



JYOTHY
INSTITUTE OF TECHNOLOGY

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TECH HERALD

REFLECTIONS & MILESTONES – A BIENNIAL MAGAZINE



PRESENTED BY:

**DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

From the Desk of Principal



I am excited about the next release of biannual Technical Magazine by the Department of Electronics and Communication in coordination with IEEE student branch. This edition serves as a testament to the department's unwavering dedication to academic excellence and innovation. Within these pages, you will discover insightful perspectives, showcasing the remarkable achievements and advancements of our students and faculties. I commend the IEEE student branch and the department of Electronics and Communication for their tireless efforts in producing these insightful publications. I encourage everyone in our community to delve into the enriching content and celebrate the collaborative spirit that defines our institute. Together, let us continue to inspire and be inspired by the pursuit of knowledge.

Dr. K Gopalakrishna
Principal, JIT

HOD's Message



I am happy that the Department of Electronics and Communication is coming out with the second edition of Biannual Technical Magazine, which gives comprehensive information of activities that have happened in a semester. I strongly believe this magazine paves way to record and promote the activities in the related fields of our department. I appreciate the efforts of our students and faculty members who have taken keen interest in shaping this magazine. I congratulate and wish them all the best.

I wish all the students and faculties of the department all success.

Dr. K Chandrasekhar
Professor and Head

About the Department

The Department of Electronics and Communication Engineering (ECE) was established in 2011, offering an undergraduate program with an initial intake of 120 students. Known for its strong emphasis on research and teaching, the department boasts a unit of excellence dedicated to imparting knowledge in the field of Electronics and Communication. It is equipped with a well-established infrastructure, providing all the necessary tools and equipment for academic and research pursuits. Moreover, the department benefits from research facilities sponsored by esteemed agencies like KSCST, VGST, DST, and SAC-ISRO.

Department clubs, essential components of any educational institution, offer a dynamic nexus for students to deepen their academic engagement and personal growth. Beyond the classroom, they provide practical skill development, networking opportunities with professors and industry experts, and a supportive community where friendships are forged, and challenges are overcome. The Department of Electronics and Communication proudly hosts the e-Yantra Club, while also playing a pivotal role in the interdisciplinary IOT Club. Additionally, the department is an active participant in IEEE, a renowned global organization, further solidifying its commitment to advancing technology and fostering collaborations between academia and industry.

VISION

To be a department of excellence at a global level in Electronics and Communication Engineering education, incorporating Research & Innovation and leadership training components.

MISSION

- Strive to provide state of Art infrastructure in classrooms and laboratories.
- Enable all-round development with individual attention and innovative teaching learning methodology.
- Impart leadership qualities into the students by exposing them to industry and research in the global Electronics and Communication Engineering domain.

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

PEO1 – To establish successful careers as leaders, innovators and experts by exhibiting sound, domain knowledge, communication and interpersonal skills.

PEO2 – Continuously learn, leverage emerging technology and innovate ethical, cost-effective products to tackle real-world challenges.

PEO3 – To identify, create and manage successful ventures, fostering innovation and driving economic and societal progress.

PROGRAM SPECIFIC OUTCOMES(PSO's)

PSO1 – Explore emerging technologies in the field of Electronics and Communication Engineering using the knowledge and skills gained.

PSO2 – Apply techniques in different domains to create innovative products and services in the Communication, VLSI, DSP, and Networking.

PSO3 – Work on various platforms as an individual/team member to develop useful and safe circuits, PCB, Power Management Systems and Automation for the society and nation.

About IEEE and SPS

IEEE, the Institute of Electrical and Electronics Engineers, has been a cornerstone of technological advancement since 1884, uniting professionals, researchers, and educators worldwide in fields like electrical engineering and computer science. Through its diverse societies and technical committees, IEEE facilitates collaboration, sets global standards, and fosters innovation across disciplines such as communication, robotics, and energy. It organizes conferences, publishes influential research, and supports education initiatives to nurture future technologists. IEEE's global influence and commitment to excellence in technology underscore its pivotal role in shaping the future of technological progress for the betterment of society worldwide.

