. K. Bhattacharyya	National Workshop on Machine Learning Applications	23 September 2019	NIT Arunachal Pradesh
D. K. Bhattacharyya	National Workshop	6 September 2019	TLC, Tezpur University
N. Hoque	Workshop in Artificial	26-27 September	Gauhati University

	Intelligence and Machine Learning	2019	
N. Sarma	E-Resources and Use of ICT for Teaching Learning	27 April 2019	Darrang College, Tezpur
N. Sarma	Use of ICT in Managing Different Components of Teaching Learning,	22 May 2019	Nowgong College, Nagaon, (in collaboration with TLC, TU)
N. Sarma	Use of ICT in Managing Different Components of Teaching Learning,	28 May 2019	Kaliabor College, Nagaon, Assam (in collaboration with TLC, TU)
N. Sarma	NAAC Sponsored National Workshop on Information and Communication Technology in Education: Breaking down the barriers of education today,	29 June 2019	IQAC, Nagaon G.N.D.G. Commerce College, Nagaon, Assam
N. Sarma	Use of ICT in Managing Different Components of Teaching Learning,	3 September 2019	Chaiduar College, Gohpur, Biswanath, Assam
N. Sarma	Use of ICT in Managing Different Components of Teaching Learning.	12 September 2019	Tezpur College, Sonitpur, Assam
N. Sarma	Refresher Course on Teacher Education (Interdisciplinary)	14 September 2019	Department of Education, Tezpur University
N. Sarma	Induction Program	5 November 2019	DR. B. K. B. College, Puranigudam, Nagaon,
N. Sarma	One Day Training Program	23 November 2019	GMIT Tezpur, Dekargaon, Sonitpur
N. Sarma	AICTE Training And Learning (ATAL) Academy Programme on CYBER SECURITY,	6 February 2020	NIT Arunachal Pradesh
S. Kalita	A Two Days Seminar on Artificial Intelligence and Machine Learning: An Application Prospective	5-6 March 2020	Rajiv Gandhi University, Doimukh, Arunachal Pradesh, India
S. Kalita	Technology Enabling Centre	20 February 2020	Nowgong College, Nagaon
U. Sharma	IQAC Workshop	7 June 2019	IQAC, Forkating College
U. Sharma	National Workshop	9 September 2019	GIMT, Guwahati

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, Year</b>
AICTE ATAL sponsored Workshop on IoT and Applications	21-25 October 2019
8th International Conference on Pattern Recognition and Machine Intelligence, Tezpur Universtiy.	17-19 December 2019

**DISTINGUISHED VISITORS**

- Dr. Sugata Sanyal, Professor, Tata Institute of Fundamental Research
- Dr. S. B. Nair, Professor, IIT Guwahati
- Joydeep Roy Choudhury, Director, Techno Media Software Solutions Pvt. Ltd. Kolkata

**AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS****Faculty members and Staff**

- K7 Cybersafe Awards 2019, D. K. Bhattacharyya, K7 Computing Group at Taj Club House, Chennai.
- Best paper award, S. S. Satapathy, International Conference on Computer Communication and Internet of Things (ICCCIoT 2020), Tripura University, Agartala.
- 2nd Best Paper Award, D. K. Bhattacharyya, 3rd ISEA Int'nl Conf on Security and Privacy (ISEA-ISAP 2020) at IIT Guwahati.
- 2nd Best Doctoral Thesis Award, N. Hoque (Guided by D. K. Bhattacharyya), 3rd ISEA Int'nl Conf on Security and Privacy (ISEA-ISAP 2020) at IIT Guwahati.

**Research Scholar/Student**

- Best paper award, P. Sen, International Conference on Computer Communication and Internet of Things (ICCCIoT 2020), Tripura University, Agartala.
- 2nd Best Paper Award, R. C. Baishya, 3rd ISEA Int'nl Conf on Security and Privacy (ISEA-ISAP 2020) at IIT Guwahati.

**OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT**

- Department of Computer Science and Engineering is selected for DST-FIST-II for the period 2018-2023
- Department of Computer Science and Engineering is selected for setting up MHRD's Center of Excellence based on Machine Learning and Big Data Analysis, for the period 2014-2020.
- Department of Computer Science and Engineering is selected for UGC SAP DRS-II in the area of Big Data Analytics- Bioinformatics, Network Security and Robotics for the period 2015-2020.
- The Department is nominated by UGC as a Participant of BRICS Network University.

- Tezpur University is selected as a Participating Institute under Ministry of IT's Information Security Education and Awareness (ISEA) Project for the period 2015-20.
- The Department has High Performance Computing Center (Super Computer "Param Shevak") to carry out collaborative research.

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

NET-JRF: 02

GATE: 26

SLET: 01

### NOTABLE PLACEMENTS

Name	Designation	Organization
Abyartha Goswami	Programmer Analyst Trainee	Cognizant Technologies
Aiishwarya Lath	Software Engineer	Zaloni Technologies
Aman Verma	Assistant System Engineer	TCS
Ankita Agarwala	Assistant System Engineer	TCS
Anupam Borthakur	Faculty It	Inurture
Chiranjib Upadhyay	Software Engineer	Zaloni Technologies
Dipangkar Dutta	Analyst	Capgemini Technology Services India Ltd
Dipankar Mandal	Faculty It	Inurture
Iftikar Ahmed	System Engineer	Infosys
Jayprakash Das	Associate Tech - Kernel Development	Wi-Jungle
Kaustav Das	Programmer Analyst Trainee	Cognizant Technologies
Kavel Baruah	Software Engineer	Zaloni Technologies
Kumar Sivansh Singh	Analyst	Capgemini Technology Services India Ltd
Lahi Mahanta	Analyst	Capgemini Technology Services India Ltd
Lakshajyoti Paul	System Engineer	Infosys
Meghna Saikia	Associte Software Engineer	Betsol
Nandita Kalita	Programmer Analyst Trainee	Cognizant Technologies
Nityananda Gohain	Software Engineer	Gocomet
Priyatosh Raut	Programmer Analyst Trainee	Cognizant Technologies
Shilajit Guha Roy	Assistant System Engineer	TCS

Sibcharan Brahma	System Engineer	Infosys
Sneha Suman	Assistant System Engineer	TCS
Sourish Sarmah	Associate Software Engineer	Betsol
Uddip Nath	Junior Faculty Of Chemistry	Spectrum Eduventure
Unmesha Banerjee	Associate Software Engineer	Betsol

## THE FACULTY MEMBERS AND STAFF

### Professors

Dilip Kumar Saikia, Ph.D. (IIT Kharagpur)

Pro Vice-Chancellor

*Specialization/Research area: Mobile Computing, Computer Networks*

E-mail: dks@tezu.ernet.in

Dhruba Kumar Bhattacharyya, Ph.D. (Tezpur University)

Dean, Academic Affairs

*Specialization/Research area: Machine Learning, Network Security and Bioinformatics*

E-mail: dkb@tezu.ernet.in

Smriti Kumar Sinha, Ph.D. (Tezpur University)

Dean, School of Engineering

*Specialization/Research area: Workflow Automation, Semi-structured Databases, Web Technology*

E-mail: smriti@tezu.ernet.in

Utpal Sharma, Ph.D. (Tezpur University)

*Specialization/Research area: Natural Language Processing*

E-mail: utpal@tezu.ernet.in

Nityananda Sarma, Ph.D. (IIT Guwahati)

*Specialization/Research area: Mobile Networks, Networks Security*

E-mail: nitya@tezu.ernet.in

Bhogeswar Borah, Ph.D. (Tezpur University)

Head of the Department

*Specialization/Research area: Data Mining, Image Processing*

E-mail: bgb@tezu.ernet.in

Sarat Saharia, Ph.D. (Tezpur University)

Head, Computer Centre

*Specialization/Research area: Image processing, Pattern Recognition*

E-mail: sarat@tezu.ernet.in

### Associate Professors

Bhabesh Nath, Ph.D. (Tezpur University)

*Specialization/Research area: Data Mining, Artificial Neural Network*

E-mail: bnath@tezu.ernet.in

Debojit Boro, Ph.D. (Tezpur University)  
*Specialization/Research area: Mobile Computing*  
E-mail: deb0001@tezu.ernet.in.

Sajib Kumar Deka, Ph.D. (Tezpur University)  
*Specialization/Research area: Computer Networks*  
E-mail: skdeka@tezu.ernet.in

Siddhartha Sankar Satapathy, Ph.D. (Tezpur University)  
*Specialization/Research area: Networking, Bioinformatics*  
E-mail: ssankar@tezu.ernet.in

**Assistant Professors**

S. Ibotombi Singh, Ph.D. (Tezpur University)  
*Specialization/Research area: Data Mining*  
E-mail: sis@tezu.ernet.in

Rosy Sarmah, Ph.D. (Tezpur University)  
*Specialization/Research area: Data Mining*  
E-mail: rosy8@tezu.ernet.in

L Basantakumar Singh, M.Tech. (Tezpur University)  
*Specialization/Research area: Pattern Recognition*  
E-mail: lbsingh@tezu.ernet.in

Arindam Karmakar, Ph.D. (Indian Statistical Institute, Kolkata)  
*Specialization/Research area: Computational geometry*  
E-mail: arindam@tezu.ernet.in

Sanghamitra Nath, Ph.D. (Tezpur University)  
*Specialization/Research area: Natural Language Processing, Data Mining*  
E-mail: snath@tezu.ernet.in

Swarnajyoti Patra, Ph.D. (Jadavpur University)  
*Specialization/Research area: Pattern Recognition, Evolutionary Computing, Neural Networks*  
E-mail: swpatra@tezu.ernet.in

Shobhanjana Kalita, Ph.D. (Tezpur University)  
*Specialization/Research area: Knowledge Representation & Reasoning*  
E-mail: kalitas@tezu.ernet.in

Nabajyoti Medhi, Ph.D. (NIT Meghalaya)  
*Specialization/Research area: Knowledge Representation & Reasoning*  
E-mail: nmedhi@tezu.ernet.in

Monisha Devi, M.Tech. (Tezpur University)  
*Specialization/Research area: Cognitive Radio Networks*  
E-mail: magna@tezu.ernet.in

Nazrul Hoque, Ph.D. (Tezpur University)

*Specialization/Research area: Data Mining, Network Security*

E-mail nazrul@tezu.ernet.in

**Adjunct Faculty (Professor)**

Jugal Kalita, MS & Ph.D. (University of Pennsylvania, Pennsylvania, USA)

*Specialization/Research area: Artificial Intelligence, Bioinformatics, Information Retrieval, Computer Security*

E-mail: jkalita@uccs.edu

Bhabani P Sinha, Ph.D. (University of Calcutta)

*Specialization/Research area: Microprogramming, Computer Arithmetic, Fault Diagnosis, Graph Algorithms, Parallel Architectures and Algorithms, Wireless Networks & Mobile Computing*

E-mail: bhabani@isical.ac.in

**Non-Teaching Staff**

Pranabjyoti Dutta, Ph.D. (Tezpur)

*System Analyst*

E-mail: pjd@tezu.ernet.in

Rajib Goswami, Ph.D. (Tezpur University)

*System Analyst*

E-mail: rgos@tezu.ernet.in

Debasish Das, Ph.D. (Tezpur University)

*System Analyst*

E-mail: ddas@tezu.ernet.in

Gautam Kumar Das, B.E. (Jorhat Engineering College)

*Technical Officer*

E-mail: gautamd@tezu.ernet.in

Ajay Kumar Sharma, M. Tech. (Tezpur University)

*Technical Assistant*

E-mail: ajay@tezu.ernet.in

Arun Chetri, MCA (IGNOU)

*Laboratory Assistant*

E-mail: arunch@tezu.ernet.in

Arup Kumar Sarkar, J.E. (Silchar )

*Laboratory Assistant*

E-mail: arupks@tezu.ernet.in

**Office Staff**

Pranati Boro, B.A.

*Assistant*

E-mail: pranati@tezu.ernet.in

Golap Baruah

*MTS*

E-mail: golapb@tezu.ernet.in

## DEPARTMENT OF ELECTRICAL ENGINEERING

### THE DEPARTMENT

The Electrical Engineering Department started in 2014 under the School of Engineering with the B.TECH program. The prime motive of the Department is to impart quality education, training and research at the undergraduate level in forefront areas of Electrical Engineering and its allied technologies. The Department currently offers B.Tech. in Electrical Engineering. This programme aims at producing engineers with sound basic and applied knowledge in electrical engineering.

Department plans to expand its teaching and research infrastructure, enhance its industrial and research collaboration, and implement modern techniques for training to realize the above goal. The key areas of faculty expertise of the Department include Power System Engineering, Power Electronics, Nonlinear Analysis-Theory, Methods & Applications, Control Systems, Fractional Order Chaotic Systems, Converter and Inverter Topologies, Sensor Technologies, Smart Grid Technologies and Policy Design, Distributed Generation Based System Optimization, Renewable Energy Management, Bio-electronics and Neuro Engineering.

### Academic Programmes and Student intake

Programme	Intake
B.Tech.	30
B.Tech. Lateral Entry	03
Ph.D.	Variable, 08 in 2019 -20

### Major Facilities and Equipment Available

- Transformer Oil Insulation Testing Kit
- Transmission Line Parameters Investigation Testing Apparatus
- Magnetic Levitation System for Control System design.

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
M. Borah	<ul style="list-style-type: none"> <li>• The Project sponsored by TU is to design and develop a low cost-efficient multisport scoreboard which can be controlled by wireless remote. Findings on available scoreboards are:</li> <li>• The design of scoreboards [1] using input module is integrated with wrist bands, watches, caps and visor of the official on the ground. These modules are too costly to build.</li> </ul>

	<p>Moreover, they are prone to damage during the games. The failure of these devices has not been considered as there is no other input the scoreboard. The system is highly expensive.</p> <ul style="list-style-type: none"> <li>• The scoring display in [2] is manually operated. The board will require a person to frequently change the entries. It cannot be thus used for games in which even seconds decide the result of the match.</li> <li>• The scoring board [3] is reported to be expensive. It requires high processing speed. Maintenance needs skilled professionals. Maintenance will also be costly.</li> <li>• .The scoreboard reported in [4] uses recognition of jerseys worn by the players. When there is no demarcation of the area, audience with the same jersey colour may trespass. Thus interruption or miscalculation will occur.</li> <li>• Tam W, Gu Hao R, 2011, "Portable Electronic Scoreboard for officiating a sporting game", US13/066,067.</li> <li>• Creech Eugene, 1995, "Portable visual display assembly", US08/536, 386.</li> <li>• Bennet M Paul, Aman A. Jame, 2015, "Sports scorekeeping system with integrated scoreboard and automatic entertainment system", US14/842,605.</li> </ul> <p>Altmaier E, Altmaier R, 2002, "Apparatus and Methods for scoreboard control with dynamic visual indicators", US10/278,583.</p>
--	--

## RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR )	Duration	Investigators
Design of solar powered multi scoreboard and its control	Tezpur University	₹ 1.02 Lakhs	1 Year (2019 - 2020)	M. Borah

## PUBLICATIONS

### Journal Publications

1. Borah M. & Roy B. K. Systematic construction of high dimensional fractional-order hyperchaotic systems. *Chaos, Solitons and Fractals*. 131. 2020.

2. Siddiqui A., Anwar M. N., Laskar S. H., Shamuzzoha M. & Mahboob M. R. Closed loop tuning of cascade controllers based on set-point experiment. *Journal of Engineering Research*. 2020.

### Conference Proceedings

1. Ahmad A. & Singh R. K. A Novel Extended-Boost Modified Switched-Inductor Quasi-Z-Source Inverter. Proceeding of the 2020 International Conference on Electrical and Electronics Engineering (ICE3). Gorakhpur, India, 2020.
2. Saharia B. J. & Sarmah N. A Soft Computing Approach for Optimal Design of a DC-DC Buck Converter. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence (PReMI 2019). Tezpur University, 2019.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
B. J. Saharia	International Conference on Pattern Recognition and Machine Intelligence	Tezpur University	December 2019	Tezpur

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

GATE - 06

### NOTABLE PLACEMENTS

Name	Designation	Organization
Antariksha Rajkumari	Fellowship	Tech for India
Antariksha Rajkumari	Intern cum job	Luit Mineral

### THE FACULTY MEMBERS AND STAFF

#### Professor

Manabendra Bhuyan, Ph.D. (Gauhati University)

Head

Specialization/Research area: *Intelligent Instrumentation, Sensor signal processing*

Email: hod\_ee@tezu.ernet.in

#### Assistant Professors

Md Rahat Mahboob, Ph.D. (Jamia Millia Islamia)

Specialization/Research area : *Instrumentation & Measurement; Sensors & Sensor Technology, IoT,*

Email: rahat@tezu.ernet.in

Manashita Borah, Ph.D. (NIT Silchar)

*Specialization/Research area: Control Systems, Nonlinear Control, Chaos and Fractional-order Systems*

Email: manabor@tezu.ernet.in

Barnam Jyoti Saharia, M.Tech. (NIT Agartala)

*Specialization/Research area: Power Electronic converters for Renewable Energy Applications, Hybrid PV-Wind Energy System Modeling and Optimization, Fuzzy and Neural Network applications in power point tracking of PV systems, Optimization in power electronic converters design, Artificial Intelligence in Renewable Energy applications*

Email: bjsece@tezu.ernet.in

Anish Ahmad, Ph.D. (IIT-BHU Varanasi)

*Specialization/Research area: Converter and Inverter topologies, design, and modeling; Hybrid converters for Microgrid and EV; Digital control in Power Electronics; Motor drives control for EV*

Email: aahmad@tezu.ernet.in

**Technical staff**

Sanku Bordoloi

Email: sankubordoloi1988@gmail.com

Biswajeet Nath

**Office Staff:**

Zakir Hussain

Email: zakir07@tezu.ernet.in

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### THE DEPARTMENT

Established in 1997, the Department of Electronics and Communication Engineering is one of the oldest departments in the University. Starting with an M.Tech. programme in Electronics Design and Technology, the Department has subsequently introduced another M.Tech. programme in Bioelectronics under the Teaching and Research in Interdisciplinary and Emerging Areas scheme of the University Grants Commission. The Department expanded its academic activities to undergraduate programmes, first with a B.Tech. programme in Electronics and Communication Engineering in 2006 followed by another B.Tech. programme in Electrical Engineering in 2014 (which, since September 2016, is being offered under the newly formed Department of Electrical Engineering). In addition, the Department offers Ph.D. programme in different areas including Signal & Image Processing, Bioelectronics, Biosensors, Microwave Engineering, Communication Engineering and Microelectronics. At present, the Department has a student strength of about 310.

### Academic programmes and Student intake

Programme	Intake
M.Tech. in Electronics Design and Technology	33
M.Tech. in Bioelectronics	20
B.Tech. in Electronics and Communication Engineering	64
Ph.D. in Electronics and Communication Engineering	Variable, 08 in 2019-2020

### Major facilities and equipment available

- Reactive Ion Etching
- Plasma Enhanced Chemical Vapour Deposition
- Thin Film Deposition
- Server

### Major research findings/research and development activities

B. Deka	Wavelet Tree Support Detection for Compressed Sensing MRI Reconstruction
P. P. Sahu	Design and development of sensor for Meat/ Fish quality monitoring
P. P. Sahu	Design and development of compact Quantum entanglement device
P. P. Sahu & S. Maity	Si-ZnO photo detector with growth of densely packed and aligned hexagonal nano-rods,
S. Maity	Circularly polarized microstrip patch antenna at ISM band with miniature structure using fractal geometry for biomedical application

**RESEARCH PROJECTS: ONGOING AND NEW**

<b>Project Title</b>	<b>Funding Agency</b>	<b>Amount (in INR)</b>	<b>Duration</b>	<b>Investigators</b>
Development of Parallel Processing Embedded Hardware for Super-resolution of Diffusion weighted and Spectroscopic Magnetic Resonance Images	AICTE (RPS)	₹ 16.47 Lakhs	3 Years (2017 - 2020)	B. Deka
Development of a Real-time Image Super- resolution System using Parallel Processing Hardware for Remote Sensing Applications	ISRO (RESPOND)	₹ 25.79 Lakhs	3 Years (2017-2020)	B. Deka
Visvesvaraya Young Faculty Research Grant	Visvesvaraya Ph.D. Scheme, MeitY-Gol	₹ 25 Lakhs	5 Years (2018 - 2023)	B. Deka
Study for label free optical detection of snake venom protein using Surface Plasmon Resonance technique	Science and Engineering Research Board, DST, Govt. of India	₹ 47.52 Lakhs	3 Years (2018-2021)	B. Mandal
Fabrication, characterization and modeling of CNT-C-ENFET	AICTE	₹ 25.00 Lakhs	3 Years (2019-2022)	J. C. Dutta
VISVESVARAYA Ph.D. Scheme	DeitY, MCIT, Govt. of India	₹272.9 Lakhs	5 Years (2015-2020)	J. C. Dutta
Integrated Biorefinery Approach towards Production of sustainable fuel and chemicals from Algal biobased System	DBT, Govt. of India	₹244.17 751 Lakhs	4 Years (2016-2020)	N. M. Kakoty
Si/ZnO/ZnMgO/PEDOT: PSS/P3HT:PC61 BM hybrid bulk heterojunction (BHJ) architecture based organic solar cell: efficiency enhancement approach through the optical structure modification	DST-SERB	₹ 19 Lakhs	3years (2016-2029)	S. Maity
Implementation of optical biosensor using nano TiO2 material,	AICTE RPS	₹ 21 Lakhs	2 years (2019-2021)	S. Maity
Design and Implementation of Low Cost Hybrid Aquaponics System	AICTE RPS	₹ 21.86 Lakhs	3 years (2019-2022)	S. Roy
Setting up of Electronics Design and device Characterization facilities	DST-FIST	₹ 200 Lakhs	5 years (2019-2024)	P. P. Sahu

## PUBLICATIONS

### Journal Publications

Deka B., Datta S., Mullah H. U. & Hazarika S. Diffusion-weighted and spectroscopic MRI super-resolution using sparse representations. *Biomedical Signal Processing and Control*. 60. 2020.

Dutta J. C., Thakur H. R. & Keshwani G. High-Performance Dual-Gate Carbon Nanotube Ion-Sensitive Field Effect Transistor With High- Top Gate and Low- Bottom Gate Dielectrics. *IEEE Sensors Journal*. 19(14). 2019.

Gebremedhin G. G., Assefa S. A., Delele W. A., Dhakshnamoorthy M., Narzary R., Sahu P. P. & Kumar A. Polyaniline-graphene quantum dots (PANI-GQDs) hybrid for plastic solar cell. *Carbon Letter*. 30 (1). 2019.

Hatibaruah R., Nath V. K. & Hazarika D. An effective texture descriptor for retrieval of biomedical and face images based on co-occurrence of similar center-symmetric local binary edges. *International Journal of Computers and Applications*. 2019.

Hazarika A., Barthakur M., Dutta L. & Bhuyan M. F-SVD based algorithm for variability and stability measurement of bio-signals, feature extraction and fusion for pattern recognition. *Biomedical Signal Processing and Control*. 47. 2019.

Kashyap R., Chakraborty S., Zeng S., Swarnakar S., Kaur S., Doley R. & Mondal B. Enhanced Biosensing Activity of Bimetallic Surface Plasmon Resonance Sensor. *Photonic Sensors*. 6. 2019.

Kim M. K., Kantarcigi C., Kim B., Baruah R. K., Maity S., Park Y., Kim K., Lee S., Malandraki J. M., Shitij A., Smith A., Sen S., Alam M. A., Malandraki G. & Lee C. H. Compliant submental skin sensor patch with remote monitoring controls for management of oropharyngeal swallowing disorders. *Science Advances*. 5(12). 2019.

Maity S. & Sahu P. P. Efficient Si-ZnO-ZnMgO heterojunction solar cell with alignment of grown hexagonal nanopillar. *Thin Film Solid*. 674. 2019.

Sahu P.P. Compact Multi-Photons Quantum Interference Component for Integrated Quantum Optic Device. *IEEE Journal of Selected Topics in Quantum Electronics*. 26. 2020.

Sharma A. & Sharma S. Review of power electronics in vehicle-to-grid systems. *Journal of Energy Storage*. 21. 2019.

### Conference Proceedings

Baruah S. M. B., Gogoi P. & Roy S. From Cable Equation to Active and Passive Nerve Membrane Model. *Proceeding of the IEEE Second International Conference on Advanced Computational and Communication Paradigms (ICACCP-2019)*. SMIT, Sikkim, 2019.

Baruah S. M. B., Nandi D. & Roy S. Modeling Signal Transmission in Passive Dendritic Fiber Using Discretized Cable Equation. *Proceeding of the IEEE 2nd international conference on innovations in electronics, signal processing and communication (IESC)*. NIT, Meghalaya, 2019.

Chetia R., Baruah S. M. B., Roy S. & Sahu P. P. Quantum Image Edge Detection Based on Four Directional Sobel Operator. *Proceeding of the International Conference on Pattern Recognition and Machine Intelligence*. Tezpur University, 2019.

Das B., Baruah S. M. B. & Roy S. Velocity Profile of Alpha Type and Gamma Type Motor Neuron and Type III and Type IV Sensory Neuron. Proceeding of the IEEE Second International Conference on Advanced Computational and Communication Paradigms (ICACCP-2019). SMIT, Sikkim, 2019.

Dutta S. & Deka B. Group-Sparsity Based Compressed Sensing Reconstruction for Fast Parallel MRI. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.

Gogoi P. & Roy S. Modeling a H-H Neuron based Spiking Neural Network incorporating Multiple Pre-synaptic Inputs. Proceeding of the IEEE 2nd international conference on innovations in electronics, signal processing and communication (IESC). NIT, Meghalaya, 2019.

Kumar S., Deka B. & Datta S. Block-Sparsity Based Compressed Sensing for Multichannel ECG Reconstruction. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.

Mullah H. U., Deka B., Barman T. & Prasad A.V. V. Sparsity Regularization Based Spatial-Spectral Super-Resolution of Multispectral Imagery. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.

Nath S., Doley K., Kashyap R. & Mondal B. Syringe Based Automated Fluid Infusion System for Surface Plasmon Resonance Microfluidic Application. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.

Senapati M. & Sahu P.P. Modelling and Simulation of a Patch Electrode Multilayered Capacitive Sensor. Proceeding of the International Conference on Pattern Recognition and Machine Intelligence. Tezpur University, 2019.

## Books

B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P. Kumar Bora & S. K. Pal (Eds.). Pattern Recognition and Machine Intelligence: 8th International Conference, PReMI 2019, Tezpur, India, December 17-20, 2019, Proceedings, Part I. Springer, 2019

B. Deka, P. Maji, S. Mitra, D. K. Bhattacharyya, P. Kumar Bora & S. K. Pal (Eds.). Pattern Recognition and Machine Intelligence: 8th International Conference, PReMI 2019, Tezpur, India, December 17-20, 2019, Proceedings, Part II. Springer, 2019.

## Book Chapters

D. Deka & B. Deka. Investigation on HRV Signal Dynamics for Meditative Intervention. In M. Pant, T. K. Sharma, R. Arya, B.C. Sahana & H Zolfagharinia (Eds.). Soft Computing: Theories and Applications, Springer, Singapore, 2020.

A Hazarika, M. Bhuyan, A Feature Fusion-Based Discriminant Learning Model for Diagnosis of Neuromuscular Disorders Using Single-Channel Needle Electromyogram Signals. In D. J. Hemanth, D. Gupta & V. E. Balas (Eds.). Intelligent Data Analysis for Biomedical Applications, Academic Press, 2019.

S. Chutia, M. Gohain, M. J. Borah, N. M. Kakoty & D. Deka, Thermal degradation of Scenedesmus obliquus for biofuel production. In M. Kaltschmitt & H. Hofbauer (Eds.). Biomass Conversion and Biorefinery, Springer, 2020.

**PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD**

Inventor(s)	Patent	Patent number/Application Number	National/International
P. P. Sahu	A system and apparatus for measuring and monitoring transformer oil breakdown voltage using optical fiber sensor	201931020800	National

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute / Venue
P P Sahu	International Conference on Pattern Recognition and Machine Intelligence	Indian Statistical Institute and Tezpur university	17-20 December 2019	Tezpur University
J. C. Dutta				
S. Sharma				
S. Roy				
B. Deka				
V. K. Nath				

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

Title	Date/Period, Year
International Conference on Pattern Recognition and Machine Intelligence	17-20 December 2019

**AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS**

P. P. Sahu received Best poster award at 27th ICFoST, 2020.

P. P. Sahu received Best paper in UFC sponsored Food security nutritional and sustainability, 2019.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

Gate: 02

**THE FACULTY MEMBERS AND STAFF****Professors**

Manabendra Bhuyan, Ph.D. (Gauhati University)

Specialization/Areas of Interest: Instrumentation Engineering

E-mail: manab@tezu.ernet.in

Partha Pratim Sahu, Ph.D. (Jadavpur University)

Specialization/Areas of Interest:Optical Network, Clinical Instrumentation

E-mail: pps@tezu.ernet.in

Jiten Chandra Dutta, Ph.D. (Jadavpur University)  
Specialization/Areas of Interest: Biosensors and Bioelectronics  
E-mail: jitend@tezu.ernet.in

Satyajib Bhattacharyya, Ph.D. (Delhi University)  
Specialization/Areas of Interest: Microwave Antennas, Absorbers and Materials  
E-mail: sb@tezu.ernet.in

Santanu Sharma, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: Device (Bioelectronics), Vehicular power electronics  
E-mail: sss@tezu.ernet.in

Soumik Roy, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: Neuro Engineering  
E-mail: xoumik@tezu.ernet.in

Bhabesh Deka, Ph.D. (IIT Guwahati)  
Specialization/Areas of Interest: Image processing, Computer Vision  
E-mail: bdeka@tezu.ernet.in

Vijay Kumar Nath, Ph.D. (IIT Guwahati)  
Specialization/Areas of Interest: Image and Video processing  
E-mail: vkn@tezu.ernet.in

#### **Associate Professors**

Nayan Moni Kakoty, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: Rehabilitation Robotics  
E-mail: nkakoty@tezu.ernet.in

Deepika Hazarika, MTech (IIT Guwahati)  
Specialization/Areas of Interest: Image processing  
E-mail: deepika@tezu.ernet.in

Ratul Kumar Baruah, Ph.D. (IIT Guwahati)  
Specialization/Areas of Interest: Nanoelectronics  
E-mail: ratulkr@tezu.ernet.in

#### **Assistant Professors**

Riku Chutia, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: Instrumentation, Machine Olfaction and Embedded System  
E-mail: riku@tezu.ernet.in

Biplob Mondal, Ph.D. (Jadavpur University)  
Specialization/Areas of Interest: Microsensors and Micro fabrications  
E-mail: biplobm@tezu.ernet.in

Durlav Sonowal, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: FPGA based system, ANN: Hardware Implementation  
E-mail: dsn@tezu.ernet.in  
Ananya Bonjyotsna, Ph.D. (Tezpur University)  
Specialization/Areas of Interest: Audio Processing  
E-mail: ananyab@tezu.ernet.in

Priyanka Kakoty, M.Tech. (Tezpur University)  
Specialization/Areas of Interest: MOS Gas sensor fabrication  
E-mail: priyankak@tezu.ernet.in

Santanu Maity, Ph.D. (NIT Arunachal Pradesh) (Resigned and left on September 2019)  
Specialization/Areas of Interest: Semiconductor devices, RF-MEMS & Ckt  
smaity@tezu.ernet.in  
Rupam Goswami, Ph.D. (NIT Silchar)  
Specialization/Areas of Interest: Device modeling and Nanoelectronics  
E-mail: rupam21@tezu.ernet.in

**Technical staff**

Anukul Baishya, M.Tech. (Tezpur University)  
Technical Officer  
Email: anukul@tezu.ernet.in

Kulendra Sharma, B.E.  
Technical Assistant  
Email: kulen@tezu.ernet.in

Jiten C. Boro, Diploma in ETE  
Technical Assistant  
Email: j\_boro@tezu.ernet.in

Khagen Gogoi, B. Tech.  
Technical Assistant  
Email: khageng@tezu.ernet.in

Satya Prasad Saikia, ITI, Electrical  
Technician  
Email: satyap@tezu.ernet.in

Rupak Sharma, ITI, Electronic Mechanic  
Lab Assistant  
Email: rupak@tezu.ernet.in

Navanit Kumar Roy, ITI, Electronic Mechanic  
Lab Assistant  
Email: navanit@tezu.ernet.in

Bipul Das, ITI, Machinist  
Machine Operator  
Email: bipulda@tezu.ernet.in

**Office Staff**

Raj Kumar Das, B.A.

Assistant

Email: raj@tezu.ernet.in

Dibakar Nath,

MTS

Email: dibakar@tezu.ernet.in

## DEPARTMENT OF ENERGY

### THE DEPARTMENT

Department of Energy has been in the forefront in dissemination of specialized knowledge and development of technologies relevant to the energy sector. The Energy sector has experienced a phenomenal growth in the last decade and it is further expected that this sector will witness continuous growth in the coming years, requiring both manpower and innovation. The Department was established in 1996 and currently offers Vocational, Masters, as well as a Doctoral programmes in multiple important areas of energy viz; solar energy, wind energy, hydro energy, energy conservation and management, biomass and combustion, energy and climate. Technological knowledge and development in these areas can benefit both the urban and rural households of India apart from bringing required changes in the industrial scenario of the country. Special emphasis is laid upon various research areas in renewable energy, which have good potential for the North East region of India. It is expected that the students from the Department of Energy become future leaders and innovators in the field of renewable energy.

### Academic Programmes and Student intake

Programme	Intake
Ph.D. in Energy	Variable 04 in 2019-20
M. Tech. in Energy Technology	23
B. Voc.	0

### Major facilities and equipment available

- 1 kW Solar Photo Voltaic Plant
- Automatic Bomb Calorimeter
- Biodiesel production unit
- Biomass Gasifier (Model CTC-150, 5kW)
- Cloud and Pour Point Apparatus suitable for biodiesel samples
- Computerized Diesel Engine Test Rig
- Duel fuel engine test rig
- Exhaust Gas Analyzer
- Laboratory Heat Exchanger for parallel and counter flow
- Licensed Software Facility (MATLAB, PV Syst, ANSYS, Design Expert)
- Micro Hydro Power Generating Equipment
- NI Virtual Bench
- Oxidation Stability Apparatus
- PEM Fuel Cell Kit
- Petrol Engine Test Rig

- Semi-Automatic Flash & Fire Point Apparatus
- Smoke Point Apparatus
- Solar PV Grid Tied Training System
- Solar Thermal Training System
- Spin coating unit
- Vertical tubular furnace

## MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
B. K. Kakati	<ul style="list-style-type: none"> <li>• Solvothermal synthesis of biomass derived graphene-based metal free ORR catalyst for fuel cell application</li> <li>• Developed a new in-situ method to quantitatively recover PEFC stacks after exposure to poisons such as H<sub>2</sub>S and SO<sub>2</sub></li> <li>• Synthesis and testing of novel Carbon Coated Lithium Iron Phosphate Compound for Lithium Ion Batteries</li> <li>• Developed a chemiluminescence based new technology to assess the performance of reactant transport layers and flow fields towards oxygen transport</li> <li>• Design and modelling of Solar Assisted Pump Hydroelectric Storage System</li> <li>• Design development and analysis of Vertical Axis Wind Turbine for Roadside Energy Harvesting</li> </ul>
D. C. Baruah	<ul style="list-style-type: none"> <li>• Thermoelectric conversion and utilization of waste heat from fixed Clay cook stove are successfully demonstrated in laboratory as well as field through the development of TIFICS (TEG integrated fixed clay cook stove). A peak electric power of 2.7W at a temperature difference of 231°C has been possible to power a 3W LED bulb and charging a 3.2V 2.0Ah Lithium iron phosphate battery (for services like indoor illumination and mobile phone charging).</li> <li>• Testing of the TIFICS has also been carried out in Dikarijan of Sonitpur district for a period of 90 days and found prospect for areas with lack of access of clean cooking device and lack of reliable access to electricity.</li> <li>• A decision support system for decentralized energy generation using biomass gasification is developed as useful platform capable of integrating the key aspects relating to biomass, gasification, energy generation and associated economics. The analysis of DSS tested in a rural area in Sonitpur district demonstrates specifically the</li> </ul>

	<p>significance of biomass availability, plant size, loading on price of generated electricity.</p> <ul style="list-style-type: none"> <li>• Substantial improvement of combustion efficiency has been possible developing a multifunctional multiple pot solid fuelled stove with combustion air pre-heating and flue gas heat extraction (Indian patent application number: 201831009091, 2019)</li> <li>• In an attempt to select suitable phase change material for latent heat storage, several key properties relating to thermal stability and metal corrosivity with varying thermal cycles of Acetamide has been determined.</li> <li>• Prospects of recycling of bioenergy by-products (biogas and producer gas system) as crop nutrient have been demonstrated for maize and green gram.</li> </ul>
D. Deka	<ul style="list-style-type: none"> <li>• Renewable heterogeneous catalyst produced from biomass and employed against biodiesel production from locally available non-edible oil seeds, waste cooking oil to decline the role of inorganic based catalyst in biodiesel production.</li> <li>• Development of renewable heterogeneous catalyst from microalgal mass for employing in biodiesel and bioethanol production.</li> <li>• Natural antioxidant development to enhance the oxidation stability of biodiesel.</li> <li>• Using local strains of Microalgae as source of biodiesel and bioethanol.</li> <li>• Development of Robotic Algal harvesting (RAH) system by under water robot from raceway pond PBR of algal growth.</li> <li>• Effluent of Agro processing wastewater treatment by growing microalgae culture.</li> </ul>
N. Sarmah	<ul style="list-style-type: none"> <li>• The state space dynamic model of DC-DC buck converter has been developed. In order to meet the optimal design model comparative analysis of optimizing algorithms, namely Particle Swarm Optimization (PSO), Simulated Annealing (SA) and Firefly Algorithm (FA) were carried out. It has been observed that the PSO algorithm gives better design parameters compared to the other two parameters.</li> <li>• The sample photovoltaic (PV) glass under dust accumulation for location Tezpur, India showed that soiling was distributed very non-uniformly and exhibits a mottled pattern of particle clustering. The predicted soiling ratio for m-Si solar cell (350-1100nm) was 0.977.</li> <li>• Effect of dust deposition on the electrical characteristics and surface temperature of the PV module has been investigated. Significant change in the power output of</li> </ul>

	<p>solar PV could be seen especially during the month of winter. Moreover, the temperature of the front surface of PV module gets reduced with deposition of the dust onto the surface of the PV module.</p> <ul style="list-style-type: none"> <li>• Overall uncertainty in the wind resource assessment and the solar resource assessment for flat terrains were estimated. WASP software showed a variance of 7% to 13% in the annual energy production, the uncertainty grows with decreasing data availability. Therefore it can be concluded that WASP is effective for locations with 90% and above data availability.</li> <li>• Performance analysis of glass and polycarbonate materials as glazing surface to test their suitability in maintaining the thermal comfort inside the buildings was carried out. It is found that the overall heat transfer coefficients of glass and polycarbonate materials are high, thus preferably serves the purpose in the cold climatic locations.</li> </ul>
P. K. Choudhury	<ul style="list-style-type: none"> <li>• Potential of utilizing exiting/ conventional water supply systems for electricity generation and storage in pico-hydro mode.</li> <li>• Development of solar- electrical (lamp- based) hybrid dryer for drying applications in reducing undesired spatial and temporal output variations of flat plat solar collectors.</li> <li>• Development of centralised monitoring system for modules and storage devices of SPV lighting system using GIGBEE wireless communication that can be particularly useful for automatic performance monitoring of scattered standalone SPV street lighting systems.</li> <li>• 4.Development of automatic cooling and cleaning system for SPV module demonstrating feasibility of using existing water supply system for reducing performance deterioration of SPV module.</li> </ul>
R. Katak	<ul style="list-style-type: none"> <li>• Thermo-chemical (pyrolytic) conversion of waste biomass offers multiple benefits in terms of effective waste management, and bioenergy and biomaterials production. Kinetic study reveals that biomass pyrolysis is a complex process and various solid-state decomposition mechanisms (order-based, nucleation, diffusion, and geometric-contraction) occurs during this process.</li> <li>• Notorious weeds like <i>Parthenium hysterophorus</i> can be effectively managed by thermos-chemical conversion of the weed biomass to biochar, and based on its pH, water holding capacity, cation exchange capacity, and R<sub>50</sub> index it is found that <i>Parthenium</i> biochar is suitable for soil amendment.</li> <li>• Biochar (produced from forest litters) applications (from 1t ha<sup>-1</sup> to 6 t ha<sup>-1</sup>) significantly increased germination and growth of forest tree seedlings of two species compared to the control (no biochar). Further, application of 6 t/ha has</li> </ul>

	<p>a significant positive effect on the growth of the two tested tree species</p> <ul style="list-style-type: none"> <li>• Adoption of a cascade of approaches leads to complete utilization of non-edible oil seeds to different biofuels and biomaterials in a biorefinery approach.</li> <li>• Perennial grasses produce huge biomass in waste lands (sand bars) and can be a potent source of biomass for pyrolytic valorization to biofuels, and chemicals for a variety of purposes including anti-oxidants.</li> <li>• Novel heteropolyacid (HPA) catalyst on a silica support was found to be useful in Furfural conversion (upto 51%) to value added chemicals, i.e. Methylfuran and Ethyl Levulinate.</li> </ul>
S. Mahapatra	<ul style="list-style-type: none"> <li>• Single Particle combustion study of coal/biomass fuel mixtures</li> <li>• Co-gasification of biomass and petroleum-coke</li> <li>• Parametric study on H<sub>2</sub> generation from coal/biomass fuel mixtures at different gasifying medium</li> <li>• Experimental and Simulation studies on partial shading and mismatch analysis of PV systems</li> <li>• Performance analysis of 1000 kWp rooftop grid connected PV systems</li> <li>• Adaptive thermal comfort models and energy performance analysis of vernacular buildings.</li> </ul>
V. Verma	<ul style="list-style-type: none"> <li>• Optimization and performance analysis of solar PV/T system for waste heat recovery.</li> <li>• Design and fabrication of Low Cost Solar Air Heater for drying applications.</li> <li>• Analysis of functional groups removal for obtaining reduced graphene oxide films.</li> <li>• Thermochemical analysis of solar assisted electrolyzer for Hydrogen production.</li> <li>• Humidification and dehumidification of desiccant materials (Silica gel, Activated Alumina and Molecular Sieves) through solar energy.</li> <li>• Thermal performance analysis of double flow flat plate solar collector.</li> </ul>

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
One-pot synthesis of Nitrogen and Sulphur co-doped	SERB	₹ 36 Lakhs	4 Years (2016-2020)	B. K. Kakati	

'biomass derived graphene' based cathode catalyst for Polymer Electrolyte Fuel Cells					
Surface modified oxidation and reduction reaction (ORR) catalyst derived from sulphur rich coal and rice straw waste for fuel cell application	Research and Innovation Grant, Tezpur University	₹ 57000	1 year (2019-2020)	B. K. Kakati Lakhanlal & S. M. Zahan	
Integrated Biorefinery Approach towards production of sustainable fuel and chemicals from Algal biobased systems"	DBT, India and MCTICNPq- Brazil.	₹ 1.01 Crores	4 Years (2016-2020)	D. Deka	Federal University of Rio de Janeiro, Brazil
Rural Hybrid Energy Enterprise Systems (RHEES)	DST(SEED)	₹ 1.98 Crores	8 Years (2013-2021)	D. C. Baruah & S. Mahapatra	University of Nottingham
Community based Bioenergy research	University of Nottingham	₹ 26.5 Lakhs	4 Years (2016-2020)	D. C. Baruah	University of Nottingham
Smart Hygrid Energy system for heat, electricity and crop nutrients	Pamoja Cleantech AB, Sweden	₹ 67700	4 Years (2016-2020)	D. C. Baruah	KTH, Sweden & Pamoja Cleantech AB, Sweden
Strengthening education, research and innovation for climate smart crops in India	Erasmus+ Capacity Building in Higher Education	₹ 84.9 Lakhs	3 Years (2018-2021)	D. C. Baruah	AUA, Greece

Design and Development of an all-purpose smart biogas reactor for household applications	AICTE	₹ 11 Lakhs	3 Years (2019-2022)	D. C. Baruah	
Multi-Crop Residue Processing Technology Package for Production of Fuel and fertilizer	SERB	₹ 2.16 Crores	3 Years (2019-2022)	D. C. Baruah & N. Sarmah	
INDIA-UK Center for Education and Research in Clean Energy (IUCERCE)	DST	₹ 74.56 Lakhs	3 years 2017-2021	N. Sarmah	Heriot-Watt University, Edinburgh
Flywheel Energy Storage System for rooftop photovoltaic system	IMPRINT	₹ 3 Lakhs	1 Year (2019-2020)	P. K. Choudhury	D. Saikia GIMT, ASTU
Women empowerment and skill development through technological intervention in cooking stove	DSIR	₹ 15.97 Lakhs	2 Years (2019-2021)	R. Kataki, M. Goswami & B. Gogoi	Women's Study Center, Tezpur University
Biomass conversion to Fuels and chemicals	AICTE	₹ 23 Lakhs	3 Years (2019-2022)	R. Kataki	
Fabrication of super capacitor electrode from chemically activated biochar	Research and Innovation Grant, Tezpur University	₹ 50000	1 Year (2019-2020)	R. Kataki & N. Bora	

## PUBLICATIONS

### Journal Publications

1. Bardhan P., Gohain M., Daimary N., Kishor S., Chattopadhyay P., Gupta K., Chaliha C., Kalita E., Deka D. & Mandal M. Microbial lipids from cellulolytic oleaginous fungus *Penicillium citrinum* PKB20 as a potential feedstock for biodiesel production. *Annals of Microbiology*. 69. 2019.
2. Baruah B., Kataki R., Thakur P. & Tiwari P. Detailed Physicochemical & Thermochemical Investigation of Upper Assam Oil Shale. *Journal of Thermal Analysis and Calorimetry*. 138(2). 2019.
3. Baruah D. C. & Enweremadu C. C. Prospects of decentralized renewable energy to improve energy access: A resource-inventory-based analysis of South Africa. *Renewable and Sustainable Energy Reviews*. 103. 2019.
4. Borah M. J., Das A., Das V., Bhuyan N. & Deka D. Transesterification of waste cooking oil for biodiesel production catalyzed by Zn substituted waste egg shell derived CaO nanocatalyst. *Fuel*. 242. 2019.
5. Borah M. J., Devi A., Borah R. & Deka D. Synthesis and application of Co doped ZnO as Heterogeneous nanocatalyst for biodiesel production from non-edible oil. *Renewable Energy*. 133. 2019.
6. Brahma B., Narzary R. & Baruah D. C. Acetamide for latent heat storage: Thermal stability and metal corrosivity with varying thermal cycles. *Renewable Energy*. 145. 2019.
7. Choudhury P. K. & Baruah D. C. Experimental investigation of a tool for assessing solar air heater (SAH) performance. *Alternative Energy and Distributed Generation*. 1(2). 2019.
8. Deb U., Bhuyan N., Bhattacharya S. S. & Kataki R. Characterization of agro-waste and weed biomass to assess their potential for bioenergy production. *International Journal of Renewable Energy Development*. 8(3). 2019.
9. Dev Choudhury N., Bhuyan N., Bordoloi N., Saikia N. & Kataki R. Production of Bio-oil from Coir Pith via Pyrolysis: Kinetics, Thermodynamics and Optimization using Response Surface Methodology. *Biomass Conversion and Biorefinery*. 2020.
10. Devi A., Das V. K., Das V. & Deka D. A green approach for enhancing oxidation stability including long storage periods of biodiesel via *Thuja orientalis* L. as an antioxidant additive. *Fuel*. 253. 2019.
11. Hiloidhari M., Baruah D. C., Kumari M., Kumari S. & Thakur I. S. Prospect and potential of biomass power to mitigate climate change: A case study in India. *Journal of Cleaner Production*. 220. 2019.
12. Ghosh A., Sarmah N., Sundaram S. & Mallick T. K. Numerical studies of thermal comfort for semi-transparent building integrated photovoltaic (BIPV)-vacuum glazing system. *Solar Energy*. 190. 2019.
13. Gohain M., Laskar K., Phukon H., Bora U., Kalita D. & Deka D. Towards sustainable biodiesel and chemical production: Multifunctional use of heterogeneous catalyst from littered *Tectonagrandis* leaves. *Waste Management*. 102. 2020.
14. Gohain M., Laskar K., Paul A., Daimary N., Maharana M., Goswami I. K., Hazarika A., Bora U. & Deka D. Carica papaya stem: A source of versatile heterogeneous catalyst for biodiesel production and C-C bond formation. *Renewable Energy*. 147. 2020.
15. Gogoi L., Narzari R., Gogoi N., Muhammad F. & Kataki R. Biochar Production and Application in Forest Soils - A Critical Review. *Phyton*. 88. 2019.

16. Iftiqar S. M., Najes Riaz S. & Mahapatra S. Simulation of Growth of Silicon Thin Films on Textured and Non-textured Surface: A Comparative Study. *Silicon*. 2020.
17. Kumar A., Choudhary R., Nirmal S. K., Pandey I. K. & Kataki R. Towards sustainable asphalt binders: Evaluation of bio-asphalt binders and mixes with biochar. *Journal of the Indian Roads Congress*. 80. 2019.
18. Lalmuankima H. T., Upadhyaya K. & Kataki R. Impact of Charcoal Production Activities on Selected Soil Properties in Mizoram. *Environment and Ecology*. 37. 2019.
19. Laskar K., Bhattacharjee P., Gohain M., Deka D. & Bora U. Application of bio-based green heterogeneous catalyst for the synthesis of arylidinemalononitriles. *Sustainable Chemistry and Pharmacy*. 14. 2019.
20. Medhi B. J., Singh A., Thokchom A. K. & Mahapatra S. Experimental and computational study on flow over stepped spillway. *Journal of Mechanical Science and Technology*. 33. 2019.
21. Nadimpalli G., Phani G., Saikia R., Hima S., Ratnam R., Gogoi N., Garg A. & Kataki R. Optimization of pyrolyzer design to produce maximum bio-oil from *Saccharum ravannae* L.: An integrated approach using experimental data and artificial intelligence. *Biomass Conversion and Biorefinery*. 9. 2019.
22. Novodárszki G., Solt H. E., Valyon J., Lónyi F., Hancsók J., Deka D., Tuba R. & Mihályi M. R. Selective hydroconversion of levulinic acid to  $\gamma$ -valerolactone or 2-methyltetrahydrofuran over silica supported cobalt catalysts. *Catalysis Science and Technology*. 9. 2019.
23. Novodárszki G., Valyon J., Illés Á., Dóbe S., Deka D., Hancsók J. & Mihályi M. R. Heterogeneous hydro conversion of levulinic acid over silica-supported Ni catalyst. *Reaction Kinetics, Mechanisms and Catalysis*. 126. 2019.
24. Patowary R. & Baruah D. C. Feasibility study of TEG-integrated biomass cook stove for electrical power generation specific to rural areas with inadequate electricity. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*. 2019.
25. Saikia D. & Choudhury P.K. A case study on micro grid with flywheel energy storage system using Homer software. *Journal of Energy Research and Environmental Technology*. 6. 2019.
26. Singh M. K, Ooka R., Rijal H. B., Kumar S., Kumar A. & Mahapatra S. Progress in thermal comfort studies in classrooms over last 50 years and way forward. *Energy and Buildings*. 188-189, 2019
27. Smestad G. P., Germer T. A., Alrashidi H. , Fernández E. F., Dey S., Brahma H., Sarmah N., Ghosh A., Sellami N., Hassan I. A. I., Desouky M., Kasry A., Pesala B., Sundaram S., Almonacid F., Reddy K. S., Mallick T. K. & Micheli L. Modelling photovoltaic soiling losses through optical characterization. *Scientific Reports*. 2020.

### Conference Proceedings

1. Baishya N. M., Verma V., Kakati B. K., Murugesan K., Sivasakthivel T., Swartbooi A., Singh S. K. & Kumar R. Optimization of Hydrogen Yield of a Solar Assisted Electrolyzer using Taguchi Method. Proceedings of the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference, IIT Roorkee, India, 2019.
2. Boro B., Kakati B. K., Zahan S. M. & Verma V. In-situ synthesis and characterization of metal free heteroatom doped graphene based oxygen reduction reaction catalyst from pyrolysed Assam silk cocoons. Proceedings of the IOP Conference Series: Earth and Environmental Science. 2019.
3. Misra N., Verma. V. & Kakati B.K. Design and feasibility study of packed bed shell and tube heat exchanger for dehumidification. Proceedings of the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference 2019, IIT Roorkee, India, 2019.

4. Nath A. P., Paul S., Rather Z. H. & Mahapatra S. Reliability estimation of offshore wind farm considering wake effect and failure probability of wind turbine. Proceeding of the IEEE PES Innovative Smart Grid Technologies (ISGT) Asia, Chengdu, China, 2019.
5. Verma V, Murugesan K. & Kakati B. K., Optimization of Solar Coupled Heat Pump System for Space Heating Application using Tagushi Method. Proceedings of the IOC Conference Series: Earth and Environmental Science. 268012045. 2019.

### Books

1. R. P. Kumar, B. Bharathiraja, R. Katakati & V.S. Moholkar. Biomass Valorization to Bioenergy. Springer, Singapore, 2019.

### Book Chapters

1. B. Dhiman, M. K. Chaudhury, S. Mahapatra, & D. Chakrabarti. Socially Constructed Design in Context of Small-Scale Solar Photovoltaic Home System. In A. Chakrabarti (Ed.). Research into Design for a Connected World. Springer, Singapore, 2019.
2. B. Tamuli & P. K. Choudhury. Comparative Performance Assessment of a Solar Hybrid dryer with Traditional Drying Techniques. In S. Singh & V. Ramadesigan (Eds.). Advances in Energy Research, Vol. 2. Springer Proceedings in Energy, Singapore, 2020.
3. D. Patowary, T. Sarmah, G. D. Sarma, B. Terang, R. Patowary, & D. C. Baruah. Economic Feasibility and Environmental Sustainability of a Community Scale Multi-component Bioenergy System. In S. Ghosh (Ed.). Energy Recovery Processes from Wastes. Springer, Singapore, 2020.
4. M. Hiloidhari, N. Bhuyan, N. Gogoi, D. Seth, A. Singh, S. Prasad, A. Garg, & R. Katakati. Agro Industry wastes: feedstocks for biofuels and biomaterials for sustainable rural development. In R. Praveen Kumar, E. Gnansounou, J. Kenthorai Raman, and G. Baskar (Eds.). Refining Biomass Residues for Sustainable Energy and Bioproducts. Elsevier, 2019.
5. N. Bhuyan, D. Sut, L. Gogoi, R. Katakati & V. V. Goud. Rural Bio-refinery: A viable solution for Production of fuel and chemicals in Rural India. In M. Rai & A. Ingle (Eds.). Sustainable Bioenergy: Advances and Impacts. Elsevier, 2019.
6. N. Gogoi, B. Sarma, S. C. Mondal, R. Katakati & A. Garg. Use of Biochar in Sustainable Agriculture. In M. Farooq & M. Pisante (Eds.). Innovations in Sustainable Agriculture. Springer, Singapore, 2019.
7. P. K. Goswami, N. D. Choudhury & R. Katakati. Comparison of Various Solar Radiation Data Sources for Feasibility Study of Parabolic Trough Collector Power Plant in Assam. In B. Biswal, B. Sarkar & P. Mahanta (Eds.). Advances in Mechanical Engineering - Lecture Notes in Mechanical Engineering. Springer, Singapore, 2020.
8. P. Tripathi, S. Mahapatra & S. Dasappa. Estimation and characterization of Tar from an open-top downdraft gasifier. In S. Singh & V. Ramadesigan (Eds.). Advances in Energy Research, Vol. 2. Springer Proceedings in Energy, Singapore, 2020.
9. P.J. Bezbaruah, D. Borah, R. Patowary & D. C. Baruah. Thermohydraulic Performance of Packed Bed Solar Air Heater. In S. Singh & V. Ramadesigan (Eds.). Advances in Energy Research, Vol. 2. Springer Proceedings in Energy, Singapore, 2020.
10. R. C. Patil, P. G. Suryawanshi, R. Katakati & V. V. Goud. Current challenges and advances in Butanol production. In M. Rai & A. Ingle (Eds.). Sustainable Bioenergy: Advances and Impacts. Elsevier, 2019.
11. S. Gogoi, R. Narzari, N. Bordoloi, N. Bhuyan, D. Sut, L. Gogoi & R. Katakati. Influence of Temperature on Quality and Yield of Pyrolytic Products of Biofuel Process Wastes. In S. K. Ghosh (Ed.). Energy Recovery Processes from Wastes. Springer, Singapore, 2019.

12. S. Das, A. S. Reshad, N. Bhuyan, D. Sut, P. Tiwari, V. V. Goud & R. Kataki. Utilization of nonedible oilseeds in a biorefinery approach with special emphasis on rubber seeds. In T. Bhaskar, A. Pandey, E. R. Rene & D. Tsang (Eds.). Waste Biorefinery. Elsevier, 2020.
13. S. Gogoi, N. Bhuyan, D. Sut, R. Narzari, L. Gogoi & R. Kataki. Agricultural Wastes as Feedstock for Thermo-Chemical Conversion: Products Distribution and Characterization. In S. K. Ghosh (Ed.). Energy Recovery Processes from Wastes. Springer, Singapore, 2019.
14. S. Kataki, G. D. Sarma, D. Patowary & D. C. Baruah. Prospects of Utilization of Liquid Fraction of Biogas Digestate as Substrate Supplement for Mushroom Cultivation, In S. K. Ghosh (Ed.). Energy Recovery Processes from Wastes. Springer, Singapore, 2019.

## PATENT

Inventor(s)	Patent	Patent number/Application Number	National/International
P. K. Choudhury	Digital occupancy meter for commercial passenger vehicle	Tezpur University is granted (Patent number no.325837) on 26/11/2019	Indian patent

## SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
D. C. Baruah	Petroleum Product conservation in agriculture Sector	Krishi Vigyan Kendra-Sonitpur	6 February 2020	Sonitpur
D. C. Baruah	Recent Advances in Solar Thermal Technology and Anaerobic digestion for farm power challenges and opportunities	Departments of Mechanical Engineering, and Industrial and Production Engineering, Assam Engineering College	10-14 February 2020	Guwahati, Assam
D. C. Baruah	National Education Policy	All India Council For Technical Education	27 July 2019	New Delhi
D. C. Baruah	Induction Training of Faculty at Tezpur University	Teaching Learning Centre	24 June 2019	Tezpur University

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
D. C. Baruah	Short-term course on Clean Energy Technologies	Centre for Energy	10 June 2019	IIT Guwahati
D. C. Baruah	Policy Dialogue on Energy and Climate Change (Assam Chapter)	Integrated Research and Action for Development	5 May 2019	IIT Guwahati
D. Deka	Leadership for Academicians Programme	Ministry of Human Resource Development (MHRD), Government of India	20-31 January 2020	Tata Institute of Social Sciences, Mumbai
S. Mahapatra	International conference on Engineering Sciences and Technologies for Environmental Care (ESTEC 2020)	CSIR NEIST, Jorhat	22 February 2020	Jorhat
S. Mahapatra	International Conference on Advances in Energy Technology	Gandhi Institute for Education and Technology	17-18 January 2020	Baniatangi, Bhubaneswar, Odisha
S. Mahapatra	National Seminar on Recent Challenges in Smart Grid	Kaziranga University	27 August 2019	Jorhat
V. Verma	Refresher Course on Teacher Education (Interdisciplinary)	Department of Education	6 - 20 September 2019	Tezpur University

#### TALKS BY THE FACULTY ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
D. Deka	Faculty Development Programme on Prospects of Mechanical Engineering in Renewable Energy Sector	19 November 2019	Girijananda Choudhury Institute of Management and Technology, Tezpur.
P. K. Choudhury	5-day Lecture Series	23 October 2019	Girijananda Choudhury Institute of Management and Technology, Tezpur.
R. Katak	Faculty Development Programme	10-14 February 2020	Assam Engineering College, Guwahati, Assam

R. Katak	The ICAR Winter School	21 December 2019	College of Forestry, Kerala Agricultural University, Thrissur, Kerala
S. Mahapatra	Induction Training of Faculty	19 June 2019	Teaching Learning Center, Tezpur University
S. Mahapatra	National Seminar on Recent Challenges in Smart Grid	27 August 2019	Kaziranga University, Jorhat
S. Mahapatra	Refresher Course on Teacher Education (Interdisciplinary),	19 September 2019	Department of Education, Tezpur University.
S. Mahapatra	Workshop on Smart and Sustainable Cities	11 October 2019	Tata Institute of Social Science, Guwahati
S. Mahapatra	Faculty Development Programme on Prospects of Mechanical Engineering in Renewable Energy Sector	22 November 2019.	GIMT Tezpur
S. Mahapatra	International Conference on Advances in Energy Technology (ICAET-2020)	17 January 2020	Gandhi Institute for Education and Technology, Bhubaneswar
S. Mahapatra	International conference on Engineering Sciences and Technologies for Environmental Care	22 February 2020	CSIR NEIST, Jorhat

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, year
National Symposium on Sustainable Waste Management (NSWM)	3 August 2019

### DISTINGUISHED VISITORS TO THE DEPARTMENT

- Dr. Debajit Palit, Director, Rural Energy and Livelihoods, TERI, New Delhi,
- Mr. Kaustov G Goswami, Founder, AxomUrja, Guwahati
- Dr. K. K. Sasi, Professor, Department of Electrical and Electronics Engineering, Amrita University, Coimbatore
- Dr. K. Srinivasa Reddy, Professor, IIT Madras, Chennai
- Dr. Michele Clarke, Professor, University of Nottingham, UK
- Dr. O. N. Tiwari, IARI, New Delhi
- Dr. V. V. Goud, Professor, Department of Chemical Engineering, IIT Guwahati

## **AWARDS & HONOURS/ NOTABLE RESEARCH ACHIEVEMENTS OF FACULTY/ RESEARCH SCHOLARS/STUDENTS/STAFF**

### **Faculty members and Staff**

- D C Baruah is appointed as Coordinator of Internal Quality Cell of the AdaptNET (an Erasmus+ project by EACEA (Education, Audiovisual and Culture Executive Agency), European Commission to strengthen education, research, and innovation for climate smart crops in India
- D. Deka is appointed as a Students Counselor in Girijananda Choudhury Institute of Management and Technology, Tezpur w.e.f. 28.02.2020 for two years.
- R. Katakai is awarded the DBT Overseas Fellowship by DBT, Government of India and Adjunct Faculty by Washington State University, Pullman, USA

### **Research Scholar/Student**

- M.Tech. students, Lakhanlal and Neelam Bora were awarded the Research and Innovation Grant of Tezpur University for their project work.
- Research Scholars, Debasish Mandal and Neelam Bora were awarded AICTE sponsored National Doctoral Fellowship (NDF).

## **OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT**

### **(i) Innovation:**

Tezpur University is granted Indian patent (no.325837) for an innovation of Dr. P. K. Choudhury titled, Digital occupancy meter for commercial passenger vehicle, on 26/11/2019.

### **(ii) Outreach programme organized:**

As part of the DSIR sponsored project on Women empowerment and skill development through technological intervention in cooking stove, more than 100 women from villages in and around the University were imparted hands-on training on improved cook stove (ICS) construction through locally available materials in 04 batches. The participants were also made aware about ill effects of traditional cook stoves and benefits of construction of ICS for indoor air pollution free home, better health of women and low fuelwood requirement. Experts from the Department, Womens Study Center, and Assam Renewable Energy Development Agency imparted the training and interacted with the participants. In a follow-up, it was found that almost all participants constructed improved chullah in their households and were using it regularly.

(iii) Dr. P. K. Choudhury volunteered in a flood relief programme of TU to Jhawani village co-ordinated by Prof. D. C. Baruah on 17 July, 2019

(iii) Contribution of the Dept. to the Society:

Through the DSIR project activity, the Department in collaboration with Women's Study Center conducted an extensive study on uses of traditional cookstove, fuelwood and user women's health. Under the project, around 100 women were made aware about the ill effects of using traditional cookstove and benefits of Improved Cookstove and were imparted training for the purpose. It can be expected that these women will act as change agents and will spread the news and educate other women regarding the issue.

(iv) Industry-Academia linkage/interface, if any:

The Department organized a meeting with the following Industries to formulate Research projects during April, 2019. 1. Biocity, Chandigarh; 2. Source Facility, Chandigarh; 3. VK-NARDEP, Kanyakumari; 4) Cleanopolis, Assam.

