



2025-26

9TH EDITION

SPARK

GOVERNMENT OF ASSAM
ASSAM ENGINEERING COLLEGE
MAIN ACADEMIC BLOCK
ESTD-1955 ALUKBARI, GUWAHATI - 781013

ANNUAL NEWSLETTER

DEPARTMENT OF ELECTRICAL AND
INSTRUMENTATION ENGINEERING

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ABOUT THE DEPARTMENT



Established in 1957, the Electrical Engineering Department of Assam Engineering College (AEC) has a proud legacy of academic excellence and technological contribution spanning more than six decades. Beginning with an initial intake of 30 undergraduate students, the department steadily expanded in response to the growing demand for skilled electrical engineers, increasing its intake to 60 students in 1962 and later to 90 students in 2009.

A major milestone was achieved in 1998 with the introduction of the Instrumentation Engineering program, starting with an intake of 20 students, reflecting the department's commitment to emerging and interdisciplinary domains. Further strengthening its academic profile, a Postgraduate program was launched in 2003 with an intake capacity of 18 students, paving the way for advanced learning and research. Today, the department offers a comprehensive academic ecosystem encompassing undergraduate, postgraduate, and doctoral programs, nurturing both foundational knowledge and advanced research. Over the years, it has produced nearly 3,500 graduates who are making meaningful contributions across industries, academia, and research organizations throughout India. The department is currently supported by a strong team of 24 experienced faculty members, complemented by a dedicated group of technical and administrative staff. Together, they strive to foster innovation, academic rigor, and holistic development, making the department a vibrant hub of learning, research, and professional growth.

VISION OF THE INSTITUTION

To be an institution for promoting and supporting sustainable development.

VISION OF THE DEPARTMENT

To emerge as a center of excellence in electrical engineering education and research in promoting sustainable development

MISSION OF THE INSTITUTION

1. To prepare technical manpower with knowledge skills and values of sustainability.
2. To take up relevant problems of society & industry as projects, research themes for study and to provide technological solutions.

MISSION OF THE DEPARTMENT

1. To impart quality education in electrical engineering with focus on continual improvement
2. To promote research and innovation in the field of electrical engineering
3. To nurture scientific temperament, professional ethics and entrepreneurship among students
4. To inspire the students to actively engage in solving societal and environmental problems by applying their technical knowledge

ABOUT THE DEPARTMENT



PROGRAM ELECTIVE OUTCOMES (PEOs) OF THE DEPARTMENT

1. To build a strong foundation so that the students can pursue higher studies and research.
2. To develop problem solving skills among students so that they can tackle any problems in their professional life and imbibe life-long learning.
3. To impart technological knowledge and enhance soft skills so that the students can adapt to the dynamic job scenario.
4. To develop life skills and overall personality of students by instilling values such as discipline, ethics, sense of responsibility and respect to the law.
5. To inculcate among students the spirit of entrepreneurship by collaborating with industry.
6. To engage students in projects and activities relevant to solving societal and environmental problems.

PLACEMENT DATA

Placement Data for Electrical and Instrumentation Engineering students

Session	Electrical Engineering	Instrumentation Engineering
July 2024 – June 2025	28	6
July 2025 – Till date	20	6

BEHIND THE DESK

MESSAGE FROM THE PRINCIPAL



DR. BIPUL TALUKDAR PRINCIPAL(I/C), ASSAM ENGINEERING COLLEGE

It gives me immense pleasure to welcome the publication of the 9th issue of Spark, the annual newsletter of the Department of Electrical and Instrumentation Engineering of Assam Engineering College.

This issue of Spark aptly reflects the academic vibrancy, innovative spirit and consistent efforts of the department in nurturing technically competent and socially responsible engineers. The achievements of our students and faculty, as highlighted in this edition, demonstrate their dedication to excellence in academics, research, innovation, robotics, coding and entrepreneurial initiatives along with commendable performance in campus placements.

In an era of rapid technological advancement, the role of Electrical and Instrumentation Engineering is more significant than ever. I am encouraged to see our students embracing emerging technologies, interdisciplinary learning and start-up culture, thereby equipping themselves to meet future challenges with confidence and competence.

I congratulate the Department of Electrical and Instrumentation Engineering and the editorial team for their sincere efforts in bringing out this issue. I wish them continued success and look forward to many more inspiring editions of Spark in the years to come.

