

# CIRCUIT TIMES

*The official newsletter of Department of ECE*



**Autonomous Institution, Affiliated to  
Anna University, Chennai  
Approved by the AICTE, Accredited by NAAC**

## IN THIS ISSUE

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**FACULTY ARTICLE**

**FACULTY PARTICIPATION**

**FACULTY ACHIEVEMENTS**

**PALS**

**PARENTS TEACHER  
MEETING**

**INDUSTRIAL VISIT**

## IN THIS ISSUE

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**STUDENT PARTICIPATION**

**STUDENT ACHIEVEMENTS**

**EVENTS ORGANIZED**

**ALUMNI ACTIVITIES**

**NATIONAL SERVICE  
SCHEME**

## **VISION OF THE DEPARTMENT**

To excel in offering value based quality education in the field of Electronics and Communication Engineering, keeping in pace with the latest developments in technology through exemplary research, to raise the intellectual competence to match global standards and to make significant contributions to the society.

## **MISSION OF THE DEPARTMENT**

To provide the best pedagogical atmosphere of highest quality through modern infrastructure, latest knowledge and cutting edge skills.

To fulfill the research interests of faculty and students by promoting and sustaining in house research facilities so as to obtain the reputed publications and patents.

To educate our students, the ethical and moral values, integrity, leadership and other quality aspects to cater to the growing need for values in the society.

## **PROGRAMME EDUCATIONAL OBJECTIVES (PEOS):**

**PEO1:** Create value to organizations as an EMPLOYEE at various levels, by improving the systems and processes using appropriate methods and tools learnt from the programme.

**PEO2:** Run an organization successfully with good social responsibility as an ENTREPRENEUR, making use of the knowledge and skills acquired from the programme.

**PEO3:** Contribute to the future by fostering research in the chosen area as an ERUDITE SCHOLAR, based on the motivation derived from the programme.

## **PROGRAMME SPECIFIC OUTCOMES (PSOS):**

**PSO1:** Graduates will gain the high-level competency to design and develop various communication systems involving current emerging technologies.

**PSO2:** Graduates would be able to plan, design, analyze, evaluate and choose the proper communication techniques to meet the global demand in the field of modern communication systems.

**FACULTY ARTICLE****A Review of IoT Applications in Healthcare****Mrs.S.Radhika, M.E., (Ph.D),***Assistant Professor, Department of Electronics and Communication Engineering,  
Sri Venkateswara College of Engineering (Autonomous), Sriperumbudur***INTRODUCTION**

Integrating Internet of Things (IoT) technologies in the healthcare industry represents a transformative shift with tangible benefits. This article provides a detailed examination of IoT adoption in healthcare, focusing on specific sensor types and communication methods. It underscores successful real-world applications, including remote patient monitoring, individualized treatment strategies, and streamlined healthcare delivery. Furthermore, it delves into the intricate challenges to realizing the full potential of IoT in healthcare.

**INTERNET OF THINGS**

The Internet of Things, abbreviated as the IoT, is a revolutionary and rapidly evolving technology that has the promise to change the way we interact with our surroundings. It is estimated by 2025, there will be over 75 billion connected devices worldwide. The healthcare industry is one of the sectors that were expected to benefit greatly from this growth.

IoT involves the interconnection of different kinds of physical subjects, types of equipment, and sensors. In healthcare, IoT technologies are used to improve patient care for remote monitoring personalized treatment plans, and efficient healthcare delivery. The IoT is also transforming industries beyond healthcare, such as manufacturing, transportation and agriculture.

In addition to improving patient care, the IoT can substantially and greatly reduce healthcare prices by streamlining processes, automating routine tasks and decreasing the need for expensive interventions.

It enhances patient care by enabling real-time data collection and monitoring by improving the response time and patient outcomes. Secondly, IoT technologies streamline healthcare operations by automating administrative tasks, which not only saves time but also reduces the need for an extensive administrative workforce, resulting in cost savings.

