



BEASPIRE
Bears Electronics Association
of Students Pioneer

Bearys INSTITUTE OF TECHNOLOGY (BIT)

LANDS END, INNOLI, MANGALORE - 574199

DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING

TECH PULSE

— IGNITING IDEAS. INNOVATING FUTURES. —

2026

A bi-annual newsletter showcasing innovation, achievements, and milestones of the ECE family.



BIT VISION

To be a premier institution in engineering education and research, fostering innovation, responsibility, and ethical leadership for a sustainable future.

BIT MISSION

- 01** Promote innovation and cutting-edge research to develop sustainable engineering solutions for real-world and global challenges.
- 02** Cultivate ethical leadership and technical excellence among students to become responsible and leading engineering professionals.
- 03** Encourage active societal engagement and industry collaboration to drive inclusive growth and environmental responsibility.



BIT Vision & Mission
Dept. Vision & Mission



- POs
- PEOs
- PSOs



Events Organized
By Department



Students Achievements
and Workshops

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT VISION

To be a center of excellence in Electronics and Communication Engineering, advancing research, innovation, ethical practice, and sustainable solutions for societal transformation

DEPARTMENT MISSION

1. Foster innovation and research in Electronics and Communication Engineering, to create sustainable solutions addressing real-world and technological challenges.
2. Inculcate technical excellence and ethical values to develop competent graduates who contribute as professionals and leaders.
3. Promote industry collaboration and community engagement to ensure inclusive development and environmentally conscious engineering practices.

PROGRAM SPECIFIC OUTCOMES

1. Apply core domain knowledge in electronics, communication, and systems to analyze, design, and develop innovative, cost-effective solutions for real-world problems using existing and advanced tools.
2. Demonstrate technical competence to pursue higher education, efficiently manage projects in multidisciplinary domains, and grow as successful professionals.

PROGRAM EDUCATIONAL OBJECTIVES

1. Graduates will apply strong foundations in Electronics, Communication, and computing to design innovative and reliable engineering solutions for real-world challenges.
2. Graduates will demonstrate professional integrity, ethical responsibility, and a commitment to continuous learning to adapt to technological advancements and societal needs.
3. Graduates will contribute effectively as Engineers, Leaders, or Entrepreneurs by collaborating with industry and engaging in projects that promote inclusive growth.

Dear Students, Faculty Members, Alumni, Industry Partners, and Readers,

It gives me immense pleasure to present the Electronics and Communication Engineering Department Newsletter 2025–2026 of Bearys Institute of Technology. This edition

showcases the remarkable achievements, academic milestones, innovative projects, research contributions, and extracurricular accomplishments of our students and faculty during the academic year.

The Department of Electronics and Communication Engineering continues to strive for excellence by fostering a culture of innovation, critical thinking, and lifelong learning. In an era driven by rapid technological advancements, we remain committed to providing our students with a strong academic foundation, hands-on experience, and industry-oriented skills that prepare them to excel in the fields of electronics, communication, embedded systems, artificial intelligence, IoT, and emerging technologies.

I sincerely appreciate the relentless efforts of our faculty members, staff, student coordinators, and the editorial team whose commitment and hard work have made this newsletter possible. Their contributions continue to strengthen the department's academic and professional ecosystem.

As we move forward, let us continue to embrace challenges, explore new opportunities, and work together towards achieving greater heights of excellence and innovation.

I extend my best wishes to all our students and faculty for a successful and rewarding academic journey ahead.

With warm regards,

Dr. Abdullah Gubbi

Professor & Head

Department of Electronics and Communication Engineering

Bearys Institute of Technology, Mangaluru



Dear Readers,

It gives me great pleasure to present the ECE Department Newsletter 2025-2026 of Bearys Institute of Technology.

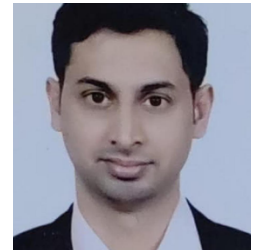
This edition reflects the vibrant academic environment, innovative spirit, and collective accomplishments of our students and faculty throughout the year. The newsletter serves as a platform to celebrate achievements, showcase technical projects, highlight research activities, and document the various events and initiatives that have enriched the learning experience within our department. It is a testament to the dedication, creativity, and hard work of everyone who contributes to the growth and success of the ECE community.

I extend my sincere gratitude to all the students, faculty members, and contributors who have shared their valuable work and experiences. I would also like to acknowledge the efforts of the editorial team whose commitment and enthusiasm made this publication possible.

I hope this newsletter not only captures the memorable moments of the academic year but also inspires our readers to pursue excellence, innovation, and continuous learning.

Prof. Sameer Kamarudeen

Faculty – Department of ECE



Message from Student Editor

Dear Readers

It is our pleasure to present the ECE Department Newsletter 2025-2026 of Bearys Institute of Technology. This edition highlights the academic achievements, technical activities, innovative projects, and memorable experiences of the students and faculty of the Electronics and Communication Engineering Department.

The past year has been a journey of learning, creativity, and growth, enriched by workshops, events, projects, and valuable guidance from our dedicated faculty members. Their continuous support and encouragement have helped us enhance our technical skills and professional outlook.

We sincerely thank all students, faculty members, and the editorial team for their valuable contributions and efforts in making this newsletter a reflection of our department's enthusiasm, teamwork, and spirit of innovation.