The Signal Processing Society (SPS) is dedicated to advancing the theory and practice of signal processing, essential for analyzing, modifying, and interpreting signals like sound, images, and data. Members from diverse fields such as engineering, mathematics, and computer science collaborate to develop cutting-edge techniques

and technologies. Through conferences, workshops, and publications, SPS promotes knowledge sharing and fosters innovation in fields ranging from medical imaging to communication systems and data analysis, shaping transformative advancements that enrich our daily lives.

VISION

To inspire and empower the next generation of engineers and technologists through innovation, collaboration, and leadership in signal processing and related fields.

MISSION

- **Education and Skill Development:** Provide educational workshops and hands-on experiences to enhance members' proficiency in related technologies.
- **Community Engagement:** Organize outreach programs and seminars to demonstrate the societal impact.
- **Networking and Collaboration:** Facilitate connections with industry professionals, researchers, and other IEEE chapters to promote collaboration and knowledge exchange.

Faculty List

IEEE-JIT Senior Member Dr. K Chandrashekar

IEEE Senior Member is a prestigious designation recognizing significant professional achievements in technology fields. It entails rigorous evaluation of contributions, technical proficiency, and leadership within IEEE. Senior Members mentor emerging professionals, contribute to disciplinary advancement, and embody a commitment to excellence and impactful global technical leadership.





IEEE-JIT Branch Counselor Dr. Ashabharathi S

A Branch Counselor in IEEE, usually a faculty member, acts as a liaison between the student branch and the IEEE section. They guide and support student members in organizing activities, events, and engaging with IEEE initiatives. Branch Counselors facilitate communication, assist with administrative tasks, mentor student leaders, and ensure alignment with IEEE's objectives, crucially enhancing the student branch experience.





Student List - IEEE JIT & IEEE SPS

Chairperson: The Chairperson of an IEEE student branch oversees branch activities, leading the executive committee to ensure effective communication and collaboration. They organize events, workshops, and initiatives to foster a vibrant technical community, representing the branch in interactions with faculty, professionals, and IEEE sections. This role requires strong organizational skills, vision, and a dedication to promoting technical knowledge and professional development among members, contributing significantly to the branch's growth and success.



Designation	Name of the Student	
IEEE-JIT Chairperson	Yashwanth Krishna L 3rd year, ECE	
IEEE-SPS Chairperson	Tejas B 3rd year, ECE	

Vice Chair: The Vice Chairperson of an IEEE student branch supports the Chairperson in planning and executing activities, often leading in their absence and assisting with strategic decisions. They coordinate events, foster team cohesion, and ensure smooth branch operations by engaging members and



facilitating communication. The Vice Chairperson plays a crucial role in leadership development and enhancing the IEEE student branch experience, promoting technical and professional growth among members.

Designation	Name of the Student	
IEEE-JIT Vice Chair	Tanishaa Sastry 3rd year, ECE	
IEEE-SPS Vice Chair	Harshitha N 3rd year, ECE	



Secretary: The Secretary of an IEEE student branch manages documentation, meeting minutes, and communications, ensuring smooth information flow and record-keeping. They collaborate with the executive committee to organize events, track membership, and support branch operations. Detail-oriented and organized, the Secretary plays a vital role in maintaining transparency, preserving institutional memory, and enhancing the efficiency of the IEEE student branch.

Designation	Name of the Student	
IEEE-JIT Secretary	Kushadh A 3rd year, ECE	
IEEE-SPS Secretary	Sonika M 3rd year, ECE	



Treasurer: The Treasurer of an IEEE student branch oversees budget management, expenses, and financial transactions, ensuring responsible practices and supporting event planning. They collaborate with the executive committee to create budgets, track expenditures, and report updates to members, playing a crucial role in maintaining financial sustainability. Their efforts enable successful execution of initiatives, enhancing the IEEE student branch experience.