## IoT TECHNOLOGIES IN HEALTHCARE

### a) Sensors

Sensors are an essential component of IoT devices. They can measure and transmit data from various sources, such as temperature, blood pressure, heart rate, glucose levels, and more. These sensors can be integrated into wearable devices, medical equipment, and even inside the human body. The types of sensors and their applications are given in Table 1,

**Table 1. Common sensors and their applications**

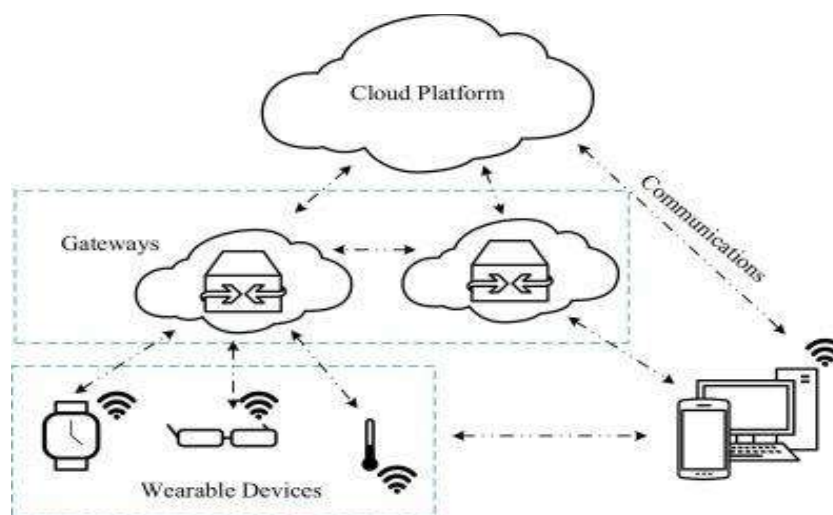
Sensor Type	Measurement	Clinical Application(s)
<b>Electrocardiogram</b>	Electrical activity of the heart	Detecting arrhythmias, heart disease
<b>Pulse Oximeter</b>	Oxygen saturation levels and heart rate	Monitoring oxygenation during surgery, COPD, asthma
<b>Blood Pressure</b>	Blood pressure	Monitoring hypertension and hypotension
<b>Glucose</b>	Glucose levels in the blood or interstitial fluid	Monitoring diabetes
<b>Temperature</b>	Body temperature	Detecting fevers or hypothermia
<b>Respiratory</b>	Respiratory rate and rhythm	Monitoring breathing disorders such as sleep apnea

### b) Communication

Communication technologies such as Bluetooth, Wi-Fi, and cellular networks are crucial for enabling data transfer between IoT devices and healthcare providers. These technologies help establish a seamless and real-time communication network between patients, healthcare providers, and medical equipment. Communication technologies such as Bluetooth, Wi-Fi and cellular networks are instrumental in the seamless integration of IoT devices within healthcare. Bluetooth enables close-range, low-power connections, perfect for wearable health gadgets, allowing real-time monitoring and data transmission to patient smartphones.

### c) Cloud

While the cloud itself is not a communication technology, Cloud provides a platform for storing, managing and analyzing colossal amounts of healthcare data generated by IoT devices as shown in Figure 1. It has revolutionized the way businesses and individuals access and use computing resources, making it easier and more cost-effective to store and process large amounts of data.



**Figure 1 Cloud Computing in IoT**

### d) Artificial Intelligence (AI)

AI algorithms have emerged as powerful tools in healthcare, when combined with data from IoT devices. By leveraging the vast amount of data these devices generate, AI algorithms can provide real-time insights into patient health and enable personalized healthcare interventions.

Machine learning models, a subset of AI, can analyze and identify patterns in IoT data to predict disease progression and suggest personalized treatment plans. These models can learn from historical data and detect subtle changes or anomalies in a patient's health parameters, allowing for early detection of potential health issues.

In the context of IoT in healthcare, AI algorithms can analyze data from wearable devices and other IoT sensors to monitor life functions, activity rates, sleep patterns and other relevant metrics. By continuously monitoring and analyzing this data, AI algorithms can provide clinicians with early warnings of health deteriorations or relapses, enabling timely interventions and improved patient outcomes.

**e) Blockchain**

The Combination of blockchain technology and IoT in healthcare holds tremendous potential for enhancing data security and facilitating seamless data sharing among healthcare providers via harnessing the block chain's decentralized and immutable nature, patient data can be safeguarded against unauthorized access, tampering and breaches.

**CONCLUSION**

An exhaustive analysis of the intersection between the Internet of Things (IoT) and healthcare, delineating its transformative potential is discussed in this article. Central to the discourse is the burgeoning relevance of personalized medicine, underscored by a framework of standardized protocols and rigorous regulations pivotal in safeguarding privacy and bolstering security infrastructures. Current incorporations of IoT technologies within healthcare paradigms have heralded enhanced patient care trajectories and improved clinical outcomes, heralding innovations in remote patient monitoring paradigms, individualized treatment architectures and operational efficiencies in healthcare delivery frameworks.

