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BMS INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institution Under VTU)

Yelahanka, Bengaluru -560064

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION

WAVES

NEWSLETTER

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DEPARTMENT VISION

Be a pioneer in providing quality education in electronics, communication, and allied engineering fields to serve as a valuable resource for industry and society.

DEPARTMENT MISSION

To nurture students with a strong foundation in theoretical and practical concepts through innovative pedagogy and industry interface.

To foster interdisciplinary research, entrepreneurship skills and instil professional ethics by providing experiential learning opportunities.

PROGRAMME EDUCATIONAL OBJECTIVES

Establish successful careers in electronics, communication, and allied engineering domains.

Pursue advanced studies and conduct research to devise innovative solutions, propelling technological advancements.

Demonstrate leadership, effective communication, and teamwork while upholding ethical practices through sustainable engineering solutions.

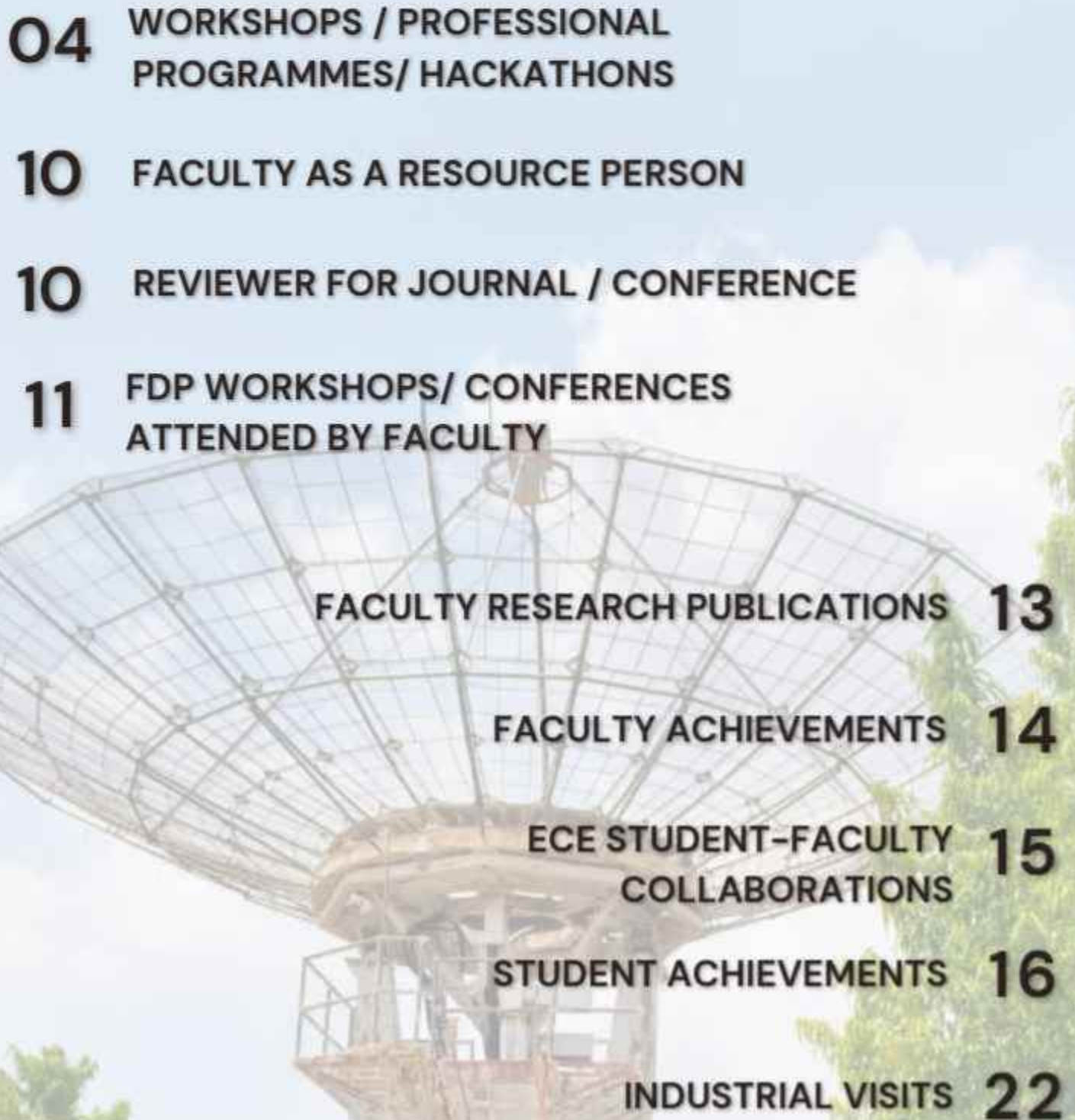
MESSAGE FROM HEAD OF DEPARTMENT



The Department of Electronics and Communication Engineering is showing consistent improvement in its academic, research, and placement performance. It offers a range of innovatively designed programs like open courses and value-added courses whose curricula are constantly updated to meet the changing requirements of the industry and to meet the needs of major stakeholders. We believe that our students have been well accepted in their job profiles and have consistently exceeded the expectations of the corporate world. The Department of Electronics and Communication Engineering brings