With best wishes,

Avvabi Shanha, G Mohammed Shamsheer, Maknoona PM, Mahammad Shahid

BE Students – Department of ECE

The Department of Electronics and Communication Engineering takes pride in the remarkable achievements of both its faculty members and students. Through dedication, innovation, research, technical excellence, and continuous learning, the department has made significant contributions in academics, intellectual property creation, skill development, and industry engagement. These accomplishments reflect the collective efforts of faculty and students in fostering a culture of excellence, innovation, and lifelong learning.

Student Achievements

INNOVATION & PATENT ACHIEVEMENTS

Innovation and problem-solving remained at the forefront of student activities during the academic year 2025–26. Students actively worked on developing technology-driven solutions to address real-world challenges, resulting in multiple patent applications.

Application Details	
APPLICATION NUMBER	202641027939
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/03/2026
APPLICANT NAME	BEARYS INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	A MULTICHANNEL GAS SENSOR BASED SYSTEM FOR FOOD QUALITY ASSESSMENT
FIELD OF INVENTION	FOOD

Application Details	
APPLICATION NUMBER	202641027993
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/03/2026
APPLICANT NAME	BEARYS INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	A REAL TIME HEADSHOT TRACKING SYSTEM USING COMPUTER VISION AND SERVO BASED CAMERA CONTROL
FIELD OF INVENTION	ELECTRONICS
F.MAIL (If e-Par Record)	mehabnshmusilawar@bhitmannalora.edu.in

"A Multichannel Gas Sensor Based System for Food Quality Assessment" was developed by Avvabi Shahna, Aysha Riha, Ayshath Akmal, to assess food freshness and quality through multi-sensor gas analysis, helping reduce food wastage and improve food safety. **"A Real-Time Headshot Tracking System Using Computer Vision and Servo-Based Camera Control"** was designed by Megha M, Shabrin K R, Suman G B to automatically detect and track human movement using computer vision techniques, enabling intelligent surveillance and automated camera positioning. Both the projects are under the guidance of Dr. Abdulla Gubbi.

"An IoT-Based Automated Car Parking System with Real-Time Slot Monitoring and Access Control" was developed to improve parking management through real-time monitoring, smart access control, and IoT-based automation, enhancing efficiency in urban parking.

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

Application Details	
APPLICATION NUMBER	202641027945
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/03/2026
APPLICANT NAME	BEARYS INSTITUTE OF TECHNOLOGY
TITLE OF INVENTION	AN IOT BASED AUTOMATED CAR PARKING SYSTEM WITH REAL-TIME SLOT MONITORING AND ACCESS CONTROL
FIELD OF INVENTION	ELECTRONICS

INTERNSHIP & INDUSTRY EXPOSURE

Students actively enhanced their professional competencies through internships and industry-oriented training opportunities. Several students secured opportunities through reputed organizations and training platforms, gaining practical exposure to real-world projects and industry practices.

Internship and training opportunities through **QSpiders Campus Connect**, a reputed industry-oriented training and placement platform. Through their dedication, technical aptitude, and performance in the selection process, **Avvabi Shahna, Zainabathul Afra, Muhammad Fayiz, Arifa Farzana, Bichchugatti Aftab, and Fathimath Afreen U I** were selected for specialized training programs designed to enhance industry-relevant skills and professional competencies.



Varsha M., Nafeesathul Missiriya, and Sahina secured internship opportunity that provided valuable industry exposure and practical learning experiences, Data Science Internship at **Prodigy InfoTech**, where they gain exposure to real-world projects, practical skill development, and industry-oriented learning experiences.

G. Mohammed Shamsheer secured multiple internship opportunities with reputed organizations. He was selected for a C++ Programming Virtual Internship offered by **CodSoft** and an Embedded Systems Internship offered by **Emertxe Information Technologies, Bengaluru**. The internship provided exposure to core embedded systems concepts, programming, and electronics-based applications, enabling development practical skills in embedded technology.



Internship Offer Letter

Date	2 June 2026
Name	G Mohammed Shamsheer
College Name	Bearys Institute of Technology
Internship Cohort	El26_016

Dear G Mohammed Shamsheer,

Hearty Congratulations!

We are pleased to offer you an Online internship in **Embedded Systems** for a duration of 4 weeks at Emertxe Information Technologies, Bangalore. This internship is an initiative from Emertxe to skill yourself in the core Embedded Systems Programming.

Kindly note, you will go through our internship evaluation process mentioned below. Upon successfully clearing, you will be provided a completion certificate.

This certificate is issued for your college administration purpose.

We look forward to your active participation in the internship program and building your foundations for your future career in the core Embedded / Electronics / IoT domains.

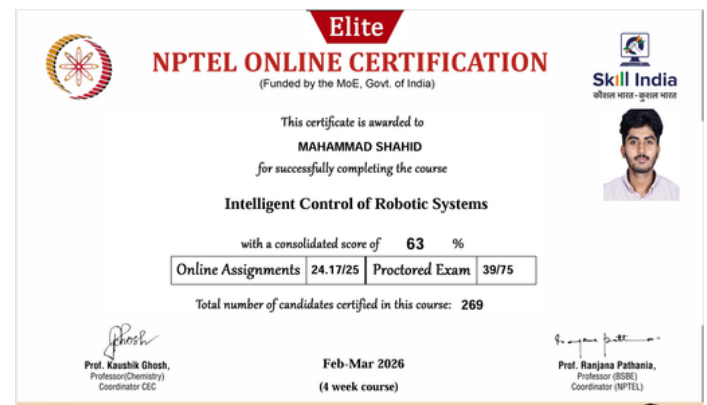

Mubeen Jukaku,


Jayakmar Balasubramanian,

CERTIFICATION ACHIEVEMENTS

Students, apart from the curriculum, demonstrated their commitment to continuous learning and professional development by successfully completing the NPTEL course **“Intelligent Control of Robotic Systems”** and earning Elite Certification. Offered through the SWAYAM-NPTEL platform, the course provided participants with in-depth knowledge of robotics, control systems, automation, and intelligent decision-making techniques used in modern engineering applications.