MESSAGE FROM THE HOD



DR. RUNUMI SARMA
HEAD OF THE DEPARTMENT
DEPARTMENT OF ELECTRICAL ENGINEERING

Engineering education can be defined as a multidisciplinary field that emphasizes on development of technical skills, analytical thinking, communication skill, innovation etc by individual work and team work. Education gives us an understanding of the world around us and offers an opportunity to use that knowledge wisely. Irrespective of race, creed, and gender education can bring people to equal status, so education is the platform that makes it possible to defeat all barriers among people.

The department newsletter is an authentic record of the various activities that are

undertaken by the students and faculty members throughout the year. It is a matter of great pride and satisfaction for Electrical Engineering Department, AEC to bring out the News Letter 'SPARK' on the occasion of college foundation day. The students of this department have acquired lot of achievements in all areas- academic, non-academic, innovative developments etc.

I am happy to mention that during the last year a number of dedicated hard working young dynamic faculty members have been appointed to serve in this department. It will contribute for rapid growth of the department as under NEP 2020 lot of changes has come in the course curriculum of engineering education. Hope our devotion, hard work and sincerity will help in bringing positive changes in the coming days.

I also take the opportunity to congratulate and thank the Editorial Board of this News Letter who have played wonderful role in accomplishing the task within the stipulated time. Furthermore, I am proud to present the 9th issue of SPARK, the annual newsletter of the Department of Electrical Engineering.

EDITOR'S COLUMN



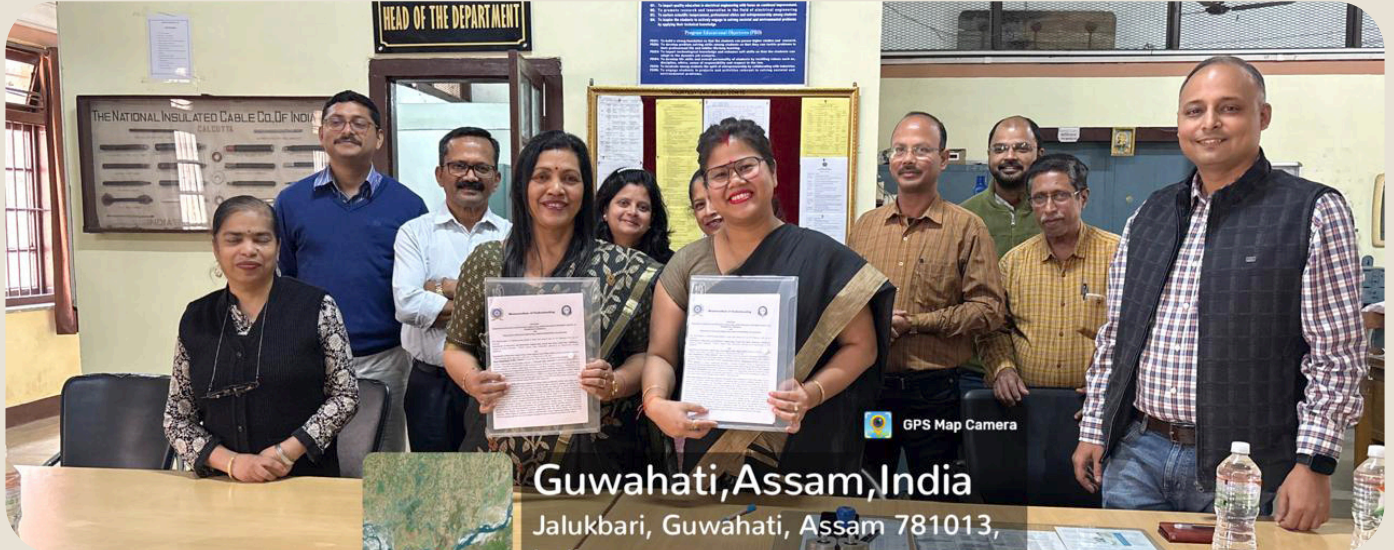
DR. PUROBI PATOWARY
PROFESSOR
DEPARTMENT OF ELECTRICAL ENGINEERING

It is a great privilege and pleasure to present the latest issue of Spark 2025-26, the newsletter of the Department of Electrical and Instrumentation Engineering of Assam Engineering College.

In this issue, I am happy to report that our students of Electrical and Instrumentation engineering have made the department proud with their achievements and accolades won in numerous fields of robotics, coding, hackathons etc. We take great pride in our young engineers getting involved in start-ups, ecoventures etc., as well as securing placements with good packages in the campus recruitment scenario.

In subsequent issues, we hope to bring news of greater success and higher accolades of our students. We welcome and encourage your constructive feedback and suggestions.