out its bi-annual newsletter "WAVES" every semester. The Department is releasing its Volume 12, Issue 01 covering faculty and students' achievements from January 2025 to June 2025. I hope this will give motivation and encouragement for both students and faculty to excel further in their respective fields. I also congratulate the editorial team members for their efforts, hard work, and precise coverage of the information. I wish them all the best. *Happy reading!*

Dr. Shobharani A
Professor and HoD

WAVES



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WORKSHOPS / PROFESSIONAL PROGRAMMES/ HACKATHONS

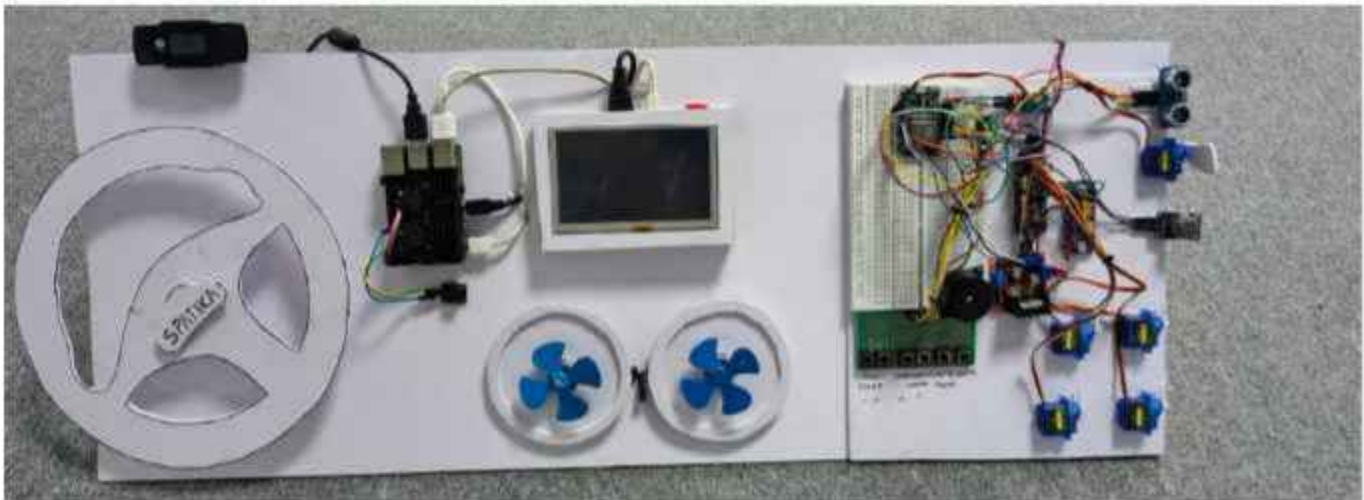
Build To Control



The Department of Electronics and Communication Engineering, BMS Institute of Technology & Management, successfully organized the Hackathon "*Build to Control*" on 27th March 2025. The competition provided a platform for young innovators to design systems that monitor and display key environmental parameters within a vehicle cabin, thereby enhancing passenger comfort and safety through automation.

The event witnessed enthusiastic participation from students, faculty, and industry professionals, fostering creativity and technical excellence.

The hackathon was ably coordinated by Dr. Vijayalakshmi G V, Dr. Shobha Rani, Dr. Anna Merine George, Dr. Asha K, and Dr. Rashmi N.



GLIMPSES FROM BUILD TO CONTROL



MathWorks MATLAB Chapter of BMSIT&M successfully organized a workshop on “Introduction to Model-Based Design using Simulink and Stateflow” on 3rd April 2025. The workshop was coordinated by **Dr. Paramita Sarkar**, Department of ECE. Mr. Rakshith from MathWorks, provided hands-on insights into model-based design concepts, enabling participants to gain practical exposure to Simulink and Stateflow for system modeling and simulation.