## FACULTY PARTICIPATION

(Seminar/FDP/STTP/Workshop/Online Course/Conference):

- **Dr.S.Vijayanand** participated in the International Conference on “**Research Trends in AI & IoT for the Infrastructure and Industry (AIII 2024)**” organized by Centre for Research, Anna University, Chennai from 06.03.2024 to 08.03.2024



- **Dr.T.J.Jeyaprabha, Mrs.R.Kousalya, Mr.L.K.Balaji Vignesh** participated in the Industry Supported Five-Days Online Short Term Training Program (STTP) On “**Recent Trends and applications in IoT**” organized by Computer Society of India, SVCE Student Chapter from 27.02.2024 to 04.03.2024





### STUDENT PARTICIPATION (Co-curricular Activities/Extra-curricular Activities)

- Ms.A.M.Lakshanaa, Ms.K.Purvaja, Ms.J.Nivetha Harshini (I Year) participated in **Circuit Forge of Tantrotsav'24** organized by Amrita Vishwa Vidyapeetham, Chennai from 05.03.2024 to 06.03.2024



- Ms.D.Karunya (I Year) participated in **HACK'HER'THON** organized by Sri Venkateswara College of Engineering (Autonomous), Sriperumbudur from 05.03.2024 to 06.03.2024
- Mr.C.Rohit, Mr.M.Prashanth and Mr.K.Prem Kumar (III Year Students) participated in **"48 HOURS PENTATHON HACKATHON 2024"** organized by Ministry of Education's (MoEs) innovation cell, AICTE from 15.03.2024 to 18.03.2024
- Mr.R.G.Vijai Saravanan (II Year) participated in **"Naadu Nam Veedu Program"** organized by Government Senior Secondary School, Ponthadalam on 28.03.2024



### STUDENT ACHIEVEMENTS

- Ms.K.Jeevitha, Ms.A.Dharani (III Year ECE) along with Ms.M.Jeevasree (III Year CSE) of team “Tech Explorers” secured **Third Prize** with a **cash award of Rs.5000** in “**HACK’HER’THON- an Intercollegiate Technical Women Hackathon**” jointly organized by **Women Empowerment Cell, SVCE and Entrepreneurship Promotion and Incubation Centre (Women - Cell) SVCE** from 05.03.2024 to 06.03.2024 under the guidance of **Dr.D.Menaka, Associate Professor/ECE** and **Mr.D.Silambarasan, Assistant Professor/ECE**.



- **Mr.A.Nidharshana (II Year ECE)** secured **first Prize** with a **cash award of Rs.1000** in the event of “**ESSAY COMPETITION**” on the topic of **INDIAN STANDARDS: IS15377:2003-DIGITAL SET TOP BOX FOR DTH SERVICE** organized by “**STUDENT BIS CLUB-ECE**” held on 18.03.2024

- **Ms.B.Amruthaa (II Year ECE)** secured **second Prize** with a **cash award of Rs.750** in the event of **“ESSAY COMPETITION”** on the topic of **INDIAN STANDARDS: IS15377:2003-DIGITAL SET TOP BOX FOR DTH SERVICE** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024
- **Ms.R.Dhanusuya (II Year ECE)** secured **third Prize** with a **cash award of Rs.500** in the event of **“ESSAY COMPETITION”** on the topic of **INDIAN STANDARDS: IS15377:2003-DIGITAL SET TOP BOX FOR DTH SERVICE** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024
- **Mr.S.K.Vikash (II Year ECE)** secured **fourth Prize** with a **cash award of Rs.250** in the event of **“ESSAY COMPETITION”** on the topic of **INDIAN STANDARDS: IS15377:2003-DIGITAL SET TOP BOX FOR DTH SERVICE** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024
- **Ms.B.Bavithra, Ms.A.Gayathri (II Year ECE)** secured **first Prize** with a **cash award of Rs.1000** in the event of **“STANDARD FORMULATION”** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024
- **Ms.V.T.Harinee, Ms.B.Balasaraswathy (II Year ECE)** secured **second Prize** with a **cash award of Rs.750** in the event of **“STANDARD FORMULATION”** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024