### Details of exchange students visit to the Department

Sl.No.	Name	Designation	Purpose	Duration	Host
1	Natalie Boyd Williams	Ph.D. Research Student, Biological and Environmental Sciences, University of Stirling, UK	To discuss the research topic and prospect of carrying out a part of the research in the Tezpur University campus & Part of Ph.D. Project on "Toilet-linked biogas plants"	22.08.2019 to 25.08.2019 & 27.01.2020 to 29.01.2020	D. C. Baruah
2	Felix Sippel	Master student, Dept for Energy Technology/HPT, Stockholm, Sweden	Collection of data for Master Thesis titled, Demand Side Management Implementation at Tezpur University (TU) Smart Microgrid	20 April - 5 May 2019	D. C. Baruah
3	Stina Carneheim	Master student, Electromagnetic Engineering lab, School of Electrical Engineering and Computer Science, KTH Royal Institute of Technology	Collection of data for MSc thesis titled, Energy Storage System for local generation in a grid-connected microgrid	28 October - 2 November 2019	D.C. Baruah

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET****GATE: 04 (2018-2020 BATCH) + 06 (2019-2021 BATCH) = 10****NOTABLE PLACEMENT:**

<b>Name</b>	<b>Designation</b>	<b>Organization</b>
Angshu Plavan Nath	Ph.D. Student	IIT Bombay
Chandan Kumar	Ph.D. Student	IISc Bangalore
Puja Hazarika	Ph.D. Student	IIT Guwahati
Nayan Moni Baishya	Ph.D. Student	IIT Guwahati

**THE FACULTY MEMBERS AND STAFF****Professors**

Debendra Chandra Baruah, Ph.D. (PAU, Punjab)

Head of the Department

*Specialization/Areas of Interest:* Renewable Energy, Energy Planning and Thermal Energy Management, Rural Energy Access

E-mail: baruahd@tezu.ernet.in

Dhanapati Deka, Ph.D. (Tezpur University)

*Specialization/Areas of Interest:* Biofuel and Bioenergy systems, Development of Renewable catalyst,

E-mail: dhanapati@tezu.ernet.in

Rupam Kataki, Ph.D. (Tezpur University)

*Specialization/Areas of Interest:* Biomass and Biofuel, Energy Environment interaction

E-mail: rupam@tezu.ernet.in

**Associate Professors**

Sadhan Mahapatra, Ph.D. (IISc, Bangalore)

*Specialization/Areas of Interest:* Biomass Gasification, Climate responsive buildings, Decentralized Energy Options, Energy conservation

E-mail: sadhan@tezu.ernet.in

**Assistant Professors**

Pradyumna Kumar Choudhury, Ph.D. (Tezpur University)

*Specialization/Areas of Interest:* Solar Energy, Hybrid Energy System, Energy Conservation, Instrumentation & Control

E-mail: pkc@tezu.ernet.in

Biraj Kumar Kakati, Ph.D. (IIT Guwahati)

*Specialization/Areas of Interest:* Fuel cells and hydrogen technology, Electrochemical energy systems, Graphene nanotechnology, Chemical recovery of precious metal catalysts

E-mail: bkakati@tezu.ernet.in

Nabin Sarmah, Ph.D. (Heriot-Watt, Edinburgh)

*Specialization/Areas of Interest:* Solar Energy, Photovoltaic, Energy Systems

E-mail: nabin@tezu.ernet.in

Vikas Verma, Ph.D. (IIT Roorkee)

*Specialization/Areas of Interest:* Thermal Engineering, Solar Thermal Energy, Heat Transfer

E-mail: vikas@tezu.ernet.in

Bibha Boro, M.Tech. (Tezpur University)

B. Voc. Faculty (On contact)

*Specialization/Areas of Interest:*

E-mail: bibha@tezu.ernet.in

### **Technical staff**

Biswajit Gogoi, M.Tech. (Tezpur University)

Technical Officer

E-mail: biswa27@tezu.ernet.in

Tapanjit Borah, Diploma in Mechanical Engineering (Dibrugarh Polytechnic)/MCA (IGNOU)

Technical Assistant

E-mail: tapanji@tezu.ernet.in

Trilokya Lahon, B.Sc. (Dibrugarh University)

Laboratory Assistant

E-mail: tlahon@tezu.ernet.in

### **Office Staff**

Polly Rajbonshi, M.Sc. (Dibrugarh University)

LDC

E-mail: polli227@tezu.ernet.in

Dinesh Bhuyan

MTS

E-mail: dinesh@tezu.ernet.in

## **DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY**

### **THE DEPARTMENT**

The Department of Food Engineering and Technology at Tezpur University is one of the six constituent departments under the School of Engineering. The vision of the Department is to create skilled human resources well versed in engineering aspects of food processing to cater the needs of the rapidly growing food processing sector. Therefore, the Department is serving to provide knowledge and skills for better preservation, processing and value addition to agro-products; also to promote research and development for product and process and assurance of high level of hygiene and safety of processed food through food safety laws and regulations for supporting a competitive, modern and safe food market for the consumers. This Department earlier known as Department of Food Processing Technology started in 2006 with the two-year MSc programme in Food Processing Technology. The Department is currently offering B Tech, BVoc, MTech and Ph.D. programmes. The Department has been supported by DST-FIST, UGC-SAP and by Ministry of Food Processing Industries (MoFPI), Government of India for running various programmes. Also with the support of MoFPI, New Delhi, the Department is running Food Quality Control Laboratory for testing food and tea samples. The Department is having several ongoing projects sponsored by various funding agencies like UGC, MoFPI, DST, DBT, DRDO, ICAR, AICTE, MSME, ASTEC etc. The main objectives of the scientific research and development works of the department are to contribute to the national food industry, its engineering and technology development.

### **Academic Programmes and Student intake**

<b>Programme</b>	<b>Student Intake</b>
B. Tech	38
M. Tech	18
B. Voc	50
Ph.D.	Variable, 13 in 2019-20

### **Major Facilities and Equipment Available**

- Milk Pasteuriser Unit (GOMA Engineering, India), Hunter Color Spectrophotometer (Hunter Lab, USA), Texture Analyser (Stable Micro System, UK), Rapid Viscosity Analyser (Newport, Australia), Freeze Dryer (Lyolab, India), HPLC (Waters, USA), Modified atmospheric packaging unit (Vacstar, Sweden), DSC-TGA (Netzsch, Germany), Encapsulator (Buchi, Switzerland), Gas pycnometer (Porous Materials Inc., USA), Fermenter (Sartorius, Germany), Supercritical fluid extraction system (Waters, USA), Rheometer (Anton Paar, Austria), PCR (Eppendorf, USA)
- One dedicated library with more than 150 nos of books
- Computer laboratory with more than 30 computers with licensed software like MATLAB etc.

**MAJOR RESEARCH AND DEVELOPMENT FINDINGS**

Principal Investigator	Salient Research Findings
N. R. S. Hulle	<p>Process Standardization of SFE of 'Bhut Jolokia' Oleoresin and its quality evaluation</p> <ul style="list-style-type: none"> <li>• Supercritical fluid extraction (SFE) of Bhut Jolokia yielded higher oleoresin compared to traditional soxhlate extraction.</li> <li>• Empirical models for the independent process variables and selected response variables were developed.</li> <li>• Optimized parameters for extraction of Bhut Jolokia oleoresin along with higher level of colour value and capsaicin content were 200 bar/60°C/73 min.</li> <li>• The oleoresin extract showed anti-bacterial properties against gram positive (<i>S.aureus</i>) as well as gram negative bacteria (<i>E.coli, S. typhi</i>).</li> </ul> <p>Standardization of Encapsulation Process of Bhut Jolokia (<i>Capsicum Chinense</i>) Oleoresin and Its Characterization</p> <ul style="list-style-type: none"> <li>• Oleoresin extract from bhut jolokia was efficiently encapsulated with sodium alginate and tween 80.</li> <li>• The optimum encapsulation was achieved with encapsulation efficiency (91.44%), total phenolic content (5734.5 mg GAE/100 g), DPPH inhibition (68.24%) and the higher capsaicin content (10755.5µg/g).</li> <li>• The standardized microencapsulated oleoresin beads also showed lower moisture content retention (13.78±0.04%), bulk density (0.744±0.064 g/cm<sup>3</sup>), good flowability (1.25), and lower hygroscopicity (19.40%).</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
Electric field based novel techniques for pilot scale processing of juice and pulp from potential fruits of NE region	ICAR	₹128.43 Lakhs	3 Years (2018-2021)	B. Srivastava	IIT Kharagpur and NES Barapani
Non-thermal pulsed light	AICTE	₹25.00 Lakhs	3 Years (2019-2022)	B. Srivastava	

processing of fresh cut fruits of NE India: A novel hurdle approach for predicting enhanced shelf life and nutritional quality					
Evaluation of tree tomatoes (tamarillo) of Nagaland utilizing the pulp, peel and seeds for its commercialization	MoFPI	₹33.03 Lakhs	2 Years (2018-2020)	C. L. Mahanta	
Processing of coconut milk, development of beverage from curcumin enriched nanoemulsified coconut milk (partially defatted) and pineapple juice and evaluation of its health implications	Coconut Development Board, GoI	₹28.00 Lakhs	2 years (2019-2021)	C.L. Mahanta	
Solar greenhouse drying system for the production of "no cooking" rice from Assam and product quality modelling during storage	AICTE	₹25.00 Lakhs	3 Years (2019-2022)	M. K. Hazarika	
Ultrasound assisted rapid immobilization of pectinase on solid support for juice clarification	AICTE	₹21.10 Lakhs	3 Years (2019-2022)	N. Sit	
Effect of pre-treatments on drying characteristics and oleoresin content of Bhut Jolokia ( <i>Capsicum</i>	UGC	₹10.00 Lakhs	2 Years (2018-2020)	N. R. S. Hulle	

<i>chinensis</i> )					
Development of Enzyme based biosensor through sol-gel techniques for debittering of grapefruit and mosambi juice	SERB-DST	₹26.62 Lakhs	3 Years (2017-2020)	P. Mishra	
Usability of smart phone to evaluate the efficiency of polyaniline based sensor for indication of freshness of fish fillets during chemical spoilage	LSRB-DRDO	₹22.54 Lakhs	3 Years (2018-2021)	P. Mishra	
Development of anti-inflammatory functional food from 'Norabogori' ( <i>Prunus persica</i> ) of Assam	MoFPI	₹27.7 Lakhs	2 Years (2019-2021)	S. C. Deka	

## PUBLICATIONS

### Journal Publications

1. Basumatary B., Bhattacharya, S. & Das A. B. Olive (*Elaeagnus latifolia*) pulp and leather: Characterization after thermal treatment and interrelations among quality attributes. *Journal of Food Engineering*. 278. 2020.
2. Begum Y. A., Chakraborty S. & Deka, S. C. Bread fortified with dietary fibre extracted from culinary banana bract: its quality attributes and in vitro starch digestibility. *International Journal of Food Science & Technology*. 55(6). 2020.
3. Begum Y. A. & Deka S. C. (2019). Effect of processing on structural, thermal, and physicochemical properties of dietary fiber of culinary banana bracts. *Journal of Food Processing and Preservation*. 43(12). 2019.
4. Begum Y. A. & Deka S. C. Ultrasound-assisted extracted dietary fibre from culinary banana bract as matrices for anthocyanin: its preparation, characterization and storage stability. *Journal of Food Science and Technology*. 57. 2020.
5. Begum Y. A., Baishya P., Das M. J., Chakravarty S. & Deka, S. C. Novel approach for the development of dietary fibre-anthocyanin enriched functional bread from culinary banana bract. *International Journal of Food Science and Technology*. 55(6). 2020.
6. Biswas B. & Sit N. Effect of ultrasonication on functional properties of tamarind seed protein isolates. *Journal of Food Science and Technology*. 57. 2020.
7. Borah A., Das D. K., Hazarika M. K., Mukhopadhy R. & Mahanta C. L. Low-cost healthy extrudates of rice and bhimkol (*Musa balbisiana* ABB) formulated through Linear Programming. *Journal of Food Process Engineering*. 42(6). 2019.

8. Brahma B. & Sit N. Physicochemical properties and digestibility of heat moisture-treated potato starches for different treatment conditions. *Potato Research*. 2020.
9. Chakraborty S., Gautam S. P., Das P. P. & Hazarika M. K. Instant Controlled Pressure Drop (DIC) Treatment for Improving Process Performance and Milled Rice Quality. *Journal of The Institution of Engineers (India): Series A*. 100(4). 2019.
10. Chutia H., Mahanta C. L., Ojah N. & Choudhury A. J. Fuzzy logic approach for optimization of blended beverage of cold plasma treated TCW and orange juice. *Journal of Food Measurement and Characterization*. 2020.
11. Das A. S., Basu A., Kumar R., Borah P. K., Bakshi S., Sharma M., Duary R. K., Ray P. S. & Mukhopadhyay R. Post-transcriptional regulation of C-C motif chemokine ligand 2 expression by ribosomal protein L22 during LPS-mediated inflammation. *The FEBS Journal*. 2020.
12. Das D., Das D., Gupta A. & Mishra P. Drying of *Citrus grandis* (pomelo) fruit juice using block freeze concentration. *Acta Alimentaria*. 2020.
13. Devi L. M., Lalnunthari C. & Badwaik L. S. Direct transformation of muskmelon seeds meal into biodegradable films and their characterization. *Journal of Polymers and the Environment*. 27(3). 2019.
14. Jha A. K. & Sit N. Drying characteristics and kinetics of colour change and degradation of phytochemicals and antioxidant activity during convective drying of deseeded *Terminalia chebula* fruit. *Journal of Food Measurement and Characterization*. 2020.
15. Lalnunthari C., Devi L. M., Amami E. & Badwaik L. S. Valorisation of pumpkin seeds and peels into biodegradable packaging films. *Food and Bioproducts Processing*. 118. 2019.
16. Lalnunthari C., Devi L. M. & Badwaik L. S. Extraction of protein and pectin from pumpkin industry by-products and their utilization for developing edible film. *Journal of Food Science and Technology*. 57(2). 2019.
17. Mahnot N. K., Gupta K. & Mahanta C. L. Shelf life enhancement and associated quality and sensory changes on refrigerated storage of tender coconut water subjected to non-thermal microfiltration and added with additives *Journal of Food Science and Technology*. 56(7). 2019.
18. Marboh V. & Mahanta C. L. Characterisation and antioxidant activity of sohphlang (*Flemingia vestita*), a tuberous crop. *Journal of Food Science and Technology*. 2020.
19. Mahnot N. K., Mahanta C. L., Farkas B. E., Keener K. M. & Misra N. N. Atmospheric cold plasma inactivation of *Escheria coli* and *Listeria monocytogenes* in tender coconut water: Inoculation and accelerated shelf life studies. *Food Control*. 106. 2019.
20. Mahnot N. K., Saikia S. & Mahanta C. L. Quality characterization and effect of sonication time on bioactive properties of honey from North East India. *Journal of Food Science and Technology*. 56(2). 2019.
21. Makroo H. A., Rastogi N. K. & Srivastava B. Ohmic heating assisted inactivation of enzymes and microorganisms in foods: A review. *Trends in Food Science & Technology*. 97. 2020.
22. Mangang K. C. S., Chakraborty S. & Deka S. C. Optimized microwave-assisted extraction of bioflavonoids from *Albizia myriophylla* bark using response surface methodology. *Journal of Food Science and Technology*. 57. 2020.
23. Sasikumar R., Chutia H. & Deka S. C. Thermosonication assisted extraction of blood fruit (*Haematocarpus validus*) juice and process optimization through response surface methodology. *The Journal of Microbiology, Biotechnology and Food Sciences*. 9(2). 2019.

24. Sasikumar R., Das M. & Deka S. C. Process optimization for the production of blood fruit powder by spray drying technique and its quality evaluation. *Journal of Food Science and Technology*. 57. 2020.
25. Sasikumar R., Das M., Sahu J. K. & Deka S. C. Qualitative properties of spray-dried blood fruit (*Haematocarpus validus*) powder and its sorption isotherms. *Journal of Food Process Engineering*. 43(4). 2020.
26. Sasikumar R., Pradhan D. & Deka S. C. Effects of thermosonication process on inactivation of *Escherichia coli* and *Saccharomyces cerevisiae* and its survival kinetics modeling in khoonphal (*Haematocarpus validus*) juice to extend its shelf life. *Journal of Food Processing and Preservation*. 43(11). 2019.
27. Sasikumar R., Vivek K. & Deka S. C. Sensory evaluation of ultrasound assisted microwave treated fruit (*Haematocarpus validus*) juice through fuzzy logic approach. *International Food Research Journal*. 26(4). 2019.
28. Watharkar R. B., Pu Y., Ismail B. B., Srivastava B., Srivastav P. P. & Liu D. Change in physicochemical characteristics and volatile compounds during different stage of banana (*Musa nana* Lour vs. Dwarf Cavendish) ripening. *Journal of Food Measurement and Characterization*. 2020.
29. Wahengbam, E. D., Abdul, S. & Hazarika, M. K. Water uptake in brown rice during soaking for production of no-cooking rice. *Agricultural Engineering International: CIGR Journal*. 21(3). 2019.
30. Wahengbam, E. D., Tongbram T. & Hazarika, M. K. Drying characteristics of ready-to-eat komal chawal rice: processing and modeling. *Journal of Food Science and Technology*. 2019.

### Book Chapters

1. P. K. Borah & R.K. Duary. Molecular recognition, selective targeting, and overcoming gastrointestinal digestion by folic acid functionalized oral delivery systems in colon cancer. In S. H. Sonawane, B. A. Bhanvase, M. Sivakuma (Eds.). *Encapsulation of Active Molecules and their Delivery System*. Elsevier, Amsterdam, The Netherlands, 2020.

### PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD

Inventor(s)	Patent	Patent number/Application Number	National/International
P. Mishra	An innovative process for rice fortification using clod plasma	Application no. 202031000071	National

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute /venue
A. B. Das	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University

B. Srivastava	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
C. L. Mahanta	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
D. Seth	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
K. K. Dash	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
L. S. Badwaik	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
M. K. Hazarika	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February, 2020	Tezpur University
N. Sit	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
N. R. S. Hulle	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
	Innovations and Interventions: Ecosystem in Academic Institutions	Technology Enabling Centre at Tezpur University	6 March 2020	Tezpur University
P. Mishra	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February, 2020	Tezpur University
R. K. Duary	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University
S. C. Deka	ICFOST 2019	AFSTI, Tezpur Chapter in association with AFSTI, Mysuru	30 January - 1 February 2020	Tezpur University

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
M. K. Hazarika	27 <sup>th</sup> ICFOST 2019	30 January – 2 February 2020	Tezpur University
P. Mishra	Recent Advancement in Food Processing and Preservation	20 August 2019	HBTU, Kanpur
P. Mishra	Advance Analytical Techniques	27 – 28 September 2019	Tezpur University
P. Mishra	Tomato Processing	2 November 2019	Defense Research Laboratory, Tezpur
P. Mishra	Challenges and Future Technologies for NE India	21 May 2019	Defense Research Laboratory, Tezpur

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, year</b>
Two-day workshop on ISO/IEC 17025:2017 (General requirements for the competence of testing and calibration laboratories)	8 - 9 May 2019
27 <sup>th</sup> ICFOST 2019	30 January - 1 February 2020

**DISTINGUISHED VISITORS**

- B.S. Khatkar, Professor, GJUS&T, Hisar, Haryana
- S.K. Dwivedi, Director, DRL, Tezpur
- V.G. Gaikar, Professor, ICT, Mumbai
- Y.S. Dhaliwal, Professor, CSKHPKV Palampur, H.P.

**AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS****Faculty members and Staff**

- Fulbright-Nehru Post-Doctoral Research Fellowship for the year 2020-2021 to Ohio State University, USA to Dr. Dibyakanta Seth (Assistant professor) by United States - India Educational Foundation
- Two best poster awards in 27<sup>th</sup> ICFOST 2019 by Dr. Poonam Mishra (Associate professor) by AFSTI
- Best poster award in 27<sup>th</sup> ICFOST 2019 by Dr. Manuj Kumar Hazarika (Professor) by AFSTI

**Research Scholar/Student**

CSIR- SRF Fellowship 2020 to Mr. Avinash Kumar Jha (Ph.D. scholars) by Council for Scientific and Industrial Research, India

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

UGC NET: 4

GATE: 9

**NOTABLE PLACEMENTS**

Name	Designation	Organization
Shreestee Das	Production trainee	ITC Pvt Ltd
Koustavmani Saharia	Production trainee	ITC Pvt Ltd
Dhanraj Purkayastha	Production trainee	ITC Pvt Ltd
Mondeep Parashar	Production trainee	ITC Pvt Ltd
Munmi Bhuyan	Production trainee	ITC Pvt Ltd
Sagar Sarma	Territorial sales in charge	Gujarat Cooperative Milk Marketing Federation (Amul)
Sunit Sagar	Marketing trainee	Luit Minerals

**THE FACULTY MEMBERS AND STAFF****Professors**

Charu Lata Mahanta, Ph.D. (CFTRI, Mysore)

*Specialization/ Research area: Rice Science and Technology, Product Development and Product Quality*

Email: charu@tezu.ernet.in

Sankar Chandra Deka, Ph.D. (Haryana Agricultural University, Hissar)

*Specialization/ Research area: Food Biochemistry, Food Quality, Fermented Foods*

Email: sankar@tezu.ernet

Manuj Kumar Hazarika, Ph.D. (IIT Kharagpur)

*Specialization/ Research area: Dairy & Food Engineering, Transport Processes, Process Modeling*

Email: mkhazarika@tezu.ernet.in

Brijesh Srivastava, Ph.D. (IIT Kharagpur)

*Specialization/ Research area: Process & Food Engineering, Fruits & Vegetable Processing and Machineries, Drying & Dehydration, Unit Operations in Food Engineering.*

Email: brijesh@tezu.ernet.in

Nandan Sit, Ph.D. (Tezpur University)

*Specialization/ Research area: Food Engineering, Biochemical Engineering, Oils and Fats*

Email: nandan@tezu.ernet.in

**Associate Professors**

Poonam Mishra, Ph.D. (Tezpur University)  
*Specialization//Research area: Food Technology*  
Email: poonam@tezu.ernet.in

Laxmikant Shivnath Badwaik, Ph.D. (Tezpur University)  
*Specialization//Research area: Food Engg. & Tech., Food Quality and Laws, Food Packaging*  
Email: badwaik@tezu.ernet.in

**Assistant Professors**

Raj Kumar Duary, Ph.D. (National Dairy Research Institute, Karnal)  
*Specialization//Research area: Dairy Technology, Dairy Microbiology, Functional and Nutraceutical Foods*  
Email: duary@tezu.ernet.in

Amit Baran Das, MS (IIT Kharagpur)  
*Specialization//Research area: Food Processing, Food Engineering*  
Email: amittu@tezu.ernet.in

Nishant Rachayya Swami Hulle, Ph.D. (IIT Kharagpur)  
*Specialization//Research area: Food Process Technology, Non-thermal Processing, Product development*  
Email: nishant@tezu.ernet.in

**Technical staff**

Dipankar Kalita, Ph.D. (Tezpur University)  
*Specialization/Research area: Food Biochemsitry, Food Microbiology*  
Email: dkalita@tezu.ernet.in

Arup Jyoti Das, Ph.D. (Tezpur University)  
*Specialization/Research area: Microbial biotechnology, Fermentation technology*  
Email: arupdas@tezu.ernet.in

Labadep Kalita, Diploma in Mechanical Engineering (State Council for Technical Education, Assam)  
*Specialization/Research area: Computerized Numerical Control Engineering*  
Email: labadeep@tezu.ernet.in

Swdwmsri Mushahary, M. Tech (Tezpur University)  
*Specialization/Research area: Food Engineering and Product Development*  
Email: swdwm26@tezu.ernet.in

**Office Staff**

Krishna Bora

Anjan Keot  
Email: akeot@tezu.ernet.in

## **DEPARTMENT OF MECHANICAL ENGINEERING**

### **THE DEPARTMENT**

The Mechanical Engineering (ME) Department at Tezpur University was established in 2006. The Department aims at producing skilled human resources with a strong foundation in ME for the heavy engineering and manufacturing industry. Another mission of the Department is to train scholars in handling ME as well as interdisciplinary problems exploiting their domain knowledge and using latest technologies. There are 16 regular faculty members, 01 guest faculty member and 01 adjunct faculty member with various specializations and 11 technical staff members in the Department. Presently the Department is offering BTech, MTech (Specialization: Machine Design and Thermal and Fluids Engineering) and Ph.D. programmes in Mechanical Engineering. The Department has various laboratories with state of the art facilities and one central workshop with all kinds of machineries. Both the BTech and MTech programmes offered in the Department are AICTE approved. The BTech programme in Mechanical Engineering is provisionally accredited by NBA with effective from 2019-2021. The Department has the vision to emerge as a centre of excellence producing quality engineers and conducting cutting-edge research.

### **Academic Programmes and Student intake**

<b>Programme</b>	<b>Intake</b>
B.Tech.	60
M.Tech.	18
Ph.D.	Variable, 2 in 2019-20

### **Major Facilities and Equipment Available**

#### **Central Workshop**

- CNC Lathe Machine
- CNC Milling Machine
- HMT High Speed Precision Lathe

#### **Turbo-machinery Lab**

- Pelton turbine
- Propeller turbine

#### **Strength of Material Lab**

- Universal testing machine
- Inverted metallurgical microscope with accessories and interface software

**Vibration Lab**

- Universal vibration apparatus
- Sound level meter with sound level calibrator

**CAD Lab**

- ANSYS academic teaching
- Pro-E software

**IC Engine and Automobile Lab**

- Diesel Engine test set up VCR
- Variable compression ratio petrol engine
- Computerised single cylinder petrol engine test rig

**Thermal and Heat Transfer Lab**

- Vapour compression and vapour absorption refrigeration test rig
- Air conditioning test rig
- Dropwise and filmwise condensation apparatus
- Shell and tube heat exchanger apparatus
- VCR petrol engine

**RESEARCH PROJECTS: ONGOING AND NEW**

<b>Project Title</b>	<b>Funding Agency</b>	<b>Amount (in INR)</b>	<b>Duration</b>	<b>Investigators</b>
Design Development and Performance Testing of a Solar Dryer for Drying of <i>Garcinia pedunculata</i> with Thermal Energy Storage	AICTE/RPS	₹ 16.85 Lakhs	3 Years (2019-2022)	Partha. P. Dutta

Multi-Crop Residue Processing Technology Package for Production of Fuel and Fertilizer	SERB_IMPRINT	₹ 1.41 Crores	3 Years (2019 - 2022)	D. C. Baruah, S. Kashyap, N. Sarmah, D. Sonowal, & E. Kalita
--	--------------	---------------	--------------------------	--

## PUBLICATIONS

### Journal Publications

1. Deka D. & Datta D. Optimization of unit commitment problem with ramp-rate constraint and wrap-around scheduling. *Electric Power Systems Research*. 177. 2019.
2. Gogoi T. K. & Saikia S. Performance analysis of a solar heat driven organic Rankine cycle and absorption cooling system. *Thermal Science and Engineering Progress*. 13. 2019.
3. Haloi P. & Gogoi T. K. Energy analysis of a coal-fired MHD power plant. *Int. J. of Recent Technology and Engineering*. 8. 2019.
4. Kalita P. & Sarmah S. A new diffusion-regulated flux splitting method for compressible flows. *Computers & Fluids*. 192. 2019.
5. Kamal S. M., Perl M. & Bharali D. Generalized Plane Strain Study of Rotational Autofrettage of Thick-walled Cylinders: Part I- Theoretical Analysis. *ASME Journal of Pressure Vessel Technology*. 141(5). 2019.
6. Kamal S. M. & Perl M. Generalized Plane Strain Study of Rotational Autofrettage of Thick-walled Cylinders: Part II- Numerical Evaluation. *ASME Journal of Pressure Vessel Technology*. 141(5). 2019.
7. Kashyap S., Nath D. & Das D. Characterization, weathering and modeling of natural fibre based composites. *Materials Today: Proceedings*. 2020.
8. Kashyap S., Banik T. & Reddy T. S. Comparative study and modelling of machinability characteristics of single and double tempered AISI H13 steel during hard part finish turning using brazed tungsten carbide tip. *Materials Today: Proceedings*. 2020.
9. Konwar D., Gogoi T. K. & Das A. J. Reply to Comment on Multi-objective optimization of double effect series and parallel flow water-lithium chloride and water-lithium bromide absorption refrigeration systems. *Energy Conversion and Management*. 185. 2019.
10. Mehta V. K. Improved Nelder–Mead algorithm in high dimensions with adaptive parameters based on Chebyshev spacing points. *Engineering Optimization*. 2019.
11. Pankaja P., Tiwaria A., Bhadra R. & Biswasa P. Experimental investigation on CO<sub>2</sub> laser butt welding of AISI 304 stainless steel and mild steel thin sheets, *Optics & Laser Technology*. 119. 2019.
12. Reddy T.S., Banik T., Velagala R. & Kashyap S. A study and modeling of cutting forces in dry turning of heat treated AISI H13 tool steel with brazed tungsten carbide tip. *Materials Today: Proceedings*. 24. 2020.

### Conference Proceedings

1. Banerjee S., Gogoi S. & Borah D. Hall-Petch Modeling to Study Influence of Grain Size on Mechanical Properties of Microalloyed Al-Cu Alloys. Proceeding of the International Conference on Advancements in Mechanical Engineering (ICAME-2020). Kolkata, 2020.

2. Banerjee S., Gogoi S., Saha B. & Rajkonwar U. Modeling of Flow Curve for 2219Al Alloys Microalloyed with Cd. Proceeding of the International Conference on Advancements in Mechanical Engineering (ICAME-2020). Kolkata, 2020.
3. Banerjee S., Gogoi S. & Bhowmick S. Investigation and Modeling of Precipitation Kinetics of 2219Al Alloy. Proceeding of the International Conference on Advancements in Mechanical Engineering (ICAME-2020). Kolkata, 2020.
4. Begum S. S., Goswami A. P., Jangid H. & Dutta P. P.<sup>1</sup> Design and modelling of a parabolic trough solar collector. Proceeding of the National Conference on Recent Advances in Science and Technology. ASTU, Guwahati, 2019.
5. Bhuyan D. P., Borthakur S., Das J. & Chowdhury B. Effect of blade length and material on the performance of a wind turbine – An experimental study. Proceeding of the National conference on Advances in Mechanical Engineering. Assam Engineering College, Guwahati, 2020.
6. Bhuyan S. & Basu D. N. Numerical analysis of mixed convection flow using non-Boussinesq approximation lattice Boltzmann method. Proceeding of the conference on the 25<sup>th</sup> National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019). IIT Roorkee, Roorkee, India, 2019.
7. Borpatra Gohain R. J. & Dutta P.P.<sup>1</sup> Modelling and experimental study of an improved biomass cook-stove. Proceeding of the National Conference on Recent Advances in Science and Technology. ASTU, Guwahati, 2019.
8. Bora J. & Kirtania S. Comparative study on elastic properties and mode I fracture energy of carbon nanotube/epoxy and carbon fiber/epoxy composite laminates. Proceeding of the 2<sup>nd</sup> Int. Conf. on Nanoscience and Nanotechnology. India, 2019.
9. Chowdhury B. & Deb S. K. Application of Design of Experiments in the analysis of thermoforming process parameters that affect rejection rate of thermoformed refrigerator liners. Proceedings of the 5<sup>th</sup> International Conference on Industrial Engineering (ICIE-2019) & 61<sup>st</sup> National Convention of Indian Institution of Industrial Engineering. SVNIT, Surat, 2019.
10. Dutta P. P.<sup>1</sup>, Das A. & Chutia L. Thermal Performance Studies of an Artificially Roughen Corrugated Solar Air Heater. Proceeding of the ICROME. NIT Silchar, 2020.
11. Dutta P., Dutta P.P.<sup>1</sup> & Kalita P. Experimental investigation of thin layer drying kinetics *Garcinia pedunculata* dried in a forced convection environmental chamber. Proceeding of National Conference on Recent Advances in Science and Technology. ASTU, Guwahati, 2019.
12. Dutta T., Roy P. K., Kumar P.S., Dutta P. P., Nath B. & Dutta H. Design and Development of a Hostel Wash Basin Waste Trap for Appropriate Food Solid Waste Management. Proceeding of the International Conference on Waste management towards circular Economy. KIIT University, India, 2019.
13. Gautam S., Choudhary S. A., Das G. & Kirtania S. Fabrication and finite element analysis of L-pin mechanism for gearless power transmission. Proceeding of the Int. Conf. on Advances in Mechanical Engineering. India, 2020.
14. Gogoi T. K. & Gautam U. Performance Evaluation of a Gas and Steam Turbine Based Cogeneration Plant: A Case Study. Proceedings of the ASME Gas Turbine India Conference, IIT Chennai, 2019.
15. Gohain R. J., Bharali N. & Dutta P. P. Thermal Performance Evaluation of an Improved Biomass Furnace for Domestic Applications. Proceeding of the KIIT Thermo. KIIT, India, 2020.

16. Goswami P., Sharma A., Dutta P. & Dutta P. P. Possibility of Waste Aluminium Can for Solar Air Heater Absorber Material through Thermal Performance Studies. Proceeding of the International Conference on Waste management towards circular Economy. KIIT University, 2019.
17. Goswami P. & Dutta P. P.<sup>1</sup> A comparative thermal study between two thermal configuration absorber plate of a double pass solar air heater using CFD and experimental analysis. Proceeding of the National Conference on Recent Advances in Science and Technology. ASTU, Guwahati, 2019.
18. Kapila K., Samanta S. & Kirtania S. Fabrication and characterization of natural fiber reinforced hybrid composites. Proceeding of the International Conference on Recent Developments in Mechanical Engineering. India, 2020.
19. Kirtania S. & Chakraborty D. Finite element based studies on elastic properties of carbon nanotube-reinforced metal matrix composites. Proceeding of the Int. Conf. on Advances in Mechanical Engineering. India, 2020.
20. Nondy J. & Gogoi T. K. Exergy Analysis of a Combined Gas Turbine and Organic Rankine Cycle Based Power and Absorption Cooling Systems. Proceedings of the ASME Gas Turbine India Conference. IIT Chennai, 2019.
21. Saikia B. & Chowdhury B. Heat transfer performance analysis of a shell and tube heat exchanger using Design of Experiments. Proceedings of the National conference on Advances in Mechanical Engineering. Assam Engineering College, Guwahati, 2020.
22. Saikia P. J., Dutta P. P. & Kalita P. Simulation and Experimental Performance Studies of a Computerized Spark Ignition Engine. Proceeding of the ICROME. NIT Silchar, 2020.
23. Samanta S., Chakraborty A., Das S., Bhadra R., Singh S. & Mondal A. Thermal and Structural Analyses of Pulse TIG Welded Butt, Tee and Lap Joints on Mild Steel Plates. Proceeding of the ICAME. Alia University, Kolkata, 2020.
24. Sharma A. & Dutta P. P.<sup>1</sup> Mathematical modelling of withering characteristics of tea leaves in Assam, India. Proceeding of the National Conference on Recent Advances in Science and Technology. ASTU, Guwahati, 2019.

## Books

1. U. S. Dixit, S. M. Kamal & R. Shufen. Autofrettage Processes: Technology and Modeling. CRC Press, Taylor & Francis Group, New York, 2020.

## Book Chapters

1. A. Sharma, M. K. Bora, A. K. Dutta & P. P. Dutta. Study of energy management in a tea processing industry in Assam, India. In P. Bora, B. Phukan & D. Bora (Eds.). Current Trends in Renewable and Alternative Energy.
2. A. Das & S. Bhuyan. Performance analysis of mixed convection in T-shaped geometry for entropy generation using lattice Boltzmann method. In B. B. Biswal, B. K. Sarkar, P. Mahanta (Eds.). Advances in Mechanical Engineering. Springer, Singapore, 2020.
3. A. Deka & D. Datta. Geometric size optimization of annular step fin array for heat transfer by natural convection. In Nature-Inspired Methods for Metaheuristics Optimization. Modeling and Optimization in Science and Technologies (MOST) book series. Springer, 2020.

4. A. Deka & D. Datta. Optimum Annular Plane Fin Profile with Uniformly Varying Thickness. In *Emerging Trends in Mechanical Engineering*. In A. Swain, S. K. Sahu, A. Ekka, S. R. Das (Eds.). *Lecture Notes in Mechanical Engineering (LNME)*. Springer, 2020.
5. A. Deka & D. Datta. A Comparative Analysis of Annular Fin Array Under Multi-objective Optimization. In L. Vijayaraghavan, K. H. Reddy & S. M. J. Basha (Eds.). *Emerging Trends in Mechanical Engineering*. *Lecture Notes in Mechanical Engineering (LNME)*. Springer, 2020.
6. H. Pathak, S. Das, R. Doley & S. Kashyap. Optimization of Cutting Parameters for AISI H13 Tool Steel by Taguchi Method and Artificial Neural Network. In *Deep Learning and Neural Networks: Concepts, Methodologies, Tools, and Applications*. IGI Global, USA, 2020.
7. P. Haloi & T. K. Gogoi. Performance Analysis of Coal-Fired Open Cycle MHD plant at Constant Subsonic Inlet Nozzle Mach Number with Variation in Nozzle-Area Ratio. *Advances in Mechanical Engineering*, *Lecture Notes in Mechanical Engineering*. Springer Nature, 2020.
8. P. Haloi & T. K. Gogoi. Exergy Modelling of a Coal-Fired MHD Power Plant. *Advances in Mechanical Engineering*, *Lecture Notes in Mechanical Engineering*. Springer Nature, 2020.
9. P. Dutta, P. P. Dutta & P. Kalita. Thermohydraulic investigation of different channel height on a corrugated heat exchanger. In P. Bora, B. Phukan & D. Bora (Eds.). *Current Trends in Renewable and Alternative Energy*.
10. S. Banerjee, R. Bhadra, S. Gogoi & R. S. Dutta. Investigating Weldability in Microalloyed Al Alloys. In B. B. Biswal, B. K. Sarkar & P. Mahanta (Eds.). *Advances in Mechanical Engineering*. Springer Nature, Singapore, 2020.
11. S. M. Kamal & R. Kulsum. Parametric Study of Axisymmetric Circular Disk Subjected to Rotational Autofrettage. In R. G. Narayanan, S. N. Joshi, U. S. Dixit (Eds.). *Advances in Computational Methods in Manufacturing*. Springer, Singapore, 2019.
12. V. K. Mehta & B. Dasgupta. A Multi-objective Optimization Method Based on Nelder–Mead Simplex Search Method. In H. Voruganti, K. Kumar, P. Krishna & X. Jin (Eds.). *Advances in Applied Mechanical Engineering*. *Lecture Notes in Mechanical Engineering*. Springer, Singapore, 2020.
13. Z. Kalita & D. Datta. The constrained single-row facility layout problem with repairing mechanisms. In B. Fouad & R. K Bhattacharjya (Eds.). *Nature-Inspired Methods for Metaheuristics Optimization*. *Modeling and Optimization in Science and Technologies (MOST) book series*. Springer, 2020.
14. Z. Kalita & D. Datta. Corridor allocation as a constrained optimization problem using a permutation-based multi-objective genetic algorithm. In B. Fouad & R. K Bhattacharjya (Eds.). *Nature-Inspired Methods for Metaheuristics Optimization*. *Modeling and Optimization in Science and Technologies (MOST) book series*. Springer, 2020.

### Other Publications

1. Mehta V. K. On Maxima and Minima (in Hindi), Sandarbh, issue 121, March-April, 2019.

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, year</b>	<b>Place/Institute/Venue</b>
B. Chowdhury	5 <sup>th</sup> International Conference on Industrial Engineering (ICIE-2019) & 61 <sup>st</sup> National Convention of Indian Institution of Industrial Engineering.	Sardar Vallabhbhai National Institute of Technology [SVNIT]	12-14 December 2019	Surat
P. Haloi	International Conference on Clean and Renewable Energy	NIT Durgapur,	10-12 July 2019	West Bengal
	International Conference on Applied Mechanical Engineering Research	NIT Warangal, Telangana	2-4 May 2019	Telangana
	STC on AutoCAD for Engineers	NITTTTR Kolkata	6-10 January 2020	Kolkata
	LaTeX 101X	IIT Bombay	24 September-02 December 2019	Mumbai
S. Bhuyan	25 <sup>th</sup> National and 3 <sup>rd</sup> International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC-2019)	IIT Roorkee	28-31 December 2019	Roorkee
S. Kashyap	International Conference of Materials Processing and Characterization (ICMPC 2020)	GLA University Mathura	25-27 February, 2020	Mathura
S. Kirtania	International Conference on Advances in Mechanical Engineering	Department of Mechanical Engineering, Alia University	16-18 January 2020	Kolkata
S. M. Kamal	GIAN course on Isothermal Near-Net Shape Forging of	IIT Guwahati	08-12 July 2019	Guwahati

	Aluminum Alloys: Advances and Inventions			
<i>T. K. Gogoi</i>	ASME Gas Turbine India Conference	ASME	5-6 December 2019	IIT Madras
<i>V. K. Mehta</i>	International Conference on Applied Mechanical Engineering Research	NIT Warangal	3-4 May 2019	Warangal

### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/ Venue
<i>D. Datta</i>	Workshop on Optimization Techniques Multidisciplinary Research	25-29 November 2019	NIT Agartala, India
<i>Partha P. Dutta</i>	Invited talk on Innovation Driven Entrepreneurship for Prospective Graduates	28 February, 2020	Sonapur College, Assam
	Invited talk on Entrepreneurship and Start-up	25 February, 2020	LOKD College, Dhekiajuli, Assam
	Invited talk on Start-up and patent	20 February, 2020	Nowgaon College, Assam
<i>P. Kalita</i>	TEQIP-III sponsored one week faculty development programme on "Advancements in Mechanical Engineering".	26 September 2019	Girijananda Chowdhury Institute of Management and Technology (GIMT), Guwahati, Assam
	TEQIP-III sponsored Workshop on "Science and Technology for Sustainable Development".	12 February 2020	Girijananda Chowdhury Institute of Management and Technology (GIMT), Tezpur, Assam
<i>T.K. Gogoi</i>	TEQIP-III sponsored one week faculty development programme on "Advancements in Mechanical Engineering".	25 September 2019	Girijananda Chowdhury Institute of Management and Technology (GIMT), Guwahati, Assam
	National Workshop on Importance of Accreditation	31 July 2019	ASTU, Guwhati
<i>V. K. Mehta</i>	Invited Seminar, IITK	3 June 2019	Department of Mech. Engg, IIT Kanpur

### AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS

### Faculty members and Staff

- Outstanding Reviewer Award, M. Bardalai, Journal of the Air & Waste Management Association (Taylor & Francis).
- Best Paper Award, S. Banerjee, International Conference on Advancements in Mechanical Engineering (ICAME-2020).

### Research Scholar/Student

- Gandhian Young Technological Innovation appreciation award (GYTI), S. J. Sharma (B.Tech.), A. Nath (B.Tech.), S.S. Gogoi (B.Tech.) and P.P. Dutta<sup>2</sup> (Assistant Professor), SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institutions), 2019.
- Best Poster Award, Harajyoti Das (M.Tech.), International Conference on Waste management towards circular Economy, KIIT University, 2019.

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

GATE: 20

### NOTABLE PLACEMENTS

Name	Designation	Organization
Subham Pokhrel	Faculty	Spectrum Eduventure
Shubhankar Maitra	Faculty	Spectrum Eduventure
Priyanka Das	District Associate	Public Health Engg. Dept., Assam
Priyom Goswami	JRF	DRDO
Denish Pratim Bhuyan	Junior Faculty of Mathematics	Spectrum Eduventure
Akangsha Bhagawati	Junior Faculty of Biology	Spectrum Eduventure
Arindam Sinha	Operations and Marketing Executive	Spectrum Eduventure
Nabajyoti Ray	Programmer analyst Trainee	Cognizant Technologies
Bobyraj Tamuli	Programmer analyst Trainee	Cognizant Technologies
Bibek Jyoti Dutta	Programmer analyst Trainee	Cognizant Technologies
Aditi Singh	Programmer analyst Trainee	Cognizant Technologies
Akangsha Deka	Programmer analyst Trainee	Cognizant Technologies
Suprodip Borthakur	Programmer analyst Trainee	Cognizant Technologies
Manash Lekharu	Intrn cum job	Luit Mineral
Aditya Changmai	Intrn cum job	Luit Mineral
Amlan K Nandi	Intrn cum job	Luit Mineral
Preetam Nandi	Intrn cum job	Luit Mineral
Abhinab Sharma	Intrn cum job	Luit Mineral
Meghna Borbora	Intrn cum job	Luit Mineral
Jyotishmita Das	Intrn cum job	Luit Mineral
Bhumidhar Das	Intrn cum job	Luit Mineral

## THE FACULTY MEMBERS AND STAFF

### Professors

Dilip Datta, Ph.D. (IIT Kanpur)  
*Specialization/Areas of interest:* Optimization/Design  
E-Mail: ddatta@tezu.ernet.in

Partha Pratim Dutta, Ph.D. (Tezpur University)  
*Specialization/Areas of interest:* Energy Technology  
E-mail: ppdutta@tezu.ernet.in

Tapan Kumar Gogoi, Ph.D. (Tezpur University)  
*Specialization/Areas of interest:* Thermal Energy and Environment Engineering  
E-mail: tapan\_g@tezu.ernet.in

### Assistant Professors

Barnali Choudhury, M.E. (Gauhati University)  
*Specialization/Areas of interest:* Thermal Engineering.  
E-mail: barnali@tezu.ernet.in

Monoj Bardalai, Ph.D. (Gauhati University)  
*Specialization/Areas of interest:* Bioenergy, Heat Transfer  
E-mail: monojb@tezu.ernet.in

Paragmoni Kalita, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Heat Power Engineering  
E-mail: paragmk@tezu.ernet.in

Polash Protim Dutta, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* CAD/CAM  
E-mail: polashd@tezu.ernet.in

Prabin Haloi, M.E. (Gauhati University)  
*Specialization/Areas of interest:* Fluid and Thermal Engineering, Energy.  
E-mail: haloi\_p@tezu.ernet.in

Rakesh Bhadra, M.E. (IEST)  
*Specialization/Areas of interest:* Manufacturing / Production Engineering.  
E-mail: r.bhadr@tezu.ernet.in

Sanjib Banerjee, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Materials and Manufacturing  
E-mail: sanjibb@tezu.ernet.in

Satadru Kashyap, Ph.D. (Tezpur University)  
*Specialization/Areas of interest:* Material Science, Mechanical Metallurgy, Characterization Techniques, Bioceramics  
E-mail: satadru@tezu.ernet.in

Seikh Mustafa Kamal, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Plasticity, Autofrettage, Stress/Strain Analysis  
E-mail: smkmech@tezu.ernet.in

Sikha Bhuyan, M.Tech. (NIT Silchar)  
*Specialization/Areas of interest:* Thermal Engineering.  
E-mail: sikha5@tezu.ernet.in

Sushen Kirtania, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Machine Design  
E-mail: sushen@tezu.ernet.in

Vivek Kumar Mehta, Ph.D. (IIT Kanpur)  
*Specialization/Areas of interest:* Robotics, Optimization.  
E-mail: vkmehta@tezu.ernet.in

Zahnupriya Kalita, Ph.D. (Tezpur University)  
*Specialization/Areas of interest:* Mechatronics  
E-mail: zk@tezu.ernet.in

#### **Guest Faculty**

Kalpajyoti Borah, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Computational Magnetohydrodynamics and computational gas dynamics  
E-mail: kalpa@tezu.ernet.in

#### **Adjunct Faculty**

Prof. Mordechai Perl, D.Sc. (Israel Institute of Technology, Israel)  
*Specialization/Areas of interest:* Fracture Mechanics, Bio-mechanics  
E-mail: merpr@bgumail.bgu.ac.il

#### **Technical officer**

Prabin Kumar Bora, B.Tech.  
E-mail: pkbora@tezu.ernet.in

#### **Senior Technical Assistant**

Heman Malakar, B.Tech.  
E-mail: heman@tezu.ernet.in

#### **Technical Assistants**

Anupjyoti Nath, Diploma  
E-mail: anupn@tezu.ernet.in

Guna Kanat Borah, Diploma  
E-mail: gunakt@tezu.ernet.in

#### **Technicians**

Dipak Gogoi, ITI  
E-mail: gunakt@tezu.ernet.in

Mitharam Handique, ITI  
E-mail: mitharam@tezu.ernet.in

Khargeswar Rangpi, ITI  
E-mail: rangpi@tezu.ernet.in

Poalsh Rabha, ITI  
E-mail: prabha@tezu.ernet.in

Sasthendra Kumar Nath, ITI  
E-mail: sknath@tezu.ernet.in

**Draftsmen**

Bhaskar Baruah, Diploma  
E-mail: bbaruah@tezu.ernet.in

Uttam Kumar Nath, Diploma  
E-mail: uttam@tezu.ernet.in

**Office Staff**

Dipanjali Sinha, M.A. (English), B.Ed  
E-mail: dsinha@tezu.ernet.in

Maniram Bania

\*\*

P.P. Dutta<sup>1</sup>: Partha Pratim Dutta

P.P. Dutta<sup>2</sup>: Polash Protim Dutta



# **School of Humanities and Social Sciences**

**Dean's Report**

**School of Humanities and Social Sciences**

**Department of Cultural Studies**

**Department of Education**

**Department of English and Foreign Languages**

**Department of Hindi**

**Department of Law**

**Department of Mass Communication and Journalism**

**Department of Social Work**

**Department of Sociology**

**Centre for Assamese Studies**

**Centre for Endangered Languages**

**Dr. Ambedkar Chair**



## **SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**

The School of Humanities and Social Sciences, one of the four Schools of Tezpur University, consists of the Department of English and Foreign Languages, the Department of Cultural Studies, the Department of Mass Communication and Journalism, the Department of Sociology, the Department of Hindi, the Department of Education, and the Department of Law.

The Centre for Potential for Excellence in Particular Areas is housed in the Department of Cultural Studies. There are four other centres under the School: the Centre for Assamese Studies, the Centre for Inclusive Development, the Centre for Women's Studies, and the Centre for Endangered Languages. The research activities of the Departments of English and Foreign Languages, Cultural Studies, and Sociology are funded by UGC's SAP. A primary responsibility of the School, explicitly mentioned in the University's statutes, is the promotion and preservation of the culture of Assam and the northeast India. The research activities of the School are in line with above mentioned statutes.

The School is committed to the objectives of a liberal education. Our ideal is to impart the soft skills and knowledge traditionally associated with a liberal arts education. We believe that such skills have not lost their importance even in a milieu that favours technological knowledge over others. We are therefore greatly encouraged by the appreciation of, and the importance given to, liberal education in the draft New Education Policy 2019.

In the School, there is a vibrant culture of organizing talks, seminars and workshops. Special mention should be made of the HSS Research group, which is largely a student-led initiative. This group, under the supervision of two dedicated faculty members, organizes talks in the School every week in order to foster research culture.

We continue to take student support seriously. Students are allotted faculty mentors and students' feedback is given due importance. Because of the current pandemic, online teaching, which we have been trying to promote for some time, became a reality with all teachers resorting to this means of ensuring continuity in teaching.

### **PERSONNEL OF THE OFFICE OF THE DEAN**

Dean, School of Humanities and Social Science  
P.K. Das, Ph.D.  
Professor  
Department of English and Foreign Languages  
Email: prsntdas@tezu.ernet.in /io@tezu.ernet.in

#### **Office staff**

Amar Bharali  
UDC  
Email: amar@tezu.ernet.in  
Guna Borah  
MTS

## DEPARTMENT OF CULTURAL STUDIES

### THE DEPARTMENT

The Department of Cultural Studies, Tezpur University, is one of the earliest Departments fully devoted to the pursuit of Cultural Studies in India. 'Culture', as understood in the context of academic engagement of this Department, is the repository of ideas and values, life-ways, modes of communication and ways of making sense of the 'self'. Today, culture is perceived as a premise upon which identities are being authenticated to assert/resist/negotiate notions and practices of ethnicity, nation, gender, territory and many similar categories.

Founded in 1995, the Department of Cultural Studies is a vibrant academic entity that engages with cultural products, practices and forms in all its dimensions, with a special focus on North East India. Students and faculty in the Department engage in exciting, interdisciplinary approaches to traditional fields of study where the aim is to explore new cultural and cross-cultural phenomena from multiple points of view. Further, the Department undertakes social intervention using folklore and culture as media. Researchers and faculty, drawn from various disciplines like Anthropology, Performance Studies, Literatures, Folklore, Media and Film Studies, Gender Studies are actively engaged in exploring subjects like ethnicity, religious institutions, folklore and culture, local and national media, cultural theory, transformation and transaction in translated literatures and formation of nationalities.

### Academic Programmes and Student intake

Programme	Intake
MA in Cultural Studies	51
Ph.D.	Variable, 05 in 2019 -20

### Major Facilities and Equipment Available

- Cultural Interpretation Centre
- Wall of Heroes: A photo gallery of Indian freedom fighters
- Departmental Library
- Audio-Visual cum Seminar Hall
- Full-fledged multimedia editing studio
- Repository for digitized cultural assets (Digital Archive)
- Classrooms with multi-media projection system
- Rack Server with console
- Professional workstations for management of multimedia contents
- NAS Storage
- Standing Multi Touch Kiosk installed in the CIC
- Digital Camcorder
- Digital Signage

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
D. P. Nath	<ul style="list-style-type: none"> <li>• Documentation of rare performing art forms of Assam</li> </ul>

	<ul style="list-style-type: none"> <li>Documentation of Cultural Resources of North East India Videography and documentation of the religious places and ritualistic performances of the places.</li> </ul>
P. Dutta	<ul style="list-style-type: none"> <li>Archiving of cultural resources of Majuli River Island</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Cultural Memory in North-East India: A Research and Documentation Programme on Textual and Visual Narratives	UGC	₹230 Lakhs	5 years (2016-21)	D. P. Nath
SAP-DRS II: Sacred Spaces on the Banks of the River Brahmaputra	UGC	₹76 Lakhs	5 years (2018- 2023)	D. P. Nath
Archiving, Modeling and Visualization of the Eco-Cultural Heritage of Majuli River Island of Assam	DST	₹21.17 Lakhs	3 years (2019-2022)	P. Dutta
Commissioning Tasks Pertaining to Preservation and Conservation of Manuscript for National Mission for Manuscripts	NNM (under Ministry of Culture)	₹7.00 Lakhs	1 year (2018-2019)	S. Devi

**PUBLICATIONS****Journal Publications**

1. Das J. V. History of press in Assam: An analysis of pre and post agitation period. *International Journal of Research in Social Science*. 9 (6). 2019.
2. Das J. V. Missionaries and early press in Assam: The question of language and identity. *European Journal of Business & Social Sciences*. 7(4). 2019.

3. Das J. V. Ethnography of a local cable news channel: Structure, economy and entertainment of the neighbourhood. *International Journal of Social Science and Economic Research*. 4(4). 2019.
4. Das J. V. Editorial structures of local cable channels in Assam: legality of news and content from the grassroots. *Journal of Advances and Scholarly Researches in Allied Education* 16(5). 2019.
5. Das J. V. Womanhood in Dahan and Antarmahal: A cinematic analysis of family and society. *The Research Journal of Social Sciences*. 10(5). 2019.
6. Das A. K., Dutta P. & Deka R. Violation and vulnerability of human rights in the context of tea garden workers in Assam with special reference to social protection schemes. *NIU International Journal of Human Rights*. 6. 2019.
7. Dowerah S. & Nath D. P. Cinematic landscapes of North East India through an eco-critical lens. *Asian Cinema*. 30 (2). 2019.

### Books

1. D. P. Nath, M. M. Sarma and G. K. Borah. (Eds.). *The Call of the Pherengadao: Translation of Select Writings of Bishnuprasad Rava*. Katha Publications, Guwahati, 2019.
2. J. G. Konwar. *Down Memory Lane: Hundred years of Tezpur District Mahila Samiti (TDMS)*. Bhabani Publishers, Tezpur, 2019.
3. P. Dutta (Ed.). *A Catalogue of Traditional Craft Objects of North East India*. Tezpur University Publication. 2019.

### Book Chapters

1. M. Baruah and K. Dutta. *Rural Development Through Self-Help Group: A Tool to Give Voice to the Voiceless*. In B. Saikia and S. Jena (Eds.). *Rural Development in India: Challenges and the Tasks Ahead*. Eastern Book House, Guwahati, 2020.
2. M. Kandali. *Dr. Satish Chandra Bhattacharyya: An Impression*. In S. K. Adya (Ed.). *Dr. Satish Chandra Bhattacharyya. Jivan, Sadhana aru Anyanya*. Chandra Prakashan, Guwahati, 2019.
3. M. Kandali. *The Contemporary relevance of the Traditional manuscript paintings of Assam*. In N.Kalita (Ed.). *Hengul Haital. Kolong Kalakendra Publishing house, Nagaon, 2019.*

### Other Publications

1. J. V. Das. *Media and Culture I. SWAYAM Annual Refresher Programme in Teaching (ARPIT). Mass Communication and Journalism*. 2019.
2. J. V. Das. *Media and Culture II. SWAYAM Annual Refresher Programme in Teaching (ARPIT). Mass Communication and Journalism*. 2019.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, year	Place/institute /venue
D. P. Nath	Ethnographic Museums in India: Contributions, Representations and Future Possibilities	Indira Gandhi Rashtriya Manav Sangrahalaya, Bhopal	28 - 30 July 2019	Bhopal
D. P. Nath	Tribal Literary Festival Cum Seminar	Indira Gandhi Rashtriya Manav	10-12 November 2019	Bhopal

		Sangrahalaya, Bhopal		
J. G. Konwar	Globalization and its impact on Youth	Gogamukh Higher Secondary School	1 February, 2019	Gogamukh
J. G. Konwar	What to eat and what not: Understanding of food prohibition and prescription in pregnancy and post-partum healing in Assamese society'	Department of Anthropology, University of Delhi	27-29 February 2020	Delhi
J. V. Das	Modernity and Indigeneity: Shifting Perspectives in Culture, Literature, and Language	Rajiv Gandhi University	5-6 March 2020	Itanagar, Arunachal Pradesh
M. Baruah	Gender Myth and the Politics of Humour: Analyzing Some Sexist Jokes and Memes in Social Media	Department of Cultural and Creative Studies, NEHU.	22-23 August 2019	Shillong, Meghalaya.

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, year	Place/institute/venue
D. P. Nath	Induction Training of Faculty	1 June - 1 July 2019	TLC, Tezpur University
D. P. Nath	ICSSR sponsored ten days national workshop on 'Researching Disadvantaged Status in India'	27 November - 6 December 2019	Tezpur University
M. Baruah	National Seminar on Cultural and Linguistic Studies in North-East India: Prospects and Challenges	30 - 31 October 2019	Department of Languages, Sankardev College, Meghalaya
M. Kandali	All India Writer's Festival	9-10 September 2019	Central Sahitya Academy in Dibrugarh, Assam
M. Kandali	A panel discussion in the National Symposium on Art Education and	9 November 2019	Art First Foundation, Mumbai

	Pedagogy			
M. Kandali	International Arunachal Lit- Festival	27-29 2019	November	Arunachal Pradesh
M. Kandali	National workshop on Reading and Writing about North East India	13-14 2019	December	Department of Sociology, Tezpur University

#### **SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANIZED**

<b>Title</b>	<b>Date/Period, year</b>
National Seminar on 'Colonial Writings On North East India'.	28 - 29 November 2019
Workshop on 'Preventive Conservation of Documentary Heritage'	21-25 October 2019
Workshop on 'Preventive Conservation: Techniques for Organic Materials'	17-19 October 2019:
A Workshop on 'Gandhi for All'	23 September 2019
A Workshop on 'Manuscriptology' (Reading Manuscript)	14 - 15 June 2019

#### **DISTINGUISHED VISITORS**

- Ms. Alison East, Senior Teaching Fellow, University of Otago, New Zealand
- Ms. Deepi Rekha Kouli, Director, Directorate of Archaeology, Assam
- Prof. Kishor K. Basa, Former Director, IGRMS, Bhopal and Indian Museum, Kolkata
- Mr. Minesh Harinkhede (conservator, National Research Laboratory for Conservation of Cultural Property, Lucknow
- Dr. Vandana Singh (Managing Director, Centre for Art Conservation and Research Experts, New Delhi

#### **OTHER IMPORTANT ACTIVITIES**

- The Department made a visit to Ranthali and Bebejia, Nagaon for field work on traditional Assamese ornaments and craft products on 18 Feb 2019
- A Heritage Walk was organized, in and around the heritage sites of Tezpur town as a heritage awareness activity on the occasion of World Heritage Day, 2019
- The Department also organized a Heritage Awareness Activities among school students and guided museum tour on the occasion of International Museum Day, 2019.
- A field visit to Sri Sri Dihing Naumati Satra, Nazira was done on 7 November 2019 by the members of Manuscript Conservation Centre, Tezpur University.

#### **Activities under SAP DRS II**

- A 5-day field trip along with extensive interviews were made to the Sadiya Region, Dibrugarh Koli Ai Than, Tinsukia during 7 - 11 June 2019 for collection of undocumented narratives behind the sacred spaces.
- A 4-day field trip was made to Parasuram Kund, Sadiya Kesaikhaiti Than during the period from 4 - 7 July 2019

- A 4-day field visit to Ajan Pir Dargah, Nazira Budbari Satra, Sivsagar during 13 – 16 July 2019 for conducting an interview with Sayed Hakikur Rahman and Mahendra Goswami (the present Satradhikar of Budbari Satra).
- A field trip was made to Singori Mandir, Maa Kalyani Than, Dipora Village and also to Kamalabari Sattra, Titabar during 19 – 20 February 2019 for collection of data in connection with sacred spaces and religious places on the Bank of Brahmaputra.
- A field visit to Vairabi Temple was done on 25 March 2019 for collection of videos and photographs related to the project.
- A field visit was made on 31 March 2019 to Biswanath Ghat, Biswanath Chariali for collection of videos and photographs of the sacred
- A 6-day field visit was made to Harhi Devalay, Dhakuakhana and Manipuri Than for video documentation during the period from 5 – 10 October 2019.
- A 2-day field trip was done to Nagoan Bardowa, Silghat Kamakhya temple, Duimuni Sil, Hatimurua Temple Jakhalabandha during 7 – 8 February 2019 for collection of videos and photographs of religious sites and sacred objects.
- A 2-day field trip was done to Jorhat Bolia Gohain Pukhuri during 30 – 31 January 2020 for documentation of the ritual of Me- Dam -Me -Phi of Tai Ahom community.
- A 7-day field trip was undertaken to Sadiya Sarisal Gosani and Arunachal during 22 – 26 February 2020 for conducting interview with the people belonging to Deuri community of Sunpura village, at Assam Arunachal Border and also for collection of photographs

#### NUMBER OF STUDENTS QAULIFIED NET-JRF/GATE/SLET

UGC-NET: 01

UGC NET-JRF :01

#### NOTABLE PLACEMENTS

Name	Designation	Organization
Mr. Manash Phukan	Development Officer	PRADAN, Bhanupratappur. Chhattisgarh
Mr. Sahnewaz Hussain	Consultant	MAMTA-HIMC (a national NGO) Bongaigaon

#### THE FACULTY MEMBERS AND STAFF

##### Professors

Debarshi Prasad Nath, Ph.D. (Rajiv Gandhi University)

*Specialization/Areas of interest:* Cultural and Literary Theory, Comparative Literature and Translation, Cultural History

E-mail: dpnath@tezu.ernet.in

##### Associate Professors

Madhurima Goswami, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Indian poetics, Performing studies, Women's studies

E-mail: mgs@tezu.ernet.in

Parasmoni Dutta, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Heritage Studies, Popular Culture

E-mail: paras@tezu.ernet.in

**Assistant Professors**

Juri Gogoi Konwar, Ph.D. (Dibrugarh University)

*Specialization/Areas of interest:* Anthropology of Textile, Anthropology of Food Ethnicity, Medical Anthropology

Email: jgkon@tezu.ernet.in

Jayanta Vishnu Das, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Media and Culture, Television Studies, Media and Globalization

E-mail: jvdas@tezu.ernet.in

Mandakini Baruah, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Gender Studies, Folklore Studies, Paremiology

E-mail: mb@tezu.ernet.in

Hashik N K, Ph.D. (Hyderabad University)

*Specialization/Areas of interest:* Performance Studies, Community Studies

E-mail: hashikk@tezu.ernet.in

Moushumi Kandali, Ph.D. (MS University, Baroda)

*Specialization/Areas of interest:* Visual and Literary Culture, Contemporary Art and Culture of North-East India.

E-mail: moushumi@tezu.ernet.in

**Office Staff**

Subhra Devi, Ph.D. (National Museum Institute, Delhi)

*Specialization/Areas of interests:* Heritology and Heritage Studies, Museum Education, Preventive Conservation

E-mail: sd@tezu.ernet.in

Ashish Dutta, B.Com.

Upper Division Clerk

E-mail: ashish@tezu.ernet.in

Lohit Bhuyan

Multi-Tasking Staff

E-mail: lohit@tezu.ernet.in

## DEPARTMENT OF EDUCATION

### THE DEPARTMENT

The Department of Education, Tezpur University was established in the year 2014 with an aim to prepare learner for meaningful careers in the field of education. Teacher Education Program assists students in developing knowledge, skills, and dispositions necessary to become effective and caring teachers in an ever-changing society. At present the department of education is running four programs. The first is MA in Education programme which provides learners wider and more comprehensive understanding of education as a field of knowledge. Second is Two Year B.Ed. programme which prepares students for work as a teacher in schools. And the third one is Ph.D. which provides doctorate degree awarded by University which qualifies the holder to teach at the University level in the degree's field, or to work in a specific profession.

### Academic Programmes and Student intake

Programme	Intake
B.Ed.	50
Integrated B.Ed. with B.Sc./ B.A.	50
M.A. in Education	35
Ph.D. (Education)	Variable, 07 in 2019-20

### Major facilities and equipment available:

Well Equipped Resource Centers

- Psychology Resource Centre
- Art and Craft Resource Centre
- Curriculum Lab
- ICT Lab
- Conference Room

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
Problems faced by the children of Tea Garden workers at secondary level education in Assam: An analytical Study	ICSSR	₹ 3.5 Lakhs	1 year (2019)	N.R. Roy	

### PUBLICATIONS

#### Journal Publications

1. Das J. & Padmavathy R. D. Altruistic behaviour among high school students of Assam in relation to their gender, area and type of school management. *Universal Review*. 8(6). 2019.