The Department of Electronics and Communication Engineering, BMS Institute of Technology & Management, organized an expert talk on “Cyber Security in Metaverse” on 7th April 2025. The session was delivered online by Dr. Hossam Mohamed, Professor of Criminal Branch and Investigation who shared valuable insights on the emerging challenges, threats, and opportunities of cybersecurity in the evolving landscape of the Metaverse. The event was coordinated by **Dr. Vijayalakshmi G V**, **Dr. Asha K.** (BICEP & IIC), and **Prof. Chandra Prabha**



The IEEE WIE Affinity Group of BMSIT&M formally inaugurated its Student Chapter alongside the launch of its flagship technical event, I.D.E.A. HEIST, on 21st May 2025 at the BSN Auditorium. The session also featured addresses by the IEEE Student Branch Counsellor Dr. Saneesh C. T. and the WIE Faculty Advisors Dr. Asha K. & Dr. Asha G. H. who shared their insights.



The Department of ECE at BMSIT&M marked National Technology Day on 12th May 2025 with the inauguration of the BMESI Student Chapter. Continuing this initiative, a webinar on "Basic Life Support for Adults and Paediatric" was held on 31st May 2025, delivered by Dr. Deepak K. R. The session equipped students with vital emergency response skills and was coordinated by Dr. Deepa Reddy N., Dr. Vijayalakshmi G. V., Dr. Asha K., and Prof. Chandra Prabha R.

Inauguration of CNER Lab



The **Computational Neuroscience and Engineering Laboratory (CNER Lab)**, under the Department of Electronics and Communication Engineering, was inaugurated on **26th May 2025** at BMSIT&M. The ceremony was graced by **Sri Aviram Sharma**, Trustee, BMS Educational Trust and Chairman, BoG, BMSIT&M; **Wg Cdr R. A. Raghavan (Retd)**, Director, BMSET; and **Dr. Sanjay H. A.**, Principal, BMSIT&M.

The CNER Lab has been established with funding support from VGST (Vision Group on Science and Technology). The lab is dedicated to cutting-edge research in the field of biomedical signal and image analysis, with a specific focus on the application of machine learning and deep learning algorithms for prediction and classification tasks involving signals such as EEG (electroencephalogram) and ECG (electrocardiogram), as well as biomedical imaging.

MathWorks & BMSIT&M: Bridging Academia and Industry



On 3rd June 2025, the Department of Electronics and Communication Engineering, BMS Institute of Technology and Management (BMSIT&M), in collaboration with MathWorks, successfully organized the student event “The Micromouse Line Follower” under the MathWorks MATLAB Chapter.

As part of the year-long series of activities under the University Connect Program of MathWorks, 66 students were awarded certifications for completing the course “Engineering Systems and Solutions” between October 2024 and June 2025.

The event was coordinated by **Dr. Paramita Sarkar**, Department of ECE, along with the MATLAB chapter student team served as both a platform for technical innovation and a recognition of student achievement.

FACULTY AS RESOURCE PERSON



Dr. Anitha V. R., Associate Professor of ECE, BMS Institute of Technology and Management, Bangalore has given an Invited Technical talk on “Research Challenges in Antennas for Different Applications and Radiation Effects” in association with IIC, IETE, IEEE Student Branch, Department of Electronics and Communication Engineering, Sreenivasa Institute of Technology and Management Studies (SITAMS), Murukambattu, Chittoor on *7th February 2025*.

REVIEWER FOR JOURNAL / CONFERENCE

1) **Dr. Anil kumar D.** served as session chair for international conference on Smart systems for applications in Electrical sciences held at SIT Tumakur on *21st and 22nd March 2025*.

2) **Dr. Ambika R.** and **Dr. Asha K.** from the Department of ECE served as Session Chairs at the *3rd IEEE International Conference on Knowledge Engineering and Communication Systems (ICKECS-2025)* held on *29th April 2025* at SJCIT, Chikkaballapur.

Additionally, **Dr. Asha K.**, Assistant Professor, Department of ECE, contributed as a Reviewer for the conference.

