PROSPECTUS , Spring 2018

Ph.D. Programme

TEZPUR UNIVERSITY

(A Central University)

www.tezu.ernet.in

Napaam, Tezpur, Assam 784028

CONTENTS

NOTE : *This Brochure does not create any binding contract between the University and candidates. Various provisions mentioned in the Brochure are subject to change. University regulation, circular and/or notification issued at a later date are liable to supersede the provisions mentioned in this Brochure.*

SECTION ONE

TEZPUR UNIVERSITY

ABOUT THE UNIVERSITY

Tezpur University was established on January 21, 1994 by an Act of Parliament of India, *The Tezpur University Act, 1993 (Act No. 45),* as a non-affiliating and residential Central University. The University is located at Napaam, about 15 km east of Tezpur town in the Sonitpur District of Assam. The sprawling, serene and green University Campus of about 262 acres provides the best of the ambience including modern infrastructure conducive for learning and dedicated research. The academic programmes offered in the University have a distinct focus on science, technology and humanities, reflecting the objective of the University. At present, the University offers Doctor of Philosophy programme in 19 disciplines, Masters programme in 25 disciplines, Post-Graduate Diploma in 3 disciplines, B.Tech. in 6 disciplines, Certificate programme in 3 disciplines, Integrated M.Sc. in 4 disciplines, Integrated B.Sc.B.Ed. in 3 disciplines; and Integrated M.A., Integrated B.A.B.Ed., Integrated M.Com., Diploma and Advanced Diploma in 1 discipline each. The University offers Add-on courses on Yoga and Violin too.

During the last twenty three years of its existence, the University has engaged itself in the process of capacity building, both in terms of infrastructure and human resource development. The University has mounted tremendous efforts in developing it into a modern university incorporating all elements from the contemporary scientific and socio-cultural milieu.

The University has already developed a number of state-of-the-art laboratories, computing facilities, internet connectivity, a dedicated power supply system with DG backup and a rich library having connectivity to several digital libraries. While students' accommodation is provided in 14 well-designed hostels, sufficient number of residential quarters are available for the accommodation of teaching and non-teaching staff. Other basic amenities like central water supply, campus security, guest house, health centre, canteen, gymnasium, outdoor and indoor sports facilities, post office, banks with ATMs, schools, etc. are also available to cater to the needs of the university community.

Being a Central University, it is privileged to receive funds from the Ministry of Human Resource and Development, Government of India, through the University Grants Commission. Assistance has also been received from the Non-Lapsable Central Pool of Resources of the Government of India. Faculty members of different academic Departments have been able to receive a large number of research grants amounting to crores of rupees from different funding agencies/ organisations. The University promotes industry-academy alliance. The existence of prestigious industry sponsored projects in the University bear testimony to this.

The National Assessment and Accreditation Council (NAAC), an autonomous Institution of UGC, accredited the University with A Grade for a period of five years starting from 2016. The University was accorded as the *Visitor's Best University Award* for the year 2016 by the President of India and is placed in the top 601-800 Universities in the World University Rankings 2017-2018 conducted by the Times Higher Education (THE), London. Four B.Tech Programmes have also been accredited by NBA (National Board of Accreditation) for a duration of 2 years starting from 2016.

FACILITIES AND SERVICES

The University offers the following major facilities and services for students and research scholars.

University Library

Central Library is the focal point of all user community of Tezpur University. The Library caters to the educational and research needs of the academic community and its resources are consulted by scholars from all over the

country. Central Library has been started functioning since 1994. At present, the library holds about 77,286+ books, 10,000+ journals (print + online), online databases, CDs and 7848 back volumes of journals. Library is a member of e-ShodhSindhu consortium, DeLCON consortium and DELNET. Library users can access book database, journal database, e-journals, institutional repository, electronic thesis & dissertations and other e-resources from any terminal within the University campus. Library provides reading facility for 365 days in the year.

Computing Facilities

The University started using computers from its very inception both in its academic and administrative activities. In addition to the Departmental computer laboratories, the University has state-of-the-art central computing facilities spread over four units of laboratories managed by the Computer Centre. The laboratories are equipped with high-end servers, several Desktop Personal Computers (PCs) and a host of latest software packages. All the PCs and servers are connected to a high speed campus LAN. Wi-Fi facilities are available in hostels and residential areas of the campus. The campus LAN is connected to the Internet through 1-Gbps National Knowledge Network (NKN) optical fiber link. The University also has a High Performance Computing Centre (PARAM-TEZ) consisting of 12 TF HPC system having 50TB of storage capacity along with three numbers of C-DAC's indigenously built PARAM Shavak having computing power of around 3TF each.

Centre for Innovation Incubation and Entrepreneurship (CIIE)

The Centre for Innovation Incubation and Entrepreneurship (CIIE) promotes specialized knowledge in the field of entrepreneurship development, innovation and creative ideas. The Centre strives to identify and motivate talented youths to implement new ideas for the fulfillment of the larger societal objectives. The CIIE also maintains an exhibition hall, called TUNOVATION that showcases various innovations made by students and faculty members as part of their projects/ research works. It also displays collection of cultural antiques of the North East Region including musical instruments, masks and terracotta.

Sophisticated Analytical Instrumentation Centre (SAIC)

The University established the Sophisticated Analytical Instrumentation Centre (SAIC) to cater to the need of various sophisticated equipment for advance research. A number of sophisticated equipment, like TEM, SEM, Single Crystal XRD, NMR etc. are installed in SAIC. The centre also extends these facilities to other educational institutions and industries within the North East Region of India and beyond to improve and promote research in different disciplines.

Hostel Accommodation

The University has separate hostels for boys and girls to accommodate all students and research scholars. In total there are 8 women's and 6 men's hostels comprising of more than 3300 capacity. The University also has a married research scholar hostel with a capacity of 36 units.

Scholarships

A limited number of Institutional fellowship is provided to meritorious Ph.D. students as per University rules.

Health Services

The University has a Health Centre to provide basic medical services with its own medical and paramedical staff. The Health Centre is managed by two full-time highly qualified physicians. Besides, specialists, like radiologist, gynecologist, pediatrician, physiotherapist and psychologist regularly visit the University on a weekly basis. The students below the age of 35 years at the time of admission are also provided with the benefit of health insurance scheme.

Games and Sports

The University provides opportunities for students to excel in various sports. The University has basketball, badminton, volleyball and tennis courts; cricket and football grounds with flood light facilities. The University has a well-equipped multi gymnasium and training facilities for Archery.

Tezpur University Alumni Association (TUAA)

TUAA was formed in the year 2000 to create a network of the alumni of the University. The Association aims to build an active pool of resources for the student community in coordination with the well placed alumni.

Tezpur University Students' Council (TUSC)

The University has a vibrant student council for the welfare of the students. The members of the council are elected annually by students through secret ballots.

Academic Calendar

The University strictly adheres to a well-planned calendar specifying the schedule of academic activities. All events including examinations are held strictly according to that calendar. Prospective students are advised to go through the current calendar to get acquainted with the academic events of the University. The academic calendar for the year 2018 will be available soon.

CURRICULUM

Each academic programme is designed to provide enough flexibility in the choice of courses for the students. The courses across the Departments have been designed in such a way that multiple teaching pedagogies could be incorporated easily for delivering the syllabus. Besides the compulsory (core) courses for each of the programmes, the students also have the option to choose courses of their own interest from the elective courses. Students will be required to register some inter disciplinary courses as per their choice under the **Choice Base Credit System.**

Instruction Methodology

The medium of instruction / examination in the University at all levels is English, except in Language course/ programme. There is adequate provision for seminars, tutorials, case studies, guided field work, etc., whatever necessary, to promote the habit of independent thinking.

To relate theoretical knowledge to the practical field, proper measures are taken to conduct case studies and guided field works. Group Discussion is an integral part of teaching pedagogy to help the students in increasing their analytical capability and creativity.

Evaluation System

The students are evaluated following relative grading system which is basically internal. In order to make sure that the students do not have to rely on any one or two major examinations for evaluation, the University follows a continuous and comprehensive evaluation system, where the tests and assignments are spread across the entire semester. A relative Letter Grade is awarded on the basis of continuous internal assessment through class tests, assignments, seminars, term tests etc.

A Letter Grade signifies the level of standard of qualitative/quantitative academic achievement, which a student attains in a particular course/ research work. Each of the Letter Grade represents a Grade Point as tabulated below. The letter grades O to P are considered as *Pass grades* and *F* is considered as *Fail* grade. The grading system adopted by the university w.e.f the Autumn semester, 2015 is given below:

Letter Grade	Grade Point	Description
O	10	Outstanding
A+	9	Excellent
A	8	Very Good
B+	7	Good
B	6	Above average
C	5	Average
P	4	Pass
F	0	Fail
Ab	0	Absent

In addition there are other grades followed by the University as stated below:

Letter Grade	Status	Remarks/Context
I	Incomplete	Letter grade assigned in case any evaluation component remains to be completed due to an extraordinary situation (conforming to the relevant provision in the Regulations for Academic Matters) faced by the student. This grade must be converted to any of the regular grades above within the first month of beginning of the following semester by completing the remaining evaluation component(s).
W	Course Withdrawn / Shortage of attendance	Letter grade assigned if (i) a student withdraws from a course after the last date for withdrawal of course and (ii) deficient of required attendance.
X	Extended Project	Letter grade assigned in case a project work remains incomplete and the work is extended to the following semester.
S	Satisfactory	Letter grade assigned for successful completion of a Foundation/ Audit Course.
U	Unsatisfactory	Letter grade assigned for being unsuccessful in a Foundation/ Audit Course.

Course registration

The student shall register for the course /project/ research work(s) for a particular semester by filling–in the registration card. A course adviser appointed by the Head of the Department (HoD) shall assist the student in the selection of the courses for the semester. The registration card duly signed by the student and countersigned by the course adviser and the HoD shall be submitted to the Controller of Examinations. One copy of the form shall be made available to the Dean of Students' Welfare, Head of the Department and the student concerned.

STUDENTS' CODE OF CONDUCT

Students are to follow discipline as prescribed in the regulations on Maintenance of Discipline of the University. Violation of any clause by any student may lead to disciplinary action as per the regulations.

Tezpur University is *Ragging Free University.* Ragging in any form is strictly prohibited inside or outside the University. Students found indulging in ragging shall be subjected to punishment as per rule. Candidates are advised to visit the website: www.ugc.ac.in or www.tezu.ernet.in for UGC Regulations on curbing the menace of ragging in Higher Educational Institutions, 2009.

ADMISSION PROCEDURE

Interested eligible candidates may APPLY ONLINE through the University Website by paying a fee of Rs. 350/- for SC, ST and PWD candidates and Rs. 700/- for other categories of candidates. Additional bank charge may apply.

The candidates are required to fill-in the application form online in the University website **www.tezu.ernet.in** Candidates should read and follow the instructions (that are available on the website) carefully while filling in the relevant columns of the online application form. Payment is to be made online using either credit card, or debit card, or net-banking. The transaction detail is to be printed and preserved for later reference.

Candidates qualified with the UGC/CSIR-JRF are eligible to apply for Ph.D. programme for the Spring semester 2018. Selection will be based on their performance in the personal interview scheduled to be held on 15th December 2017. The names of the candidates eligible for personal interview will be published in the University website. No individual call letter shall be sent .

SECTION TWO

Ph.D. PROGRAMME

Ph.D. PROGRAMME

The following departments/ centre of Tezpur University will offer Ph.D. programme for JRF qualified candidates in Spring Semester 2018:

School of Engineering

1. Computer Science and Engineering
2. Electronics and Communication Engineering
3. Energy
4. Food Engineering and Technology
5. Mechanical Engineering

School of Humanities and Social Sciences

1. English and Foreign Languages
2. Education
3. Sociology

School of Management Sciences

1. Business Administration

School of Sciences

1. Chemical Sciences
2. Environmental Sciences
3. Mathematical Sciences
4. Molecular Biology and Biotechnology
5. Physics

Important information regarding the Ph.D. programme of the University are highlighted below.

COURSE WORK, COURSE REGISTRATION AND ATTENDANCE REQUIREMENT

Course Work

A student admitted to the Ph.D. programme shall be required to complete specified course work prior to the submission of Plan of Research as per the recommendation of the Departmental Research Committee (DRC)/ Centre's Research Committee (CRC). Currently the scholars are required to complete a total of 16 credits (1 credit generally consists of one hour lecture/ tutorials or two hours of practical in a week). As a step initiated by the University towards implementation of Choice Based Credit System (CBCS), out of the stipulated credit requirement 4 credits should be from another Department. All selected candidates have to complete the course work within the first two semesters.

In order to continue research a candidate must secure a CGPA (Cumulative Grade Point Average) of 6.0 or more.
During the course work, students shall report at the Department/Centre regularly and attend classes or do assigned tasks.

Course Registration
The courses opted by the students in a particular semester are to be registered on the specified date(s). For newly admitted students, registration of courses shall take place during 18-19 January 2018 along with the admission formalities.

Attendance requirement
All students including Ph.D. scholars must attend every lecture, tutorial and practical classes of the course registered by him/her. However, to account for late registration, sickness or other such contingencies, the attendance requirement will be a minimum 75% of the classes. Students with deficiency in attendance in a course will not be allowed to appear in the Term-end examination and will be assigned W grade in the course.

Renewal of admission
Every student will renew his/her admission in the successive semesters on or before the notified dates. No student is allowed to get himself/herself admitted after scheduled date.

Monitoring the progress of research
During the period of research work scholars shall be in touch with their supervisors and give at least one seminar in each semester on experiments/ field work/ library work completed during the Semester. Except part-time students, other categories of students shall be generally available in the Department/ Centre unless they are engaged in experiments/ field work/ library work elsewhere with prior permission of the supervisors.

CATEGORIES OF CANDIDATES

The University shall admit Ph.D. students under the following categories:

a) Full Time: Students under this category shall work full time for the Ph.D. courses/ research. They may apply for fellowship/assistantship available from different funding agencies.

b) Sponsored: Candidates may be sponsored by recognised R&D organisations, national institutions, other universities, government organizations or industries. They shall be admitted through the normal process, and they shall not be entitled to any fellowship/assistantship from the University. They shall work full time for the Ph.D. courses/research. Scanned copy of the Sponsorship / No Objection Certificate from the employer in the prescribed format given in **Annexure I** will be required to upload while submitting the application form.

c) Project Fellows: Students working on different research projects at Tezpur University may be admitted to the Ph.D. programme provided they satisfy the eligibility criteria, subject to the consent of the Principal Investigator of the project.

d) **Part Time*:** Candidates employed in nearby academic institution /University (including Tezpur University)/ R&D organizations may be considered for admission into the Ph.D. programme of Tezpur University, following the normal admission procedure. They shall have to fulfil the stipulated requirements for Ph.D. admission.