Designation	Name of the Student	
IEEE-JIT Treasurer	Yeshwanth BS 3rd year, ECE	
IEEE-SPS Treasurer	Dhanyashree 3rd year, ECE	

Web Master: The Webmaster of an IEEE student branch manages the branch's online presence and technological infrastructure, designing and maintaining the website for effective communication and information dissemination. They ensure easy access to resources, event details, and updates, and may oversee social media platforms and integrate digital tools. A tech-savvy role, the Webmaster enhances visibility, fosters engagement, and connects members within the IEEE student branch through innovative online strategies.


Designation	Name of the Student	
IEEE-JIT Web Master	Darshan P 3rd year, ECE	
IEEE-SPS Web Master	Anirudh 2nd year, ECE	




Membership Development Chair: The Membership Development Chair of an IEEE student branch focuses on attracting and retaining members through recruitment events, workshops, and networking opportunities. They collaborate with the executive committee to create initiatives catering to diverse interests, fostering community and professional growth. This role emphasizes effective communication, creativity, and creating a welcoming environment to encourage active participation in IEEE activities.

Designation	Name of the Student	
IEEE-JIT Membership Development Chair	V Venkatesh 3rd year, ECE	
IEEE-SPS Membership Development Chair	Rohith P 2nd year, ECE	


Faculty List

Sl.No	Name of the Faculty	Qualification and Designation	
1	Dr. K Chandrashekar	B.E, M.E, PhD Professor & Head	
2	Dr. Geetha Priya M	B.E, M.Tech, PhD Professor	
3	Dr. H B M Ajjaiah	B.E, M.Tech, PhD Associate Professor	
4	Dr. Chethana K	B.E, M.Tech, PhD Associate Professor	
5	Dr. Asha Bharathi S	B.E, M.Tech, PhD Associate Professor	
6	Dr. Hamsa S	B.E, M.Tech, PhD Associate Professor	
7	Mr. Chandrashekar B M	B.E, M.Tech,[PhD] Assistant Professor	





8	Mrs. Sumangala Gejje	B.E, M.Tech, [PhD] Assistant Professor	
9	Mr. Nagesh Kumar D N	B.E, M.Tech,[PhD] Assistant Professor	
10	Mr. Madhukar M	B.E, M.Tech, [PhD] Assistant Professor	
11	Mrs. Smita Agarwal	B.E, M.Tech, [PhD] Assistant Professor	
12	Mr. Deepak V Ingale	B.E, M.Tech, Assistant Professor	
13	Mrs. Srilakshmi R	B.E, M.Tech, [PhD] Assistant Professor	
14	Mrs. Kritika P J	B.E, M.Tech, Assistant Professor	
15	Mrs. Bhargavi N G	B.E, M.Tech, Assistant Professor	
16	Mr. Shivaraj A	B.E, M.Tech, Assistant Professor	
17	Mrs. Nami Susan Kurian	B.E, M.Tech, [PhD] Assistant Professor	
18	Mr. Dayananda LN	B.E, M.Tech, [PhD] Assistant Professor	




19	Dr. Soumya Padukone G	B.E, M.Tech, PhD Assistant Professor	
20	Mrs. Lakshmi H G	B.E, M.Tech, Assistant Professor	
21	Mr. Prasanna Venkanna Bhat	B.E, M.Tech, Assistant Professor	

Visiting Professor

Sl.No	Name of the Faculty	Designation	
1	Prof. N Narasimha Swamy	B.E, M.Tech, Professor	

Staff list

Sl.No	Name of the Staff	Designation	
1	Mr. Goutham C	B.E, Foremen	
2	Mr. Shashi Kumar S V	Diploma, M.A Senior Instructor	
3	Mrs. Ranjitha Bhat	B.E, Senior Instructor	
4	Mr. Prabhu	Diploma, BCA(B.E) Senior Instructor	

4	Mrs. Chandana T V	B.E, Instructor	
5	Ms. Medha Chowdhary M	B.E, Instructor	
6	Mrs. Shruthi M	B.B.M, M.B.A Second Divisional Clerk	

IEEE Events

TECHNOXIAN: In a noteworthy achievement, students from the Electronics and Communication department, who were in their fourth semester, actively took part in TECHNOXIAN during the month of July, 2023, recognized as the world's largest Robotics competition held in Noida, Uttar Pradesh. Impressively, five teams from the department enthusiastically joined the competition, with two teams competing in the line follower category, two in the drone sector, and one in the Robo race category. Although none of the teams secured a podium finish in this edition, this invaluable experience will undoubtedly serve as a valuable stepping stone for the students as they gear up for next year's competition.