FDP WORKSHOPS/ CONFERENCES ATTENDED BY FACULTY

- 1) **Dr. Ambika R.** of ECE dept attended ATAL FDP "Empowering Smart Cities with AI-Driven Edge and Fog Computing Architecture" at Siddaganga Institute of Technology from *20th - 25th January 2025*.
- 2) **Dr. Anitha M., Dr. Asha K., Dr. Saneesh C. T., Dr. Thyagraj T.** of ECE department attended the IEEE Bangalore Section AGM at IIIT-B Campus on *12th January 2025*.
- 3) **Dr. Anitha M., Dr. Jayadeva and Dr. Anna Merine George** of ECE dept attended Quantum Machine Learning: Bridging AI and Quantum Computing during *3rd - 7th February 2025*, Organized by Department of Artificial Intelligence & Machine Learning (AI & ML) and Computer Science & Business Systems (CSBS) of BMSIT &M.
- 4) **Dr. Anitha M.** attended 3-day 'Bhuvan Overview' webinar scheduled during *21st - 23rd January, 2025*, organized by National Remote Sensing Centre, Hyderabad, Dept. of Space, ISRO. Bhuvan is ISRO's Geospatial platform showcasing seamless satellite imagery visualization of Indian subcontinent in 2-D & 3-D, thematic data & disaster services and valuable citizen centric- applications related to agriculture, sustainable management & Governance.
- 5) **Dr. Asha K.,** Completed Faculty development Program certification in the course "Quantum Algorithms and Cryptography", from NPTEL platform (Feb 2025 - April 2025).
- 6) **Mrs. Vishalakshi G. R.** completed her Ph.D defence from ECE research centre under the guidance of **Dr. A.Shobha Rani** on *30th January 2025*

7) **Prof. Shilpa Hiremath** Attended a five days online FDP on "NextGen Data Science: Transforming Education and Research through Data" Organized by: Presidency School of CSE & IS, Department of Data Science, Presidency University, Bengaluru, India from 23rd June 2025 – 27th June 2025.

8) **Dr. Anitha V. R.**, Chapter Officer and Advisor of the IEEE MTT-S Student Branch Chapter at BMSIT&M, was invited as a delegate to the IEEE MTT-S Chapter Chair Meeting at the International Microwave Symposium (IMS 2025) in San Francisco, USA (June 15 – 20, 2025). The invitation, endorsed by Dr. Goutam Chattopadhyay (NASA JPL & IEEE MTT-S President 2025), with full sponsorship, recognizes her leadership in advancing microwave education and highlights the global reputation of BMSIT&M's IEEE Student Chapter.



FACULTY RESEARCH PUBLICATIONS

- 1) **Dr. Anna Merine George** of ECE Dept presented research paper entitled "Design of Wide Neural Network Model for Controlling Tunable LED Luminaire (Neural Network based Luminaire Control)" in the 2025 Fifth IEEE Sponsored International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2025) held at Shankaracharya Technical Campus (SSTC), Bilai, Chhattisgarh, India during *09 - 10, January 2025*.
- 2) **Dr. Anitha M.** of ECE Dept presented research paper entitled " Real-Time Smart Aquarium Monitoring System Driven by IoT" in International Conference, IEEE Conference (Record No.: 64758) on Sustainable Energy Technologies and Computational Intelligence (SETCOM 2025), at School of Energy Technology Pandit Deendayal Energy University (PDEU), Gandhinagar, Gujarat, India *February 21 – 23, 2025*.
- 3) **Dr. Ambika R.** presented "A Comprehensive Review on Fault Tolerances, Routing Techniques and Energy Efficiency in Network on Chip Architectures" in the International Conference on Recent Research in Computational Sciences and Engineering held on *12th April 2025*.
- 4) **Dr. Anitha M.** presented "Convolutional Neural Networks Competence In Image Analytics For Tree Enumeration" International Conference on Recent Trends in Management Engineering and Technology (ICMET) *April 2025* , Vishwabharati Academy's College of Engineering, Ahilyanagar, Maharashtra. This paper got the best paper award

5) **M. C. Hanumantharaju et al.,**

“A novel approach to low-light image and video enhancement using adaptive dual super-resolution generative adversarial networks and top-hat filtering,”

Computers and Electrical Engineering, vol. 123, art. no. 110052, Mar. 2025, doi: 10.1016/j.compeleceng.2024.110052.

6) **A. M. George,**

“Review on human-centric lighting focusing on smart solid-state lighting and switchable glazing,”

Journal of Green Building, vol. 20, pp. 199–226, May 2025, doi: 10.3992/jgb.20.2.199.

7) **A. V. R. Anitha,**

“Simulation and characterization of novel right scalene wearable bowtie jean textile antenna for wireless medical communications,”

Brazilian Journal of Physics, vol. 55, pp. 1–14, Jun. 2025, doi: 10.1007/s13538-025-01805-x.