The fee structure for Ph.D. programme is given in **Annexure II.**

***The University encourages full time scholars and as such the applicants shall be admitted as Part-time scholars only in exceptional cases.**

Eligibility Criteria for Admission into Ph.D. Programme

School	Department	Qualification
Engi-neering	**Computer Science and Engineering**	M.Tech. in Computer Science/ I.T./ Electronics MCA M.Sc. in Computer Science/ I.T. B.E./B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE Score.
	Electronics and Communication Engineering	M.E. / M.Tech. / M.Sc. Engg. / M.S. in Electronics/ Communication/ Electronics Design/ Electrical/ Instrumentation/ Control/ Microwave/ Biomedical/ Bioelectronics/ Bio-Technology/ Computer Science/ Information Technology. M.Sc. in Electronics/ Physics/ Applied Mathematics. MCA with Physics, Chemistry and Mathematics in Bachelor degree, MBBS with MD/ MS degree. B.E. / B.Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.
	Food Engineering and Technology	M.Sc. / M.Tech. / M.E. in Food Technology/Food Processing Technology/ Food Science and Technology / Food and Nutrition / Microbiology / Food Microbiology / Biochemistry / Chemistry / Biotechnology/ Food Engineering/ Applied Microbiology/ Dairy Engineering/ Food Biotechnology Engineering. B.E. / B.Tech. with an aggregate of at least 80% marks or equivalent CGPA.
	Mechanical Engineering	M.E. / M.Tech. / M.Sc. (Engg.) in Mechanical Engg. or allied areas. B.E. / B.Tech with 80% marks in aggregate or equivalent CGPA with a valid GATE Score.
	Energy	M.Sc. / M.E. / M.Tech. degree in Energy Technology/ Energy Management/ Energy related Engineering and Technology/ Physics/ Chemistry/Agriculture Allied subjects.
Humani-ties and Social Sciences	**English and Foreign Languages**	M.A. in English (specialization may be in Literature, English Language Teaching or Linguistics) , M.A. in Linguistics
	Sociology	Post –Graduation in Sociology / Cultural Studies / Anthropology (with specialization in Social Anthropology) / Economics / History / Political Science / Philosophy / Mass Communication / English / Law / Management/ Social Work.
	Education	Post Graduate in Education or in any allied discipline/ subjects with 55% marks.
Manage-ment Sciences	**Business Administration**	M.B.A. M.Com. M.A. / M.Sc. in Economics M.A. in Psychology/ Sociology/Social Work/Cultural Studies MCA M.T.M. / M.T.A. FCA/ FCS/ FICWA

School	Department	Qualification
Sciences	**Chemical Sciences**	M.Sc. in all branches of Chemical Science/ Physics/Nanoscience/ Material Science/ Biotechnology/ Biochemistry/ Bioinformatics/ Environmental Science. M.E./M.Tech. in allied subjects (Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental Engineering etc.); B.Tech. in Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental Engineering, etc. with 80% marks in aggregate or equivalent grade.
	Mathematical Sciences	M.A. / M.Sc. in Mathematics/ Statistics/ Physics/ Computational Seismology/ Economics with requisite background in Mathematics.
	Molecular Biology and Biotechnology	Masters in any branches of Life Sciences/ Physical Sciences/ Chemical Sciences/ Mathematical Sciences/ Agricultural Sciences / Veterinary or Engineering Sciences / Medical Sciences or in any allied field. B. Tech./ B. E degree students with 80% marks in CGPA with GATE score> 90.00 percentile in Chemical Engineering/ Chemical Sciences/ Bioinformatics or any allied filed. MBBT or BVSc. Degree with at least 60% marks or equivalent CGPA. Apart from the above, candidates having consistently good academic record will be preferred.
	Physics	M.Sc. in Physics/ Electronics/ Geophysics/ Material Science/ Applied Mathematics/ Nanoscience and Technology/ Biotechnology/ Environmental Science and Chemical Science. M.Phil., M.Tech in Solid State Material/ Material Science/ Electronics/Energy/ Nanoscience and Technology/ Biotechnology/ Environmental Science and Chemical Sciences. B.Tech. in Engineering Physics with 80% marks in aggregate or equivalent CGPA.
	Environmental Science	Masters in any Science/ Applied Science / Engineering discipline with at least 55% marks or equivalent CGPA. At Bachelor's level the candidate must have attended Science / Technology programme.

Relaxation in requisite qualifications for SC/ST candidates shall be followed as per Central Govt. Rules. Reservation of seats for SC/ST/ OBC (NCL), Kashmiri Migrant and Person with Disability (PWD) candidates shall also be as per Central Govt. Rules. The prescribed format of OBC (NCL) certificate is given in **Annexure IV**. A candidate with at least 40% permanent disabilities shall be considered under the PWD category.

Recognised Supervisors and their areas of specialization

The names of available supervisors and their areas of research interests have been indicated in the Departmental Profiles in **Section Three**. For detail information, candidates may contact the Department (**Annexure V)** or browse through the specific faculty's webpage available in www.tezu.ernet.in.

DEPARTMENTAL PROFILES

SECTION THREE

SCHOOL OF ENGINEERING

COMPUTER SCIENCE AND ENGINEERING
(Year of Establishment: 1994)

The Department of Computer Science and Engineering was established in 1994 and it is one of the oldest Departments of the University. 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 the Department received support from the Department of Science and Technology (DST), Govt. of India under its FIST- programme. The Department has been carrying out active research in the fields of computational theory, computer networks, network security, mobile computing, soft computing and data mining, natural language processing, workflow management, qualitative spatial reasoning, web services, rehabilitation robotics, pattern recognition, bioinformatics, image processing algorithms, computational geometry, machine learning and remote sensing image analysis.

Programmes offered

1. B. Tech. in Computer Science and Engineering
2. Master of Computer Application (MCA)
3. M. Tech. in Information Technology
4. Ph. D.

Professors	
Dilip Kumar Saikia,* Ph.D. (IITKgp)	*Networks, Mobile Computing*
Dhruba Kumar Bhattacharyya,* Ph.D. (TU), Dean, Academic Affairs	*Data Mining, Network Security, Bio-informatics*
Smriti Kumar Sinha,* Ph.D. (TU)	*Workflow Automation, Web Theory*
Shyamanta Moni Hazarika,* Ph.D. (Leeds)	*Knowledge Representation and Reasoning, Rehabilitation Robotics*
Utpal Sharma,* Ph.D. (TU)	*Natural Language Processing*
Nityananda Sarma,* Ph.D. (IITG)- HoD	*Wireless Networks and Mobile Computing*
Bhogeswar Borah,* Ph.D. (TU)	*Data Mining, Image Processing*
Associate Professors	
Sarat Saharia,* Ph.D. (TU)	*Pattern Recognition*
Bhabesh Nath,* Ph.D. (TU)	*Data Mining*
Siddhartha Sankar Satapathy,$ Ph.D. (TU)	*Computational Biology and Bioinformatics, Wireless Sensor Network*
Assistant Professors	
Sarangthem Ibotombi Singh, MCA (MU)	*Service Oriented Systems, Trust and Reputation*
Loitongbam Basantakumar Singh, M. Tech. (TU)	*Object Recognition, Trust and Reputation*
Rosy Sarmah,* Ph.D. (TU)	*Data Mining, Bioinformatics, Image Processing*
Sanjib Kumar Deka, Ph.D. (TU)	*Cognitive Radio Network, Operating System*
Debojit Boro, M. Tech. (TU)	*Network Security*
Arindam Karmakar,* Ph.D. (ISI)	*Algorithms, Computational Geometry*
Sanghamitra Nath, M. Tech. (TU)	*Speech Processing*
Swarnajyoti Patra,* Ph.D. (JU)	*Pattern Recognition, Machine Learning, Remote Sensing, Image Analysis*
Zubin Bhuyan, M. Tech. (TU)	*Knowledge Representation and Reasoning*
Shobhanjana Kalita, M. Tech. (TU)	*Knowledge Representation and Reasoning*
Nabajyoti Medhi, M.Tech. (TU)	*Software Defined Networking, Wireless Networks, Network Security, Cloud Computing, Web Technologies*

*** Recognized Supervisor $ Recognized Associate Supervisor**

LEGENDS: ***IITKgp****-Indian Institute of Technology Kharagpur,* ***TU****-Tezpur University,* ***Leeds****-University of Leeds England,* ***IITG****-Indian Institute of Technology Guwahati,* ***MU****-Manipur University,* ***ISI****-Indian Statistical Institute Kolkata,* ***JU****-Jadavpur University Kolkata,* ***HoD****-Head of the Department*

Facilities

The Department has several state-of-the-art computer laboratories, viz :
* Basic Programming Laboratories
* Software Engineering Laboratory
* Hardware Laboratory
* Mobile Computing Laboratory

The Department houses the following Research / Special Computing Facilities :
* Network Security Laboratory
* Biomimetic and Cognitive Robotics Laboratory
* Natural Language Processing Laboratory
* Cognitive Radio Network Laboratory
* Network Laboratory
* Malware Research Laboratory

Departmental Library

The Department has a library with a collection of more than 1400 book volumes in the field of computer science and information technology. The library also receives 8 international and 3 national journals in the field of computer science in addition to those at the central library. The digital libraries of ACM, IEEE, are accessible to the Department.

Research Activities

No. of papers published in the year 2016-2017: 46 (including 4 Books)
No. of ongoing research projects: 08
No. of current Ph.D. scholars: 42

Selected Publications

1. Pooja Sharma, D K Bhattacharyya and J K Kalita, Disease biomarker identification from gene network modules for metastasized breast cancer, *Scientific Reports 7*, Nature Publishing Group, Article number: 1072, April, 2017.

2. N. Medhi, D. K. Saikia, OpenFlow-Based Scalable Routing With Hybrid Addressing in Data Center Networks, *IEEE Communication Letters*, Vol.-21, No.5, pp 1047-1050, 2017.

3. N Hoque, H Kashyap and D K Bhattacharyya, A Real-time DDoS Attack Detection Using FPGA, *Journal of Computer Communications,* Elsevier, vol 110, pp 48-58, September, 2017.

4. S Deka and N Sarma, Opportunity Prdeiction at MAC-layer Sensing for Ad-hoc Cognitive Radio Networks, *Journal of Network and Computer Applications (Elsevier)*, vol. 82, issue C, pp.140- 151, March 2017.

5. Rajib Goswami, D K Bhattacharyya and M Dutta, Materialized view selection using evolutionary algorithm for speeding up big data query processing, *Journal of Intelligent Information Systems*, Springer, pp 1-27, March, 2017 [DoI:10.1007/s10844-017-0455-6].

6. D Das, U Sharma and D K Bhattacharyya, Defeating SQL Injection Attack in Authentication Security: An Experimental Study, *Int'nl Journal of Information Security*, Springer, October, 2017(in press)

7. Singla, A. and Patra, S., A Fast Automatic Optimal Threshold Selection Technique for Image Segmentation, *Signal, Image and Video Processing*, 11(2), 243 - 250, 2017.

For more information one can visit the departmental website http://www.tezu.ernet.in/dcompsc

ELECTRONICS AND COMMUNICATION ENGINEERING
(Year of Establishment: 1997)

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 in 1997, 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. (currently under the department of Electrical Engineering since October, 2016). The department also carried out implementation of a three year diploma programme in Advanced Diploma in Healthcare Informatics and Management under the career oriented scheme of the University Grants Commission (2012-2017). In addition, the department offers Ph.D. programme in different areas including Signal and Image Processing, Bioelectronics, Biosensors, Microwave Engineering, Communication Engineering and Microelectronics.

The department is supported by:

- DST-FIST
- DeitY - MIT
- UGC-SAP (DRS-I)

Programmes offered

1. B. Tech. in Electronics and Communication Engineering
2. M.Tech. in Electronics Design and Technology
3. M.Tech. in Bioelectronics
4. Ph.D.

Faculty and Areas of Interest

Professors	
Manabendra Bhuyan,* Ph.D. (GU)- Pro V.C	*Sensor Design, Intelligent Instrumentation, Signal Processing*
Partha Pratim Sahu,* Ph.D. (JU)	*Optical Networks and its Components, Clinical Instrumentation, Microfabrication*
Jiten Chandra Dutta,* Ph.D. (JU)	*Biosensors and Bio-electronics, Neuorobioengineering,*
Satyajib Bhattacharyya,* Ph.D. (DU)-HoD	*Microwave Antennas, Absorbing Materials*
Associate Professors	
Santanu Sharma,* Ph.D. (TU)	*Semiconductor Devices , Bioelectronic Devices, Vehicular Electronics, Power Electronics*
Soumik Roy,* Ph.D. (TU)	*Neuroengineering.*
Bhabesh Deka,* Ph.D. (IITG)	*Image Processing, Computer Vision, Compressive Sensing MRI, Biomedical Signal Processing*
Vijay Kumar Nath,* Ph.D. (IITG)	*Image and Video Processing*
Nayan Moni Kakoty, Ph.D. (TU)	*Robotics, Biomedical Signal Processing*
Assistant Professors	
Riku Chutia, Ph.D. (TU)	*E-nose, Instrumentation and Signal Processing, Embedded System*
Deepika Hazarika, M. Tech. (IITG)	*Image Processing*
Ratul Kumar Baruah Ph.D. (IITG)	*Nanoelectronics, VLSI, MEMS*
Biplob Mondal, Ph.D. (JU)	*VLSI and MEMS Devices*
Durlav Sonowal, M. Tech. (TU)	*Sensors, Signal Processing*
Ananya Bonjyotsna, M. Tech. (TU)	*Audio Processing*
Priyanka Kakoty, M. Tech. (TU)	*Intelligent Instrumentation*
Santanu Maity, Ph.D. (NITY)	*Semiconductor devices, Nano Technology, RF-MEMS switch and Antenna, Photo-voltaic cell*

*** Recognized Supervisor**

*LEGENDS: **GU**-Gauhati University, Guwahati; **JU**-Jadavpur University, Jadavpur; **DU-** University of Delhi, Delhi; **TU-**Tezpur University, Tezpur **IITG**-Indian Institute of Technology Guwahati, **AEC**-Assam Engineering College Guwahati, **NITY**– National Institute of Technology, Yupia Arunachal Pradesh, **HoD**-Head of the Department.*

Facilities

(a) Basic Electrical Engineering Laboratory: It is equipped with DC Motor-Generator sets, 30 Power factor Trainer Kits, Series Motor Panel Kits, Synchronous Panel Motors, Shunt Motors, various trainer kits and measuring instruments. Experiments on Basic Electrical Engineering are conducted in this lab.