The achievers include **Aashiqua Farhan, Fathima Sana, Fathimath Suhaila S.P., Ayisha Mishaal, Fathimath Saniza, Shayma, and Mahammad Shahid**. Through consistent effort and successful completion of assignments and assessments, they gained valuable insights into robotic system design, intelligent control strategies, and emerging technologies that are shaping the future of automation and smart systems.



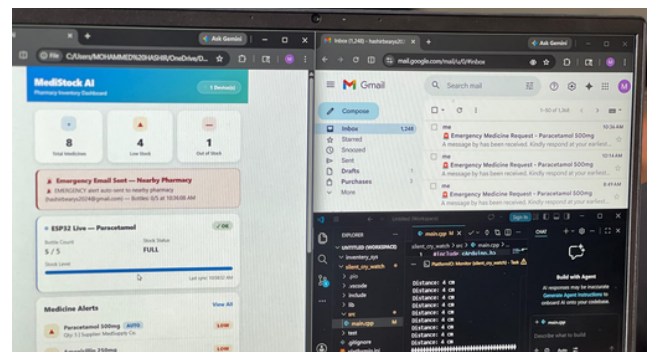
In addition, students successfully completed **IBM certification** programs that focused on emerging technologies and industry-relevant skills. Students also enhanced their technical expertise through **Maven Silicon courses in core electronics and VLSI-related domains**, while Infosys Springboard certifications provided opportunities to strengthen their knowledge in programming, professional skills, digital technologies, and career development. These certifications reflect the students' commitment to lifelong learning, technical excellence, and industry readiness.



COMPETITIONS, RESEARCH & TECHNICAL EVENTS

Mr. Mohammed Junaid Raza, under the guidance of **Prof. Nikhitha C**, presented the research paper “**Nanotechnology: Exploring the Frontiers and its Applications**” at the International Conference Drishti 2025. **Mr. Mohammed Junaid Raza, Mr. Shabaz S. M., Ms. Suman G. B., and Ms. Shabrin K. R.** secured National Level Rank 1 for their research paper titled “**Revolutionizing Healthcare: The Transformative Role of Artificial Intelligence.**”

Demonstrating innovation, teamwork, and problem-solving skills, **Mohammed Shahid participated in Techverse 2026**, a hackathon organized by the Department of Computer Science with participation from over 100 students representing various colleges and disciplines. Collaborating with students from other departments, he worked on an interdisciplinary healthcare project titled “**MedPlus: Inventory Management System in Pharmacy.**” Competing against numerous teams, the project **secured Fifth Place**, reflecting the team's dedication, creativity, and ability to apply technology to solve industry-relevant problems.



Teams comprising **Fathimat Saniza, Fathima Sana, Aysha Mishaal, Aasimath Safiya, Faheema, Fathimath Adhila, Fathamthul Shahanaz, Ramlathul Umaira, and Muneesha** enthusiastically participated in the competition and presented innovative ideas across various domains. Their active involvement reflected the department’s commitment to nurturing innovation, critical thinking, and collaborative learning among students. Among the participating teams, **Avvabi Shahna, Ayishath Rafeeda, Nafeesathul Missiriya, and Rameza** secured **Second Place** for their innovative solution titled “**RoadSteth – Impact-**

Based Road Health Intelligence System.” The project focused on addressing road maintenance challenges through a technology-driven approach and was appreciated for its practical relevance, creativity, and potential societal impact.

Faculty Achievements

The Department proudly congratulates **Dr. C. Kamalakannan, Principal**, Bearys Institute of Technology, on the successful publication of the research paper titled “**AI-Powered Fault Diagnosis for PMSM-based Electric Vehicles using BWKO-NeuroRBF-SCNet Architecture**” in the Iranian Journal of Science and Technology, Transactions of Electrical Engineering.

The Department of Electronics and Communication Engineering is proud to recognize the academic and research contributions of its faculty members who continue to inspire innovation and excellence in teaching and research.

Dr. Ubaidulla, a distinguished academician and researcher, completed his **PhD studies** at the **National Institute of Technology Karnataka (NITK), Surathkal**, under the guidance of **Dr. Jora M. Gonda**. With 14 years of teaching experience and 5 years of full-time research experience, he has made significant contributions to the fields of Machine Learning, Mathematical Modelling, and Graph Theory. His research and academic work reflect a strong commitment towards advancing knowledge, fostering innovation, and developing interdisciplinary solutions to complex engineering challenges.

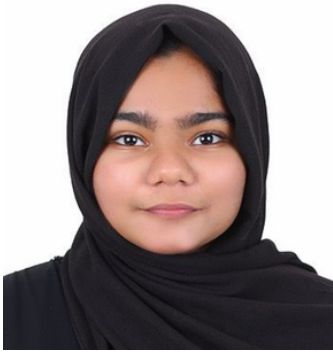
Further strengthening the department's research culture, **Dr. Abdullah Gubbi** and his team were granted a UK Design Patent titled “**Smart Power Bank for Electrical Vehicle**” on 29 July 2025. Dr. Abdullah Gubbi was also honored with the Best Paper Award at the National Conference held at HKBK Engineering College, Bengaluru, for the research paper “**Leveraging AI for Predictive Analytics in Healthcare: A Systematic Review and Framework for Improved Patient Outcomes.**”

In the area of scholarly publications, **Dr. Mehaboob Mujawar, Dr. Abdullah Gubbi, and Aasheesh Raizada** authored a book chapter titled “**AI-Powered Phishing Detection System,**” published by IGI Global, contributing to advancements in Artificial Intelligence-based cybersecurity.