2. Das J. & Padmavathy R. D. Does blogs amplify post graduate students learning experience? *International Journal of Research and Analytical Reviews*. 6(2). 2019.
3. Das P. & Roy N. R. Emergence of activity-based approach. *International Journal of Innovative Knowledge Concepts*. 7. 2019.
4. Das S. S. & Roy N. R. Sustainable women empowerment among the tea garden women workers in Assam: a stepping stone for holistic development. *Research Guru-Online Journal of multidisciplinary Subjects*. 13. 2019.
5. Padmavathy R. D. University Graduates awareness towards cybercrime and familiarity of its terms: a comparison. *Think India Journal*. 22(4). 2019.
6. Paul R. & Roy N. R. Heutagogy: A channel for transformation of adult learners into lifelong learners through self-determined practices. *International Journal of Applied Social Sciences*. 6(5). 2019.
7. Paul R. & Roy N. R. Development and implementation of competency based curriculum in higher education level-a utopia. *IJRAR International Journal of Research and Analytical Reviews*. 6. 2019.
8. Paul R. & Roy N. R. Hitting the bull's eye: designing the process of implementation of heutagogy to empower the adult learners. *SURAJ PUNJ Journal for Multidisciplinary Research*. 9. 2019.
9. Paul R. & Roy N. R. Putting cherries on the cake: Infusion of innovative practices in enriching internship of teacher preparation programme. *International Journal of Advance and Innovative Research*. 6. 2019.
10. Roy N. R. & Das C. C. Scheduled Caste and Scheduled Tribe students in higher education in Bodoland territorial areas districts of Assam. *Journal of Education and Development*. 9. 2019.

### Conference Proceedings

1. Das S. S. & Roy N. R. A study of attitude of pupil teacher towards inclusive education. Proceeding of the Quality Teacher Education. Dimapur Nagaland, 2019.
2. Das P. & Roy N. R. Activity-based approach: a strategy for improving soft skills. Proceeding of Quality Teacher Education. Dimapur Nagaland, 2019.
3. Padmavathy R. D. Pre-Service Teachers perception towards LMS specific to gnomio: An investigation digital education. Proceeding of the APH Publishing Corporation. New Delhi, 2019.
4. Padmavathy R D. Change in prospective teachers view towards value education: Augment psychological wellbeing, Reimaging Values in Teacher Education. Proceeding of the International Conference organized by Michael Job Memorial College of Education for Women. Michael Job Publisher. Coimbatore, 2019.
5. Roy N. R. Emerging pedagogical trends in higher education. Proceeding of the Two-Day National Seminar on Gender Sensitisation in India's North East: Issues and Challenges. Krishna Kanta Handique State Open University, Guwahati, 2019.
6. Saikia H. & Roy N. R. Relevance of Arts and Drama Education in B.Ed. Curriculum. Proceeding of the Quality Teacher Education. Dimapur Nagaland, 2019.
7. Yadav S. & Singh G. Counselling couples before they plan for child: A proactive step to eliminate preventable causes of disabilities. Proceeding of the Seminar on Skills for Counselling Parents of Students with Special Needs. Department of Education, Jadavpur University, 2020.

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
G. Singh	Rethinking Our Education System with Reference to J. Krishnamurti & Thought	Department of Education, Department of Physical Education & Sport Science and Department of Yogic Art & Science, Vinaya-Bhavana, Visva-Bharati, Santiniketan	17-18 February 2020	Visva-Bharati
G. Singh	Counselling Couples Before They Plan for Child: A Proactive Step to Eliminate Preventable Causes of Disabilities	Department of Education, Jadavpur University & Arogya Sandhan Charitable Trust, Sonarpur	28 February-1 March 2020	Jadavpur University
N. R. Roy	Women Empowerment & Gender Sensitization: Convergences, Divergences and Plurality	IQAC & Extension Education Cell, LCB College	6-7 April 2019	Maligaon, Guwahati
N. R. Roy	Innovative Practices for Enhancement and Sustenance of Quality in the Institutions of Higher Education: Trends and Prospects,	Internal Quality Assurance Cell (IQAC), Furkating College	7-8 June 2019	Golaghat, Assam
N. R. Roy	MHRD Sponsored Workshop on Pedagogical Action Research	Teaching Learning Centre, Tezpur University	18 June 2019.	Tezpur University
N. R. Roy	Issues 18 and Challenges in Teacher Education	Unity College of Teacher Education	23-24 August 2019.	Dimapur, Nagaland
R.D. Padmavathy.	Research Integrity and Awareness	Tezpur University	26 August 2019	Tezpur University
S. Pradhan	Innovative practices for Enhancement and Sustenance of Quality in the Institutions of Higher Education: Trends & Prospects	Furkating College	7 June 2019	Furkating College
S. Pradhan	Quality Enhancement of Teacher Education in India: Recent Trends and Challenges	Nikhil Banga Sikshan Mahavidyalaya	13-14 July 2019	Bishnupur, Bankura
S. Pradhan	International conference on Environmental Sustainability & Tribal Development	Saiard and the School of Tribal Resource Management, Kalinga institute of social sciences (kiss)	24-25 August 2019	KISS, Bhubaneswar,

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
N. R. Roy	International Conference on Emerging Trends in Education, Pedagogy to Heutagogy-A Paradigm Shift in Higher Education.	25 June 2019	Aliah University, Kolkata
N. R. Roy	Induction training Programme for the faculties of Universities/ Colleges/ Institutes, Pedagogy to Heutagogy & Curriculum Evaluation	1 July 2019	TLC, Tezpur University
N. R. Roy	Eight Days Workshop cum Training Programme on Research Methodology in Humanities and Social Sciences, Writing of Synopsis for thesis/Dissertation & Report Writing	10-17 July 2019	Mahapurusha Srimanta Sankardeva Vswavidyalaya, Nagaon
R.D. Padmavathy	In-service Teacher Training Programme for TGT's	9 June 2019	Kendriya Vidyalaya, Tezpur (Regional)
R.D. Padmavathy	Two-day Training Programme on 'Curriculum Formulation, Curriculum Transaction and Curriculum Evaluation	10-11 October 2019	University of Science and Technology, Meghalaya
Y. Sultana	In-service Teacher Training Programme for TGT's	27 December 2019	Kendriya Vidyalaya, Tezpur

**AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS****Faculty members and Staff**

- Commendation Certificate, Dr. Sanghamitra Das, CRPF (30 Battalion), Ministry of Home Affairs on Women's Empowerment Day March-8, 2020 for contribution in providing quality education to U.G. & P.G. students and role model to women and society.

**OTHER IMPORTANT ACTIVITIES****Contribution of the Department to the Society**

- Dr. Sanghamitra Das Working as a 'Village Level Coordinator' under the Unnat Bharat Abhiyan-Tezpur University wing.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET:**

NET: 22

**NOTABLE PLACEMENTS (2019-20)**

Name	Designation	Organization
Anisha Chaudhuri	Assistant Professor	Dumduma College
Antareepa Bora	Assistant Professor	Biswanath College
Dibakar Dutta	Assistant Professor	North Lakhimpur College

Juri Das	Assistant Professor	Rongia College
Pranjal Das	Assistant Professor	LTK College
Prashana Bora	Assistant Professor	Baihata BEd College
Rimbiso Terangpi	Assistant Professor	OPD College Lakhimpur

## THE FACULTY MEMBERS AND STAFF

### Professors

Nil Ratan Roy, Ph.D. (Assam University)

*Specialization/ Research Area:* Curriculum Development, Educational Planning and Administration, Teacher Education, Education for Disadvantaged groups, Measurement and Evaluation

E-mail: niledn@tezu.ernet.in

### Associate Professors

Mohammad Shaheer Siddiqui, Ph.D. (MJP Rohilkhand University, Bareilly)

*Specialization/ Research Area:* Philosophy & Economics of Education, Pedagogy of English & Social Science, Indian Spiritual Traditions & Sufism Islamic Philosophy of Education for Sustainable Development

E-mail: 622mssiddiqui@gmail.com

### Assistant Professors

Yeasmin Sultana, Ph.D. (Assam University)

*Specialization/ Research Area:* Language Education, Educational Technology, Research Methodology in Education

E-mail: yeasmin@tezu.ernet.in

R D Padmavathy, Ph.D. (Pondicherry)

*Specialization/ Research Area:* Mathematics Education, Research Methodology & Statistics in Education, Educational Psychology, Cognitive Science, Educational Technology, e-content Development, Guidance and Counseling, Environmental Education, Adult and Continuing Education.

E-mail: padma@tezu.ernet.in

Hitesh Sharma, Ph.D. (DAVV, Indore)

*Specialization/ Research Area:* Educational Psychology, ICT in Education, Research Methodology and SPSS, Educational Administration, Guidance and Counseling, Method of Teaching Physical sciences, Method Of Teaching Biological sciences, Early Childhood Education

E-mail: hitesh@tezu.ernet.in

Sashapra Chakrawarty, Ph.D. (BHU)

*Specialization/ Research Area:* Educational Psychology, Educational Research, Special Needs Education, Method of Teaching in Biological Science/Elementary Education.

E-mail: sashapra@tezu.ernet.in

Pratima Pallai, Ph.D. (Lucknow)

*Specialization/ Research Area:* Pedagogy of Social Science, ICT in Education, Teacher Education Measurement and Evaluation

E-mail: pratima@tezu.ernet.in

Md. Asif, M.A. (AMU), M.Ed. (Jamia Millia Islamia)

*Specialization/ Research Area:* Contemporary Indian Education, Teacher Education, Educational Technology, Pedagogy of Social Science  
E-mail: [mdasif@tezu.ernet.in](mailto:mdasif@tezu.ernet.in)

Sradhanjali Pradhan, Ph.D. (Utkal)  
*Specialization/ Research Area:* Pedagogy of Physical Science, Educational Technology and ICT in Education, Measurement and Evaluation  
E-mail: [sradha@tezu.ernet.in](mailto:sradha@tezu.ernet.in)

Rajinder Singh, Ph.D. (Panjab University)  
*Specialization/Areas of Interest:* Educational Technology, Educational Research, Special Education, ICT in Education, Language Education, Environmental Education, Educational Guidance and Counselling  
E-mail: [badotra@tezu.ernet.in](mailto:badotra@tezu.ernet.in)

Sanghamitra Das, Ph.D. (NIEPA, New Delhi)  
*Specialization/ Research Area:* Gender and Education  
Email: [Sanghamitradas82@gmail.com](mailto:Sanghamitradas82@gmail.com)

Gopal Singh, Ph.D. (R.I.E. Ajmer, NCERT/ MDSU, Ajmer)  
*Specialization/ Research Area:* Science Education, Learning & Teaching, Guidance & Counselling/ Constructivism & Thinking Skills  
email: [drgrana@tezuernet.in](mailto:drgrana@tezuernet.in)

#### **Technical Staff**

Amarnath Sah, MCA (SMU, Gangtok)  
*Specialization/ Research Area:* Computer Networks, Web Technologies and ICT in Education  
Email: [amarsah@tezu.ernet.in](mailto:amarsah@tezu.ernet.in)

#### **Office Staff**

Nilakshi Saikia  
Laboratory Assistant  
Email: [nilakshi@tezu.ernet.in](mailto:nilakshi@tezu.ernet.in)

Chandan Nath  
Library Attendant  
Email: [nathchn@tezu.ernet.in](mailto:nathchn@tezu.ernet.in)

Anupam Saikia  
Laboratory Attendant  
Email: [anupams@tezu.ernet.in](mailto:anupams@tezu.ernet.in)

Suman Handique  
Office Assistant  
Email: [sumanh@tezu.ernet.in](mailto:sumanh@tezu.ernet.in)

Nitai Bauri  
MTS  
Email: [nitai12@tezu.ernet.in](mailto:nitai12@tezu.ernet.in)

## DEPARTMENT OF ENGLISH

### THE DEPARTMENT

The Department of English (formerly Department of English and Foreign Languages) was established in 1994. It aims to give instruction and carry out research in English Literature, Women's Writing in English, American Literature, Indian Writing in English, and English Language Teaching. In August 2012 and August 2015 an M.A. programme in Linguistics and Language Technology and an MA programme in Linguistics and Endangered Languages were introduced respectively. These programmes aim to give instruction and carry out research in Core Linguistics, Linguistics Theories, Field Linguistics, Computational Linguistics, Documentation and Archiving. The MA programme in Linguistics and Endangered Languages was discontinued w.e.f. Autumn semester 2019. Other academic programmes include Integrated MA in English (introduced in August 2011), Integrated BA B.Ed. (introduced in August 2011, and approved in 2015), and Certificate Course in Chinese. The Integrated BA B.Ed. programme was also discontinued w.e.f. Autumn semester 2019. The foreign language was separated from the Department in December 2019.

### Academic Programmes and Student intake

Academic Programme	Student Intake
M.A. English	55
M.A. Linguistics and Language Technology	33
Integrated M.A. in English	22
Certificate in Chinese	43
Ph.D.	Variable, 15 in 2019-20

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
P. K. Das	<ul style="list-style-type: none"> <li>• Specific studies are adding to our evolving understanding of Colonial Indian modernity.</li> <li>• An alternative paradigm of modernity is also emerging</li> </ul>

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Principal Investigator
SAP- DRS-II	UGC	₹98 Lakhs	5 Years (2015-2020)	P. K. Das
Women and the Making of the Public Sphere in Contemporary Assam: An Oral history Digital Archive	ICSSR	₹10 Lakhs	2 Years (2018-2020)	H. M. Medhi
A Stimulus-Appraisal based Study on Motivation Affect in L2 Learning at the Tertiary Level with reference to Engineering Students Learning English as an L2 in Assam	DST	₹28.4 Lakhs	3 Years (2019-2022)	S. K. Doley

Documentation and Revitalization of Ntenyi, Khongdei and Zyphe: three endangered languages of Northeast India	North Eastern Council, Shillong	₹79.04 Lakhs	2 Years (2020-2022)	M. Barbora
---	---------------------------------	--------------	---------------------	------------

## PUBLICATIONS

### Journal Publications

1. Biswas S. Film and Accountability: Ritwik Ghatak's Image Discourse on Bengal's Partition. *IJAEMA*. XII (1). 2020.
2. Pal A., Gope A., Athar A. S. & Iannacchione G. S. A comparative study of the drying evolution and dried morphology of two globular protein and de-ionized water Solutions. *RSC Advances*. 10(29). 2020.
3. Pal A., Gope A. & Iannacchione G. S. A Comparative Study of the Phase Separation of a Nematic Liquid Crystal in the Self-Assembling Drying Protein Drops. *MRS Advances*. 2019.
4. Pal A., Gope A., Kafle R. & Iannacchione G. S. Phase Separation of a Nematic Liquid Crystal in the Self-assembly of Lysozyme in a Drying Aqueous Solution Drop. *MRS Communications*. 2019.

### Conference Proceedings

1. Danta B. K. The Rule of Writing in the Early Indian Novel: Reading Phakirmohan Senapati's Six Acres and a Third. In H. S. Mohapatra and P. St-Pierre (Eds.). Proceedings of the International Conference on Revisiting Early Indian Fiction: Reading, Writing, Society. Karanjia Autonomous College, Odisha, Authors Press, New Delhi, 2020.
2. Mahanta S. & Gope A. Voiceless Sonorants and Lexical Tones in Mog. In S. Calhoun, P. Escudero, M. Tabain & P. Warren (Eds.). Proceedings of the 19th International Congress of Phonetic Sciences. Melbourne, Australia. 2019.

### Books

1. T. Borgohain & M. Barbora. *Hrangkhoh Nam Conga Irchuna Lekhabu: A learner's book of the Hrangkul Language*. Centre for Endangered Languages, Tezpur University, 2019.
2. D. Mohapatra. *Together with English*. Trinity Books, New Delhi, 2019.
3. B. Patgiri, Hrusso Aka I Shipiyow. *The Story of Hrusso Aka*. Aka Elite Society, Thrizino, Arunachal Pradesh, 2019.
4. B. Patgiri. A. Gope & B. Sarangthem. *Phonological Aspects of Biate, Khelma, Hrangkhoh, Onamae, Purum, Liangmai and Yimchunger*. Bhabani Publishers, Guwahati, 2020.

### Book Chapters

1. B. K. Danta. The Critic as Shaman: Teaching English, Reading Comparative Literature. In J. Chhuria & B. Jhankar (Eds.). *Manaswee Madhusudan: Essays Presented to Professor Madhusudan Pati*. Balangir, S B Foundation Publications, Odisha, 2020.
2. F. Danta. Protocols of Colonial Hunting: Surveillance, Transgression and the Allegory of Empire in F. T. Pollok's Wild Sports of Burma and Assam. In A. Ara, D. Sharma & B. Gogoi (Eds.). *Narrative Cultures and Textual Traditions of North-East India*. Purbayon with North East India Association for Human Sciences (NEIAHS), Guwahati, 2019.
3. S. K. Doley. Hesitant intimacy: North East Indian English poetry vis-à-vis the Indian nationhood. In K. Chakraborty (Ed.). *The Politics of Belonging in Contemporary India: Anxiety and Intimacy*. Routledge, New York. July 2019.
4. J. Moshahary & M. Barbora. Nonverbal Predicate Clause in Dimasa and Bodo. In Monali

- Longmailai (Ed.). Studies on Dimasa: History, Language, and Culture (II). DVS Publishers, Guwahati, 2019.
5. M. Longmailai, & B. Sarangthem. Culture Metaphor in Dimasa and Meitei-An Ethnolinguistics Aspect. In M. Longmailai (Ed.). Studies on Dimasa History, Language and culture (II), DVS Publishers, Guwahati, 2019.
  6. A. Pal, A. Gope & G. S. Iannacchione. Image-Based Analysis of Patterns Formed in Drying Drops. In B. Deka, P. Maji, S. Mitra, D. Bhattacharyya, P. Bora & S. Pal. (Eds.). Pattern Recognition and Machine Intelligence. PReMI 2019. Lecture Notes in Computer Science, (11941). Springer, 2019.
  7. Sabnam, Mehsina & A. K. Nath. Expressives in Bodo. In T. Khan (Ed.). Queries in the Structure of Language. Central Institute of Indian Languages, Mysuru. 2020.

**CONSULTANCY**

Consultants	Title/Nature of the consultancy work	Client	Amount in INR
B. K. Danta	Coordinator, UGC LOCF (English) National Curriculum Report for English and English Literary Studies at B.A., B.Sc., B.Com. and B.A. (Hons) Level.	English and English Literary Studies at B.A., B.Sc., B.Com. and B.A. (Hons) Level	Free (Government assigned)
	Member, UGC Committee on Jeevan Kaushal (Life Skills)	UGC	Free (Government assigned)
	Member, SET (WBSPC), 2019	WBSPC	₹ 6000
F. Danta	Expert for screening of IMPRESS project proposals for Humanities and Social Sciences during November-December 2019	Project Applicants of IMPRESS, ICSSR	₹ 1800/- (Government assigned)
H. Medhi	Consultation work, Book Review "Old anxieties of identity" Commissioned Review of Sangeeta Barooah Pisharoty, The Accord, The Discord (2019) Penguin, published in The Telegraph, Kolkata 30 January, 2020	The Telegraph, Kolkata	₹ 1500/-
S. Sahoo	Union Public Service Commission	UPSC	₹10000/-

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED****International and National**

Name of the faculty member	Title	Organized by	Date/Period, year	Place/Institute/Venue
A. Gope	9 <sup>th</sup> International Congress of Phonetic Sciences	Melbourne Convention Centre, Melbourne, Australia	5- 9 August 2019	Australia

	8th International Conference on Pattern Recognition and Machine Intelligence	Tezpur University	17-20 December 2019	Tezpur University
A. K. Nath	40th Annual Conference of the Linguistic Society of Nepal	Tribhuvan University, Nepal	26-27 November 2019	Nepal
	International Conference of Linguistic Society of India (ICOLSI-41)	Department of Linguistics and Contrastive Study of Tribal Languages, Indira Gandhi National Tribal University, Amarkantak (MP)	13-15 November 2019	Amarkantak (MP)
	International Conference on Multilingual Awareness and Multilingual Practices (MAMP19)	Thomas More University of Applied Sciences, Antwerpen, Belgium	28-29 October 2019	Belgium
B. Gogoi	National Symposium on Urban Folklore with Special Reference to North-East India	Dept of Cultural and Creative Studies, NEHU,	22-23 August 2019	Shillong
A. Gogoi	19th International MELOW conference on Connections/Disconnections: Literary Traditions, Continuities and Disruptions	Dept of English and Cultural Studies, Panjab University	21-23 February 2020	Chandigarh
B. K. Danta	National Seminar on Reading Phakirmohan Senapati from a Postcolonial Perspective	Gangadhar Meher University, Sambalpur, Odisha	29-30 May 2019	Sambalpur, Odisha
	International Seminar on Revisiting the Early Indian Novel	Karanja Autonomous College, Karanja, Odisha	22 November 2019	Karanja, Odisha
	National Seminar on Contemporary British Fiction: Texts and Contexts	Department of English, Dibrugarh University, Dibrugarh	3-4 March 2020	Dibrugarh
B. Patgiri	Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, TU	10 - 13 February 2020	Tezpur University
	National Conference on the Indigenous and Lesser Studied Languages (ILSL)	Centre for Endangered Languages, Tezpur University	31 October 2019	Tezpur University

	8th Endangered and Lesser Known Languages Seminar on Himalayan Languages and Society for Endangered and Lesser Known Languages (SEL)	Doon Library and Research Centre (DLRC), Dehradun	21-22 February, 2020	Dehradun
D. Mohapatra	LIF19-6th International Language in Focus Conference, Language, Research and Teaching in 21st Century	LIF19	May 2-4, 2019	Croatia
G. K. Borah	Three-day National Conference on the Indigenous and Lesser Studied Languages (ILSL) of the North-East India	CFEL, Tezpur University	29-31 October 2019	Tezpur University
M. Barbora	International Conference on Sino-Tibetan Languages and Linguistics (ICSTL)	Department of Linguistics, Faculty of Arts and Social Sciences, Lucknow University	24 - 29 June 2019	Lucknow University
S. Sahoo	National Seminar on Literature From Northeast India: Texts And Contexts	Indian Institute of Advanced Study (IIAS), Shimla	6-7 May 2019	Shimla
	National Seminar on Contemporary British Fiction: Texts and Contexts	Department of English, Dibrugarh University	3-4 March 2020	Dibrugarh
S. K. Doley	MHRD sponsored workshop on Assessment and Evaluation	Teaching Learning Centre, Tezpur University	16-21 September 2019	Tezpur University
	National Seminar on Modernity and Indigeneity: Shifting perspectives in culture, literature, and language	Department of English, Rajiv Gandhi University	5 -6 March 2020	Arunachal Pradesh
S. Biswas	Third Tribal Literature Festival	IGRM, Bhopal	10-12 November 2019	Bhopal

#### TALKS BY THE FACULTY ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, year	Place/Institute/Venue
A. Gope	A Boot Camp on Theoretical and Experimental Phonology	17-25 June 2019	Mysuru, India
A. K. Nath	Bridge course for the newly admitted students	21 August 2019	Girijananda Chowdhury Institute of Management and Technology, Tezpur

B. K. Danta	Utkal University Platinum Jubilee Lecture Series	6 September 2019	Department of English, Utkal University, Bhubaneswar
G. K. Borah	Students' Talk	2 August 2019	School of Engineering, Tezpur University, Tezpur
	National Workshop on Grammar Writing for Lesser Researched Languages	22-23 November 2019	CFEL, Tezpur University
H. Medhi	National workshop Reading and Writing Lives in Northeast India.	1-2 February 2020	Tezpur University
	Capacity Building Workshop for Quality Research Communication	31 January 2020	Tezpur University
	Eight Day Workshop cum Training Programme on Research Methodology in Humanities and Social Sciences	10-17 July 2019	Tezpur University
M. Borbora	Endangered and Lesser Known Languages (ELKL) of Department of Linguistics, University of Lucknow	21-22 February 2020	Dehradun
S. Sahoo	ICSSR-NERC sponsored National Workshop on Socio-cultural Perspective of Translation in Writings from Northeast India	21-26 October 2019	Arya Vidyapeeth College, Guwahati
S. K. Doley	Workshop on Research Methodology	7 March 2020	Department of English, Rajiv Gandhi University, Itanagar, Arunachal Pradesh
S. Biswas	Creative Writing for Future Engineers	2019	Tezpur University

### DISTINGUISHED VISITORS

- Dr. Anup Kr. Dey, Associate Professor, Dept. of English, Assam University, Diphu Campus.
- Prof. Asima Ranjan Parhi, Utkal University, Bhubaneswar.
- Prof. Chidananda Bhattacharya, Kolkata
- Prof. Chungkham Yashawanta Singh, Manipur University, Imphal, Manipur.
- ConchÚr ó Giollagáin, University of the Highlands and Islands, UK.
- Prof. Gordon Wells, University of the Highlands and Islands, UK.
- Prof. Kavita Rastogi, University of Lucknow, Lucknow.
- Dr. Mimi Kevichüsa Ezung, Nagaland University, Kohima
- Prof. Nigamananda Das, Nagaland University, Kohima
- Prof. Pramod K Pandey, JNU, Delhi.
- Prof. Scot Delancy, University of Oregon, USA.

- Prof. Shailendra Kr. Singh, NEHU, Shillong.
- Prof. T. K. Bamun, The EFL University, Shillong

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

NET-JRF: 6  
NET: 35  
SET: 3

**THE FACULTY MEMBERS AND STAFF**

**Professors**

Bijay Kanta Danta, Ph.D. (Utkal University)

*Specialization/Areas of interest:* American Literature, Critical Theory, Fiction Studies

E-mail: bkdanta@tezu.ernet.in

Farheena Danta, Ph.D. (Dibrugarh University)

*Specialization/Areas of interest:* American Literature, Modernist Poetics, Cultural Studies

E-mail: fdefl@tezu.ernet.in

Prasanta Kumar Das, Ph.D. (Gauhati University)

Dean, School of Humanities and Social Sciences

*Specialization/Areas of interest:* Indian Writing in English, American Literature

E-mail: prsntdas@tezu.ernet.in

Madhumita Barbora, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Linguistics (Morphology, Syntax, Language Acquisition), Language Documentation, Field Linguistics

E-mail: mmb@tezu.ernet.in

Gautam Kumar Borah, Ph.D. (NTNU, Norway)

*Specialization/Areas of interest:* Philosophy of Language, General and Cognitive Linguistics, English Literature, Applied Linguistics

E-mail: gkb@tezu.ernet.in

Sravani Biswas, Ph.D. (North Eastern Hill University)

*Specialization/Areas of interest:* Critical Theory, Indian Writing in English

E-mail: sravani@tezu.ernet.in

**Associate Professors**

Debasish Mohapatra, Ph.D. (EFLU, Hyderabad)

*Specialization/Areas of interest:* Curriculum Development, Materials Production, Language Policy

E-mail: deva@tezu.ernet.in

Hemjyoti Medhi, Ph.D. (University of Delhi)

*Specialization/Areas of interest:* Gender Studies, Women's Studies

E-mail: hjyoti@tezu.ernet.in

Sanjib Sahoo, Ph.D. (Tezpur University)

*Specialization/Areas of interest:* Indian Writing in English, Ecocriticism, Travel Writing

E-mail: ssahoo1@tezu.ernet.in

**Assistant Professors**

Rathijit Chakraborty, M.Phil. (Jawaharlal Nehru University)  
*Specialization/Areas of interest:* Chinese Language & Literature  
E-mail: rathijit@tezu.ernet.in

Reetamoni Narzari, PhD (Tezpur)  
*Specialization/Areas of interest:* Women's Writing, Commonwealth Literature, Indian Writing in English  
E-mail: reita@tezu.ernet.in

Pallavi Jha, Ph.D. (University of Hyderabad)  
*Specialization/Areas of interest:* Children's Literature, Popular Culture and Literature, Postcolonial Writing  
E-mail: pjefl@tezu.ernet.in

Bashabi Gogoi, Ph.D. (Gauhati University)  
*Specialization/Areas of interest:* Indian Writing in English, Adaptation Theory  
E-mail: b\_gogoi@tezu.ernet.in

A. K. Nath, Ph.D. (Jawaharlal Nehru University)  
*Specialization/Areas of interest:* Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics  
E-mail: akn@tezu.ernet.in

Bipasha Patgiri, M.Phil. (Jawaharlal Nehru University)  
*Specialization/Areas of interest:* Phonology (Prosody, Dialectology, Language Typology and Syntax)  
E-mail: bipasha@tezu.ernet.in

Esther Daimari, PhD (Gauhati University)  
*Specialization/Areas of interest:* South Asian Literature  
E-mail: esther@tezu.ernet.in

Amalesh Gope, PhD (IIT, Guwahati)  
*Specialization/Areas of interest:* Acoustic Phonetics with special interest in Tone, Psychoacoustics, Computational Linguistics, International Phonology and Language Documentation  
E-mail: amaleshgope5sept@gmail.com

Sarat K. Doley, Ph.D. (EFLU, Shillong)  
*Specialization/Areas of interest:* English Language Education  
E-mail: dolesar@tezu.ernet.in

**Assistant Professors (Contractual)**

Daveirou Lanamai, M.A. (Jawaharlal Nehru University)  
*Specialization/Areas of interest:* Chinese Language  
E-mail: davei@tezu.ernet.in

Pallavi, M. Phil. (Jawaharlal Nehru University)  
*Specialization/Areas of interest:* German Language  
E-mail: manjari23@tezu.ernet.in

**Visiting Fellow**

Saif Uddin Ahmed, Diplôme de deuxième cycle (Université de Paris I. Panthéon-Sorbonne Paris, France)

*Specialization/Areas of interest:* French Language

E-mail: saif@tezu.ernet.in

Tapan K. Mazumdar, M.A. Russian (Part-I Completed) (Calcutta), Diploma in German (Ramkrishna Mission Institute of Culture, Kolkata)

*Specialization/Areas of interest:* German Language

**Technical Staff**

Hemen Das, M.Sc. IT (Gauhati University)

Technical Assistant

E-mail: hemen@tezu.ernet.in

**Office Staff**

Bhaskar Bhattarai, M.A. (IGNOU)

UDC

E-mail: bhattarai@tezu.ernet.in

Pranab K. Borah

MTS

E-mail: pkborah@tezu.ernet.in

## DEPARTMENT OF HINDI

### THE DEPARTMENT

The Department of Hindi was established in January 2010 and it started an MA programme in Hindi from 2013. At present the Department also runs the following programmes: Post Graduate Diploma Programme in Translation (Hindi), Hindi as a Modern Indian Language (MIL); Ph.D. in Hindi literature/language). Apart from these programmes, the Department also runs a Certificate Course in Official Hindi (Level-1), which is meant for the employees of the University.

### Academic Programmes and Student intake

Programme	Intake
Certificate Course	10
P.G. Diploma in Translation	23
M.A. in Hindi	25
Ph.D.	Variable, 01 in 2019-20

### PUBLICATIONS

#### Journal Publications

1. Anushabda & Goyal C. Prasangikata ka prashn aur Kabir ki Kavita. *Dwibhashi Rashtrasevak*. 11(1-2). 2019.
2. Anushabda & Goyal C. Hindi ka Rashtriya aur Antarrashtriya sandarbh. *Dwibhashi Rashtrasevak*. 11(5-6). 2019.
3. Anushabda. Asamiya lok sahitya mein Raam katha. *Chanakya Varta*. 13 (1-15). 2019.
4. Preeti Prakash & Anushabda. Aadhi aabadi aur Arun Kamal ki Kavita. *Bhasha*. 58 (258). 2019.

#### Books

1. Anushabda. Swachchh Bharat Samridhdh Bharat. Parampara Publication, Delhi, 2019.

#### Book Chapters

1. Anushabda. Hinditar Pradeshon mein Hindi-Shikshan ki Chunautiyan aur Samadhan. In Ghanshyam Sharma (Ed.). Hindi ke Shaikshik aur Bhaugolik Sandarbh. Anugya Books, Delhi, 2020.
2. Anushabda, Shrimant Shankardev aur Unka 'Keligopal. In M. K. Dewraja (Ed.). Krishna Kathamrit. Babul Borah, General Secretary, Reception Committee, Morigaon, Assam, 2019.
3. Shukla S. Social Media ki samajik pariwartan mein mahattwapurn bhumika. K. Gawali. Social Media aur. Hind. Maya Prakashan, Kanpur, 2020.
4. Tripathi S. Mooktibodh ke sahitya mein vyakti. In P. S. Rao (Ed.). Mooktibodh aur Samsheel Telugu Rachanakar (Hindi-Telugu). Akshara, Duvvuri Publication, Machilipatanam, Andhra Pradesh, 2019.

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, year</b>	<b>Place/Institute/Venue</b>
Anushabda	National Seminar on Asamiya Raamkatha ki Parampara	Department of Culture, Ayodhya Research Institute, UP, India	22- 23 October 2019	Uttar Pradesh
Anushabda	National Seminar on Bhasha, Raaj aur Samaj	Shyama Prasad Mukherji women college, University of Delhi, Delhi in collaboration with UGC	6 - 7 February 2020	Delhi
Anushabda	Grammar Writing for Lesser Researched Languages	EFL and the Centre for Endangered Languages, Tezpur University.	22 - 23 November 2019	Tezpur University.

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
Anushabda	Invited lecture on Laingik samanta aur Gandhi	9 - 10 August 2019	Delhi
Anushabda	National Seminar on Rasleela, Lecture on Keligopal mein Rasleela ka Swaroop	13 November 2019	Majuli, Assam
Tripathi S	Shikshak Navikaran Pathyakram, Lecture on Hindi Bhasha ka Swaroop	03 February 2020	Guwahati.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

NET: 03

SLET: 01

**THE FACULTY MEMBERS AND STAFF**

**Professors**

Suryakant Tripathi, Ph.D. (Banaras Hindu University)

*Specialization/Areas of Interest:* Applied Linguistics, Indian Poetics, Folkloristic

E-mail: sktripathi@tezu.ernet.in

**Associate Professors**

Anju Lata, Ph.D. (Tezpur University)

*Specialization/Areas of Interest:* Medieval Poetry, Fiction

E-mail: anju@tezu.ernet.in

**Assistant Professors**

Anushabda, Ph.D. (University of Delhi)

*Specialization/Areas of Interest:* Linguistics, Media, Poetry, Indian and Western Poetics.

E-mail: anush@tezu.ernet.in

Pramod Kumar Sharma, Ph.D. (University of Hyderabad)

*Specialization/Areas of Interest:* Medieval Poetry

E-mail: pramods@tezu.ernet.in

Shipra Shukla, M.Phil. (Delhi)

*Specialization/Areas of Interest:* Modern Hindi Literature.

E-mail: shipras@tezu.ernet.in

**Office Staff**

Sashi Ingti, B.A. (Gauhati University)

Assistant

Email: ingti@tezu.ernet.in

Ajoy Kr. Nath

MTS

## DEPARTMENT OF LAW

### THE DEPARTMENT

The Department of Law was established in the year 2016-17 under the School of Humanities and Social Sciences with a vision to produce legal professionals who will add value in the field of teaching, judiciary, law making, law enforcement officers and more importantly work for the society as a good citizen. Presently, the Department is offering two year LL.M. programme with specializations in International Human Rights, International Humanitarian Law, Law Relating to Migrants and Criminology & Criminal law. The objective of the programme is to make the Department as a vibrant centre of legal education and research. The first batch of the Department will soon complete their programme by the end of this academic year. In the month of December, 2019 an Associate Professor has joined the Department and in coordination of three other young and active faculties along with a guest faculty have made an early strides. The curriculum was updated bringing in recent trends.

It is the Department's priority to inculcate among the students the quality of a good teacher, social sensitivity and nationalism and towards that end Department has celebrated Constitutional Day, Human Rights Day, International Women's Day, organized quiz competition, training programme in e-legal resources, Invited lectures on topics having social and legal relevancies. In the month of February-March 2020, students of Second Semester got the exposure through an academic tour to Indian Parliament (Rajya Sabha & Lok Sabha), Supreme Court of India, National Human Rights Commission, Common Wealth Human Rights Initiatives, Indian Law Institute and places of national importance in Delhi.

### Academic Programmes and Student intake

Programme	Intake
LL.M. (2 Years)	25

### PUBLICATIONS

#### Other Publications

1. D. K. Sarmah, One Academic Video Lecture Module on Law of Probation, September 9, 2019, TLC, TU (under the PMMMNTT Scheme)-Govt. Initiative
2. D. K. Sarmah, Two Academic Video Lecture Modules on Media Law course for M.A. Programme in Mass Communication (Open and Distance Learning), Coming up soon, Centre for Open and Distance Learning –Institutional LMS.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
A.H. Syiem	International Conference On 'Custom, Law and the Colonial State in Northeast India: Dynamics and	Nehru Memorial Museum & Library, Delhi in association with Department of History, North-Eastern Hill	13-14 June 2019	NEHU, Shillong

	Challenges for the Postcolonial State'	University, Shillong		
<i>A.H. Syiem</i>	One-Day Workshop on Discipline Specific Curriculum Construction for Professional Development Programme	TLC, TU	26 September 2019	Tezpur University
<i>D.K. Sarmah</i>	One-Day Workshop on Discipline Specific Curriculum Construction for Professional Development Program	TLC, TU	26 September 2019	Tezpur University
<i>M. Acharjee</i>	Refresher Course on Teacher Education (Interdisciplinary)	Department of Education in Collaboration with TLC, Tezpur University	6-20 September 2019.	Tezpur University, Assam
<i>M. Acharjee</i>	Workshop on 'Art of Thesis Writing'	Dept. of Bioengineering & Technology, Gauhati University and Rehoboth Academic Services at Gauhati University	1 February 2020	Gauhati University
<i>M. Acharjee</i>	One- Day Orientation Programme on human rights	National Human Rights Commission, New Delhi	2 March 2020	NHRC, New Delhi
<i>P.R. Kumar</i>	One-Day Orientation Programme on human rights	National Human Rights Commission, New Delhi	2 March 2020	NHRC, New Delhi

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
<i>A. H. Syiem</i>	In-Service Course for TGTs organized by KV, Tezpur University	16 June 2019	Kendriya Vidyalaya, Tezpur, No IV (Tezpur University)
<i>A.H. Syiem</i>	District Level Workshop on Empowering Women on Gender Budgeting organized by Assam State Social Welfare Board, Guwahati, Assam, Sponsored by Ministry of Women and Child Welfare, India	27 November 2019	Tarun Asom Sangha
<i>A.H. Syiem</i>	North-East NSS Festival organized by Tezpur University	21 January 2020	Tezpur University
<i>D. K. Sarmah</i>	Nobel Laureate Lecture Series: A talk on Nobel Peace Prize 2019	15 November 2019	Tezpur University
<i>P. R. Kumar</i>	Generation Equality in India: Role of Stakeholders, organized by Department of Law, TU	13 February, 2020	Department of Law, Tezpur university

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, Year</b>
Departmental Level Orientation Programme and Ice-Breaking Session for the newly admitted batch (Autumn Semester, 2019)	29 July 2019
	2 September 2019

Lecture on “Gender Perspective in human and child trafficking”	24 October 2019
Lecture on “Techniques of data collection and analysis”	21, 23, 25, 28 October 2019
Lecture on “Mental Health with special emphasis on Stress Management”	31 October 2019
Debate Competition on “Human Rights are culturally relative and not Universal” as part of advance celebration on Human Rights Day	1 November, 2019
Invited Lecture organized on Constitution Day	26 November 2019
Invited Lecture on “Preparation for Judicial services-Carrier opportunity and Challenges”	23 January 2020
Hands on training program on Manupatra legal database	24 January 2020
Panel Discussion on Generation Equality in India: Role of Stakeholders	13 February 2020
Invited talk cum training on "SCC E-Learning Toolkit & Training"	25 February 2020

### **DISTINGUISHED VISITORS**

- Mr. Arijit Kalita, Territory Manager, Supreme Court Online, EBC 25 February, 2020
- Mr. Bidyabrata Acharyya, Sub-Divisional Judicial Magistrate (SDJM) Sonitpur, Tezpur 23 January, 2020
- Mr. Lochan Kumar Hazarika Assistant Manager, Manupatra 24 January, 2020
- Mr. Satendra Kumar, Maupatra, 24 January 2020

### **OTHER IMPORTANT ACTIVITIES**

#### **Outreach programme organized**

- Academic tour to New Delhi, 29 February to 7<sup>th</sup> March, 2020, organised by the Department for the Second Semester LL.M. students, accompanied by Dr. Priya Ranjan Kumar, Associate Professor and Ms. Madhumita Acharjee, Assistant Professor. The team visited Indian Parliament (Rajya Sabha, Lok Sabha, Parliament Museum), Supreme Court of India, National Human Rights Commission, Indian Law Institute, Commonwealth Human Rights Initiative. During the visit all the students had interacted with many legal luminaries.

#### **Contribution of the Department to the Society**

- On the Eve of Sarasvati Puja on 29<sup>th</sup> January, 2020 food was distributed for 50 people staying in Orphanage Home “Naba Prabhat Orphanage” Ketekibari, Sonitpur, Assam 785154

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET/AIBE**

NET: 2  
AIBE: 2

**NOTABLE PLACEMENTS**

Name	Designation	Organization
Babita Chetry	Lecturer	Apex Professional University (School of Law and Juridical Sciences)

**THE FACULTY MEMBERS AND STAFF****Associate Professors**

Priya Ranjan Kumar, Ph.D. (Gauhati University, Guwahati)

*Specialization/Research Area:* Constitutional Law, Administrative Law, Contract Law & Corporate Law, Laws on terrorism

Email: pranjan@tezu.ernet.in

**Assistant Professors**

Angel Habamon Syiem, LL.M. (Symbiosis Law School, Pune)

*Specialization/Research Area:* Human Rights Laws and Tribal Issues

Email: angelsy@tezu.ernet.in

Madhumita Acharjee, LL.M. (Assam University, Silchar)

*Specialization/Research Area:* Criminal Law, Criminology, Juvenile Justice, Rights of elderly persons

Email: madhuap@tezu.ernet.in

Debajit Kumar Sarmah, LL.M. (IP University, Delhi)

*Specialization/Research Area:* Criminology and Criminal Law

Email: dksarmah@tezu.ernet.in

**Office Staff**

Meetaly Tamuly

Designation: L.D.C

E-mail: meetaly@tezu.ernet.in

Chand Md. Ali

Designation: M.T.S

E-mail: chandmd@tezu.ernet.in

## DEPARTMENT OF MASS COMMUNICATION AND JOURNALISM

### THE DEPARTMENT

The Department of Mass Communication and Journalism offers conducive learning environment driven by a passion for Media and Communication Studies. The Department is dedicated to the interdisciplinary understanding of communication in an increasingly networked society. As the technological advancement yield a social environment that is constantly changing and evolving; The MA Mass Communication and Journalism (MCJ) and MA Communication for Development (C4D) programmes equip the students with the recent developments in theory and practice while remaining true to the mission of emphasizing professional excellence along with social commitment.

Over the years, the Department has evolved as a nodal centre for teaching-learning, training and research in communication studies with national and international collaborations. This is epitomized in the numerous accolades it has received. It had been placed at the top position among Indian universities in the Times Higher Education Asia University Ranking 2018 in the Communication and Media Studies category. Moreover, our students are well placed in some of the reputed academic institutions, national and international media houses, government and non-government organizations engaged in the development sector.

The Department is committed to exploring ways in which media and communications connect us with the world and how these relationships help shape the societies in which we live. The faculty, with variety of specializations and wide ranging experience, not only stimulate the students with intellectual curiosity but also facilitate professional competency that is much demanded in an ever-changing communication environment.

### Academic Programmes and Student intake

Programme	Intake
M.A in Mass Communication and Journalism (MCJ)	40
M.A in Communication for Development (C4D)	12
Ph.D.	Variable, 03 in 2019-20

### Major Facilities and Equipment Available

- 14 Apple computers with Final Cut Pro software for video editing
- TV studio with Panasonic P2 Camera (05 nos.)
- Sony DSR 570wspl Camera (02 nos.)
- Canon 5D Mark III (01 no.), Canon 1500D (05 Nos.)
- Teleprompter and other studio recording facilities
- 11 Nos. of Desktops with Sony Sound Forge with Pro Tools Console for audio editing
- 18 nos. of Windows Intel i7 Desktops with QuarkXpress and Adobe software for print media practical
- Screening hall

**RESEARCH PROJECTS: ONGOING AND NEW**

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
Advancing Communication for Development as a Strategy for Social Change in Assam and North East Region (Phase IV)	UNICEF	₹2.37 Lakhs	1 Year (November 2018-31 December 2019)	A. Borah	
Historical Continuity and Cultural Connotations of the Mask Traditions of North East India	ICSSR	₹ 9.7 Lakhs	2 Years (2020-2022)	J. Chakraborty	

**PUBLICATIONS****Journal Publications**

1. Bora A. Media Planning in Science Communication. *Indian Journal of Science Communication*. 18(2). 2019.

**Conference Proceedings**

1. M. Hazarika, J. Chakraborty. Women in local E-Governance: A case study. Proceedings of the 12th International Conference on Theory and Practice of Electronic Governance (ICEGOV2019), Melbourne, VIC, Australia, April 3-5, 2019.

**Book Chapters**

1. A. Bora. ODL in North-Eastern Region – prospects and challenges. In A. Ghosh, P. Saikia (Eds.). *ODL: Issues and perspectives: From East and North East India*. KKHSOU, Guwahati, NSOU, Kolkata, 2019.

**CONSULTANCY**

Consultants	Title/Nature of the consultancy work	Client	Amount
Dept. of MCJ, TU	Recording and editing the video modules for MOOC course on Direct Tax Laws.	Prof. S.S. Sarkar, Dept. of Commerce, TU	₹ 3.52 Lakhs

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
A. Bora	One-week training programme on Science Communication	CSIR-NISCA IR	8-12 July 2019	CSIR-NISCA IR, Delhi
J. Deka	National Seminar on Media in North East India	Rajiv Gandhi University, Arunachal Pradesh	7-8 June 2019	Don Bosco Institute, Guwahati
J. Deka	Refresher Course	Dept. of Education and TLC, TU	7-19 September 2019	Tezpur University

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, year</b>	<b>Place/Institute/Venue</b>
A. Bora	Session on 'Teaching profession and Public Relations' at Induction Programme	25 June 2019	Teaching Learning Centre, Tezpur University
A. Bora	Lecture series by eminent people for B Tech Students' Induction Prog. 2019	14 August 2019	Tezpur University
A. Bora	Panel discussion on Public Relations	31 August 2019	Public Relations Society of India, Guwahati Chapter, India Club, Guwahati
J. Chakraborty	Lecture on Importance of communication as a specialized skill and Need for Media literacy	5 August 2019	School of Engineering, Tezpur University
J. Chakraborty	Lecture on 'Initiating transformational change through SBCC in areas of urgency: Health, Nutrition and WASH in North Eastern Region'	10 August 2019	Assam Don Bosco University, Guwahati
J. Chakraborty	Constitutional Democracy in India: Role of Media	26 November 2019	Tezpur University
J. Chakraborty	Lecture on 'Challenges in adopting CSBC curricula at departmental and institutional (academic council/board)	29 November 2019	Jamia Millia Islamia, New Delhi

J. Chakraborty	Moderator for Panel Discussion on 'Women in Science', InScignis	29 February 2020	Tezpur University.
J Chakraborty	Round Table Conference on Women Empowerment	8 March 2020	Tezpur University

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, Year
Gender Sensitization programme	29 August 2019
North East Youth Conclave	6-8 September 2019
Workshop on Communication Campaign Planning	11-14 November 2019
One day workshop on Forum Theatre conducted by Mr. Ravi Ramaswamy, Centre for Community Dialogue and Change, Bangalore.	11 November 2019.
Workshop on Environmental Journalism	12-13 November 2019
Workshop on Participatory Audio Video Production	22-26 January 2020
Invited lecture of Kuladhar Saikia, IPS (Retd), President, Assam Sahitya Sabha and Ex-DGP, Assam.	21 January 2020
Invited lecture of Leena Sharma, Senior Indian Railway Service Officer, NF Railways Guwahati and former Chief Public Relations Officer of NFR	21 January 2020
One day workshop on Forum Theatre conducted by Mr. Ravi Ramaswamy, Centre for Community Dialogue and Change, Bangalore.	11 November 2019.

### DISTINGUISHED VISITORS

- Prof. B.P Sanjay, Former Vice Chancellor of CUTN
- Jan Servaes, UNESCO Chair in Communication for Sustainable Social Change at the University of Massachusetts at Amherst
- Kuladhar Saikia, IPS (Retd), President, Assam Sahitya Sabha and Ex-DGP, Assam
- Leena Sharma, Senior Indian Railway Service Officer, NF Railways Guwahati and former Chief Public Relations Officer of NFR
- Patchanee Malikhao, Faculty member, University of Massachusetts Amherst, Public Health Department
- Ravi Ramaswamy, Centre for Community Dialogue and Change, Bangalore
- Sanjeev Kumar, C4D practitioner, New Delhi
- Susanta Talukdar, Editor, NEZINE and former Special Correspondent, The Hindu
- Udayan Borthakur, Aranyak, Guwahati

### AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS

#### Research Scholar/Student

- Abhishek Kabra, a student of MCJ (sem II), published 6 articles/features/news features during March-May, 2020 in the Assam Tribune, Frontier Weekly, The Sentinel.
- Arnab Jyoti Arya, a student of C4D published his first Assamese storybook "Daworaru Nai" and its translation "Anuradha Dances the Bihu" Pratham Books.

- Lipika Chutia, winner of the "The Reel Fest" at Cotton Fiesta, 2019 organised by the Cotton University for the documentary film "The Unsung Tune of Doyang-Tengani"
- Madhusmita Bordoloi, a student of MCJ (sem II), published 3 articles/features/news features during March-May, 2020 in The Hills Times, Frontier Weekly.

#### OTHER IMPORTANT ACTIVITIES

- One-day visit to All India Radio Station, Tezpur, was organized by the Department on 10 November 2019. The daylong programme was aimed to provide practical knowledge about radio station to MCJ first semester students.

#### Outreach activities

- 3rd semester students of the MA (C4D) programme engaged with children in three schools in the vicinity of Tezpur University - Naapam MV School, Borghat HS School, and Panchmile HS School, and worked towards building their skills of communication and social mobilization. They facilitated the children to generate communication material on a specific issue in local language and then become agents of social change within their community.
- Three groups of C4D students worked in three schools and facilitated a group of children from class 7 and 8 to carry out communication campaigns on three issues - Promoting better nutrition among students of Napaam MV school, Group 2 (Working with Borghat HS School): Facilitating enhanced participation of the child cabinet for the better management of the school in F.A. Ali Ahmed School, Barghat, and Promoting Clean Classrooms and Inculcating Good Habits among students of Panchmile HS School.

#### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET- NET: 19

#### NOTABLE PLACEMENTS

Name	Designation	Organization
Amrita Pritam Borchetia	Development Apprentice	Pradan
Amlan Jyoti Das	EastMojo	Content Writer
Bishal Sharma	Teach for India	Fellow
Chinmoyee Deka	Development Apprentice	Pradan
Happy Das	Development Apprentice	Pradan
Khusbu Bin	Bluberry Digital Labs	Content Writer
Nibirjyoti Mriduta	Bluberry Digital Labs	Content Writer
Rajat Hazarika	SeSTA	Executive Trainee
Shreejana Rai	Bluberry Digital Labs	Content Writer
Tirtharaj Gohain	SeSTA	Executive Trainee

#### THE FACULTY MEMBERS AND STAFF

##### Professors

Sunil Kanta Behera, Ph.D. (Berhampur University, Berhampur)

Professor of Eminence

*Areas of interest:* Communication Theory and Research, Gender and Media

Abhijit Bora, Ph.D. (Gauhati University)

Professor

*Areas of interest:* Radio and Development Communication

Joya Chakraborty, Ph.D. (University of Hyderabad)

Professor and Head

*Areas of interest:* ICT for Development, Development Communication, Women and Media; Traditional Media.

### **Associate Professors**

P. Anbarasan, Ph.D. (JNU)

*Areas of interest:* Media Studies, Cultural and Film Studies

Uttam Kr. Pegu, Ph.D. (Jamia Milia Islamia)

*Areas of interest:* ICT Implications on Society, Science Communication, Film Studies, and Media Analysis

### **Assistant Professors**

Perosh Jimmy Daimari, Ph.D. (Tezpur University)

*Areas of interest:* Film studies, photography

Kapou Malakar Ph.D. (Tezpur University)

*Areas of interest:* Media History, Contemporary Development Discourse and Practice, Political Studies, International Studies, Digital Media, Multimedia Studies, Convergent Journalism

Anjuman Borah Ph.D. (Tezpur University)

*Areas of interest:* Media and Children, Children's Participation, Participatory Communication, Advertising and Public Relations

Junali Deka Ph.D. (Assam University)

*Areas of interest:* Digital media and society, cultural studies

Manoj Deori Ph.D. (Berhampur University, Berhampur)

*Areas of interest:* New Media Journalism, Multimedia Production, Media and Disaster Management, E-learning

### **Technical staff**

Ratul Chandra Nath

Technical Officer

Chanchal Singha

Senior Technical Assistant

### **Office Staff**

Bijoy Mech

LDC

Bubul Das

MTS

## DEPARTMENT OF SOCIAL WORK

### THE DEPARTMENT

The Department of Social Work, Tezpur University was established in 2014 to respond to the dearth of good Social Work schools and trained social work professionals in the North-East Region (NER) of India. The Department follows a rigorous theoretical and field-based pedagogy with special focus on the issues of the NER. For now, the Department offers Ph.D. and Master's degree programme and follows a credit-based continuous evaluation system. Students from multi-disciplinary backgrounds are trained in the core values and skills of the social work profession. The curriculum is designed to train students with the generic approach of social work, which leads to the conduct of research in emerging areas of social work profession and issues related to the NER. Through the fieldwork practicum (a crucial and integral part of social work training), the students are exposed to different economic, socio-cultural and political realities of the region. Additionally, the students are exposed to various social welfare programmes implemented at the grassroots level through the community, NGOs and government settings. The students are also encouraged to carry out internship and volunteering activities during the semester breaks in profit and non-profit sectors and other various government departments. Graduates from the department are envisaged to be placed in various positions in social welfare organisations, in non-profit and private sectors, and in academics.

### Academic Programmes and Student intake

Programme	Intake
M.A. in Social Work	17
Ph.D.	Variable, 02 in 2019-20

### Major Facilities and Equipment Available

- Classrooms with Multi Media Projectors.
- Seminar room with Multi Media Projector.

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
C. K. Sharma	<p>Research findings of The State Nutrition and Community Action Resource Centre set up in the Department of Social work to work in collaboration with POSHAN Abhiyaan, Government of Assam:</p> <ul style="list-style-type: none"> <li>• Malnutrition is a social problem connected to the political economy of the state and the local ecology.</li> <li>• There is a gap existing between the production of knowledge and delivery of services at the grassroots.</li> <li>• The issue of malnutrition can be effectively addressed through a collaborative and interdisciplinary approach.</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
State Nutrition and Community Action Resource Centre	UNICEF, Assam	₹25.86 Lakhs	9 Months (March - December 2020)	C. K. Sharma, N. Sharma & Rajesh. K	Department of Social Welfare, Government of Assam
An Assessment of Conflict as A Social Determinant of Health in The North-East Region of India.,	ICMR/New Delhi,	₹ 18.45 Lakhs	3 Years (2018-2020)	V. Yumnam	
Tea Tribes and Deprivations: A Study on Access to Universal Protection Schemes in addressing deprivations in relation to COVID: 19	UNICEF, Assam	₹ 2.13 Lakhs	1 year (2020)	V. Yumnam	

**PUBLICATIONS****Journal Publications**

1. Banik P. Social Work intervention and Women empowerment through micro finance in India. *Perspectives in Social Work*. 34 (1). 2019.
2. Kumar D. & Banik P. Paradox of rich land and poor people: A study of Jharkhand. *Public Affairs and Governance*. 8(1). 2020.

**Conference Proceedings**

1. Banik P. Social Work intervention with Marginalised Groups in strengthening local self-governance in India. Proceedings of the National seminar on Social justice and the working of Panchayat in India: Revisiting the concern of Ambedkar school of thought. Sri Ramkrishna Hegde Chair, Institute for Social and Economic Change, Bengaluru, 2019.

**CONSULTANCY**

Consultants	Title/Nature of the consultancy work	Client	Amount
C. K. Sharma & N. Sharma	Study of Child marriage in Assam	State Child Protection Society, Assam.	₹ 5 Lakhs

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
N. Sharma	Disaster Management and Climate Change: Perspectives from India's North East	Centre for North East Studies and Policy Research, Jamia Millia Islamia	16-17 October 2019	Jamia Millia Islamia

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
N. Sharma	In Service Course for TGT	16 June 2019	Kendriya Vidyalaya, Tezpur University
N. Sharma	In-Service Training Programme for Psychiatric social workers under DMHP, NHS, Assam	27 July - 10 August 2019	LGBRIMH, Tezpur
N. Sharma	District Level Workshop on Empowering women through gender budgeting	27 November 2019	Assam State Social Welfare Board, Tarun Asom Sangh, Tezpur, Assam
N. Sharma	1 <sup>st</sup> World Food System Center Alumni Network (WFSCAN) Workshop	19 January 2020	Pabhoi Greens, Pabhoi, Assam

**AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS****Research Scholar/Student**

1<sup>st</sup> Semester M.A. Students participated in a social work meet organized by Dibrugarh University for all social work schools in the North-East region (EKAYAN), and won the following awards:

- Street Play competition: First Position
- Project proposal presentation: Second position

**OTHER IMPORTANT ACTIVITIES**

- Outreach programme was organized by the Department of Social Work in collaboration with the Department of Sociology to celebrate International Women's Day in the village Amolapam, Tezpur.

**THE FACULTY MEMBERS AND STAFF****Professors**

Chandan Kumar Sharma, Ph.D. (University of Delhi)

Specialization/Research area: Development; Environment; Urbanisation; Agrarian Structure; Social Movements; Ethnicity; Migration; Northeastern India

Email: chandan@tezu.ernet.in

**Assistant Professors**

Apurva Saha, Ph.D. (NIMHANS, Bangalore)

Specialization/Research area: Social Work & Mental Health, Psychosocial Care in Disaster Management, Street Children, and Application of Social Work Methods.

Email: apurbasaha@tezu.ernet.in

Veda Yumnam, Ph.D. (JNU)

Specialization/Research area: Social Determinants of Health, Disaster Management, Nutrition, Social Epidemiology of HIV/AIDS, Health Systems Research.

Email: vedamsw@tezu.ernet.in, vedayumnam@gmail.com

Rajesh Kalarivayil, Ph.D. (JNU)

Specialization/Research area: Innovation Studies, Science and Technology in Rural Development.

E-mail: rajeshk@tezu.ernet.in

Namami Sharma, Ph.D. (University of Delhi)

Specialization/Research area: Environment and Ecology, Tribal Studies

E-mail: namamis@tezu.ernet.in

Prerana Banik, M. Phil. (TISS, Mumbai)

Specialization/Research area: Food security, Gender and livelihood, Labour rights, Inclusive policies and development, Marginalised group and social development

E-mail: banikpb@tezu.ernet.in

**Office Staff**

Kiran Mahalia

Email: kiran@tezu.ernet.in

G. Borah

Email: guna@tezu.ernet.in

## DEPARTMENT OF SOCIOLOGY

### THE DEPARTMENT

The Department of Sociology at Tezpur University was established in 2006 with a Masters programme. Subsequently, it launched a PhD programme in 2008. The Department is dedicated toward creating competent and socially sensitive graduates through rigorous teaching/training programmes and extension activities.

The curriculum lays emphasis on the teaching and learning of general concerns of sociology as well as the issues of sociological significance in north-eastern India which constitute a special focus of the teaching and research of the Department. A combination of participatory, experiential and creative pedagogy is used for transacting the curricula with a view to fostering dialogue, mutual learning and critical reflection. The pedagogical practices also utilise an inter-disciplinary framework combining classical approaches in conjunction with emerging areas of research.

### Academic Programmes and Student intake

Programme	Intake
M.A. in Sociology	38
Ph.D. in Sociology	Variable, 06 in 2019-2020

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Vulnerability Analysis of Marginalised Communities in Riverine Islands of Assam	UNICEF, Guwahati.	₹5.15 Lakhs	July 2019 to December 2020	A. K. Das
Evaluation and Process Monitoring of PMMVY	UNICEF, Guwahati.	₹ 5.5 Lakhs	1 year (2019)	A. K. Das
Process Evaluation of Capacity Building Programme of State Institute of Panchayat and Rural Development	UNICEF, Guwahati.	₹ 14.91 Lakhs	February 2019 to October 2019	A. K. Das
'Inequality and inclusion in Primary Health Care System in India: Comparative analysis of Kerala and Assam'.	Indian Council of Medical Research, New Delhi.	₹ 36.4 Lakhs	2 years (2018-2020)	Sumesh S. S.

## PUBLICATIONS

### Journal Publications

1. Das S. Clocking the Satra: Meanings and movements. *Eastern Anthropologist*. 72. 2019
2. Deka R., Borah P. P. & Bhuyan A. Ethnicity and fragmented identity: diverse forms of identity formation among the Misings of Assam. *Asian Ethnicity*. 2020.
3. Deka R. & Borah P. We are not Assamese: Reflections on ethnic identity formation in contemporary Assam, *International Journal of Scientific and Technology Research*. 8(11). 2019.
4. Deka R. & Borah P. Governance, development and tribal identity construction. *International Journal of Scientific and Technology Research (IJSTR)*. 8 (12). 2019.
5. Sharma C.K. & Muktiar P. In search of a better future: Nepali rural out-migration from Assam, *Sociological Bulletin*. 68(3). 2019.
6. Sharma C. K. Gandhir Jibon, Karma aru Darshan: 1869-1915 (The Life, Work and Philosophy of Gandhi: 1869-1915), *Satsori*. 2019.
7. Sharma C. K. & Borgohain B. The New Land Settlement Act in Arunachal Pradesh: Road to empowerment or dispossession? *Economic and Political Weekly*, 54(23). 2019.

### Edited Book

1. D. N. Pathak and A. K. Das (Eds.) Investigating developmentalism: Notions of development in the social sphere. New York, Palgrave Macmillan, 2019.

### Book Chapters

1. A. K. Das. Governance and government. In Farazmand A. (Ed.). Global Encyclopedia of public administration, public policy, and governance. Springer, Cham, 2019.
2. A. K. Das. New governance and neoliberalism. In Farazmand A. (Ed.). Global Encyclopedia of public administration, public policy, and governance. Springer, Cham, 2019
3. A. K. Das. & D. N. Pathak. Introduction: Developmentalism—On a Trope of (Dis) Enchantment. In D. Pathak and A. K. Das (Eds.). Investigating developmentalism: Notions of development in the social sphere, New York, Palgrave Macmillan, 2019.
4. A. K. Das. & R. Ray. The danger of development today: An inevitable polemic. In D. Pathak and A. K. Das (Eds.). Investigating developmentalism: Notions of development in the social sphere. New York, Palgrave Macmillan, 2019.
5. C. K. Sharma & B. Borgohain. Tribal movements. In B. Ghosh (Ed.). Social movements: Concepts, experiences and concerns. Sage, New Delhi, 2020.
6. N. Goswami. Contextualising educational attainment in Assam: Interrogating the phenomenon of gender gap. social sector development in Northeast India. In Atul Sarma, Ashok Pankaj & Antora Bora; (Eds.). Sage, New Delhi. 2020.
7. P. Hagjer. Birth rituals in urban space: A study on Dimasas of Assam. In M. Longmalai (Ed.) Studies on Dimasa: History, language and culture. 2. DVS, Guwahati, 2020.

### Other Publications

1. N. Goswami. Ours is a semi English medium school: Schooling aspirations and a neighbourhood school in Banaras. In Education and the Urban in India. Max Weber Stiftung, London, 2020.
2. N. Goswami. Classification Process of Languages in India. In George W. Noblit (Ed.). The Oxford Encyclopedia of qualitative research methods in education. Oxford University Press, 2020.
3. P. Hagjer. Units on Social movements: Definitions, Characteristics And Types, The social base: Class, Caste, Ethnicity, Gender, Role And Types Of Leadership; Relationship Between

Leaders And The Masses , Theories on social movements: Weberian and post-Weberian, Theories on social movements: Structural-Functionalist, Social movements in India: Dalit movement, New social movements in India: Women's Movement in the course MSO301 Social Movements in India ; Self Learning Materials for M.A (Sociology) in CODL, Tezpur University.