(b) Basic Electronics Laboratory: Itis equipped with a number of analog trainer kits, digital trainer kits, DSOs, CROs, function generators, etc. Experiments on Switching Circuit and Digital Logic (SCDL), Biomedical Electronics (BE), Analog Electronics Devices & Circuits (AEDC), Integrated Circuits (IC), Electronic Devices and Circuits (EDC), Design of Digital Systems (DDS) are conducted in this lab.

(c) Design and Prototyping Laboratory: It is equipped with following machines**:** Lathe machine, drilling machine, milling machine, grinding machine, welding machine, bending machine, spot welding, wood planer, miter saw, hand grinder, power hack-saw, etc. Experiments on Physical and Industrial Design of Electronic Systems (PIDE) are conducted in this lab for M. Tech. students. This lab is also used for many hardware related project works of B. Tech. and M. Tech. programmes.

(d) M.Tech. Project Laboratory: It is equipped with anumber of computers equipped with software for computer simulation of different M.Tech. project works.

(e) Software Simulation Laboratory: It is equipped with PCs connected to a LAN server and the internet**.** There are up-to-date Circuit Simulators like PCB layout, XILINX. Experiments on Data and Computer Networks (DCN), VLSI, Modelling and Simulation (MS), Device Modelling, and Advanced Programming Language (APL) are conducted in this lab.

(f) Communication Laboratory: It is equipped with CRO, DSO, function generator, trainer kit, measuring instruments, spectrum analyser, etc. Experiments on Principles of Communication (PC). Digital Communication (DC), Control System (CS) and Microprocessors are conducted in this lab.

(g) Microwave Laboratory: It is equipped with Power meter, VSWR meter, DMM etc. and consists of setups for different microwave experiments.

(h) DSP Laboratory: It is equipped with (i) Software - MATLAB, CCS for DSP, LabView, etc. (ii) Hardware - DSP and FPGA Boards, PCs. Experiments on digital signal processing applications are conducted in this lab.

(i) Computer Vision and Image Processing Laboratory: It is equipped with PCs, digital camera, embedded FPGA Software and Hardware, MATLAB, Open CV for computer vision and image processing experiments.

(j) Instrumentation Laboratory: It is equipped with temperature transducers – thermocouple, IC sensors, ti-channel temperature indicators, Load cell indicator, humidity sensor, sensor interfacing to PC, industrial type remote transmitter, PC based steeper motor, Servo motor driver, etc. it also includes CRO, Function Generator, various trainer kits and measuring instruments.(**Supported by AICTE under MODROB**).

(k) Bioelectronics Laboratory: It is related with Robotics, vision development with LabView, E-nose, Insectronics, Device Simulator and a number of computers.

(l) Neuroengineering Laboratory: It is equipped with a power lab system which includes instruments having capabilities of measuring and processing of ECG, EMG, EEG. It has a number of computers, sensors, Robotics setups and various motors.

(m) Optical Fibre Laboratory: It is equipped with He-Ne Laser (630nm), fibre optic connectorization kit, optical fibre communication single channel, single phase lock in amplifier, optical bread-board, etc. This lab is under MODROB, AICTE.

(n) Micro fabrication/MEMS Facility: Established in 2014, focuses on research and education in the broad area of Microelectronics and Nano Technology covering topics such as MEMS devices, materials, Bio Sensor, Chemical and Gas Sensor etc. Faculty, Research Scholars, M. Tech. and B. Tech. Students and Students/Research Scholar from other Institutes are engaged in the facility. The Facility has a state-of-the-art Clean Room (Class 1000 and Class 10000) to enable the development of cutting edge technologies for various applications.

(o) Major equipment are: RIE (Reactive Ion Etching), PECVD (Plasma Enhanced Chemical Vapour Deposition), Photolithography, Vacuum coating unit (Thermal evaporation and E-Beam Technology), Oxidation Furnace, Laminar Air Flow Unit, Spin coating unit, Prism Coupler Water De-ionizer, etc. thickness measurement instrument, stero-microscope etc.

(p) Research Laboratories: In addition to the above facilities, there are a number of laboratories exclusively for research scholars. These are

- Power Electronics Laboratory (Vehicular Electronics)
- Microwave Engineering Laboratory
- Wireless Communication Engineering Laboratory
- E-nose Laboratory
- Computer Vision and Image Processing Laboratory

Research Laboratories : In addition to the above facilities, there are a number of laboratories exclusively for research scholars. These are

1) Power Electronics Laboratory (Vehicular Electronics)
2) Microwave Engineering Laboratory
3) Wireless Communication Engineering Laboratory
4) E-nose Laboratory
5) Computer Vision and Image Processing Laboratory

Research Activities

No. of papers published in the year 2016-2017: 63
No. of ongoing research projects: 08
No. of current Ph. D scholars: 35

Selected Publications

1. Dutta, L., Hazarika, A., Bhuyan, M., Direct interfacingcircuit based E-Nose for gas classification and itsuncertainty estimation', *IET Circuits, Devices and Systems*, DOI: 10.1049/iet-cds.2017.0106 , Online ISSN 1751-8598, 2017.

2. S. Maity, C. T. Bhunia and P. P. Sahu, Improvement in optical and structural properties of ZnO thin film through hexagonal nanopillar formation to improve the efficiency of Si-ZnO heterojunction solar cell" *J. of Physics D: Applied Physics*. vol-49(20), 205104, 2016.

3. B. Deka , M. Handique and S. Datta, Sparse Regularization Method for the Detection and Removal of Random-Valued Impulse noise, *Multimedia Tools and Applications*, vol. 76 (5), pp. 1-34, 2016.

4. Hazarika, D., Nath, V.K., and Bhuyan, M., Speckle Removal From SAR Images in the Lapped Transform Domain Using Adaptive Threshold Based on Despeckling Evaluation Indexes." *Procedia Computer Science* (Elsevier), 87:148-155, 2016.

5. Dutta, J. and Thakur, H., Sensitivity determination of CNT based ISFETs for different high-κ dielectric materials. *IEEE Sensors Letters*, 1(2), 2017 .

For more information one can visit the departmental website http://www.tezu.ernet.in/delect

ENERGY
(Year of Establishment: 1996)

Founded in 1996, the Department of Energy has been a vibrant academic platform, engaging itself with an academic mandate to produce manpower pool in the field of energy, development of new and efficient energy technologies, and R & D and extension activities in diverse areas of energy. The department offers a two-year (four semesters) AICTE approved M. Tech. programme in Energy Technology, One year Post Graduate Diploma in Renewable Energy and Energy Management (under distance education mode through CODL) and Ph. D. in energy related areas. The thrust areas of research are Biomass energy, Solar energy, Energy-Environment interface, Energy Conservation and Management, Energy Efficiency, Climate Responsive Buildings, Hydrogen Energy, Fuel Cell and Rural Hybrid Energy. Apart from the teaching and research, the department also organizes training programmes, workshops and seminars in the relevant areas of energy. The Faculty of Department has successfully completed a number of international collaborative research projects, notable among them are, 1) Indo-UKIERI, 2) Indo-European Union and 3) Indo-Finland. The Department also has four on-going international collaborative research projects. Research Scholars in the Department received accolades at national and international level, Nehru-Fulbright Fellowship in 2013, CIMO fellowship at Abo Akademi University, Finland in 2013, ISCA young Scientist Award, Indo-French Sandwich Ph.D. Fellowship, Swarna Jayanti Puraskar for the best paper of National Academy of Science, India, 2010.

Programmes offered

1. M.Tech. in Energy Technology
2. Ph.D.
3. B.Voc. in Renewable Energy Management
4. Post Graduate Diploma in Renewable Energy and Energy Management (through CODL)

Faculty and Areas of Interest

Professors	
Debendra Chandra Baruah,* Ph.D. (PAU),	*Renewable Energy and Energy Management*
Dhanapati Deka,* Ph.D. (TU)	*Biofuels, Catalytic transformation of biomass to biofuel and chemical, Bioenergy and Environment*
Rupam Kataki,* Ph.D. (TU)- HoD	*Biomass and Bioenergy, Biofuels, Energy Environment interaction*
Associate Professor	
Sadhan Mahapatra, Ph.D. (IISc)	*Biomass Gasification, Climate Responsive Buildings, Decentralized Energy Options, Energy Conservation*
Assistant Professors	
Pradyumna Kumar Choudhury, M.Tech. (TU)	*Energy Conservation and Management, Integration of Renewable Energy Systems*
Biraj Kumar Kakati,* Ph.D. (IITG)	*Fuel Cell, Hydrogen Technology and Redox Flow Battery, Graphane nanocatalyst.*
Nabin Sarmah,* Ph.D. (HWU)	*Solar Energy, Photovoltaic, Energy Systems*
Bibha Boro, M.Tech. (TU)	*Electrical Engineering*
Vikas Verma, Ph.D. (IITR)	*Thermal Engineering, Solar Thermal Energy, Heat Transfer*

***Recognized Supervisor**

LEGENDS: ***PAU****-Punjab Agriculture University,* ***TU****-Tezpur University,* ***DSW****-Dean, Student's Welfare,* ***HoD****-Head of the Department,* ***IISc.****– Indian Institute of Science Bangalore,* ***IITG****-Indian Institute of Technology Guwahati,* ***HWU****-Heriot Watt University United Kingdom,* ***IITR****– Indian Institute of Technology Roorkee,*

Facilities

Laboratory
The Department is equipped with various equipments such as Gas Chromatograph, Computerized power meter, Bomb Calorimeter, Biomass gasifier system, Solar radiation measuring equipments, Wind speed direction measuring equipments, Wind electric generator, Briquetting Press, Single cylinder 4-stroke petrol engine Test Rig with electrical Dynamometer, Fibertech apparatus, Toxic Gas analyzer, Carbon-Hydrogen analyzer, UV-visible spectrophotometer, TOC Analyser, Petrol and Diesel Engine Test set-up, Hydrocarbon type Analyser, Pyrolyser, Adiabatic Bomb Calorimeter, TBP Apparatus, Duel Fuel Engine, Vacuum Distillation Apparatus, Microhydel test set-up, Research Radiometer, Solar thermal collector test set-up, Solar Dryer, Peristaltic Pump, Ultrasonicator, Programmable Muffle Furnace, Biodiesel Plant and various renewable energy systems.

Departmental Library
A good number of books, video cassettes and CDs on Energy and related areas are available for the students. A number of national and international journals related to different areas of energy are also being subscribed by Central Library of the University.

Scholarship
Ministry of New and Renewable Energy (MNRE), Government of India offers fellowship for M. Tech. and Ph. D. students under its National Renewable Energy Fellowship Schemes on the basis of GATE score. MHRD fellowships are also available for GATE qualified candidates. NEC fellowships are available for the students from North East regions. ONGC has also offered scholarship to M. Tech. students of the Department.

Research Activities
No. of papers published in the year 2016 - 2017: 25
No. of ongoing research projects: 08
No of current Ph.D scholars: 26

Selected Publications

1. Baruah, D., Baruah, D.C., Hazarika, M.K. Artificial neural network based modeling of biomass gasification in fixed bed downdraft gasifiers, *Biomass and Bioenergy*, 98, 2017.
2. Gohain, M., Devi, A., and Deka, D. Musa balbisiana Colla peel as highly effective renewable heterogeneous base catalyst for biodiesel production, *Industrial Crops and Products*, 109, 2017.
3. Narzari, R., Bordoloi, Neon J., Sarma, B., Gogoi, L., Gogoi, N., Borkotoki, B. and Kataki, R. Fabrication of biocarbons obtained from valorization of biowaste and evaluation of its physicochemical properties, *Bioresource Technology,* 242, 2017.
4. Snehesh, S., Mukunda, H S., Mahapatra and S., Dasappa, S. Fischer-Tropsch route for the conversion of biomass to liquid fuels - Technical and economic analysis, *Energy*, 130, 2017.
5. Sivasakthivel, T., Philippe, M., Murugesan, K., Verma, V. and Hu, P. Experimental thermal performance analysis of ground heat exchangers for space heating and cooling applications, *Renewable Energy*, 113, 2017.

For more information one can visit the departmental website http://www.tezu.ernet.in/dner

FOOD ENGINEERING AND TECHNOLOGY
(Year of Establishment: 2006)

Graduate education in the area of food processing and engineering. With the introduction of B.Tech. programme in Food Engineering and Technology (FET) in the year 2010, the department was renamed as the Department of Food Engineering and Technology. The department also offers M.Tech. and Ph. D. programmes in Food Engineering and Technology. The vision of the Department is to create skilled human resources in the engineering aspect of food processing in order to cater to the needs of the rapidly growing food processing sector.

The Department has established Food Quality Control Laboratory with the support of Ministry of Food Processing Industries (MoFPI), Govt. of India. The laboratory has also got NABL accreditation in the year 2017.The department has received HRD grant from MoFPI for establishing laboratories for UG and PG courses in Food Engineering and Technology. The Department of Science and Technology (DST), Govt. of India has granted support to strengthen the Post Graduate teaching and Research under its FIST programme. Department is covered under UGC-SAP (DRS-I). AICTE has supported running AICTE approved courses at the department through the scheme of AICTE NEQIP. GATE qualified M.Tech. students receive PG Scholarship of MHRD. Students from the department have been benefited from MHRD's schemes for North-East under ISHAN UDAY, ISHAN VIKAS.

Research activities at the Department are supported by various sponsoring agencies like UGC, MoFPI, DST, DBT, DRDO, ICAR, AICTE, MSME, ASTEC, etc. Various projects carried out at the Department aims at developing effective and low cost technologies for the society. Some developed food products have also been patented by the faculties. Workshops and seminars are organized regularly in the Department for knowledge sharing among peers as well as for motivating local youths to start their own enterprises.