- **Ms.A.Nidharshana, Ms.T.Priyanka (II Year ECE)** secured **third Prize** with a **cash award of Rs.500** in the event of **“STANDARD FORMULATION”** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024
- **Ms.S.Swetha, Ms.V.Sai Sruthi (II Year ECE)** secured **fourth Prize** with a **cash award of Rs.250** in the event of **“STANDARD FORMULATION”** organized by **“STUDENT BIS CLUB-ECE”** held on 18.03.2024

- **Ms.B.Mahalakshmi (I Year ECE)** secured **second Prize** in the event of “**ATHLETCS**” organized by Sri Venkateswara College of Engineering (Autonomous), Sriperumbudur held on 05.03.2024 to 06.03.2024
- **Mr.S.Vignesh (IV Year ECE), Mr.A.Keerthivasan, Mr.M.Monish, Mr,V.Harish Kumar and Mr.R.Prabhakaran (I Year ECE Students)** secured **Runners up** title in “**SSE Chakra 2024 Kho-Kho Tournament**” organized by Saveetha Institute of Medical and Technical Sciences, Thandalam on 06.03.2024



### FACULTY ACHIEVEMENTS

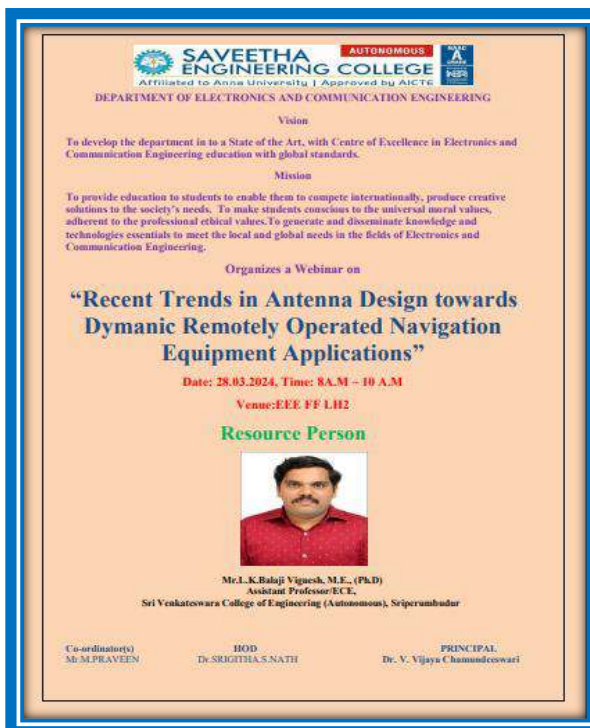
- **Dr.T.J.Jeyaprabha** acted as reviewer for the **IEEE International Conference on Distributed Computing and Optimization Techniques** organized by SJB institute of Technology, Bengaluru during 15<sup>th</sup> & 16<sup>th</sup> March 2024.



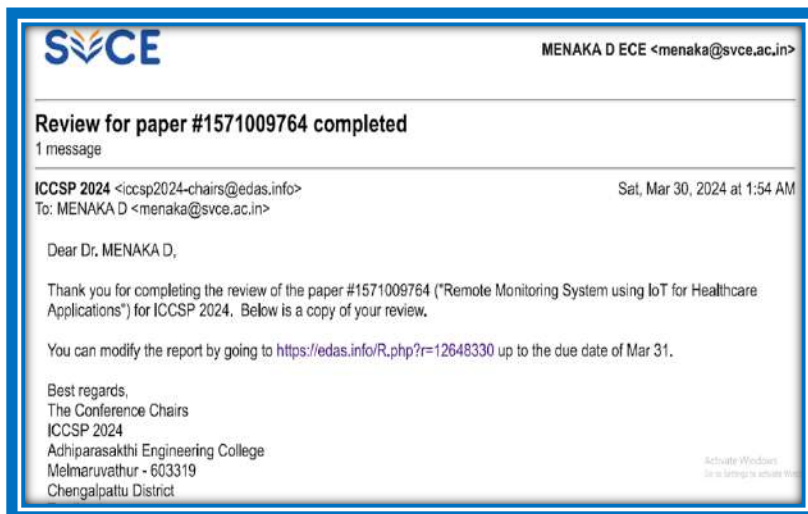
- **Dr.D.Menaka** delivered a technical talk on “Seminar On Image processing using Machine Learning” organized by Saveetha Engineering College, Chennai held on 02.03.2024