DEPARTMENTAL EVENTS



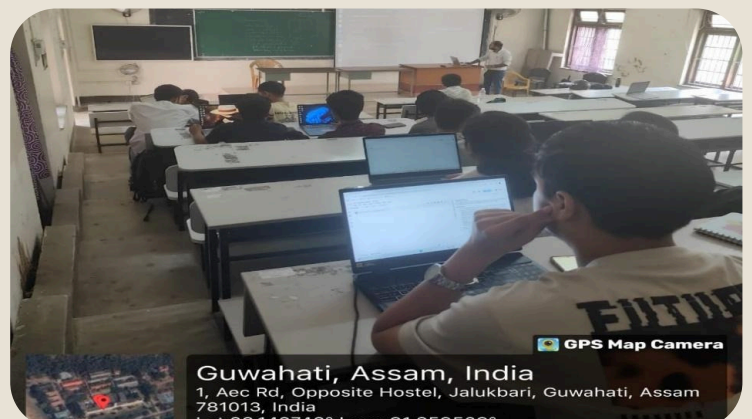
MOU WITH ADBU FEB 27

On 27 February 2025, the Department of Electrical and Electronics Engineering, Assam Don Bosco University, and the Department of Electrical Engineering, Assam Engineering College (AEC), Jalukbari, signed an MoU at the AEC campus. The collaboration focuses on joint curriculum development, collaborative research, faculty and student exchange, and shared use of laboratory facilities. The partnership aims to strengthen academic excellence, promote innovation in power systems and renewable energy, and better prepare students for industry needs.

WORKSHOP ON PYTHON

AUG 2-9

The workshop on "Python for Electrical Engineering" under the MoU was conducted from August 2nd to 9th, 2025, by the faculty members of the Department of EEE, Assam Don Bosco University, for the students of the Department of EE & IE of AEC.



DEPARTMENTAL EVENTS



ADBU–AEC RESEARCH CONCLAVE

FEB 27

The Research Conclave on “Towards Achieving SDG 7 (Affordable and Clean Energy)”, jointly organized by the Department of Electrical & Electronics Engineering of Assam Don Bosco University (ADBU) and the Department of Electrical Engineering of Assam Engineering College (AEC), successfully concluded 13 September 2025, with robust industry, academic and NGO participation, and had decisive outcomes and actionable commitments. The one-day event showcased 30 technical presentations and catalysed cross-sector roadmaps for decentralized renewable energy pilots and academia–industry collaborations.



STUDENTS' ACTIVITIES



Guwahati, Assam, India
4qq5+75r, Bongshar, Odalbakra, Kahilipara, Guwahati, Assam
781034, India
Lat 26.138262° Long 91.758591°
20/02/2025 10:39 AM GMT +05:30

INDUSTRY VISIT

FEB 20

Assam Engineering College, Electrical Engineering Department organized an industrial visit to SLDC, Kahilipara, and 132 kV GSS Type 1, Kahilipara AEGCL for the student's 6th-semester Electrical Engineering on 20-02-2025 (Thursday).

The visit was organized with prior permission from the General Manager (HR)/i/c 010 the MD, AEGCL Bijulee Bhawan, Paltan Bazar, Ghy- 01



STUDENTS' ACTIVITIES



IIT GUWAHATI

DEC 3

An industrial visit to the Technology Innovation Hub, IIT Guwahati was organized by the department for 3rd Semester Instrumentation Engineering students on December 3, 2025.



ITI GUWAHATI

NOV 11

A technical visit to the Industrial Training Institute (ITI), Guwahati, was organised for the 3rd semester students on 03/11/2025 with the purpose of providing them with structured exposure to practical industrial training. The visit was planned to supplement their academic curriculum by offering insights into real-time applications of electrical and electronics engineering concepts, thereby strengthening their foundational understanding.



FDP

NOV 11

The Department of Electrical & Instrumentation Engineering, Assam Engineering College, Jalukbari, organized a one-week online Faculty Development Programme (FDP) titled "Preparing Students for Placements and Higher Studies (ICT-122)" from 10-14 November 2025, through the Remote Center at AEC in association with NITTTT Chandigarh. The programme focused on career guidance, soft skills, interview readiness and overall personality development. It was coordinated by Mr. Sanjit Dutta and Mr. Partha Pratim Paul, Assistant Professors of the department.