Programmes offered

1. B. Tech. in Food Engineering and Technology
2. M. Tech. in Food Engineering and Technology
3. Ph. D.
4. B. Voc. in Food Processing

Faculty and Areas of Interest

Professors	
Charu Lata Mahanta,* Ph.D. (CFTRI), Dean– SoE	*Rice Science and Technology, Product Development and Food Quality*
Sankar Chandra Deka,* Ph.D. (HAU)	*Food Biochemistry and Food Quality, Fermented Foods*
Associate Professors	
Manuj Kumar Hazarika,* Ph.D. (IITKgp)	*Food Materials Engineering, Food Industrial Engineering, Food Design.*
Brijesh Srivastava,* Ph.D. (IITKgp)- HoD	*Process and Food Engineering, Fruits and Vegetable Processing and Machineries, Non-Thermal Processing, Unit Operations in Food Engineering*
Nandan Sit,* Ph.D. (TU)	*Food Engineering, Biochemical Engineering, Oils and Fats, Food and Biotechnology*
Poonam Mishra,* Ph.D. (TU)	*Nano Composite, Fruits and Vegetable Technology, Function Food, Biosensors.*
Laxmikant S. Badwaik,* Ph.D. (TU)	*Food Packaging, Food Safety and Laws, Osmotic Dehydration*
Assistant Professors	
Dibyakanta Seth, M. Tech. (IITKgp)	*Dairy and Food Engineering, Dairy Technology, Unit Operations in Food Engineering, Emerging Trends in Food Process Engineering*

Raj Kumar Duary,* Ph.D. (NDRI)	*Isolation and Establishment of Probiotic Organism, Probiotic Food Formulation and Development, Fermentation, Human Cell Culturing*
Kshirod Kumar Dash,* Ph.D. (IITKgp)	*Food Process Modeling, Transfer process in Engineering, Optimization in Food Engineering*
Amit Baran Das, M.S. (IITKgp)	*Food Process Modeling, Optimization in Food Engineering, Product Technology Development*
Nishant Rachayya Swami Hulle, Ph.D. (IITKgp)	*Food Process Technology, Non Thermal Processing, Product Development*
Sourav Chakraborty, M.Tech. (TU)	*Food Engineering, Food Process Simulation and Modeling*

*** Recognized Supervisor #Recognized Co-Supervisor**

*LEGENDS: **CFTRI**-Central Food Technological Research Institute Mysore, **SoE**– School of Engineering, **HAU**-Haryana Agricultural University Hisar, **IITKgp**-Indian Institute of Technology Kharagpur, **TU**-Tezpur University, **NDRI**- National Dairy Research Institute Haryana, **HoD**- Head of the Department*

Facilities

The Department is well equipped with processing and analytical equipments and is in the process of procuring many more equipment to make the state of the art facilities. Great emphasis is laid on practical for processing of foods and for analyzing their quality. List of some major equipment available with department are as follows: HPLC, Texture Analyser, Hunter Lab Color Spectrophotometer, Rapid Visco Analyser, UV-Vis Spectrophotometer, Binocular Microscope, Deep Freezer, BOD Incubator, Rotary Vacuum Evaporator, Photoflurometer, Biohazard Safety Cabinet, Lab. Scale Spray Drier, Tray Drier, Drum Drier, Fluidized Bed Drier, Baking Oven, Canning Unit, Food Processing Equipment, Packaging Equipment, Hammer Mill, Ball mill, Laboratory Pasteurizer, Paddy Huller, Paddy Sheller, Laminar Flow, Fruit Crasher, etc. Supercritical fluid extractor, Advanced Freeze Dryer, Dynamic Rheometer.

Research Activities

No. of papers published in the year 2016-17: 40
No. of ongoing research projects: 07
No of current Ph.D. scholars: 31

Selected Publications

1. Bora, S. J., Handique, J., & Sit, N. Effect of ultrasound and enzymatic pre-treatment on yield and properties of banana juice. *Ultrasonics Sonochemistry*, 37, 445-451, 2017
2. Borah, P. P., Das, P., & Badwaik, L. S. Ultrasound treated potato peel and sweet lime pomace based biopolymer film development. *Ultrasonics sonochemistry*, 36, 11-19, 2017
3. Das, A. B., Goud, V. V., & Das, C. Extraction of phenolic compounds and anthocyanin from black and purple rice bran (Oryza sativa L.) using ultrasound: A comparative analysis and phytochemical profiling. *Industrial Crops and Products*, 95, 332-341, 2017
4. Duyi Samyor, Amit Baran Das, Sankar Chandra Deka. Pigmented rice a potential source of bioactive compounds: A review, *International Journal of Food Science & Technology* (Available Online).
5. Saxena, J., Ahmad Makroo, H., & Srivastava, B. Effect of ohmic heating on Polyphenol Oxidase (PPO) inactivation and color change in sugarcane juice. *Journal of Food Process Engineering*, 40(3), 2017
6. Seth, D., Mishra, H. N., & Deka, S. C. Effect of Microencapsulation using Extrusion Technique on Viability of Bacterial Cells during Spray Drying of Sweetened Yoghurt. *International Journal of Biological Macromolecules*. 103, 802-807, 2017

For more information one can visit the departmental website http://www.tezu.ernet.in/dfpt

MECHANICAL ENGINEERING
(Year of Establishment: 2006)

The Department of Mechanical Engineering was established in the year 2006 under the School of Engineering for offering B. Tech degree in Mechanical Engineering. Subsequently, M.Tech and Ph.D. programmes were started in the year 2013. The vision of the department is to emerge as a centre of excellence producing quality engineers and conducting cutting-edge research. Both the B.Tech and M. Tech (Mechanical Engineering) programmes are approved by AICTE. Moreover, B. Tech Mechanical Engineering programme is accredited by National Board of Accreditation with effective from 01/01/2016.

Programmes offered

1. B. Tech in Mechanical Engineering
2. M. Tech in Mechanical Engineering (Three Specializations)
   - 2a. M. Tech in Thermo–fluids Engineering
   - 2b. M. Tech in Applied Mechanics
   - 2c. M. Tech in Machine Design
3. Ph. D.

Professors	
Dilip Datta,* Ph.D.(IITK)	*Design, Optimization and Operational Research*
Tapan Kumar Gogoi,* Ph.D. (TU)	*Thermal, Energy and Environment Engineering*
Associate Professor	
Partha Pratim Dutta*, Ph.D. (TU)-HoD	*Energy and Thermal Engineering, Drying Technology*
Assistant Professors	
Paragmoni Kalita, M. Tech. (BHU)	*Computational Fluid Dynamics , High speed flows*
Polash Pratim Dutta, M. E. (BIT)	*CAD, Laser Forming, Mechatronics, Soft Computing*
Sushen Kirtania, Ph.D. (IITG)	*Composite Materials, Carbon Nanotubes, Carbon Nanotubes Based Composites, Finite Element Method, Fracture Mechanics*
Prabin Haloi, ME (GU)	*Fluid and Thermal Engineering*
Sanjib Banerjee,* Ph. D. (IITG)	*Materials and Manufacturing*
Monoj Bardalai, Ph.D. (GU)	*Thermal Engineering, Renewal Energy Conversion*
Satadru Kashyap, M.Sc. (Engg.) (UA)	*Manufacturing and Materials Science*
Zahnupriya Kalita, ME (AIT)	*Mechatronics*
Rakesh Bhadra, ME (BESUS)	*Manufacturing, Production Engineering*
Barnali Chowdhury, ME (AEC)	*Mechanical Engineering*
Seikh Mustafa Kamal, Ph.D. (IITG)	*Machine Design*
Vivek Kumar Mehta, Ph.D. (IITK)	*Robotics, Optimization: Classical and Evolutionary Algorithms, Multi-objective Optimization, Multi-modal Optimization*
Shikha Bhuyan, M. Tech. (NITS)	*Thermal Engineering*
Kalpajyoti Borah (M. Tech (IITKgp)	*Aerospace Engineering, Navel Architecture (Guest Faculty)*

***Recognized Supervisor**

*LEGENDS: **IITK**-Indian Institute of Technology Kanpur, **TU**-Tezpur University, **BHU**-Banaras Hindu University, Uttar Pradesh, **BIT**- Birla Institute of Technology, Jharkhand, **IITG**-Indian Institute of Technology Guwahati, **GU**-Gauhati University, **UA**-University of Alberta, Canada, **AIT**- Asian Institute of Technology, Bangkok, **BESUS**-Bengal Engineering and Science University , West Bengal, **AEC**- Assam Engineering College, Guwahati, NITS - National Institute of Technology ,Silchar, IITKgp– Indian Institute of Technology Kharagpur, **HoD**- Head of the Department.*

Facilities

CAD Laboratory
This laboratory is equipped with computers having server based installed software such as ANSYS -FLUENT combo, FLUENT 6.3 teaching version, Pro-E Wildfire 3.0 version, NI Lab. View Software, COMSOL Multiphysics, MATLAB and CATIAV5. At present the laboratory has two servers and 25 computers for use of both students and academic staff.

Fluid Mechanics Laboratory
This laboratory is equipped with hydraulic bench, discharge through orifice apparatus, Bernoulli's apparatus, flow meter apparatus, impact of jet apparatus, discharge over weir and notch attachments, energy losses in pipelines, Reynolds apparatus, and Multi-function measuring instrument (pressure, temperature, velocity, relative humidity, CO, CO_2 concentration) with relevant sensors.

Theory of Machine Laboratory
This laboratory is equipped with universal governor apparatus, static and dynamic balancing equipment, whirling of shaft apparatus, apparatus for influence of inertia upon velocity and acceleration, and gyroscope apparatus.

Engineering Mechanics
This laboratory is equipped with Bell crank lever apparatus, Cantilever beam apparatus, Combined coil and flat belt friction apparatus, Compound lever, Deflection of beam apparatus, Fly wheel, Hook's Law, Jib crane, Law of moments apparatus, Link polygon apparatus, Parallel forces apparatus, Screw jack, Torsion apparatus, Triangle and parallelo-gram law of forces and Universal force table apparatus.

Strength of Materials Laboratory
This laboratory is equipped with Rockwell hardness tester, Brinell hardness tester, Vickers hardness tester, impact testing machine, universal testing machine with computer interfacing, digital torsion testing machine, rotating fa-tigue machine, creep machine, thin cylinder testing machine, metallurgical polishing machine and digital LCD micro-scope.

Thermal Science Laboratory (Refrigeration and Air Conditioning/Heat Transfer)
This laboratory is equipped with Vapour Absorption refrigeration system, Standard vapour compression refrigera-tion system, Air conditioning and Cooling tower, Concentric tube heat exchanger, Critical heat flux apparatus, double pipe heat exchanger, Drop and film condensation apparatus, Emissivity measurement apparatus, Heat transfer in natural convection, Shell and tube heat exchanger apparatus, Thermal conductivity of liquids, Heat transfer through lagged pipe, Heat pipe demonstrator, Heat transfer in forced convection, Heat transfer through composite wall, Stef-an Boltzmann apparatus, Thermal conductivity of insulating slab.

Material Science Laboratory
This laboratory is equipped with metal melting furnace, metallographic cutting machine, metallographic sample mounting machine, metallographic automatic polishing machine, injection molding machine, optical microscope, muffle furnace, and hot air oven.

IC Engine/Automobile Laboratory
This laboratory has three setups - computerized single cylinder 4 stroke diesel engine, diesel smoke-meter, and a petrol car (Model ESTEEM), Variable compression ratio spark ignition engine, Diesel Engine Vehicle etc.

Kinematics Laboratory
In this laboratory, there are various types of models of different mechanisms, like shaper model, clutch model, Old-ham coupling model, gear drive, belt drive, chain drive, etc.

Turbo-Machinery Laboratory
One centrifugal pump unit and one plunger pump unit with computer interface has been installed in this laboratory. One turbine service unit and a Francis turbine with computer interface have also been installed recently.

Vibration Laboratory
This laboratory has one universal vibration apparatus which can be used for performing thirteen numbers of experiments.

Metrology laboratory
Instruments such as plunger type dial indicator, lever type dial indicator, external micrometer, universal bevel protractor, vernier caliper, sine vice, slip gauge, surface plate, surface roughness tester, digital micrometers of different types of various ranges, depth gauge, filler gauge, pitch gauge, and radius gauge are available in this laboratory.

Renewable Energy Laboratory
The equipment available in this laboratory are biodiesel manufacturing unit, bomb calorimeter, viscometer, density meter, flash and fire point apparatus, distillation apparatus, carbon residue apparatus, pour point and cloud point apparatus, copper strip corrosion apparatus, various cut section models (diesel engine, gear box, differential gear, steam engine models, pneumatic cylinder model), fixed bed pyrolysis oil production set-up (under installation), biomass gasifier, 100% producer gas engine generator test rig, gas chromatograph, hot wire anemometer, micromanometer, fluidized bed dryer, pitot tube, and different energy efficient solar air heater.

Central Workshop
This is a central facility well equipped with CNC lathe machine, CNC milling machine, high speed precision lathe machine, conventional lathe machines, shaping machine, vertical milling machine, horizontal milling machine, universal milling machine, high precision surface grinding machine, universal tool and cutter grinder, radial drilling machine, pillar drilling machine, double ended pedestal grinding machine, slotting machine, arc welding machine, oxyacetylene gas welding setup, TIG welding and MIG welding machine, power hacksaw, sheet bending roller machines, plate bending machine, manual shearing machine, cutting force dynamometer, etc.

Research Activities
No. of paper published in the year 2016-2017: 42
No. of ongoing research projects: 01
No. of current Ph.D. scholars: 10

Selected Publications

1. Gogoi, T. K., Estimation of operating parameters of a water-LiBr vapour absorption refrigeration system through inverse analysis, *ASMEJ of Energy Resources Technology,* 138(2), 022002, 2017.

2. Kalita, P., Dass, A. K., A diffusion-regulated scheme for the compressible Navier-Stokes equations using a boundary-layer sensor, *Computers & Fluids*, 2016, Vol. 29, pp. 91-100, DOI 10.1016/j.compfluid.2016.02.001.

3. Dutta, P.P., Saharia J., Kumar T., Gupta A., Singh A.K. Gasification of some locally available biomass using a downdraft gasifier. *Journal of Biofuel and Bioenergy* 1(2), 208-217, 2016.

4. Steiner, M. T. A., Datta, D., Neto, P. J. S., Scarpin, C. T. and Figueeira, J R. Multi-objective optimization in partition -ing the healthcare system of Parana State in Brazil, *Science Omega - The International Journal of Management Science,* 52, 53—64, 2015.

5. Talukdar, K., Gogoi, T. K., Energy analysis of a combined vapour power cycle and boiler fuel gas driven double effect water-LiBr absorption refrigeration system, *Energy Conversion & Management*, 110, 468—477, 2017.

For more information one can visit the departmental website http://www.tezu.ernet.in/dmech

SECTION FOUR

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

EDUCATION
(Year of Establishment: 2014)

The Department of Education was established in the year 2014 under the School of Humanities and Social Sciences. The Department aims at producing prospective teachers with sound knowledge of the content, pedagogy and skills needed for the society. The department has started postgraduate and doctoral Programmes in Education from autumn semester, 2015.