MoU with Loginware: In a transformative partnership, our Electronics and Communication Engineering Department joined forces with Loginware on July 13, 2023. This MOU is a beacon for innovation, fostering collaborative research and development. It also offers our students and faculty valuable industry training, internships, and industrial insights, bridging the gap between academia and the real-world electronics manufacturing sector. Loginware's commitment to training our staff ensures our department remains at the forefront of industry practices. This collaboration marks a pivotal step in enhancing our students' education and our faculty's expertise.



MoU with Celominds: In a recent milestone, the Department of Electronics and Communication Engineering officially established an MOU with Celominds on July 12, 2023. This strategic alliance focuses on fostering research and development in the domains of science and engineering. Moreover, it encompasses collaborative initiatives for student training, skill-enhancement programs, and avenues for internships and placements, promising enriching prospects for our students. Keep an eye out for updates on this significant development in our department's forthcoming magazine.



Technical Talk on upskilling course on 5G Technology: The Department of Electronics and Communication Engineering at Jyothy Institute of Technology, Bangalore, organized a technical talk titled "Insights into 5G Technology" in collaboration with the IEEE student chapter, specifically for 7th-semester students. Held on September 27th, 2023, the session was led by T V Saranya, Regional Business Head of the Deutsche Akademie für Digitale Bildung (DADB). The discussion provided in-depth insights into the rapid evolution of 5G technology, stressing its critical relevance to the field. The talk underscored the importance of keeping abreast of these advancements. DADB, renowned for pioneering digital education in Germany, highlighted how 5G is set to transform industrial applications, offering accessible on-site education and training opportunities.



Technical Talk on VLSI and Embedded systems: The IEEE and SPS JIT student branch, in association with the Department of ECE at Jyothy Institute of Technology and the IEEE Bangalore section, organized a VLSI workshop for 4th-semester ECE students on 13th September 2023. Facilitated by Epitome Circuits, the workshop featured industry experts like Mr. Ravi Siddanath and Veena Hallur from Broadcom, and Ganesh Prasad from Synopsys, who shared their expertise in layout design. Established in 2011 as Kanada Technologies, Epitome Circuits aims to enhance engineering education and employability in the semiconductor industry. The workshop, attended by 20 IEEE members and 63 non-IEEE members, was informative and beneficial, contributing significantly to the students' professional development.



Technical Talk on Quantum Computing: On 11th October 2023, the Department of ECE at Jyothy Institute of Technology, in association with the IEEE Bangalore section, hosted a technical talk on 'Quantum Communications and Quantum Computing using Photonics.' Dr. Srinivas T, a professor from IISC Bangalore and an active IEEE Bangalore Section volunteer, led the session, which was attended by 8 IEEE members and 54 non-IEEE members. Dr. Srinivas elucidated the role of quantum technology in advancing modern technology, explained the difference between bits and quantum qubits, and discussed fiber optics. He also highlighted the



benefits of IEEE membership for students engaged in research.

MATLAB Workshop: The Department of Electronics and Communication Engineering at Jyothy Institute of Technology, Bangalore, in collaboration with IEEE student chapter, organized a MATLAB workshop specifically for 1st-year students, conducted on November 11th and 25th. The workshop sessions were facilitated by Dr. Asha Bharathi S and Mr. Shivraj A, aimed at introducing foundational skills in MATLAB programming. Participants received hands-on training in utilizing MATLAB for numerical computing and data analysis, essential for their academic

journey in engineering. Dr. Asha Bharathi S and Mr. Shivraj A, through their expertise, guided students in understanding MATLAB's applications in solving engineering problems and enhancing computational proficiency. The workshop provided a valuable platform for students to develop practical skills crucial for their future studies and careers in Electronics and Communication Engineering.