### Book Reviews

1. A. K Das. 2020, Deepak Mehta and Rahul Roy (Eds), Violence and the Quest for Justice in South Asia, in Sociological Bulletin Vol-69, No-1. Pp 126-128. ISSN 0038-0229.
2. S. Das. The Medicalisation of Incest and Abuse: Biomedical and Indigenous Perceptions in Rural Bolivia By Carolina Borda-Nino-Wildman, *American Journal of Sociology*, 2019.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
N. Goswami	International Seminar on Locating Neighbourhoods in the Global South	Department of Sociology, Tezpur University	25-26 September, 2019	Tezpur University
S. Das	International Seminar on Locating Neighbourhoods in the Global South	Department of Sociology, Tezpur University	25-26 September 2019	Tezpur University
S. Das	Eastern Himalayas Naturenomics Forum	Balipara Foundation, Guwahati	5 -6 November 2019	Guwahati

### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, year	Place/institute/venue
A. K. Das	Reading and writing about the lives in Northeast India organised by Department of Sociology, Tezpur University	3-4 February 2020	Tezpur University
C.K. Sharma	Empowering youth action for good water governance in the Brahmaputra River Basin in Assam, India' organized by Aaranyak and Oxfam India in association with District Administration, Majuli	25 - 27 June 2019	Sanchipaath, Majuli,
C.K. Sharma	Ethnic diversity and social development in Northeast India a Technical session on 'Demography and Ethnic Diversity' in the Seminar on "Social Sector Development in North-East India: Problems, Issues and Challenges."	15-16 July 2019	Council for Social Development, Delhi

C.K. Sharma	Globalization and Higher Education, Refresher course for Assistant Professors. Organized by Dept. of Education in collaboration with Teaching Learning Centre, Tezpur University.	9 September, 2019	Tezpur University
C.K. Sharma	Human rights and social inclusion, Refresher course for Assistant Professors. Organized by Dept. of Education in collaboration with Teaching Learning Centre, Tezpur University.	9 September, 2019	Tezpur University
C. K. Sharma	Relevance of Mahatma Gandhi today, National Conference on Gandhi in National Institute of Technology, Itanagar.	28-29 September, 2019	Arunachal Pradesh
C. K. Sharma	Social and political ideology of Mahatma Gandhi, Organised by Departments of History, Sociology and Hindi, Rajiv Gandhi University,	28 September, 2019	Arunachal Pradesh.
C. K. Sharma	Expectations of an Editor, Capacity Building Workshop for Quality Research Communication for Humanities, Social and Management Sciences, Internal Quality Assurance Cell, Tezpur University	31 January, 2020	Tezpur University
N. Goswami	Key note paper on education in social development in Northeast India.	15-16 July 2019	Council for Social Development, Delhi
N. Goswami	Empowering women through gender budgeting, Workshop organised by Assam State Social Welfare Board, Tezpur	26-28 November 2019	Tezpur, Assam
N. Goswami	In service training of TGT(English) Kendriya Vidyalaya Sangathan	30 December 2019	KV Tezpur 4
N. Goswami	One day capacity building Workshop for Quality Research Communications	31 January 2020	IQAC Cell, Tezpur University
N. Goswami	International Mother Language Day	21 February 2020	Department of Hindi, Tezpur University
R. Deka	Namghar and democratisation of religion	21 July, 2019	Web magazine Nezine podcasted talk

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES**

Title	Date/Period, year
International Seminar on Locating Neighbourhoods in the Global South	25-26 September 2019

Reading and Writing about the Lives in Northeast India	3-4 February 2020
--	-------------------

### DISTINGUISHED VISITORS

- Aman Madan, Professor, Azim Premji University, Bengaluru
- Virginiux Xaxa, Professor, former Professor of Eminence, Dept. of Sociology, Tezpur University

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

NET: 08

### NOTABLE PLACEMENTS

Name	Designation	Organization
Dr. Prarthana Baruah	Assistant Professor	Dept. of Sociology, Bihpuria College, Assam
Dr. Purabi Bhagawati	Assistant Professor	Mahapurush Srimanta Sankardev Viswavidyalaya, Nagaon, Assam
Dr. Himasnata Dutta Sarkar	Assistant Professor	Royal Global University, Guwahati
Ms. Rituporna Choudhury	Assistant Professor	Kaziranga University, Jorhat, Assam
Dr. Jagritee Ghosh	Project Coordinator	UNICEF sponsored consultancy Project
Ms. Mekory Dodum	Trade Officer, Government of Arunachal Pradesh	Arunachal Pradesh Public Service Commission
Ms. Rajashree Saharia	Research Associate	University of Sussex

### THE FACULTY MEMBERS AND STAFF

#### Professors

Chandan Kumar Sharma, Ph.D. (University of Delhi)

*Area of Interest:* Development, Environment, Social Movements, Ethnicity, Migration, Culture, Society and Politics of Northeastern India.

E-mail: chandan@tezu.ernet.in

Rabin Deka, Ph.D. (Dibrugarh University)

*Area of Interest:* Sociological Theories, Sociology of Movement, Agrarian Sociology.

E-mail: rdeka@tezu.ernet.in

Kedilezo Kikhi, Ph.D. (North Eastern Hill University)

*Area of Interest:* Research Methodology, Gender and Society, Sociology of Northeast India

E-mail: kedi@tezu.ernet.in / kedithejakikhi@yahoo.co.in

#### Associate Professors

A K Das, Ph.D. (Tezpur University)

*Area of Interest:* Sociology of Development, Research Methodology in Social Sciences, Sociology of Health and Illness, Sociology of Governance

E-mail: amiyadas@tezu.ernet.in // amiyadas@gmail.com

**Assistant Professors**

Sumesh, S.S., Ph.D. (University of Kerala)

Area of Interest: Research Methods, Social Stigma, Social Exclusion, Environment and Movements

E-mail: sumesh@tezu.ernet.in/ sumeshss@gmail.com

Nirmali Goswami, Ph.D. (IIT Kanpur)

Area of Interest: Sociology of Education, Education Policy of India, Identity Politics,

Multiculturalism, Sociology of Language

E-mail: nirmalig@tezu.ernet.in / nirmalig@gmail.com

Sarmistha Das, Ph.D. (Tezpur University)

Area of Interest: Agrarian Studies, Sociology of Family, Marriage and Kinship

E-mail: sarmistha@tezu.ernet.in

Subhadepta Ray, Ph.D. (University of Delhi)

Area of Interest: Sociology of Science, Sociology of India, Sociological Theory, Sociology of Literature

E-mail: sray@tezu.ernet.in/ subhadepta@gmail.com

A.S. Shimreiwung, Ph.D. (Jawaharlal Nehru University)

Area of Interest: Sociology of Religion, Culture and Art, Tribal Studies, Orality and Colonial Photography.

E-mail: shim@tezu.ernet.in / shimreiwung@gmail.com

Pamidi Hagjer, Ph.D. (Guwahati University)

Area of Interest: Ritual Studies, Kinship, Sociological Theories.

E-mail: pamidi@tezu.ernet.in / pamihagjer@gmail.com

**Office Staff**

Amarjyoti Bharali

Upper Division Clerk

Jogen Das

Multi-Tasking Staff

## CENTRE FOR ASSAMESE STUDIES

### THE CENTRE

The Centre for Assamese Studies of Tezpur University completed eight years on 7 June 2019. The primary aim of the Centre is to undertake and foster intensive and innovative study and research in Assamese Language, Literature and Culture in their varied dimensions adopting a wide perspective and an all-encompassing worldview.

### Academic Programmes and Student intake

Programme	Intake
Ph.D.	Variable, 0 in 2019-20

### PUBLICATIONS

#### Journal Publications

1. Dutta J. Natun Itihasbadaru Iyar Prashangikata (New Historicism and its Relevance). *Satsari*. 15(8). 2020.
2. Dutta J. Bharatiya Sahitya, Tulanamulak Sahitya aru Anubad (Indian Literature, Comparative Literature and Translation). *Prakash*. 88. 2019.
3. Dutta J. Utsabar Mohan Sangya: Kartik Hazarika Rastriya Nat Mohotsabar Abhigyata (Great Definition of Festival: Experiences from the Kartik Hazarika National Theatre Festival). *Satsari*. 14 (9). 2019.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, year	Place/institute/venue
J. Dutta	Tribal Literature Festival- 2019	Indira Gandhi Rashtriya Manav Sangrahalaya (IGRMS)	10-12 November 2019	IGRMS, Bhopal

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED BY THE DEPARTMENT

Title	Date/Period, year
A day long programme on Celebration of 125 years of <i>Miri Jiyori</i> (one of the first novels of Assamese language)	10 May 2019

### DISTINGUISHED VISITORS

- Dr. Arupa Patangia Kalita, Eminent Writer.
- Dr. Dhruvajyoti Bora, Eminent Writer and Former President of Assam Sahitya Sabha.
- Prof. Govinda Prasad Sharma, Eminent Critic.
- Nuruddin Ahmed, Sangeet Natak Academi Awardee
- Pranjal Saikia, Theatre and Film Artiste.
- Prof. Tilottama Mishra, Eminent Critic.

### Faculty members and Staff

#### Professors

Prasanta Kumar Das, Ph.D. (Gauhati University)

Head (in-charge), Centre for Assamese Studies

*Specialization/Areas of Interest:* Indian Writing in English, American Literature

E-mail: prsntdas@tezu.ernet.in

**Assistant Professors**

Juri Dutta, Ph.D. (Rajiv Gandhi University, Arunachal Pradesh)

*Specialization/Areas of Interest:* Regional Literatures of India, Translation Studies and Comparative Literature

E-mail: juri@tezu.ernet.in

**Office Staff**

Pranjal Kumar Sarma, B.A. (Gauhati University)

Data Entry Operator

E-mail: pranjal@tezu.ernet.in

Mohan Saikia

MTS

## CENTRE FOR ENDANGERED LANGUAGES

### THE CENTRE

The University has been awarded the Centre for Endangered Languages by the Ministry of Human Resource Development in 2014 with an approved grant in-aid of Rs.6,00,00,000/- (Rupees six crore only). Out of this, 50% of the amount i.e. Rs.3,00,00,000/- was sanctioned as first installment on 3<sup>rd</sup> April 2014 and the fund was released on 27<sup>th</sup> August 2015. The remaining amount of Rs.3,00,00,000/- was given as 2<sup>nd</sup> installment, sanctioned on 21.02.2019 and fund released by March 2019.

This is the Nodal Centre for the consortium of North-East India comprising Tezpur University, Rajiv Gandhi University, Arunachal Pradesh and Sikkim University, Sikkim.

The Centre is attached to the Department of English and Foreign Languages. The Centre also offers two CBCS courses during each semester (Academic session):

- i) LE223 : Language Society and Endangerment
- ii) LE224: Language Policy, Education and Language Revitalization

### Academic Programmes and Student intake

Programme	Intake
Nil	Nil

### Major Facilities

Phonetic Lab (With 20 seat capacity)  
 Documentation Lab (Recording and Editing Suite)  
 Multipurpose Hall  
 3 Classrooms with Smart board and Projector facilities

### Equipment Available

Sl. No.	Name of the Items	Make/Model/Type	Quantity
1	30KVA Online UPS System	Make: Orion/Astra	1
2	Console	ATEN	1
3	KVM Switch	ATEN	1
4	42U Rack	NET-RACK	1
5	Smart board TM Interactive White Board	Make: OPTOMA Model-480	4
6	Projector Optima Short Throw	CSCXCW	4
7	Laptop	HP Probook 440	16
8	Mobile	Samsung Galaxy J7	15
9	Digital Voice Recorder	OLYMPUS LS-100	15
10	Camera	Nikon Digital Camera Coolpix P900	3
11	Video Camera: 4K 60P	Panasonic HC-X1000	1
12	Video camera: Full HD Recording,	Panasonic, HDC-MDH2M	2

13	External mic	Ahuja CTP – 10	3
14	Headphones	Panasonic RP-HD5	20
15	Professional Shotgun Microphone	Panasonic	5
16	Wireless Microphone	Ahuja AWM – 520VL	4
17	Printer	HP, Model: Laser Jet Pro M706n	1
18	Colour Photocopier	XEROX, Model: WC7225	1
19	Desktop PC	HP, 406G1	23
20	Storage (NAS Based)	HP, Store Easy 1650	1
21	Air Conditioner	Blue Star, 2.0 Tr Split Type	9
		Blue Star, 1.5 Tr Cassette Type	1
		Blue Star, 1.5 Tr Split Type	2
		Blue Star, 1.0 Tr Split Type	1
22	Headphone Amplifier	Presonus HP 4	1
23	Soundcard for Editing Machine	Presonus	1
24	12 Channel Professional Mixing Console	Yamaha, MG12XU	1
25	Workstation for Recording and Editing	Apple iMac	1
26	Professional Grade Installed Recording Device	Denon DN-450R	1
27	6 KVA Online UPS System	Orion/Astra Series	1
28	Vacuum Cleaner	Euro clean X Force	1
29	Microphone	Shure, SM 10A	5
30	Ahuja DAP570 Amplifier	Ahuja	1
31	Ahuja Wall Speaker, WS 664T	Ahuja	4
32	Ahuja DGN Stand	Ahuja	1
33	Ahuja Microphone AWM 490 VHL (set with collar mike)	Ahuja	1
34	Multi Media Projector	Make: Hitachi, Model: CP-EX402	1
35	Wall Mount Projector Screen (Motorized)	Make: Liberty, Size: 7 x 5	1
36	Digital UPS System	Make: Orion/Astra	2

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

The faculty, research associates and field assistants of the Centre have been divided into seven (7) groups for collection of data from the endangered languages being studied at the Center at the moment. Till date six (06) field works have been conducted by the groups. The last field trip was held from 5 - 25 January 2019. The groups went to Manipur, Nagaland and Dima Hasao Areas of Assam for collection of data. The table below shows the details:

State	Groups	Areas	Chosen Endangered Language
Assam	1	Dima Hasao Area	Biate
	2	Dima Hasao Area	Khelma
	3	Dima Hasao Area	Hrangkhoh
Manipur	4	Senapati District	Onaeme
	5	Kangpokpi district	Purum
Nagaland	6	Tuensang district	Yimchunger
	7	Tening Peren district	Liangmai

### Ongoing activities of the Centre

- The faculty and staff of the Centre have completed writing the three books on the Phonology, Morphology and Syntax on Biate, Hrangkhoh, Khelma (Assam), Purum, Onaeme (Manipur), Liangmai and Yimchunger (Nagaland). These three volumes are ready for publication and waiting for the university approval. Delayed for publication due to the Covid-19 pandemic lockdown.
- A Learner's Book of the Yimchunger Language, which was left behind for publication due to the untimely resignation of the staffs of that group, is now ready for publication. Delayed due to the Covid-19 pandemic lockdown.
- Making of three Tri-lingual dictionaries of the seven endangered languages that the Centre has been working on is in the process. These dictionaries will provide basic grammar and lexical features of Biate, Hrangkhoh, Khelma (Assam), Purum, Onaeme (Manipur), Liangmai and Yimchunger (Nagaland). Lexique Pro 8 software is being used in preparing the dictionaries.

### RESEARCH PROJECTS: ONGOING AND NEW

Centre for Endangered Languages in itself is a major research project, funded by UGC for a period of 3 years (2015 – 2018) with approved amount of Rs. 6 crores. The first installment was released in August 2015 and the second installment in March 2019. The Centre is coordinated by Prof. M. Barbora.

### PUBLICATIONS

#### Journal Publications

- Barbora M. The languages of the seven sisters, Preserving linguistic diversity in north-east India. *Endangered Languages, The ACU Review, The Association of Commonwealth Universities Review*. Vol-I. Issue-I. 26-29. 2019
- Longmailai M. Some Aspects of Folkloristics in Dimasa. *Vaak Manthan*, Volume 3 Issue 2 (September). ISSN: 2426-2149. 12-27. 2019.
- Longmailai M. A Study of Tenselessness in Rengma (Western). *Languages 4 (89)*. doi.10.3390/languages4040089. 1 – 15. 2019.

- Longmailai M. & Saikia J. Patterns of Sound Change in Deori and Dimasa. *Nepalese Linguistics*. Volume – 34. Pp: 26 – 35. ISSN: 0259-1006. 2019.
- Pal A., Gope A., Athar A. S., & Iannacchione G. S. A comparative study of the drying evolution and dried morphology of two globular protein and de-ionized water Solutions. *RSC Advances*. 10(29).pp. 16906-16916. <https://doi.org/10.1039/D0RA01748E>. 2020.
- Pal A., Gope A., & Iannacchione G.S. A Comparative Study of the Phase Separation of a Nematic Liquid Crystal in the Self-Assembling Drying Protein Drops. *MRS Advances*. pp. 1-6. <http://doi:10.1557/adv.2019.209>. 2019.
- Pal A., Gope A., Kafle, R. & Iannacchione G.S. Phase Separation of a Nematic Liquid Crystal in the Self-assembly of Lysozyme in a Drying Aqueous Solution Drop. *MRS Communications*. 2019. <https://doi.org/10.1557/mrc>. 2019.
- Sarangthem B. An Introduction to Sizang Kinship Terms. *International Journal of Dravidian Linguistics* 48:2, 153-164. 2019.
- Sarangthem B. Taboo and Euphemism. Sizang. *Vaak Manthan*, Volume-3. Issue-2. (September). ISSN: 2426-2149. Pp: 6-11. 2019.
- Sarangthem B. & Lhouvum Lh. Cultural and Linguistic affinities amongst Meitei-Sizang-Thadou. *Nepalese Linguistics*, Vol 34. pp 58-67. 2019.
- Widinibou. The Practice and Significance of Cultural Performance Amongst Liangmai. *In Veda's International Journal of English Language and Literature –JOELL*. Vol: 7. Issue-1. Pp: 14 – 21. ISSN-2349-9753. 2019.

### Conference Proceedings

- Mahanta S. & **Gope A.** Voiceless Sonorants and Lexical Tones in Mog. In Sasha Calhoun, Paola Escudero, Marija Tabain & Paul Warren (eds.) *Proceedings of the 19th International Congress of Phonetic Sciences, Melbourne, Australia* (pp. 3852-3856) 2019.

### Books

- M. Longmailai. Studies on Dimasa History, Language and Culture. DYF Selected Papers, DVS Publishers, Guwahati, Vol 2, ISBN: 978-93-85839-32-0. 2019.
- Widinibou. Aliu Naih Pawan. Liangmai Foundation, Baju Associate Multicolour Offset Press, Guwahati-8, Vol.1, 2019.

### Book Chapters

- H. K. Devi, G. Raghav, B. Sarangthem & L.S. Singh. "Morphotactics of Manipuri Verbs: A Finite State Approach", in Saha A., Kar N., Deb S (eds) *Advances in Computational Intelligence, Security and Internet of Things*. ICCISIoT 2019. Communications in Computer and Information Science, Vol 1192, Springer, Singapore, 2020.
- N. Sinha & M. Barbora. Nominalization in Koro. in *Investigationes Linguisticae*, Vol 41, amu.edu.pl, Poland 157-163. DOI:<https://doi.org/10.14746/il.2018.41.11>. ISSN: 1426-188X, ISSN (ONLINE): 1733-1757. INDEXED by Jstor, WorldCat, Google Scholar, 2019.

- J. Moshahary & M. Barbora. Nonverbal Predicate Clause in Dimasa and Bodo. in Monali Longmailai (Ed)., Studies on Dimasa History, Language and Culture, Vol-II, Page 45-55, DYF Selected Papers, DVS Publishers, Guwahati, ISBN: 978-93-85839-32-0. 2019.
- M. Longmailai & B. Sarangthem. Cultural Metaphor in Dimasa and Meitei – An Ethnolinguistic Aspect. in Monali Longmailai (Ed) Studies on Dimasa History, Language and Culture, Vol-II, Page 86-106, DYF Selected Papers, DVS Publishers, Guwahati, ISBN: 978-93-85839-32-0, 2019.
- M. Longmailai. Spread and Contact Situation of Dimasa. in Monali Longmailai (Ed) Studies on Dimasa History, Language and Culture, Vol-II, Page 66-85, DYF Selected Papers, DVS Publishers, Guwahati, ISBN: 978-93-85839-32-0, 2019.
- A. Pal., A. Gope., & G. S. Iannacchione. Image-Based Analysis of Patterns Formed in Drying Drops. International Conference on Pattern Recognition and Machine Intelligence, Springer, Cham, pp. 567-574, 2019.
- M. Sabnam, & A. K. Nath. Expressives in Bodo. in Queries in the Structure of Language, ed. Tariq Khan, Central Institute of Indian Languages, Mysuru. ISBN 978-81-946499-7-7. 2020.

#### Other Publications

- A. K. Nath. An article titled Xongkotot Ishwaror Bakdhara aru Poribortito Prathomikota' (Endangered discourse on God and the changing Priorities) published in the editorial page of the Amar Asom, a popular Assamese daily, on 02 June, 2020.

#### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
A. Gope	19 <sup>th</sup> International Congress of Phonetic Sciences	Melbourne Convention Centre, Melbourne, Australia	5 – 9 August 2019	Melbourne Convention Centre, Melbourne, Australia
A. Gope	8 <sup>th</sup> International Conference on Pattern Recognition and Machine Intelligence	Tezpur, India	17–20 December 2019	Tezpur, India
A. K. Nath	40 <sup>th</sup> Annual Conference of the Linguistic Society of Nepal	Tribhuvan University, Nepal	26 – 27 November 2019	Tribhuvan University, Nepal
A. K. Nath	41 <sup>st</sup> International Conference of Linguistic Society of India (ICOLSI 41)	Department of Linguistics and Contrastive Study of Tribal Languages,	13 – 15 November 2019	Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh

		Indira Gandhi National Tribal University, Amarkantak, Madhya Pradesh,		
A. K. Nath	International Conference on Multilingual Awareness and Multilingual Practices (MAMP 19)	Thomas More University of Applied Sciences, Antwerpen, Belgium	28-29 October 2019	Thomas More University of Applied Sciences, Antwerpen, Belgium,
B. Sarangthem	6 <sup>th</sup> National Language Conference	Institute of Odia Studies and Research, Bhubaneswar and Sambalpur University, Odisha, India,	23 - 26 February 2020	Institute of Odia Studies and Research, Bhubaneswar and Sambalpur University, Odisha, India
B. Sarangthem	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University,	10 - 13 February 2020	Department of English and Foreign Languages, Tezpur University,
B. Sarangthem	11 <sup>th</sup> International Conference of the North East Indian Linguistics Society (NEILS11)	Department of Humanities and Social Sciences and Centre for Linguistics and Cultural Studies, CIT, Kokrajhar	7-9 February 2020	CIT, Kokrajhar
B. Sarangthem	2-Day National Workshop on Grammar Writing for Lesser Researched Languages of the North East India	Linguistic Wing of the Department of English and Foreign Languages and Centre for Endangered Languages, Tezpur University	22 - 23 November 2019	Department of English and Foreign Languages, Tezpur University
B. Sarangthem	3-Day National Conference on the	Centre for Endangered	29-31	Department of English and

	Indigenous and Lesser Studies Languages (ILSL) of the North East India	Languages, Tezpur University,	October 2019	Foreign Languages, Tezpur University
D. Borah	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
D. Borah	3-Day National Conference on the Indigenous and Lesser Studies Languages (ILSL) of the North East India,	Centre for Endangered Languages, Tezpur University	29-31 October 2019	Department of English and Foreign Languages, Tezpur University
E. M. Meitei	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University,	10-13 February 2020	Department of English and Foreign Languages, Tezpur University,
E. M. Meitei	11 <sup>th</sup> International Conference of the North East Indian Linguistics Society (NEILS),	Department of Humanities and Social Sciences and Centre for Linguistics and Cultural Studies, CIT, Kokrajhar	7-9 February 2020	CIT, Kokrajhar
E. M. Meitei	2-Day National Workshop on Grammar Writing for Lesser Researched Languages	Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University	22-23 November 2019	Department of English and Foreign Languages, Tezpur University
G. Pegu	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
G.K. Borah	3-Day National Conference on the Indigenous and Lesser	Centre for Endangered Languages,	29-31 October 2019	Department of English and Foreign Languages,

	Studies Languages (ILSL) of the North East India	Tezpur University		Tezpur University
H. S. Singh	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
H. S. Singh	2-Day National Workshop on Grammar Writing for Lesser Researched Languages	Linguistic Wing of the Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University	22-23 November 2019	Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University
I. D. Raguibou	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
I. D. Raguibou	2-Day Workshop on Grammar Writing for Lesser Researched Languages	Linguistics Wing of Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University	22-23 November 2019.	Department of English, Tezpur University
I. D. Raguibou	3-Day National Conference on the Indigenous and Lesser Studies Languages (ILSL) of the North East India,	Centre for Endangered Languages, Tezpur University	29-31 October 2019	Department of English and Foreign Languages, Tezpur University
M. Barbora	3-Day National Conference on the	Centre for Endangered	29-31	Department of English and

	Indigenous and Lesser Studies Languages (ILSL) of the North East India	Languages, Tezpur University	October 2019	Foreign Languages, Tezpur University
M. Barbora	52 <sup>nd</sup> International Conference on Sino-Tibetan Languages and Linguistics (ICSTLL) and 25 <sup>th</sup> Himalayan Language Symposium (HLS)	Department of Linguistics, Faculty of Arts and Social Sciences at University of Sydney, Australia,	24 – 29 June 2019	University of Sydney, Australia,
M. Das	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
M. Das	2-Day National Workshop on Grammar Writing for Lesser Researched Languages	Linguistic Wing of the Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University	22-23 November 2019	Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University
M. Das	3-Day National Conference on the Indigenous and Lesser Studies Languages (ILSL) of the North East India	Centre for Endangered Languages, Tezpur University	29-31 October 2019	Department of English and Foreign Languages, Tezpur University
M. Longmailai	11 <sup>th</sup> International Conference of the North East Indian Linguistics Society (NEILS11),	Department of Humanities and Social Sciences and Centre for Linguistics and Cultural Studies, CIT, Kokrajhar	7-9 February 2020	CIT, Kokrajhar
M. Longmailai	3-Day National Conference on the	Centre for Endangered	29-31	Department of English and

	Indigenous and Lesser Studies Languages (ILSL) of the North East India	Languages, Tezpur University	October 2019	Foreign Languages, Tezpur University,
M. Longmailai	International Language Fest on Indigenous and Endangered Languages (ILFIEL 2019)	North-Eastern Hill University, Shillong	25-26 October 2019	North-Eastern Hill University, Shillong
R. Boruah	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
R. Boruah	2-Day National Workshop on Grammar Writing for Lesser Researched Languages,	Linguistic Wing of the Department of English and Foreign Languages Tezpur University and Centre for Endangered Languages, Tezpur University	22-23 November 2019	Department of English and Foreign Languages, Tezpur University
R. R. Boro	4-Day Workshop on Kuki-Chin Languages of North East Indi	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
R. R. Boro	11 <sup>th</sup> International Conference of the North East Indian Linguistics Society (NEILS),	Department of Humanities and Social Sciences and Centre for Linguistics and Cultural Studies, CIT, Kokrajhar	7-9 February 2020	CIT, Kokrajhar
R. R. Boro	2-Day National Workshop on Grammar Writing for Lesser Researched Languages	Linguistic Wing of the Department of English and Foreign Languages	22-23 November 2019	Department of English and Foreign Languages Tezpur University

		Tezpur University and Centre for Endangered Languages, Tezpur University		
R. R. Boro	3-Day National Conference on the Indigenous and Lesser Studies Languages (ILSL) of the North East India	Centre for Endangered Languages, Tezpur University	29-31 October 2019	Department of English and Foreign Languages, Tezpur University,
S. Saikia	4-Day Workshop on Kuki-Chin Languages of North East India	Centre for Endangered Languages, Tezpur University	10-13 February 2020	Department of English and Foreign Languages, Tezpur University
Widinibou	11 <sup>th</sup> International Conference North East Indian Linguistics Society' (NEILS)	Department of Humanities and Social Sciences and Centre for Linguistics and Cultural Studies, CIT, Kokrajhar,	7-9 February 2020	CIT, Kokrajhar

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, year	Place/institute/venue
A. Gope	Five (05) lectures and hands-on training as a Lead Resource Person in the workshop entitled 'A Boot Camp on Theoretical and Experimental Phonology'	17 to 25 June, 2019	CIIL Mysuru, India
B. Sarangthem	A lecture on "Phonetics" for the In-Service Course for TGTs (English)	26 December 2019	Kendriya Vidyalaya No. IV, Central University Tezpur, Assam, India
D. Borah	A talk "Grammatical aspects of Yimchunger" during the Awareness	22 - 23 February 2020.	Shamator Town, Tuensang District, Nagaland

	Programme on language maintenance and Revitalization on Yimchunger language		
G. K. Borah	Two talks on “Cognitive Linguistics and Grammar Writing” at the 2-Day National Workshop on Grammar Writing for Lesser Researched Languages of the North East India,	22 – 23 November 2019	Linguistic Wing of the Department of English and Foreign Languages and Centre for Endangered Languages, Tezpur University
G. K. Borah	A talk on “The Philosophy of Language”	20 August 2019	School of Engineering, Tezpur University
I.D. Raguibou	A talk “The Importance of maintaining an endangered language” during the Awareness Programme on language maintenance and Revitalization on Yimchunger language	22 – 23 February 2020.	Shamator Town, Tuensang District, Nagaland

#### **SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, year</b>
Three-Day National Conference on the Indigenous and Lesser Studied Languages (ILSL) of North East India	29 - 31 October, 2019
Two-Day National Workshop on Grammar Writing for Lesser Researched Languages of North East India	22 – 23 November, 2019
Five-Day Data Verification Workshop on Biata, Khelma, Hrangkhoh, Onaeme, Purum, Liangmai, and Yimchunger	December 2019 January 2020
Four-Day Workshop on Kuki-Chin Languages of North East India	10 – 13 February 2020
Awareness Programme on Language Maintenance and Revitalization for the endangered communities of Biata, Khelma, Hrangkhoh, Onaeme, Purum, Liangmai, and Yimchunger	20 – 24 February 2020

#### **DISTINGUISHED VISITORS**

- i) Prof. Conchur O Giollagain, Gaelic Research Professor and Director of the UHI Language Sciences Institute, Director of Soillse, The University of the Highlands and Islands, UHI Language Sciences Institute, EO UHI, Inverness, Scotland, Oct. 2019

- ii) Dr. Gordon Wells, The University of the Highlands and Islands, UHI Language Sciences Institute, EO UHI, Inverness, Scotland, Oct. 2019
- iii) Prof. Kavita Rastogi, University of Lucknow, Oct. 2019
- iv) Prof. Shailendra Kumar Singh, North East Hills University, Shillong, Oct. 2019
- v) Prof. Pramod K Pandey, Jawaharlal Nehru University, New Delhi, Nov. 2019
- vi) Prof. Scot Delancey, University of Oregon, USA, Feb. 2020

### OTHER IMPORTANT ACTIVITIES

- i) The 2<sup>nd</sup> Advisory Committee meeting of CFEL, TU was held on 31 October 2019
- ii) The Cluster Meeting of the Centre for Endangered Languages, Rajiv Gandhi University, Arunachal Pradesh, Sikkim University, Sikkim and Tezpur University, Tezpur

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

05

### NOTABLE PLACEMENTS

Name	Designation	Organization
Priyanshe Adhyapak	Resource Person for Assamese	LDCIL, CIIL, Mysuru
Syeda Mustafiza Tamim	Resource Person for Assamese	LDCIL, CIIL, Mysuru

### THE FACULTY MEMBERS AND STAFF

Madhumita Barbora, PhD (Tezpur University)  
*Specialization/Areas of Interest: Syntax, Field Linguistics: Documentation of Tibeto-Burman languages of North East India and Applied Linguistics*  
 E-mail: mmb@tezu.ernet.in  
 Coordinator, CFEL & Professor, Dept. of English

#### Linguistics faculties of Department of English associated with the Centre

G. K. Borah, Ph.D (NTNU, Trondheim, Norway)  
*Specialization/Areas of interest: Linguistics (General and Cognitive), Philosophy of Language*  
 E-mail: gkb@tezu.ernet.in  
 Professor, Dept. of English

A. K. Nath, Ph.D (JNU)  
*Specialization/Areas of interest: Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics.*  
 E-mail: akn@tezu.ernet.in  
 Assistant Professor, Dept. of English

A. Gope, Ph.D (IIT, Gauhati)  
*Specialization/Areas of interest: Acoustic Phonetics with special interest in Tone, Psychoacoustics, Computational Linguistics, International Phonology and Language Documentation.*  
 E-mail: amalesh@tezu.ernet.in  
 Assistant Professor, Dept. of English

Bipasha Patgiri, M.Phil (JNU)

*Specialization/Areas of interest: Phonetics, Phonology, Historical Linguistics, Dialectology and Language Typology*

E-mail: bipasha@tezu.ernet.in

Assistant Professor, Dept. of English

### **Assistant Professors of CFEL**

Bobita Sarangthem, PhD (Manipur University)

*Specialization: Descriptive Linguistics, Sociolinguistics, Phonetics and Phonology, Field Linguistics (Endangered Languages)*

E-mail: bobsara@tezu.ernet.in

Dhanapati Shougrakpam, PhD (Manipur University)

*Specialization: Descriptive Linguistics, Morphology, Field Linguistics (Endangered Languages)*

E-mail: dippi17@tezu.ernet.in

Dr. Dhanapati Shougrakpam resigned from her post on 31.10.2019 to join at Central University Rajasthan

Monali Longmailai, PhD (NEHU)

*Specialization: Descriptive Linguistics, Morpho-Syntax, Field Linguistics and Language Documentation*

E-mail: monali@tezu.ernet.in

### **Research Associates**

Pushpa Renu Bhattacharyya, PhD (Gauhati University)

*Specialization: Descriptive Linguistics and Socio-linguistics*

E-mail: pushparb@tezu.ernet.in

Widinibou, PhD (Assam University, Silchar)

*Specialization: Phonology and Tibeto-Burman languages*

E-mail: widinibou@gmail.com

E.M.Meitei, Ph.D (Manipur University)

*Specialization: Phonology, Morphology, Field Linguistics, syntax and socio-linguistics*

E-mail: manielangbam8@gmail.com

I.D.Raguibou, Ph.D (Assam University, Silchar)

*Specialization: Phonology and Comparative Study*

E-mail: daimairagui@yahoo.com

### **Field Assistants**

D. Borah, MA in Linguistics and Language Technology (Tezpur University)

E-mail: dinkur123@gmail.com

R.R. Boro, MA in Linguistics and Language Technology (Tezpur University)

E-mail: raju246@tezu.ernet.in

Rima Saikia, MA in Linguistics and Language Technology (Tezpur University)  
E-mail: rimasaikia422@gmail.com

Radhika Boruah, MA in Linguistics and Language Technology (Tezpur University)  
E-mail: radhikaboruah6@gmail.com

Mayashri Das, MA in Linguistics and Language Technology (Tezpur University)  
E-mail: mayadas086@gmail.com

Huiningshumbam Surchandra Singh, Ph.D, Manipur University  
E-mail: boinao86@gmail.com

Gunjan Pegu, MA in Linguistics and English Language Teaching (Gauhati University)  
E-mail: gunjankopegu@gmail.com

Sagarika Saikia, MA in Linguistics and Language Technology (Tezpur University)  
E-mail: saga248.ss@gmail.com

#### **Technical Staff**

T Narzari, MSc-CS (SHIATS)  
Technical Assistant  
E-mail: trilok@tezu.ernet.in

#### **Office Staff**

Dipali Sona Nayak, B. Com (Gauhati University)  
Upper Division Clerk  
E-mail: dipasn@tezu.ernet.in

## DR. AMBEDKAR CHAIR

Dr. Ambedkar Chair, Tezpur University was established by Dr. Ambedkar Foundation (DAF), Ministry of Social Justice and Empowerment (SJ&E), New Delhi in the year 2016, to serve as core centre for northeast India furthering ideas and philosophy of Dr. B.R. Ambedkar and emancipation of the disadvantaged sections. The thrust area of the Chair is to conduct research on issues related to disadvantaged communities in the context of northeast India with particular emphasis on their marginalisation, development, and participation. The Chair is functioning with the following objectives:

- a) Teaching and research
- b) Building a library
- c) Conducting research projects
- d) Organising public lectures
- e) Conducting awareness and skill development programmes

Dr Ambedkar Chair has also introduced open elective courses at post-graduate and doctoral level w.e.f. autumn semester, 2018.

- a) Philosophy of B.R. Ambedkar & Its Contemporary Relevance (PhD)
- b) B.R. Ambedkar & Constitution of India (PG)

### Major Facilities and Equipment Available

#### Library:

As per mandate, Dr. Ambedkar Chair maintains a library with books on relevant literatures. The Chair has a collection of all the volumes of writings & speeches of Dr. B. R. Ambedkar (BAWS) and a reasonable collection of books on marginalized communities (Scheduled Caste, Scheduled Tribe, Dalit, Adivasi, women, religious minorities, etc.) and northeast.

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator/s	Salient Research Findings
K. Kikhi & D. R. Gautam	<p style="text-align: center;"><b>An Evaluative Study of Skill Development Training Programme in Assam (Consultancy Project)</b></p> <p>Demographic Profile: mostly females (92%)            Literacy Level: below matric (76%)            Age Group: majority (26-45 Years)            Family Profession: farming (62%)            Admission Process: swift, smooth (82.5%)            Content of Training: satisfactory in terms of gain in skill</p> <p>Impact of SDTP: Economic &amp; Social            - Economic Status: family income marginally improved (2.6%)            [major share of CIPET (58.8%)]</p>

	<ul style="list-style-type: none"> <li>- Employment: marginal reduction in unemployment (6.7%)</li> <li>- Transformation to wage earner (1.9%), and self-employment (6.7%).</li> </ul> <p>wage earner – major contributor CIPET. self-employment – major contributors were IIE Udalguri, TSC Baksa, IIE Kamrup</p> <p>Social Impact:</p> <ul style="list-style-type: none"> <li>- Individual Gains – were noticed in terms of skill enhancement, motivation for further studies, self-confidence, self-empowerment</li> <li>- Family Gain – reduction of backwardness</li> </ul>
--	--

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Annotated Bibliography on Scheduled Castes and Scheduled Tribes in Social Sciences and Humanities	DAF, Ministry of Social Justice & Empowerment (SJ&E), New Delhi	₹3,00,000.00	3 Years (2017-20)	K. Kikhi & D.R. Gautam
An Evaluation of Schemes under DAF in the Context of Mizoram	DAF, Ministry of Social Justice & Empowerment (SJ&E), New Delhi	₹2,50,000.00	3 Years (2017-20)	K. Kikhi & D.R. Gautam

### PUBLICATIONS

#### Journal Publications

Kikhi, K. & Lanamai, D. Contested Borders and Borderlands in Northeast India: (IL)Legitimate Claims of Naga Identity Assertion, *Sociological Bulletin*. 69 (2). 2020.

#### Other Publications

Kikhi, K (Ed.) MSO 203: Sociology of Development. MA in Sociology (Second Semester), SLM-CODL, Tezpur University. 2019

### CONSULTANCY

Consultants	Title/Nature of the consultancy work	Client	Amount
K. Kikhi & D.R. Gautam	An evaluative study of skill development training programme in Assam	NBCFDC, New Delhi	₹ 4,24,200.00

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period/Year</b>	<b>Place/Institute/Venue</b>
K.Kikhi	<i>Keynote Address. ICSSR sponsored national seminar on North-East and Boundary Issues: Problems and Prospects in the Context of Globalization.</i>	7-8 June 2019	Eastern Christian College, Dimapur
K. Kikhi	'Prospects and Challenges for Inclusive Education'. Refresher Course on Teacher Education (Inter-disciplinary). Sponsored by TLC, TU under PMMMNMTT Scheme, MHRD, GOI.	6-20 September, 2019	Dept. of Education, TU
K. Kikhi	<i>Keynote Address. ICSSR sponsored Two Day National Seminar on Concept of Property in Naga Customary Tradition.</i>	20-21 September 2019	Immanuel College & Institute of Naga Studies, Dimapur
K. Kikhi	<i>Plenary Session Speaker. 'Rekindling (Collating) Traditions and Modernity: A Critical Outlook'. National Seminar on Kelhou Zho: Cultural Heritage among the Tribes of Nagaland: Balancing Tradition and Modernity.</i>	24-25 September 2019	IGNCA-NERC & Culture Study Centre, Baptist College, Guwahati
K. Kikhi	'Colonial Writings, Administration and Cartographic lines in Naga Areas'. National Seminar on <i>Colonial Writings on North East India.</i>	28-29 November 2019	Centre for Assamese Studies & Dept. of Cultural Studies, TU
K. Kikhi	'Tribals and Land Issues in North East India'. A Consultation on <i>Just-Peace in Globalized Context: North East India Focus.</i>	11-15 February 2020	Asia-Pacific YMCA Alliance and Tribal Study Centre, Jorhat
K. Kikhi	<i>Keynote Address. Two Day National Conference on Exploring the Marriage and Family Experiences of Northeast India.</i>	21-22 February 2020	Assam Don Bosco University, ICSSR-NERC & Indian Oil, Guwahati
K.Kikhi	<i>Invited (Plenary) Lecture. International Seminar on Rethinking State and Civil Society.</i>	5-6 March 2020	Dept. of Political Science, University of North Bengal

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period/Year</b>
National Level ten days Research Methodology Workshop on <i>Researching Disadvantaged Status in India.</i> Sponsored by ICSSR, New Delhi	27 November – 6 December 2019

## **DISTINGUISHED VISITORS**

1. C.J. Thomas, Dr. and Acting Director, ICSSR NERC, Shillong
2. D.B. Talukdar, Professor, Dibrugarh University, Dibrugarh
3. M.C. Arunkumar, Professor, Manipur University, Imphal
4. N. Sukumar, Professor, Delhi University, Delhi
5. R. Govinda, Professor & Former-VC, NIEPA, Delhi
6. Sashmi Nayak, Chair Professor, Dr. Ambedkar Chair, NISWASS, Bhubaneswar
7. Tulsi Patel, Professor, Delhi University (Retd.), Delhi
8. Uma Chakravarti, Professor, Delhi University (Retd.), Delhi
9. V. Xaxa, Former-Deputy Director, TISS-Guwahati & Former-Professor of Eminence, TU

## **OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT**

- a) 128<sup>th</sup> Birth Anniversary Celebration of Dr. B. R. Ambedkar, Floral Tribute (April 14, 2019).
- b) Medical Health Camp at Harijan Colony, Tezpur (10th November 2019). In collaboration with the Department of Social Work, Tezpur University and supported by the Directorate of Health Services, Government of Assam, and Baptist Christian Hospital, Tezpur.
- c) 64<sup>th</sup> Mahaparinirvana Diwas of Dr. B. R. Ambedkar, Floral Tribute (December 6, 2019).
- d) Skill Development Training Programme (Stitching & Fungiculture) at Harijan Colony, Tezpur (March 2020).

## **THE FACULTY MEMBERS AND STAFF**

### **Professors**

Kedilezo Kikhi Ph.D. (NEHU)

*Specialization/Research Area:* Sociology of northeast India, Tribal Studies, Ethnic Movements

Email: kedi@tezu.ernet.in

### **Research Officer**

D. R. Gautam, Ph.D. (NIEPA)

*Specialization/Research Area:* Social Exclusion and Higher Education

E-mail: dgautam@tezu.ernet.in

# **School of Management Sciences**

**Dean's Report**

**Department of Business Administration**

**Department of Commerce**

**Centre for Disaster Management**

**Tezpur University Intellectual Property Rights Cell**



## SCHOOL OF MANAGEMENT SCIENCES

The School of Management Sciences of Tezpur University had completed 25 years of its existence and during this period it had been able to create a reputation for itself in the field of Management and Commerce education, and also in the industry. The School includes the Department of Business Administration, Department of Commerce, Centre for Disaster Management and Tezpur University Intellectual Property Rights (TUIPR) Cell each having carved a niche for itself in its respective field.

The Department of Business Administration offers Masters in Business Administration(MBA), Masters in Tourism and Travel Management (MTTM), PhD and Certificate programme in Capital Market Management (in collaboration with National Stock Exchange of India) and Diploma in Human Resource Management under distance mode.

The Department of Commerce offers Integrated Masters in Commerce as well as M.Com; the Centre for Disaster Management offers Open elective course on Disaster Management for Undergraduate and Post graduate students, and Post Graduate Diploma in Environment and Disaster Management under distance mode; TUIPR Cell offers Open elective course on Intellectual Property Rights for PhD, PG and UG students.

All together there are 25 teaching and 7 non-teaching staffs apart from involvement of a number of experts from industry and academia as adjunct/guest and visiting faculty.

A number of workshops, seminars, trainings were conducted by the different department/ Centre/Cell. Noteworthy are workshops on IPR conducted for college students, entrepreneurs, and *muga* weavers; National Seminar on Issues in Emergence of Farmer Producer Companies in India , training and development Programme for the LPG distributors of Indian OIL Corporation Ltd., workshops for students on Stress Management, Personality Development, Business Simulation, Design Thinking, Investors Awareness (by the Institute of India, Guwahati), Challenges in Community conservation(by WWF), training on TALLY, FINACLE software for students, Hands-on Training on Fire Safety Norms and Practices for the students of different departments of the University. It was a proud moment for us when the ideas of our young innovators supported by IPR Cell bagged the Gandhi Young Technology Innovation award for the third time in a sequence. During this period two Alumni meets were organized.

Six patent applications were filed during this period of which two patents were granted. To take forward its teaching and research activities, the School signed an MOU with Indian Institute of Foreign Trade, New Delhi.

The faculty members are involved in projects and consultancy sponsored by different agencies, notable are UNICEF, Ministry of Rural Development, Swacch Bharat Mission, Jal Jivan Mission, UGC, and Government of India. Noteworthy among these are, the project on “Reviving cultural artefact Gamosa through Intellectual Property Management in Assam and Innovative supply chain” funded by Scheme for Trans-disciplinary Research for India’s Developing Economy (STRIDE); UGC SAP DRS II on “livelihood through Tourism”; “Evaluation of SHYAMA PRASAD MUKHERJEE RURBAN Mission”.

A MOOCS on Direct Tax Laws and Practice offered under SWAYAM Platform was very well received and had a huge enrollment being one of the top courses sought by the learners under MOOCS.

During this period the School had five international students from Malawi in the MBA programme. Three students from MBA programme went as exchange students to Avans University, Netherlands.

All together there were 19 publications during this period. The departments/Centre/Cell have adopted and disseminated knowledge with the most updated syllabus with industry participation. Alumni participation in its activities is a key highlight.

The School of Management Sciences is committed to achieving its vision and garner fame for the University.

#### **PERSONNEL OF THE OFFICE OF THE DEAN**

##### **Dean, School of Management Sciences**

Papori Barauh, Ph.D. (TU)

Professor, Department of Business Administration

##### **Office Staff**

Brindaban Borah

Office Assistant

Suren Borah

MTS

## DEPARTMENT OF BUSINESS ADMINISTRATION

### THE DEPARTMENT

The Department of Business Administration started its journey in January 1995. The flagship programme of the Department is its 2-year Master's degree in Business Administration. The Department has also introduced a new 2-year Master's degree in Tourism and Travel Management from 2016. Doctor of Philosophy is also offered by the Department. The specialized areas include Human Resource Management, Financial Management, Marketing Management, Operations Management, and Information Technology.

The Faculty of the Department is actively engaged in research and other academic activities, availing of overseas fellowships, and participating in national and international seminars and conferences. The Department has successfully completed UGC-SAP DRS-1 and currently working on UGC-SAP DRS II. The Department has also been regularly organising seminars, conferences, symposiums, and refresher courses. It has also been conducting MDPs/FDPs for the corporate executives and academics. The Department has been rated A3 by AIMA in 2012. The students of the Department have been bagging various prizes by participating in extra-curricular activities organized in and outside the University. The Department has also ranked 16<sup>th</sup> in India Today B - School ranking 2018 of Govt. B School (Non IIM & IIT category), and rated "A" by Chronicle B-school survey 2019 and was placed among Top 10 B-school of the Eastern Region.

### Academic Programmes and Student intake

Programme	Intake
MBA (Full-time)	51
MTTM	17
PhD	Variable, 11 in 2019-20

### Major Facilities and Equipment Available

- One air-conditioned boardroom.
- One air-conditioned student lounge.
- Audio-visual facilities such as LCD projectors, sound systems etc. in all classrooms.
- One smart classroom.
- One library-cum-reading room.
- Air conditioned seminar hall, training hall and a computer laboratory.
- Departmental office equipped with a modern office automation system.

### MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
S. S. Sarkar and P. Baruah	<p>Post project evaluation of Saansad Sdarsh Gram Yojana (SAGY) in north eastern region, Odisha and West Bengal entrusted by the ministry of Rural Development, Government of India</p> <p>Our experience in the field makes us presume that because of non-allocation of funds for the SAGY programme, there is a</p>

	<p>tendency of omission about the programme. We do not recommend any additional major funding for the programme (except a small percentage of CGF in the line of RURBAN), otherwise, it would lose its beauty and will be just like any other rural development programme. We recommend a funding pattern in the line of RURBAN. There may be a provision for minimum support as low as 10% of the estimated investment for activities taken in the VDP by line departments, given as <b>Critical Gap Funding (CGF)</b>, while 90% of the funds may be mobilized by the States through convergence with synergic State and Central programmes as well as private investment and institutional funding. A small proportion of funding will ensure completion of the activities by each line department.</p> <p>SAGY is a very well-conceived programme with robust guidelines. The development of the village is very scientifically designed with bottom up approach. <b>We strongly recommend for continuance of the programme. However, the leadership skill and dedication of the hon'ble MP is the key to the success of the programme.</b></p>
--	---

#### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR )	Duration	Investigators	Collaboration
UGC SAP DRS II - Livelihood through Tourism	UGC	39,10,000 /-	5 Years	C. Goswami	
Reviving Cultural Artefact Gamosa Through Intellectual Property Management in Assam and Innovative Supply Chain	UGC-Scheme for Trans-disciplinary Research for India's Developing Economy	43,00,000 /-	3 Years	M. Dutta	

#### PUBLICATIONS

##### Journal Publications

Das R & Das D. The 2030 Agenda for Sustainable Development: Where Does India Stand?. *Journal of Rural Development*. 38(2). 266-195. 2019.

Das D. Disruptive Technology Regime and Future of Indian Banking. *IIBM Digest (A Journal of IIBM)*. Issue: June, 3-9. 2019.

Das R. Farmer Producer Companies, The Actual Facilitator for Farmers: A Case Study. *International Journal of Innovative Studies in Sociology and Humanities*. 2019.

Dutta M. & Dutta P. K. Community based tourism model for conservation: A case study of Arunachal Pradesh, part of Himalaya biodiversity hotspot. *Nature & Society eJournal*. 1(10). 2019.

Dutta M. Impact of customary laws in sustaining collective resources-community conservation practices from North East India. *Global Ecological Change eJournal*. 3(9). 2020.

Goswami C. & Kakati, S. Factors and Motivation of Fraud in the Corporate Sector: "A Literature Review". *Journal of Commerce & Accounting Research*. 8(3). pp 86-96. 2019.

Sarma M. K. & Dutta D. Service Innovation Typologies and Applications in India: A Literature Review (ACCEPTED). *International Journal of Business Innovation and Research*. 2019. [doi:10.1504/IJBIR.2020.10019243]

Sarma M. K. & Goswami S. Modelling Customer Delight in Hotel Industry. *Global Business Review (GBR)*. Published by Sage-indexed in SCOPUS. 20(2). 405-419. 2019.

Saikia A. A. & Goswami C. The Concept of Youth Tourism as a Distinct Tourism Market Segment: A Review of Literature. *Asian Journal of Multidimensional Research*. 8(5). 137-149. 2019.

### **Conference Proceedings**

Baruah P. & Sarma T. R. Identifying components of shipping freight derivatives through systematic literature review and a brief highlight of key shipping exchanges and Indices. Proceeding of the NEICMA 4<sup>th</sup> National Conference. Dibrugarh University, Assam, 2019.

Baruah P. & Sarma T. R. A conceptual framework for using location allocation model to optimize the inland water port- dry port river logistics infrastructure system. Processing of the XXIIIrd Annual International Conference of the Society of Operations Management (SOM 2019). IIT Kanpur, UP, 2019.

Baruah P. Developing a composite ranking index for city ranking based on comparative analysis of Swachh Survekshan ranking parameters. Proceedings of the National Symposium on Sustainable Waste Management (SWM 2019). Department of Energy, Tezpur University, 2019.

Mehdi M. M. & Sarma T. R. Organizational Productivity Parameters of Micro, Small and Medium Enterprises (MSMEs) in India and North East Region States: A Comparative Analysis. Proceedings of the 7<sup>th</sup> PAN IIM World Management Conference. Indian Institute of Management Rohtak, India, USI New Delhi, December 12-14, 2019.

Mehdi M. M., and Sarma T. R. Bhimshakti: A Case of Value-Addition that Transformed a Rural item into Baby-Food. Proceedings of the National Seminar on Issues in Emergence of Farmer Producer Companies in India. Department of Business Administration, Tezpur University, Assam, April 4, 2019.

### Book Chapters

M. Dutta. Promoting responsible tourism in Western Arunachal Pradesh. In S. K. Nayak, L. Nochi & M. Lama (Eds) Hill Economics and Sustainable Development in India. p 137-147. Concept Publishing Company Pvt. Ltd., New Delhi, 2019.

M. Dutta. Majuli: An emerging niche tourism destination village in North East India. In U. N. Shukla & S. K. Kulshreshtha (Eds) Emerging Dynamics of Indian Tourism & Hospitality: Transformation & Innovation. Copal Publishing, Gaziabad 2019.

P. Baruah & R. Bhatia. Interface between AI and Human Proficiency: A review of Literature. In Riasuden et al (Eds) Building HR Workforce; Transforming Talent, Technology and Ideas. Shanlax Publication, Madurai.

### Edited Books

M. M. Mehdi and T. R. Sarma. The Labour, Machine, and Material as Sources of Value Addition for SMEs: An Empirical Evidence from India. Edited book on Challenges and Opportunities for SMEs in Industry 4.0 by N. H. Ahmad, Q. Iqbal & H. A. Halim, IGI Global Publisher, 2020.

### Other Publications

M. Dutta. E-Resource for Teaching Learning Centre, Tezpur University (Supply Chain Management: Online Reverse Auction).

### CONSULTANCY

Consultants	Title/Nature of the consultancy work	Client	Amount (in INR)
Chandana Goswami (PI) H. Barpujary (Co-PI)	Technical assistance to PHED towards safely managed drinking water – systems strengthening for planning, monitoring and reporting.	PHED Govt. of Assam & UNICEF India	69,49,650/-
M. K. Sarma (PI) K. Mahanta (Co-PI)	Development of Tourism Convenience Index for Major Tourism Destinations in the State of Assam (with limited data collection).	Govt. of Assam for SSS scheme of Govt. of India	25,60,000/-
Papori Baruah (PI) S. S. Sarkar (Co-PI)	Hiring/Engagement of District level Financial Management Specialists.	Mission Directorate, Swachh Bharat Mission (Gramin), Assam	2,00,000/-

S. S. Sarkar (PI) Papori . Baruah (Co-PI)	Post Project Evaluation of Sansaad Adarsh Gram Yojana (SAGY) in NE States, Odisha and West Bengal.	Ministry of Rural Development, Government of India	44,00,000/-
S. S. Sarkar (PI) Papori Baruah (Co-PI)	Post Project Evaluation of SHYAMA PRASAD MUKHERJEE RURBAN Mission in NE States, Odisha and Bihar.	Ministry of Rural Development, Government of India	73,97,720/-

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute /Venue
D. Das	National Level workshop on Dual Mode University Manual	NAAC	18 December 2019	NAAC, Bangaluru
	Assessors Orientation Programme: Open and Dual Mode University	NAAC	23-24 December 2020	NAAC, Bangaluru
M. Dutta	10th Conference on Excellence in Research and Education	Indian Institute of Management, Indore	3-5 May 2019	IIM Indore, Madhya Pradesh
	National Symposium on Sustainable Waste Management-2019	International Society of Waste Management Air and Water & Consortium of Researchers in International Collaboration	3 August 2019	Tezpur University
	National Symposium on Sustainable Waste Management – SWM 2019 (Paper Presenter)	Department of Energy, Tezpur University	3 August 2019	Tezpur University
	ABHIKALPAYITA - Symposium on Design Education - A Collaborative Approach with Art, Social Science, Mass Communication and Management	IIT, Guwahati	8 November 2019	Department of Design, IIT, Guwahati
M. K. Sarma	LEAP Programme	NTU, Singapore and BHU, Vanaras	23 September -12 October 2019	BHU, Vanaras

P. Baruah	Interface Between Artificial Intelligence and Human Proficiency: A Review of Literature, International Conference on Building Agile Workforce	Department of Management Studies, Pondicherry University	26-27 December, 2019	Pondicherry University
Prayash Baruah	4th Doctoral Consortium ( <i>Paper Presenter</i> )	SJSOM, IIT, Bombay	21-22 February 2020	IIT, Bombay
	XXIIIrd Annual International Conference of the Society of Operations Management ( <i>Paper Presenter</i> )	IIT, Kanpur	19-21 December 2019	IIT, Kanpur
	7 <sup>th</sup> PAN IIM World Management Conference ( <i>Paper Presenter</i> )	IIM, Rohtak	11-14 December 2019	USI, New Delhi
	NEICMA 4th National Conference ( <i>Paper Presenter</i> )	CMS, Dibrugarh University	27-28 September 2019	Dibrugarh University
	First Annual Innovation Festival	MHRD Innovation Cell	11 September 2019	AICTE HQ, New Delhi
	National Symposium on Sustainable Waste Management - SWM 2019 ( <i>Paper Presenter</i> )	Department of Energy, Tezpur University	3 August 2019	Tezpur University
R. Das	Refresher Course on Teacher Education (Interdisciplinary) in collaboration with TLC, Tezpur University.	TLC & Department of Education, Tezpur University	06-20 September 2019	Tezpur University

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
Chandana Goswami	Workshop for engineering students	21 February 2020	GIMT, Tezpur
D. Das	10 days Research Methodology Workshop for Social Sciences	8 February 2020	Kalinga Institute of Social Science, Bhubaneswar
Prayash Baruah	Navdisha-Training and Development	12 February 2020	Tezpur University

	Programme for Indane LPG Distributors		
	Hands on Training on Preparation of Video Modules - Organised by TLC, Tezpur University	3 September 2019	Chaiduar College, Gohpur

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES

Title	Date/Period, year
Stress Management Workshop by Lokopriya Gopinath Bordoloi Regional Institute of Mental Health, Tezpur	25 October 2019
MS Excel Advanced by Power BI Fox	13-16 December 2019
Personality Development Workshop by Walch and People First Ltd (Dale Carnegie)	17-19 January 2020
Business Simulation Workshop by M/S Runu International	17-19 January 2020
Design Thinking Workshop by Tinker Labs Design Solutions Private Limited	1-2 February 2020
I Connect Workshop by Mr. Tanmoy Patgiri, Talent Acquisition Analyst, Thomson Reuters	12 February 2020
A Training and Development Programme for the LPG distributors of Indian OIL Corporation Ltd. by School of Management Sciences, Tezpur University	12-13 February 2020
Investors Awareness Programme by the Institute of India, Guwahati	13 February 2020
India on Challenges in Community Conservation Models by WWF India Resource Persons	06 March 2020

### DISTINGUISHED VISITORS

Mr. Amar Keshari, Manager-Sales HDFC Mutual Fund  
 CS Amitava Banerjee, CS, NFCG  
 Ambassador Dilip Sinha  
 CS Harsh Baid  
 Dr. Kamal Narayan Kalita, Associate Professor, Psychiatry, LGBRIMH  
 CS Pravin Kumar Chhajer, Former Chairman of NE Chapter of EIRO of ICSI  
 Mr. Satyam Sarma, Co-founder, All Pro Auto Consultants

**OTHER IMPORTANT ACTIVITIES**

- Department organized a National Seminar on Issues in Emergence of Farmer Producer Companies in India on 4 April 2019.
- Maintenance and renovation of the Bhumuraguri Rock Inscription by the students of MTTM in association with the District Administration and local people.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

NET-LS: 01

**NOTABLE PLACEMENTS**

<b>Name</b>	<b>Designation</b>	<b>Organization</b>
Usham Sushant Singha	Assistant Manager	SBI Life
Ajija Arin	Assistant Manager	SBI Life
Aritra Kundu	Business Analyst	SBI Life
Parthadeep Sharma	Business Analyst	SBI Life
Preethwjit Biswas	Territory Sales Manger	Amul
Dipshikha Mahanta	Territory Sales Manger	Amul
Tuheen Poran Das	-	Bandhan Bank
Devangana Bora	Management Trainee	DHL
Alok Kumar Das	Management Trainee	RBL Finservice
Sushweta Kar	Management Trainee	TCS
Anupa Kanungoe	Management Trainee	TCS
Nayan Jyoti Kalita	Management Trainee	TCS
Prakhyat Sarmah	Sales Officer	Berger Paints
Kapil Pratim Das	Sales Officer	Asian Paints/ Kent System
Tanushree Sarkar	Senior Relationship Manager	Bajaj Allianz
Sweety Balmiki	Senior Relationship Manager	Bajaj Allianz
Indrani Deka	Hr Manager	Kotak Life
Ria Mazumdar	Relationship Manager	Uti Mutual Fund
Nazmeen Ahmed	Relationship Manager	Uti Mutual Fund
Sujata Gogoi	Management Trainee	Buyerforesight
Santosh Rawat	-	Oil India Limited
Nomita Gogoi	Management Trainee	Accord Management
Priyashree Dutta	Executive Trainee	Experience Destination
Lakhyajyoti Borah	F & B Service	Greenwood, Tezpur
ManashChamuah	F & B Service	Greenwood, Tezpur
Arup Jyoti Saikia	Travel Assistant	My Voyage Tours And Travels
Monisha Chetia	Executive Trainee	Ramoji Film City
Mayurima Bora	Travel Executive	Siang Explorer
Subham Paul	Executive Trainee	SOTC

## **THE FACULTY MEMBERS AND STAFF**

### **Professors**

Chandana Goswami, PhD (Gauhati University) FDP (IIMA)

*Specializations/Areas of interest:* Financial Management, General Management

Email: cg1@tezu.ernet.in

Chandan Goswami, PhD (Tezpur University)

*Specialization/Areas of interest:* Marketing Management

Email: chand@tezu.ernet.in

Debabrata Das, PhD (RGU), AIII (Mumbai)

*Specializations/Areas of interest:* Financial Management

Email: ddas09@tezu.ernet.in

Mrinmoy Kumar Sarma, PhD (Tezpur University)

*Specializations/Areas of interest:* Marketing, Tourism Management

Email: mrinmoy@tezu.ernet.in

Papori Baruah, PhD (Tezpur University)

*Specialization/Areas of interest:* Human Resource Management

Email: papori@tezu.ernet.in

Subhrangshu Sekhar Sarkar, PhD (Tezpur University)

*Specializations/Areas of interest:* Financial Management, Accounting & Taxation

Email: subh@tezu.ernet.in

### **Associate Professors**

Anjan Bhuyan, PhD (Tezpur University)

*Specialization/Areas of interest:* Managerial Economics, Entrepreneurship Development

Email: anjanb@tezu.ernet.in

Arup Roy, PhD (Tezpur University)

*Specialization/Areas of interest:* Financial Management

Email: arup@tezu.ernet.in

Tridib Ranjan Sarma, PhD (Tezpur University)

*Specialization/Areas of interest:* System Management and Operation Management

Email: tridib@tezu.ernet.in

### **Assistant Professors**

Heera Barpujary, PhD (Tezpur University)

*Specialization/Areas of interest:* System Management and Knowledge Management

Email: heera@tezu.ernet.in

Kakali Mahanta, PhD (Dibrugarh University)

*Specialization/Areas of interest:* Marketing, Human Resource Management

Email: kakali@tezu.ernet.in

Mridul Dutta, PhD (Gauhati University)

*Specialization/Areas of interest:* Tourism

Email: mridul@tezu.ernet.in

Prayash Baruah, MBA (SIU, Pune)

*Specialization/Areas of interest:* Supply Chain management, Logistics, Transportation

Email: prayashb@tezu.ernet.in

Runumi Das, PhD (Gauhati University)

*Specialization/Areas of interest:* Marketing Management

Email: runumi@tezu.ernet.in

**Adjunct Faculty**

Amlan Bora MBA (AIT)

Trade and Investment Commissioner, NBSO.

*Specialization/Areas of interest:* Brand Management

**Guest Faculty**

Niranjan Das, PhD (NEHU)

*Specialization/Areas of interest:* Tourism, Community Livelihood

Email: niranjandas@tezu.ernet.in

**Visiting Fellow**

B. K. Das, PhD (Gauhati)

Former MD, Numaligarh Refinery Ltd.

*Specialization/Areas of interest:* Human Resource

**Technical staff**

Tarun Jyoti Borah, M. Phil. (NOU)

Senior Technical Assistant

Email: taruntu@tezu.ernet.in

Kushal Roy, DETC (AEI)

Technical Assistant

Email: kushal@tezu.ernet.in

**Office Staff**

Brindabon Borah, M. Com (Gauhati University)

UDC

Email: brind@tezu.ernet.in

Suren Kumar Borah

MTS

## DEPARTMENT OF COMMERCE

### THE DEPARTMENT

The Department of Commerce is the second department established under the School of Management Sciences. With a vision to emerge as a Centre of excellence by exploring new frontiers in knowledge, research and innovation in commerce education; it came into existence in the year 2014 with a 5 year Integrated M. Com Programme. The Curricula for the Integrated M. Com programme is aligned to professional courses like CA, CS and CMA. The courses are designed in a way to make the students capable of pursuing their career in manifold directions including teaching and research. In addition to its regular faculty members, the Department has been getting assistance in teaching from the faculty members of Department of Business Administration, Department of English and Foreign languages, etc.

### Academic Programmes and Student intake

Programme	Intake
Integrated M. Com	30
M. Com (Lateral Entry)	Variable, 12 in the 2019-20

### Major Facilities and Equipment Available

- Interactive Pen Display.
- Electronic Podium with Microphone and Speaker.
- Student Response system.

### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators
Forensic Accounting Education in India: Prospects and Problems	ICSSR-IMPRESS	10,00,000/- plus overhead charges @ 5% or maximum of 10,000/- whichever is less for the study including publication.	2 years	R. K. Tiwari

### PUBLICATIONS

#### Journal Publications

Ghose B. & Kabra K. C. Does Growth affect Firms' Leverage Adjustment Speed? A Study of Indian Firms. *Business Perspectives and Research*. 8(2). 2020.

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES**

<b>Title</b>	<b>Date/Period, year</b>
Career orientation programme in association with the NE Chapter of EIRC of the Institute of Company Secretaries of India	26 April 2019

**DISTINGUISHED VISITORS**

CS Amitava Banerjee, Consultant, National Foundation for Corporate Governance, New Delhi  
 Mr. Anjan Chowdhury, Soft Skills Trainer, Guwahati  
 Dr. Gautam Dutta, Professor, Indian Institute of Foreign Trade, Kolkata  
 Dr. Joydeep Baruah, Associate Professor, Omeo Kumar Das Institute of Social Change and Development, Guwahati  
 CS Kushal Bharat Bagadia, Guwahati  
 Dr. Parimal Kumar Sen, Goenka College of Commerce and Business Administration  
 Prof. Sujit Sikidar, Retired Professoor, Guwahati University

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

NET: 08

**THE FACULTY MEMBERS AND STAFF****Professor**

S. S. Sarkar, PhD (Tezpur University)  
 Specialization/Areas of Interest: Accounting and Taxation  
 Email: subh@tezu.ernet.in

**Associate Professors**

S. G. Maji, PhD (Burdwan University)  
 Specialization/Areas of Interest: Finance and Accounting.  
 Email: sgmaji@tezu.ernet.in.