Programmes offered

1. B.Ed.
2. M.A. in Education
3. Ph. D.

Faculty and Areas of Interest

Associate Professors	
Nil Ratan Roy,* Ph.D. (AUS)-HoD	*Measurement and Evaluation in Education, Research Methodology, Educational Planning and Management, Curriculum Development.*
Assistant Professors	
Yeasmin Sultana,*Ph.D. (AUS)	*Language Education and Research Methodology*
R.D. Padmavathy, Ph.D. (PU)	*Mathematics Education, Educational Psychology, Educational Technology, e-content Development, Research Methodology and Statistics in Education, Guidance and Counselling, Environmental Education*
Hitesh Sharma,$ Ph.D. (DAV)	*Method of Teaching Physical Science and Biological Science, Educational Psychology, ICT in Education, Educational Administration, Guidance and Counselling, Early Childhood Education*
Sashapra Chakrawarty, Ph.D. (BHU)	*Biological Science, Educational Psychology, Teacher Education, Elementary Education, Special Education, Guidance and Counselling*
Pratima Pallai,* Ph.D. (LU)	*Social Science Teaching, ICT in Education, Guidance and Counselling, Measurement and Evaluation, Educational Psychology*
Mohammad Asif, M. Ed. (JMI)	*Contemporary Indian Education, Teacher Education, Educational Technology, Pedagogy of Social Science, History of Education*
Sradhanjali Pradhan, M.Ed. (UU)	*Pedagogy of Physical Science, Educational Technology and ICT in Education, Measurement and Evaluation*
Rajinder Singh, Ph.D. (PU^)	*Educational Technology, Educational Research, Special Education, ICT in Education, Language Education, Environment Education, Educa-*

***Recognized Supervisor $ Recognized Associate Supervisor**

LEGENDS: ***AUS****-Assam University Silchar,* ***PU****-Pondicherry University,* ***DAV****-Devi Ahilya Vishwavidyalaya Indore,* ***BHU****-Banaras Hindu University Varanasi,* ***LU****-Lucknow University, JMI– Jamia Millai Islamia New Delhi,* ***UU****– Utkal University Odisha ,* **PU^ -** *Panjab University,* ***HoD****-Head of the Department*

Facilities

The teaching support infrastructure includes a Psychological Laboratory and Education Technology Laboratory, Science and Mathematics resource centre, art and craft resource centre, ICT and Language Laboratory

Research Activities
No. of paper published in the year 2016–17: 16
No of ongoing research projects: 01
No. of current Ph.D. scholars: 06

Selected Publications

1. Chakrawathy, S., Pallai, P. & Sultana, Y. Students' perspective of effective teaching in higher education, *Indian Journal of Psychometry and Education*, 48(2), 2017.
2. Padmavathy, R.D. Gender Equality in Education: Empower Women, *International Journal of Multidisciplinary Educational Research,* 6(7). 24-39, 2017.
3. Pallai, P., Chakrawarty, S., & Sultana, Y, Quality Life and Academic Achievement: A survey of Post Graduate Students, *Psycho-lingua*, 48(1), 2017
4. Pallai, P. and Chakrawathy, S., Interrelationship between Education and Democracy. *Psycho-Lingua*, 47(2), 2017.
5. Roy, N.R. & Lepha P.R. Soico-Cultural Trends and Education in Sikkim, *Journal of Contemporary Educational Research and Innovations*, 7(2), 68-72, 2017
6. Roy, N.R. & Lepha P.R. Education of the Lepchas: With Special Reference to Night Schools in West Bengal, *Annals of Education*, 3(2), 30-37, 2017
7. Singh, R. A study of environmental attitude of higher secondary school teachers in relation to their gender and institution type, *IDL - International Digital Library of Education & Research*, 1(2), 1-10, 2017

For more information one can visit the departmental website http://www.tezu.ernet.in/dedu

ENGLISH AND FOREIGN LANGUAGES
(Year of Establishment: 1994)

The Department was established in 1994 with aims to provide instruction and carry out research in American Literature, English Language Teaching, English Literature, Indian Writing in English, Linguistics, New Literature in English and Women's Writing in English. The Department of English and Foreign Language is a UGC-SAP Department.

Programmes offered

1. One Year Certificate Course in Chinese
2. Integrated B.A.B.Ed. in English (Major-English)
3. Integrated M.A. in English
4. M.A. in English
5. M.A. in Linguistics and Language Technology
6. M. A. in Linguistics and Endangered Language (Modular). (*Students on this programme will have the choice to exit after successful completion of the first two semesters and receive a PG Diploma in Linguistics and Endangered Languages, or continue for another two semesters for an MA in Linguistics and Endangered Languages.)*
7. Ph. D.

Faculty and Areas of Interest

Professors	
Madan Mohan Sarma,* Ph.D. (DU)	*Applied Linguistics, Literature in English, ELT*
Bijay Kumar Danta,* Ph.D. (UU)	*American Literature, Critical Theory, Fiction Studies*
Farheena Danta,* Ph.D. (DU)	*American Literature, Cultural Studies, Modernist Poetics*
Prasanta Kumar Das,* Ph.D. (GU)	*Indian Writing in English, British Literature, Book History*
Madhumita Barbora,* Ph.D. (TU)-HoD	*Linguistics (Syntax, Psycholinguistics), Field Linguistics, Documentation*
Gautam Kumar Borah,* Ph.D. (NTNU)	*Linguistics, Cognitive Semantics, Philosophy of Language, Literary Theory*
Associate Professors	
Debasish Mohapatra,* Ph.D. (EFLU, Hyderabad)	*Curriculum Development, Materials Production, Language Policy, Multilingualism*
Sravani Biswas,* Ph.D. (NEHU)	*Indian Writing in English, Postcolonial Studies ,Literary Theory, British Romantic Poetry*
Hemjyoti Medhi, Ph.D. (DU^)	*Gender and Literature, New Literatures in English, Indian Vernacular Literature*
Assistant Professors	
Rathijit Chakraborty, M.Phil. (Chinese), (JNU)	*Chinese Language and Literature*
Reetamoni Narzari, M.A. (NEHU)	*Women's Writing, Indian Writing in English, Postcolonial Literature*
Pallavi Jha, Ph.D. (UoHyd)	*Children's Literature, Popular Culture and Literature, Postcolonial Writing*
Sanjib Sahoo,* Ph.D. (TU)	*Indian Writing in English, Travel Writing, Contemporary British Literature*
Bashabi Gogoi, M. Phil. (EFLU, Shillong)	*Critical Theory, Adaptation Studies*
Arup Kumar Nath,$ Ph.D. (JNU)	*Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics*
Bipasha Patgiri, M.Phil. (JNU)	*Phonology (Prosody, Dialectology, Language Typology and Syntax)*
Esther Daimari, M. Phil. (GU)	*South Asian English Literature*

Amalesh Gope, Ph.D. (IITG)	*Acoustic Phonetics with special interest in Tone, Psychoacoustics, Computational Linguistics, Intonational Phonology and Language Documentation*
Sarat Kr. Doley, Ph.D. (EFLU, Shillong)	*English Language Education, Language Testing, Psychology of SLA, Social Context of SLA*
Daveirou Lanamai, M. A. (Chinese) (JNU)	*Chinese Language*
Pallavi, M. Phil. (German), (JNU)	*German Literature and Language, Concepts of Emotions and Literature, Gender and Literature. Holocaust Literature, Post-War Literature*

*** Recognized Supervisor $ Recognized Associate Supervisor**

LEGENDS: ***DU****-Dibrugarh University,* ***UU****-Utkal University Odisha,* ***GU****-Gauhati University,* ***TU****-Tezpur University,* ***NTNU****-Norweign University of Science and Technology Norway,* ***EFLU****- English and Foreign Language University,* ***NEHU****- North Eastern Hill University Shillong* ***DU^****-Delhi University, ,* ***JNU****- Jawaharlal Nehru University New Delhi,* ***UoHyd****-University of Hyderabad ,* ***IITG****– Indian Institute of Technology Guwahati,* ***HoD****-Head of the Department.*

Facilities

Digital Language Laboratory: The Department has a digital multimedia, multipurpose language laboratory with fifteen booths. Students can improve their pronunciation of English and Foreign Languages (Chinese and French) and develop interactive language skills by utilizing the software and other facilities available in the Laboratory.

Smart Class Room: The Department has three smart classrooms for augmented teaching learning facilities.

Departmental Library: Selected books and photocopied materials relating to literature, linguistics and ELT are available in the Departmental Library. The Department also has a collection of audio cassette of English Pronunciation and spoken English and number of Video CDs on library texts. The Department has a small Computer Laboratory for the use of students and research scholars

Research Activities

No. of papers published in the year 2016-2017: 04
No. of ongoing research projects : 01
No. of current Ph.D. scholars: 37

Selected Publications

1. Daimari Esther, (2017). "Lapsed Landscapes: Graves, Caves and Ruins in Michael Onddtje's *Anil's Ghost". Kakatiya Journal of English Studies*, Vol-36, pp. 69-84, ISSN: 0971-8877

2. Daimari Esther. (2017). "Scarred and Ruined Landscapes in Romesh Gunesekera's *Heaven's Edge*." *Assonance: A Journal of Russian and Comparative Literary Studies*, Vol- 17, pp- 144-154, ISSN: 2394-7853.

3. Nath A.K. (2017). "Ferdinand de Saussure aru Xongjutibad (Ferdinand de Saussure and Structuralism)" *Special Volume of Assam Sahitya Sabha*, ed. Padun, N. Sibsagar session.

4. Sarma, M. M. (2017). "Biswasahityar Dharana aru Sahityat Biswajanin Dharana (World Literature and the Notion of Universals in Literature)" in D. P. Nath ed. *Tulanamulak Sahitya: Patabhumikat Asam* (Comparative Literature in the Backdrop of Assam). Purbanchal Prakash, Guwahati, 66-74, ISBN: 978-81-7213-312-2.

For more information one can visit the departmental website http://www.tezu.ernet.in/deng

SOCIOLOGY
(Year of Establishment: 2006)

The Department of Sociology of Tezpur University was established in 2006 with a Masters programme. Subsequently, it launched a Ph.D. programme in 2008. The Department is dedicated toward nurturing competent and socially sensitive graduates through rigorous teaching and research activities. The faculty members of the Department have a wide range of interests and expertise and are currently engaged in research in areas such as Development, Education, Environment, Ethnic Conflicts, Governance, Health, Migration, Social Movements, Science Studies, etc. The curriculum lays emphasis on teaching and learning of general concerns of sociology as well as issues of sociological significance in northeastern India which constitute a special focus of the teaching and research of the Department. The students pursuing their Masters in the Department not only have to learn critical approaches and perspectives in the class-room but are also encouraged to participate in short field visits during vacations as part of their mandatory research projects. The Department also makes an effort to expose the students to the prevailing social realities through activities such as outreach programmes, regular film screening, seminars and other programmes in collaboration with other social organizations. The Department is currently supported by UGC-SAP (DRS-I).

Programmes offered

1. M. A. in Sociology
2. Ph. D.

Faculty and Areas of Interest

Professors	
Virginius Xaxa, Ph.D. (IITK) (Gopinath Bardoloi Chair Professor)	*Agrarian Studies, Plantation Labour, Indigenous Peoples, Development Studies*
Chandan Kumar Sharma,* Ph.D. (DU^)-HoD	*Social Development, Culture and Media Studies, Environmental Sociology Nationalism*
Kedilezo Kikhi,* Ph.D. (NEHU)	*Research Methodology, Gender and Society, Sociology of Northeast India, Tribal Studies*
Associate Professors	
Rabin Deka,* Ph.D. (DU)	*Sociological Theories, Sociology of Movement, Agrarian Sociology*
Assistant Professors	
Amiya Kumar Das, Ph.D. (TU)	*Sociology of Development, Sociology of Health and Illness, Sociology of Governance*
Sumesh, S. S,* Ph.D. (UK)	*Social Stigma and Exclusion, Sociology of Body, Sexuality*
Nirmali Goswami,* Ph.D. (IITK)	*Sociology of Education, Identity of Politics, Multiculturalism*
Sarmistha Das, M.Phil. (JNU)	*Gender Studies, Sociology of North East India*
Subhadeepta Ray, Ph.D. (DU^)	*Sociology of Science and Sociology of India*
A. S. Shimreiwung, Ph.D. (JNU)	*Sociology of Religion, Environmental Sociology, Sociology of Music*
Pamidi Hagjer, M.A. (JNU)	*Ritual Studies, Kinship, Sociological Theories*

*** Recognized Supervisor**

*LEGENDS: **UM**-University of Madras, **DU^**-Delhi University, **DU**-Dibrugarh University, **NEHU**-North Eastern Hill University Shillong, **TU**-Tezpur University, **UK**-University of Kerala, **IITK**-Indian Institute of Technology Kanpur, **JNU**-Jawaharlal Nehru University New Delhi, **HoD**-Head of the Department.*

Facilities

The department has a library with selected books and photocopied materials. The classrooms are enabled with ICT facilities.

Research Activities

No. of papers published in the year 2016-17: 19
No. of ongoing research projects: NIL
No of current Ph.D. scholars: 25

Selected Publications

1. Xaxa, V., (ed), *Forest Lanterns*, Penguin, 2017.
2. Goswami, N., *Legitimising Standard Languages: Perspectives from a School in Banaras.* Sage. 2017.
3. Sharma, C.K. and Baruah, P., "Small Tea Plantation and its impact on the Rural Landscape of Contemporary Assam" *International Journal of Rural Management*, Sage, Vol. 13, No. 2, pp. 1-22, Sage, 2017.
4. Deka, R., "Religion, Patriarchy and Women's Rights" in Borah, R. (ed). *Violation of Women and Child Rights in India*. New Delhi: DVS Publishers. 2017.
5. *Sharma, C.K.,* "*State Water Policy of Assam 2007: Conflict over Commercializing Water",* Water Conflicts in Northeast India. Eds. K. J. Joy, et al. Pp. 92-102, Routledge. 2017.