Prof. Mubeena Perveen Taj successfully completed the **NPTEL-AICTE Faculty Development Programme courses on “Outcome Based Pedagogic Principles for Effective Teaching” and “Sensors and Actuators.”** These courses enhanced her understanding of effective teaching methodologies, outcome-based education practices, and modern sensor technologies, contributing to her continuous professional development and academic excellence.

Mr. Sameer Kamarudeen actively participated in the ISTE-BNY Sponsored Knowledge Enhancement Programme on “**Next Generation VLSI Architectures for AI-driven Financial Systems.**” The programme provided valuable insights into emerging VLSI technologies, artificial intelligence applications, and advanced system architectures, enhancing his knowledge in cutting-edge research areas and strengthening his expertise in modern electronic system design.

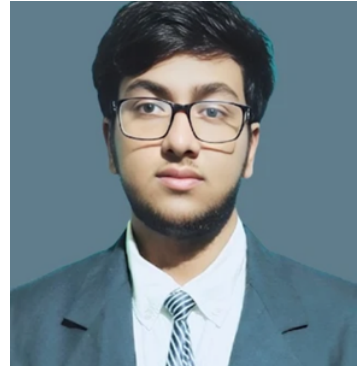
The AICTE ATAL Faculty Development Program on **Digital Twin Technology and Industrial Automation enhanced participants'** knowledge of Industry 4.0 and smart manufacturing concepts. The program was successfully completed at New Horizon College of Engineering from 18–23 August 2025 by **Mamata V Ritti**, Assistant Professor.



Fathima Nida



Mohammed Junaid Raza



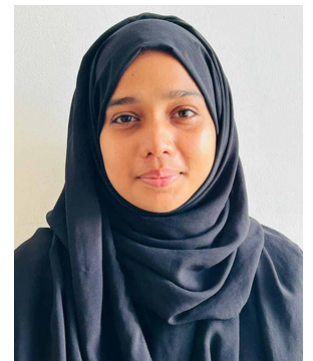
Shabaz S M



Saniya



Keerthi



Mahisha Sheikh



Syed Hyder Mahadi



Avinash Bankur





Ayshath Minaz



Abbas Nihal



Farhana Banu



Hajjuma Bagwan



Shabrin K R



Suman Basargod



Ummiswaliya



SMART PARKING THROUGH IoT: AN AUTOMATED CAR PARKING SYSTEM WITH REAL-TIME SLOT MONITORING AND ACCESS CONTROL by Mohammed Junaid Raza, Mohammed Thanveez, Muhammad Ibrahim Nawaz, Prof. Nikhitha C

As urbanization continues to increase, the demand for efficient parking management systems has become a significant challenge in modern cities. Drivers often spend considerable time searching for available parking spaces, leading to traffic congestion, fuel wastage, and unnecessary delays. To address these challenges, students of the Department of Electronics and Communication Engineering developed an innovative solution titled “An IoT-Based Automated Car Parking System with Real-Time Slot Monitoring and Access Control,” which has been filed as an Indian Patent Application.

The proposed system utilizes vehicle detection sensors, a microcontroller unit, and Internet of Things (IoT) communication technology to monitor parking slot availability in real time. Sensors installed in each parking space continuously detect vehicle occupancy and transmit the information to a central monitoring system. This enables users to instantly view available parking slots through a display interface, reducing the time required to locate parking spaces.

A key feature of the system is its automated access control mechanism. Based on slot availability, the system can regulate vehicle entry through an automated gate control unit, ensuring efficient utilization of parking infrastructure and preventing overcrowding. Real-time monitoring also allows parking administrators to manage space allocation more effectively and improve operational efficiency.

The system offers several advantages, including reduced traffic congestion, improved parking space utilization, enhanced user convenience, and minimized fuel consumption. By integrating IoT technology with intelligent monitoring and automation, the project contributes to the development of smart city infrastructure and sustainable transportation systems.

Beyond improving parking efficiency, the proposed system demonstrates the growing potential of IoT-enabled smart infrastructure in urban environments. By combining sensing technology, automation, and real-time data communication, the system enables informed decision-making and enhances the overall user experience. The solution can be further expanded with mobile application integration, cloud-based monitoring, reservation features, and analytics tools, making it suitable for deployment in shopping malls, educational institutions, airports, hospitals, and smart city projects.

REAL-TIME HEADSHOT TRACKING SYSTEM USING COMPUTER VISION AND SERVO-BASED CAMERA CONTROL by Megha M, Shabrin K R, Suman G B, Dr. Abdullah Gubbi

Computer vision has emerged as one of the most transformative technologies in modern automation, enabling machines to detect, analyze, and respond to visual information in real time. To harness the potential of this technology, an innovative system titled “A Real-Time Headshot Tracking System Using Computer Vision and Servo-Based Camera Control” was developed and filed as an Indian Patent Application. The project focuses on intelligent target detection and automatic camera positioning, enabling continuous tracking of a subject without manual intervention.