S. Rameshkumar, PhD (Madurai Kamaraj University)  
 Specialization/Areas of Interest : Banking and Finance  
 Email: sramesh@tezu.ernet.in

**Assistant Professors**

Biswajit Ghose, PhD (North-Eastern Hill University)  
 Specialization/Areas of Interest: Accounting and Finance  
 Email: bghose@tezu.ernet.in

D. J. Bharadwaz, M. Com (Dibrugarh University)  
 Specialization/Areas of Interest: Accounting, Micro Finance and Risk Management  
 Email: bharadj@tezu.ernet.in

Farah Hussain, PhD (Dibrugarh University)  
*Specialization/Areas of Interest:* Economics and Mathematical Economics  
Email: farah@tezu.ernet.in

M. Kumar, M. Com (Delhi University)  
*Specialization/Areas of Interest:* Corporate Finance and Accounting  
Email: manish@tezu.ernet.in

Reshma Tiwari, PhD (Gauhati University)  
*Specialization/Areas of Interest:* Accounting, Financial Inclusion, Microfinance  
Email: reshma@tezu.ernet.in

**Visiting Faculty**

A. Banerjee, CS  
*Specialization/Areas of Interest:* Corporate Governance & Company Act.

A. Chowdhury  
*Specialization/Areas of Interest:* Soft Skills Trainer and Career Counseling

G. Dutta, PhD  
*Specialization/Areas of Interest:* International Business

J. Baruah, PhD  
*Specialization/Areas of Interest:* Regional Development, Poverty & Inequality, Quantitative Methods

P. K. Sen, PhD  
*Specialization/Areas of Interest:* Business Organization & Management

S. Sikidar, PhD  
*Specialization/Areas of Interest:* Accounting & Taxation

Shivani Tyagi, PhD  
*Specialization/Areas of Interest:* Human Resource Management and Marketing Management

**Office Staff**

B. Das, MA (Gauhati University)  
Upper Division Clerk  
Email: bhrigu@tezu.ernet.in

N Dutta  
MTS  
Email: nipend@tezu.ernet.in

## CENTRE FOR DISASTER MANAGEMENT

### THE CENTRE

Centre for Disaster Management was established in 1997 under the Central Sector Scheme of NDM Division, Ministry of Agriculture and Cooperation, Government of India. The scheme has subsequently been transferred to the Ministry of Home Affairs, Government of India during 2002. At present the Centre is functioning under Tezpur University. The main objectives of the Centre are to:

- Organise and conduct training programmes, conferences, and workshops on disaster management.
- Extend academic support to other organisations.
- Conduct regular / optional courses and research work on Disaster Management.

### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, year	Place/institute/venue
D. Nath	Training programme for in-service TGT of Kendriya Vidyalaya Sangathan	7 June 2019	Kendiya Vidyalaya, Tezpur University
D. Nath	Workshop on Preventive Conservation of Documentary Heritage	24 October 2019	Tezpur University

### OTHER IMPORTANT ACTIVITIES

#### COURSES / PROGRAMME CONDUCTED

- Open elective / skill enhancement course on Disaster Management for UG students.
- Open elective course on Disaster Management for PG students.
- Post Graduate Diploma in Environment and Disaster Management under CODL, Tezpur University, in association with the Department of Environmental Science.

#### Hands-on Training on Fire Safety Norms and Practices for the students of Tezpur University

Date	Department	No. of students nominated by the departments
18 November 2019	Commerce	31

18 November 2019	Chemical Sciences	49
20 November 2019	Hindi	42
21 November 2019	Cultural Studies	38
6 February 2020	Business Administration	66
17 February 2020	Sociology	60
20 February 2020	Physics	55
24 February 2020	Environmental Science	38
27 February 2020	Food Engineering and Technology	48
5 March 2020	Mathematical Sciences	39

## **THE FACULTY MEMBERS AND STAFF**

### **Assistant Professor**

Dipak Nath, PhD (Gauhati University)

Specialization/Areas of Interest: Nuclear Physics & Cosmic Radiation / Disaster Risk Assessment

Email: dipak@tezu.ernet.in

### **Office Staff**

Bhriagu Das

Email: bhrigu@tezu.ernet.in

## INTELLECTUAL PROPERTY RIGHTS CELL

### THE CELL

On its 11<sup>th</sup> year of establishment this year, the Intellectual Property Cell continued its legacy of celebrating Intellectual Property across various domain. The array of IP activities in this year started with the celebration of Intellectual Property Day on April 26 in the University Campus that centered around the theme “Reach for Gold: IP and Sports”. Later in the year, the Cell worked for safeguarding IP at local level by reaching out to the grassroot innovators and the craftsmen of Assam engaged in Muga Cultivation and weaving through its 3<sup>rd</sup> Geographical Indications Camp. This programme not only focused on getting and using GI, but also on setting up of strong entrepreneurial ventures through various schemes offered by Government. The teaching-learning activities during last part of the year were shifted to online mode due to onset of COVID-19 pandemic across the country.

### Academic programmes and Student intake

Programme	Intake
CBCT Course in IPR	28

### PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD

Inventor(s)	Patent /Application Number	Title of the Patent	National/International
Poonam Mishra and Kumudhini Akasapu	202031000071	An improved iron fortification technique for fortification of rice using cold plasma	National Patent Application
Nayan M. Kakoty, Lakhyajit Gohain	201931049269	An EMG based Prosthetic Hand Controller for Real Time Grasping realizing Neuromuscular Constraint	National Patent Application
Tarun Kumar Sharma, Anjali Anand, Robin Doley	201911027455	Aptamers against phospholipase A2 in snake Venom and uses thereof	National Patent Application
Arup Jyoti Choudhury, Gazi Ameen Ahmed, Namita Ojah	201931020800	Polymer/antibiotic coated Muga (antheraea assamensis) silk suture	National Patent Application
Pritam Deb and Meenakshi Talukdar	201931014698	Two dimensional heterostructure based composite films for food packaging	National Patent Application
Patha Pratim Sahu	201931020800	An optical fiber prototype instrument for online monitoring of transformer oil insulation	National Patent Application
Niranjan Karak and Bibekananda De	312661	A tough synthetic low dielectric hyperbranched epoxy thermoset and a process of preparation thereof.	Granted Indian Patent

Pradyumna Choudhury	Kr.	325837	Digital Occupancy Meter for Commercial Passenger Vehicles	Granted Indian Patent
---------------------	-----	--------	---	-----------------------

### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
Prof. P. Deb	One day Awareness Programme on IPR	3 March 2020	MSME-DI, Guwahati
Dr. Juri B. Saikia	One day Awareness Programme on IPR	3 March 2020	MSME-DI, Guwahati
Prof. P. Deb	Intellectual Property Rights Awareness Programme	20 February 2020	Nagaon College
Dr. Juri B. Saikia	Intellectual Property Rights Awareness Programme	20 February 2020	Nagaon College
Prof. P. Deb	A daylong workshop on Intellectual Property Rights	10 August 2019	Beltola College, Guwahati
Dr. Juri B. Saikia	A daylong workshop on Intellectual Property Rights	10 August 2019	Beltola College, Guwahati

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, year
Workshop on Effective use of Geographical Indication and Trademark in the market for handloom industry at Harhi College, Gobindapur, Lakhimpur, Assam	24 October 2019
Colloquium on Intellectual Property Day at Tezpur University, Assam	26 April 2019

### THE FACULTY MEMBERS AND STAFF

#### Coordinator

P Deb, PhD (Jadavpur)

*Specialization/Areas of Interest:* IPRs, Patents and Trade Secrets

E-mail: coordinator\_tuipr@tezu.ernet.in

#### Research Officer

Juri Borbora Saikia, PhD (Tezpur)

*Specialization/Areas of Interest:* IPRs, Patents, Industrial Design and GI

E-mail: juriipr@tezu.ernet.in

#### Office Staff

Dip Chandra Baniya

MTS

E-mail: dip@tezu.ernet.in



# **School of Sciences**

**Dean's Report**

**Department of Chemical Sciences**

**Department of Environmental Science**

**Department of Mathematical Sciences**

**Department of Molecular Biology and Biotechnology**

**Department of Physics**

**Advanced Institutional Level Biotech Hub**



## **SCHOOL OF SCIENCES**

The School of Sciences has five departments; Chemical Sciences, Environmental Sciences, Mathematical Sciences, Molecular Biology and Biotechnology, and Physics, offering a total of 12 programmes, apart from the Ph.D. programmes. Each department offers discipline specific M.Sc. and Ph.D. programmes. All the departments, except Environmental Science offer Integrated M. Sc. programmes with an intake of 20 students each. In addition, the Integrated B. Sc. B. Ed. Programmes, with an intake of 10 students per department is offered by Chemical Sciences, Mathematical Sciences and Physics. The departments of the School also support the required teaching and laboratory programmes of the B. Tech. programmes in the seven disciplines offered by the School of Engineering.

Each department regularly organizes conferences/workshops and outreach programmes. The total intake of students in all 12 non-Ph. D. programmes of the School is 471.

There are 75 members of faculty that include 31 Professors, 10 Associate Professors and 34 Assistant Professors working in the five departments of the School. In addition, Prof. M. Lakshmi Kantam, Professor at ICT, Mumbai is an Adjunct Professor in the Department of Chemical Sciences.

The members of the faculty of the School are engaged in cutting-edge research in their respective areas. They have made several significant contributions in academic and research activities during 2019-2020.

The faculty members of the School have secured projects funded from agencies like DST, DBT, Deity, DRDO, BRNS, SERB, CSIR and UGC. All five departments in the School are DST-FIST and UGC-SAP supported. The faculty members of the five departments of the School have published more than 200 research papers in peer-reviewed international and national journals during 2019-2020.

Alumni of the school are well placed in various academic institutions and industries, mainly in India. The number of students that have qualified for NET, GATE and SLET, from the School of Sciences, continues to remain encouraging.

At the School of Sciences, we believe, in what the Nobel Laureate, Richard Feynman said “Students should be made to think like scientists, be open minded, curious, and especially to doubt” and thus inculcate a true scientific temper.

### **PERSONNEL OF THE OFFICE OF THE DEAN Dean, School of Sciences**

Ramesh Ch. Deka, Ph.D. (NCL, Pune)  
Professor, Department of Chemical Sciences

#### **Office Staff**

Mahendra Das  
MTS

## DEPARTMENT OF CHEMICAL SCIENCES

### THE DEPARTMENT

Department of Chemical Sciences was established in the year 1997, with the prime objective of creating manpower in different areas of Chemical Sciences. Initially the Department offered M.Sc. programme in Polymer Science which was converted to M.Sc. in Applied Chemistry in 2006 to 2009. In 2009, the Department started five years Integrated M.Sc. in Chemistry programme and in 2010 the Department again started M.Sc. in Chemical Sciences which was later renamed as M.Sc. in Chemistry. From 2011, autumn session, the Department had started M. Tech. in Polymer Science & Technology and Integrated B.Sc. B.Ed. in Chemistry. The Department has also been running a Ph.D. programme covering several important areas of research in Chemical Sciences including interdisciplinary areas.

### Academic Programmes and Student intake

SL No	Programme Name	Intake
1	M.Sc. in Chemistry	20
2	Integrated M.Sc. in Chemistry	20
3	Ph.D. in Chemical Sciences	Variable, 25 in 2019 - 20
4	Integrated B.Sc. B.Ed. in Chemistry	10
5	M.Tech. in Polymer Science & Technology	10

### Major Facilities and Equipment Available

- 400 MHz NMR spectrophotometer, Jeol
- Thermal Analyzer, Shimadzu, (FIST Funded)
- CHN Analyzer, Perkin Elmer (FIST Funded)
- FTIR spectrophotometer, PerkinElmer
- Automated Compression Press, S5 Type, Santac
- Polarizing Microscope, Olympus,
- UV-Visible Spectrophotometer, Shimadzu,
- Universal Testing Machine, 10 KN Zwick
- Rheometer, Bohlin Instruments
- High performance computational facilities
- Digital Polarimeter
- Millipore Water Purification System
- Tabletop Magnetometer
- Single Screw Laboratory Extruder
- Cyclic Voltmeter
- Cyclic Voltmeter with Rotating Disk Electrode
- Atomic Absorption Spectroscopy

## MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings
A. J. Thakur	<ul style="list-style-type: none"> <li>• Hypervalent chemistry has been exploited in the synthesis of bioactive heterocycles. E.g. Cu-catalysed arylation of both <math>N^1</math>, <math>N^3</math> - atoms in hydantoins has been achieved by diaryliodonium salts under mild condition</li> <li>• 'On-water' synthesis of 2,2-bis(indolyl)indoline-3-ones via N2-selective dearomatization of '(N-H) protection-free' indole derivatives is developed. An oxidative homo trimerization of indole via nano Au/Pd catalysis with oxone as additive was successfully demonstrated for the first time. In situ generation of isatin at room temperature and with water as solvent are key features.</li> </ul>
A. K. Phukan	<ul style="list-style-type: none"> <li>• Designed and studied the ligand properties of a variety of metal-N-heterocyclic carbenes as well as carbene stabilized boron (I) bases. Also, designed a highly stable N-heterocyclic borylene.</li> </ul>
B. C. Sarma	<ul style="list-style-type: none"> <li>• Developed a methodology to crystallized drug molecules on functionalized surface in a pre-designed orientation</li> <li>• Reported cocrystals technology as a remedy for fickle drugs by manipulating supramolecular synthons</li> <li>• Demonstrated reasons for cocrystal polymorphs formation and how they are different by drug bioavailability</li> </ul>
K. K. Bania	<ul style="list-style-type: none"> <li>• Synthesis of cinnamaldehyde by two different catalytic systems, i.e. Pd-Au nanoalloy supported on zeolite-Y and cobalt-chrome (<math>\text{CoCr}_2\text{O}_4</math>) supported on halloysite nanotube</li> <li>• Invented new synthetic procedure for the synthesis of silver cyanide by direct cyanidation of silver sulfide by heterolytic C-CN bond cleavage of acetonitrile</li> <li>• Synthesis of Pd-NiO-Y/CNT catalytic system for efficient methanol oxidation</li> <li>• Successful hydrogen evolution <i>via</i> electrocatalytic water splitting by using gold vanadium catalyst</li> </ul>
N. Gogoi	<ul style="list-style-type: none"> <li>• Developed a series of heterometallic aggregates by rational assembly of magnetically anisotropic 3d building blocks with cyanometallate based linkers. The magnetic properties of these heterometallic aggregates have been investigated by using both static as well as dynamic magnetization studies to reveal their key magnetic features.</li> </ul>

N. Karak	<ul style="list-style-type: none"> <li>• Polyurethane/carbon-nitride-dot nanocomposites as robust anti-counterfeiting materials</li> <li>• Interpenetrating-polymer-networks of polyurethane and polystyrene nanocomposites with hydrophobic, self-healing, self-cleaning and antimicrobial properties</li> <li>• Waterborne polyester nanocomposite with self-cleaning, anti-reflecting, anti-icing and oil-water separating attributes</li> <li>• Bio-based epoxy nanocomposites for anticorrosion coating materials, etc.</li> </ul>
N. S. Islam	<ul style="list-style-type: none"> <li>• Developed a series of heterogeneous and homogeneous catalysts based on polymer immobilized compounds of V, Mo, Nb, and Ta which efficiently catalyzed selective oxidation of variety of organic substrates under eco-compatible reaction condition.</li> <li>• Synthesis and structural characterization of Bis- and mixed-ligand copper (II) complexes of nalidixic acid, the antibacterial drug, and investigation on their cytotoxicity, DNA binding and cleavage activities</li> </ul>
P. Bharali	<ul style="list-style-type: none"> <li>• Various PdCuM/C (M = Fe, Ni, Co) with different Pd/Cu/M compositions have been synthesized, characterized and evaluated for cathodic oxygen reduction reaction and anodic formic oxidation reaction.</li> <li>• MO<sub>x</sub>/CeO<sub>2</sub>/C (MO<sub>x</sub> = Co<sub>3</sub>O<sub>4</sub>, Mn<sub>3</sub>O<sub>4</sub>, CuO) with different composition and morphologies have been synthesized, characterized and evaluated for oxygen electrocatalysis.</li> </ul>
P. Puzari	<ul style="list-style-type: none"> <li>• A novel and cheap electrochemical method for studying the ionic liquid cytotoxicity has been developed.</li> <li>• A method for label free (impedometric) detection of pesticide has been developed through covalent immobilization of acetylcholinesterase on a hybrid bilayer of 11-mercapto undecanoic acid SAM and chitosan. The method has the detection range from 10-350 ppb.</li> </ul>
R. Borah	<ul style="list-style-type: none"> <li>• Development of imidazolium and ammonium based functionalized ionic liquid materials and study their physical properties including density, solvatochromic parameter, Bronsted acidity, conductivity.</li> <li>• Investigation of electrochemical stability of acidic ionic liquids</li> <li>• Preparation of hybrid composite of halometallates with zeolite support for development as heterogeneous acidic</li> </ul>

	<p>catalyst</p> <ul style="list-style-type: none"> <li>• Synthesis and characterization ionic liquid based polyoxometallates as heterogeneous catalyst.</li> </ul>
R. K. Dutta	<ul style="list-style-type: none"> <li>• Upscaling of the Arsiron Nilogon and Fluoride Nilogon methods developed in our laboratory for removal of arsenic and fluoride from contaminated drinking water is being done.</li> <li>• Another work has been carried out on study of preparation, characterization and restoration of manuscript folios and study and application of traditional paintings of early Assam.</li> </ul>
S. K. Das	<ul style="list-style-type: none"> <li>• Synthesized a series of 11-aryl-11<i>H</i>-indeno[1',2':4,5]imidazo[1,2-<i>a</i>]pyridines AlCl<sub>3</sub>-promoted, dehydrative cyclization of the corresponding aryl(2-arylimidazo[1,2-<i>a</i>]imidazole-3-yl)methanols in moderate to good yields.</li> <li>• Developed a base-mediated dinucleophilic cyclization of readily accessible 2,3-epoxy tosylates with 2-mercaptobenzimidazole for the one-pot diastereoselective synthesis of benzimidazole-based tricyclic compounds equipped with two stereogenic centres.</li> <li>• Explored the synthesis of hitherto unknown 1,4-benzoxazine-fused benzothiazepine-1,1-dioxides by a NaH-promoted intramolecular one-pot double-cyclization of epoxide-tethered 2-fluorobenzene sulfonamides.</li> <li>• Synthesized a small library of Brazilin-like compounds.</li> <li>• Developed a new stereo- and regioselective method for oxazolidinones.</li> </ul>
S. K. Dolui	<ul style="list-style-type: none"> <li>• Development of bio-based Non-Isocyanate Polyurethanes (NIPUs) by utilizing sunflower oil, soybean oil, glycerol, tannic acid and CO<sub>2</sub> and make them appropriate for practical applications like coatings, paints, adhesive etc. In this regard, efforts have been made to enhance the properties of these NIPUs by blending and reinforcing various nanofillers.</li> <li>• Synthesis of polymeric hydrogels and their nanocomposites based on several natural monomers. and its further applications in the area of drug release, shape memory and self-healing. pH-responsive swelling behavior is modulated incorporating different fillers (LDH, MMT clay) inside the hydrogel followed by the investigation of the effect of different parameters on the same. Biocompatibility, cytotoxicity and biodegradability of the prepared hydrogels have been studied. With the change in the pH media, the</li> </ul>

	<p>drug release behaviour was evaluated. Mechanical properties of the hydrogels were reported with the change in the precursor content. The shape memory of the hydrogels was also studied in different solutions followed by evaluation of self-healing.</p> <ul style="list-style-type: none"> <li>• Development of novel self-healing polymers both through extrinsic methods involving the encapsulation of healing agents in microcapsules and through intrinsic methods utilizing the formation of reversible chemical networks and supramolecular crosslinks. In this regard, efforts have been devoted to prepare linear as well as functional brush-like graft, star polymers and polymer composites with carbon based materials such as graphene oxide and MWCNTs via Atom Transfer Radical Polymerization (ATRP). The synthesized polymers and polymer nanocomposites show improved self-healing efficiency with multiple healing cycles.</li> </ul>
S. P. Mahanta	<ul style="list-style-type: none"> <li>• Developed a metal assisted strategy for the colorimetric sensing of fluoride in aqueous medium.</li> <li>• Developed a hydrogen bonded polymer towards the vapour phase sensing of nitrophenol derivatives.</li> </ul>
T. K. Maji	<ul style="list-style-type: none"> <li>• Green composites using rosin acid derivative and animal fibres were prepared. The product showed significant improvement in various properties. Further work is in progress.</li> <li>• Composites were prepared using PVC, rice husk ash and graphene oxide and their various properties were analysed.</li> <li>• Curcumin - HP<math>\beta</math>CD complexes were prepared by different methods and the modified drug was characterized using different techniques.</li> <li>• Biological study such as cytotoxicity, antibacterial, antifungal of the complexes was also carried out. Further work is in progress to further check their efficacy.</li> <li>• Preparation and characterization of modified curcumin loaded chitosan-carageenan nanoparticles was carried out.</li> </ul>
U. Bora	<ul style="list-style-type: none"> <li>• Direct site-specific C-2 and C-3 functionalization of indole moiety</li> <li>• methodology development C-C and C-N bond formation reactions</li> <li>• Development of nitromethane as "CN" surrogate</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

<b>Project Title</b>	<b>Funding Agency</b>	<b>Amount (in INR)</b>	<b>Duration</b>	<b>Principal Investigator</b>
Application and Development of "NOSE" approach with special reference to Carbon-Carbon and Carbon-Heteroatom bond formation reactions	CSIR	₹ 20.00 Lakhs	3 Years (2017-2020)	A. J. Thakur
Chemistry of Monovalent Group 13 and Divalent Group 14 Bases: A Theoretical Study	DST-SERB	₹ 43.77 Lakhs	3 Years (2017-2020)	A. K. Phukan
Computational Design of Functional and Structural Mimics of the Active Site of [FeFe]-Hydrogenase	CSIR	₹ 5.40 Lakhs	3 Years (2017-2020)	A. K. Phukan
Synthesis, Reactivity and Bonding in Metal and Metal-free Borylenes	DST-DAAD	₹ 13.68 Lakhs	2 Years (2019-2021)	A. K. Phukan
Multicomponent crystal technology to improve drug pharmacokinetic attributes	CSIR	₹ 29.76 Lakhs	3 Years (2017-2020)	B. C. Sarma
Crystallization of Drugs Templated by Mimetic Organogels and Functional surface	DST-SERB	₹ 29.64 Lakhs	3 Years (2020-2023)	B. C. Sarma
Design of Ship in a Bottle Complexes and Zeolite-Y Supported Nanocatalyst for C-Cl Bond Activation and C-C Coupling Reactions.	DST-SERB	₹ 32.50 Lakhs	3 Years (2020-2023)	K. K. Bania
Development of water-borne hyperbranched polyesters and polyurethanes from bio-based resources and their nanocomposites	CSIR	₹ 25.56 Lakhs	3 Years (2017-2020)	N. Karak
Development of polymer supported Nb and Ta based catalysts for organic oxidation under ecologically sustainable reaction condition	SERB	₹ 45.17 Lakhs	3 Years (2017-2020)	N. S. Islam
Electrochemical study of enzyme embedded supported bilayer lipid membrane for development of a sensor for organophosphate and organocarbamate pesticides	SERB	₹ 64.97 Lakhs	3 Years (2017-2020)	P. Puzari
Identification of efficient semi-conductor dopant combination for selective chemiadsorption of tea	NTRF	₹ 34.50 Lakhs	4 Years (2016-	P. Puzari

pesticides on metal oxide semiconductor (MOS) sensors.			2020)	
Directed functionalization of oxide and carbon nanomaterials for the development of efficient catalysts for carbon dioxide conversion into value-added products.	DST (under DST-RFBR program)	₹ 21.84 Lakhs	2 Years (2019-2021)	P. Bharali
Synthesis and characterization of task-specific ionic liquid systems for one pot synthesis of pyrimidine derivatives	CSIR	₹ 20.00 Lakhs	3 Years (2017-2020)	R. Borah
Synthesis, characterization and investigation of physicochemical properties of specific ionic liquid (IL) based systems for evaluation of electrochemical and photocatalytic activities	SERB	₹ 44.35 Lakhs	3 Years (2017-2020)	R. Borah
Theoretical investigation of methane oxidation catalyzed by metal nanoclusters supported on zeolites	SERB-DST	₹ 47.00 Lakhs	3 Years (2018-2021)	R. C. Deka
Decentralized water treatment for removal of arsenic, fluoride and mercury from drinking water	DST	₹1.05 Crores	3 Years (2017-2020)	R. K. Dutta
Proposal for collaboration with UNICEF to support PHED in Water Quality Lab Strengthening in 10 selected districts of Assam	UNICEF	₹ 12.00 Lakhs	2 Years (2019-2020)	R. K. Dutta
Functionalized graphene-based nanocomposites for direct methanol fuel cell	CSIR	₹ 20.00 Lakhs	3 Years (2017-2020)	S. K. Dolui
Design and Synthesis of Hybrid Molecules for Multi-Drug-Resistant Tuberculosis	DBT	₹ 32.40 Lakhs	3 Years (2018 – 2021)	S. K. Das
UGC-BSR Mid-Career Award	UGC	₹ 10.00 Lakhs	2 Years (2020-2021)	S. K. Dolui
Development of a Cu(II) mediated strategy for the sensing of fluoride anion in aqueous medium	CSIR	₹ 20.00	3 Years (2019-2022)	S. P. Mahanta
Asymmetric Total Synthesis of Marine Natural Products Ammonificins A-D and Their Analogs	CSIR	₹ 23.60 Lakhs	3 Years (2017-2020)	S. K. Das

Stereoselective Synthesis of Spirocyclic Indolines	DST-SERB	₹ 45.70 Lakhs	3 Years (2019 – 2022)	S. K. Das
Site specific Functionalization of Nitrogen Based heterocyclic moieties via C-H activation	SERB	₹ 48.70 Lakhs	3 Years (2017-2020)	U. Bora
Green and sustainable catalysts based on zeolites for oxidative transformation reactions	DST (Under Indo-Bulgaria collaborative programme)	₹ 11.80 Lakhs	2 Years (2019-2020)	U. Bora

## PUBLICATIONS

### Journal Publications

- Ahmed K., Saikia G., Paul S., Baruah S. D., Talukdar H., Sharma M. & Islam N. S. Water-soluble polymer anchored peroxotitanates as environmentally clean and recyclable catalysts for mild and selective oxidation of sulfides with H<sub>2</sub>O<sub>2</sub> in water. *Tetrahedron*. 75(44). 2019.
- Basumatary G., Dhar E. D., Das D., Deka R. C., Yadav A. K. & Bez G. Coumarin-based trisubstituted methanes as potent anthelmintic: Synthesis, molecular docking and in Vitro efficacy. *Journal of Chemical Sciences*. 132(1). 2020.
- Basumatary G., Mohanta R., Baruah S. D., Deka R. C. & Bez G. First aminocatalytic synthesis of bis(Indolyl)methanes and DFT studies on the reaction pathway. *Catalysis Letters*. 150(1). 2020.
- Bayan R. & Karak N. Bio-based hyperbranched polymer-supported oxygeneous graphitic-carbon nitride dot as heterogeneous metal-free solar light photocatalyst for oxidation and reduction reactions. *Applied Surface Science*. 514. 2020.
- Bayan R. & Karak N. Photoluminescent oxygeneous-graphitic carbon nitride nanodot-incorporated bioderived hyperbranched polyurethane nanocomposite with anticounterfeiting attribute. *ACS Omega*. 4(5). 2019.
- Bharadwaz P. & Phukan A. K. Introducing N-Heterocyclic Borylenes: Theoretical prediction of stable, neutral, monomeric Boron(I) Carbenoids. *Inorganic chemistry*. 58(9). 2019.
- Bhattacharjee P. & Bora U. Molecular iodine-catalyzed selective C-3 benzylation of indoles with benzylic alcohols: A greener approach toward benzylated indoles. *ACS Omega*. 4(7). 2019.
- Bhattacharyya B., Biswas J. P., Mishra S. & Gogoi N. Rapid Suzuki-Miyaura cross-coupling reaction catalyzed by zirconium carboxyphosphonate supported mixed valent Pd(0)/Pd(II) catalyst. *Applied Organometallic Chemistry*. 33(8). 2019.
- Bhattacharyya M. K., Gogoi A., Chetry S., Dutta D., Verma A. K., Sarma B., Franconetti A. & Frontera A. Antiproliferative evaluation and supramolecular association in Mn (II) and Zn

- (II) bipyridine complexes: Combined experimental and theoretical studies. *Journal of Inorganic Biochemistry*. 200. 2019.
10. Biswakarma N., Sarma P. J., Baruah S. D., Gour N. K. & Deka R. C. Catalytic oxidation of NO on [Au-M]- (M = Pd and Pt) bimetallic dimers: An insight from density functional theory approach. *The Journal of Physical Chemistry C*. 124(5). 2020.
  11. Bora A., Mohan K. & Dolui S. K. Carbon dots as co-sensitizers in dye sensitized solar cell and fluorescence chemosensor for 2, 4, 6-trinitrophenol detection. *Industrial & Engineering Chemistry Research*. 58(51). 2019.
  12. Bora A. J. & Dutta R. K. Removal of heavy metals- Pb, Cd, Cu, Cr, Ni and Co from drinking water by oxidation-coagulation-absorption at optimized pH. *Journal Water Process Engineering*. 31. 2019.
  13. Borah B. J., Saikia H., Goswami. C., Hazarika K. K., Yamada Y. & Bharali P. Unique half embedded/exposed PdFeCu/C interfacial nanoalloy as high performance electrocatalyst for oxygen reduction reaction. *ChemCatChem*, 11(15). 2019.
  14. Borgohain H. & Das S. K. Synthesis of 11-aryl-11H-indeno [1',2':4,5] imidazo[1,2-a] pyridines via dehydrative cyclization of aryl(2-arylimidazo[1,2-a] pyridin-3-yl)methanols. *Tetrahedron Letters*. 60(31). 2019.
  15. Borthakur B. & Phukan A. K. A Computational study of carbene ligand stabilization of biomimetic models of the rotated Hred State of [FeFe]-Hydrogenase. *European Journal of Inorganic Chemistry*. 2019(17). 2019.
  16. Borthakur B. & Phukan A. K. Can carbene decorated [FeFe]-Hydrogenase model complexes catalytically produce dihydrogen? An insight from theory. *Dalton Transactions*. 48(30). 2019.
  17. Borthakur S., Baruah S., Sarma B. & Gogoi S. Pd (II)-Catalyzed synthesis of alkylidene phthalides via a decarbonylative annulation reaction. *Organic letters*. 21(8). 2019.
  18. Borthakur S., Sarma B. & Gogoi S. Ruthenium (II)-catalyzed oxidative double C-H activation and annulation reaction: Synthesis of indolo [2,1-a] isoquinolines. *Organic letters*. 21(19). 2019.
  19. Boruah K. & Borah R. Design of water stable 1,3-dialkyl-2-methyl imidazolium basic ionic liquids as reusable homogeneous catalysts for aza-Michael reaction in neat condition. *ChemistrySelect*. 4(12). 2019.
  20. Das A. J., Borgohain H., Sarma B. & Das S. K. Switching of regioselectivity in base-mediated diastereoselective annulation of 2, 3-epoxy tosylates and their N-tosylaziridine analogs with 2-mercaptobenzimidazole. *Organic & Biomolecular Chemistry*. 18(3). 2020.
  21. Das B., Baruah M. J., Sharma M., Sarma B., Karunakar G. V., Satyanarayana L., Roy S., Bhattacharyya P. K., Borah K. K. & Bania K. K. Self pH Regulated Iron (II) catalyst for radical free oxidation of benzyl alcohols. *Applied Catalysis A: General*. 589. 2020.
  22. Das B., Saikia P., Sharma M., Baruah M. J., Roy S. & Bania K. K. Direct cyanidation of silver sulfide by heterolytic C-CN bond cleavage of acetonitrile, *RSC Advances*. 10(14). 2020.
  23. Das B., Sharma M., Baruah M. J., Borah K. K. & Bania K. K. Synthesis of silver cyanide without poisonous KCN or NaCN. *Inorganica Chimica Acta*. 498. 2019.
  24. Das B., Sharma M., Hazarika A. & Bania K. K. Self-assembled monolayer stabilized Gold-Vanadate nanoflute for water splitting reactions. *ChemistrySelect*. 4(24). 2019.

25. Das J., Borah B. J., & Das S. K. Base-mediated intramolecular one-pot double-cyclization of epoxide-tethered 2-fluorobenzenesulfonamides: an avenue to 1, 4-benzoxazine-fused benzothiazepine-1, 1-dioxides, *Organic & Biomolecular Chemistry*. 18(2). 2020.
26. Das R., Sarma P. J., Borborah A., Bharati S. P. & Mahanta S. P. Revisiting the fluoride binding behaviour of dipyrrolylquinoxaline in aqueous medium: a copper ion mediated approach. *New Journal of Chemistry*. 43(8). 2019.
27. Das S., Dutta T. & Borah R. Comparative study of the physical and electrochemical behavior of direct N-SO<sub>3</sub>H functionalized 1,3-disulfo-2-alkyl-imidazolium trifluoroacetate ionic liquids in molecular solvents. *Journal of Molecular Liquids*. 289. 2019.
28. Das S., Porashar B., Saikia S. & Borah R. Brønsted acidic ionic liquids catalysed sequential Michael-like addition of indole with chalcones *via* Claisen-Schmidt condensation. *ChemistrySelect*. 5(10). 2020.
29. Das S. K., Laskar K., Konwar D., Sahoo A., Saikia B. K. & Bora U. Repurposing fallen leaves to bio-based reaction medium for hydration, hydroxylation, carbon-carbon and carbon-nitrogen bond formation reactions. *Sustainable Chemistry and Pharmacy*. 15. 2020.
30. Deka P., Borah B. J., Saikia H. & Bharali P. Cu-based nanoparticles as emerging environmental catalysts. *The Chemical Record*. 19. 2019.
31. Deka R. C., Deka A., Deka P., Saikia S., Baruah J. & Sarma P. J. Recent advances in nanoarchitectonics of SnO<sub>2</sub> Clusters and their applications in catalysis. *Journal of Nanoscience and Nanotechnology*. 20(8). 2020.
32. Dey M., Mudoi P. P., Choudhury A., Sarma B. & Gogoi N. Deciphering the influence of structural distortions on the uniaxial magnetic anisotropy of pentagonal bipyramidal Ni(II) complexes. *Chemical Communications*. 55(77). 2019.
33. Duarah R. & Karak N. Hyperbranched polyurethane/palladium-reduced carbon dot nanocomposite: An efficient and reusable mesoporous catalyst for Visible-light-driven C-C coupling reactions. *Industrial & Engineering Chemistry Research*. 58(36). 2019.
34. Dutta M., Bania K. K. & Pratihar S. Remote imidazole based Ruthenium (II) para-cymene pre-catalyst for selective oxidation reaction of alkyl arenes and alcohols. *Chemistry-An Asian Journal*. 15(6). 2020.
35. Dutta N. & Maji T. K. Valorization of waste rice husk by preparing nanocomposite with polyvinyl chloride and montmorillonite clay. *Journal of Thermoplastic Composite Materials*. 2019.
36. Dutta N. & Maji T. K. Synergic effect of montmorillonite and microcrystalline cellulose on the physicochemical properties of rice husk/PVC composite. *SN Applied Sciences*. 2(3). 2020.
37. Gebreslassie G., Bharali P., Chandra U., Sergawie A., Baruah P. K., Das M. R. & Alemayehu E. Hydrothermal synthesis of g-C<sub>3</sub>N<sub>4</sub>/graphene/NiFe<sub>2</sub>O<sub>4</sub> nanocomposite and its enhanced photocatalytic activity. *Applied Organometallic Chemistry*. 33. 2019.
38. Ghosh T., Bardhan P., Mandal M. & Karak N. Interpenetrating polymer network-based nanocomposites reinforced with octadecylamine capped Cu/reduced graphene oxide nanohybrid with hydrophobic, antimicrobial and antistatic attributes. *Materials Science and Engineering: C*. 105. 2019.

39. Ghosh T. & Karak N. Cashew nut shell liquid terminated self-healable polyurethane as an effective anticorrosive coating with biodegradable attribute. *Progress in Organic Coatings*. 139. 2020.
40. Ghosh T. & Karak N. Multi-walled carbon nanotubes reinforced interpenetrating polymer network with ultrafast self-healing and anti-icing attributes. *Journal of colloid and interface science*. 540. 2019.
41. Gogoi G., Mandal M. & Maji T. K. Study of properties of modified soybean oil based composite reinforced with chicken feather. *Fibers and Polymers*. 20(5). 2019.
42. Gogoi P., Kanna N., Begum P., Deka R. C., Satyanarayana C. V. V. & Raja, T. Controlling and stabilization of Ru nanoparticles by tuning the nitrogen content of the support for enhanced H<sub>2</sub> production through aqueous-phase reforming of glycerol. *ACS Catalysis*. 10 (4). 2019.
43. Gogoi S., Kalita S., Hazarika R. & Puzari P. Preparation of an integrated porous substrate of 11-mercaptoundecanoic acid and chitosan on gold for electrochemical study of pores and pore forming interactions in lipid bilayers. *Electrochimica Acta*. 329. 2020.
44. Gogoi S. R., Talukdar H. & Islam N. S. Peroxo complexes of niobium(V) as potent inhibitors of acid phosphatase and calcineurin enzyme activities. *Journal of the Indian Chemical Society*. 96(10). 2019 (*Invited paper, Chemist Convention special issue*).
45. Gohain M., Laskar K., Paul A. K., Daimary N., Maharana M., Goswami I. K., Hazarika K., Bora U. & Deka D. Carica papaya stem: A source of versatile heterogeneous catalyst for biodiesel production and C–C bond formation. *Renewable Energy*. 147, 2020.
46. Gohain M., Laskar K., Phukon H., Bora U., Kalita D. & Deka D. Towards sustainable biodiesel and chemical production: Multifunctional use of heterogeneous catalyst from littered *Tectona grandis* leaves. *Waste Management*. 102. 2020.
47. Gohain S. B., Basumatary M., Boruah P. K., Das M. R. & Thakur A. J. Nano Au/Pd-catalysed “on-Water” synthesis of C3-C3’ diaryl-oxindole scaffolds: Via N2-selective dearomatization of indole. *Green Chemistry*. 22(1). 2020.
48. Gomosta S., Saha K., Kaur U., Pathak K., Roisnel T., Phukan A. K. & Ghosh S. Hydroboration of alkynes:  $\eta^4$ -Alkene–Borane versus  $\eta^4$ -*E*-Boratabutadiene. *Inorganic chemistry*. 58(15). 2019.
49. Gour N. K., Borthakur K., Paul S. & Deka R. C. Tropospheric degradation of 2-fluoropropene (CH<sub>3</sub>CFCH<sub>2</sub>) initiated by hydroxyl radical: Reaction mechanisms, kinetics and atmospheric implications from DFT study. *Chemosphere*. 238. 2020.
50. Gour N. K., Deka R. C. & Paul S. Atmospheric oxidation of 2-fluoropropene (CH<sub>3</sub>CFCH<sub>2</sub>) with Cl atom and aerial degradation of its product radicals by computational study. *New Journal of Chemistry*. 44(8). 2020.
51. Handique J., Gogoi J., Nath J. & Dolui S. K. Synthesis of self-healing bio-based tannic acid-based methacrylates by thermoreversible Diels–Alder reaction. *Polymer Engineering & Science*. 60(1). 2020.
52. Handique J., Gogoi J. & Dolui S. K. Development of self-healing star metallopolymers by metal–ligand crosslinking. *Journal of Applied Polymer Science*. 137(14). 2020.
53. Handique J., Saikia B. J. & Dolui S. K. Designing microencapsulation based self-healing methylmethacrylate-glycidyl methacrylate copolymer. *Polymer Science, Series A*. 61(5). 2019.

54. Handique J. & Dolui S. K. A Thermally remendable multiwalled carbon nanotube/epoxy composites via Diels-Alder bonding. *Journal of Polymer Research*. 26(7). 2019.
55. Hazarika D. & Karak N. Nanocomposite of waterborne hyperbranched polyester and clay@ carbon dot as a robust photocatalyst for environmental remediation. *Applied Surface Science*. 498. 2019.
56. Hazarika K. K., Talukdar H., Sudarsanam P., Bhargava S. K. & Bharali P. Highly dispersed  $Mn_2O_3-Co_3O_4$  nanostructures on carbon matrix as heterogeneous Fenton-like catalyst. *Applied Organometallic Chemistry*. 34(4). 2020.
57. Khatun B., Baishya P., Ramteke A. & Maji T. K. Study of complexation of structurally modified curcumin with hydroxypropyl- $\beta$ -cyclodextrin and its effect on anti-cancer activity. *New journal of Chemistry*. 44(12). 2020.
58. Laskar K., Bhattacharjee P., Gohain M., Deka D. & Bora U. Application of bio-based green heterogeneous catalyst for the synthesis of arylidinemalononitrile. *Sustainable Chemistry and Pharmacy*. 14. 2019.
59. Laskar K., Paul S. & Bora U. Cellulose as recyclable organocatalyst for ipso-hydroxylation of arylboronic acids. *Tetrahedron Letters*. 60(38). 2019.
60. Lenczyk C., Roy D. K., Ghosh B., Schwarzmann J., Phukan A. K. & Braunschweig H. First Bis( $\sigma$ )-borane complexes of Group 6 transition metals: Experimental and theoretical studies. *Chemistry–A European Journal*. 25(36). 2019.
61. Mahanta G., Sarma N. K., Borah P. J., Raul R. K., Deka R. C., Thakur A. J. & Bora U. A convenient room temperature ipso-nitration of arylboronic acid catalyzed by molecular iodine using zirconium oxynitrate as nitrating species: An experimental and theoretical investigation. *Applied Organometallic Chemistry*. 33(8). 2019.
62. Mandal M., Bardhan P., Mandal M. & Maji T. K. Study of UV stability, biodegradability and physical properties of rosin derivative cross-linked wood polymer composites. *International Wood Products Journal*. 11(1). 2020.
63. Mandal M., Begum P., Deka R. C. & Maji T. K. Wood flour thermoset composites using chemically modified epoxidized soybean oil. *European journal of Wood and Wood Products*. 77(4). 2019.
64. Mandal M., Halim Z. & Maji T. K. Mechanical, moisture absorption, biodegradation and physical properties of nanoclay-reinforced wood/plant oil composites. *SN Applied Sciences*. 2(2). 2020.
65. Mandal M. & Maji T. K. Preparation, physical properties and ultraviolet resistance of wood nanocomposites based on modified soybean oil and bentonite. *Wood Material Science & Engineering*. 14(6). 2019.
66. Matus E. V., Shlyakhtina A. S., Sukhova O. B., Ismagilov I. Z., Ushakov V. A., Yashnik S. A., Nikitin A. K., Bharali P., Kerzhentsev M. A. & Ismagilov Z. R. Effect of preparation methods on the physicochemical and functional properties of Ni/CeO<sub>2</sub> catalysts. *Kinetics and Catalysis*. 60. 2019.
67. Mohan K., Bora A., Roy R., Nath B. C. & Dolui S. K. Polyaniline nanotube/reduced graphene oxide aerogel as efficient counter electrode for quasi solid-state dye sensitized solar cell. *Solar Energy*. 186. 2019.

68. Mohan R., Bora A. J. & Dutta R. K. Continuous fixed-bed column assessment for defluoridation and arsenic removal from water by oxidation-coagulation treatment using different oxidizing agents. *Journal of Water Chemistry and Technology*. 2020.
69. Mohan R. & Dutta R. K. Continuous fixed-bed column assessment for defluoridation of water using Hap-coated-limestone. *Journal of Environmental Chemical Engineering*. 8(4). 2020.
70. Nath J., Saikia P., Handique J., Gupta K. & Dolui S. K. Multifunctional mussel-inspired gelatin and tannic acid-based hydrogel with pH-controllable release of Vitamin B12. *Journal of Applied Polymer Science*. 2020.
71. Paul S., Mishra B. K., Baruah S. D., Deka R. C. & Gour N. K. Atmospheric Oxidation of HFE-7300 [n-C<sub>2</sub>F<sub>5</sub>CF(OCH<sub>3</sub>)CF(CF<sub>3</sub>)<sub>2</sub>] Initiated by •OH/Cl oxidants and subsequent degradation of its product radical: A DFT approach. *Environmental Science and Pollution Research*. 27(1). 2020.
72. Rohman S. S., Ghosh B. & Phukan A. K. In search of stable singlet Metalla-N-Heterocyclic Carbenes (MNHCS): A contribution from theory. *Dalton Transactions*. 48(31). 2019.
73. Rohman S. S., Sarmah B., Borthakur B., Remya G. S., Suresh C. H. & Phukan A. K. Extending the library of Boron bases: A contribution from theory. *Organometallics*. 38(14). 2019.
74. Saha U., Dutta D., Bauzá A., Frontera A., Sarma B. & Bhattacharyya M. K. Werner type clathrates involving guest benzoic acid and benzoate in discrete Mn (II) hosts: Experimental and theoretical studies. *Polyhedron*. 159. 2019.
75. Saikia A., Debbarma N. & Karak N. Renewable resource based hyperbranched epoxy thermosetting nanocomposite with cellulose nanofiber as a sustainable material. *Cellulose*. 26(8). 2019.
76. Saikia A., Sarmah D., Kumar A. & Karak N. Bio-based epoxy/polyaniline nanofiber-carbon dot nanocomposites as advanced anticorrosive materials. *Journal of Applied Polymer Science*. 136(27). 2019.
77. Saikia A. & Karak N. Cellulose nanofiber-polyaniline nanofiber-carbon dot nanohybrid and its nanocomposite with sorbitol based hyperbranched epoxy: Physical, thermal, biological and sensing properties. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. 584. 2020.
78. Saikia A. & Karak N. Fabrication of renewable resource based hyperbranched epoxy nanocomposites with MWCNT-polyaniline nanofiber-carbon dot nanohybrid as tough anticorrosive materials. *Express Polymer Letters*. 13(11). 2019.
79. Saikia B., Sultana N., Kaushik T. & Sarma B. Engineering a remedy to improve phase stability of famotidine under physiological pH environments. *Crystal Growth & Design*. 19(11). 2019.
80. Saikia G., Ahmed K., Gogoi S. R., Sharma M., Talukdar H. & Islam N. S. A chitosan supported peroxidovanadium(V) complex: Synthesis, characterization and application as an eco-compatible heterogeneous catalyst for selective sulfoxidation in water. *Polyhedron*. 159. 2019.
81. Saikia G., Ahmed K., Rajkhowa C., Sharma M., Talukdar H. & Islam N. S. Polymer immobilized tantalum(V)-amino acid complexes as selective and recyclable heterogeneous catalysts for oxidation of olefins and sulfides with aqueous H<sub>2</sub>O<sub>2</sub>. *New Journal of Chemistry*. 43(44). 2019.

82. Saikia S., Baruah S. D., Deka R. C., Thakur A. J. & Bora U. An insight into nitromethane as an organic nitrile alternative source towards the synthesis of aryl nitriles. *European Journal of Organic Chemistry*. 2019(36). 2019.
83. Saikia S., Puri K. & Borah R. Supported dual acidic 1,3-disulfoimidazolium chlorozincate@HZSM-5 as promising heterogeneous catalyst for synthesis of indole derivatives. *Applied Organometallic Chemistry*. 33(3). 2019.
84. Saikia S. & Borah R. 2-Methyl-1, 3-disulfoimidazolium polyoxometalate hybrid catalytic systems as equivalent safer alternatives to concentrated sulfuric acid in nitration of aromatic compounds. *Applied Organometallic Chemistry*. 33(10). 2019.
85. Saikia S. & Borah R. One-pot sequential synthesis of 2-amino-4, 6-diaryl pyrimidines involving SO<sub>3</sub>H-functionalized piperazinium-based dicationic ionic liquids as homogeneous catalysts. *ChemistrySelect*. 4(30). 2019.
86. Sarkar C., Nath J., Bhuyan S. & Dolui S. K. Multifunctional ternary nanocomposites of Ni/polypyrrole/reduced graphene oxide as supercapacitor and electrocatalyst in methanol oxidation. *ChemistrySelect*. 4(9). 2019.
87. Sarma B., Bora P. & Saikia B. Oriented crystallization on organic monolayers to control concomitant polymorphism. *Chemistry–A European Journal*. 26(3). 2019.
88. Sarmah D. & Karak N. Biodegradable superabsorbent hydrogel for water holding in soil and controlled-release fertilizer. *Journal of Applied Polymer Science*. 137(13). 2020.
89. Sarmah M., Neog A. B., Boruah P. K., Das M. R., Bharali P. & Bora U. Effect of substrates on catalytic activity of biogenic palladium nanoparticles in C–C cross-coupling reactions. *ACS Omega*. 4(2). 2019.
90. Sarmah M., Dewan A., Boruah P. K., Das M. R. & Bora U. Intercalation of copper salt to montmorillonite K-10 and its application as a reusable catalyst for Chan–Lam cross-coupling reaction. *Applied Organometallic Chemistry*. 34(4). 2020.
91. Sharma M., Das B., Baruah M. J., Bhattacharyya P. K., Saikia L. & Bania K. K. Pd–NiO–Y/CNT Nanofoam: A Zeolite–Carbon nanotube conjugate exhibiting high durability in methanol oxidation. *Chemical Communications*. 56(3). 2020.
92. Sharma M., Das B., Baruah M. J., Biswas S., Roy S., Hazarika A., Bhargava S. K. & Bania K. K. Pd–Au–Y as Efficient catalyst for C–C coupling reactions, benzylic C–H Bond activation, and oxidation of ethanol for synthesis of cinnamaldehydes. *ACS Catalysis*. 9(7). 2019.
93. Sharma M., Das B., Hazarika A., Guha A. K., Bhargava S. K. & Bania K. K. PdO/CuO nanoparticles on Zeolite-Y for nitroarene reduction and methanol oxidation. *ACS Applied Nano Materials*. 2(6). 2019.
94. Sharma M., Pandian M. G., Sanjeev A., Tamilarasan A., Mattaparthi V. S. K., Islam N. S. & Palaniandavar M. Bis-and mixed-ligand copper (II) complexes of nalidixic acid the antibacterial drug: mode of nalidixate coordination determines DNA binding and cleavage and cytotoxicity. *Inorganica Chimica Acta*. 504. 2020.
95. Singh S. P., Hussain I., Konwar B. K., Deka R. C. & Singh C. B. Design of potential IKK-binhbitors using molecular docking and molecular dynamics techniques for their anti-cancer potential. *Current Computer-aided Drug Design*. 2020.

## Book Chapters

1. B. J. Borah, M. Mondal & P. Bharali. Palladium-Based Hybrid Nanocatalysts: Application Towards Reduction Reactions. In S. Mohapatra, T. A. Nguyen & P. Nguyen-Tri (Eds.). Noble Metal-Metal Oxide Hybrid Nanoparticles. Woodhead Publishing, Cambridge, 2019.
2. C. Goswami, B. Chutia & P. Bharali. Metal and Metal Oxide-Based Nanomaterials for Electrochemical Applications. In S. Rajendran, M. Naushad, K. Raju & R. Boukherroub (Eds.). Emerging Nanostructured Materials for Energy and Environmental Science. Springer, Cham, Switzerland, 2019.
3. D. Bhattacharjee, B. K. Mishra, N. K. Gour & R. C. Deka. Troposphere degradation mechanism and kinetics of HFE-7000 ( $i\text{-C}_3\text{F}_7\text{OCH}_3$ ) and fate of  $i\text{-C}_3\text{H}_7\text{OCH}_2\text{O}\cdot$  radical: An insight from DFT study. In J. Baruah (Ed.). Air and Water Quality Assessment, Contamination and our Surroundings: Specific Analysis and Applications. Walnut Publication, Bhubaneswar, 2019.
4. N. Karak. Fundamentals of Sustainable Nanostructural Materials at Bio-Nano Interface. In N. Karak (Ed). Dynamics of Advanced Sustainable Nanomaterials and their Related Nanocomposites at the Bio-Nano Interface. Elsevier, UK, 2019.
5. N. Sultana, P. Bora & B. Sarma. Nanocarriers in drug delivery system: Eminence and confront. In P. Nguyen-Tri, T.O. Do & T.A. Nguyen (Eds.). Smart Nanocontainers. Elsevier Inc., UK, 2020.
6. P. Begum, P. Gogoi & R. C. Deka. Chemical reactivity of atomically precise clusters towards industrial development and environmental conservation, In J. Baruah (Ed.). Air and Water Quality Assessment, Contamination and our Surroundings: Specific Analysis and Applications. Walnut Publication, Bhubaneswar, 2019.
7. P. J. Sarma, D. Dowerah, N. Biswakarma & R. C. Deka. Global Minimum Structures of  $(\text{MnO})_n$  clusters,  $n= 1\text{-}10$  at DFT energy landscape, In J. Baruah (Ed.). Air and Water Quality Assessment, Contamination and our Surroundings: Specific Analysis and Applications. Walnut Publication, Bhubaneswar, 2019.
8. R. Bayan & N. Karak. Polymer nanocomposites based on two-dimensional nanomaterials. In R. Khan & S. Barua (Eds.). Two-Dimensional Nanostructures for Biomedical Technology. Elsevier, UK, 2020.

**PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD**

<b>Inventor</b>	<b>Patent</b>	<b>Patent number/Application Number</b>	<b>National /International</b>
C. Bezbaruah, P. Nath & R. K. Dutta	Removal of arsenic from groundwater by capsule technique	Application No. TENP/E-1/2425/2020-KOL, 18 January 2020	National
N. Karak & B. Dey	A tough synthetic low dielectric hyperbranched epoxy thermoset and a process for preparing thereof	Indian Patent, Patent No. 312661 on 13/05/2019/ Application No. 786/KOL/2013 of 28 June 2013.	National

**CONSULTANCY**

<b>Consultants</b>	<b>Title/Nature of the consultancy work</b>	<b>Client</b>	<b>Amount</b>
N. Karak	Guar gum (Starch) based multifaceted superabsorbent	Hindustan Gum & Chemicals Ltd., Bhiwani	₹ 3.0 Lakhs

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, Year</b>	<b>Place/Institute /Venue</b>
B. C. Sarma	Emerging Trends in Chemical Sciences (ETCS-2020)	Department of Chemistry	13-15 February 2020	Gauhati University
	16 <sup>th</sup> Conference of the Asian Crystallographic Association (AsCA)	NUS, Singapore	19 December 2019	NUS Singapore
K. K. Bania	National Conference on Green, Sustainable and Evolving Sciences (GSES-2019)	Cotton University, Guwahati	28-29 June 2019	Guwahati
N. Karak	International conference on Advances In Polymer Science and Rubber Technology	IIT Kharagpur, India	24-27 September 2019	Kharagpur
	International symposium	IIT Guwahati, India	23-25 August	Guwahati

	on Sustainable Polymers & Launch of SPSI-North East Chapter		2019	
N.S. Islam	56 <sup>th</sup> Annual Convention of Chemists & International Conference on Recent Trends in Chemical Sciences	Pt. Ravishankar Shukla University, Raipur	14-16 November 2019	Raipur
P. Puzari	Emerging Trends in Chemical Sciences (ETCS-2020)	Department of Chemistry	13-15 February 2020	Gauhati University
	5 <sup>th</sup> International Conference on Catalysis for Renewable Sources: Fuel, Energy, Chemicals CRS-5	Aristotle University of Thessaloniki in corporation with Boreskov Institute of Catalysis of the Siberian Branch of the Russian Academy of Sciences (Novosibirsk) and ILLIOS Company	2-6 September 2019	Agios Nikolaos, Crete, Greece
R. C. Deka	International Conference on Emerging Trends in Chemical Sciences (ETCS-2020)	Department of Chemistry, Gauhati University	13-15 February 2020	Guwahati
	International Conference on Nanospace Materials - Nanoarchitects in Nanospace Materials	The University of Queensland, St Lucia Campus, Australia,	1-4 October 2019	Australia
	Lecture Workshop on "Medicinal Chemistry and Natural Products: Approaches towards New Drug Discovery"	Rajiv Gandhi University, Itanagar, Arunachal Pradesh	25-27 September 2019	Arunachal Pradesh
	National Conference on Green, Sustainable and Evolving Sciences (GSES-2019)	Cotton University, Guwahati	28-29 June 2019	Guwahati
R. K. Dutta	National Symposium on Sustainable Waste Management	Department of Energy	3 August 2019	Tezpur University
	Attended national conference on "Provision of Safe Drinking Water in Arsenic and Fluoride affected areas"	Task Force for FHWT, Ministry of Jal Shakti	7 February 2020	New Delhi
S. K. Dolui	International Conference on Emerging Trends in	Department of Chemistry, Gauhati	13-15 February	Guwahati

	Chemical Sciences	University, India	2020	
S. P. Mahanta	Emerging Trends in Chemical Sciences (ETCS-2020)	Department of Chemistry, Gauhati University	13-15 February 2020	Guwahati
U. Bora	Deliver talk in "International Conference on Chemistry for Human Development (ICCHD-2020)"	Department of Chemistry, University of Kolkata and Professor Asima Chatterjee Foundation, Kolkata, and Heritage Institute of Technology	9-11 January 2020	Kolkata
	International Conference "Modern Trends in Molecular Magnetism"	Department of Chemistry, IISER Bhopal	27-30 November 2019	Bhopal
	International conference "Modern Trends in Inorganic Chemistry 2019"	Department of Chemistry, IIT Guwahati	11-14 December 2019	Guwahati

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
B.C. Sarma	16 <sup>th</sup> Conference of the Asian Crystallographic Association (AsCA)	19 December 2019	NUS, Singapore
	Lecture series on (i) Organic Retro-Synthesis, (ii) Supramolecular Chemistry and (iii) NMR Spectroscopy	7-9 March 2020	Sibasagar College, Assam
	Workshop on Emerging Electron Crystallography	12 <sup>th</sup> February 2020	CSIR-NCL Pune
	Modern Trends in Inorganic Chemistry-XVIII, IIT-Guwahati	11-14 December 2019	IIT Guwahati
	Lecture series on NMR Spectroscopy	9 November	Nowgong College,

		2019	Assam
	International Conference on Emerging Trends in Chemical Sciences, (ETCS-2020)"	13-15 February 2020	Gauhati University
	National Conference on Green, Sustainable and Evolving Sciences (GSES-2019) & 64 <sup>th</sup> Annual Technical Session of Assam Science Society	28-29 June 2019	Cotton University Guwahati
	Lecture Series on Science Education and Research	17 August 2019	Cotton University Guwahati
K. K. Bania	Lecture series on (i) EPR spectroscopy (ii) Bio-Inorganic Chemistry	20 March 2019	Sibsagar College, Assam
	Faculty Development Program on Physics, Chemistry and Mathematics	19-23 August 2019	Bineswar Brahma Engineering College, Kokrajhar
N. Gogoi	International Conference on Modern Trends in Molecular Magnetism	27-30 November 2019	IISER Bhopal
	International conference on Modern Trends in Inorganic Chemistry 2019	11-14 December 2019	IIT Guwahati
	Workshop on Role of Chemistry in Interdisciplinary Research	22-23 October 2019	Dibrugarh University
N. Karak	International Conference on Emerging Trends in Chemical Sciences (ETCS-2020)	13-15 February 2020	Gauhati University
	International conference on Advances in Polymer Science and Rubber Technology	24-27 September 2019	IIT Kharagpur
	International symposium on Sustainable Polymers & Launch of SPSI-North East Chapter	23-25 August 2019	IIT Guwahati
N. S. Islam	Endowment Award Lecture in 56th Annual Convention of Chemists & International Conference on Recent Trends in Chemical Sciences	14-16 November 2019	Pt. Ravishankar Shukla University, Raipur
	Modern Trends in Inorganic Chemistry (MTIC -XVIII) Symposium	11-14 December 2019	IIT Guwahati
P. Bharali	Lecture Series on Chemistry Education and Research	17 August 2019	Cotton University Guwahati
P. Puzari	National Seminar on Current Perspectives in Environmental Pollution: Challenges and	7-8 June 2019	Tezpur University

	Opportunities		
	National Symposium on Sustainable Waste Management (SWM2019)	3 August 2019	Tezpur University
	International conference on Emerging Trend in Chemical Science, ETCS 2020	13-15 February 2020	Gauhati University
	5 <sup>th</sup> International Conference on Catalysis for Renewable Sources: Fuel, Energy, Chemicals CRS-5	2-6 September 2020	Agios Nikolaos, Crete, Greece
R. K. Dutta	Orientation Programme of District Associate (Monitoring and Evaluation)	13 May 2019	WSSO, PHED Assam, Guwahati
	National conference on Provision of Safe Drinking Water in Arsenic and Fluoride affected areas	7 Feb 2020	Task Force for FHWT, Ministry of Jal Shakti, New Delhi
	State level program under NPPCF, Assam	7 February 2020	Bhabendralaya, Beltola, Guwahati,
	Workshop on Household Water Treatment and Storage (HWTS)	27-28 February 2020	National Institute of Rural Development & Panchayati Raj, Hyderabad,
	National Seminar on Science Technology and innovation	29 February 2020	Arya Vidyapeeth College, Assam
	Orientation programme	8 August 2019	Kaliabor Civil Sub-Division (PHED), Kaliabor
	Asom Mahotsav	27 January 2020	Jorhat, Assam
	Awariness Programme on Arsiron Nilogon	8 January 2020	Sonari, Assam,
	Awariness Programme on Arsiron Nilogon Technology	27 September 2019	Nalbari College, Nalbari
	Workshop on Preventive Conservation of Documentary Heritage	20-25 October 2019	Dept. of Cultural Studies, Tezpur University
	Awariness Programme on Arsiron Nilogon	27 January 2020	J. B. College, Jorhat Assam
	Training Programme on Arsiron Nilogon	3 October 2019	Buxar, Bihar
R.C. Deka	International Conference on Emerging Trends in Chemical	13-15 February 2020	Gauhati University

	Sciences (ETCS-2020)		
	National Conference on Progresses in Material Science Research (PMSR)	4-6 February 2020	Dibrugarh University, Dibrugarh
	International Conference on Nanospace Materials -Nanoarchitects in Nanospace Materials	1-4 October 2019	The University of Queensland, St Lucia Campus, Australia
	Science Academies Lecture Workshop	25-27 September 2019	Rajiv Gandhi University, Itanagar, Arunachal Pradesh
	National Conference on Green, Sustainable and Evolving Sciences (GSES-2019)	28-29 June 2019	Cotton University, Guwahati
S.K. Dolui	International Symposium on Sustainable Polymers	23-25 August 2019	IIT Guwahati
	lecture series on Material Sciences	20 November 2019	GMIT, Tezpur,
S.P. Mahanta	Emerging Trends in Chemical Sciences (ETCS-2020)	13-15 February 2020	Gauhati University
U. Bora	International Conference on Chemistry for Human Development (ICCHD-2020)	9-11 January 2020	University of Kolkata
	Recent Advances in Applied Sciences (RAAS'2019)	17-18 May 2019	Gauhati University

#### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES/TRAINING ORGANISED

Title	Duration
International symposium on Modern Trends in Inorganic Chemistry (MTIC-XVIII)	11-14 December 2019
One-week UGC-SAP workshop on Analytical Techniques in Chemical Sciences	20-25 January 2020
One-week UGC-SAP workshop on Hengul-Haital: A painting tradition of early Assam	16 -21 February 2020
One day UGC-SAP funded Lecture cum Practical Demonstration Workshop	3 February 2020
Lectures by retired Prof. B. Viswanathan, IIT, Madras on "Electrochemistry"	20 -25 January 2020
Delivered lecturers by Dr. V. G. Puranik, retired Scientist, NCL Pune, on "Crystallography"	22 -26 January 2020

Chemistry Olympiad Exposure Workshop for Teachers	10-14 November 2019
Lecture by Prof. P.S. Kalsi on "Stereochemistry and NMR spectroscopy"	11-13 February 2020
Lectures by three distinguished foreign visitors in the Department of Chemical Sciences. Prof. William Jones, Emeritus Professor of Material Chemistry, University of Cambridge Dr. Dejan-Kresimir Bucar, University College of London Dr. Mihails Arhangelskis, University of Warsaw	17-18 February 2020
Workshop on "Role of Colleges in Mitigation of Arsenic and Fluoride Problem in Assam: An UNICEF Assam Initiative, Tezpur University"	24 February 2020
Workshop on "Water Quality Testing & Training on Arsenic and fluoride Nilogon for Lab-personal of PHED Assam-An Initiative of UNICEF Assam, Tezpur University"	8 February 2020
Workshop on "Water Quality Testing for Lab-personnel of PHED Assam: An Initiative of UNICEF Assam, Tezpur University"	8 November 2019
Workshop on "Fluoride Nilogon"	7 December 2019
Workshop on "Arsenic Nilogon and Fluoride Nilogon"	27 July 2019
One day training programme on "Fluoride Nilogon"	13 September 2019
One day training programme on "Arsenic Nilogon"	31 December 2019
One day training programme on "Arsenic Nilogon"	6 May 2019
One day training programme on "Water Quality Testing & Arsenic Nilogon"	6 May 2019

**DISTINGUISHED VISITORS:**

- Prof. B. Viswanathan, Emeritus Professor, IIT Madras
- Dr. Dejan-Kresimir Bucar, University College of London
- Dr. Mihails Arhangelskis, University of Warsaw
- Prof. P.S. Kalsi, Retired Professor of Punjab Agriculture University
- Dr. V. G. Puranik, Retired Scientist, NCL Pune

- Prof. William Jones, Emeritus Professor of Material Chemistry, University of Cambridge,

## **AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS**

### **Faculty members and Staff**

- N. Karak : Selected as Associate Editor of "Journal of Renewable Materials"
- N. S. Islam: Received Indian Chemical Society: Prof. D. P. Chakraborty Commemoration Award.
- R.C. Deka: Selected as Council member of CRSI for the period of 2020-2023.
- S.K. Dolui : Received National Technology Innovation Award, 2019 by Dept. of Chemicals and Petrochemicals under Ministry of Chemicals and Fertilizers.