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For more information one can visit the departmental website http://www.tezu.ernet.in/dsoc

SECTION FIVE

SCHOOL OF MANAGEMENT SCIENCES

BUSINESS ADMINISTRATION
(Year of Establishment: 1995)

The Department of Business Administration came into existence in 1995 with the objectives of producing quality management professionals and carrying out research in the areas of Finance, Human Resources, Marketing, Production and System Management. The Department has been conducting PG Diploma in Tourism Management since 2002, which has been upgraded to Master of Tourism and Travel Management with the first batch of students admitted in the Academic Year 2016-17. The Department is awarded 3rd Asia's Best B-school award for its innovation in teaching methodology in 2012, rated A+ by Business India, rated "A" by Discovery Education Media for 2012-13 and recipient of "Best Business School Award" in the category of placement (NE Region) awarded by Bureaucracy Today. The Department was conferred with "A" category by Business Chronicle B-School Survey and placed among the top 10 B-School in the Eastern Region. It was ranked 39th among all institutions offering Management Education in India by NIRF (Ministry of HRD, Govt. of India). The Department has successfully completed a research on "Microfinance and Livelihood Development" under the UGC-SAP (DRS-I) research grant.

Programmes offered

11. Master of Business Administration (MBA).
2. Master in Tourism and Travel Management (MTTM).
3. Post Graduate Diploma in Human Resource Management (Distance Mode)
4. Ph.D.

Apart from these the Department has started a short term certificate course on National Stock Exchange Certified Capital Market Professional (NCCMP) Programme from autumn semester 2017.

Faculty and Areas of Interest

Professors	
Mrinmoy Kumar Sarma,* Ph.D. (TU)	*Services Marketing, Tourism Marketing*
Chandana Goswami,* Ph.D. (GU)- Dean, SoMS	*Financial Management, General Management*
Subhrangshu Sekhar Sarkar,* Ph.D. (TU)	*Accounting, Taxation, Social Development Issues*
Debabrata Das,* Ph.D. (RGU), Director, CODL	*Financial Management, Financial Markets and Development Finance*
Chandan Goswami,* Ph.D. (TU)	*Marketing and Promotional Strategies, Consumer Behaviour, Tourism*
Papori Baruah,* Ph.D. (TU)-HoD	*Human Resource Management, Organization Behaviour, Change Management, Rural Development, NGOs*
Associate Professors	
Tridib Ranjan Sarma,* Ph.D. (TU)	*Operations Management, Project Management, Tourism*
Anjan Bhuyan,* Ph.D. (TU)	*Economics, Rural Economics, Tourism Management, Entrepreneurship*
Arup Roy,* Ph. D. (TU)	*Microfinance, Stock Market, Development Finance, Social Entrepreneurship*
Assistant Professors	
Heera Barpujary, Ph.D. (TU)	*Knowledge Management, Web Technology*
Kakali Mahanta, Ph.D. (DU)	*Human Resource Management, Employee Engagement, Work Life Balance*
Runumi Das, Ph.D. (GU)	*Marketing, Rural Marketing*
Mridul Dutta, Ph.D. (GU)	*Community Based Tourism, Intellectual Property Rights*
Prayash Baruah, MBA (SIU)	*Supply Chain Management, Logistics, Transportation*

*** Recognized Supervisor**

LEGENDS: ***IIMA****– Indian Institute of Management Ahmadabad,* ***TU****-Tezpur University,* ***GU****-Gauhati University,* ***SoMS****-School of Management Sciences,* ***RGU****-Rajiv Gandhi University Itanagar,* ***CODL-****Centre for Open and Distance Learning,* ***DU****-Dibrugarh University,* ***SIU****– Symbiosis International*

Facilities

The Department is well equipped with modern educational facilities like state of the art computer laboratory and instructional audio-visual aids including video conferencing facility. The Department has an air conditioned board room for facilitating case study, group discussion etc. and air conditioned student lounge.

Research Activities

No. of papers published in the year 2017-2018: 7
No. of ongoing research projects: NIL
No. of current Ph.D. scholars: 21

Selected Publications

1. Begum, R. & Goswami, C. (2017). Problems and Prospects of Informal Enterprises : A Study of Street Vendors and Home Based Enterprises in Assam (India), *International Journal of Entrepreneurship and Development Studies (IJEDS)*, 5(1), 33-52.

2. Gurung, D.J. & Goswami, C. (2017). User Generated Content on Sikkim as an Image Formation Agent : A Content Analysis of Travel Blog, *International Journal of Hospitality & Tourism Systems*, 10(2), 47-57, (ISSN: 0947-6250)

3. Yasung, M. & Baruah, P. (2017). Professionalism and Employee Outcome : A Comparative Analysis of Three Districts in Arunachal Pradesh, *IBMRD's Journal of Management and Research*, 6 (1), Print (ISSN: 2277-7830), Online (ISSN: 2348-5922).

4. Sarkar, S. S. (2017). Base Erosion and Profit Shifting : A Challenge to Governments, *Management Accountant*, 52(6).

5. Roy, A. (2017). *Impact Assessment of Microfinance Programme of MFI's on their Clients : A Study in Sonitpur District of Assam in India*, Germany: Lambert Academic Publishing. [ISBN: 978-3-300-03940-7].

6. Das, D. & Das, R. (2017). Barriers in Financial Inclusion : Ground Level Observations From Assam, In S. S. Sangwan and G. Deep (Eds), *Efficiency of Financial Inclusion Policies and Way Ahead*, (pp. 23-44), Chandigarh : CRRID, [ISBN : 978-81-85835-85-3].

For more information one can visit the departmental website http://www.tezu.ernet.in/dba/new/

SECTION SIX

SCHOOL OF SCIENCES

CHEMICAL SCIENCES
(Year of Establishment: 1997)

The Department was established in the year 1997 with the objectives of providing a broad based training to the students in various disciplines related to Chemical Sciences and reach out to the society. The faculty members are actively involved in advanced research programmes in the areas of catalysis, polymers, nanocomposites, drug delivery, bioinorganic chemistry, surfactant systems, water purification technique, synthetic organic chemistry, theoretical chemistry and green chemistry. Apart from externally funded projects, consultancy projects are also run by faculty members of the Department. The Department has received financial assistance under UGC-SAP and DST-FIST special grants for strengthening teaching, research and training.

Programmes offered

1. Integrated B.Sc.B.Ed. (major in Chemistry)
2. Integrated M.Sc. in Chemistry
3. M.Sc. in Chemistry
4. M.Tech. in Polymer Science and Technology
5. Ph.D.

Faculty and Areas of Interest

Professors	
M. Lakshmi Kantam, Adjunct professor, Ph.D. (KU)	*Homogeneous/ Heterogeneous Catalysis*
Swapan Kumar Dolui,* Ph.D. (IITKgp)	*Fibre Reinforced Plastic, Self Reinforced Plastic, Water Based Coating and Adhesive, Diffusion of Small Molecule Through Plastic*
Nashreen Islam,* Ph.D. (NEHU)	*Synthetic Inorganic Chemistry and Biomimetic Chemistry of Transition Metals, Catalysis*
Tarun Kumar Maji,* Ph.D. (CU)	*Grafting of Fibres, Rubber Processing, Reaction Engineering, Emulsion Polymer, Textile Finishing*
Robin Kumar Dutta,* Ph.D. (NEHU)	*Surfactants and Micelles, Water Purification*
Niranjan Karak,* Ph.D. (IITKgp)	*Synthesis of Advanced Polymers, Polymer Nanocomposites and Nanomate - rials*
Ramesh Chandra Deka,* Ph.D. (NCL)	*Theoretical Chemistry, Catalysis and Drug Design*
Ashim Jyoti Thakur,* Ph.D. (NEIST)-HoD	*Heterocyclic Chemistry, Organic Synthesis and Molecular Container Chemistry*
Ashwini Kumar Phukan,* Ph.D. (UoHyd)	*Theoretical Inorganic and Organometallic Chemistry*
Associate Professor	
Ruli Borah,* Ph.D. (NEIST)	*Synthesis of Bioactive Molecule, Development of Green Methodologies for Organic Transformation*
Assistant Professors	
Panchanan Puzari,* Ph.D. (IITG)	*Physical Chemistry, Biosensor*
Kusum Kumar Bania,* Ph.D. (TU)	*Heterogeneous Catalysis*
Pankaj Bharali,* Ph.D. (IICT)	*Inorganic Materials, Catalysis, Adsorption*
Nayanmoni Gogoi,* Ph.D. (IITB)	*Molecular Magnet, Functional Metal Organic Framework*
Bipul Sarma,* Ph.D. (UoHyd)	*Solid State Chemistry, Supramolecular Chemistry and Crystallography*
Sajal Kumar Das,* Ph.D. (CDRI & JNU)	*Synthetic Organic Chemistry*

Assistant Professors	
Utpal Bora,* Ph.D. (NEIST)	*Synthetic Organic Chemistry*
Sanjeev Pran Mahanta,$ Ph.D. (UoHyd)	*Physical Chemistry, Molecular Engineering and Molecular Recognition*
DST Inspire Faculty	
Sanjay Pratihar,$ Ph.D. (IITKgp)	*Inorganic Chemistry, Organometallic Chemistry*

***Recognized Supervisor $ Recognized Associate Supervisor**

LEGENDS: ***KU****-Kurukshetra University Haryana,* ***GU****- Gujarat University,* ***IITKgp****-Indian Institute of Technology Kharagpur,* ***NEHU****-North Eastern Hill University Shillong,* ***CU****-Calcutta University,* ***NCL****- National Chemical Laboratory Pune,* ***NEIST-****North East Institute of Science and Technology Jorhat ,* ***UoHyd****-University of Hyderabad,* ***IITG****-Indian Institute of Technology Guwahati,* ***TU****-Tezpur University,* ***IICT****-Indian Institute of Chemical Technology Hyderabad,* ***IITB-*** *Indian Institute of Technology Bombay,* ***CDRI****-Central Drug Research Institute Lucknow,* ***JNU****-Jawaharlal Nehru University New Delhi,* ***HoD****-Head of the Department.*

Facilities

In addition to the laboratory facilities required for undergraduate and post graduate level studies in Chemical Sciences, the Department is equipped with sophisticated instrumentation facilities, like FT-IR spectrophotometer, CHN Analyzer, Thermal analyzer, UV-Visible spectrophotometer, Universal testing machine (UTM), Atomic absorption spectrophotometer, Polarizing microscope, Computational facilities etc. Besides these, the University has central instrumentation facilities of Scanning electron microscope, 400 MHz Nuclear Magnetic Resonance spectrophotometer, TEM, SEM, Raman spectrophotometer, Single crystal X-ray instrument, GC-MS, ICP-AES, GPC, HPLC, GC etc.

Award

The highest scorer among the students of M.Tech. in Polymer Science and Technology programme is awarded with the Polymer Science Award.

Research Activities

- No. of papers published in the year 2017-2018: 84
- No. of ongoing research projects : 25
- No. of current Ph.D. scholars : 78

Selected Publications

1. Das, V. K., Gogoi, S., Choudary, B. M. and Karak, N., A promising catalyst for exclusive para hydroxylation of substituted aromatic hydrocarbons under UV light, *Green Chemistry*, 19, 4278-4283, 2017.
2. Mondal, M. and Bharali, P., Nickel-catalyzed reductive defunctionalization of esters and amides to aromatic hydrocarbons, *New Journal of Chemistry*, (In press, 2017). DOI: 10.1039/C7NJ02488F.

For more information one can visit the departmental website http://www.tezu.ernet.in/dcs

ENVIRONMENTAL SCIENCE
(Year of Establishment: 2004)

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 include Environmental Pollution, Greenhouse Gas Emission, Riverine Hazards, Geomorphology, Climate, Atmospheric Processes, Vulnerability and Adaption, Hydrogeochemistry, Vermicomposting, Pollution Remediation, Biodiversity Conservation and Atmospheric System Modeling. The Department is a recipient of grant under UGC-SAP and DST-FIST.

Programmes offered

1. M. Sc. in Environmental Science
2. Ph. D.

Professors	
Kushal Kumar Baruah,* Ph.D. (PAU)	*Environmental Plant Physiology and Biochemistry*
Kali Prasad Sarma,* Ph.D. (NEHU)	*Water and Soil Pollution, Hydro-geochemistry, Remediation of Toxic Substances*
Raja Rafiqul Hoque,* Ph.D. (JNU)	*Air Pollution and Environmental Monitoring and Assessment*
Apurba Kumar Das,* Ph.D. (JNU)	*Geomorphology, Regional Climate*
Associate Professors	
Ashalata Devi,* Ph.D. (NEHU)-HoD	*Forest Ecology, Wildlife and Biodiversity Conservation*
Assistant Professors	
Nirmali Gogoi,* Ph.D. (DU)	*Stress Physiology and Biochemistry, C- sequestration*
Satya Sundar Bhattacharya,* Ph.D. (VB)	*Vermiculture, Plant Nutrition and Soil Fertility Management, Soil C Management, Plant Products and Nano fertilizer.*
Sumi Handique, M.Sc. (JNU)	*Geochemistry of River Basins, Hydrogeochemistry*
Amit Prakash,* Ph.D. (JNU)	*Air Pollution Meteorology, Noise Pollution Monitoring and Modelling, Environment System modelling, Urban Climate.*
Sudip Mitra,* Ph.D. (IARI)	*Environmental Science - Environmental Chemistry*
Nayanmoni Gogoi, Ph.D. (IITG)	*Ecosystem functions: Geochemistry and Hydrochemistry; Geostatistics, Pollution Indexing, Nanobiotechnology, Wetland Productivity*
Santa Kalita, Ph.D. (GU)	*Entomology and Environmental physiology*
Pratibha Deka, Ph.D. (TU)	*Environmental Pollution –Air, Water and Soil; Human-Environment Interactions*

*** Recognized Supervisor**

LEGENDS: ***PAU****-Punjab Agricultural University,* ***NEHU****-North Eastern Hill University Shillong,* ***JNU****-Jawaharlal Nehru University New Delhi,* ***DU****-Dibrugarh University,* ***VB****-Visva Bharati Santiniketan,* ***IARI****-Indian Agricultural Research Institute New Delhi,* ***IITG****– Indian Institute of Technology Guwahati,* ***GU****– Gauhati University,* ***TU****-Tezpur University,* ***HoD****- Head of the Department.*

Facilities

The Department has a sophisticated instrumentation laboratory to facilitate research and other academic activities. The laboratory has equipment, like ICP-OES, Laser Leaf Area Meter with Root Measurement Attachment, Light Meter, Portable Photosynthesis Systems, Gas Chromatographs, Ion Chromatograph, TOC Analyzer, Continuous Air Pollution Monitoring Station, UV-Visible Spectrophotometer, Ion meter, Repairable dust sampler and Flame Photometer, GIS laboratory and Plant Culture House.