The proposed system utilizes computer vision algorithms to detect and track a person's face or head in real time. A camera continuously captures video frames, which are processed using image analysis techniques to identify the target's position. Based on the detected movement, servo motors automatically adjust the camera orientation, ensuring that the subject remains centered within the frame. This dynamic tracking mechanism enables smooth and accurate monitoring even when the target is moving.

A key feature of the system is its ability to combine real-time image processing with automated mechanical control. The integration of computer vision and servo-based actuation allows the camera to respond instantly to changes in the subject's position, significantly improving tracking accuracy and operational efficiency. The system minimizes the need for human intervention and enhances the effectiveness of surveillance and monitoring applications.

The technology has wide-ranging applications in intelligent surveillance systems, security monitoring, video conferencing, smart classrooms, content creation, robotics, human-computer interaction, and automated broadcasting. By enabling accurate target tracking and automated camera control, the system contributes to the advancement of intelligent vision-based technologies and smart automation solutions.

The project reflects the growing role of Artificial Intelligence, Computer Vision, and Embedded Systems in developing next-generation intelligent monitoring systems. With future enhancements such as object recognition, multi-target tracking, AI-powered analytics, and cloud connectivity, the system can be adapted for advanced industrial, commercial, and research applications, supporting the development of smarter and more responsive technological ecosystems.

A MULTICHANNEL GAS SENSOR BASED SYSTEM FOR FOOD QUALITY ASSESSMENT by Avvabi Shahna, Ayisha Riha, Ayishath Akmala, Dr. Abdullah Gubbi

Food spoilage is a major concern worldwide, leading to health risks, economic losses, and significant food wastage. Traditional methods of assessing food quality often rely on visual inspection, smell, or laboratory testing, which may not always provide accurate or real-time results. To address this challenge, an innovative solution titled “A Multichannel Gas Sensor Based System for Food Quality Assessment” was developed and filed as an Indian Patent Application.

The proposed system utilizes multiple gas sensors to detect and analyze the gases released during the deterioration of food products. As food begins to spoil, it emits specific gases such as ammonia, methane, hydrogen sulfide, and other volatile compounds. By continuously monitoring these gases, the system can accurately assess the freshness and quality of food in real time.

The multichannel sensing approach improves detection accuracy by analyzing multiple gas parameters simultaneously rather than relying on a single indicator. The collected sensor data is processed using intelligent algorithms to determine the condition of the food and provide timely alerts when spoilage is detected. This enables users to make informed decisions regarding food consumption, storage, and distribution.

The system offers several practical applications in households, food storage facilities, supermarkets, restaurants, food processing industries, and supply chain management systems. By providing early detection of spoilage, the technology helps reduce food wastage, improve food safety standards, and protect consumer health.

The proposed system has the potential to become an important component of future smart food monitoring solutions. With further enhancements such as IoT connectivity, cloud-based monitoring, and mobile application integration, the system can enable remote food quality assessment and automated alert generation. Such advancements can significantly contribute to sustainable food management practices and support global efforts to minimize food wastage while ensuring food safety.

A key advantage of the proposed system is its ability to provide non-destructive and continuous food quality monitoring. Unlike conventional laboratory testing methods that require sample collection and specialized equipment, the multichannel gas sensor system can perform rapid assessments without altering or damaging the food product. This makes the technology cost-effective, user-friendly, and suitable for real-time deployment in both domestic and industrial environments. By enabling early detection of spoilage indicators, the system supports better inventory management, reduces unnecessary disposal of consumable food, and promotes sustainable food utilization practices.

WOMEN'S SAFETY DEVICE WITH GPS TRACKING & ALERTS by Arifa Farzana, Ayishath Rafeeda, and Rameeza, Prof. Mubeena Perveen Taj

Women's safety remains one of the most significant concerns in modern society, demanding innovative technological solutions that can provide immediate assistance during emergencies. To address this challenge, students of the Department of Electronics and Communication Engineering developed a project titled "Women's Safety Device with GPS Tracking & Alerts", a portable embedded system designed to enhance personal security through real-time location tracking and emergency communication.

The system is built using an Arduino Uno microcontroller integrated with a Neo-6M GPS module and a SIM800L GSM module. In emergency situations, the user can activate the device using a dedicated panic button. Once triggered, the system instantly acquires the user's geographical coordinates and transmits an alert message containing the live location to pre-registered emergency contacts through the GSM network. An LCD display provides real-time status information, ensuring reliable operation and user awareness.

A major advantage of the proposed device is its ability to function independently without requiring internet connectivity or smartphone applications. This makes it particularly useful in situations where accessing a mobile phone may be difficult or when network conditions are limited. The system is designed to be compact, affordable, power-efficient, and suitable for everyday use by women, students, elderly individuals, and other vulnerable users.

The project demonstrates how embedded systems, GPS technology, and wireless communication can be combined to create an effective real-world safety solution. By enabling rapid emergency alerts and accurate location tracking, the device helps reduce response time during critical situations and contributes towards building a safer environment through technology-driven innovation.

The proposed system also highlights the growing role of embedded systems in addressing social and safety-related challenges. By integrating GPS-based location tracking with GSM-enabled communication, the device ensures rapid transmission of critical information during emergencies. The modular architecture of the system allows future enhancements such as IoT connectivity, mobile application integration, voice-activated alerts, and cloud-based monitoring, making it a scalable solution for next-generation personal safety systems. Such innovations have the potential to significantly improve emergency response mechanisms and contribute towards technology-driven women empowerment and public safety.