Introduction to Computer Networking: The Department of Electronics and Communication Engineering at Jyothy Institute of Technology, Bangalore, in collaboration with IEEE student chapter, organized a workshop titled "Introduction to Computer Networking with Hands-on Training on Cisco Packet Tracer" for first-year students. Conducted by Nami Susan Kurian, the workshop aimed to provide foundational knowledge and practical skills in computer networking. Held on specified dates, the sessions familiarize students with essential concepts in networking and allow them to gain hands-on experience using Cisco Packet Tracer software. Nami Susan Kurian, leveraging her expertise, guided participants through practical exercises designed to simulate real-world networking scenarios. This workshop served as a valuable learning opportunity, equipping students with fundamental skills crucial for their academic and professional journey in Electronics and Communication Engineering.



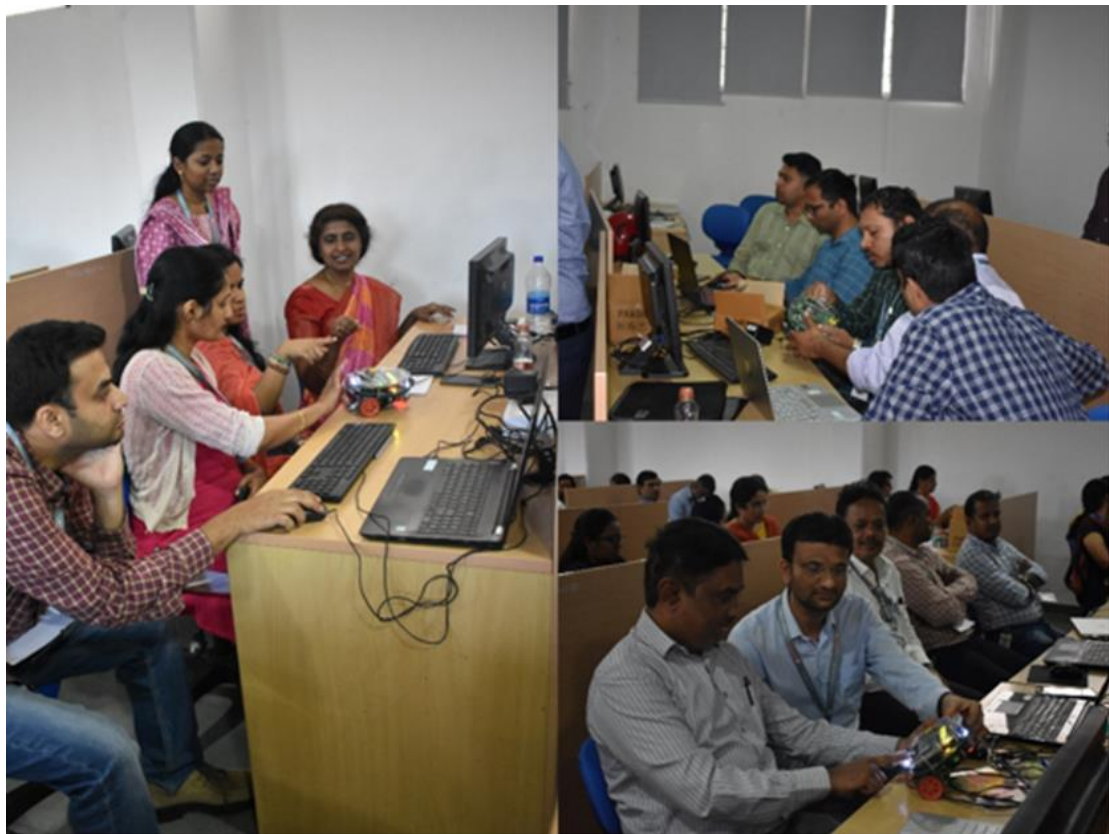
Principal's Meet: On September 7, 2023, the Principals' Meet was held, bringing together principals from various engineering and polytechnic colleges across Karnataka for a collaborative and knowledge-sharing event. The gathering was graced by the esteemed Guest of Honor, Dr. Kavi Arya, professor and Principal Investigator of eYantra at IIT Bombay. Dr. Arya, welcomed by the Principal of Jyothy Institute of Technology, delivered an insightful address, emphasizing the pivotal role of eYantra in transforming engineering education. He explained that eYantra aims to integrate practical robotics and embedded systems into the curriculum, thereby enhancing students' technical skills and fostering innovation. Dr. Arya elaborated on the eYantra Lab Setup Initiative (eLSI), underscoring its importance in cultivating a hands-on learning environment that promotes creativity and problem-solving. He provided detailed insights into the implementation models and modalities of eLSI, engaging the principals in discussions about lab setups and facilitating a platform for the exchange of ideas and best practices.