### **Research Scholar/Student**

- Abhishek Borborah received best poster award for the poster entitled Perylenetetracarboxylate-Guanidium based H-bonded nanostructures, solvent dependent morphology and nitrophenol detection in National Symposium on Recent Trends in Chemistry (RTC-19) organized by NEHU, Shillong, 29-30 October 2019
- Chiranjita Goswami received the best poster award in a National Conference on "Recent Advances in Applied Sciences" (RAAS'2019) on 17-18 May 2019 organized by the Department of Applied Sciences, Gauhati University.
- Niharika Kashyap won the Best poster award at ETCS-2020, an International Conference organized by Gauhati University on 13-15 February 2020.
- Niharika Kashyap won the 3<sup>rd</sup> Best poster award at National conference on Green, Sustainable and Evolving Sciences, Cotton University, Guwahati, Assam, 28-29 June 2019.
- Shivane Borpatra Gohain has been awarded Commonwealth Split-Site (Ph.D.) Scholarship 2019 for a period of 1-year (17.09.19 to 30.09.20).

## **OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT**

### **Ongoing Project Scheme of Department**

**UGC-SAP DRS-II project**, Amount sanction ₹ 150 lakhs; Duration 2015-2020

**DST-FIST project**; Amount sanction ₹ 259 lakhs; Duration 2018-2023

## Some salient information of the Department

### (i) Any innovation:

Prof. N. Karak research group find out synthetic approach for a low dielectric hyperbranched epoxy thermoset. An Indian Patent has been granted for such finding.

A new process for the synthesis of silver cyanide (AgCN) has been developed from the research group of Dr. Kusum K. Bania without use of poisonous potassium or sodium cyanide.

### (ii) Outreach programme organized / attended

One week workshop on "Hengul-Haital: A painting tradition of early Assam" at Boralimora Satra and Tezpur University, Tezpur during 16-21 February at Boralimora Satra, Tezpur where 28 participants from various places of Assam were trained in Hengul-Haital painting traditional of early Assam while restoring 23 pieces of waring out woodcarving with Hengul-Haital to bring back their original look. The workshop was jointly sponsored by The Department of Chemical Sciences, TU with funding from UGC SAP DRS-II and Tezpur University as an outreach programme.

### (iii) Contribution to the Society

The outreaching work through removal of toxic arsenic and fluoride from water is continued in affected areas in Assam and some other states. The following achievements during the period may be noted:

- A piloting of Fluoride Nilogon, a method of fluoride removal from drinking water in Chhattisgarh and Odisha has been successfully completed in collaboration with Water Aid India and two local NGOs during 4 Oct 2019 – 3 Jan 2020 in collaboration with TU. The programme included installation of 39 household and 1 small community (School) Fluoride Nilogon filters. All filters are working well, the users are happy and WaterAid is planning to implement the technology in large scale in several stated in India.
- The Fluoride Nilogon technology has been being implemented in Karbi Anglong in large scale by Art of Living, an NGO, with Government Funding and in collaboration with TU. Already over 1500 household and some small community Fluoride Nilogon filters have been installed.
- Implementation of Arsiron Nilogon, a method of removal of arsenic from drinking water developed at TU, has been started in Buxar district, Bihar in October 2019 with initiative from the district administration as a part of Swastha Bharat Mission in collaboration with TU.
- Arsiron Nilogon and Fluoride Nilogon have been included in Module for training to school teachers during 2019-2020 by Assam Sarba Shiksha Abhiyan Mission for implementing in schools in Assam.
- Helping PHED Assam in strengthening its water quality testing through an initiative of UNICEF Assam.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET/ CSIR-SRF/OBC-NF**

NET: 13

SLET: 10

GATE: 21

CSIR-SRF: 04

ONC-NF: 06

**NOTABLE PLACEMENTS**

<b>Name</b>	<b>Designation</b>	<b>Organization</b>
Nibedita Sarkar	Chemical and Metallurgical Assistant	North East Frontier Railways
Preetima Changmai	Chemical Operator	Brahmaputra Valley Fertilizer Corporation Limited, Namrup
Dipjyoti Das	Chemist	Montex Glass Fibre Industries Pvt. Ltd., Nasik, Maharashtra
Riya Saha	Lecturer	Assam Engineering Institute, Guwahati, Assam
Sahid Mostak Ahmed	Apprentice	IOCL Guwahati
Biplap Sarkar	Apprentice	IOCL Bongaigaon
Raju Chauhan	Chemist	Berger Paints India Limited
Mridul Bhowmick	Chemist	Berger Paints India Limited
Dr. Pankaj Gogoi,	Assistant Professor	Sipajhar College
Dr. Himadri Saikia,	Assistant Professor	North Guwahati College
Dr. Debajyoti Bhattacharyee	Assistant Professor	Majuli College
Dr. Pinky Gogoi	Assistant Professor	Darrang College
Dr. Abhijit Mahanta	Assistant Professor	Digboi College
Dr. Vijay Kumar Das	Assistant Professor	Banaras Hindu University
Dr. Pakiza Begum,	Assistant Professor	Gorgaon College
Dr. Champak Dutta	Assistant Professor	Bahona College
Dr. Mrinal Saskia	Assistant Professor	Dergaon College
Dr. Moon Mandal	Assistant Professor	Pandit Dindayal Upadhyay Mahavidyalay, Dalgaoon
Dr. Madhurya Borah	Assistant Professor	Barnagar College
Sameeran Kumar Das	Assistant Professor	M.C. College, Barpeta
Durlav Pegu	UDC	Tezpur University

**THE FACULTY OF THE DEPARTMENT****Professors**

Swapan K. Dolui, Ph.D. (IIT Kharagpur)

*Specialization/Areas of interest:* Polymer Chemistry

E-mail: dolui@tezu.ernet.in

Nashreen S. Islam, Ph.D. (North Eastern Hill University)  
*Specialization/Areas of interest:* Inorganic Chemistry  
E-mail: nsi@tezu.ernet.in

Tarun K. Maji, Ph.D. (University of Calcutta)  
*Specialization/Areas of interest:* Polymer Chemistry  
E-mail: tkm@tezu.ernet.in

Robin K. Dutta, Ph.D. (North Eastern Hill University)  
*Specialization/Areas of interest:* Physical Chemistry  
Email: robind@tezu.ernet.in

Niranjan Karak, Ph.D. (IIT Kharagpur)  
*Specialization/Areas of interest:* Advance Polymers and Nanomaterials  
E-mail: nkarak@tezu.ernet.in

Ramesh C. Deka, Ph.D. (NCL, Pune)  
*Specialization/Areas of interest:* Theoretical Chemistry  
E-mail: ramesh@tezu.ernet.in

Ashim J. Thakur, Ph.D. (NEIST, Jorhat)  
*Specialization/Areas of interest:* Organic Chemistry  
E-mail: ashim@tezu.ernet.in

Ashwini K. Phukan, Ph.D. (Hyderabad University)  
*Specialization/Areas of interest:* Inorganic Chemistry  
E-mail: ashwini@tezu.ernet.in

Ruli Borah, Ph.D. (NEIST, Jorhat)  
Head, Department of Chemical Sciences  
*Specialization/Areas of interest:* Organic Chemistry  
E-mail: ruli@tezu.ernet.in

#### **Associate Professors**

Panchanan Puzari, Ph.D. (IIT Guwahati)  
*Specialization/Areas of interest:* Physical Chemistry  
E-mail: pancha@tezu.ernet.in

Utpal Bora, Ph.D. (NEIST, Jorhat)  
*Specialization/Areas of interest:* Organic Chemistry  
E-mail: ubora@tezu.ernet.in

#### **Assistant Professors**

Kusum K. Bania, Ph.D. (Tezpur University)  
*Specialization/Areas of interest:* Inorganic Chemistry  
E-mail: kusum@tezu.ernet.in

Pankaj Bharali, Ph.D. (IICT, University of Hyderabad)  
*Specialization/Areas of interest:* Inorganic Chemistry & Catalysis  
E-mail: pankajb@tezu.ernet.in

Nayanmoni Gogoi, Ph.D. (IIT Bombay)  
*Specialization/Areas of interest:* Inorganic Chemistry  
E-mail: ngogoi@tezu.ernet.in

Bipul C. Sarma, Ph.D. (University of Hyderabad)  
*Specialization/Areas of interest:* Organic Chemistry  
E-mail: bcsarma@tezu.ernet.in

Sajal K. Das, Ph.D. (CDRI, Lucknow)  
*Specialization/Areas of interest:* Synthetic Organic Chemistry  
E-mail: sajalkd@tezu.ernet.in

Sanjeev P. Mahanta, Ph.D. (University of Hyderabad)  
*Specialization/Areas of interest:* Physical Chemistry  
E-mail: samahan@tezu.ernet.in

#### **Adjunct Professor**

M. Lakshmi Kantam, Ph.D. (Kurukshetra University)  
*Specialization/Areas of interest:* Inorganic  
Email: mlakshmi@iict.res.in

#### **Guest Faculty**

Gauranga Chakraborty, Ph.D. (University of Hyderabad)  
*Specialization:* Bio-organic/bio-inorganic chemistry  
Email : gaurango16@gmail.com

Jayanta K. Nath, Ph.D.(IIT Guwahati)  
*Specialization:* Inorganic/Supramolecular chemistry  
Email: jayantn@tezu.ernet.in

#### **Technical staff**

Biren Gohain, Ph.D. (Tezpur University)  
Technical Officer  
E-mail: bng@tezu.ernet.in

Biraj J. Borah, Ph.D. (Tezpur University)  
Senior Technical Assistant  
E-mail: biraj@tezu.ernet.in

Raju K. Borah, Ph.D. (Tezpur University)  
Technical Assistant  
E-mail: raju@tezu.ernet.in

Nipu Dutta, M.Sc. (Annamalai University)  
Technical Assistant  
E-mail: nipu@tezu.ernet.in

Sankur Phukan, M.Sc. (Vinayaka University)  
Technical Assistant

E-mail: sankur@tezu.ernet.in

Manuranjan Sarma, M.Sc. (Madurai Kamaraj University)  
Laboratory Assistant  
E-mail: mranjan@tezu.ernet.in

Biplob Ozah, M.Sc. (IGNOU)  
Laboratory Assistant  
E-mail: bipozah@tezu.ernet.in

**Office Staff**

Babita Das, M.Sc. (SMU)  
Upper divisional Clerk  
bobi@tezu.ernet.in

Khogen Ch. Das  
MTS

## DEPARTMENT OF ENVIRONMENTAL SCIENCE

### THE DEPARTMENT

Initially established as a Centre for Environmental Science in 2003, the Centre was converted to the Department of Environmental Science in 2004, with the objective of imparting education on regional and global environmental issues. The curriculum for the M. Sc. Programme focuses on all important aspects of Environmental Science covering contemporary problems of natural resource conservation and environmental quality. Areas of research includes, Atmospheric processes, Environmental pollution, Greenhouse gas emission, Riverine hazards, Hydrogeochemistry, Geomorphology, Vulnerability & adaption, Natural hazards, Climate change and its impacts on agroecosystem and forest ecosystem, Plant-insect interactions, Nanotechnology in environmental research, Waste management, Vermicomposting, Pollution remediation, Ecosystem dynamics, Biodiversity conservation and Atmospheric system modeling.

The Department is a recipient of grant under UGCSAP and DST-FIST.

### Academic Programmes and Student intake

Programme	Intake
M.Sc.	33
Ph.D.	Variable, 04 in 2019-20

### Major Facilities and Equipment Available

- Inductively Coupled Plasma Mass spectrophotometer (ICP-MS)
- Carbon Hydrogen Nitrogen and Sulphur Analyzer (CHNS)
- High-performance liquid chromatography (HPLC)
- Ion Chromatography (IC)
- Fluorescence Microscope with Camera and Software
- Microwave Digestion system
- Portable Photosynthesis Systems
- Gas Chromatograph
- TOC Analyzer
- Continuous Air Pollution Monitoring Station
- UV-Visible Spectrophotometer
- Ion meter
- Repairable dust sampler with gaseous sampling attachment
- Gas Chromatograph with ECD and FID detector

**MAJOR RESEARCH AND DEVELOPMENT FINDINGS**

Principal Investigator	Salient Research Findings
S. S. Bhattacharya	<ul style="list-style-type: none"> <li>Isolated one-metallothionein metal binding protein of - 150 kDa molecular weight in earthworm (<i>Eisenia Fetida</i>).</li> <li>Toxic Brick-kiln coal ash was sanitized into nutrient manure through vermitechnology. The outcome of this research has been covered by 'Current Science' in 'Science in Last Fortnight' column under 'News' Section</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
Spatial Distribution of Uranium and associated water quality parameters in six districts of Assam (Golaghat, Karbi Anglong, Udalguri, Darrang, Dhemaji, Dibrugarh and Tinsukia)	Dept. of Atomic Energy	₹24.56 Lakhs	3 Years (2017-2020)	A. Prakash & S. Handique	
Exploration of Biodiversity and conservation issues of Talley Valley Wildlife sanctuary, Arunachal Pradesh with reference to wildlife species distribution along climate and topographical gradients	MoEF& CC	₹ 38.96 Lakhs	3 Years (2016-2019)	A. Devi & A. Kumar	NERIST, Itanagar, Arunachal Pradesh
Climate Change Impacts and Adaptation for a Climate Resilient North East India	DST	₹6.35 Crores	5 Years (2020-2024)	A. Devi, D. C. Baruah, R. R. Hoque, A. K. Das, N. Gogoi, S. Handique & A. Prakash	
Ecohydrological assessment of eutrophicated	DST-SERB	₹26.21 Lakhs	3 Years (2019-2022)	N. Gogoi	

water bodies- monitoring algal blooms (algal toxins, water quality and developing techniques to reduce eutrophication					
Strengthening Education, research and innovation for climate smart crops in India	Erasmus capacity building in higher education	₹88.9 Lakhs	3 Years (2019-2022)	N. Gogoi, D. C. Baruah & E. Kalita	AAU, Jorhat; India; University of Agricultural Science, Dharwad-India; University of Milan, Italy; University of Athens,Greece
Soil plant atmosphere study in relation to net CO2 flux from terrestrial ecosystem of Assam	Ministry of Earth Science, Govt of India	₹1.02 Crores	9 Years (2013-2022)	N. Gogoi	Indian Institute of Tropical Meterology, Pune
Assessment of indoor air quality in different indoor environments and prevalence of sick building syndrome	UGC	₹10.0 Lakhs	2 Years (2019-2021)	P. Deka	
Earthworm Gut Microbes Mediated Carcinogenic Polycyclic Aromatic Hydrocarbon Remediation in Contaminated Soil	DBT	₹33.85 Lakhs	3 Years (2019-2022)	R. R. Haque & N. Gogoi	

Elucidating the mechanism and assessing amelioration potential of <i>Ocimum</i> and <i>Lucas</i> in stress- induced impaired homeostasis on growth and reproduction in Zebra-fish	ICAR-NASF	₹46.57 Lakhs	3 Years (2017-2020)	S. S. Bhattacharya & S. Maitra	Visva- Bharati
Prospect of a novel protein in earthworm gut to minimize heavy metal risk in vermicompost for sustainable crop production	CSIR	₹26.9 Lakhs	3 Years (2017- 2020)	S. S. Bhattacharya	
Utilization of textile industry sludge through application of vermitechnology: An in-sight on metal accumulation potential of earthworms	DST-SERB	₹57.60 Lakhs	3 Years (2017-2020)	S. S. Bhattacharya and S. Pratihar	CSIR-CSMCRI, Bhavnagar

## PUBLICATIONS

### Journal Publications

1. Baidya S., Thakur B. & Devi, A. Ethnomedicinal plants of the sacred groves and their uses by Karbi tribe in Karbi anglong district of Assam, northeast India. *Indian Journal of Traditional Knowledge*. 19(2). 2020.
2. Baruah N., Mondal S. C., Farooq M. & Gogoi N. Influence of Heavy Metals on Seed Germination and Seedling Growth of Wheat, Pea, and Tomato. *Water, Air, & Soil Pollution*. 230(12). 2019.
3. Basumatary H., Sah R. K. & Das A. K. Analyzing Area Dynamics on a Protected Floodplain Using Long-Term Sequential Data: The Case of Kaziranga National Park. *Journal of the Indian Society of Remote Sensing*. 47(9). 2019.
4. Bharadwaj N., Barthakur S., Biswas A. D., Das M. K., Kour M., Ramteke A. & Gogoi N. Transcript expression profiling in two contrasting cultivars and molecular cloning of a SKP-1 like gene, a

- component of SCF-ubiquitin proteasome system from mungbean *Vigna radiata* L. *Scientific Reports*. 9(1). 2019.
5. Bora M. S., Gogoi N. & Sarma K. P. Tolerance mechanism of cadmium in Ceratopteris pteridoides: Translocation and subcellular distribution. *Ecotoxicology and Environmental Safety*. 197. 2020.
  6. Daimari R., Bhuyan P., Hussain S., Nayaka S., Mazumder M. A. J. & Hoque R. R. Biomonitoring by epiphytic lichen species-Pyxine cocoas (Sw.) Nyl.: understanding characteristics of trace metal in ambient air of different landuses in mid-Brahmaputra Valley. *Environmental Monitoring and Assessment*. 192(1). 2019.
  7. Das S., Lee S. H., Kumar P., Kim K. H., Lee S. S. & Bhattacharya S. S. Solid waste management: Scope and the challenge of sustainability. *Journal of Cleaner Production*. 228. 2019.
  8. Das S., Teron R., Duary B., Bhattacharya S. S. & Kim K. H. Assessing C–N balance and soil rejuvenation capacity of vermicompost application in a degraded landscape: A study in an alluvial river basin with *Cajanus cajan*. *Environmental Research*. 177. 2019.
  9. Deka J., Baul N., Bharali P., Sarma K. P. & Hoque R. R. Soil PAHs against varied land use of a small city (Tezpur) of middle Brahmaputra Valley: seasonality, sources, and long-range transport. *Environmental Monitoring and Assessment*. 192(6). 2020.
  10. Devi J., Deb U., Barman S., Das S., Bhattacharya S. S., Fai Tsang Y., Lee J.-H. & Kim K.-H. Appraisal of lignocellulosic biomass degrading potential of three earthworm species using vermi reactor mediated with spent mushroom substrate: Compost quality, crystallinity, and microbial community structural analysis. *Science of The Total Environment*. 716. 2020.
  11. Devi U., Taki K., Shukla T., Sarma K. P., Hoque R. R. & Kumar M. Microzonation, ecological risk and attributes of metals in highway road dust traversing through the Kaziranga National Park, Northeast India: implication for confining metal pollution in the national forest. *Environmental Geochemistry and Health*. 41(3). 2019.
  12. Ghosh M. & Devi A. Assessment of crop growth, soil properties and crop yield in an upland acidic soil with inorganic fertilizer blended with organic amendments in summer rice cropping seasons. *International Journal of Recycling of Organic Waste in Agriculture*. 8(1). 2019.
  13. Gogoi L., Narzari R., Gogoi N., Farooq M. & Kataki R. Biochar Production and Application in Forest Soils-A Critical Review. In *Phyton-International Journal of Experimental Botany*. 88(4). 2019.
  14. Gopal P., Nadimpalli G., Saikia R., Sankari H., Ratnam R., Gogoi N., Garg A., Buragohain P. & Kataki, R. Optimization of pyrolyzer design to produce maximum bio-oil from *Saccharum ravennae* L.: an integrated approach using experimental data and artificial intelligence. *Biomass Conversion and Biorefinery*. 9(4). 2019.

15. Mondal A., Goswami L., Hussain N., Barman S., Kalita E., Bhattacharyya P. & Bhattacharya S. S. Detoxification and eco-friendly recycling of brick kiln coal ash using *Eisenia fetida*: A clean approach through vermitechnology. *Chemosphere*. 244. 2020.
16. Mondal S. C., Sarma B., Farooq M., Nath D. J. & Gogoi N. Cadmium bioavailability in acidic soils under bean cultivation: role of soil additives. *International Journal of Environmental Science and Technology*. 17(1). 2020.
17. Paul S., Choudhury M., Deb U., Pegu R., Das S. & Bhattacharya S. S. Assessing the ecological impacts of ageing on hazard potential of solid waste landfills: A green approach through vermitechnology. *Journal of Cleaner Production*. 236. 2019.
18. Paul S., Goswami L., Pegu, R. & Bhattacharya S.S. Vermiremediation of cotton textile sludge by *Eudrilus eugeniae*: Insight into metal budgeting, chromium speciation, and humic substance interactions. *Bioresource Technology*. 314. 2020.
19. Sahariah B., Das S., Goswami L., Paul S., Bhattacharyya P. & Bhattacharya S. S. An avenue for replacement of chemical fertilization under rice-rice cropping pattern: Sustaining soil health and organic C pool via MSW-based vermicomposts. *Archives of Agronomy and Soil Science*. 2019.
20. Saikia P., Baruah K. K., Bhattacharya, S. S. & Choudhury C. Organic based integrated nutrient management scheme enhances soil carbon storage in rainfed rice (*Oryza sativa*) cultivation. *Soil Research*. 57(8). 2019.
21. Vikrant K., Roy K., Kim K.-H. & Bhattacharya S. S. Insights into the storage stability of ammonia in polyester aluminum bags. *Environmental Research*. 177. 2019.

### Book Chapters

1. M. Hiloidhari, N. Bhuyan, N. Gogoi, D. Seth, A. Garg, A. Singh, S. Prasad & R. Kataki. Agroindustry wastes: biofuels and biomaterials feed stocks for sustainable rural development. In Praveen Kumar, R., Gnansounou, E., Kenthorai Raman, J. & Baskar, G. (Eds.). *Refining Biomass Residues for Sustainable Energy and Bioproducts*. Elsevier, 2019.
2. N. Gogoi, B. Sarma, S.C. Mondal, R. Kataki & A. Garg. Use of Biochar in Sustainable Agriculture. In Farooq M. & Pisante M. (Eds.). *Innovations in Sustainable Agriculture*. Springer, 2019.
3. P. Borah, N. Baruah, L Gogoi, B. Borkotoki, N. Gogoi & R. Kataki. Biochar: A New Environmental Paradigm in Management of Agricultural Soils and Mitigation of GHG Emission. In Singh J. & Singh C. (Eds.). *Biochar Applications in Agriculture and Environment Management*. Springer, 2020.
4. S. Barman, S. S. Bhattacharya & N.C. Mandal. *Serratia*. In N. Amaresan, M. Senthil Kumar, K. Annapurna, Krishna Kumar & A. Sankaranarayana (Eds.). *Beneficial Microbes in Agro-Ecology*. Elsevier, 2020.
5. S. Das & S.S. Bhattacharya. Dynamics of advanced sustainable nanomaterials and their related nanocomposites at the bio-nano interface. In N. Karak (Ed.). *Bio-nano interfacial interactions of nanostructural materials in soil health and environment*. Elsevier, 2019.

6. S. Baidya, B. Thakur and A. Devi. Exploration of medicinal plants in sacred groves of West Karbi Anglong district, Assam, North-east India. In B. C. Chutia & F. Yasmin (Eds.). Bioresources for India sustaining life and livelihoods in North-east. 2019.

#### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
K.P. Sarma	Agenda for Brainstorming workshop on River-research to Evolve Sustainable-Projects for People with Ecofriendly Climate-resilient Technology (RESPECT)	IIT Guwahati	15-16 November 2019	IIT Guwahati
N. Gogoi	International Conference on Bioprocess for Sustainable Environment and Energy	NIT Rourkela	March 5-7, 2020	NIT Rourkela
	Agenda for Brainstorming workshop on River-research to Evolve Sustainable-Projects for People with Ecofriendly Climate-resilient Technology (RESPECT)	IIT Guwahati	15-16 November 2019	IIT Guwahati
N. Gogoi	Strengthening education, research and innovation for climate smart crops in India	(funded by European Union under Erasmus+ programme	From 18 January 2020- 16 February 2020	University of Milan, Italy; Polytechnic University of Marche; Ancona, Italy; Costa Navarino, Greece; International Crop Research Institute of Semiarid Tropics, Hyderabad, India

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
A.K. Das	Research Methodology Workshop	27 November-6 December 2019	Tezpur University
A.K. Das	University Annual Day	1 February 2020	Madhab Deb University, Narayanpur.

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

Title	Date/Period, year
National seminar on “Current Perspectives in Environmental Pollution: Challenges and opportunities”	7 - 8 June 2019
One day workshop on Quality Research Communication	27 September 2019
One Day training programme on “Sustainable Bio-waste Management through Vermitechnology”	2 October 2019
5th Annual Workshop of the Centre for research on the Economics of Climate, Food, Energy and Environment (CECFEE)	10-11 November 2019

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET :**

02

**THE FACULTY MEMBERS AND STAFF****Professors**

Kali Prasad Sarma, Ph.D. (North Eastern Hill University)

*Specialization/ Areas of Interest: Water and Soil Pollution, Hydro-geochemistry& Remediation of Toxic Substances*

E-mail: sarmakp@tezu.ernet.in

Raza Rafiqul Hoque, Ph.D. (Jawaharlal Nehru University)

*Specialization/ Areas of Interest: Atmospheric chemistry, Organic pollutants, Environmental Monitoring*

E-mail: rrrh@tezu.ernet.in

Apurba Kumar Das, Ph.D. (Jawaharlal Nehru University)

*Specialization/Research area: Fluvial Geomorphology, River morphology and landforms, Riverine hazards. Climate studies, Application of Remote Sensing and GIS techniques to atmospheric, urban climate, hydro- geomorphic, LULC, phyto-geographic studies, and socio-environmental issues.*

Email: apurba@tezu.ernet.in

**Associate Professors**

Ashalata Devi, Ph.D. (North Eastern Hill University)

Head

*Specialization/ Areas of Interest: Forest ecosystem dynamics, behavioural ecology of primates, predictive distribution modeling, bioresources assessment, utilization and indigenous conservation practices, and biodiversity conservation*

E-mail: kh\_asha@tezu.ernet.in

### **Assistant Professors**

Nirmali Gogoi, Ph.D. (Dibrugarh University)

*Specialization/ Areas of Interest: Stress Physiology & Biochemistry. Plant Abiotic Stress, GHG emission from Agro ecosystem and soil C sequestration*

E-mail: nirmali@tezu.ernet.in

S S Bhattacharya, Ph.D. (Visva-Bharati University)

*Specialization/ Areas of Interest: Vermiculture, Plant Nutrition and Soil Fertility Management, Soil C management, Plant products & Nano fertilizers, Solid waste management*

E-mail: satya72@tezu.ernet.in

Sumi Handique, Ph.D. (Tezpur University)

*Specialization/ Areas of Interest: Geochemistry of River Basins & Hydrogeochemistry. Water pollution and remediation*

E-mail: sumihan@tezu.ernet.in

Amit Prakash, Ph.D. (Jawaharlal Nehru University)

*Specialization/ Areas of Interest: Environmental System Modelling, Air Pollution Meterology, Climate Impact Modelling, Extreme Events analysis, Machine Learning Technique for Environmental Systems, Neurofuzzy Systems, Nonstationary Stochastic System and Noise Pollution*

E-mail: ap@tezu.ernet.in

Nayanmoni Gogoi, Ph.D. (IIT Guwahati)

*Specialization/ Areas of Interest: Ecosystem functions, Wetland Productivity, Nanotechnology in Environmental Research*

E-mail: nayanmoni@tezu.ernet.in

Santa Kalita, Ph.D. (Gauhati University)

*Specialization/ Areas of Interest: Entomology & Environmental Physiology*

E-mail: santa@tezu.ernet.in

Pratibha Deka, Ph.D. (Tezpur University)

*Specialization/ Areas of Interest: Environmental Pollution– Air, Water and Soil & Human–Environment Interactions*

E-mail: pratibha@tezu.ernet.in

### **Technical staff**

Pranjol Goswami, MCA (Dibrugarh University)

Senior Technical Assistant

E-mail: pranjol@tezu.ernet.in

Jayanta Borah, M.Sc. (Gauhati University)

Technical Assistant

E-mail: jborain@tezu.ernet.in

### **Office Staff**

Anup Kumar Dutta

UDC

E-mail: anupduttaa122@gmail.com

Niranjan Boro,

MTS

E-mail: niranjanboro2018@gmail.com

## DEPARTMENT OF MATHEMATICAL SCIENCES

### THE DEPARTMENT

Established in 1994, the Department of Mathematical Sciences is one of the first three Departments of the University. So far 25 batches of students have successfully completed their M.Sc. in Mathematics, 7 batches of students have successfully completed their Integrated M. Sc. in Mathematics and the first batch of students have successfully completed their Integrated B. Sc. B.Ed. (Major in Mathematics) from the Department. Besides this, 56 scholars have done their Ph.D. in Mathematics from the department. The faculty of the Department have published more than 200 research papers in national and international journals during the last five years.

### Academic Programmes and Student intake

Programme	Student Intake
M.Sc. in Mathematics	42
Integrated M.Sc. in Mathematics	20
Integrated B.Sc. B.Ed. (Major in Mathematics)	10
Ph.D. in Mathematics	Variable, 03 in 2019-20

### Major facilities and equipment available

Computer lab equipped with 01 server, 22 PCs

### MAJOR RESEARCH FINDINGS/RESEARCH AND DEVELOPMENT ACTIVITIES

Principal Investigator	Salient research findings
D. K. Basnet	<ul style="list-style-type: none"> <li>• Introduced weak clean index and characterised rings of weak clean index 1, 2 and 3.</li> <li>• Introduced Nil clean ideal of a ring and proved some interesting properties.</li> <li>• Weakly r-clean rings and weakly *-clean rings and discussed some of their interesting properties.</li> </ul>
M. Hazarika	<ul style="list-style-type: none"> <li>• Extended the concept of slant weighted Toeplitz operators from <math>L^2(T)</math> to <math>L^2(T^n)</math>.</li> </ul>

N. D. Baruah	<ul style="list-style-type: none"> <li>• New results on vanishing coefficients in infinite product expansions were found.</li> <li>• New arithmetical identities and congruences were found for mock theta functions</li> </ul>
P. K. Das	<ul style="list-style-type: none"> <li>• Necessary and sufficient conditions for existence of detecting, and correcting linear codes dealing with burst error, repeated burst error, key error, periodic random error along with hamming and homogeneous weights.</li> </ul>
R. K. Nath	<ul style="list-style-type: none"> <li>• Various energies of commuting graphs of certain classes of finite non-abelian groups have been computed and analyzed graphically.</li> <li>• The concept of auto commutativity degree of finite groups have been generalized and introduced g-autocommuting probability of a finite group as well as g-autocommuting probability of a finite group relative to its subgroups. Certain characterizations of finite groups/subgroups have been obtained with respect to these generalized autocommutativity degrees.</li> <li>• Various spectra and genus of commuting graphs of certain classes of finite non-commutative rings have been computed and characterized certain classes finite non-commutative rings such that its commuting graph is planar or toroidal. Also the notion of super integral rings have been introduced. A generalized version of a problem posed by P. Lescot regarding asymptotic commutativity degree of finite groups have been answered affirmatively.</li> </ul>
S. Dutta	<ul style="list-style-type: none"> <li>• Obtained asymptotic properties of empirical and kernel based estimators of distribution function and quantile functions based on length biased data.</li> <li>• Obtained asymptotically optimal bandwidth for the kernel distribution function estimator based on length biased data.</li> <li>• Compared the finite sample mean squared errors of the empirical and kernel distribution function estimators using Monte-Carlo Simulation</li> <li>• Compared predictive performance of point fore-casts of elicitable risk measures based on real data on Nifty 50 index returns.</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

<b>Project Title</b>	<b>Funding Agency</b>	<b>Amount (in INR )</b>	<b>Duration</b>	<b>Investigators</b>
On Algebraic Connectivity and Laplacian Spectral Radius of Graphs	DST-SERB	₹6.6 Lakhs	3 Years (2019-2022)	D. Kalita
On pareto eigenvalue of distance matrix of connected graphs	DST-SERB	₹6.6 Lakhs	3 Years (2019-2022)	M. Nath
A study on exact generating functions and congruences for partition functions associated to Ramanujan's mock theta functions and other related functions	DST-SERB	₹6.6 Lakhs	3 Years (2019-2022)	N. D. Baruah
A Study of controllability of Navier-Stokes Equations with Navier boundary conditions.	DST-SERB	₹ 6.6 Lakhs	3 Years (2019-2022)	R. Haloi
A Study of Navier-Stokes Equations with Navier boundary conditions.	NBHM	₹12.9 Lakhs	3 Years (2019-2022)	R. Haloi
Point and interval estimation of some functionals of the distribution function of identically distributed random variables and their sums with applications.	DST-SERB	₹ 6.6 Lakhs	3 Years (2019-2022)	S. Dutta
Development of dispersion, dissipation characteristics preserving finite difference schemes for fluid flow problems	DST-SERB	₹6.6 Lakhs	3 Years (2018-2021)	S. Sen

**PUBLICATIONS:****Journals publications**

1. Baruah N. D. & Begum N. M. Proofs of some conjectures of Chan on Appell - Lerch sums. *The Ramanujan Journal*. 2020.
2. Baruah N. D. & Begum, N. M. Generating functions and congruence's for some partition functions related to mock theta function. *International Journal of Number Theory*. 2020.

3. Baruah N. D., Kaur M., Kim M. & Oh B. K. Proofs of some conjectures by Z. -H. Sun on relations between sums of squares and sums of triangular numbers. *Indian Journal of Pure and Applied Mathematics*. 51. 2020.
4. Baruah N. D. & Kaur M. New congruences modulo 2, 4 and 8 for the number of tagged parts over the partitions with designated summands. *The Ramanujan Journal*. 52. 2020.
5. Basnet D. K. & Bhattacharyya J. Weak clean index of a ring. *Beiträge zur Algebra und Geometrie / Contributions to Algebra and Geometry*. 60 (4). 2019.
6. Chutia D. & Haloi R. Approximate controllability of quasilinear functional differential equations. *Electronic Journal of Differential Equations*. 2019.
7. Dutta P., Bagchi B. & Nath R. K. Various energies of commuting graphs of finite nonabelian groups. *Khayyam Journal of Mathematics*. 6. 2020.
8. Dutta J., Fasfous W. N. T. & Nath R. K. Spectrum and genus of commuting graphs of some classes of finite rings. *Acta et Commentationes Universitatis Tartuensis de Mathematica*. 23(1). 2019.
9. Dutta P. & Nath R. K. On relative commuting probability of finite rings. *Miskolc Mathematical Notes*. 20(1). 2019.
10. Dutta P. & Nath R. K. On generalized autocommutativity degree of finite groups. *Hacettepe Journal of Mathematics and Statistics*. 48(2). 2019.
11. Dutta P. & Nath R. K. Generalized autocommuting probability of a finite group relative to its subgroups. *Hacettepe Journal of Mathematics and Statistics*. 49(1). 2020.
12. Hazarika M. & Marik S. Reducing and minimal reducing subspaces of slant Toeplitz operators. *Advances in Operator Theory*. 5. 2020.
13. Hazarika M. & Marik S. Toeplitz and slant Toeplitz operators on the polydisk. *Arab Journal of Mathematical Science*. 2019.
14. Nath R. K. On asymptotic commutativity degree of finite groups. *Proyecciones Journal of Mathematics*. 38(4). 2019.
15. Nath R. K. A note on super integral rings. *Boletim da Sociedade Paranaense de Matemática*. 38(4). 2020.
16. Pal S. & Haloi R. On solution to the Navier-Stokes equations with Navier slip boundary condition for three dimensional incompressible fluid. *Acta Mathematica Scientia*. 39(6). 2019.
17. Sharma A. & Basnet D. K. Weak nil clean ideals. *Rendiconti del Circolo Matematico di Palermo Series 2*. 69(2). 2019.
18. Sharma A. & Basnet D. K. Nil clean ideals, *Annali Dell' universita' di Ferrara*. 65(2). 2019.
19. Sharma A. & Basnet D. K. Weakly r-clean rings and weakly \*-clean rings. *An. Stiint. Univ. Al. I. Cuza Iasi Math*. LXV(2). 2019.
20. Sharma M. & Hazarika D. Fuzzy bounded linear operator in fuzzy normed linear spaces and its fuzzy compactness. *New Mathematics and Natural Computation*. 16(1). 2020.

**Accepted/In Press**

1. Baruah N. D. & Kaur, M. Some results on vanishing coefficients in infinite product expansions. *The Ramanujan Journal*. Accepted 2019.
2. Bhowal P., Nongsiang D. & Nath R. K. Solvable graphs of finite groups. *Hacetatepe. Journal of Mathematics and Statistics*, Accepted 2020.
3. Borah J. & Bora S. N. Sufficient conditions for existence of integral solution for non-instantaneous impulsive fractional evolution equation. *Indian Journal of Pure and Applied Mathematics*. Accepted 2019.
4. Das P. K. & Kumar S. Location and weight distribution of key errors. *Matematicki Vesnik*. Accepted 2020.
5. Das P. K. & Kumar S. Correcting key errors blockwise and correcting low density key errors. *International Journal of Mathematical, Engineering and Management Sciences*. Accepted 2020.
6. Dutta P. & Nath R. K. Some bounds for relative autocommutativity degree. *Proyecciones Journal of Mathematics*. Accepted 2019.
7. Dutta P. & Nath. R. K. Various energies of commuting graphs of some super integral groups. *Indian Journal of Pure and Applied Mathematics*. Accepted 2020.
8. Fasfous W. N. T., Sharafdini R. & Nath R. K. Common neighborhood spectrum of commuting graphs of finite groups, *Algebra and Discrete Mathematics*. Accepted 2019.
9. Fasfous W. N. T., Sharafdini R. & Nath R. K. Various spectra and energies of commuting graphs of finite rings. *Hacetatepe Journal of Mathematics and Statistics*. Accepted 2020.
10. Giri S. & Sen S. A new class of diagonally implicit Runge–Kutta methods with zero dissipation and minimized dispersion error. *Journal of Computational and Applied Mathematics*. Accepted 2020.

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
D. Goswami	MAFELAP 2019 Conference	Department of Mathematics	18-21 June 2019	Brunel University, London
N. D. Baruah	Revision of Course Curriculum	Department of Mathematics	21-22 February 2020	NERIST, Nirjuli, AP.
P. K. Das	Pedagogical Training for Mathematics	MTTS TRUST	25-30 December	Tezpur University

	Teachers		2019	
R. K. Nath	Group Algebras, Representations and Computation	ICTS, Bengaluru	14-18 November 2019	Bengaluru
R. K. Nath	Pedagogical Training for Mathematics Teachers	MTTS Trust & Tezpur University	25-30 December 2019	Tezpur University
R. Haloi	Differential Equations and Control: Modeling, Analysis and Computations	Department of Mathematics	17-19 June 2019	IIT Mandi, Himachal Pradesh.
R. Haloi	Equadiff 2019	Department of Mathematics	08-12 July 2019	University of Leiden, Netherlands
R. Haloi	Annual Meeting of Indian Academy of Science	University of Hyderabad	8-10 November 2019	University of Hyderabad
S. Dutta	Two Random days in honour of Alok Goswami, Arup Bose and Rahul Roy	Statistics and Mathematics Unit	25-26 April 2019	ISI Kolkata

**TALKS BY THE FACULTY ABROAD AND IN INDIA:**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute /Venue</b>
D. K. Basnet	Mini MTTS organised by MTTS Trust, Hyderabad	22 – 27 February 2020	Kaziranga University, Assam
	'Mathematics Learning' under TEQIP-III of MHRD, GoI organised by Assam Science and Technology University(ASTU).	16 November 2019	GIMT Tezpur, Assam
	Capacity Building Programme in Mathematics for Secondary and Senior Secondary teachers organised by CBSE	27–28 August 2019	Tezpur Gurukul School, Tezpur, Assam
	Faculty Development Programme under	26 August	GIMT Tezpur,

	TEQIP-III of MHRD, GoI organised by Assam Science and Technology University(ASTU) and GMT Tezpur.	2019	Assam
	Capacity Building Programme in Mathematics for Secondary and Senior Secondary teachers organised by CBSE.	26- 27 July 2019	Kingcup Public School, Itanagar, Arunachal Pradesh
	Mathematics Olympiad training programme organised by Darrang College, Sontipur, Assam	8 -9 July 2019	Darrang College, Sonitpur, Assam
	“Mathematics Training Programme for undergraduate teachers and students” organised by Centre for Educational Technology (under PMMMMNMTT) and Department of Mathematics, IIT Guwahati.	1 - 6 July 2019	IIT Guwahati
M. Nath	Linear Algebra and its Applications in Engineering Sciences (LAAES)	12-16 August 2019	DUIET, Dibrugarh University
N. D. Baruah	International Conference on Number Theory and Graph Theory	27—29 June 2019.	University of Mysore, Karnataka
	National Mathematics Day- 19 organized by Assam Academy of Mathematics, Sonitpur Branch	22 December 2109	Tezpur Girls and M. P. School, Sonitpur
	National Mathematics Day- 19 organized by ASTEC, Assam, Office of the Inspector of Schools and District Administration of North Lakhimpur	26-27 December 2019	North Lakhimpur H. S. School, Assam
	National Mathematics Day and Mathematics Olympiad Award giving ceremony organized by Assam Academy of Mathematics	02 February 2020	B. Borooh College, Guwahati.
	Celebration of Pi Day and the First International Day of Mathematics proclaimed by UNESCO and Organized centrally in Assam by Assam Academy of Mathematics	14 March 2020	Darrang College, Tezpur.
M. Hazarika	TEQIP III	13 March	GMT Tezpur

		2020	
R. K. Nath	Green, Sustainable and Evolving Sciences (GSES 2019) & 64 <sup>th</sup> Annual Technical Session of Assam Sciences Society	28 June 2019	Cotton University, Guwahati
S. Dutta	Statistics, Big Data and Data Science	21-22 November 2019	NEHU, Shillong
S. Dutta	Statistical Methods in Finance	16-21 December 2019	CMI, Chennai

#### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED BY THE DEPARTMENT

Title	Date/Period, Year
Pedagogical Training for Mathematics Teachers	December 25-30, 2019

#### DISTINGUISHED VISITORS TO THE DEPARTMENT

- Prof. A. Adimurthi, TIFR CAM, Bangalore
- Prof. A. B. Raha, ISI Kolkata
- Prof. A. K. Nandakumaran, IISc. Bangalore
- Dr. Ananthanarayananhariharan, IIT Bombay.
- Dr. Atul Dixit, IIT Gandhinagar.
- Prof. B. K. Sharma, IIT Guwahati.
- Dr. Bibekananda Maji, IIT Gandhinagar.
- Dr. Diganta Bhusan Das, Loughborough University, UK.
- Prof. G. D. V. Gowda, TIFR CAM Bangalore
- Dr. Lipika Deka, De Montfort University, UK.
- Dr. R. K. Shrivastava, IIT Guwahati.
- Prof. R. P. Sarkar, ISI Kolkata.
- Prof. S. Thangavelu, IISc. Bangalore.
- Dr. Shameek Paul, RKMVERI, Belur, Kolkata
- Dr. V. Bist, Punjab University.

#### OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT/ACHIEVEMENTS OF THE FACULTY:

- DST-FIST            2014 to 2019
- UGC-SAP (DRS-II) 2018 to 2023

**NUMBER OF STUDENTS WHO PASSED NET-JRF/GATE**

NET-JRF:	17
NET-LS:	3
SLET-NE:	3
GATE:	4

**NOTABLE PLACEMENT OF STUDENTS**

<b>Name</b>	<b>Designation</b>	<b>Organization</b>
Diganta Medhi	Lecturer	DIET, Goalpara
Homen Baruah	Research Scholar	Cotton University
Birinchi Kumar Baruah	Research Scholar	Dibrugarh University
Hridayananda Saikia	Research Scholar	ISI, Kolkata
Sougata Marik	Research Scholar	IGFAI, Tripura
Shilpi Biswas	Research Scholar	IIT Guwahati
Rupam Haloi	Assistant Professor	Sipajhar College
Rishabh Sarma	Research Scholar	University of Florida, USA
Manjil Pratim Saikia	Post-Doctoral Fellow	Cardiff University, UK
Nilufer Mana Begum	Guest Faculty	Tezpur University
Parama Dutta	Assistant Professor	Lakhimpur Girls' College
Ajay Sarma	Guest Faculty	Tezpur University
Krishna Ram Saikia	Guest Faculty	Tezpur University
Jutirekha Dutta	Guest Faculty	Tezpur University
Deepak Sharma	Assistant Professor	Assam Agricultural University
Surashmi Bhattachyra	Assistant Professor	B. N. College of Agriculture, Biswanath
Jwngsar Musahary	Assistant Professor	Sarat Ch. Singha College of Agriculture, Dhubri.
Rahul Dutta	Research Scholar	University of Barcelona, Spain

## THE FACULTY OF THE DEPARTMENT

### Professors

Nayandeep Deka Baruah, Ph.D. (Tezpur University)  
*Specialization: Number Theory, Ramanujan's Mathematics*  
*E-mail: nayan@tezu.ernet.in*

Debajit Hazarika, Ph.D. (Jamia Milia Islamia)  
*Specialization: General Topology, Fuzzy sets & applications*  
*E-mail: debajit@tezu.ernet.in*

Munmun Hazarika, Ph.D. (Tezpur University)  
*Specialization: Operator Theory, Functional Analysis*  
*E-mail: munmun@tezu.ernet.in*

Milan Nath, Ph.D. (IIT Guwahati)  
*Specialization: Ordinary Graph Spectra, Inverse eigenvalue problem*  
*E-mail: milan@tezu.ernet.in*

Santanu Dutta, Ph.D. (Tezpur University)  
*Specialization: Statistics (Non-parametric)*  
*E-Mail: sdutta@tezu.ernet.in*

Dhiren Kumar Basnet, Ph.D. (Dibrugarh University)  
*Specialization: Ring Theory, Finite Field Theory*  
*E-Mail: dbasnet@tezu.ernet.in*

### Associate Professors

Bhim Prasad Sarmah, Ph.D. (Gauhati University)  
*Specialization: Theoretical Physics*  
*E-mail:bhim@tezu.ernet.in*

Shuvam Sen, Ph.D. (IIT Guwahati)  
*Specialization: Computational Fluid Dynamics*  
*E-Mail: shuvam@tezu.ernet.in*

Rajib Haloi, Ph.D. (IIT Kanpur)  
*Specialization: Analysis*  
*E-Mail: rhaloi@tezu.ernet.in*

### Assistant Professors

Bipul Kumar Sarmah, Ph.D. (Tezpur University)  
*Specialization: Theory of Partitions, Ramanujan Mathematics*  
*E-Mail: bipul@tezu.ernet.in*

Rajat Kanti Nath, Ph.D. ( North Eastern Hill University)  
*Specialization: Group Theory, Character Theory*  
*E-Mail: rknath@tezu.ernet.in*

Debajit Kalita, Ph.D. (IIT Guwahati)  
*Specialization: Algebraic Graph Theory*  
*E-Mail: kdebajit@tezu.ernet.in*

Deepjyoti Goswami, Ph.D. (IIT Bombay)  
*Specialization: Finite Element Method*  
*E-Mail: deepjyoti@tezu.ernet.in*

Pankaj Kumar Das, M.Sc. M. Phill. Ph.D. (University of Delhi)  
*Specialization: Coding Theory*  
*E-Mail: pankaj4@tezu.ernet.in*

Jayanta Borah, Ph.D. (IIT Guwahati)  
*Specialization: Fractional Differential Equations,*  
*Mathematical Control Theory*  
*E-Mail: jba@tezu.ernet.in*

**Technical staff**

Anjan Kumar Bhattacharyya, Ph.D. (Tezpur University)  
*System Analyst*  
*Email: anjan@tezu.ernet.in*

Krishna Das, Ph.D. (Tezpur University)  
*Technical Assistant*  
*Email: krishnadas@tezu.ernet.in*

**Office Staff**

Dipak Kumar Deka  
*LDC*  
*Email: dkdeka@tezu.ernet.in*

Nur Ali  
*MTS*

## DEPARTMENT OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

### THE DEPARTMENT

The Department of Molecular Biology and Biotechnology (MBBT) completed Twenty-three years since its inception in 1997. In this year one of the notable achievements is that our Master degree students got admitted in Ph.D. programme of reputed research institutions such as IISc, IGIB, NCCS, NISER, NBRC, IICB, IMTECH etc. Like the earlier years, this year too several students had qualified in the national level test such as NET-JRF, DBT-JRF and GATE. In term of research, several publications have come in high impact journals such as Scientific reports, Journal of Proteomics, J. Virology. Frontiers in Genetics etc.

### Academic Programmes and Student intake

Programme	Intake
M. Sc.	30
Int. Msc.	25
Ph.D	Variable, 20 in 2019-20

### Major Facilities and Equipment Available

- DNA sequencers (4 capillary)
- Bioanalyzer
- Quantitative PCR
- Fast protein Liquid Chromatography (FPLC)
- UHPLC systems
- Ultracentrifuge
- HPLC
- FTIR
- Spectrofluorometer
- Fluorescence microscope
- Animal cell culture facility
- Plant tissue culture facility
- Microbiology lab
- Bioinformatics infrastructure facility
- ONGC CPBT Centre For Petroleum Biotechnology

## MAJOR RESEARCH AND DEVELOPMENT FINDINGS

Principal Investigator	Salient Research Findings (in short bullet points)
A. Kumar	<ul style="list-style-type: none"> <li>Annotation of regulatory regions in the genome is crucial for complete understanding of functional genomics. Sequence based approaches are generally found to be less effective (result in to more false positives) and most importantly they are organism specific in nature. In contrast, DNA structural properties have been found to be present distinctly in the regulatory regions and also, they are found to be universal in nature, across the domains of life. Hence, we are working towards the development of algorithms on annotation of regulatory regions based on DNA structural features.</li> </ul>
A. K. Mukherjee	<ul style="list-style-type: none"> <li>Unveiling the venom proteomes of eastern India Naja naja and western India Russell's Viper.</li> </ul>
A. N. Jha	<ul style="list-style-type: none"> <li>Studies from our lab led to the atomic level understanding of interactions and effect of Zinc Oxide/Silver nanoparticles with different structural proteins.</li> </ul>
A. Ramteke	<ul style="list-style-type: none"> <li>To understand the molecular basis of carcinogenesis and prevention in multiple cancer types including breast, lung and head and neck cancer, through intervention of phytochemical. We are primarily involved in understanding mechanistic effect of phytochemical on the signaling molecules involved in tumor progression, metastasis and drug resistance using in vitro and in vivo pre-clinical cancer models (breast, lung and colon cancer).</li> <li>We are also conducting research on the development of nanocomposite/nanoparticles from biopolymers for delivery of drug/therapeutic agents to the cancer cells.</li> </ul>
B. K. Konwar	<ul style="list-style-type: none"> <li>In silico studies on the molecular interaction analysis of dietary flavonols as a potent inhibitor of heat shock protein 90 enzyme in fighting against cancer. S. P. Singh, C R Dev, S U Ahmed, Y Saratchandra, B K Konwar (2016)-</li> <li>This study is on dietary flavonols (viz- quercetin, myricetin and kaempferol) shows that they effectively help in degradation of Hsp90 protein which helps in stabilization of several proteins responsible for tumour and cancer. These flavonols through competitive inhibition block the N terminal site of the Hsp90, thereby degrading the protein and preventing cancer cell growth. These flavonols are known to have anti-cancer property and study reveals that they can be orally ingested as they have less lethal dose.</li> </ul>
E. Kalita	<ul style="list-style-type: none"> <li>Development of Iron oxide Permeated Mesoporous rice-husk nanobiochar (IPMN) mediated removal of dissolved arsenic (As)</li> <li>Development of Nanocellulose Iron Oxide Nanobiocomposites (NIONs) from rice husk and sugarcane bagasse derived nanocelluloses for adsorptive removal of arsenic.</li> <li>Isolation of microcrystalline cellulose (MCC) from <i>Saccharum spontaneum</i> through an environment friendly and sustainable method using mild acids and chlorine-free bleaching</li> </ul>

	<ul style="list-style-type: none"> <li>Optimizing In vitro Culture Conditions for the Biotrophic Fungi <i>Exobasidium vexans</i></li> </ul>
J. P. Saikia	<ul style="list-style-type: none"> <li>UGC Project: A novel germination stimulator for heat stressed seed.</li> <li>DBT Project: Identification, sample collection and deposition of <i>O. indicum</i> to national agency for future reference.</li> </ul>
M. Mandal	<ul style="list-style-type: none"> <li>Few probiotic yeast and bacterial strains were identified the strains have been found suitable for commercial use.</li> <li>Several medicinal plants were screened out for control of microbial biofilm formation.</li> <li>One oleaginous yeast strain has been characterized for biodiesel production from bio-waste</li> </ul>
M. V. Satish Kumar	<ul style="list-style-type: none"> <li>Research on Alzheimer's disease: We have predicted the seed structure of Amyloid beta 1-42 peptide responsible for aggregation that is the major risk factor in Alzheimer's disease and investigated the interactions that stabilize the toxic intermediates. Finally, we have devised three approaches to inhibit the aggregation of Amyloid beta 1-42 peptide. ss-oligonucleotide, Amyloid beta 1-40 and small 6-mer peptide were found to act as potent inhibitor in the aggregation of Amyloid beta 1-42 peptide.</li> <li>Research on Parkinson's disease: We found a probable method to control the aggregation in <math>\alpha</math>-synuclein which is responsible for Parkinson's disease. Basic region of Tau protein strongly interacts with C-terminal acidic regions of <math>\alpha</math>-synuclein fibrils and undergo conformational change resulting in the formation of seed for assembly of Tau into amyloid like fibrils. Targeting the Tyr residue at the position 133 may provide better solution to significant delay in the early stage of aggregation in <math>\alpha</math>-synuclein. We see predominant transient interactions between <math>\alpha</math>S and <math>\beta</math>S can be used to drive inhibition of <math>\alpha</math>S aggregation.</li> <li>Research on Breast Cancer: We obtained the salient structural features of human Lemur Tyrosine Kinase 3 (LMTK3) which is considered as a novel therapeutic target for breast cancer, then characterized its probable interaction with different proteins such as ER<math>\alpha</math>, CDK5 and GRB2 and identified probable interface interacting residues between them. Then ATP competitive potential inhibitors were designed against LMTK3 to control breast cancer.</li> </ul>
N. D. Namsa	<ul style="list-style-type: none"> <li><b>Rotavirus:</b> The laboratory has developed protocol for molecular characterization of enteric viruses such as rotavirus, norovirus, astrovirus and adenovirus associated with acute gastroenteritis in children's. Rotaviruses (RV) cause acute severe diarrhea in the absence of substantial intestinal inflammation. The ability of RV to suppress IFN-mediated receptors likely impacts intestinal cell homeostasis, as the cleavage of multiple intestinal caspases during RV infection is mediated by the IFN-STAT1 signaling pathway in a suckling mouse model. Together, our findings provide a mechanism underlying both the remarkable interferon resistance of homologous RV and its ability to prevent substantial inflammatory damaging e to the small bowel.</li> <li><b>Immune epitope mapping of rotavirus, scrub typhus and SARS-CoV-2:</b> Using comprehensive computational tools, we have identified potential B- and T-cell epitopes by exploring the rotavirus</li> </ul>

	<p>proteins, structural proteins of SARS-CoV-2, and type specific antigen (TSA56) of <i>Orentia tsutsugamushi</i> (causative agent of scrub typhus, a reemerging disease of India). The long-term interest of laboratory is to develop an indigenous rapid test for detection of rotavirus and scrub typhus.</p>
P. Barah	<ul style="list-style-type: none"> <li>• 'EvolOMICs' (short form of Evolutionary OMICs) group in the Department of Molecular Biology and Biotechnology, at Tezpur University studies the complex phenomena of evolution in biological systems starting from the subcellular molecular levels (microscopic) to the whole organism and ecosystem level (macroscopic) level using Next Generation Sequencing, Big data and robust computer algorithms.</li> <li>• We are trying to solve few interesting questions such as-  <i>How do certain cancers develop therapy resistance and evolve to high grade tumors?</i>  <i>Why certain diseases have population specific and/or geography specific incidence rates?</i>  <i>Being sessile in nature, how do plants perceive, respond, adapt and evolve during simultaneous exposure of harsh biotic and abiotic factors?</i>  <i>Do non-coding regions of the genome play crucial role in evolution of biological systems?</i>  <i>Can we utilize heterogenous high dimensional biological and clinical datasets (Big data) to identify translatable biomarkers using machine learning methods?</i> </li> </ul>
R. Doley	<ul style="list-style-type: none"> <li>• <b>DBT project:</b> A protein from the venom of <i>Daboia russelii</i> have been purified which inhibit platelet aggregation induced by collagen.</li> <li>• <b>ICMR Protein:</b> Venom proteomics of North Easter <i>Naja kaouthia</i> have been completed. Unique from <i>Naja kaouthia</i> of North East origin have been identified and characterized for development of diagnostic tool to characterize snakebite.</li> <li>• <b>BIRAC Project:</b> High affinity aptamer towards snake venom PLA2 have been identification and characterization of aptamers are underway.</li> </ul>
R. Mukhopadhyay	<ul style="list-style-type: none"> <li>• A novel anti-inflammatory role of ribosomal protein L22 (RPL22) has been elucidated. RPL22 along with its binding partner Up-frameshift protein-1 (UPF-1) interacts and degrades the mRNA of a pro-inflammatory mediator <i>ccl2</i> in during bacteria-mediated inflammation, thus maintaining a critical homeostasis in inflammatory response.</li> <li>• Fruit extract of <i>Ricinus communis</i> has been studied for their anti-cancer efficacy. Individual components of the extract has been identified. The extracts as well as bioactive compounds were shown to be inhibit metastatic development in breast cancer cell lines beside induction of apoptosis, a hallmark of an anti-cancer agent.</li> <li>• To our effort to unravel the mechanism of plant-based polyphenols, role of kaempferol and biochanin A was studied. Detailed mechanism of their anti-inflammatory function has been studied.</li> </ul>
S. Baruah	<ul style="list-style-type: none"> <li>• The incidence of anti cardiolipin positivity was found to be 26.19 % in the overall obstetrics population which is higher than the global average range (1-7%) as per literature wherein it affected 25 % of RPL cases. Though, net inhibitory receptor gene content was</li> </ul>

	<p>high (KIR2DL3&gt;2DL2&gt;2DL1) in RPL cases as compared to the non RPL cases the frequency of KIR2DS1 was found to be high compared to KIR2DL1 in RPL cases.</p> <ul style="list-style-type: none"> <li>• The allelic diversity of <i>KIR2DL1</i> gene and its cognate ligand <i>HLA-C</i> was assessed in the population of Assam, North-East India. We found KIR2DL1*003 at highest frequency of 79.1%. The nucleotide diversity of <i>KIR2DL1</i> alleles and of <i>HLA-C</i> gene suggested substantial variability in the population. We also identified 9 <i>HLA-C</i> alleles in the study population. The binding affinity study of alleles found on centromeric A and B <i>KIR</i> motif of the <i>2DL1</i> gene with <i>HLA-C</i> gene was investigated where a stronger binding affinity of KIR2DL1*003 with <i>HLA-CW4</i> as compared to KIR2DL1*004 and KIR2DL1*005 was found.</li> </ul>
S. Dasgupta	<ul style="list-style-type: none"> <li>• Saturated free fatty acid-induced adipocyte inflammation plays a pivotal role in implementing insulin resistance and type 2 diabetes. Recent reports suggest A2A adenosine receptor (A2AAR) could be an attractive choice to counteract adipocyte inflammation and insulin resistance. We therefore explored various small molecules of different categories like flavonoid, alkanoids, terpenes and sulfonylurea for its binding efficacy with the agonist conformation of A2AAR and the attenuation of lipid-induced adipocyte inflammation and insulin resistance. Using a combination of in-silico virtual screening of potential anti-diabetic candidates and in-vitro study on insulin resistant model of 3T3-L1 adipocytes, we determined indirubin-3'-monoxime (I3M) through A2AAR activation markedly prevents lipid-induced impairment of the insulin signaling pathway in adipocytes without any toxic effects. Our research thus showing promise for the management of insulin resistance and type 2 diabetes. This work recently published in <i>Biochemical Journal</i> (DOI: 10.1042/BCJ20190251). We are also involved in research to find out novel small molecules targeting insulin resistance and type 2 diabetes.</li> <li>• The transformation of macrophages into lipid-loaded foam cells is a critical and early event in the pathogenesis of atherosclerosis. To investigate the underlying molecular mechanism of inflammation induced foam cell formation, we observed that the TLR4 mediated inflammatory signaling communicated with mTORC2-Akt-mTORC1 metabolic cascade in macrophage and thereby promoting lipid uptake and foam cell formation. This work was published in the journal <i>Biochimie</i> (DOI: 10.1016/j.biochi.2018.06.001). We are now investigating the cross-talk between macrophage foam cells and adipocytes to explore the novel biomarkers in obesity-induced adipocyte inflammation and insulin resistance.</li> <li>• We are also involved in research on the effect of exercise on insulin sensitivity and its underlying molecular mechanisms. Although several reports indicate the salutary effect of physical exercise on insulin sensitivity and glucose homeostasis, however, the underlying mechanism is yet unclear. To address this issue, we are in process to find out novel exercise-induced myokines that could impair lipid-induced adipocyte inflammation and insulin resistance.</li> </ul>

S. K. Ray	<ul style="list-style-type: none"> <li>• Molecular plant microbe interactions: we have isolated several transposon induced mutants of <i>R. solanacearum</i> that are deficient in virulence in tomato seedlings. Some of the mutants are virulence deficient by root inoculation but virulence proficient by leaf clip inoculation in tomato seedlings. Presently we are doing molecular characterization of these mutants.</li> <li>• Molecular evolution: we are studying nucleotide polymorphisms in bacteria by comparing genome sequences different strains within a species to understand base substitution mutation spectra and the role of replication and transcription .</li> </ul>
S. P. G. Ponnamm	<ul style="list-style-type: none"> <li>• Ours is probably the only group working on the molecular genetic analysis of <i>Keratoconus</i> patients from Assam, India. We are also attempting to perform in vitro studies to correct defective region of the CHST6 gene associated with Macular Corneal Dystrophy using the CRISPR-Cas9 system. Currently, both the projects are being actively pursued.</li> </ul>

#### RESEARCH PROJECTS: ONGOING AND NEW

Project Title	Funding Agency	Amount (in INR)	Duration	Investigators	Collaboration
Studies on epidemiology, hospital management of snakebite, and standardization of laboratory tests for assessment of efficacy and quality control of commercial antivenom manufactured in India and in ASEAN countries.	DST-SERB (Under ASEAN)	₹46.43 Lakhs	3 years (February 2018 - January 2021)	A. K. Mukherjee	Dr. C. H. Tan, Department of Pharmacology, Faculty of Medicine, University of Malaya, Malaysia & Dr. L. V. Dong, Vietnam Military Medical University, Hanoi city, Vietnam
Development of functionalized nanoparticles-based novel diagnostic kit for the detection of species-specific snake envenomation	DBT Tata Innovation Fellowship	₹18.00 Lakhs	3 years (April 2018- March 2021)	A. K. Mukherjee	NA
Development of snake venom toxins-targeted specific novel anti-venom	BIRAC-PACE	₹38.00 Lakhs	1 year (June 2018-December 2019)	A. K. Mukherjee	Dr. M. V. Khadilkar, Premium Serum and Vaccines Pvt.