HEALTHCARE MONITORING SYSTEM FOR ICU PATIENTS USING ARDUINO UNO MICROCONTROLLER by Ibrahim Azman, Ismail Mahammed Ameen, and Kartik Devendra Naik, Prof. Nagaraj Shet

The advancement of embedded systems and biomedical electronics has opened new possibilities for developing affordable and efficient healthcare solutions. A Healthcare Monitoring System for ICU Patients using Arduino Uno Microcontroller was developed to provide continuous monitoring of critical patient parameters such as heart rate and blood oxygen saturation (SpO₂). The project aims to support healthcare professionals by enabling real-time observation of patient health conditions and facilitating timely medical intervention.

The system is built around the Arduino Uno microcontroller and integrates a MAX30100 pulse oximeter sensor, a 16×2 LCD display, and an alert buzzer. The MAX30100 sensor continuously measures vital physiological parameters, while the Arduino processes the sensor data and displays the readings on the LCD screen. Whenever the measured values exceed predefined safety limits, the buzzer generates an immediate alert, allowing caregivers to respond quickly to potential emergencies.

One of the major advantages of the proposed system is its low cost and simplicity compared to conventional ICU monitoring equipment. The device provides reliable real-time monitoring without requiring complex infrastructure, making it suitable for hospitals, emergency care units, rural healthcare centers, and home-based patient monitoring applications. Its compact design, ease of operation, and continuous monitoring capability contribute to improved patient safety and efficient healthcare delivery.

The project demonstrates the practical application of embedded systems in modern healthcare and highlights the potential of Arduino-based technologies in developing accessible medical solutions. By combining biomedical sensing, real-time data processing, and automated alert mechanisms, the system offers a dependable platform for monitoring critically ill patients and supporting technology-driven healthcare services. Future enhancements such as IoT connectivity, cloud-based data storage, remote monitoring, and artificial intelligence-based health analytics can further improve the effectiveness and scalability of the system.

WOMEN'S SAFETY DEVICE WITH GPS TRACKING & ALERTS by Arifa Farzana, Ayishath Rafeeda, and Rameeza, Prof. Mubeena Perveen Taj

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SMART IRRIGATION SYSTEM by Nafeeathul Missiriya, Aysha Safa, Rakshitha Ravi Naik, Prof. Syeda Iqra Naaz

The rapid advancement of automation and embedded technologies has significantly transformed traditional agricultural practices, enabling farmers to adopt smarter and more efficient methods of crop management. One of the major challenges faced in agriculture today is the efficient utilization of water resources. Conventional irrigation techniques often rely on manual operation or fixed time schedules, which can lead to over-irrigation, under-irrigation, and unnecessary water wastage. To address these issues, the Smart Irrigation and Temperature Monitoring System using Arduino Uno has been developed as an intelligent and automated solution that ensures optimal water usage based on real-time environmental conditions.

The proposed system integrates a soil moisture sensor and a DHT11 temperature sensor with an Arduino Uno microcontroller. The soil moisture sensor continuously monitors the water content present in the soil, while the temperature sensor records the surrounding environmental temperature. The collected data is processed by the Arduino Uno, which acts as the central control unit of the system. Based on predefined threshold values, the controller automatically determines whether irrigation is required. When the soil moisture level drops below the desired limit, the Arduino activates a relay module to switch ON the water pump and supply water to the plants. Once the soil reaches an adequate moisture level, the pump is automatically turned OFF, preventing excess water consumption and protecting plant roots from damage caused by overwatering.

The integration of temperature monitoring further enhances the effectiveness of the system by providing valuable information about environmental conditions that influence plant growth and water requirements. High temperatures can accelerate evaporation and increase the demand for irrigation, while lower temperatures may reduce water consumption by plants. By continuously monitoring these parameters, the system creates a more adaptive and responsive irrigation process.

The use of affordable components such as Arduino Uno, soil moisture sensors, relay modules, and DHT11 sensors makes the system cost-effective and accessible for farmers, gardeners, and researchers. Additionally, the design is flexible and scalable, allowing future enhancements such as IoT connectivity, cloud-based monitoring, mobile application control, and machine learning-based irrigation prediction. By combining automation with environmental sensing, the Smart Irrigation and Temperature Monitoring System contributes to sustainable agricultural practices and demonstrates the practical application of embedded systems technology in solving real-world farming challenges.

Exploring Emerging Technologies: Industrial Visit to Sahyadri College of Engineering and Management



An Industrial Visit to Sahyadri College of Engineering and Management, Mangaluru, was organised on 26 May 2026. The visit was conducted with the objective of providing students with practical exposure to emerging technologies, innovation ecosystems, and industry-oriented learning environments. The programme enabled students to bridge the gap between classroom learning and real-world technological applications.

During the visit, students explored several state-of-the-art laboratories and innovation centers, including the Connected Systems and IoT Laboratory, Metaverse and Spatial Computing Laboratory, Agentic Artificial Intelligence Laboratory, Web and Mobile Application Development Laboratory, and Robotics Laboratory. These facilities showcased cutting-edge technologies and real-world engineering applications, offering valuable insights into the future of smart systems, automation, artificial intelligence, and digital innovation.

A major highlight of the visit was the Hydrogen Technology Demonstration, where students learned about hydrogen-based energy systems, fuel cell technologies, and sustainable energy solutions. The session emphasized the growing importance of clean energy technologies and their role in future transportation and environmental sustainability.

The visit further included an interactive session conducted by RDL Private Limited, a startup operating within the Sahyadri innovation ecosystem. Students gained insights into PCB Design, Embedded Systems, industry-standard development tools, internship opportunities, and career prospects in electronics and semiconductor-related domains. The interaction provided valuable industry exposure and enhanced students' understanding of current technological trends and professional expectations.