Two Days Workshop on Introduction to Robotics: The Department of Electronics and Communication Engineering, in collaboration with e-Yantra IIT Bombay,

organized a comprehensive two-day workshop on Introduction to Robotics from September 8th to 9th, 2023. Designed for faculty members from diverse colleges across Karnataka, the workshop provided expert guidance led by Ms. Roopa Avudiappan, Ms. Ruchi Sharma, and Ms. Shyama H from the e-Yantra Team. Participants immersed themselves in practical learning with the Firebird V robot, focusing initially on fundamental skills such as robot programming and interfacing with the AVR Microcontroller. Hands-on sessions equipped attendees with essential tools to effectively engage with robotic technologies.

Day two of the workshop advanced into more intricate techniques, particularly in interfacing and path control, allowing participants to apply their knowledge in real-world scenarios. The workshop concluded with the presentation of certificates and positive participant feedback, highlighting its success in integrating theoretical knowledge with practical skills. Beyond enhancing participants' proficiency in robotics, the event laid the foundation for future collaborations and the establishment of e-Yantra labs in participating colleges, promising a sustained impact on robotics education throughout the region.





Student Achievements

Aero Aura(Model Expo): **Sinchana** and **Swathi** from the Department of Electronics and Communication participated in the finals of the **Aero Aura(Model Expo), Aeromodelling contest** conducted by the Global Academy of Technology on 30th of June and 1st of July



Aero-Quiz: **Swathi** from the Department of Electronics and Communication secured **3rd place** in the finals of the **Aero-Quiz** conducted by the Global Academy of Technology on 30th of June and 1st of July



Technoxian RC Plane Contest: **Ram, Sinchana and Swathi** from the Department of Electronics and Communication participated in the **2023 Technoxian Remote Control (RC) Plane Contest** and were selected for the final rounds held in **Delhi** during the month of July

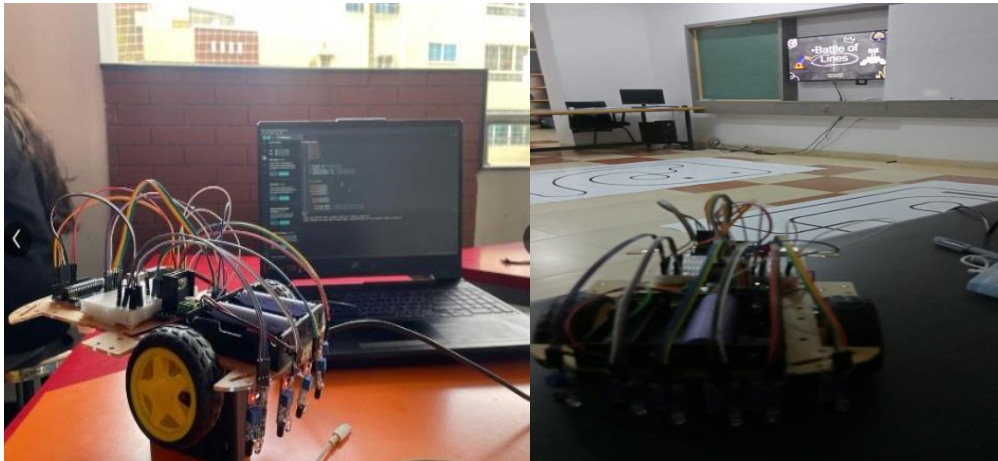
MinIoTron: The **IoT Club** Crea at Jyothy Institute of Technology organized an exciting **MinIoTron event** on August 22nd, centered around various activities and an IoT implementation project. Among the attendees were first-year students, including **Shreya L, Swathi Bhat, Chirag Buddhivanth, and Chitraaksh**, who not only enthusiastically participated but also **secured a 1000 INR cash prize** for their outstanding performance.