“Performance of 6×6 CNT transistor array using composite nanomaterials for biomedical applications,”

Physical Sciences Reviews, vol. 10, pp. 141–149, 2025, doi: 10.1515/psr-2024-0029

“Quadcopter drone for surveillance, monitoring and emergency medicine delivery,”

AIP Conference Proceedings, vol. 3137, 2025, doi: 10.1063/5.0263303.

FACULTY ACHIVEMENTS



Prof. Asha G. Hagargund successfully defended her Ph.D. thesis on 6th January 2025 at NITK, Surathkal, Karnataka, under the guidance of Dr. N. S. V. Shetty and Dr. Muralidhar Kulkarni. Her research, titled *"Efficient and Dynamic Scheduling Strategies in Time-Sensitive Networking for Real-Time Applications"*, contributes significantly to the advancement of real-time communication and networking technologies.

ECE STUDENT-FACULTY COLLABORATIONS



1) The IEEE EMBS Student Chapter at BMSIT&M secured funding of USD 2,500 on 13th June 2025 to host the *MediVerse* technical event. This achievement was led by Jayashree K., Ananya N. Murthy and their team from the 6th semester, ECE Department, under the mentorship of Dr. Asha G. Hagargund and Dr. Saneesh Cleatus Thundiyl from the ECE Department.

2) Jayashree K. and Ananya N. Murthy of 6th Semester ECE department under the guidance of Dr Asha G. Hagargund got an approval for funding of USD 5000 from IEEE EMBS society for the project “*Linear Polarization-based Diagnostic Tool for Characterizing Normal and Fibrotic Heart Tissues*”

3) The student project “*ML-Aided Robotic Arm for Dental Alignment Diagnosis*”, by Apoorva Shetty, Roshan H. V., Rohith Chavan, and Chethan Kumar N. V., has been approved for a scholarship of ₹5,500 under KSCST 48th Series, 2024–2025. The project is guided by Dr. Deepa N. Reddy.

STUDENT ACHIEVEMENTS

SAMSUNG ANVESHANA 2025



Team SPATIKA comprising Tarun Patil, Sri Srujan Hari T., Nitish K. S., and Harshitha K. V. (4th Semester, ECE), under the guidance of Dr. Raghunandan G. H. and Dr. A. Shobharani, secured the 3rd Place nationwide with a cash prize of ₹30,000 at Anveshana 2025, a national-level science competition organized by the Agastya Foundation in collaboration with Samsung Semiconductor Research India (SSIR). Their project, *“Smart Automated Feeding and Environmental Monitoring System for Sericulture”*, stood out among 800+ proposals submitted across Bengaluru, Mumbai, Pune, Hyderabad, and Chittoor, showcasing innovation and research-driven solutions to real-world challenges.

SRISHTI 2025 @SGCE Kerala

Nitish K. S. and Sri Srujan Hari T. (4th Semester, ECE), under the guidance of Dr. Rajesh Gopinath (Eco Club, BMSIT), participated in the 11th edition of Srishti, a national-level project exhibition organized by Saint Gits College of Engineering, Kottayam, Kerala, on 24–25 February 2025. Their project, *“IoT-based Environmental Monitoring System with Threshold Mechanism for Smart Cities”*, was shortlisted to the finals among 58+ submitted abstracts and 10 finalist teams, and went on to secure 2nd place nationwide in the Civil Engineering stream.



DRONEACHARYA 2025

Tharun Susri B. S., Sahil Sourav, Shankar Reddy, Tanish R., and Sharath S. C. (6th semester, ECE) secured the 1st Runner-Up position in the Droneacharya Competition held at Vidya Vikas Institute of Engineering and Technology, Mysore, on 2nd April 2025. The team showcased a drone designed for sea rescue missions, equipped with YOLOv8-based human and object detection, capable of releasing a self-inflatable swimming tube upon detecting a person in distress.



BUILD TO CONTROL HACKATHON



Team SPATIKA comprising Tarun Patil, Sri Srujan Hari T., Nitish K. S., and Harshitha K. V. (4th Semester, ECE) secured the 1st place in “Build to Control” Hackathon hosted by the dept. of ECE, BMSIT&M.



Prajwal N K, Uday madhav B., Prashanth A., Sathwik M. S. Vikas S Sagar (6th Semester, ECE) secured the 3rd place in “Build to Control” Hackathon hosted by the dept. of ECE, BMSIT&M.