					Ltd, Mumbai
Studies on signal transduction mechanism(s) of neurotrophin molecules from Indian cobra ( <i>Naja naja</i> ) and Russell's Viper ( <i>Daboia russelii</i> ) venoms in cultured neuronal cells and their functional significance	SERB, New Delhi	₹39.29 Lakhs	3 years (December 2018-November 2021)	A. K. Mukherjee	Dr. R. Doley, Tezpur University, Tezpur, Assam
Studies on country specific polyvalent Snake Venom Antiserum for Sri Lanka developed by Premium Serums & Vaccines Pvt. Ltd: Purity assessment and immuno cross-reactivity analyses	Premium Serum & Vaccines Pvt. Ltd., Pune	₹5.09 Lakhs	1 year (April 2019-March 2020)	A. K. Mukherjee	Premium Serum & Vaccines Pvt. Ltd., Pune
Pharmacological studies of recombinant and mutant fibrin(ogen)olytic protease(s) for the prevention and/or treatment of hyperfibrinogenemia associated cardiovascular disorders	DBT, New Delhi	₹26.04 Lakhs	2 year (September 2018-March 2020)	A. K. Mukherjee	U. C. Benerjee, Department of Pharmaceutical Technology, National Institute of Pharmaceutical Education and Research (NIPER), Punjab.
Search of potent inhibitors against target from <i>L. donovani</i> (Visceral Leishmaniasis) using systems biology, virtual screening and molecular dynamics	DBT	₹15.00 Lakhs	2 years (2019-2021)	A. N. Jha	IIT, Ghy
Biophysical	DBT	₹70.00	3 years	A. N. Jha	Central

characterization of adenylosuccinate lyase- a potential drug target from <i>Leishmania donovani</i> - a computational and molecular approach		Lakhs	(2017-2020)		University of Gujrat
Nanoparticle based approach to enhance the AMP efficacy against AMP resistant bacteria	DBT	₹38.00 Lakhs	4 years (2016 - 2020)	A. N. Jha	NIT, Rourkela
Development of synthetic derivatives of natural compound, Noscapine as tubulin binding chemotherapeutic agent and evaluation of its synergistic effect with Taxotere for management of human breast cancer	DBT	₹70.50 Lakhs	3 Years (2018-2021)	A. Ramteke	Sambalpur University, Sambalpur Orissa and Indian Institute of Chemical Technology, Hyderabad
Studies on exosomal lipidomics and microRNAs and their clinical utility in the management of metastatic and multiple drug resistant breast cancer	DST	₹54.03 Lakhs	4 Years (2016-2020)	A. Ramteke	NA
Studies on proteome and lipidome and their clinical implications in the management of drug resistant and recurrent head and neck squamous cell carcinoma (HNSCC)	ICMR	₹19.95 Lakhs	4 Years (2016-2020)	A. Ramteke	Dept. of chemical Sciences, Tezpur University

Bio-refinery Approach for Generation of Platform Chemicals and Bioethanol from Indigenous Lignocellulosic Agro-waste And Algal Bioresources.	DBT	₹75.67 Lakhs	3 Years (2017-2020)	E. Kalita	S. S. Singh, National Institute of Renewable Energy, Punjab
Multi-Crop Residue Processing Technology Package for Production of Fuel and Fertilizer (Under IMPRINT-IIC.1 programme)	SERB, DST, Govt. of India	₹140.78 Lakhs	2 years (2019-2021)	E. Kalita	Department of Energy, Tezpur University
Optimization of nanocatalysts for sustainable conversion of food wastes into value added products	Scheme for Transformational and Advanced Research in Sciences [STARS], Ministry of Human Resource Development, [MHRD, Govt. of India],	₹53.8 Lakhs	2 years (2020-2022)	E. Kalita	Department of Chemicals Sciences, Tezpur University
UGC StartUp grant	UGC	₹10.00 Lakh	2 years (2018-2020)	J. P Saikia	NA
Anticancer compounds purification from Oroxyllum indicum root culture	DBT	₹72.54 Lakh	3 years (2019-2022)	J. P. Saikia	M. Saikia, ADP College, Nagaon
Studies on antimicrobial and anti-biofilm activities of medicinal plant	DBT	₹52.97 Lakhs	3 Years (2017-2020)	M. Mandal	NEERI, Nagpur, Central Agricultural University, Aizawl
Bioconversion of organic wastes and de-oiled algal residue into biodiesel and value added products	DBT	₹11.99 Lakhs	2 Years (2019-2021)	M. Mandal	IIT Guwahati

(carotenoids) using oleaginous microbes					
Standardization of Indigenous Probiotic based Formulation for Immunity, Glucose and Lipid metabolism	DBT	₹67.57 Lakhs	2 Years (2020-2022)	M. Mandal	Institute of Medicinal and Aromatic Plants, Lucknow
Computational Investigation on the membrane-induced self-assembly and aggregation of a-Synuclein	Science and Engineering Research Board (SERB)	₹44.78 lakhs	3 Years (2018-2021)	M. V. Satish Kumar	NA
Development of novel rationally designed ferrocene, glucose and folic acid conjugated lanthanide (III), iron (III) and cobalt (III) complexes as antibacterial and theranostic anticancer agents,	DBT, India	₹104 Lakhs	3 years (2019-2022)	M. V. Satish Kumar	A. Hussain, Handique Girls' College, Guwahati and K. K. Saikia, Guwahati Univeristy
Identification and characterization of active molecules derived from selected edible medicinal plants of Arunachal Pradesh against rotavirus and clinical isolates of drug resistant <i>E. coli</i> and <i>S. aureus</i>	DBT	₹58.41 Lakhs	3 Years (2019-2022)	N. D. Namsa	NA
Integrative approach for understanding the role of noncoding mutations in the evolution of biological systems	DBT-Ramalingaswamy fellowship Contingency grant	₹35.00 Lakhs	5 Years (February 2018-January 2023)	P. Barah	NA
Integrative systems biology approach to identify the molecular response signatures in Rice during concurrent biotic ( <i>Rhizoctonia solani</i> ) and abiotic (heat)	DBT-NERBP MC	₹82.96 Lakhs	3 Years (July 2018 -June 2021)	P. Barah	P. B. Kirti, Agri Biotech Foundation, Hyderabad

stresses					
Big data and Machine learning based approach to understand combined stress response signatures in multiple cultivating crop plants	DST-SERB	₹23.24 Lakhs	2 years (November 2019-September 2021)	P. Barah	NA
Search for novel anti-platelet and anti-thrombin peptides from Indian viper venom ( <i>Daboia russelii</i> ): Purification, characterization and evaluation of its anti-thrombotic potential	DBT, Govt. of India	₹60.796 Lakhs	3 Years (September 2018 to August 2021)	R. Doley & R. Mukhopadhyay	Prof. M. Ashraf, Jamia Milia Islamia University
Isolation, identification and characterization of marker proteins from the venom of <i>Naja kaouthia</i> and <i>Bungarus fasciatus</i> of North East India for development of rapid diagnostic tool for identification snakebite in North East India Funding Agency	ICMR, Govt. of India	₹38.53 Lakhs	3 Years (February 2018 to January 2021)	R. Doley & A.K. Mukherjee	NA
Aptmer based rapid test to differentiate venomous snake bites from non-venomous and dry snake bites	BIRAC, Govt. of India	₹ 12.25 Lakhs	(June 2018-2 Years August 2020)	R. Doley	T. K. Sharma THSTI, Faridabad
Studies on genetic and epigenetic alternations on keratoconus patients from Assam, India	DBT/IIT	₹15.98 Lakhs	3 Years (2019-2022)	S. P. G. Ponnamp	NA

In vitro studies to investigate the therapeutic approach of editing the defective exon 3 of the human CHST6 gene associated with Macular Corneal Dystrophy through the CRISPR-Cas9 technology".	SERB, DST	₹45.94 Lakhs	3 Years (2019-2022)	S. P. G. Ponnam	NA
---	-----------	--------------	---------------------	-----------------	----

## PUBLICATIONS

### Journal Publications:

1. Chanda A. & Mukherjee A. K. Mass spectrometry analysis to unravel the venom proteome composition of Indian snakes: Opening new avenues in clinical research. *Expert Review of Proteomics*. 2020.
2. Patra A. & Mukherjee A. K. Proteomic analysis of Sri Lanka *Echis carinatus* venom: Immunological cross-reactivity and enzyme neutralization potency of Indian polyantivenom. *Journal of Proteome Research*. 2020.
3. Chanda A. & Mukherjee A. K. Quantitative proteomics to reveal the composition of Southern India spectacled cobra (*Naja naja*) venom and its immunological cross-reactivity towards commercial antivenom. *International Journal of Biological Macromolecules*. 160. 2020.
4. Das B., Patra A. & Mukherjee A. K. Correlation of venom toxinome composition of Indian red scorpion (*Mesobuthus tamulus*) with clinical manifestations of scorpion sting: Failure of commercial antivenom to immune-recognize the abundant of low molecular mass toxins of this venom. *Journal of Proteome Research*. 19(4). 2020.
5. Rai S. K., Roy J. K. & Mukherjee A. K. Application of poly(vinyl alcohol) assisted silver nanoparticles immobilized  $\beta$ -keratinase composite as topical antibacterial and dehairing agent. *Journal of Protein and Proteomics*. 2020.
6. Gogoi D., Ramani S., Bharati S., Chattopadhyay P. & A. K. Mukherjee Characterization of active anticoagulant fraction and a fibrin(ogen)olytic serine protease from leaves of *Clerodendrum colebrookianum*, a traditional ethno-medicinal plant used to reduce hypertension. *Journal of Ethnopharmacology*. 243, 112099. 2019.
7. Kalita B., Dutta S. & Mukherjee A. K. RGD-independent binding of Russell's Viper venom Kunitz-type protease inhibitors to platelet GPIIb/IIIa receptor. *Scientific Reports*, 9. 8316. 2019.
8. Kalita B. & Mukherjee A. K. Recent advances in snake venom proteomics research in India: A new horizon to decipher the geographical variation in venom proteome composition and exploration of candidate drug prototypes. *Journal of Proteins and Proteomics*. 10. 2019.
9. Thakur R., Chattopadhyay P. & Mukherjee A. K. The wound healing potential of a pro-angiogenic peptide purified from Indian Russell's Viper (*Daboia russelii*) venom. *Toxicon*. 165. 2019.
10. Patra A., Chanda A. & Mukherjee A. K. Quantitative proteomic analysis of venom from Southern India common krait (*Bungarus caeruleus*) and identification of poorly immunogenic toxins by immune-profiling against commercial antivenom. *Expert Review of Proteomics*. 16(5). 2019.

11. Dutta S., Sinha A., Dasgupta S. & Mukherjee A. K. Binding of a *Naja naja* venom acidic phospholipase A<sub>2</sub> cognate complex to membrane-bound vimentin of rat L6 cells: Implications in cobra venom-induced cytotoxicity. *Biochimica et Biophysica Acta-Biomembrane*. 1861, 958-977. 2019.
12. Chanda A., Kalita B., Patra A., Sandani W. D, Senevirathne T. & Mukherjee A. K. Proteomic analysis and antivenomics study of Western India *Naja naja* venom: Correlation between venom composition and clinical manifestations of cobra bite in this region. *Expert Review of Proteomics*. 16 (2). 2109.
13. Deka A., Sharma M., Mukhopadhyay R. Devi A. & Doley R. Naja kaouthia venom protein, Nk-CRISP, upregulates inflammatory gene expression in human macrophages. *International Journal of Biological Macromolecules*. 160(1). 2020.
14. Deka A., Gogoi A., Das D., Purkayastha J. & Doley R. Proteomics of Naja kaouthia venom from North East India and assessment of Indian polyvalent antivenom by third generation antivenomics. *Journal of Proteomics*. 22. 2019.
15. Deka A., Reza M. A., Faisal Hoque K. M., Deka K., Saha S. & Doley R. Comparative analysis of Naja kaouthia venom from North-East India and Bangladesh and its cross reactivity with Indian polyvalent antivenoms. *Toxicon*. 2019.
16. Borah A. K., Singh A., Yasmin R., Doley R., Mattaparthi V.S.K. & Saha S. 1 $\alpha$ , 25-dihydroxy Vitamin D<sub>3</sub> containing fractions of *Catharanthus roseus* leaf aqueous extract inhibit preadipocyte differentiation and induce lipolysis in 3T3-L1 cells. *BMC Complement Altern. Med*. 29 (1). 2019.
17. Kashyap R., Chakraborty S., Zeng S., Swarnakar S., Kaur S., Doley R. & Mondal, B. Enhanced Biosensing Activity of Bimetallic Surface Plasmon Resonance Sensor. *Photonics*. 6(4). 2019.
18. Gupta K., Singh S. P., Manhar A. K., Saikia D., Namsa N. D., Konwar B. K. & Mandal M. Inhibition of *Staphylococcus aureus* and *Pseudomonas aeruginosa* Biofilm and Virulence by Active Fraction of *Syzygium cumini* (L.) Skeels Leaf Extract: *In Vitro* and *In Silico* Studies. *Indian J Microbiol*. 59(1). 2019.
19. Phukan M. M., Bora P., Gogoi K. & Konwar B. K. Biodiesel from *Saccharomyces cerevisiae*: fuel property analysis and comparative economics. *SN Applied Sciences*. 1(2). 2019.
20. Singh S. P., Hussain I., Konwar B. K., Deka R. C. & Singh C. B. Design of potential IKK- $\beta$  inhibitors using molecular docking and molecular dynamics techniques for their anti-cancer potential. *Current Computer Aided Drug Design*. 2020.
21. Chanu L. V., Nongalleima K., Singh S. P., Chanu W. K., Singh C. B. & Singh O. M. Synthesis, anti-inflammatory evaluation and in silico studies of naphtho[1,2-e][1,3]oxazine derivatives as potential non-steroidal anti-inflammatory agents. *Medicinal Chemistry Research*. 29 (2). 2020.
22. Phukan M. M. & Konwar B. K. Leveraging microalga feedstock for biofuel production and wasteland reclamation using remote sensing remote sensing and ex situ experimentation. *Renewable Energy*. 2020.
23. Phukan T., Kabyashree K., Singh R., Sharma P. L., Singh N., Barman A., Jena B. R. and Ray S.K., *Ralstonia solanacearum* virulence in eggplant seedlings by the leaf clip inoculation. *Phytopathol Researc*. 1:23. 2019.
24. Patowary P., Bhattacharyya D. K. & Barah P. Identifying critical genes in esophageal squamous cell carcinoma using an ensemble approach. *Informatics in Medicine Unlocked*. 18, 100277. 2020.
25. Sahu A., Chowdhury H. A. & Barah P. Integrative network analysis identifies differential regulation of neuroimmune system in Schizophrenia and Bipolar disorder. *Brain, Behavior, & Immunity-Health*. 100023. 2019.

26. Kakati T., Bhattacharyya D.K., Barah P. & Kalita J. K. Comparison of Methods for Differential Co- Expression Analysis for Disease Biomarker Prediction. *Computers in Biology and Medicine*. 113, 103380. 2019.
27. Körber V., Yang J., Barah P., Reifengerger G, Höfer T. & Lichter P. EvolutionaryTrajectories of IDHWTGlioblastomas Reveal a Common Path of Early Tumorigenesis Instigated Years ahead of Initial Diagnosis. *Cancer Cell*. 15;35(4). 2019.
28. Saikia J. P., Boruah K. & Alam A. Traditional Medicine: Garlic extract in hot mustard oil in relieving common cold, *IJRAR*. 6. 2019.
29. Singh A., Borah A. K., Deka K., Gogoi A. P., Verma K., Barah, P. & Saha S. Arginylation regulates adipogenesis by regulating expression of PPA R<gamma>at transcript and protein level. *Biochim Biophys Acta Mol Cell Biol Lipids*. 1864(4). 2019.
30. Mandal M., Bardhan P., Mandal M. & Maji T. K. Study of UV stability, biodegradability and physical properties of rosin derivative cross-linked wood polymer composites. *International Wood Products*. 11(1). 2020.
31. Gupta K., Singh S. P., Manhar A. K., Saikia D., Namsa N. D., Konwar B. K. & Mandal M. Inhibition of Staphylococcus aureus and Pseudomonas aeruginosa biofilm and virulence by active fraction of Syzygium cumini (L.) Skeels leaf extract: in-vitro and in silico studies. *Indian journal of microbiology*. 59(1), 13-21. 2019.
32. Ojah N., Deka J., Haloi S., Kandimalla R., Gogoi D., Medhi T., Mandal M. Ahmed G. A. & Choudhury A. J. Chitosan coated silk fibroin surface modified by atmospheric dielectric-barrier discharge (DBD) plasma: a mechanically robust drug release system. *Journal of Biomaterials Science, Polymer* .13 (1). 2019.
33. Pritam B., Gohain M., Daimary N., Kishor S., Chattopadhyay P., Gupta K., Chaliha C., Kalita, E., Deka D. & Mandal M. Microbial lipids from cellulolytic oleaginous fungus Penicillium citrinum PKB20 as a potential feedstock for biodiesel production. *Annals of Microbiology*. 69 (11). 2019.
34. Asifa Q., Yogeshwari B. I., Saikia D., Mandal M. & Purohit H. Bacteria associated with non-alcoholic fermented bamboo shoot food product. *Journal of Microbiology, Biotechnology and Food Sciences*. 9(4). 2020.
35. Sen A., Namsa N. D., Feng N. & Harry B. Greenberg. Rotavirus Reprograms Multiple Interferon Receptors and Restricts Their Intestinal Antiviral and Inflammatory Functions. *J Virol*. 94(6). 2020.
36. Hatiboruah D., Devi D.Y., Namsa N. D. & Nath P. Turbidimetric analysis of growth kinetics of Bacteriain the laborator environment using smartphone. *J. Biophotonics*. 2020.
37. Baruah J., Chaliha C., Kalita E., Nath B. K., Field R. A. & Deb P. Modeling and optimization of factors influencing adsorptive performance of agrowaste-derived nanocellulose/iron oxide nanobiocomposites during remediation of arsenic contaminated groundwater. *International Journal of Biological Macromolecules*. 2020.
38. Baruah J., Deka R. C. & Kalita, E. Greener production of microcrystalline cellulose (MCC) from Saccharum spontaneum (Kans grass): Statistical optimization. *International Journal of Biological Macromolecules*. 2020.
39. Chaliha, C., Kalita E. & Verma P. K. Optimizing In vitro Culture Conditions for the Biotrophic Fungi Exobasidium vexans Through Response Surface Methodology. *Indian Journal of Microbiology*. 2019.
40. Nath B. K., Chaliha C. & Kalita E. Iron oxide Permeated Mesoporous rice-husk nanobiochar (IPMN) mediated removal of dissolved arsenic (As): Chemometric modelling and adsorption dynamics. *Journal of environmental management*. 246. 2019.
41. Bora, N., & Jha A. N. In silico metabolic pathway Analysis identifying target against Leishmaniasis – A Kinetic modeling approach. *Frontiers in Genetics*. 2020.

42. Das S., Hazarika Z., Sarmah S., Baruah K., Rohman M. A., Paul D., Jha A. N. & Roy A. S. Exploring the interaction of bioactive kaempferol with serum albumin, lysozyme and hemoglobin: A biophysical investigation using multi-spectroscopic, docking and molecular dynamics simulation studies. *Journal of Photochemistry and Photobiology B: Biology*. 205. 2020.
43. Das S., Sarmah S., Hazarika Z., Rohman M. A., Sarkhel P., Jha A. N. & Roy A. S. Targeting the heme protein hemoglobin by (-)-epigallocatechin gallate and the study of polyphenol-protein association using multi-spectroscopic and computational methods. *Physical Chemistry Chemical Physics*. 22. 2020.
44. Hazarika Z. & Jha A. N. Computational analysis of Silver nanoparticle - human serum albumin complex. *ACS Omega*. 5. 2020.
45. Saynaz A. C., Bora N., Banerjee D., Arora L., Das A. S., Yadav R., Klotz K.-N., Pal D. & Jha A. N., Dasgupta S. A novel small molecule A2A receptor agonist, indirubin-3'-monoxime, alleviates lipid-induced inflammation and insulin resistance in 3T3-L1 adipocytes. *Biochemical Journal*. 476. 2019.
46. Dutta N., Borah P. & Mattaparthi V. S. K. Effect of CTerm of human albumin on the aggregation propensity of A $\beta$ 1-42 peptide: a potential of mean force study, *Journal of Biomolecular Structure and Dynamics*. 2020.
47. Das P. & Mattaparthi V. S. K. Computational Investigation on the p53-MDM2 Interaction Using the Potential of Mean Force Study, *ACS Omega*. 5(15). 2020.
48. Das P. & Mattaparthi V.S.K. Computational investigation on the molecular interactions between MDM2 and its photoactivatable inhibitor. *Biointerface Research in Applied Chemistry*. 9(6). 2019.
49. Kakati M., Das D., Das P., Sanjeev A. & Mattaparthi V. S. K. Effect of ethanol as molecular crowding agent on the conformational dynamics of  $\alpha$ -synuclein, *Letters in Applied Nano BioScience*. 9(1). 2020.
50. Borah P., Sanjeev A., & Mattaparthi V.S.K. Computational investigation on the effect of Oleuropein aglycone on the  $\alpha$ -Synuclein aggregation, *Journal of Biomolecular Structure and Dynamics*. 2020.
51. Borah P. & Mattaparthi V.S.K. Computational investigation on the role of C-Terminal of human albumin on the dimerization of A $\beta$ 1-42 peptide, *Biointerface Research in Applied Chemistry*. 10(1). 2020.
52. Borah P. & Mattaparthi V.S.K. Effect of Ionic Strength on the aggregation propensity of A $\beta$ 1-42 peptide: An in-silico study, *Current Chemical Biology*. 2020.
53. Das D., Kakati M., Gracy A., Sanjeev A., Patra S.M. & Mattaparthi V.S.K. Screening of druggable conformers of  $\alpha$ -synuclein using molecular dynamics simulation. *Biointerface Research in Applied Chemistry*. 10(3). 2020.
54. Sharma M., Ganeshpandian M., Sanjeev A., Tamilarasan A. K., Mattaparthi V. S. K., Islam .S. & Palaniandavar M. Bis-and mixed-ligand copper (II) complexes of nalidixic acid the antibacterial drug: Mode of nalidixate coordination determines DNA binding and cleavage and cytotoxicity, *Inorganica Chimica Acta*. 504. 119450. 2020.
55. Anand R., Agrawal M., Mattaparthi V.S.K. Swaminathan R. & Santra S.B. Consequences of Heterogeneous Crowding on an Enzymatic Reaction: A Residence Time Monte Carlo Approach, *ACS Omega*. 4. 2019.
56. Majumder M., Debnath S., Gajbhiye R. L., Saikia R., Gogoi B., Samanta S. K., Das D. K., Biswas K., Jaisankar P. & Mukhopadhyay R. *Ricinus communis* L. fruit extract inhibits migration/invasion, induces apoptosis in breast cancer cells and arrests tumor progression in vivo. *Scientific Reports*. 9. 2019.

57. Borah A., Das D. K., Hazarika M. K., Mukhopadhyay R. & Mahanta C. L. Low-cost healthy extrudates of rice and *bhimkol* (*Musa balbisiana*, ABB) formulated through linear programming. *J. Food Process Eng.* 2019.

### Conference Proceedings

1. Mukherjee A. K. Proceeding of the National Workshop on Recent Advances in Immuno-Proteomics. CSIR-IGIB, North campus, Mall Road, Delhi, 2019.
2. Mukherjee A. K. Proceeding of the International Symposium on Snakebites. Indian Institute of Science, 2019.
3. Mukherjee A. K. Proceeding of the 65<sup>th</sup> Annual Conference of the Association of Physiologists and Pharmacologists of India (APPICON 2019). Guwahati Medical College and Hospital, Guwahati, 2019.
4. Mukherjee A. K. Proceeding of the 11<sup>th</sup> Annual Meeting of the Proteomics Society, India (PSI) and the International Conference on Proteomics for System Integrated Bio-Omics, One Health and Food Safety. NDRI, Karnal, 2019.
5. Mukherjee A. K. Proceeding of the Venom Week 2020, 7<sup>th</sup> Annual Meeting of the North American Society of Toxinology. University of Florida, Gainesville, USA, 2020.
6. Sharma M., Das A. S., Basu A., Majumder M., and Mukhopadhyay R. High dietary salt induces inflammation-induced anti-tumorigenicity. Proceedings of the International Symposium on Emerging Trends and Challenges in Cancer Chemoprevention, Diagnosis and Therapeutics, Tezpur University, Assam, India 2020.
7. Das A.S., Basu A., Bakshi S., Sharma M., Kumar R., Borah P.K., Duary R.K., Ray P.S. and Mukhopadhyay R. Large ribosomal subunit protein RPL22 surveils CCL2 expression by post-transcriptional regulation in PLS-mediated inflammation", EMBO. Workshop on Protein Synthesis and Translational Control, EMBL, Heidelberg, Germany, 2019.
8. Konwar B. K. *National Conference on Application of Nanotech & Biotech in day life'*, Sibsagar College, Jaysagar, Assam.2019.
9. Konwar, B. K. Chemistry in multi- and inter-disciplinary science research. Dept of Chemistry, Dibrugarh University, Assam, 2019.
10. Mandal M., Gupta K., Rathod M. Nano-emulsions derived from Kaji lemon (*Citrus limon*) fruit peel as a potential therapeutic to combat biofilm formation of *P. aeruginosa* and *C. albicans*. Proceedings of the National conference on Emerging trends on Advances in Materials Science, Mujal Institute of Technology, Gurgaon, Haryana, 2020

---

### Books

1. B. K. Konwar. Bacterial Bio-surfactant. Apple Academic Press (CRC, Taylor and Francis Gr), 2020.

### Book Chapters

1. A. K. Mukherjee, B.Kalita, S. Dutta, A. Patra, C.R. Maity, D. Punde Snake Envenomation: Therapy and Challenges in India. Second Edition. In S. P. Mackessy (Ed.). Section V: Global Approaches to Envenomation and Treatments, Handbook of Venoms and Toxins of Reptiles. CRC Press, USA, 2020.

**PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD**

Inventor(s)	Patent	Patent number/Application Number	National/International
A. K. Mukherjee	Toxins-Targeted Specific Novel Anti Snake Venom	201831038837	National
T. K. Sharma, A. Anand, & R. Doley, Robin Tezpur University, Assam, India	Aptamers Against Phospholipase A2 In Snake Venom And Uses Thereof	201911027455	National

**CONSULTANCY**

Consultants	Title/Nature of the consultancy work	Client	Amount
A. K Mukherjee	Studies on country specific polyvalent Snake Venom Antiserum for Sri Lanka developed by Premium Serums & Vaccines Pvt. Ltd: Purity assessment and immuno cross-reactivity analyses	Premium Serum & Vaccines Pvt. Ltd., Pune	₹ 5,09,152.00

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute /Venue
A. K. Mukherjee & S. Dutta,	Protein and peptide-based Antithrombotic Cardiovascular Drug Development from Snake Venoms: Prospects and Challenges	106 <sup>th</sup> Indian Science Congress, New Biology section, Lovely Professional University, Phagwara, Punjab, 3-7	3-7 January 2019	Phagwara, Punjab,
A. K. Mukherjee	Tandem mass spectrometry analysis to show geographical variation in Indian Russell's Viper ( <i>Daboia russelii</i> ) venom composition and its impact on clinical manifestations and antivenom therapy	8th Annual Conference of Indian Academy of Biomedical Sciences	February, 2019	Thiruvananthapuram
A. K. Mukherjee	Characterization of	International	16 October	Indian Institute

	Indian snake venoms and commercial antivenom	Symposium on Snakebites, Indian Institute of Science,	2019	of Science
A. K. Mukherjee	Drug from Snake Venom: Exploring the Anticancer Mechanism of Russell's Viper Venom Proteins	4th Chapter of National Seminar in Frontiers in Biotechnology, St. Xavier's College (Autonomous), Kolkata	5 November 2019	St. Xavier's College (Autonomous), Kolkata
A. K. Mukherjee	Proteomic Analysis to Correlate the Russell's Viper (RV) Venom Proteome Composition with Clinico-pathological Manifestation Post-Envenomation : Therapy Against RV Envenomation	65 <sup>th</sup> Annual Conference of the Association of Physiologists and Pharmacologists of India (APPICON 2019), Guwahati Medical College and Hospital, Guwahati	28-30 November 2019	Guwahati Medical College and Hospital, Guwahati
A. K. Mukherjee	Recent developments in snake venom proteomics research in India: A new perspective	11 <sup>th</sup> Annual Meeting of the Proteomics Society, India (PSI) and the International Conference on Proteomics for System Integrated Bio-Omics, One Health and Food Safety	2-4 December 2019	Karnal - Haryana, India
A. K. Mukherjee,	Species-specific and geographical variation in venom composition of Indian Cobra: Impact on polyantivenom therapy	Venom Week 2020, 7 <sup>th</sup> Annual Meeting of the North American Society of Toxinology, at University of Florida, Gainesville, USA	4-7 March, 2020	University of Florida, Gainesville, USA
A. K. Mukherjee,	Quality Control of Commercial Anti-snake Venom by Quantitative Proteomic Analysis and Immuno-profiling	National Workshop on Recent Advances in Immuno-Proteomics, CSIR-IGIB, North campus,	29-30 of August, 2019	CSIR-IGIB, North campus, Mall Road, Delhi

	against Snake Venoms	Mall Road, Delhi		
B. K. Konwar	National Seminar on Current Research in drug discovery & development	Dibrugarh University	13-14 November 2019	Dibrugarh, Assam, India
B. K. Konwar	National Conference on Applications of Nanotechnology and Biotech in day life	Sibsagar College	27-29 October 2019	Jaysagar, Assam, India

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
A.K. Mukherjee,	Invited speaker, 106th Indian Science Congress, New Biology section, Lovely Professional University, Phagwara, Punjab	3-7 January 2019	Lovely Professional University, Phagwara, Punjab
A.K. Mukherjee	Invited speaker and Resource Person, National Workshop on Recent Advances in Immuno-Proteomics, CSIR-IGIB, North campus, Mall Road, Delhi, 29-30 August, 2019	29-30 August 2019	CSIR-IGIB, North campus, Mall Road, Delhi, 29-30 August, 2019
A.K. Mukherjee	Invited speaker, International Symposium on Snakebites, Indian Institute of Science	16 October 2019	Indian Institute of Science
A.K. Mukherjee	Invited Plenary Speaker, 4th Chapter of National Seminar in Frontiers in Biotechnology, St. Xavier's College (Autonomous), Kolkata	5 November 2019	St. Xavier's College (Autonomous), Kolkata
A.K. Mukherjee	Invited speaker, 65 <sup>th</sup> Annual Conference of the Association of Physiologists and Pharmacologists of India (APPICON 2019), Guwahati Medical College and Hospital, Guwahati	28-30 November 2019	Guwahati Medical College and Hospital, Guwahati
A.K. Mukherjee	Invited speaker, 11 <sup>th</sup> Annual Meeting of the Proteomics Society, India (PSI) and the International Conference on	2-4 December 2019	NDRI, Karnal

	Proteomics for System Integrated Bio-Omics, One Health and Food Safety, NDRI, Karnal		
A.K. Mukherjee	Invited Plenary Speaker, Venom Week 2020, 7 <sup>th</sup> Annual Meeting of the North American Society of Toxinology, at University of Florida, Gainesville, USA	4-7 March 2020	University of Florida, Gainesville, USA
S. K. Ray	Invited talk	19 July 2019	Microbiology and Cell Biology Department, IISc Bangalore.
S. K. Ray	Molecular Microbiology Meeting	12 July 2019	CDFD, Hyderabad
M .Mandal	National Conference on Emerging Trends on Advance in Materials Science	16-17 January 2020	Gurgaon, Haryana

## AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS

### Faculty members and Staff

Year	Name of the faculty	AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS
2019	A. K. Mukherjee	Nominated and sponsored by Ministry of Human Resource Development (MHRD), Govt. of India for participation in three weeks programme (two weeks in India and one week in abroad) on the “Leadership-for-Academicians Programme (LEAP)” organized by UGC-Human Resource Development Centre, JNU, New Delhi ( two weeks) and National University of Singapore, Singapore (one week). The main objective of LEAP is to prepare second tier academic heads who are potentially likely to assume leadership roles (VC / Director) in the future
		National Task Force Expert Member “ICMR-National Task Force for Research on Snake Bite in India”, Indian Council of Medical Research, Govt. of India.
		Elected Fellow, West Bengal Academy of Science and Technology, Kolkata, West Bengal, India.
		Expert Member, National Advisory Committee on Snakebite Envenoming, Department of Biotechnology, Ministry of Science and Technology, Govt. of India
2020	E. Kalita	Selected for a 4 week training in three European Institutes (UniMi , Milan; UNIVPM, Ancona and AUA, Athens) and ICRISAT, India on Climate Smart Crop development and management under Erasmus+ sponsored AdaptNet Project

### Research Scholar/Student

- Damayanti Yengkhom Devi was awarded 3<sup>rd</sup> Best Poster Presentation Award in Medical Virology in poster presentation entitled “Hospital-based Surveillance of Rotavirus Diarrhea Among Under-five Children in RIMS, Imphal, Manipur” conferred at the 28<sup>th</sup> International Conference of Virology “VIROCON 2020” organized by the Indian Virological Society (IVS).
- Anindhya Sundar Das received EMBO-Travel Grant for attending EMBO Workshop: Protein Synthesis and Translational Control, EMBL, Germany, 4-7 September 2019. He presented a poster titled “Large ribosomal subunit protein RPL22 surveils CCL2 expression by posttranscriptional regulation in LPS-mediated inflammation” in the workshop.

### OTHER IMPORTANT ACTIVITIES

#### “International Symposium on Emerging Trends and Challenges in Cancer Chemoprevention, Diagnosis and Therapeutics”

The “International Symposium on Emerging Trends and Challenges in Cancer Chemoprevention, Diagnosis and Therapeutics” was organized from February 17-18, 2020. This event was supported by Department of Biotechnology, Government of India, Department of Science and Technology, Government of India, Council of Scientific and Industrial Research (CSIR), Government of India and Tezpur University, Tezpur. There were 10 sessions with 26 invited talks, 6 oral presentations and 21 poster presentations covering various aspects of cancer biology including Molecular basis of carcinogenesis and chemoprevention, Tumor microenvironment, Cancer metabolome, novel phytochemical and molecular targets for interventions, novel biomarkers for diagnosis and therapeutics chemoprevention and novel strategies for prevention and therapeutics. The total of 102 scientists, researchers and students across the country and abroad participated in the symposium.

### NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET

CSIR-NET-JRF : 08  
 DBT-JRF : 04  
 ICMR-JRF : 01  
 GATE : 18

### NOTABLE PLACEMENTS

Name	Designation	Organization
Ms Karishma Borah	Ph.D.	IISER Pune
Mr Malaya Mili	Ph.D.	IIT Guwahati
Ms Dwipjyoti Sarmah	Ph.D.	IISER Mohali
Ms Nirmita Dutta	Ph.D.	IIT Kharagpur
Ms Binita Dam	Ph.D.	NCBS Bangalore
Ms Gariyoshi Mahanta	Ph.D.	IIT Guwahati
Ms Tania Sarkar	M Tech	IIT Guwahati
Ms Angom Hiroshima	Ph.D.	IIT Guwahati
Mr Dwaipayan Chakrabarty	Ph.D.	IISc Bangalore
Mr Vijay Singh Bohara	Ph.D.	IIT Guwahati

Ms Aditi Gogoi	Govt. job as Field cum Lab Assistant	College of veterinary science and animal husbandry, Central agricultural university, Imphal
Mr Azharul Alam	Forest Ranger Officer	Environment and Forest Dept., Govt. of Assam
Ms Vatsala Pokhrel	Research Associate	Life Sciences R& I, Tata Research Development and Design Centre, TCS, Pune
Ms Anushree Roy	Faculty	Private Sector Spectrum Eduventures

## THE FACULTY OF THE DEPARTMENT

### Professors

B. K. Konwar, Ph.D. (Imperial College, London), DIC  
 Specialization/Areas of interest: Petroleum Biotechnology, Plant Biotechnology, Genetic Engineering- Metagenomics, Bioenergy  
 E-mail: bkkon@tezu.ernet.in

A. K. Mukherjee, Ph.D. (Burdwan University)  
 Specialization/Areas of interest: Snake Venom Biochemistry and Microbial Biotechnology  
 E-mail: akm@tezu.ernet.in

Shashi Baruah, Ph.D. (PGIMER, Chandigarh)  
 Specialization/Areas of interest: Molecular Immunology  
 E-mail: sbaruah@tezu.ernet.in

S. K. Ray, Ph.D. (CCMB-Hyderabad)  
 Specialization/Areas of interest: Plant-Microbe Interactions; Molecular Evolution  
 E-mail: suven@tezu.ernet.in

A. M. Ramteke, Ph.D. (JNU, New Delhi)  
 Head of the Department  
 Specialization/Areas of interest: Cancer Genetics and Chemoprevention  
 E-mail: anand@tezu.ernet.in

M. Mandal, Ph.D. (IGIB-Delhi)  
 Specialization/Areas of interest: Microbial Biotechnology  
 E-mail: mandal@tezu.ernet.in

R. Doley, Ph.D. (Tezpur University, Tezpur), Head & Co-ordinator  
 Specialization/Areas of interest: Molecular Toxinology  
 E-mail: doley@tezu.ernet.in

**Assistant Professors**

E. Kalita, Ph.D. (NIPGR, New Delhi & Gauhati University)

Specialization/Areas of interest: Plant-Pathogen-environment interactions, Nanobiotechnology, Environmental engineering, Bioenergy

E-mail: [ekalita@tezu.ernet.in](mailto:ekalita@tezu.ernet.in)

S. P. G. Ponnampalnam, Ph.D. (LVPEI & Hyderabad University, Hyderabad)

Specialization/Areas of interest: Human Molecular Genetics & Synthetic Biology

E-mail: [suryap@tezu.ernet.in](mailto:suryap@tezu.ernet.in)

A. N. Jha, Ph.D. (IISc-Bangalore)

Specialization/Areas of interest: Computational Biophysics, Bioinformatics

E-mail: [anjha@tezu.ernet.in](mailto:anjha@tezu.ernet.in)

R. Mukhopadhyay, Ph.D. (Jadavpur University, Kolkata)

Specialization: Inflammation biology, cancer Biology

E-mail: [mrupak@tezu.ernet.in](mailto:mrupak@tezu.ernet.in)

N. D. Namsa, Ph.D. (IISc-Bangalore)

Specialization/Areas of interest: Molecular Virology and Scrub typhus

E-mail: [namsa@tezu.ernet.in](mailto:namsa@tezu.ernet.in)

S. Dasgupta, Ph.D. (Visva-Bharati University, West Bengal)

Specialization/Areas of interest: Molecular Biology/ Disease Biology/Cellular metabolism

E-mail: [suman@tezu.ernet.in](mailto:suman@tezu.ernet.in)

M. V. S. Kumar, Ph.D. (IIT Guwahati)

Specialization/Areas of interest: Computational Biotechnology and Bioinformatics

E-mail: [venkata@tezu.ernet.in](mailto:venkata@tezu.ernet.in)

J. P. Saikia, Ph.D. (Tezpur University, Tezpur)

Specialization/Areas of interest: Plant Biology

E-mail: [jyoti06@tezu.ernet.in](mailto:jyoti06@tezu.ernet.in)

A. Kumar, Ph.D. (IISc, Bangalore)

Specialization/Areas of interest: Bioinformatics

Email: [aditya@tezu.ernet.in](mailto:aditya@tezu.ernet.in)

P. Barah, Ph.D. (Norwegian University of Science and Technology, Trondheim, Norway)

Specialization/Areas of interest: Computational Systems Biology

Email: [barah@tezu.ernet.in](mailto:barah@tezu.ernet.in)

**Technical staff**

Kalyan Kumar Hazarika, Ph.D. (Tezpur University, Tezpur)

Technical Officer

E-mail: [kalyan@tezu.ernet.in](mailto:kalyan@tezu.ernet.in)

Naba Kumar Bordoloi, Ph.D. (Tezpur University, Tezpur)

Senior Technical assistant

E-mail: [nabakb@tezu.ernet.in](mailto:nabakb@tezu.ernet.in)

P. Mudoi, M.Sc. (Diburgarh University, Dibrugarh)  
Junior Technical assistant  
E-mail: pmudoi@tezu.ernet.in

**Office Staff**

Mrs. P.S. Talukdar  
Assistant  
E-mail: pranita@tezu.ernet.in

Mr. Guna Das  
MTS  
E-mail: gdas@tezu.ernet.in

## DEPARTMENT OF PHYSICS

### THE DEPARTMENT

The Department was established in January 1998. Department of Physics has stridden out not only in its post-graduation teaching but also in new frontiers of research. To keep pace with the advancement in science and technology, new special papers have been included with adaptation to new developments within the course content. The areas of specialization for post-graduation includes Condensed Matter Physics, Electronics and Photonics, High Energy Physics, and Nano Science and Technology. To develop the students from the graduate level, the Department also started an Integrated M.Sc. in Physics in 2009. Keeping in mind the need of teachers at the school level, the Department has also been running a B.Sc.-B.Ed. programme since July 2011.

Major thrust areas of research of the Department are Astrophysics, High Energy Physics (Theoretical), Nanoscience, Neutrino, Optoelectronics, Plasma Physics, Microwaves and Solid State Ionics.

### Academic Programmes and Student intake

Programme	Intake
Ph.D.	Variable, 8 in 2019-20
M.Sc	38
Int. M.Sc	25
Int. B.Sc. B.Ed	11

### Major Facilities and Equipment Available

- Scanning Electron Microscope (SEM), Make: JEOL, Model: JSM 6390LV
- LB Film Depositor, Make: Apex Instruments, Model: LB2007DC
- FTIR (Shifted to SAIC), Make: Perkin Elmer, Model: Spectrum 100
- Millipore water Purification system, Make: MilliQ Model: MilliQ,
- UV-VIS Spectrophotometer, Make: Shimadzu, Model: UV-2450  
Range: 200nm to 1100nm
- Fluorescence Spectrometer, Make: Perkin Elmer, Model: LS 55  
Range: 200nm to 900nm
- XRD Make: RIGAKU, Model: Miniflex, Target: Copper, Wavelength: 1.54 Å  
Scanning Speed: 0.01 to 100° / Min ( Key board input)
- CNC Milling Machine, Make: MTAB, Model: XLMILL
- Optical Microscope, Make: Carl Zeiss
- Nd-Yag Laser, Make: Spectra Physics, Model: ND50
- High Vacuum Coating Unit, Make: Hind High Vac. Model:

**MAJOR RESEARCH AND DEVELOPMENT FINDINGS**

<b>Principal Investigator</b>	<b>Salient Research Findings</b>
N. Das	<ul style="list-style-type: none"> <li>Investigated anomalous phase transition and transport of dust particles in a streaming magnetized plasma</li> </ul>
P. Deb	<ul style="list-style-type: none"> <li>Exclusive T2 MRI contrast enhancement by mesoporous carbon framework encapsulated</li> <li>Graphitic-C3N4@FeNi3 heterostructure for in-plane micro-supercapacitor with superior quantum energy storage</li> <li>Janus nanoparticles for contrast enhancement of T1-T2 dual mode magnetic resonance imaging Magnetic proximity effect in Graphene-CrBr3 van der Waals heterostructures</li> </ul>
P. Nath	<ul style="list-style-type: none"> <li>Designed a smartphone optical microscope with optical magnification 520x.</li> <li>The ICMR sponsored research project entitled, "Smartphone based optical microscope for clinical applications" is envisaged to develop Low-cost field-portable optical microscope was developed with magnification of 400x or better that can use in resource poor settings where access to lab-grade microscope is limited.</li> <li>Demonstrated Dark-field microscopy via smartphone in two different modalities namely- total internal reflection (TIR) illumination and oblique illumination</li> <li>Imaged optical translucent micro particles reliably.</li> <li>ASTEC sponsored project entitled, "Design of smartphone platform fluorescence microscopic system for resource poor regions" aims to develop low-cost fluorescence microscopic system using smartphone.</li> <li>The BIRAC-SRISTI sponsored project entitled, Smartphone Based Instrumentation for Water Quality Monitoring with Reference to Resource Poor Region" focuses to convert the demonstrate work on monitoring of various important parameters in water using a smartphone.</li> <li>Several papers have been published and a patent has been filed related to the project work.</li> </ul>

**RESEARCH PROJECTS: ONGOING AND NEW**

<b>Project Title</b>	<b>Funding Agency</b>	<b>Amount (in INR )</b>	<b>Duration</b>	<b>Investigators</b>	<b>Collaboration</b>
Departmental Project UGC-SAP-DRS-II	UGC	₹89.51 Lakhs	5 Years (2016-2021)	A. Kumar	

Study of interactions of Ionic Liquid ions with unsaturated metal centers in Metal Organic Framework based polymer electrolyte nanocomposites incorporated with Ionic Liquids through Neutron Scattering and Raman Spectroscopy	UGC-DAE-CS R	₹10.71 Lakhs	3 Years (2018-2021)	A. Kumar	
Studies on bifunctional (wetting-dewetting and biophotonic colouration) properties of certain natural systems of biological origin	DST, New Delhi	₹ 40 Lakhs	3Years (2017-2020)	D. Mahanta	
Studies on photo-catalytic, photo-luminescence and mechanical properties of WS <sub>2</sub> /C-dot nano scale systems subjected to irradiation	IUAC, New Delhi	₹ 6.75 Lakhs	3Years (2017-2020)	D. Mahanta	
Miniaturized flexible planar antennas for body worn applications as health monitoring systems in L and S band using nano magneto-dielectric composite as substrate	DST(nano-mission)	₹ 86.962 Lakhs	3 Years (2017-2020)	N.S. Bhattacharya	
A study on laser-driven ion acceleration from plasma target and generation of large scale magnetic field	SERB-DST	₹25.564 Lakhs	3 Years (2019-2022)	N. Das	

in relativistic laser plasma interaction					
Efficient oil recovery as conventional energy using smart graphitic nano-composite.	DBT, Govt. of India	₹15 Lakhs	3 Years (2019-2022)	P. Deb	
Small angle scattering based study on hierarchical mesoporous assemblies of nanoparticles.	UGC-DAE CSR, Govt. of India	₹3.0526 1 Lakhs	3 Years (2017-2020)	P. Deb	
Departmental Project DST-FIST-II	DST	₹192 Lakhs	5 Years (2017-2022)	P. Deb	
Smartphone based optical microscope for clinical applications	ICMR, New Delhi	₹29.58 Lakhs	3 Years (2017-2020)	P. Nath	
Design of smartphone platform fluorescence microscopic system for resource poor regions	ASTECC, Guwahati	₹ 2.41 Lakhs	3 Years (2019-2021)	P. Nath	
Smartphone Based Instrumentation for Water Quality Monitoring with Reference to Resource Poor Region	SRISTI	₹ 15 Lakhs	2 Years	P. Nath	
Stability analysis of astrophysical complex plasmas	SERB	₹ 17 Lakhs	3 Years (2018-2021)	P.K. Karmakar	
A multiwavelength study of Active Galactic Nuclei and X-ray sources	CSIR	₹ 13.23 Lakhs	3 Years (2017-2020)	R. Gogoi	IUCAA
Study of the Abundance and Characteristics of Interstellar Dust	DST-SERB	₹ 19.66 Lakhs	3 Years (2018-2021)	R. Gogoi	BHU
The AstroSat view on understanding	ISRO	₹ 16.84 Lakhs	3 Years (2019-2022)	R. Gogoi	IUCAA

the nature of synchrotron spectrum in blazars					
Identification of electroactive materials for batteries	SERB DST	₹ 32 Lakhs	3 Years (2018-2021)	S. K. Das	

## PUBLICATIONS

### Journal Publications

1. Behera S. K., Bora M., Chowdhury S. S. P. & Deb P. Proximity effects in Graphene and Ferromagnetic CrBr<sub>3</sub> van der Waals Heterostructure. *Physical Chemistry Chemical Physics*. 21. 2019.
2. Bhagawati A., Kuri D. & Das N. Proton acceleration due to laser plasma interactions from mass-limited spherical targets. *Phys. Plasmas*. 26. 2019.
3. Biswas R. Influence of heavy metal ions in fisheries. *Oceanogr Fish Open Access J.* 9(5). 2019.
4. Biswas R. Hetero core arrangement of optical fibers as an effective tool for different sensing applications. *COJ Elec. Communicat.* 1(5). 2019.
5. Biswas R. Hazardous effects in oceanic water caused by offshore rigs related to petrochemicals. *Mod App Ocean & Pet Sci.* 2(5). 2019.
6. Biswas R. & Boruah S. Assessing site response through ambient noise measurements in a seismic prone area. *Physics & Astronomy International Journal.* 3(2). 2019.
7. Biswas R. & Karmakar P. K. A Facile technique of sensing adulteration in emulsion: A road to safety. *Ergonomics Int J.* 3(5). 2019.
8. Biswas R. & Pradhan M. A comparative analysis of all fiber optic sensors for detection of adulteration in fossil fuels. *Opt Quant Electron.* 52(62). 2020.
9. Bora D. & Biswas R. A preliminary report on the recent earthquakes in Arunachal Himalaya. *Current Science.* 117(1). 2019.
10. Boruah B.S. & Biswas R. Probing lead ion contamination in aqueous solution through bio-inspired surface modification of gold nanoparticles on D-shaped fiber. *IEEE Trans.Nano.* 18. 2019.
11. Boruah B. S., Biswas R. & Deb P. A green colorimetric approach towards detection of arsenic (III): A pervasive environmental pollutant. *Optics & Laser Technology.* 111. 2019.
12. Boruah B.S., Gogoi D. & Biswas R. Bio-inspired finger like Cu-electrodes as an effective sensing tool for heavy metal ion in aqueous solution. *J. Electrochemical Soc.* 167 (2). 2020.
13. Boruah B.S, Biswas R. & Ojah N. Bio-inspired localized surface plasmon resonance enhanced Sensing of Mercury through Green synthesized Silver nanoparticle. *J. Lightwave Technology.* 38(7). 2020.
14. Dalal N., Boruah B. S., Neog A. & Biswas R. Correlation of Surface Plasmon Resonance Wavelength (SPR) with Size and Concentration of Noble Metal Nanoparticles. *Annals Reviews and Research.* 5(2). 2019.
15. Das K.K., Ali N. A., Das D. & Mohanta D. Thorough evaluation of sweet potato starch and lemon-waste pectin based-edible films with nano-titania inclusions for food packaging applications. *Int. J. Biolog. Macromol.* 139. 2019.

16. Das P., Khan N. & Das M. K. Phenomenological study of neutrino mass, dark matter and baryogenesis within the framework of minimal extended seesaw. *J. High Energy Physics*. 03 (18). 2020.
17. Das P. & Karmakar P. K. Nonlinear nucleus-acoustic waves in strongly coupled degenerate quantum plasmas. *Europhysics Letters*. 126. 2019.
18. Dasgupta S. & Karmakar P.K. The Jeans instability in viscoelastic spherical astrophysical fluid media. *Astrophysics and Space Science*. 364. 2019.
19. Deka A., Saha A. & Mohanta D. Noticeable size dispersity and optical stability of sodium dodecyl sulphate (SDS)-coated MnSe quantum dots in extreme natural environment. *Appl. Phys. A*. 125. 2019.
20. Deka K., Guleria A., Kumar D., Biswas J., Lodha S., Kaushik S. D., Dasgupta S. & Deb P. Exclusive T2 MRI contrast enhancement by mesoporous carbon framework encapsulated manganese oxide nanoparticles. *Current Applied Physics*. 20. 2020.
21. Deka K., Guleria A., Kumar D., Biswas J., Lodha S., Kaushik S.D., Dasgupta S., Choudhary S.A. & Deb P. Janus nanoparticles for contrast enhancement of T1-T2 dual mode magnetic resonance imaging. *Dalton Transactions*. 48. 2019.
22. Devi K., Nag A., Paul J. & Karmakar P. K. Dynamics of sheath evolution in magnetized charge-fluctuating dusty plasmas. *Chinese Journal of Physics*. 65. 2020.
23. Devi M. & Kumar A. Surface modification of reduced graphene oxide polyaine nanotubes nanocomposites for improved supercapacitor electrodes. *Polymer Composites*. 2019.
24. Dutta P. & Karmakar P. K. Dynamics of gravoviscothermal instability in complex astrofluids amid cosmic radiative moderation effects. *Astrophysics and Space Science*. 364. 2019.
25. Dutta R. & Kumar A. 100 MeV O<sup>7+</sup> ion irradiation induced electrochemical enhancement in NiBTC metal-organic framework based composite polymer electrolytes incorporated with ionic liquid. *Materials Research Express*. 6. 2019.
26. Dutta R., Rao M.N. & Kumar A. Investigation of Ionic Liquid interaction with ZnBDC-Metal Organic Framework through Scanning EXAFS and Inelastic Neutron Scattering. *Scientific Reports*. 9(1). 2019.
27. Dutta R. & Kumar A. Probing the ionic transport dynamics in Ionic Liquid incorporated CuBTC-Metal-Organic Framework based PVdF-HFP nanocomposite membranes. *Solid State Sciences*. 100. 2020.
28. Gautam N. & Das M. K. Phenomenology of keV scale sterile neutrino dark matter with S4 flavor symmetry. *J. High Energy Physics*. 01 (98). 2020.
29. Goswami P., Sinha A., Chandra S., Misra R., Chitnis V., Gogoi R., Sahayanathan S., Stalin C.S., Singh K.P. & Yadav J.S., Unraveling the unusually curved X-ray spectrum of RGB J0710+591 using AstroSat observations. *Monthly Notices of the Royal Astronomical Society*. 492. 2019.
30. Hatiboruah D., Das T., Chamuah N., Rabha D., Talukdar B., Bora U., Ahamad K. U. & Nath P. Estimation of trace-mercury concentration in water using a smartphone. *Measurement*. 154. 2020.
31. Hatiboruah D., Devi D.Y., Namsa N. D. & Nath P. Turbidimetric analysis of growth kinetics of bacteria in the laboratory environment using smartphone. *Journal of Biophotonics*. 13 (4). 2020.
32. Hazarika S., Behera P. S., Mohanta D. & Nirmala R. Magnetocaloric effect of Gd<sub>2</sub>O<sub>3</sub> nanorods with 5% Eu-substitution. *Appl. Surf. Sci.* 491. 2019.
33. Hazarika S., Mohanta D. & Nirmala R. Enhanced Magnetocaloric effect in Terbium-doped Gadolinium oxide nanoparticles. *Physica B: Cond. Matter*. 570. 2019.
34. Hazarika S. J. & Mohanta D. Revealing mechanical, tribological and surface wettability features of nanoscale inorganic fullerene-type tungsten disulfide dispersed in a polymer. *J. Mater. Res.* 34(21). 2019.

35. Itay R., Szabo P.Z., Koltman G., Devi M. M., Shutman M., Landsman H. & Budnik R. DIREXENO—an apparatus for measuring correlated scintillation signatures in liquid xenon. *J. Instr.* 15. 2020.
36. Kalita D. & Karmakar P. K. Analyzing the instability dynamics of spherical complex astroclouds in a magnetized meanfluidic fabric. *Physics of plasmas*. 27. 2020.
37. Kalita D., Chetia L., Chetri P. & Ahmed G. A. Investigation of structural and luminescence properties of nanocrystalline tungsten-incorporated molybdenum disulphide ternary compounds: an experimental and DFT study. *Bull Mater Sci.* 42(134). 2019.
38. Khanam R. & Mohanta D. Influence of Cr<sup>3+</sup> doping on the structural, optical, and photochromic and thermochromic reversibility of nano-titania systems. *Canad. J. Phys.* 97(04). 2019.
39. Khatoon R., Shah Z., Misra R. & Gogoi R. Study of long-term flux and photon index distributions of blazars using RXTE observations. *Monthly Notices of the Royal Astronomical Society*. 491. 2020.
40. Nandi S. & Das S. L. An electrochemical study on bismuth oxide (Bi<sub>2</sub>O<sub>3</sub>) as an electrode material for rechargeable aqueous aluminum-ion battery. *Solid State Ionics*. 347. 2020.
41. Neog A., Deb S. & Biswas R. A typical electrical behavior of few layered WS<sub>2</sub> nanosheets based platform subject to heavy metal ion treatment. *Materials Letters*. 268. 2020.
42. Rabha D., Sarmah A. & Nath P. Design of a 3D printed smartphone microscopic system with enhanced imaging ability for biomedical applications, *Journal of Microscopy*. 276 (1). 2019.
43. Ray J. D., Vijayan S. M., Godah W. & Kumar A. Investigation of background noise in the GNSS position time series using spectral analysis – A case study of Nepal Himalaya. *Geodesy and Cartography*. 68(2). 2019.
44. Sachdeva S., Gogoi R., Saha K., Kembhavi A. & Raychoudhury S. Formation of disc galaxies around  $z \sim 2$ . *Monthly Notices of the Royal Astronomical Society*. 487. 2019.
45. Saikia A., Sarmah D., Kumar A. & Karak N. Bio-based epoxy/polyamine nanofiber-carbon dot nanocomposites as advanced anticorrosive materials. *J. Appl. Poly. Sci.* 136. 2019.
46. Sarmah D. & Kumar A. Ion beam modified molybdenum disulfide-reduced graphene oxide/polypyrrole nanotubes ternary nanocomposite for hybrid supercapacitor electrode. *Electrochimica Acta*. 312. 2019.
47. Sarmah H. J. & Mohanta D. Emergence of Raman active D-band and suppression of surface conductivity in pencil-lead graphitic systems under 80 keV Xe<sup>+</sup> ion irradiation. *Nucl. Instrum. Meth. B*. 463. 2020.
48. Sharma A., Tripathi D., Erdélyi R., Gupta G. R. & Ahmed G. A. Wave amplitude modulation in fan loops as observed by AIA/SDO. *A & A*. 638. 2020.
49. Singha P.K. & Karmakar P. K. Bimodal instability dynamics in nonthermal complex tridust astroclouds towards structure formation. *Europhysics Letters*. 128. 2019.
50. Talukdar M., Behera S. K. & Deb P. Graphitic carbon nitride ornate with FeNi<sub>3</sub> nanoparticles for flexible planar micro supercapacitor with ultrahigh energy density and quantum storage capacity. *Dalton Transactions*. 48. 2019.
51. Talukdar M., Behera S. K., Bhattacharya K. & Deb P. Surface modified mesoporous g-C<sub>3</sub>N<sub>4</sub>@FeNi<sub>3</sub> as prompt and proficient magnetic adsorbent for crude oil recovery. *Applied Surface Science*. 473. 2019.

### Conference Proceedings

1. Borgohain H., Borah D. & Das M. K. Lepton number violation, Lepton flavor violation in left right symmetric model. Proceedings of the J. Phys. Conf. Ser. 1468 (1), 2020.
2. Das P. & Karmakar P. K. Nonlinear nucleus-acoustic waves and possible equivalent conservation laws. Proceedings of the 1st National Conference on Advances in Nuclear Physics and Condensed Matter (ANPCM-18), 2019.

3. Dutta P. & Karmakar P. K. Evolution of conjugational hybrid mode in partially ionized astrophysical plasmas. Proceedings of the 1st National Conference on Advances in Nuclear Physics and Condensed Matter (ANPCM-18), 2019.
4. Haloi A. & Karmakar P.K. Gyrokinetic influence on star-forming bimodal cloud stability. Proceedings of the 1st National Conference on Advances in Nuclear Physics and Condensed Matter (ANPCM-18), 2019
5. Karmakar P.K. Anunaad: Magazine-cum-Souvenir of School of Sciences. Proceedings of the InSCIgnis: National Science Day, 2020.

### Book Chapters

1. D. Paul & R. Biswas. An introduction to Photonic crystal Fiber: Modal and Structural Parameters. In Narendra Kumar, Bhuvneshwer Suthar (Eds) Advances in Photonic Crystals and Devices. CRC Taylor & Francis. 2019.
2. N. Singh, M.K. Das, A. Ramteke, R. Paulraj, S.C. Deka, A. Ansari & D. Mohanta, Nanotechnology-Based Challenges and Scope in the Food Industry: From Production to Packaging, In Ali Pourhashemi, Sankar C Deka (Eds) Research Methods and Applications in Chemical and Biological Engineering. Apple Academic Press, CRC Press/Taylor and Francis, Florida.
3. R. Biswas. Role of Radon as a Precursor to Earthquakes: An Appraisal. In Ramesh C. Tiwari (Ed) Radon: Detection, Exposure and Control. Nova Publishers, New York, 2020.
4. R. Dutta & A. Kumar. Applications of Metal-Organic Frameworks and Their Derived Materials. In Inamuddin Inamuddin, Rajender Boddula, Mohd Imran Ahamed, Abdullah M. Asiri (Eds) Applications of Metal-Organic Frameworks and Their Derived Materials. John Wiley & Sons.

### PATENT: GRANTED OR APPLIED FOR DURING THE REPORTING PERIOD

Inventor(s)	Patent	Patent number/Application Number	National/International
P. Deb and M. Talukdar	Two dimensional heterostructure based composite films for food packaging	201931014698	National

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
	ICRC 2019	UW Madison, USA	24 July – 01 August, 2019	UW Madison, USA
	NEMA-V	Tezpur University & IUCAA	11 – 13 September, 2019	Tezpur University

M. M. Devi	INO Collaboration Meeting	INO	16-17 November, 2019	TIFR, Mumbai
	WHEPP-XVI	IIT Guwahati	01 - 10 December, 2019	IIT, Guwahati
M. K. Das	National Conference on Trends in Modern Physics	Assam Don Bosco University	24-25 February 2020	Guwahati
	Refresher Course in Physics	Manipur University	9-21 December 2019	Imphal
N. Das	12th International Conference on <i>Plasma Science and Applications (ICPSA-2019)</i>	Department of Physics, University of Lucknow, India & Asian African Association for Plasma Training (AAAPT)	11-14 November 2019	Lucknow, India
N. Das	National Seminar on <i>Nonlinear and Complex Phenomena (NCP-2020)</i> at Jadavpur University, Kolkata	Centre for Plasma Studies, Jadavpur University, Kolkata & Advanced Centre for Nonlinear and Complex Phenomena (ACNCP), Kolkata	18-19 February 2020	Jadavpur University, Kolkata
	Analytical Techniques in Chemical Sciences	Dept. Chemical Sciences in association with TLC, Tezpur University	20-25 January, 2020	Tezpur University
	AICTE Training and Learning (ATAL) Academy	Department of Computer Science and	21-25 October, 2019	Tezpur University

R. Sarma	Programme on Internet of things (IoT) and its applications	Engineering, Tezpur University		
	SERB School on Nonlinear Dynamics	Department of Physics, IIT PATNA	16-18 <sup>th</sup> December 2019	IIT PATNA
S. K. Das	International Conference on Emerging Trends in Sciences ETCS 2020,	Guwahati University	20 March 2020	Gauhati University

#### TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA

Name of the faculty member	Event	Date/Period, Year	Place/Institute/Venue
M. M. Devi	ICRC 2019	24 July – 01 August 2019	UW, Madison
	INO Collaboration Meeting	16-17 November 2019	TIFR, Mumbai
	NEMA-V	11 – 13 September 2019	Tezpur University
	Nobel lecture Series	13-15 November 2019	Tezpur University
	Science Day	28 Feb, 2020	B.N. college, Dhubri
	WHEPP-XVI	01 – 10 December 2019	IIT, Guwahati
M. K. Das	National Conference on Trends in Modern Physics	24-25 February 2020	Gauhati University
	Refresher Course in Physics	9-21 December 2019	Manipur University
N. Das	Nonlinear and Complex Phenomena (NCP-2020)	18-19 February 2020	Jadavpur University, Kolkata
	12th International Conference on Plasma Science and Applications (ICPSA-2019)	11-14 November 2019	University of Lucknow

P. Deb	National conference on Progresses in Material Science Research (PMSR)	04-06 February 2020	Dibrugarh University, Dibrugarh
P. Nath	One week short term training program under TEQIP III,	28 May – 01 June 2019	Dibrugarh University
	Lab-on-Phone: an emerging sensing platform of 21 <sup>st</sup> Century	10 July 2019	University of Hebrew at Jerusalem, Israel
	Analytical Techniques in Chemical Sciences	23 January 2019	Tezpur University

#### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, Year
NEMA-V	11 – 13 September, 2019
Invited lecture by Prof. Mala Das, Astroparticle Physics and Cosmology Division, SINP	03 October, 2019
DST-SERB preparatory school on Theoretical High energy Physics	14 November-09 December, 2019

#### DISTINGUISHED VISITORS

- Dr. A.K. Srivastava, AMPRI, Bhopal
- Prof. Anjali Pal, IIT Kharagpur
- Prof. Ayon Bhattacharjee, NIT Meghalaya
- Prof. Kallol Bhattacharya, Calcutta University
- Prof. M.C. Mahato, NEHU
- Dr. Mala Das, Associate Professor, SINP
- Dr. Pintu Bandyopadhyaya, IPR, Gandhinagar
- Dr. Saurabh Boruah, Chief Scientist, CSIR-NEIST
- Prof. S. Bhagwat, ICT Mumbai

#### AWARDS & HONOURS/ NOTABLE ACHIEVEMENTS

##### Faculty members and Staff

- FRSC, A. Kumar, Royal Society of Chemistry
- Visiting Associateship, M.M. Devi, IUCAA
- Visiting Fellowship, Pabitra Nath, INSA-bilateral exchange program 2019

**Research Scholar/Student**

- Rula International Research award 2020, Meenakshi Talukdar, Sushant Kumar Behera, World Research Council
- Best Poster Award, Ashamani Neog, PMSR 2020
- Best Poster Award, Biswajit Dutta, ICPSA, 2019

**OTHER IMPORTANT ACTIVITIES**

Department of Physics is funded by DST, UGC and ISRO under the schemes of **DST-FIST-II**, **UGC-SAP-DRS-II** and **ISRO-Space Science Promotion Scheme**.