Aeromodelling Workshop: Aeroclub organized an **aeromodelling workshop** for freshers from October 10th to 13th, 2023. **Swathi** from the Department of Electronics and Communication served as the **organizer and speaker** for the event.



Line Follower Robot Challenge: On December 14th, Naveen Sudhanva from Department of Computer Science and **Swathi Bhat** from Department of Electronics and Communication participated as a team in the **Line Follower Robot Challenge** held at **RVITM**(R V Institute of Technology and Management) as part of their technical fest, "Resonance," where they secured the position of **second runners-up**.



Faculty Achievements

Dr. Geetha Priya, professor, department of Electronics and Communication Engineering has embarked on an **Antarctic expedition funded by the Government of India**. She has made significant contributions to the domain of image processing, with a portfolio boasting around 18 published journals. Additionally, she plays an **active role in research projects funded by prestigious organizations like ISRO, the Ministry of Earth Science, and CSR**. In 2023, Dr. Geetha Priya M successfully organized and conducted two workshops with a specific emphasis on image processing



Dr. Asha Bharathi actively contributes as a **reviewer for various international conferences and prestigious publishers such as Springer and Scopus**. She holds a position on the editorial board for the book series titled "**Futuristic Trends in Robotics and Automation**" under IIP publishers.

She also holds the role of **branch counselor for the IEEE student branch at Jyothy Institute of Technology**. Under her guidance, numerous activities have been successfully organized.

Toppers of the semester

Semester	Name and USN	% and CGPA
7 th	1. Hitha Dathananda [[1JT20EC018] 2. Jaya Agarwal [1JT20EC020] 3. Ameetha Mumtaj SH [1JT20EC002]	91.6 % 89.3 % 84.3 %
5 th	1. Udhayashri K A [1JT21EC081] 2. Bhoomika S B [1JT21EC010] 3. Nirmitha D [1JT21EC046]	83.6 % 82.6 % 81.5 %
3 rd	1. Yogesh B [1JT22EC123] and Vinod Kashyap [1JT22EC118] 2. N. Rishitha Choudhary [1JT22EC065] 3. Sindhu Shree [1JT22EC095]	88.1 % 87.3 % 86.9 %

Faculty paper publications

Name of the Staff	Research Article Name	Indexing	Date of Publish
G. Sowmya Padukone	Computational process to ascertain DNA micro-array using genetic marker. Int. j. inf. tecnol. 16, 361–368 (2024). https://doi.org/10.1007/s41870-023-01623-x	Scopus	Dec 2023
Dr. Chethana K	Measurement model of integrated FBG sensor for beam structure., Institute of Physics Publishing, J Opt (2023). https://doi.org/10.1007/s12596-023-01441-1	Scopus	Oct 2023
Srilakshmi R	Design of symmetric supercapacitor from biowaste derived carbon for flashlight applications with superior cycle's stability, Inorganic Chemistry Communications, Volume 157, 2023, 111404, ISSN 1387-7003, https://doi.org/10.1016/j.inoche.2023.111404 .	Scopus	Sept 2023
Nagesh Kumar D N	ROBOTIC INNOVATION IN E-DELIVERY SYSTEMS: A DESIGN AND MODELING APPROACH		Nov 2023

Department of Electronics and Communication Engineering

Editorial Board



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Professor and Head



Dr. Hamsa S
Associate Professor

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Venkatesh V, 4th year
[1JT20EC053]



Tejas B, 4th year
[1JT20EC052]



Udhayashree K, 3rd year
[1JT21EC081]



Shreya L, 2nd year
[1JT22EC092]