9TH NATIONAL TECHNO EXHIBITION

Shishir Aithal, Subhash, and team (8th semester, ECE), under the guidance of Dr. Anitha V. R., secured first place in the 9th National Techno Exhibition held at Dr. Ambedkar Institute of Technology on 14th April 2024. Competing across 12 themes, the team won in the “Drone and Related Technology” category, showcasing their innovation and technical excellence.



SYMBIOT 2025



Team Garuda comprising **Srijan U.** and **M. Sharan Kumar Reddy** (4th Semester ECE) participated in Symbiot-25, a 24-hour National Level Hackathon held at VVCE Mysore on 8th - 9th May 2025. They exhibited their model on “Wireless EV Charging Stations” and secured 1st Prize in the Hardware Track, winning a cash award of ₹15,000 and a trophy, under the guidance of **Dr. Raghunandan G. H.**

AVISKARA 2025



Team Spatika, comprising **Tarun Patil**, **Sri Srujan Hari T.**, **Nitish K. S.**, and **Harshitha K. V.** (4th Semester ECE), secured 1st Place with a cash prize of ₹5,000 at the Āviskāra Intercollegiate Student Project Exhibition on 10th May 2025, organized by IEEE and ISTE Bangalore Section in association with Vemana IT.

SRISHTI 2025 @Acharya IT Karnataka



Team Spatika – Tarun Patil, Sri Srujan Hari T, Nitish K. S., and Harshitha K. V. (4th Semester ECE) won 1st Prize with a cash award of ₹25,000 for their project “Smart Automated Feeding and Environmental Monitoring System for Sericulture” under the guidance of Dr. Raghunandan G. H. and Dr. A. Shobharani at Srishti 2025, held at Acharya Institute of Technology from 23rd–25th May 2025. Over 150+ engineering colleges across Karnataka participated in the expo.

Team Garuda – Srijan U. and M. Sharan Kumar Reddy (4th Semester ECE) secured 3rd Prize in the Project Expo Track at Srishti 2025, hosted by Acharya Institute of Technology on 25th May 2025. Their project, titled “Wireless EV Charging Stations”, guided by Dr. A. Shobharani, showcased an innovative approach to smart sustainable energy utilisation and futuristic mobility.



VTU CRICKET TOURNAMENT



The BMSIT&M Cricket Team clinched 1st Place in the VTU North Division Inter-Collegiate Cricket Tournament held at Acharya Institute of Technology on 12th March 2025. The team was led by Captain **Hari Rajiv** (4th Semester ECE), whose leadership and performance were pivotal in securing the championship.

NATIONAL CADET CORPS



CSUO **Varadaraj Prabhu G. G.** (ECE) successfully completed the All India Thal Sainik Camp (AITSC) held from 2nd-12th September 2024 at HQ DG NCC, Delhi. Representing the Karnataka & Goa Directorate in Map Reading (MR), he played a key role in securing 3rd Place in the Overall Championship (SD Category). For his outstanding performance and commitment, he was honored with the prestigious Deputy Director General's Commendation Award by Air Commodore S. B. Arunkumar, VSM.

INDUSTRIAL VISITS



Dr. Anitha V. R., Associate Professor of ECE at BMS Institute of Technology and Management, Bangalore, visited the Microwave Tube Research and Development Center (MTRDC) on *31st January and 1st February 2025*. MTRDC Director Dr. S. K. Datta guided her through labs manufacturing advanced tubes for Electronic Warfare and RADAR systems.



As part of ELECSIM club activities, 20 ECE students attended a one-day workshop, "Innovate to Elevate," at the Agri Innovation Centre, UASB, GKVK, on *27th March 2025*. The workshop aimed to empower students with tools and strategies for success in the evolving agricultural landscape. Faculty members **Dr. Anitha M.** and **Prof. Chandraprabha R.** accompanied the students.



The Department of ECE, BMSIT&M, organized an industrial visit to the Mahatma Gandhi Institute of Rural Energy and Development (MGIRED) on 3rd April 2025. As part of the course curriculum, the visit aimed to provide students with practical exposure to rural energy systems. A total of 40 students from 4th Semester participated, accompanied by faculty members **Dr. Dankan Gowda**, **Dr. Asha K.**, and **Dr. Laxmisagar H. S.**



On 29th April 2025, the Department of ECE organized an industrial visit to the Gauribidanur Radio Observatory. 35 students, accompanied by **Dr. Anitha V. R.** and **Prof. Shilpa Hiremath**, gained hands-on exposure to Various antenna systems used, radio telescopes, solar observation techniques, and data analysis.

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