DEPARTMENTAL ADVISORY BOARD

Departmental Advisory Board (DAB) is reconstituted with the following persons:

1. **Er. Ujjwal Sarma** – H-BUS Equipment Manufacturing Company
2. **Er. Tonmoy Goswami** – Entrepreneur
3. **Dr. Bikramjit Goswami** – Professor & Head, EE Department, Don Bosco University
4. **Dr. Rashi Borgohain** – Professor, ETE Department, Assam Engineering College
5. **Dr. Runumi Sarma** – HOD, EE Department, Assam Engineering College
6. **Dr. Sarmila Patra** – Professor, EE Department, Assam Engineering College
7. **Dr. Bimal Ch. Deka** – NBA Coordinator, EE Department, Assam Engineering College
8. **Dr. Amrita Ganguly** – Institutional NBA Coordinator, Assam Engineering College
9. **Dr. Sonali Biswas** – Associate Professor, Assam Engineering College

OUR PUBLICATIONS

A. Journal Publications

1. Paper Title: Reliable EAR Method to Increase the Performance of a Solar PV Array connected in TCT fashion even in Partial Shading Condition

Authors: D. K. Mahanta, P. Changmai, J. Ahmed, S. Kalita and S. Sahu

Journal Name: Indian Journal of Pure & Applied Physics

Journal Details: Vol. 63, June 2025, pp. 460–466

DOI: 10.56042/ijpap.v63i6.8511 (SCI Indexed)

2. Paper Title: ASD-HybridNet: A Hybrid Deep Learning Framework for Detection of Autism Spectrum Disorder

Authors: Nirmal Rai, P. C. Pradhan, Hemanta Saikia, Rinkila Bhutia and O. P. Singh

Journal Name: Magnetic Resonance Imaging

Journal Details: Vol. 124, 2025, Article No. 110492

DOI: 10.1016/j.mri.2025.110492 (SCI Indexed)

3. Paper Title: Performance Analysis of AODV-Based VANETs in Guwahati City: A Comparative Study of Propagation Models

Authors: Rajkumar Joydev Borah and D. Ganga

Journal Name: International Journal of Vehicle Information and Communication Systems

Journal Details: Vol. 10, No. 1, 2025, pp. 61–84

DOI: 10.1504/IJVICS.2025.144091 (Scopus Indexed)

B. International Conference Publications

1. Paper Title: Transformer Health Monitoring using IoT

Presented by: Fardin Zaman, Anurag Hazarika, Mondeep Bhattacharya, Muhammed Salman Khurshid and Amrita Ganguly

Presented in: International Conference on Power Electronics and Energy (ICPEE) 2025

Paper Title: Power System Harmonics Mitigation Under Non-Linear Load Conditions Using Shunt Active Filter Based Model

Presented by: Anusha Saha and Amrita Ganguly

Presented in: IEEE Silchar Subsection Conference (IEEE SILCON 2025)

2 Paper Title: Micro-Hydro and Solar Synergy: A Review of Hybrid Power Solutions for Assam's Energy Challenges

Presented by: Deba Kumar Mahanta and Manchuam Gohain

Presented in: IEEE International Conference on Electrical Power and Energy (ICEPE 2024), NIT Meghalaya, India, 20–22 June 2024

Paper Title: Smart Battery Monitoring with Auto-Detection of Individual Battery and Accountability

Presented by: Deba Kumar Mahanta and Ananya Dutta

Presented in: IEEE International Conference on Electrical Power and Energy (ICEPE 2024), NIT Meghalaya, India, 20–22 June 2024

OUR PUBLICATIONS

3. Paper Title: Micro-Hydro and Solar Synergy: A Review of Hybrid Power Solutions for Assam's Energy Challenges

Presented by: Deba Kumar Mahanta and Manchuam Gohain

Presented in: IEEE International Conference on Electrical Power and Energy (ICEPE 2024), NIT Meghalaya, India, 20–22 June 2024

Paper Title: Smart Battery Monitoring with Auto-Detection of Individual Battery and Accountability

Presented by: Deba Kumar Mahanta and Ananya Dutta

Presented in: IEEE International Conference on Electrical Power and Energy (ICEPE 2024), NIT Meghalaya, India, 20–22 June 2024

4. Paper Title: Control and Energy Management of Fuel Cell with Hybrid Energy Storage System

Presented by: Moushumi Patowary, Tirtharaaj Mali and Probit Rabha

Presented in: 2025 IEEE 4th International Conference on Smart Technologies for Power, Energy and Control (STPEC), NIT Goa, India, 10–13 December 2025 Paper Title: Gene Ontology-Based Drug Function Prediction via Multi-Output Deep Learning Framework

Presented by: Pranab Das, Bishal Chhetry and Rajkumar Joydev Borah

Presented in: 2025 IEEE Silchar Subsection Conference (IEEE SILCON), 06–08 November 2025 (Accepted for publication)