Research Activities

No. of papers published in the year 2016-17: 20
No. of ongoing research projects: 05
No of current Ph.D. scholars: 37

Selected Publications

1. Baruah, S., Sarma Bora, M., Sharma, P., & Sarma, K. P. (2017). Understanding of the Distribution, Translocation, Bioaccumulation, and Ultrastructural Changes of *Monochoria hastata* Plant Exposed to Cadmium. *Water Air Soil Pollution.* 228: 17. DOI: 10.1007/s11270-016-3092-8.

2. Bharali, A., Baruah, K. K., Bhattacharya, P. & Gorh, D. (2017): Integrated nutrient management in wheat grown in a northeast India soil: Impacts on soil organic carbon fractions in relation to grain yield. *Soil and Tillage Research.* 168: 81-91.

3. Mondal, A., Das S., Sah, R. K., Bhattacharyya, P., & Bhattacharya, S. S. (2017). Environmental footprints of brick kiln bottom ashes: Geostatistical approach for assessment of metal toxicity. *Science of the Total Environment.* 609: 215–224.

4. Sah, R.K., & Das, A.K. (2017). Overcoming source limitations in drainage delineation by combining the streams of topo sheet and DEM in river morphometric studies. *Journal of Geological Society of India*. 2: 183-186.

5. Sarma B., Borkotoki, B., Gogoi, N., & Kataki, R. (2017). Responses of Soil Enzymes and Carbon Mineralization to Applied Organic Amendments: A Short-term Study in Acidic Sandy Loam Soil. *Journal of the Indian Society of Soil Science*. 65: 283-289.

6. Sarma, J., Roy, D. K., Sarania, B., & Devi, A. (2017). A note on extended distribution and IUCN status of *Pyrenaria khasiana* R.N. Paul var. *lakhimpurense*. Odyuo & D.K.Roy - an endemic Theaceous plant of Eastern Himalaya. NeBIO. 8: 108-111.

7. Borah, M., Devi, A., & Kumar, A. (2017). Diet and feeding ecology of the western hoolock gibbon (*Hoolock hoolock*) in a tropical forest fragment of Northeast India. *Primates*. DOI 10.1007/s10329-017-0627-6.

For more information one can visit the departmental website http://www.tezu.ernet.in/denvsc

MATHEMATICAL SCIENCES
(Year of Establishment: 1994)

The Department was started in July 1994 with the objective of producing trained manpower for undertaking research and teaching in mathematics and allied branches of basic or applied sciences. The Department carries out research in the areas of Probability distributions, Optimization theories, Number theory (Algebraic and Analytic), Operator theory, Fuzzy topology, Finite element method, Algebraic graph theory, Algebra (Group Theory and Ring Theory) etc. The Department is currently supported by the UGC under its SAP (DRS-I) scheme and DST-FIST grant .

Programmes offered

1. Integrated B.Sc.B.Ed. in Mathematics (Major- Mathematics)
2. Integrated M.Sc. in Mathematics
3. M.Sc. in Mathematics
4. Ph.D.

Faculty and Areas of Interest

Professors	
Nayandeep Deka Baruah,* Ph.D. (TU)	*Number Theory, Ramanujan's Mathematics*
Debajit Hazarika,* Ph.D. (JMI)	*General Topology, Fuzzy Sets and Applications*
Munmun Hazarika,* Ph.D. (TU)	*Functional Analysis, Operator Theory*
Milan Nath,* Ph.D. (IITG)	*Ordinary Graph Spectra, Inverse Eigen Value Problem*
Associate Professors	
Bhim Prasad Sarmah., Ph.D. (GU)- HoD	*High Energy Astrophysics, Relativity*
Santanu Dutta,* Ph.D. (TU)	*Statistics (Non-parametric)*
Dhiren Kumar Basnet,* Ph.D. (DU)	*Algebra*
Shuvam Sen,* Ph.D. (IITG)	*Computational Fluid Dynamics*
Assistant Professors	
Rajib Haloi,* Ph.D. (IITK)	*Abstract Differential Equations*
Bipul Kumar Sarmah, Ph.D. (TU)	*Theory of Partition, Ramanujan's Mathematics*
Rajat Kanti Nath,* Ph.D. (NEHU)	*Theory of Finite Groups*
Debajit Kalita,* Ph.D. (IITG)	*Algebraic Graph Theory*
Deepjyoti Goswami, Ph.D. (IITB)	*Finite Element Method*
Pankaj Kumar Das, Ph.D. (DU^)	*Coding Theory*

*** Recognized Supervisor**

*LEGENDS: **GU**-Gauhati University, **TU**-Tezpur University, **JMI**-Jamia Millia Islamia New Delhi, **IITG**-Indian Institute of Technology Guwahati, **DU**-Dibrugarh University, **IITK**-Indian Institute of Technology Kanpur, **NEHU**- North Eastern Hill University Shillong, **IITB**-Indian Institute of Technology Bombay, **AU**-Anna University Chennai, **DU**^-Delhi University, **HoD**-Head of the Department.*

Facilities

The Department has a computer laboratory established with financial assistance from the DST and UGC. Various Mathematical software are available in the laboratory. The laboratory is fully networked and it is linked with the Central Computer Center via LAN with access to the INTERNET. One Systems Analyst and one Technical Assistant look after the computational and networking facilities of the department. The laboratory is being fully upgraded under DST-FIST grant.

Research Activities
No. of papers published in the year 2016-2017: 13
No. of ongoing research projects: Nil
No of current Ph.D. scholars: 24

Selected Publications

1. Bapat, R. B., Kalita, D., Nath, M. and Sarma, D. Convex and quasiconvex functions on trees and their applications, *Leaner Algebra and its Applications*, (533) (2017), 210-234

2. Basnet, D. K. and Bhattacharyya, J. Nil Clear graphs of rings, *Algebra Colloquium*, 24 (2017), no.3, 481- 492.

3. Chakraborty, D and Saikia, A. An explicit construction for unramified quadratic extensions of biquadratic fields, *Acta Arithmetica*, 178 (2017), no 2, 153-161

4. Das, P. K. Bounds on parity check of linear codes detecting repeated solid bursts, *Bulletin of Pure and Applied Sciences- Mathematics and Statistics*, 36 (2017), no 1, 62-69.

5. Dutta J., Basnet, D. K. and Nath, R. K., On commuting probability of finite rings, *Indagationes Mathematicae*, 28 (2017), no 2, 272-282

For more information one can visit the departmental website http://www.tezu.ernet.in/dmaths

MOLECULAR BIOLOGY AND BIOTECHNOLOGY
(Year of Establishment: 1997)

The Department of Molecular Biology and Biotechnology (MBBT) was establishment in the year of 1997 with the objectives to create quality human resource and to engage in quality research work in the challenging and frontier area of modern biotechnology. The Department has close linkage with the industry and academic institute of the country.

The current research activities in the Department include molecular genetic analysis of various human diseases/disorders, microbial, environmental and petroleum biotechnology, snake venom biochemistry, enzymology and enzyme technology, medicinal plants, immunology, immune genetics and evolutionary genetics, computational biology, nano biotechnology, plant microbe interactions, cancer genetics and chemoprevention, and molecular virology.

The Department of MBBT is supported by UGC-SAP (DRS-II), DST-FIST and DBT strengthening project. Department also houses Bioinformatics infrastructure facility (DBT-BIF) for computational research and DBT-HUB to impart training on molecular biology to students and faculty members. The Department has ONGC-Centre for Petroleum Biotechnology.

Programmes offered

1. Integrated M. Sc. in Biosciences and Bioinformatics
2. M. Sc. in Molecular Biology and Biotechnology
3. Ph. D.

The students admitted to the M.Sc. Programme are eligible for monthly fellowship of Rs. 3000/- only (for detailed information please visit: http:// www.tezu.ernet.in/dmbbt) by the DBT supported M.Sc. Biotechnology teaching programme.

Faculty and Areas of interest

Professors	
Bolin Kumar Konwar,* Ph.D. (IC),	*Petroleum Biotechnology, Plant Biotechnology, Genetic Engineering and Metagenomics, Bioenergy*
Alak Kumar Buragohain,* Ph.D. (IC) On-lien as V.C. of DU	*Drug Discovery from Medicinal Plants, Diatom Nanotechnology, Plant Biotechnology, Evolutionary Genomics, Petroleum Biotechnology*
Ashis Kumar Mukherjee,* Ph.D. (BU), Dean, R &D	*Snake Venom Biochemistry and Microbial Biotechnology*
Sashi Baruah,* Ph.D. (PGIMER)	*Innate Immunity and Immunogenetics ((Heterogeneity and Evolution of Immune Responses)*
Suvendra Kumar Ray,* Ph. D. (CCMB)	*Molecular Plant -Microbe Interactions, Molecular Evolution*
Manabendra Mandal,* Ph.D. (IGIB)	*Probiotics and Nutrition, Microbial Biofilm, Bioenergy*
Anand Ramteke,* Ph.D. (JNU)- HoD	*Cancer Genetics and Chemoprevention*
Associate Professors	
Robin Doley,* Ph.D. (TU)	*Anti-haemostatic Proteins from Snake Venom and Hematophagus Insect*
Assistant Professors	
Tapas Medhi,* Ph.D. (IITKgp)	*Enzymology and Bioprocess Engineering*
Eshan Kalita,* Ph.D. (NIPGR-GU)	*Nanobiotechnology and Plant Functional Biology*
Surya Prakash G. Ponnam,*Ph.D. (LVPEI-UoHyd)	*Molecular Genetics and Disease Biology of Various Human Diseases/ Disorders*
Anupam Nath Jha,* Ph.D. (IISc)	*Computational Biophysics, Bioinformatics*
Rupak Mukhopadhya,* Ph.D. (IACS-JU)	*Cellular and Molecular Biology (Sub Areas: Inflammation, Cardiovascular Disease), Microbial Biotechnology*
Sougata Saha,* Ph.D. (IISc)	*Cellular and Molecular Biology (Protein Arginylation and its Role in Cellular Function, Obesity)*
Nima D. Namsa,* Ph.D. (IISc)	*Molecular Biology of Rotavirus*
Suman Dasgupta,* Ph.D. (VB)	*Insulin Resistance and Type 2 Diabetes*
Mattaparthi V. Satish Kumar,* Ph.D. (IITG)	*Computational Biotechnology and Bioinformatics*
Jyoti Prasad Saikia, Ph. D (TU)- Ad-hoc	*Plant Biotechnology*

Assistant Professors	
Aditya Kumar, Ph.D. (IISc)	*Computational Biophysics, Genomics and Bioinformatics*
Pankaj Barah, Ph.D. (NUST)	*Evolutionary Genomics , Systems Biology , Big-data in Biology , Struc-*

*** Recognized Supervisor $ Recognized Associate Supervisor**

*LEGENDS: **IC**-Imperial College London, **DU**-Dibrugarh University, **BU**-Burdwan University West Bengal, **R &D**– Research and Development, **PGIMER**-Post Graduate Institute of Medical Education and Research Chandigarh, **CCMB**-Centre for Cellular and Molecular Biology Hyderabad, **IGIB**-Institute of Genomics and Integrated Biology Delhi, **JNU**-Jawaharlal Nehru University New Delhi, **TU**-Tezpur University, **IITKgp**-Indian Institute of Technology Kharagpur, **NIPGR**-National Institute of Plant Genome Research New Delhi, **GU**-Gauhati University, **LVPEI**-L.V. Prasad Eye Institute Hyderabad, **UoH**-University of Hyderabad, **IISc**-Indian Institute of Science Bangalore , **IACS**-Indian Association for the Cultivation of Science Kolkata, **JU**-Jadavpur University Kolkata, **VB**-VisvaBharatiSantiniketan, **IITG**-Indian Institute of Technology Guwahati, **NUST**- Norwegian University of Science and Technology Norway,**HoD**-Head of the Department.*

Facilities

The Department has several sophisticated instruments like, Automated DNA sequencer, UHPLC, FPLC, HPLC systems, Real Time PCR Bioanalyzer, Spectrofluorimeter, Immunofluorescence Microscope, GC mass spectrometer and Fermenter. Department is equipped with a cold room, animal and plant cell culture facilities, animal experimentation laboratory and Bioinformatics facility. Apart from these individual; faculty research laboratories are well equipped to carry out advance research.

Research Activities

- No. of papers published in the year 2017-2018 : 22
- No. of ongoing research projects: 38
- No of current Ph.D. Scholars: 66

Selected Publications

1. Chaliha, C., Nath, B. K., Verma, P. K., & Kalita, E. (2016). Synthesis of functionalized Cu: ZnS nanosystems and its antibacterial potential. *Arabian Journal of Chemistry*.
2. Deka, K., Singh, A., Chakraborty, S., Mukhopadhyay, R., Saha, S. (2016). Protein arginylation regulates cellular stress response by stabilizing HSP70 and HSP40 transcripts. *Cell Death Discov*. 2016 Oct 3;2:16074. eCollection.
3. Das, V. K., Bharali, P., Konwar, B. K., Mikkola, J. P., Shchukarev, A., & Thakur, A. J. (2016). A convenient 'NOSE'approach used towards the synthesis of 6-amino-1, 3-dimethyl-5-indolyl-1 H-pyrimidine-2, 4-dione derivatives catalyzed by nano-Ag. *New Journal of Chemistry*, *40*(3), 1935-1939.
4. Sanjeev, A., & Mattaparthi, V. S. K. (2017). Computational investigation on the effects of H50Q and G51D mutations on the α-Synuclein aggregation propensity. *Journal of Biomolecular Structure and Dynamics*, 1-13.
5. Sharma, M., Iyer, J. K., Shih, N., Majumder, M., Mattaparthi, V. S. K., Mukhopadhyay, R., & Doley, R. (2016). Daboxin P, a Major Phospholipase A2 Enzyme from the Indian Daboia russelii russelii Venom Targets Factor X and Factor Xa for Its Anticoagulant Activity. *PloS one*, *11*(4), e0153770.

For more information one can visit the departmental website http://www.tezu.ernet.in/dmbbt

PHYSICS
(Year of Establishment: 1998)

Department of Physics was established in 1998. It offers studies in various fields of physics leading to postgraduate and doctoral degree. The research interests of the faculty falls in various areas of condensed matter physics, photonics, high energy physics, microwaves, plasma physics, astrophysics, neutrino physics and nanoscience & technology. The Department is also working in association with other institutes like IUCAA Pune, CMACs Bangalore, IIT Guwahati, CAT Indore, VECC Kolkata, SAMEER Mumbai, University of Southampton UK, Queen's University Belfast, University of Tokyo Japan, Max Planck Institute Germany and others. The Department of Physics is a UGC-SAP, DST-FIST and ISRO supported Department. The department provides a conducive and rigorous research environment.