A Step Closer to Excellence: NBA Mock Visit Gracefully Conducted at Bearys Institute of Technology ✨



As part of its ongoing commitment to academic excellence, quality enhancement, and the effective implementation of Outcome-Based Education (OBE), the Departments of Electronics and Communication Engineering (ECE) and Computer Science and Engineering (CSE) at Bearys Institute of Technology (BIT) successfully organized a two-day NBA Mock Visit on 11 and 12 March 2026.

The mock evaluation was carried out by distinguished academicians, Dr. Prasanna Kumar C and Dr. Sunitha Guruprasad. The primary objective of the visit was to assess the readiness of the departments for the National Board of Accreditation (NBA) process and provide expert insights for further strengthening academic practices and institutional standards.

Throughout the two-day visit, the expert team engaged in detailed interactions with faculty members, students, and administrative personnel. A comprehensive evaluation was conducted covering curriculum planning and delivery, attainment of course and program outcomes, laboratory facilities, teaching-learning methodologies, documentation practices, student achievements, and overall departmental performance in alignment with NBA accreditation criteria.

The initiative was widely appreciated by the management, faculty, and stakeholders of BIT. The mock visit served as a meaningful exercise in self-assessment and quality assurance, reinforcing the institution's dedication to excellence in technical education. Such initiatives contribute significantly to fostering innovation, accountability, and continuous improvement, while upholding the institute's guiding motto, "Purity of Heart – Clarity of Mind." ✨

Fostering Innovation and Technical Excellence: Technical Seminar & Brain Fusion Session 2026 🚀💡



a Technical Seminar and Brain Fusion Session on 23 April 2026 at the International Seminar Hall. The event was designed to enhance students' technical knowledge, creativity, innovation, and problem-solving skills through a combination of expert interaction and hands-on brainstorming activities.

The programme commenced with a formal inaugural session attended by faculty members and students. Dr. Abdullah Gubbi, Head of the Department, addressed the gathering and encouraged students to actively participate in technical and innovation-oriented activities for their overall professional growth. The event featured an insightful keynote session by Mr. Nizamuddin, Vice Principal, Bearys Institute of Emerging Science, who delivered an inspiring talk titled "Break the Chain – Unlock Your Potential." The session motivated students to overcome limitations, embrace opportunities, and strive for continuous personal and professional development. A sustainability awareness presentation by second-year ECE students further enriched the programme by highlighting the importance of responsible and sustainable engineering practices. The session concluded with an engaging technical quiz that encouraged active participation and strengthened students' understanding of fundamental engineering concepts.

The afternoon Brain Fusion session provided a platform for students to explore creativity and entrepreneurial thinking. Participants were challenged to assume the role of startup founders and develop innovative product concepts. Working collaboratively, students identified real-world problems, proposed practical solutions, and presented their ideas before a panel for evaluation. The activity encouraged innovation, teamwork, critical thinking, and effective communication skills.

🌟 *BIT Alumni Meet 2026: Celebrating Connections, Cherished Memories, and Lifelong Bonds* ✨



Mangaluru, 26 January 2026:

Bearys Institute of Technology (BIT) successfully hosted Alumni Meet 2026 on 26 January 2026 at the Bearys Knowledge Campus. Organized following the Republic Day flag hoisting ceremony, the event brought together alumni, faculty members, and students in a heartwarming celebration of lifelong connections, shared memories, and the enduring spirit of the BIT community.

The gathering provided a meaningful platform for alumni to reconnect with their alma mater, engage with former teachers and classmates, and revisit the memorable moments that shaped their academic journey. The event featured interactive sessions, enjoyable games, and inspiring alumni talks, creating an atmosphere filled with enthusiasm, nostalgia, and camaraderie.

During the program, alumni shared their professional experiences, career achievements, and valuable insights gained across various industries. Their inspiring stories motivated current students while offering practical guidance on career development, leadership, and personal growth. Alumni also shared constructive suggestions that will contribute to the continued progress and development of the institution.

The interactions among alumni, faculty members, and students strengthened the bond between the institute and its graduates, fostering a strong sense of belonging, pride, and mutual support. These meaningful exchanges highlighted the vital role of alumni in mentoring students, promoting professional networking, and contributing to the growth of the BIT community.

The event concluded on a joyful and nostalgic note, marked by laughter, renewed friendships, group photographs, and cherished memories. Alumni Meet 2026 was a resounding success, reflecting BIT's commitment to nurturing lifelong relationships with its graduates and creating opportunities for meaningful engagement, collaboration, and institutional excellence. The celebration beautifully embodied the institution's motto, "Purity of Heart – Clarity of Mind."

Campus to Career: Research and Industry Readiness – 20.02.2026 | Bridging Learning with Opportunity



The Department of Training & Placement in association with the BIT-IEEE Student Branch organized an insightful session titled "Campus to Career: Research & Industry Readiness" on 20th February 2026 at 10:30 AM in the International Seminar Hall, Bearys Institute of Technology (BIT).

The keynote speaker for the session was Dr. Ashritha Salian, National Post-Doctoral Fellow from the Department of Ceramic Engineering, Indian Institute of Technology (BHU), Varanasi, Uttar Pradesh, a proud Alumna of BE – ECE – 2016 graduating batch of BIT. Dr. Ashritha Salian shared valuable insights on bridging the gap between academic learning and industry expectations, emphasizing research orientation, skill development, and professional readiness among engineering students.