**NUMBER OF STUDENTS QUALIFIED NET-JRF/GATE/SLET**

GATE: 13

NET: 07

SET: 07

JEST: 03

**NOTABLE PLACEMENTS**

<b>Name</b>	<b>Designation</b>	<b>Organization</b>
Dr. Pranjal Kr. Gogoi	Assistant Professor	Tezpur University
Mr. Lakhya Jyoti Das	Scientific Asstt.	Indian Metreological Dept., Tezpur
Dr. Praktishya Bezbaruah	Assistant Professor	Biswanath College, Biswanath Charilai
Ms. Happy Borgohain	Research Associate	IIT, Guwahati
Mr. Ankurjyoti Bordoloi	Scientific Assistant	Indian Meteorological Dept., Dibrugarh
Ms. Snageeta Medhi	Faculty	Kamrup Metropolitan Jr. College, Guwahati
Dr. Debabrat Kalita	Assistant Professor	Dindayal Upadhyay College, Dalgaoon, Assam
Ms. Pubali Dehingia	Probationary Officer	Assam Gramin Bikash Bank
Dr. Iftak Hussain	Post-Doctoral Fellow	Bio-Photonics Center, Vanderbilt University, USA
Dr. Nabadweep Chamuah	Post-Doctoral Fellow	Dept. of Bioscience & Bioengineering, IIT, Bombay
Dr. Barsha Borgohain	Assistant Professor	Darrang College, Tezpur, Assam
Mr. Madurjya Lalung	Assistant Professor	Nagaon College, Nagaon (2020)
Mr. Pragyan Phukan	Assistant Professor	Moran College, Moran (2020)
Dr. Dhruvajyoti Gogoi	Assistant Professor	Nalbari College, Nalbari (2020)
Dr. Deep Kr. Kuri	Assistant Professor	Digboi College, Digboi

## THE FACULTY MEMBERS AND STAFF

### Professors

Jayanta Kumar Sarma, Ph.D. (Gauhati University)  
*Specialization: High Energy Physics, Particle Physics*  
E-mail: jks@tezu.ernet.in

Nidhi Saxena Bhattacharyya, Ph.D. (Delhi University)  
*Specialization: Microwave, Material Devices and Antennas*  
E-mail: nidhi@tezu.ernet.in

Nilakshi Das, Ph.D. (Gauhati University)  
*Specialization: High Energy Physics, Plasma Physics*  
E-mail: ndas@tezu.ernet.in

Pritam Deb, Ph.D. (Jadavpur University)  
*Specialization: Nanoscience and Technology*  
E-mail: pdeb@tezu.ernet.in

Mrinal Kumar Das, Ph.D. (Gauhati University)  
*Specialization: High Energy Physics, Neutrino*  
E-mail: mkdas@tezu.ernet.in

Pabitra Nath, Ph.D. (Gauhati University)  
*Specialization: Fibre Optics*  
E-mail: pnath@tezu.ernet.in

### Associate Professors

Gazi A. Ahmed, Ph.D. (Gauhati University)  
*Specialization: Laser Physics*  
E-mail: gazi@tezu.ernet.in

Dambarudhar Mohanta, Ph.D. (Tezpur University)  
*Specialization: Nanotechnology & Condensed Matter Physics*  
E-mail: best@tezu.ernet.in

Pralay Kumar Karmakar, Ph.D. (Gauhati University)  
*Specialization: Theoretical Plasma Physics*  
E-mail: pkk@tezu.ernet.in

Ng. K. Francis, Ph.D. (Gauhati University)  
*Specialization: High Energy Physics (Theoretical)*  
E-mail: ngk@tezu.ernet.in

### Assistant Professors

Rajib Biswas, Ph.D. (NEIST, Jorhat)  
*Specialization: Electronics & Condensed Matter Physics, Seismology*  
E-mail: rajib@tezu.ernet.in

Rupjyoti. Gogoi, MSc (Gauhati), Ph.D. (Gauhati University)

*Specialization: High Energy Physics*

E-mail: rgogoi@tezu.ernet.in

Shyamal K. Das, Ph.D. (IISc, Bangalore)

*Specialization: Materials Science*

E-mail: skdas@tezu.ernet.in

Ritupan Sarmah, Ph.D. (IISc, Bangalore)

*Specialization: Condensed Matter Physics*

E-mail: ritupan@tezu.ernet.in

Moon Moon Devi, Ph.D. (TIFR, Mumbai)

*Specialization: Astro Particle Physics*

E-mail: devimm@tezu.ernet.in

### **Technical staff**

Kishor Baruah, Ph.D. (Gauhati University),

Technical Officer

Email: kiba@tezu.ernet.in

Ratan Boruah, Ph.D. (Tezpur University),

Technical Assistant

Email: rboruah@tezu.ernet.in

Mrinmoy Gohain, Diploma in E&T (AICTE)

Laboratory Assistant

Email: mgohain@tezu.ernet.in

Biju Boro, B.Sc. (Dibrugarh University)

Laboratory Assistant

Email: bbiju@tezu.ernet.in

Dhurbojyoti Deka, B.Sc. (Guwahati University)

Laboratory Assistant

Email: ddeka@tezu.ernet.in

### **Office Staff**

U. Patir, B.Sc., PGDTM (Tezpur University)

UDC

Email: patir@tezu.ernet.in

N. Sarma

MTS

Email: narayan@tezu.ernet.in

## **ADVANCED INSTITUTIONAL LEVEL BIOTECH HUB**

Institutional Biotech Hub (IBT Hub) is an initiative of Department of Biotechnology, Government of India with a view to promote research and for manpower development. The mandate of Institutional Biotech Hub is to create trained manpower in the field of Biotechnology. The IBT Hub at Tezpur University was established in the year 2011 (Sanction no. BT/22/NE/11) at the Department of Molecular Biology and Biotechnology for a period of five years with the mandate to contribute to the advancement of the emerging area of Disease Biology with area of specialization Human Diseases. It has now been upgraded to Advanced Level Biotech Hub on the basis of its performance rated as "Very Good". IBT Hub, Tezpur University besides conducting trainings, workshops, seminars and outreach programmes in basic and advanced areas of Biotechnology, has also been extending support to the research and teaching programmes of the Department of MBBT. IBT Hub has also been extending infrastructure, technical and consumable support to the Department of MBBT. IBT Hub has one completed Ph.D. thesis, one on going Ph.D. thesis, eleven M.Sc. dissertations and ten publications to its credit.

### **Objectives of the Hub**

- To conduct hands on trainings and workshops in the area of Disease Biology
- To support teaching and research programmes of the University
- Extension of facility for research activity of the departments of the University
- Extend teaching and training facilities to neighbouring institutes of the region

### **Major facilities and equipment available**

IBT Hub, TU provides laboratory, equipment and research facilities to Undergraduate, Post-graduate students and Research Scholars.

- SDS PAGE gel running and transfer apparatus
- Purification system for ultra- pure water
- Freeze Dryer
- Real Time PCR

## **PUBLICATIONS**

### **Journals Publication**

Sarmah N., Baruah, M. N. and Baruah S. Immune modulation in HLA-G expressing Head and Neck Squamous Cell Carcinoma in relation to Human Papilloma Virus positivity: a study from Northeast India, *Frontiers in Oncology*, 2019

Banerjee D. Sinha A., Saikia S., Gogoi B., Rathore A., Das A., Pal D., Buragohain A. and, Dasgupta S. Inflammation-induced mTORC2-Akt-mTORC1 signaling promotes macrophage foam cell formation *Biochimie*, 2018

## **THE PERSONNEL OF THE CELL**

### **Coordinator**

Sashi Baruah, Ph.D. (PGIMER, Chandigarh)

Professor, Dept of Molecular Biology and Biotechnology

E-mail: sbaruah@tezu.ernet.in

### **Co-Coordinator**

S K Ray, Ph.D. (CCMB Hyderabad)

Professor, Dept. of Molecular Biology and Biotechnology

E-mail: suven@tezu.ernet.in

## CENTRE FOR OPEN AND DISTANCE LEARNING

### THE CENTRE

The Centre for open and Distance Learning was established in the year 2011 with an aim to disseminate and impart education through open and distance mode in chosen areas. The Centre offers various post-graduate, undergraduate, diploma and certificate programmes in emerging areas of science & technology, social sciences, management and humanities with flexible system to cater to the needs of the learners facing difficulty in availing regular mode of education.

Ongoing programmes under the Centre are MSc in Mathematics, M.A. in Mass communication, M.A. in English, and M.A. in Sociology. Post graduate diploma courses are offered in thrust areas such as Human Resource development, Environment and Disaster management and Renewable Energy and Energy Management.

The Centre, in its endeavor to offer more and more upcoming courses, is supported by international organization like UNICEF and a Post Graduate Diploma in Child Rights and Development is sponsored by the organization. In near future the Centre visions to connect itself to a wide range of learners through new and skill based programmes.

### Academic Programmes and Student intake

Programme	Intake
M.A. in English	31
M.A. in Sociology	63
M.A. in Mass Communication	34
Post Graduate Diploma in Human Resource Management	110
Post Graduate Diploma in Renewable Energy and Energy Management	42
Post Graduate Diploma in Environmental and Disaster Management	33
Post Graduate Diploma in Child Rights and Governance	38

### PUBLICATIONS

#### Journal Publications

Madhusmita B. A Critical Media Literacy Approach of Reading Nationalism in MNC's Advertising in India. *Communication Today*. 23. 2019

#### Book Chapters

Goswami S. Intersecting the Real and the Fictional: Chandraprabha Saikiani and 'Pitri Bhitha'. In Goswami M (Ed) *Chandraprabha Saikiani: A Force in History*. DVS Publisher, Guwahati, 2020

**SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED**

<b>Name of the faculty member</b>	<b>Title</b>	<b>Organized by</b>	<b>Date/Period, Year</b>	<b>Place/Institute /Venue</b>
D. Das	National Level workshop on Dual Mode University Manual	NAAC	18 December 2019	NAAC, Bangaluru
D. Das	Assessors Orientation Programme: Open and Dual Mode University	NAAC	23-24 December 2020	NAAC, Bangaluru
S. Goswami	National Seminar on Contemporary British Fiction: Texts and Contexts	Dept of English	3-4 March 2020	Dibrugarh University

**TALKS BY THE FACULTY MEMBERS ABROAD AND IN INDIA**

<b>Name of the faculty member</b>	<b>Event</b>	<b>Date/Period, Year</b>	<b>Place/Institute/Venue</b>
D. Das	10 days Research Methodology Workshop for Social Sciences	8 February, 2020	Kalinga Institute of Social Science, Bhubaneswar

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, Year</b>
Two-Day Workshop on Research Orientation	15-16 February 2020

**THE FACULTY MEMBERS AND STAFF****Professor**

Debabrata Das, Ph.D. (RGU)  
 Director  
 Email:codldirector@tezu.ernet.in

**Assistant Professors**

Suchibrata Goswami, Ph.D. (DU)  
*Specialization/Areas of Interest: American Literature, postcolonial literature*  
 Email: suchitu@tezu.ernet.in

Ankita Bhattacharyya, M.A. (TU),

*Specialization/Areas of Interest: Sociology of Health and Illness*

Email:ankita@tezu.ernet.in

Madhusmita Boruah, M.A. (TU),

Specialization/Areas of Interest: Advertising and Public Relation

Email:madhu@tezu.ernet.in

### **Officials**

Partha P Kalita, MBA (TU)

Assistant Registrar

Email: parthap@tezu.ernet.in

### **Technical staff**

Kalpadroom Almany,BCA

Computer Operator

Email:kalpa01@tezu.ernet.in

### **Office Staff**

Anita Ghosh,BA

Office Assistant

Email: anitag\_ta@tezu.ernet.in

Rajit Bora

MTS

## TEACHING LEARNING CENTRE

### THE CENTRE

The Teaching Learning Centre (TLC), Tezpur University was formally inaugurated on January 28, 2016 as a Centre of Excellence for Curriculum and Pedagogy under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) scheme. The scheme is funded by Department of Higher Education, Ministry of Education(formerly MHRD), Govt. of India. TLC envisages developing and promoting a responsive and relevant teaching-learning system for higher education communities and contributing to excellence in teaching and learning as an innovative and resourceful Centre through reflective research-based practice and the optimal use of technology. The Centre has conducted 12 programmes in this financial year and trained 540 teachers and prospective teachers. Through these programmes, TLC has been providing assistance and support for promoting best practices in teaching learning environment among higher education communities. Focus areas of the conducted activities are teaching learning pedagogy, curriculum development, training on ICT based pedagogy, assessment and evaluation. In 2019-2020, TLC has conducted 4 outreach programmes in different colleges of Assam. It has also completed few action research projects, developed several video contents and developed references for e-resources on some micro topics through teacher training programmes and through open invitation. In January 2020, a book titled “Effective Pedagogy: An Action Research Approach” was published under Tezpur University Publication. The book contains the findings of 4 action researches conducted by some faculty members of Tezpur University

### Major Facilities and Equipment Available

ICT Lab and Video Recording Facility

### Other Publications

Sarma, M. K., Bora, S., Ahmed, I. H. & Patowari, B.(Eds.). Effective Pedagogy: An Action Research Approach, Tezpur University, 2019

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute /Venue
I. H. Ahmed	National Consultancy Meeting on TLC	TLC, NITTTTR, Bhopal	5-6 September, 2019	Bhopal

**SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED**

<b>Title</b>	<b>Date/Period, Year</b>
Induction Training of Faculty(June-July, 2019)	11 June-10 July 2019
Special Lecture on Draft National Education Policy2019	11 June, 2019
Workshop on Pedagogical Action Research	18 June 2019
Convergence-II(a TLC follow up program cum conference on pedagogy and practice)	23 August 2019
Refresher Course on Teacher Education (Interdisciplinary) in collaboration with Dept of Education, Tezpur University	6-20 September 2019
Weeklong Workshop on Assessment and Evaluation	16-21 September 2019
One-Day Workshop on Discipline Specific Curriculum Construction for Professional Development Program	26 September 2019
UGC-SAP(DRS-II) and Tezpur University sponsored One week workshop on Analytical Techniques in Chemical Sciences	20-25 January 2020

**DISTINGUISHED VISITORS**

Prof. B. K. Sarma, Director, DBT –AAU, Centre for Agricultural Biotechnology  
 Prof. B. Viswanathan, Retired Professor, IIT Madras  
 Prof. Kandarpa K. Deka, Vice Chancellor(Retired), MSSV, Nagaon  
 Prof. Lopita Nath, Professor & Chair, Department of History, University of the Incarnate Word, Texas  
 Dr. M. V. Srinivasan, NCERT, New Delhi  
 Prof. Shyam B. Menon, Professor, Central Institute of Education, Delhi University  
 Prof. Sudhanshu Bhushan, Professor and Head, Department of Higher and Professional Education, NIEPA, New Delhi

**OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT****Outreach programme organized**

Two-Day workshop on ICT in Management of Education at Nowgong College, Assam, May 22 & 30, 2019  
 Two-Day workshop on ICT in Management of Education at Kaliabor College, Assam, May 28 & June 4, 2019  
 Two-Day workshop on ICT in Management of Education at Chaiduar College, Gohpur, Assam, September 3& 6, 2019  
 Two-Day workshop on ICT in Management of Education at Tezpur College, Assam , September 12& 17, 2019

**PERSONNEL OF THE CELL****Director**

M. K. Sarma, PhD (Tezpur University)  
 Professor, Dept. of Business Administration & Coordinator MTTM  
*Specialization/Areas of Interest:* Research Methodology, Services Marketing, Tourism Marketing  
 E-mail: mrinmoy@tezu.ernet.in, tlc@tezu.ernet.in

**Assistant Professors**

I H Ahmed, MPhil (Delhi University), B.Ed (Gauhati University)

*Specialization/Areas of Interest:* Evolutionary Ethics, Environmental Ethics, Symbolic Logic, Philosophy of Education

E-mail: ikbal@tezu.ernet.in

Swapnarani Bora, PhD (Dibrugarh University)

*Specialization/Areas of Interest:* Folklore, Sociolinguistics, Pedagogy of Assamese

E-mail: swapnabora@tezu.ernet.in

**Research Associate**

Bhushita Patowari, Ph.D.(Gauhati University)

*Specialization/Areas of Interest:* Survey Sampling & Statistical Epidemiology

E-mail: b.stat@tezu.ernet.in

**Office Staff**

Pankaj Saikia

E-mail: tinku23@tezu.ernet.in



# **CENTRAL FACILITIES**

**Central Library**

**Centre for Inclusive Development**

**Centre for Innovation, Incubation and Entrepreneurship**

**Computer Centre**

**Engineering Cell**

**Health Centre**

**Horticulture Cell**

**Internal Quality Assurance Cell**

**International Office**

**Sophisticated and Analytical Instrumentation Centre**



## THE CENTRAL LIBRARY

### THE LIBRARY

The Central Library, Tezpur University was established in 1994 along with the establishment of the University. The library holds its goal to achieve the height as an ideal University library in the region as well as in the country. Central Library has a diverse collection of more than one lakh books and journals etc. The Library is fully computerized with the KOHA Open source software, which is an integrated multi-user library management system that supports all its in-house operations.

The collection of the Library covers the latest information resources on all areas of Engineering, Science, Management, Social Science, Humanities. Library is providing access to e-resources & databases through the e-ShodhSindhu Consortia of INFLIBNET Centre and DelCon Consortium. Library is also member of DELNET and utilising its services.

Library users can access book database, theses, journal database, e-journals and other e-resources from any computer within the University campus. The Central Library is an invaluable resource for students, researchers and faculties of the University. The library delivers innovative information products, services and programmes of the highest quality that are integrated with teaching, learning and research activities. The library occupies a unique place in academic and research activities of the University. The mission of the Library is to support and supplement learning, teaching and research programmes.

The Library is housed at the center of the University campus in an aesthetically built three storied building occupying an area of 4734 sq m

### OPENING HOURS

The Library is open from 9.00 am–1.00 am midnight throughout the year.

### COLLECTIONS OF THE LIBRARY

Books	<b>96242</b>
Books added during	<b>7402</b>
Print Journals	221
E-Journals	10360
Back Volumes of Journals	10280
Online databases	41
Theses	723
Dissertations	1750
CDs	2644
VCDs	81
VHS Cassettes	36
Newspaper/Magazines	10
Manuscripts	32

## LIBRARY SERVICES

The Library is providing the following services:

- 365 days reading facility.
- Book Lending Facility.
- Book Bank Facility for EWS.
- Reference Services.
- OPAC/WebOPAC /CD Lib. Catalogue
- User Orientation and Information Literacy Programmes for Research Scholars, faculty members and students
- Current Awareness Service (Monday Morning, InfoJ, InfoGranth)
- New Arrival of Books.
- Training cum Demo on Electronic Resources
- Online Renewal and Reservation of Books
- Photocopy Services
- Children section
- Library & Information Services to Outsiders on Request
- Research Support Services
- Plagiarism Check (Urkund).
- Document Delivery Services (DELNET, JCCC).

## VISITORS TO THE LIBRARY 2019-2020

Visitor category	Student	Research Scholar	Faculty member	Staff	Outsider	Total
Average daily visitor	421	35	11	5	8	480

## SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, Year
Current awareness program on <i>Taylor &amp; Francis publishing e-resources</i>	3 May 2019
Library Orientation Program	7 - 27th August 2019.
<i>EBSCO Business Source Elite Training Session and EBSCO Discovery Services</i>	13 September, 2019.
Workshop on <i>Manupatra a legal database</i>	24 January, 2020
Workshop on <i>Use and Awareness of Supreme Court Cases Online (SSC Online)</i>	25 February, 2020

## OTHER IMPORTANT ACTIVITIES

1. **National Librarians' Day** is observed on 12 August every year to commemorate the birth anniversary of Padmashri Dr. S. R. Ranganathan (1892-1972), who is considered as father of library science in India. Dr. Ranganathan dedicated his entire life to library profession in India leaving a rich legacy. On 127th birth anniversary of Dr. S. R.

Ranganathan, the Central Library of Tezpur University celebrated National Librarian's Day on 13 August 2019.

2. Central Library Tezpur University organized "**Walk to the Library Program**" on 30th July, 2019. Prof.D.K Bhattacharaya, Dean, Academic Affairs, Tezpur University and Dr. L Boral, Controller of Examinations, Tezpur University led the program in presence of all Deans, HoDs and numbers of faculty members from various departments. Students were assembled near the water fountain and march forward to Central Library, total 785 numbers of students attended the programme and made it a success.

## **PUBLICATIONS**

### **Journal Publication**

1. Gohain A., Sarma D. & Saikia M. Quantitative Growth in Print Book Collection in Tezpur University: A Case Study" In Library Philosophy and Practice (e-journal). 2212. 2019. <https://digitalcommons.unl.edu/libphilprac/2212>
2. Gohain A. Sarma D. & Saikia M. Collection Analysis of Print Resources in Tezpur University: A Study" In. Library Philosophy and Practice (e-journal). 3003. 2019 <https://digitalcommons.unl.edu/libphilprac/3003>

### **Book**

1. M. Saikia & Monawwer Eqbal. Library and Information Management: Recent Trend and Research. Intellectual Property Publications, Guwahati, 2019

### **Book Chapter**

1. J.M. Das. *Library Services in wireless environment and impacts on users*. Editor M Saikia. & Monawwer Eqbal. Library and Information Management: Recent Trend and Research. Intellectual Property Publications, Guwahati, 2019.

## **LIBRARY STAFF**

**Mukesh Saikia**, MLISc, Ph.D (NEHU)

Librarian

E-mail: mukesh@tezu.ernet.in

**Monawwer Eqbal**, MLISc, MA, Ph.D (AMU)

Deputy Librarian

E-mail: meqbal@tezu.ernet.in

**Jitu Mani Das**, MLISc (GU), UGC-NET

Assistant Librarian

E-mail: jmdas@tezu.ernet.in

**Sambhunath Sahoo**, MLISc (Utkal), MCA, UGC-NET

Information Scientist

E-mail: sambhu@tezu.ernet.in

**Dipak Sarma**, MLISc (GU), UGC-NET

Professional Assistant

E-mail: dsarma@tezu.ernet.in

**Anjan Gohain**, MA, MLISc, MPhil (VMU), UGC-NET  
Professional Assistant  
E-mail: anjang@tezu.ernet.in

**Monmi Choudhury**, BA, MLISc, PGDELT (IGNOU)  
Semi Professional Assistant  
E-mail: monmi@tezu.ernet.in

**Dipak Kumar Gogoi**, BA, MLISc (IGNOU)  
Semi Professional Assistant  
E-mail: dkgogoi@tezu.ernet.in

**Rajesh Sharma**, BA, DLISc (KKHSOU)  
Library Assistant  
E-mail: rajesh@tezu.ernet.in

**Ijaz Ahmed**, BA, BLISc (IGNOU)  
Library Assistant  
E-mail: ijazah@tezu.ernet.in

**Saurav Kumar Mahanta**, MLISc (CUH)  
Library Assistant  
E-mail: souravk@tezu.ernet.in

**Pinchu Basumatary**, BA, BLISc (SHIATS)  
LDC  
E-mail: pinchu7@tezu.ernet.in

**Hiranya Sarmah**, BA (GU)  
LDC  
E-mail: hsarmah@tezu.ernet.in

**Mahendra Kr. Nath**, BA (GU)  
Library Attendant  
E-mail: mknath@tezu.ernet.in

**Manjit Tamuli**, HSSLC (AHSEC)  
Library Attendant  
E-mail: mtamuli@tezu.ernet.in

**Md. Derajuddin Ahmed**  
MTS  
E-mail: deraj@tezu.ernet.in

**Dinesh Bhuyan**  
MTS  
E-mail: dinesh@tezu.ernet.in

**Kanaka Das**  
MTS

## CENTRE FOR INCLUSIVE DEVELOPMENT

### THE CENTRE

The Centre for Inclusive Development was established in 2013. The Centre, among other things, combines the activities of the Equal Opportunity Cell and the SC/ST Cell that have a functional commonality. The primary objective of the Centre is to play a catalytic role in uplifting the underprivileged students of the University through education, training, engagement and counselling. The Centre makes efforts to identify areas of intervention and takes appropriate measures. Additionally, the Centre reaches out to the community outside the University's periphery and extend support to the needy people, particularly children and youths, through resource sharing, intellectual support and counselling. The Centre also offers P.G Diploma programme in Child Rights and Governance. The Centre envisions to engage with the issues pertaining to development of the marginalised sections of the society, particularly in north-east India, in future.

### Academic Programmes and Student intake

Programme	Intake
Post Graduate Diploma in Child Rights & Development	22

### Major Facilities

- Computer Laboratory with 13 Desktop Computers
- Seminar Hall (100 seater)
- Multi-media projector with screen

### PUBLICATIONS

#### Book Chapters

1. K. Sarkar & S. Dhar. Introduction. In Sarkar & Dhar (Eds.). Contextualizing Peace and Conflict. Manak Publisher, New Delhi, 2020.

### SEMINARS/CONFERENCES/WORKSHOPS/SYMPOSIA ATTENDED

Name of the faculty member	Title	Organized by	Date/Period, Year	Place/Institute/Venue
S. Dhar	National Conclave on Synergizing Knowledge, Policy and Practice for Vulnerable Children, Youth and Women	Tezpur University in collaboration with UNICEF	27-28 January 2020	Tezpur University

### SEMINAR/WORKSHOP/SYMPOSIA/INVITED LECTURES ORGANISED

Title	Date/Period, Year
National Seminar on "Emancipation of Students with Disabilities in Science and Technology"	13 September 2019
National Conclave on Synergizing Knowledge, Policy and Practice for Vulnerable Children, Youth and Women.	27-28 January 2020

### **DISTINGUISHED VISITORS**

- Dr. Madhulika Jonathan, Chief of UNICEF-Assam (new incumbent)
- Dr. Tushar Rane, Chief of UNICEF-Assam
- Dr. Yasmin Ali Haque, UNICEF Representative in India

### **OTHER IMPORTANT ACTIVITIES OF THE DEPARTMENT**

- Outreach Programme on the occasion of Children's Day in collaboration with CWC, DCPU, Sonitpur at SOFTSEED, CCI, Nikamul, Tezpur was held on 14 November 2019 at Softseed, CCI, Nikamul, Tezpur. There were a total of 30 beneficiary sponsored by Tezpur University.

### **THE FACULTY MEMBERS AND STAFF**

#### **Professors**

Rajeev K. Doley, Ph.D. (IIT, Guwahati)

*Specialization / Research area:* Sociolinguistics, Communication Skills, Child Rights

E-mail: rkdoley@tezu.ernet.in

#### **Assistant Professors**

Subhrangshu Dhar Ph.D. (Visva-Bharati, West Bengal)

*Specialization/Research area:* Women and Child Welfare and Child Rights

Email: sdhar@tezu.ernet.in

Krishna M. Bordoloi (Guest Faculty)

LLM (Human Rights) Gauhati University

*Specialization/Research Interest:* Human Rights and Social Development

Email: krishnabordoloi123@gmail.com

#### **Technical staff**

Bhanu Pangging Gogoi, Ph.D. (Dibrugarh University)

*Specialization/Research Interest:* Social and Cultural Anthropology

Email: bhanubj@tezu.ernet.in

#### **Office Staff**

M. Saikia

Email: mohans@tezu.ernet.in

## **CENTRE FOR INNOVATION INCUBATION AND ENTREPRENEURSHIP**

### **THE CENTRE**

The Centre for Innovation, Incubation and Entrepreneurship was established in September 2013 which was merged with the Entrepreneurship Development Cell (EDC) initially funded by AICTE. The objectives of the cell are to:

- (a) Create awareness among the students of the University and the educated unemployed youths of North east India regarding entrepreneurship as a career option.
- (b) Conduct training programmes in the field of entrepreneurial skill development
- (c) Develop entrepreneurship related course curriculum to incorporate in management and engineering programmes
- (d) Provide guidance and facilities to first time entrepreneurs during gestation.
- (e) Explore the possibility of commercialization of some of the potential technologies developed by the faculty members and students of TU
- (f) Form a Technology Development group in Tezpur University comprising enthusiastic former students of the university and thereby motivating towards self-employment

### **Major facilities and equipment available**

- Laboratory
- TUNOVATION ( A display room for developed research items)

### **Activities and Participation**

1. Establishment of Institute Innovation Council (IIC), in line with the guidelines of MHRD's innovation Council
2. Institute Innovation Council (IIC) calendar programme, success story of entrepreneurs, on 16-09-2019. Chief Guest: Dr Abhijit Sharma, Director CIIE.
3. Innovation day celebration on 15-10-2019 on the birth anniversary on former president of India Dr. A.P.J. Abdul Kalam.
4. Visit to Mangaldoi in Darrang district to assess an invention on "Water run vehicle" in 04-01-2020.
5. Hosting of a Hackathon in association with IIM Calcutta Innovation Park on 4-5 March, 2020
6. Signing of MoU with the NRDC for the establishment of NRDC-IFC at Tezpur University, in March 2020.

### **THE PERSONNEL OF THE CENTRE**

#### **Head**

M. K. Hazarika. Ph.D.  
Professor, Department of Food Engineering and Technology  
E-mail: headciie@tezu.ernet.in

#### **Office Staff**

Uttam Roy, (on time – sharing basis)  
UDC  
J. C. Das, (on time – sharing basis)  
STA, as caretaker for Tunovation

## **COMPUTER CENTRE**

### **THE CENTRE**

The Computer Centre (CC) is the main ICT resource centre for the whole University. It has well-equipped three units of Computer labs with latest configured Desktop Personal Computers (PCs). The computer labs under the CC are mostly used for computational & laboratory purposes and sometimes for skill tests, online interviews, workshops, etc.

The ICT-enabled Campus of the University is well supported by the Computer Centre with its dedicated team of technical staff of various levels. The CC acts as the support system for the University Community in the form of Hardware, Software and Network related activities and there is a constant endeavour to envisage better services under its umbrella. The campus-wide Local Area Network (LAN) is equipped with 10Gigabit backbone and high speed Switching Network Devices. Most of the components in its Local Area Network (LAN) are Internet Protocol (IP) based and therefore manageability mostly centralized.

There are a number of medium to high range of servers and storages which run on 24x7 basis on a dedicated air-conditioned server room. The Website, Email and Internet services are fully hosted in-house with its own set of servers and storages and run on 24x7 basis. A number of Software Packages developed in-house by the CC Staff are used extensively in automation projects of Administration, Academic Departments and other user departments.

The CC has a multifunction 70-seater state-of-the-art Video Conferencing facility which is available for Online Meetings, Interviews and Virtual Classes etc.

Other important services rendered by the CC are the Campus Telephony System and the Video Surveillance System which runs over the Campus LAN. The Internet facility is being facilitated through the high performance 1Gbps link of National Knowledge Network (NKN).

The *Campus Connect WiFi* Scheme of the MHRD has been operational since 2017 mostly covers academic complexes, administration, student hostels and student activity areas with a user base of 4300. The WiFi services under this scheme is fully maintained and managed by dedicated company engineers.

### **SERVICES PROVIDED BY THE COMPUTER CENTRE**

The primary goal of the Computer Centre is to provide quality ICT services including computational facilities to the University community. In addition to the maintenance of the computational infrastructure, the following services are supported by the Computer Centre:

- Email & Internet Services
- Credit/audit practical courses of different Departments
- Organizing practical sessions for various workshops and refresher courses of various Academic Departments.
- Organizing training programmes for the University Employees
- Assist the Administration in the process of selection and procurement of computing resources

- Providing maintenance services for computers/ peripherals to the Faculty/Staff /Departments
- Maintaining and monitoring the Campus LAN.
- Maintaining and monitoring various Internet Links.
- System Administration, Network Administration and monitoring of various servers - Email, Web, Proxy, Firewall, etc.
- Maintaining the University Website and intranet portal.
- Develop, procure and maintain software for administration and others sections of the University.
- Software maintenance Services.
- Providing presentation assistance in the auditorium and conference halls.
- EPABX system administration and maintenance.
- IP CCTV Surveillance Management.

### Academic programmes

programme	Intake
DOEACC 'O' Level Diploma	30
DOEACC 'A' Level Diploma	20

### Major facilities and equipment available

#### Equipment

SL	Particulars	Hardware (Make/Model)	Qty
1	Video Conferencing System	Polycom 8000 Series	1
2	VoIP Telephony Server with 1200 Extension capacity	Avaya S8500 with Avaya Media Gateways G650 (2Nos), G450(2Nos), G700(5Nos), G430(2Nos)	1
3	Core Switch with 64 10G Ports	Cisco C6807-XL	1
4	Distribution Switch with 32 10G Ports	Cisco WS-C3850-24XS	16
5	Access Switches	Cisco WS-C2960X-24TD-L	80
		Extreme X350 48T	56
		Extreme X350 24T	19
		Allied Telesis AT-x510L-28GT	11
		Allied Telesis AT-x510L-52GT	3
	HP 2520G	9	
10	Firewall	Huawei Eudemon 200E-X7	1
11	Router (NKN)	Cisco ASR 1000	1

#### Servers

SL	Server Particulars	Hardware (Make/Model)	Operating System and Application Platform
1	Seconday Storage	HP StoreEasy 1650	Windows Storage Server 2012

	Server		
2	Email cum DNS Server	Dell PowerEdge R730xd	CentOS 6.4/ Sendmail, Bind
3	Proxy/NAT/Firewall Server	Dell PowerEdge R730xd	CentOS 6.4/ Squid Proxy 4.0
4	Email Storage Server	Dell NX 3230	Windows Storage Server 2012 R2
5	Proxy Storage Server	Dell NX 3230	Windows Storage Server 2012 R2
6	Aruba NMS Server	HP / DL-380G5	CentOS/Aruba Airwave
7	Oracle 10g Database (old)	HP / DL-380G5	Windows 2003 Server/ Oracle 10g Suite
8	Oracle 10g Database	IBM/X3560	Windows 2008 R2 Server/ Oracle 10g DB
9	Application Server	IBM/X3560	Windows 2008 R2 Server/ MySql-XAMPP
10	File cum Kaspersky Antivirus Admin Server	HP ML350 G5	Windows 2003 Server/ Kaspersky Total Space Security Admin
11	File Server cum Programming	HP DL 180G5	Redhat Enterprise Linux ES 4.0/ Open Source
12	Video Streaming Server with Storage	IBM/X3650 + IBM/DS3524	Windows 2008 R2 Server/ Adobe Media Server 5
13	Web Server	IBM/X3560	RHEL 6/Apache

### Computer Terminals & Peripherals Available

Unit No	Unit Name/Location	Terminals & Peripherals
Unit-0	Central Computer Centre (Academic Building -2)	Terminals = 60 (Core i5 / Windows 7 Pro./Windows 10 Pro. Desktops) Laser Printer =2 Scanner = 2 Projector =1
Unit-1	Computer Centre-Cluster-1 (SoE Complex)	Terminals = 100 (Core i5 / Windows 10 Pro. Desktops) Laser Printer =1 Scanner = 1 Projector = 1
Unit-2	Training Room (SoE Complex)	Terminals = 12 (Core i5 / Windows 10 Pro. Desktops) Projector = 1

### Software Subscriptions

SN	Packages	Renewal Period
1	Microsoft Campus Agreement	Yearly
2	Kaspersky Total Space Security	Yearly

## **OTHER IMPORTANT ACTIVITIES OF THE CENTRE**

- Campus Connect WiFi Project (MHRD Initiative) started its operation since August 2017.
- The Campus backbone network have been upgraded from 1G to 10G.
- A new set of Email & Proxy Server started operating since June 2017.
- The Computer Centre Cluster-2 located at the SoE Complex have been augmented to 100 PC lab from 68PC lab.

## **THE PERSONNEL OF THE CENTRE**

### **Head**

Sarat Saharia, PhD (Tezpur)

Professor, Department of Computer Science & Engineering

*Specialization/Areas of Interest:* Pattern Recognition, Image procession & MachineIntelligence

E-mail: sarat@tezu.ernet.in

### **Technical Staff**

#### **Computer Engineer**

Dhiraj Kumar Sarma, BE(DU),MS (Tezpur)

*Specialization/Areas of Interest:* Computer Networks and Security

E-mail: dhiraj@tezu.ernet.in

#### **Junior Programmer**

Dipak Chandra Choudhury, MCA (Tezpur)

Jamil Ahmed, MTech(CSE) (NIT, Meghalaya)

#### **Senior Technical Assistant**

Abani Kumar Das, Diploma in Engg. (CSE)

Nirnajan Kumar Deka, Diploma in Engg. (Electronics & Telecommunication)

#### **Technical Assistants**

Manjul Baruah, Diploma in Engg (CSE)

Prandeep Borah, DOEACC-A Level, MS(IT)

Raghvendra Choudhary, Diploma in Engg (CSE), CCNA

#### **Other Staff**

Multi Tasking Staff: 03

EPABX Technicians: 01 (Contractual)

Part-time Student Assistants: 05

## **ENGINEERING CELL**

The Engineering Cell of the University established in March 1995. It is assigned the prime responsibility of developing and maintaining the infrastructure in the University campus, covering an area of about 262 acres of land. The following are the major duties and responsibilities entrusted on the Engineering Cell:

1. Allotment and execution of construction projects involving civil, electrical, water supply and sanitary works.
2. Maintenance and repairing of buildings and roads.
3. Maintenance of power supply to the University campus.
4. Maintenance of water supply to all the buildings including hostels and canteens.
5. Preparing of agenda notes and writing minutes of Building Committee meetings.
6. Maintenance and development of the University campus.

### **CONSTRUCTION ACTIVITIES**

The following construction activities were accomplished during 2019-20.

1. Construction of RCC 3 storied 100 capacity SC Girls Hostel
2. Replacement of existing 70W&150W HPSV street light with LED
3. Improvement of ASTC yard and different roads.

### **WORKS DONE WITH TENDER PROCESS**

The following projects have already started

1. Construction of RCC 3 storied 180 capacity Girls Hostel
2. Renovation of Academic Building No. I & II

Nine building projects which include Academic Buildings & Hostels under HEFA funding are under tendering process under Assam PWD.

### **POWER SUPPLY**

The Govt. of Assam has sanctioned 2 MW of power to Tezpur University. This power is released to the University by APDCL as per the load demand. Currently, the University is drawing 1500 KW (1.5MW) from the 132/33 KV Depota Grid Sub-Station of APDCL through a 13.50 KM long dedicated power line. This power is received at the university end through a 2 x 2.5 MVA, 33/11KV Sub-Station constructed by the University and is distributed through an 11KV H.T. Ring Main connected to 4 nos. of Sub-station of capacity 2 x 315 KVA, 11KV/0.433 KV located at peak load centres inside the campus. During 2019-20, the total hours of interruptions in supply of power to the university was 317.00 hours. Out of this maintenance shut down availed by the University was 12 hours, which was rather insignificant considering the present power crisis in Assam.

### **Solar Power**

The University has 1MW capacity Roof top Solar panels installed at different locations within the campus. The electricity generated from solar is directly feeded to the APDCL grid. This system resulted in reduction of Electricity bill served by APDCL. The net saving in amount of electricity bill plus payment made to the Solar Company is about Rs. 41.84 lakh for the said year.

### **WATER SUPPLY**

One deep tube well, of 102 meters deep, associated with submersible pumps were installed in the University campus to access ground water. The treatment plant consisting of aerator, flush mixture, sedimentation tan, filter unit, chlorination, underground clear water constructed for proper treatment of raw water.

The present requirement of water in the university campus is more than 10.00 lakh liters per day. The demand is likely to increase with the increase of new Academic Buildings, Hostels and Residential Buildings. There was no instance of interruption in supply of treated water during the concerned year.

### **PROPOSALS OF THE YEAR**

Planning and designing of the following projects have been taken up and construction works of these projects are awaited as these are placed under HEFA

1. Lecture Hall complex-II for School of Humanities & Social Sciences, School of Education and School of Sciences
2. RCC 4 storied Academic Building for the Department of Physics
3. RCC 4 storied Academic Building for the Department of Commerce
4. RCC 4 storied Academic Building for the School of Law
5. RCC 4 storied 500 capacity Boy's Hostel
6. RCC 4 storied 500 capacity Girl's Hostel
7. Type-C Residential Building
8. Type-D Residential Building
9. RCC 2 storied Animal House for Department of MBBT

Another 07 nos. of Extension projects in the School of Engineering and 01 of Management Sc. For EWS has been sanctioned under HEFA Funding.

## HEALTH CENTRE

The Health Centre of Tezpur University has been functioning since 1995. It provides health care services mainly to the students, faculty members, staff along with their families and others those who are involved with the University. At present we have over 5000 beneficiaries.

### Services /Facilities available

The Centre offers OPD services. However, indoor beds are also available to provide initial care to the indoor patients including emergency cases.

### OPD services:

The OPD timings are as follows:

Session	Morning	Evening
April to September	8.30AM to 12.30PM	4 PM to 6 PM
October to March	8.30AM to 12.30PM	3 PM to 6 PM
Saturdays and Sundays- From 10 AM to 12 NOON		

One Medical Officer is always available for **24hrs emergency duty**. The cases requiring hospitalization are referred to the referral Hospitals at Tezpur. Ambulance service is available round the clock and is provided free of cost. A second ambulance is also available for the PWD candidates to attend to their classes.

A stock of common medicines including lifesaving drugs are maintained and are supplied free of cost. Routine laboratory investigations are also done free of cost.

An **Autoanalyser** (fully automatic) and a **Hormone Analyser (Mini-Vidas)** is available for doing the investigations. **ECG** and **X-ray** facilities are also made available at the Health Centre for the benefit of the University community.

The Centre also keeps a set of appliances for person with disability.

### Visit by Specialists:

The University has engaged **Specialists of different disciplines (Paediatrics, Obstetrics and Gynaecology)** who visit the Health Centre on different days of the week on regular basis for the benefit of the University community.

A **Clinical Psychologist** also visits the University regularly for offering counselling on stress related problems. A **Physiotherapist** visits the health centre twice a week for offering physiotherapy to the differently abled students as well as other patients.

### Important activities

- The Medical Officers visited the hostels and canteens for assessing the prevailing hygiene of the dining hall and the drainage system of the surroundings to check for any outbreak of waterborne diseases.
- Annual Health Checkup programme for employees was conducted in the current year which started from 17-09-2018.

- Fogging in the campus was done on 24-08-2018 to prevent outbreak of mosquito borne diseases.
- Pulse Polio Immunization camps was organized on 10-03-2019 in the campus as per directive of the Govt.
- A health camp was done on 20-11-18 at Navapratat, Ketekibari Tezpur, organized by IPR cell.
- Blood donation camp was also organized on different occasions.

**Other activities:**

A lecture cum demonstration was given to PGDT students.

Regularly attended progress seminars as a DC member of Ph. D student in the Dept. of MBBT.

**OFFICERS AND STAFF**

**Medical Officers**

Dr.(Mrs) J.S. Goswami, MBBS, DLO  
CMO

Dr. S.K. Yadav, MBBS  
MO (Contractual)

Dr. R. Boro, MBBS  
MO (Contractual)

**Staff**

Pranab Baruah, D. Pharm.  
Pharmacist

Eliza H. Barla, GNM  
Nurse

Amrita Purty, GNM  
Nurse

Anuj Baruah, BA, CMLT  
Lab. Technician

Niramoni Das, ANM  
Lab. Technician

Hiten Debnath, DMRT  
Radiographer (Contractual)

Manoj Kr. Saikia  
MTS

Jiten Rajbongshi  
MTS

## **HORTICULTURE SECTION**

The Horticulture Section of Tezpur University is entrusted to carry out landscaping and beautification activities inside the University campus. The Assistant Horticulturist employed at Horticulture Section looks after the whole horticultural/ landscaping activities under the supervision of a Campus Horticultural Committee with a teacher as Coordinator. He is assisted by two supervisors along with 28 daily wage labourers and a tractor driver. The annual horticultural activities during the concerned period were the followings:

### **PLANTATION PROGRAMMES**

A total of 511 seedlings of different ornamental plants/shrubs, fruit trees and medicinal plants etc. (excluding plantation of front side of EPABX room) were planted in different parts of the University campus, which include the Tezpur University Botanical Garden, Administrative Building, Cafeteria, Takshashilla Vidyapeeth, Garden near water body, Guest House, Health Centre, Auditorium, Library, Additional plot, School of Engineering, Academic Building II, Dept. of Energy, School of Management Science, 33/11 KV substation, plot near entrance gate, parts of ring road and other road etc.

### **NEW DEVELOPMENTAL WORK**

The area (about 250 sq. m) located in front of EPABX room was cleaned, leveled and beautified by development of lawn, plantation of different ornamental plants and shrubs (47 nos.), hedge (about 49 m) which was earlier a low lying area with different seasonal jungles.

### **MAINTENANCE OF THE EXISTING TREES**

Maintenance of all existing earlier planted trees (like road side and other plantation) other than garden area was done with cleaning, fertilization and watering etc.

### **MAINTENANCE OF THE EXISTING GARDENS**

Essential maintenance work on all the flower gardens which are located in the front of the Administrative Building, the Auditorium, the Guest House, the Library, the Community Hall, the Health Centre, the Student Activity Centre, Swimming Pool, Dept. of Energy, Dept. of Chemical Science, Dept. of MBBT, Dept. of Environmental Sciences, Dept. of Mass Communication and Journalism, HSS Building, Dept of Business Administration, Academic Buildings I and II, School of Engineering, VC's residence, Garden near waterbody, the Cafeteria, the Sophisticated Analytical Instrumentation Centre, the Community hall, the Chandraprabha Saikianee Bhaban, the Shopping Complex, the Day Care Centre, the Car parking area near Administrative Building, Takshashilla Vidyapeeth, Kendriya Vidyalaya, the Children Park, Swimming pool, Botanical Garden, Citrus Garden etc. was carried out throughout the concerned year.

### **MAINTENANCE OF HOUSE PLANT POTS FOR INDOOR DECORATION**

Essential maintenance work was also carried out on all the house plant pots (about 950 in number) placed in the Administration Building, the Academic buildings, the Library, the Guest House, the Community Hall, the KBR Auditorium, the Health Centre, the Student Activity Centre and all other office buildings of the University.

### **MAINTENANCE OF VERMICOMPOST UNIT**

A vermicompost unit has also been running successfully and has fulfilled the need of organic manure to some extent. About 25.74 quintals of vermicomposting was produced during the concerned year.

### **MAINTENANCE OF THE UNIVERSITY NURSERY**

The University has a nursery of its own, which has been the source of seedlings of ornamental and fruit trees of different types; shrubs; indoor plants and also some seasonal flowers for the use of the University. Essential maintenance work was carried out on the nursery throughout the concerned year. A good amount of revenue (Rs.10,585/-) was also earned by selling different seedlings produced in the nursery among the employee of the University.

### **OTHER ACTIVITIES**

In addition to the above, cleaning (by jungle cutting) of different parts of University campus like surroundings of Administrative Building, different Offices and Academic Building, Library, Auditorium, Guest House, Chandraprabha Saikianee Bhaban, Community hall, Sports Complex, Shopping Complex/Day Care Centre, Children park, Takshashilla Vidyapeeth, Kendriya Vidyalaya, Car parking area and both sides of different roads including boundary footpath etc., were done from time to time.

### **PERSONNEL OF THE UNIT**

**Girindra Hazarika, M.Sc (Agri) (AUU)**

Assistant Horticulturist

## **INTERNAL QUALITY ASSURANCE CELL**

The Tezpur University Internal Quality Assurance Cell (TU IQAC) is engaged in a series of activities required to foster the spirit of quality among the members of the University Community. The IQAC carried out verification of applications for the promotion of Faculty members under Career Advancement Scheme (CAS) as per norms specified by the UGC. Further, as per the mandatory requirement of National Assessment and Accreditation Council (NAAC), IQAC prepares the Annual Quality Assurance Report (AQAR) based on the inputs received from all the Departments/Centres/Cells/Offices of the University.

Highlighted below are some of the notable activities during the period 2019-2020:

1. A talk on Prospects of Project Funding for the Teachers/Researchers of Humanities & Social Sciences was organized on 02 April 2019.
2. Follow-up meeting on Action taken on Academic and Administrative Audit (AAA) 2018 was conducted on 06 May 2019 where several important matters were deliberated.
3. A preparatory meeting on Annual Quality Assurance Report (AQAR) 2019 was conducted on 19 June 2019.
4. IQAC Committee meets on 04 September 2019. The 2<sup>nd</sup> meeting of 2019 where several important matters were deliberated.
5. Capacity Building Workshop series on Quality Research Communications for the Registered PhD Students of Tezpur University was organized on 27/09/2019, 18/10/2019 & 31/01/2020.
6. An interactive session of Faculties and Administrative Officers with Dr. B S Madhukar, Former Advisor NAAC on different aspects of accreditation procedure was conducted on 29 November 2019.
7. TUIQAC had successfully submitted the Annual Quality Assurance Report (AQAR) for the year 2018-2019 on 31 December 2019.
8. IQAC committee met on 26 February 2020. The 1st meeting of 2020 where several important matters are deliberated.

### **PERSONNEL OF THE CELL**

#### **Director**

Debendra Chandra Baruah, PhD (PAU)  
Professor, Department of Energy  
E-mail: baruahd@tezu.ernet.in

#### **Staff**

##### **Data Entry Assistant**

S Mahanta, MA  
Data Entry Assistant  
E-mail: santanu@tezu.ernet.in

## THE INTERNATIONAL OFFICE

The International Office (IO) of Tezpur University was established in February 2013 at a time when capacity development of tertiary education in Northeast India was being actively promoted by UGC and the Ministry of Development of North Eastern Region (DONER) in collaboration with Queens' University, Belfast. The International Office has since then been run by a part-time Director and a part-time Deputy Director. Over the years, the International Office has handled the admission of international students, organized talks and seminars on overseas education and research opportunities and facilitated collaboration between the University and institutions abroad.

### ACTIVITIES

In April, the International Office processed and confirmed the applications of 12 foreign students sponsored by the Indian Council for Cultural Relations (ICCR).

A get-together of graduating foreign students was held on June 23. On August 9, the IO a meeting of foreign students with the Vice Chancellor. On September 28, the IO organized (at Tezpur University) an interaction of ICCR students with the Regional Director, Guwahati.

The IO was visited by the AAA team on October 30. The team evaluated the IO and its activities. It recommended that the IO should have a budget of its own.

The Director (with four Deans) visited National Chung Hsing University, Taichung, Taiwan on December 17 and 18 to discuss collaboration with Tezpur University. This visit was jointly financed by National Chung Hsing University.

On January 23 and 24, the IO participated in meetings with a Queen's University Belfast (QUB) delegation consisting of Professors Stan Scott and Su Taylor and Mr Trueman. The meeting finalized the details of the MoU that will enable students and faculty to visit QUB (and vice versa) from the second half of 2019.

On March 29, the Director attended the oral defence evaluation of Alebachew Alemnew Wobete (thesis title: "School Climate and Trust: Status and Impact on the Academic Achievement of Primary School Students in Ethiopia"), Ethiopian national and the first research scholar of the PhD programme of the Department of Education.

### PERSONNEL OF THE OFFICE

#### Director

P. K. Das  
Professor  
Department of English and Foreign Languages  
Email: prsntdas@tezu.ernet.in /io@tezu.ernet.in

#### Deputy Director

Rupak Mukhopadhyay  
Assistant Professor  
Department of MBBT  
Email: mrupak@tezu.ernet.in/io@tezu.ernet.in

## SOPHISTICATED ANALYTICAL INSTRUMENTATION CENTRE

Instrumental methods of analysis form an indispensable aspect of Research and Development. Tezpur University has a number of departments and centers working on areas which require sophisticated analytical equipment. Sophisticated Analytical Instrumentation Centre (SAIC) at Tezpur University has been set up to cater to these needs. The Centre also extends these facilities to other educational institutions and industries within the north-east region and beyond, as many of them do not have the resources to procure and maintain sophisticated analytical instruments. The Centre also provides demonstration of instruments and their utility in different fields of research to the UG/PG students of colleges.

The SAIC was established in 2010 with two equipment, namely, High-performance liquid chromatography (HPLC) and Gel permeation chromatography (GPC). Now thirty equipment including Transmission electron Microscope (TEM), Scanning Electron microscope (SEM), Single crystal XRD, Powder XRD, BET (Surface and Pore size) analyzer, Raman Spectrometer, Atomic absorption spectrometer (AAS), Nuclear magnetic resonance spectroscopy (NMR), Inductively Couple plasma optical Emission Spectrophotometer (ICP-OES) are under the umbrella of SAIC. The centre also focuses to install many sophisticated equipment like XPS, HR-MS, Confocal Microscope etc. in future.

### Equipment under SAIC

Sl. No.	Name	Model/Date of Installation
1	Transmission electron Microscopy (TEM)	Model: TECNAI G2 20 S-TWIN (200KV) Date of Installation: 22.10.2013
2	Single crystal XRD	Model: AXS SMART APEX-I Date of Installation: 04.07.2012
3	Powder XRD	Model: D8 FOCUS Date of Installation: 02.11.2012
4	BET (Surface and Pore size) analyzer	Model: NOVA 1000E Date of Installation: 15.06.2011
5	Raman Spectrometer	Model: RENISHAW BASIS SERIES WITH 514 LASERS  Date of Installation: 12.10.2012
6	Atomic absorption spectrometer (AAS)	Model: AAS-ICE 3500 Date of Installation: 18.09.2012
7	High Performance Liquid Chromatography (HPLC)	Model: UV VISIBLE DETECTION-2489, REFRACTIVE INDEX DETECTOR-2414, HPLC PUMP-515 Date of Installation: 08.06.2011
8	GPC (Gel Permeation Chromatography)	Model: UV/V VISIBLE DETECTION- 2489, REFRACTIVE INDEX DETECTOR-2414, HPLC PUMP-515 Date of Installation: 09.06.2011
9	Scanning Electron microscopy (SEM)	Model: JSM 6390LV Date of Installation: 18.11.2008
10	Photoluminescence	Model: LS-55 Luminescence Spectrometer Date of Installation: 13.06.2008

11	UV-VIS	Model: UV 2450, 206-55672-34 Date of Installation: 13.06.2008
12	NMR (multi-nuclei)	Model: ECS-400 Date of Installation: 08.04.2010
13	Thermal Analyzer (TGA-DSC)	Model: TGA-50 & DSC-60 Date of Installation: 26.05.2006
14	CHN analyzer	Model: 2400 SERIES 2 Date of Installation: 24.09.2006
15	Gas Chromatography –Mass Spectrometer	Make: PERKINELMER, USA Model No.: CLARUS 600 Date of Installation: 04.02.2009
16	Gas Chromatography	Make: Chromatography & Instrument Company, India Model: GC2010 Date of Installation: 22.01.2011
17	Fourier Transform Infrared Spectrometer	Make: Perkin Elmer Date of Installation: 29.01.1998
18	Inductively Coupled Plasma Optical Emission Spectrophotometer	Make: Perkin Elmer, USA Model No.: optima 2100 DV Date of Installation: 04.11.2009
19	DNA Sequencer	Make: Applied Biosystem Model No.: 3130 Genetic Analyzer Date of Installation: 05.07.2010
20	Fluorescence Spectrometer	Make: Perkin Elmer Date of Installation: 12.05.2010
21	Bomb Calorimeter	Make: MS. CHANGSHA KAIYUAN INSTRUMENTS CO. LTD., CHANGSHA, CHINA Model: SE-1AC/ML Date of Installation: 02.04.2008
22	Oxidation Stability Apparatus	Make: METROHM, USA Model: RANCIMAT 743 Date of Installation: 05.03.2008

### Services provided by SAIC

The Centre provides the following services:

- Characterization and analysis of samples as per user defined protocol.
- Instrument facility is available for internal as well as external users.
- Provide consumables (analytical gases, LN2, chemicals, spare parts and glass blowing works) to all central facilities, departmental requirements as well as personal projects as and when require.
- Provide demonstration, presentation on the use and application of various spectroscopic and analytical techniques for students, teachers and scientists from different Laboratories, Universities and Industries.

### Visitors to the centre

Visitor Category	Internal Users	External users	Total
Average visitor/day	200	20	220

**Facilities/services extended to the User community:**

- The central facility is extending the analytical facilities to the targeted user groups effectively. Moreover, the centre is managing an inventory of analytical gases and liquid nitrogen to ensure a reliable and regular supply of these within the University users.
- Keeping in view the requirements of users, a *glass blowing workshop* has been set up as part of the central facility under SAIC. Different types of laboratory glass apparatus are designed and prepared as per user requirements.
- The centre gives the demonstrations and presentations of instruments operation, importance to visitors. We present the power point presentation of operation/importance in research etc. of the equipment under SAIC in Faculty development programme organized by Tezpur University. The centre also organizes glass blowing workshop program for school level students.
- SAIC is also providing services of maintaining or repairing instruments of various departments of the University including central facility and project equipment as per intimation of users

**Workshop/Seminar organized/other activities:**

- One day workshop on RAMAN spectrometer on 11 March, 2019.
- Workshop on Particle Characterization by Dynamic Light Scattering (DLS) and Laser Diffraction Technique on 19 February, 2020.
- .

**PERSONNEL OF THE CENTRE**

**Head**

Pabitra Nath, Ph.D.  
Professor, Department of the Physics

**Technical Staff**

Prakash Kurmi  
Technical Assistant  
Email: prakash@tezu.ernet.in  
Nava kr. Gogoi  
Technical Assistant,  
Email: nabag@tezu.ernet.in

Tridib Ranjan Nath  
Technical Assistant (Contractual)  
Email: trnath@tezu.ernet.in

Mr. Pankaj Bharali  
Glass Blower(Contract)  
Email: pankaj@tezu.ernet.in

Office Staff  
Mohendra Das,  
MTS  
Email: mohen31@tezu.ernet.in

## Programmes organized by the University

1. 27th Foundation Day observed : Amidst festive fervor and enthusiasm, Tezpur University (TU) observed its 27th Foundation Day on January 21, 2020 with a host of activities. Prof. Ved Prakash, noted academician & former Chairperson, University Grants Commission, as distinguished guest on the occasion delivered the first Foundation day Oration. Following Prof. Ved Prakash's speech, the chief guest, Dr. Kuladhar Saikia, former Director General of Police (DGP) of Assam and President elect of Assam Sahitya Sabha delivered the second Foundation Day Oration.
2. Tezpur University organised its XVII Convocation on December 23, 2019 at Kalaguru Bishnuprasad Rabha auditorium of the University. A total of 1275 students had been conferred upon Degrees and Diplomas amongst which, 82 were awarded PhDs, 749 Masters, 402 Under Graduates (B.Tech/B.Sc/BA), and 42 were Diplomas and PG Diplomas. Prof. D. P. Singh, Chairman, University Grants Commission (UGC) and Former Director, National Assessment and Accreditation Council (NAAC), Bengaluru was the Chief Guest, while Hon'ble Governor of Assam, Prof. Jagdish Mukhi presided over the Convocation as the Chancellor of the University.
3. **"InSciIgnis" organised on the occasion of National Science Day:** On the occasion of National Science Day observed every year throughout the country to commemorate the invention of the Raman Effect by the noted Indian physicist, Sir C.V. Raman, the University too celebrated the day with great enthusiasm and joy. Tezpur University's annual science fest showcased an array of activities ranging from experimentation and designing, astronomy exhibition, quizzes, workshops, fun events and lecture series from eminent scientists from around the globe. Apart from the lecture series, workshops and other mentioned activities, a book fair was also being organized during the event.
4. **International Day of Yoga:** The University celebrated the 7<sup>th</sup> International Day of Yoga with great enthusiasm on the University campus. Various Yoga related activities, such as, demonstration and exhibition of various yoga asanas and postures, online essay competition, quiz competition on Yoga were held. A week-long yoga camp for different age groups was also organised.
5. **Annual Meet:** The University organised the 24<sup>th</sup> Annual Meet with lots of enthusiasm and with a large number of participation of the students. The event started with lighting of the Olympic Torch, followed by Flag Hoisting and University song. A host of sporting/cultural activities, such as, march past competition, inter-hostel chorus competition, one act play, visual /fine arts, literary events etc were organised. The annual meet concluded with a gala cultural Evening.
6. **Independence Day:** The University community celebrated the 74<sup>th</sup> Independence Day with a daylong programme. Prof. V.K. Jain, Vice-Chancellor hoisted the National Tricolour in the playground of the University. The unfurling of the flag was followed by a programme of patriotic songs, dances presented by the University students and students of Taxashila Vidyapith and Kendriya Vidyalaya, CUT.
7. **Republic Day:** The University celebrated the 72<sup>nd</sup> Republic Day with great fervor and joy with a daylong programme. The day started with a cycle rally by the students followed by hoisting of

the National Flag in the playground of the University by the Vice Chancellor, Prof. V.K. Jain. It was followed by a programme of patriotic songs/chorus/group dance by the students of the University, Takshashila Vidyapeeth and Kendriya Vidyalaya. A friendly cricket match by the employees of the University was also played along with various other sporting activities.

8. **Kalaguru Bishnuprasad Rabha remembered on Rabha Divas:** On the occasion of death anniversary of Kalaguru Bishnuprasad Rabha, the University organized the day on 20th June, 2019 in the Council Hall of the University.
9. **Nobel Laureate lecture series organised:** A series of lectures delivered by faculty members of the University on Frontier knowledge, Imagination and Initiatives based on the works of Nobel Laureates of the year 2019 was organised during November 15-17, 2019 at KBR auditorium.
10. **Hindi fortnight:** To promote the official language of the country, Hindi, Hindi fortnight was organised at the University during September 02-16, 2019. Various competitions such as essay writing, quiz, recitation etc were organised amongst employees and students of the University.
11. **Silpi Divas:** Like previous years, the University paid rich tributes to Rupkonwar Jyoti Prasad Agarwala by observing 'Silpi Divas', the death anniversary of, the icon of Assamese culture on January 17 with a befitting programme organised at the University.
12. **Rabindra Jayanti:** The University paid rich tributes to Kaviguru Rabindranath Tagore on his Birth Anniversary by observing Rabindra Jayanti at the screening hall of the Dept of Mass Communication and Journalism.
13. **Tithi of Shrimanta Shankardeva:** The death anniversary of Srimanta Sankaradev, the great social reformer, Vaishnava saint and doyen of Assamese culture and literature was observed in a befitting manner.
14. **Death anniversary of Bhupen Hazarika:** The University paid fitting tribute to the legendary Bhupen Hazarika on his 8<sup>th</sup> death anniversary by organizing a cultural programme at KBR auditorium of the University.
15. **National Education Day:** National Education Day was observed by the University on November 11, 2019 by organizing a host of activities, such as, Cycle rally, student seminar, debate, poster making competition, and essay writing on topic, Role of value education in contemporary society.
16. **Vigilance Awareness Week, 2019:** The University, like previous years organised Vigilance Awareness Week to create awareness on corruption from October 27-November 04, 2019.

## The Year in Figures

### Statistics :: Employees

#### Teaching

Employees	As on 31.03.2019	Joined during 2019-20	Left during 2019-20	As on 31.03.2020
<b>Professor</b>	<b>62</b>	<b>18</b>	<b>0</b>	<b>80</b>
<b>Associate Professor</b>	<b>39</b>	<b>15</b>	<b>17</b>	<b>37</b>
<b>Assistant Professor</b>	<b>145</b>	<b>19</b>	<b>14</b>	<b>150</b>
<b>Total</b>	<b>246</b>	<b>52</b>	<b>31</b>	<b>267</b>

#### Non-Teaching

Employees	As on 31.03.2019	Joined during 2019-20	Left during 2019-20	As on 31.03.2019
<b>Group-A</b>	<b>36</b>	<b>02</b>	<b>00</b>	<b>38</b>
<b>Group-B</b>	<b>54</b>	<b>01</b>	<b>00</b>	<b>55</b>
<b>Group-C</b>	<b>101</b>	<b>04</b>	<b>01</b>	<b>104</b>
<b>Group-C (MTS)</b>	<b>73</b>	<b>00</b>	<b>00</b>	<b>73</b>
<b>Total</b>	<b>273</b>	<b>08</b>	<b>04</b>	<b>277</b>

### Statistics: SC/ST Employees, Female / Male Employees (as on 31 March, 2019)

#### Teaching:

Employees	SC	OBC	ST	Gen	Female	Male	Total
<b>Professor</b>	<b>04</b>	<b>13</b>	<b>05</b>	<b>47</b>	<b>11</b>	<b>58</b>	<b>69</b>
<b>Associate Professor</b>	<b>05</b>	<b>11</b>	<b>02</b>	<b>23</b>	<b>07</b>	<b>34</b>	<b>41</b>
<b>Assistant Professor</b>	<b>24</b>	<b>36</b>	<b>13</b>	<b>66</b>	<b>44</b>	<b>95</b>	<b>139</b>
<b>Total</b>	<b>36</b>	<b>65</b>	<b>22</b>	<b>144</b>	<b>71</b>	<b>196</b>	<b>267</b>

#### Non-Teaching:

Employees	SC	OBC	ST	Gen	Female	Male	Total
<b>Group-A</b>	<b>05</b>	<b>10</b>	<b>02</b>	<b>21</b>	<b>03</b>	<b>35</b>	<b>38</b>
<b>Group-B</b>	<b>10</b>	<b>20</b>	<b>04</b>	<b>21</b>	<b>11</b>	<b>44</b>	<b>55</b>
<b>Group-C</b>	<b>17</b>	<b>40</b>	<b>11</b>	<b>36</b>	<b>09</b>	<b>95</b>	<b>104</b>
<b>Group-C (MTS)</b>	<b>13</b>	<b>25</b>	<b>05</b>	<b>30</b>	<b>05</b>	<b>68</b>	<b>73</b>
<b>Total</b>	<b>48</b>	<b>8</b>	<b>27</b>	<b>104</b>	<b>30</b>	<b>247</b>	<b>277</b>

### STATISTICS: STUDENTS (as on 31 September 2019)

Total	Male	Female	General		SC		ST		OBC/MOBC		PWD*	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>4129</b>	<b>2413</b>	<b>1713</b>	<b>1274</b>	<b>899</b>	<b>302</b>	<b>205</b>	<b>174</b>	<b>163</b>	<b>619</b>	<b>416</b>	<b>31</b>	<b>17</b>

\*PWD candidates are included in the table as per their category. Therefore it to be counted separately











### **Compiled and edited by**

Dr. Apurba Kumar Das, Professor, Dept. of Environmental Science  
Dr. P. Anbarasan, Associate Professor, Dept. of Mass Communication & Journalism  
Dr. Dipak Nath, Assistant Professor, Centre for Disaster Management  
Dr. Nirmali Gogoi, Assistant Professor, Dept. of Environmental Science  
Dr. Arindam Karmakar, Assistant Professor, Dept. of Computer Science and Engineering  
Ms. Angel Habamon Syiem, Assistant Professor, Department of Law  
Mr. Samaresh Barman, Public Relations & Information Officer

### **Hindi version**

Mr. Kul Pd Upadhyay, Assistant Director (Official Language)  
Ms. Rekha Rani Bezbaruah, Hindi Translator  
Ms. Simimoyee Devi, Hindi Typist

### **Acknowledgements**

Most photographs that appear in this Annual Report were taken by the students of our University. Their contribution is gratefully acknowledged.

### **Published by**

The Registrar  
Tezpur University

### **Printed at**

TICOL STYLE TRACK  
Kumar Gaon, Tezpur – 784001  
Ph : (03712) 224535  
Email : ticolpress@gmail.com

TU Annual Report 2019-20/180/23 /11/20



# TEZPUR UNIVERSITY

Napam, Tezpur 784028, Assam

Phone: 03712-267100

Fax: +91 3712 267005/6

Email: [registrartu@tezu.ernet.in](mailto:registrartu@tezu.ernet.in)

Web: <http://tezu.ernet.in>