Programmes offered

1. Integrated B.Sc.B.Ed. in Physics (Major-Physics)
2. Integrated M. Sc. in Physics
3. M. Sc. in Physics
4. M. Sc. in Nanoscience and Technology
5. Ph. D.

Faculty and Areas of Interest

Professors	
Ashok Kumar,* Ph.D. (IITK)- Dean, SS	*Condensed Matter Physics, Solid State Ionics*
Jayanta Kumar Sarma,* Ph.D. (GU)	*Theoretical High Energy Physics, Particle Physics*
Nidhi Saxena Bhattacharyya,* Ph.D. (DU^)	*Microwave Devices, Antennas and EMI Materials*
Nilakshi Das,* Ph.D. (GU)	*Plasma Physics*
Pritam Deb,* Ph.D. (JU)	*Nanoscience and Nano Technology, Physics of Materials*
Associate Professors	
Gazi Ameen Ahmed,* Ph.D. (GU)- HoD	*Laser Physics, Optoelectronics*
Dambarudhar Mohanta,* Ph.D. (TU)	*Condensed Matter Physics, Nanoscience*
Pralay Kumar Karmakar,* Ph.D. (GU)	*Plasma Physics, Astrophysics, Nonlinear Dynamics*
Mrinal Kumar Das,* Ph.D. (GU)	*Theoretical High Energy Physics, Nuclear Physics*
Pabitra Nath,* Ph.D. (GU)	*Photonics*
Assistant Professors	
Ng K. Francis, Ph.D. (GU)	*Particle Physics Phenomenology and Particle Cosmology*
Rajib Biswas,# Ph.D. (DU)	*Fiber Optic Instrumentation, PCFs; Geophysical Instrumentation*
Amit Pathak,* Ph.D. (GU^)	*Molecular Astrophysics of Polycyclic Aromatic Hydrocarbons (PAHs), Interstellar Dust (Cosmic Dust), UV Astronomy*
Rupjyoti Gogoi,* Ph.D. (GU)	*Astrophysics*
Shyamal Kumar Das,* Ph.D. (IISc)	*Material Science*
Ritupan Sarmah, Ph.D. (IISc) -Ad-hoc	*Computational Material Science*
Moon Moon Devi, Ph.D. (TIFR)	*Experimental High Energy and Astro-particle Physics Neutrino Physics UHE Cosmic Rays and Extensive Air Showers Detector Instrumentation and Data Acquisition*
DST Inspire Faculty	
Arup Jyoti Choudhury, Ph.D. (GU)	*Low Temperature Plasma Processing*

***Recognized Supervisor # Recognized Co-supervisor**

LEGENDS: *, **IITK**-Indian Institute of Technology Kanpur, **GU**-Gauhati University, **DU^**-Delhi University, **JU**-Jadavpur University West Bengal, **TU**-Tezpur University, **DU**-Dibrugarh University, **GU^**-Gorakhpur University Uttar Pradesh, **IISc**-Indian Institute of Science Bangalore, **TIFR**– Tata Institute of Fundamental Research Mumbai, **HoD**-Head of the Department.*

Facilities

The Department has a rich collection of setups and instruments related to Photonics, Electronics, Condensed Matter Physics and Nanoscience at research level in addition to general laboratory instruments for postgraduate teaching in Physics. The Department has a 25 MW pulsed, NdYAG laser, high vacuum coating unit, X-band Microwave Bench, Electrochemical Workstation, LCR HiTester Meter, AFM, PPMS, SEM, XRD, Double Distilled water treatment plant, hot air oven, material developing facilities, semiconductor characterization set-up, UV-VIS spectrophotometer, Millipore water purification system, LB film deposition unit, FT-IR, spectrophotometer, vector network analyzer, spin wave instability characterization system, antenna parameter measurement facility, hydraulic press, CNC Milling Machine and other systems. The Department also has high end computational facility to carry out theoretical and astrophysics research work in addition to a departmental library. The department also offers its facilities to the students of other institutes and other departments within the University.

The research activities in the department is supported by University's Sophisticated Instrument and Analytical Centre (SAIC) and the University Library.

Research Activities

No. of papers published in the year 2016-2017 : 55
No. of ongoing research projects: 18
No of current Ph.D. scholars: 56

Selected Publications

1. Boruah M. J., Gogoi A., Nath B. C. and Ahmed G. A., Light scattering studies of randomly oriented polycrystalline fayalite micro particles as interstellar dust analogues, *Journal of Quantitative Spectroscopy & Radiative Transfer*, 196, 213-221, 2017.
2. Das S.K., Mahapatra S. and Lahon H., Aluminium-ion Batteries: Developments and Challenges, *Journal of Materials Chemistry* A, 5, 6347-6367, 2017.
3. Sarma R. and Mohanta D., Anomalous carrier life-time relaxation mediated by head group interaction in surface anchored MnSe quantum dots conjugated with albumin proteins, *Materials Chemistry and Physics*, 187, 46-53 , 2017.
4. Bora N. and Biswas R., Quantifying Regional Body Wave Attenuation in a Seismic Prone Zone of Northeast India, *Pure and Applied Geophysics*, 174, 1953-1963, 2017.
5. Chetia L., Kalita D. and Ahmed G. A., Enhanced photocatalytic degradation by diatom templated mixed phase titania nanostructure, *Journal of Photochemistry and Photobiology A: Chemistry*, 338, 134–145, 2017.

For more information one can visit the departmental website http://www.tezu.ernet.in/dphy

ANNEXURES

ANNEXURE I

Prescribed Format of Sponsorship / No Objection Certificate

(*Format for Sponsorship / No Objection Certificate*)

(The letter should be typed on the Official Letter-Head of the Sponsoring Organization / Employer / Principal Investigator and signed by the Head of the Institution / Principal Investigator)

To

The Controller of Examinations
Tezpur University

Sub: Sponsorship / No objection Certification of Mr./Ms. _____
For Ph.D. programme at Tezpur University.

Dear Sir / Madam,

Mr./Ms. _____ has been working in this organization/ Project as _____ since _____

This organization has no objection to his / her being admitted to the Ph.D. programme at Tezpur University from the session starting from _____ as a part time / full time candidate.

Mr./Ms. _____ is hereby sponsored for carrying out the Ph.D. Programme (only for sponsored candidate).

The employee will be relieved from his/her duties in the organization to join in the Ph.D. Programme (not applicable to project fellow).

Date: Signature_____

Place: Name_____

Designation_____

Seal of the Sponsoring authority / employer

1. Verified by : Signature …….. Date……..

Name:…….. Designation……..

2. Recommended / Not Recommended

Signature: ……

Name: ……

Chairperson, Selection Committee

Head, Department of ……..

Date……..

ANNEXURE II

Fees Structure for the Ph.D. Programme

Particular Fee	Mode	Ph.D. Full time	Ph.D. (Part Time/ Spon.)
Admission	Once on admission	500	500
Registration	Once on admission	150	150
Identity card	Once on admission	50	50
Convocation	Once on admission	500	500
Provisional certificate	Once on admission	100	100
Alumni Association	Once on admission	500	500
Caution deposit (Library and Laboratory)	Once on admission	2000	2000
Hostel Caution deposit	Once on admission	3000	3000
Hostel Mess Advance	Once on admission in case of Hostel boarder	1500	1500
Hostel admission/re-admission (Single seater for Ph.D. students)	Per semester in case of Hostel boarder	3000	3000
Enrollment	Per semester *(w.e.f. 2nd sem. Onward)*	500	500
Tuition	Per semester	1500	2000
Library	Per semester	350	350
Students' activity	Per semester	500	500
Medical	Per Semester	250	250
Transport	Per semester	1000	1000
Laboratory (including computer usage)	Per semester	1000	1000
Research Fee	Per semester	3000	4000
Infrastructure and amenity	Per semester	1000	1000
Fan, Electricity and Water charge	Per semester	300	300
Students' Welfare Fund	Per semester	150	150
Development Fund	Per semester	1500	1500
Thesis Examination Fee	At the time of submission of thesis	5000	5000
Consumable Charge *(Additional fee for the students of the Depts. of Chem. Sc., MBBT, Physics, Env. Sc. and FET)*	Per semester	2000	2000
** Health Insurance	Per annum *(Students above 35 yrs. of age are not covered in this scheme)*	406	406

* Candidates admitted to the Ph.D. programme in the Departments of Chemical Sciences, Molecular Biology and Biotechnology, Physics, Environmental Science and Food Engineering and Technology will be required to pay an additional fee of **Rs. 2,000/- (Rupees Two thousands)** per semester on account of consumables .

N.**B: SC/ST students are exempted from paying hostel seat rent**.

ANNEXURE III

IMPORTANT DATES

1	Online portal opens on	November 07, 2017
2	Online application closes on	November 26, 2017
3	Publication of shortlisted names	December 01, 2017 (Tentative)
4	Date of personal interview	December 15, 2017
5	Date of admission and course registration	January 16, 2017 (Tentative)

ANNEXURE IV

Prescribed Format of OBCNCL Certificate

FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR APPOINTMENT TO POSTS/ ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER THE GOVERNMENT OF INDIA

This is to certify that Shri/Smt./Kum.……..
Son/Daughter of Shri/Smt.……..
……of Village/ Town ……..……District/Division……..
in the……Community which is recognized as a backward class under:

(i) Resolution No. 12012 / 68 / 93-BCC(C) dated 10 / 09 / 93 published in the Gazette of India Extra ordinary Part I Section I No. 186 dated 13 / 09 / 93.
(ii) Resolution No. 12012 /9 / 94-BCC dated 19 / 10 / 94 published in the Gazette of India Extra ordinary Part I Section I No. 163 dated 20 / 10 / 94.
(iii) Rsoltion No. 12012 / 7 / 95 BCC dated 24 / 05 / 95 published in the Gazette of India Extra ordinary Part I Section-INo.88dated25/05/95.
(iv) Resolution No. 12012 / 96 / 94-BCC dated 9 / 03 / 96.
(v) Resolution No. 12012 / 44 / 96 -BCC dated 6 / 12 / 96 published in the Gazette of India Extra ordinary Part I Section I No. 210 dated 11 / 12 / 96.
(vi) Resolution No. 12012 / 13 / 97-BCC dated 03 / 12 / 97.
(vii) Resolution No. 12012 / 99 / 94-BCC dated 11 / 12 / 97.
(viii) Resolution No. 12012 / 68 / 98-BCC dated 27 / 10 / 99.
(ix) Resolution No. 12012 / 88 / 98-BCC dated 06 / 12 / 99 published in the Gazette of India Extraordinary Part-I Section-I No. 270 dated 06 / 12 / 99.
(x) Resolution No. 12012 / 36 / 99-BCC dated 04 / 04 / 2000 published in the Gazette of India Extraordinary Part-I Section-I No. 71 dated 04 / 04 / 2000.
(xi) Resolution No. 12012 / 44 / 99-BCC dated 21 / 09 / 2000 published in the Gazette of India Extraordinary Par-I Section-I No. 210 dated 21 / 09 / 2000.
(xii) Resolution No. 1201 5 / 9 / 2000-BCC dated 06 / 09 / 2001.
(xiii) Resolution No. 12012 / 1 / 2001-BCC dated 19 / 06 / 2003.
(xiv) Resolution No. 12012 / 4 / 2002-BCC dated 13 / 01 / 2004.
(xv) Resolution No. 12012 / 9 / 2004-BCC dated 16 / 01 / 2006 published in the Gazette of India Extra ordinary Part I Section I No. 210 dated 16 / 01 / 2006.

Shri/Smt./Kum. ..... and/or his family ordinarily reside (s) in the. .....District/Division of ..... state. This is also to certify that he/she does not belong to the persons/section (Creamy Layer) mentioned in Column 3 of the Schedules of the Government of India. Department of Personnel & Training O.M.No.36012/22/93-Estt.(SCT) dated 08/09/93 which is modified vide OMNo.36033/3/2004Estt.(Res.) dated09/03/2004.

Dated:…… District Magistrate/Deputy Commissioner/Competent Authority

Seal

NOTE :

(a) The term ordinarily used here will have the same meaning as in Section 20 of Representation of the People Act. 1950.
(b) The authorities competent to issue Caste Certificates are indicated below:
(i) District Magistrate/Additional Magistrate/Collector/Deputy Commissioner/Additional Deputy Commissioner/ Deputy Collector/1stClass Stipendiary Magistrate/Sub Divisional Magistrate/Taluka Magistrate/Executive Magistrate/Extra Assistant Commissioner (not below the rank of 1stClass Stipendiary Magistrate)
(ii) Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
(iii) Revenue Officer not below the rank of Tehsil darand
(iv) Sub- Divisional Officer of the area where the candidate and/or his family resides.

ANNEXURE V
CONTACT DETAILS

All enquiries about academic programmes and requisite qualification should be directed to the office of the Department concerned.

Department/Office	Office number (03712)	Mobile number * (HoDs)	e-mail
Business Administration	275000	94353-80862	hod_ba@tezu.ernet.in
Chemical Sciences	275050	94351-81464	hod_chem@tezu.ernet.in
Civil Engineering	275950	98640-60200	hod_civil@tezu.ernet.in
Commerce	273290	94350-81446	hod_com@tezu.ernet.in
Computer Science and Engineering	275100	94350-84063	hod_cse@tezu.ernet.in
Cultural Studies	275150	99544-49460	hod_cul@tezu.ernet.in
Education	275650	94353-55351	hod_edu@tezu.ernet.in
Electronics and Communication Engineering	275250	94353-81270	hod_ece@tezu.ernet.in
Energy	275300	94353-80921	hod_ene@tezu.ernet.in
English and Foreign Languages	275200	94350-82112	hod_efl@tezu.ernet.in
Environmental Science	275600	94354-90582	hod_env@tezu.ernet.in
Food Engineering and Technology	275700	94351-81352	hod_fet@tezu.ernet.in
Hindi	275750	94351-85346	hod_hin@tezu.ernet.in
Mass Communication and Journalism	275450	98640-72390	hod_mcj@tezu.ernet.in
Mathematical Sciences	275500	99571-91527	hod_ms@tezu.ernet.in
Mechanical Engineering	275850	96784-01587	hod_mech@tezu.ernet.in
Molecular Biology and Biotechnology	275400	99544-72151	hod_mbbt@tezu.ernet.in
Physics	275550	94350-14377	hod_phy@tezu.ernet.in
Social Work	275830	94351-85424	hod_sw@tezu.ernet.in
Sociology	275800	94351-44482	hod_soc@tezu.ernet.in

Mobile Number should be used during office hours and only in case of emergency.