The program commenced with a warm Welcome Address delivered by Ms. Avvabi Shahna, student from 3rd Year ECE. Dr. Salian's session focused on the significance of research exposure during undergraduate studies, industry collaboration, higher education opportunities, and developing competencies aligned with global technological advancements. The interactive session encouraged students to gain insights on innovation, internships, and interdisciplinary learning.

The event concluded with a heartfelt Vote of Thanks proposed by Ms. Nisha Fathima Hasan, student from 3rd Year AI & DS, The session witnessed active involvement from students across departments and proved to be highly informative.

Exploring Innovation: Webinar on “AAKRUTI Innovation Competition 2026” at Bearys Institute of Technology 🚀☀️



The Student Research & Training Committee (SRTC) of Bearys Institute of Technology (BIT), Mangaluru, successfully organized an informative webinar on “AAKRUTI Innovation Competition 2026” on 14 May 2026 at 10:00 AM in the International Seminar Hall. The event was conducted in association with the Internal Quality Assurance Cell (IQAC) and in coordination with Dassault Systèmes, with the objective of encouraging students to embrace innovation, research, and technology-driven problem-solving.

The programme was organized under the guidance of Dr. S. I. Manjur Basha, Director, BIT, who served as the Patron, and was presided over by Dr. C. Kamalakannan, Principal, BIT. The event was coordinated by Dr. Altamashuddin Khan, Dr. Nubila, and Dr. Imran Mokashi, whose efforts ensured the successful execution of the webinar.

The session featured distinguished resource persons from Dassault Systèmes, Mr. Aarish Gulfarosh and Mr. Suraj Gajbhiye, both serving as CATIA R&D QE Specialists. The speakers provided comprehensive insights into the AAKRUTI Innovation Competition 2026, a prestigious national platform designed to inspire students to develop innovative solutions to real-world engineering and societal challenges.

During the webinar, participants gained valuable knowledge about the competition's objectives, eligibility criteria, various stages, project expectations, and the opportunities available to showcase their creativity, technical expertise, and problem-solving abilities. The speakers emphasized the role of AAKRUTI in strengthening industry-academia collaboration and exposing students to emerging technologies and practical industrial applications.

The event witnessed enthusiastic participation from students and faculty members across various departments, reflecting BIT's commitment to fostering a culture of innovation, entrepreneurship, and research excellence. The interactive session provided attendees with an opportunity to engage directly with the experts, clarify their queries, and gain practical insights into preparing competitive project proposals.

The organizers highlighted the significance of innovation-driven competitions in motivating students to think beyond conventional classroom learning and contribute towards technological advancements and societal development through creative solutions.

The webinar concluded with a vote of thanks, expressing gratitude to the resource persons, organizers, faculty members, and participants for their valuable contributions in making the event highly informative and successful.

Through such initiatives, Bearys Institute of Technology continues to strengthen its mission of promoting student-centric research, innovation, and industry engagement, empowering young minds to transform ideas into impactful solutions for the future.

Aakhiri Masttt – Farewell Celebration 2026 🎬 ✨



The department organized a heartfelt farewell programme titled “Aakhiri Masttt” on 20 May 2026 to bid a memorable farewell to the outgoing Batch of 2026. The event brought together students, faculty members, and dignitaries to celebrate the achievements, friendships, and cherished memories created throughout the students’ academic journey.

The programme was graced by the presence of the Principal, faculty members, and students of the department. The event commenced with a warm welcome, followed by a series of speeches and interactions that reflected the strong bond shared between students and teachers. Faculty members fondly recalled memorable moments with the graduating students and shared words of encouragement, appreciation, and guidance for their future endeavors. Their heartfelt messages inspired the outgoing students as they prepared to embark on the next phase of their professional and personal journeys.

Students also shared their experiences, expressing gratitude towards the institution, faculty members, and friends who played an important role in shaping their college life. The programme featured various cultural activities, interactive sessions, and moments of celebration that filled the atmosphere with joy, nostalgia, and excitement.

The farewell served as a beautiful occasion to honor the graduating batch and recognize their contributions to the department. While it marked the end of an important chapter, it also celebrated the beginning of new opportunities and aspirations.

The event concluded with best wishes from the faculty and juniors, leaving behind lasting memories and strengthening the bond between the department and its graduating students. The farewell was filled with moments of nostalgia as faculty members and students reminisced about their experiences, achievements, and memorable events over the years. The speeches delivered by the teachers reflected their pride in the accomplishments of the graduating students and their confidence in the students’ future success. The event created a warm and emotional atmosphere, making it a truly memorable occasion for everyone present.



CONCLUSION

Conclusion

The accomplishments featured in this edition of Tech Pulse reflect the department's dedication to fostering a culture of innovation, academic excellence, and industry readiness. From transforming ideas into patented technologies and securing achievements in national-level competitions to gaining valuable industry exposure and professional certifications, our students and faculty have consistently strived to push boundaries and create meaningful impact.

As we look ahead, the department remains committed to empowering future engineers with knowledge, technical expertise, ethical values, and a spirit of lifelong learning. We hope this magazine serves not only as a record of our achievements but also as an inspiration for future batches to dream bigger, innovate boldly, and contribute positively to society through technology.

Tech Pulse stands as a celebration of our collective efforts, cherished memories, and shared success. With gratitude to all students, faculty members, staff, alumni, and stakeholders who contributed to this journey, we look forward to many more milestones in the years to come.

"Innovating Today, Inspiring Tomorrow."

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