C. National Conference Publications

1. Paper Title: Evaluation of DC-DC Converter Efficiency in a Standalone PV System with Battery Management System

Presented by: Moushumi Patowary and Tirtharaaj Mali

Presented in: National Seminar on Green Energy, Environment and Technology (NSGEET-2025), Department of Electrical Engineering, NITTTTR Kolkata, India, 16–17 January 2025

2. Paper Title: Leakage Current Calculation and Performance Analysis of Grid-Connected PV System for Transformer-Based and Transformer-less Topologies

Presented by: Moushumi Patowary and Probit Rabha

Presented in: National Seminar on Green Energy, Environment and Technology (NSGEET-2025), Department of Electrical Engineering, NITTTTR Kolkata, India, 16–17 January 2025

STUDENT ACHIEVEMENTS

- Team Zodiac, comprising Dipjyoti Barman (EE), Ujjal Deka (EE), Aman Ahmed (ETE), Sambhab Roy (ETE), Bandip Barman (ETE), Rekibbudin Ansani (ETE), Baijeet Samdani (ETE) and Dipmoni Kalita (ChE), secured 1st Position in Robo Rush and 3rd Position in Robo Soccer at JEC.
- Team ISTE AEC, comprising Jugalkishore Kalita (CE), Caleb Varnunthar Varte (ETE), Sayed Jesim (EE) and Neehar Kakaty (EE), secured the Runners-up Position in AEROKRAFT, an RC Plane Maneuvering Competition held under the technical fest TECHNOVUS at Jorhat Engineering College on 30 April 2025.
- A team comprising Shayan Dutta (EE), Chinmoy Koch (ETE) and Jyotirmoy Ganguly (IPE) secured the Runners-up Position in the Cosmic Code Hackathon conducted at Dhemaji Engineering College.
- A team comprising Shayan Dutta (EE), Deepjyoti Debnath (EE), Nilav Talukdar (EE) and Radhika Jalan (CSE) secured 1st Position in the Hackathon event conducted during Euphusim 2025 at Girijananda Chowdhury University, Guwahati.
- Team Out of the Box, comprising Bibek Bharadwaj (ETE), Gaurav Choraria (ETE), Niharika Choudhury (ETE), Hema Das (ChE), Manas Kumar Das (ME) and Jit Debnath (EE), was selected for the National Grand Finals of Smart India Hackathon 2025, making it the only team from Assam Engineering College to qualify for this prestigious national-level competition.
- Jit Debnath (EE, 3rd Semester) achieved a National Record in the India Book of Records for “Fastest Teen to Type 100 Digits of PI Value Blindfolded”, completing the feat in 1 minute, 5 seconds, and 13 milliseconds. The achievement will be featured in the India Book of Records Magazine (2027 Edition).

STUDENT ACHIEVEMENTS

- Jitabrata Nath (EE) secured 2nd Position in the Senior Open Category at the Greater Kamrup Rapid Chess Tournament, held at AKHS Institution, North Guwahati on 18 May 2025. He also secured 2nd Position in the 1601–1700 Rating Category, 12th Position in the Open Category at the 3rd Diloo Dhar Open International FIDE Rating Chess Tournament, and 1st Position in the 2nd NESAs Chess Tournament 2025 (Open Category) among 59 participants, winning a ₹5,000 cash prize and a trophy.
- Team Phantom Battalion, comprising MD Mehtab Hussain (EE), Nihardeep Chakravarti (EE), Priyam Das (ChE), Prithviraj Das (ETE), Anubhab Borgohain (ETE), Dwaipayan Chakraborty (ChE), Partha Pratim Baishya (ChE) and Pragyajyoti Mahanta (ChE), secured 3rd Prize in the Roborace Competition held at Assam Don Bosco University under Prajyuktam.
- A startup team comprising Jit Debnath (EE), Sibasish Das and KJ Gyanam Das secured 1st Place at TISS Pitchfest (March 2025), where the startup was also featured on Guwahati Plus for its innovation and impact. The same team further secured 1st Place at the GCC Pitch Arena, held on 3 November 2025.
- Arindom Sarma (EE) was selected for a two-week summer camp at RUDN University (People's Friendship University of Russia), Moscow, with focused emphasis on Artificial Intelligence and Space Science, including hands-on experience in satellite image analysis and geospatial applications.
- A team comprising Nihardeep Chakravarti (EE) along with students from other departments secured 1st and 2nd Prizes in the Robo Soccer Competition held on 28–29 November 2025 at Assam Down Town University, organized by the Robotics Club of ADTU.

EDITORIAL BOARD



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