- **Mr.L.K.Balaji Vignesh** delivered a webinar on “Recent Trends in Antenna Design towards Dynamic Remotely Operated Navigation Equipment Applications” organized by Saveetha Engineering College, Chennai held on 28.03.2024



- Dr.D.Menaka acted as reviewer for the **IEEE INTERNATIONAL CONFERENCE ON COMMUNICATION AND SIGNAL PROCESSING** organized by Adhiparasakthi Engineering College, Melmaruvathur held on 31.03.2024



- **Mr.L.K.Balaji Vignesh, Mr.S.Elangovan** reviewed Six Papers for the **INTERNATIONAL CONFERENCE ON COMMUNICATION, COMPUTING AND INTERNET OF THINGS** organized by Sri Sairam Engineering College (Autonomous), Chennai.

### ALUMNI ACTIVITIES

- **Mr.S.Venkatraman (PG Alumnus: 2018-2020), Patent Analyst, Dolcera Ites Pvt. Ltd. Hyderabad**, delivered a webinar on “**Brief Introduction To Conversational AI tools and their usage for academic teachers**” to ECE Department Faculty members on 22.03.2024



## EVENTS ORGANIZED

- The Department of ECE organized a guest lecture on “**Role of Embedded Systems in Cars and Automotive Vehicles**” in collaboration with the Electronics and Communication Engineers Association, the Institution of Electronics and Telecommunication Engineers-Student Forum of SVCE, and the Robotics and Artificial Intelligence Club, SVCE on 08.03.2024 at Function Hall, SVCE for I, II and III Year ECE Students. The session was handled by **Dr.G.Boopalan, Associate Professor, School of Electronics Engineering VIT-Vellore**. The event was organized by Dr.T.J.Jeyaprabha, Associate Professor/ECE, Mr.S.Elangovan, Assistant Professor/ECE under the guidance of Dr.S.Ganesh Vaidyanathan, Principal and Dr.G.A.Sathish Kumar, HOD/ECE. The purpose of this lecture was to provide the students with thought-provoking points on potential opportunities for embedded systems in the automobile sector.



- The Department of ECE organized the Inauguration of “**STUDENT BIS CLUB-ECE**” held on 11.03.2024. Totally 54 students (II ECE & III ECE) were inducted into the club including one Student Leader representative and Six Student representatives.
- **TECHNOWAYS** is a prestigious national-level technical symposium which aims to bring together students, faculty, researchers, and industry professionals to exchange knowledge, showcase innovations, and foster collaboration in recent technology. The event coordinated by Dr.T.J.Jeyaprabha and Mr.S.Elangovan along with ECE Association organized technical events like **Sparkquest, Electrocraft Challenge, Paper Prism and Chip Connect** which was held from **15.03.2024 to 16.03.2024**



- The Department of ECE organized the event of “**ESSAY COMPETITION AND STANDARD FORMULATION**” in association with “**STUDENT BIS CLUB-ECE**” held on 18.03.2024. Totally 20 students (II ECE) were participated and get benefitted about the basic standards, awareness, regulations, product specifications, testing and analysis related to specific department.





- The **24 Hours Make-a-Thon 5.0** coordinated by **Dr.T.J.Jeyaprabha** and **Mr.S.Elangovan** was a thrilling event under ECEA, IETE-SF & RAIC that took place with vibrant energy and creativity on **March 22 and 23, 2024**. Students from various Engineering colleges attended this exciting event, readily demonstrating their inventiveness and problem-solving abilities. The energy of expertise and inspiration was brought to the make-a-thon by the esteemed Chief Guests, **Dr.N.Venkateswaran, Associate Professor from the Department of Biomedical Engineering, SSN College of Engineering (Autonomous), Chennai** and **Mr.Sandeep from boAt, Bengaluru**. To overcome obstacles and realize their ideas, groups of passionate students worked together for 24 hours, collaborating intensively on brainstorming and developing concepts. The RAIC mentors supported the students team throughout the 24 hours. The make-a-thon provided a platform for budding engineers to push the boundaries of their imagination, leveraging cutting-edge technologies and interdisciplinary approaches. SVCE-ECE thanks and honors all invited Academicians, industry experts and lovable Alumni-**Dr.N.Venkateswaran, Professor (SSNCE), Dr.L.Vanitha, Professor (SAEC), Mr.Sandeep from boAt, Bengaluru, Mr.Prashanna Rangan (PG Alumni), Mr.Rakesh Elamaran (INT Alumni), Mr.Aadhavan (2004-2008), Ms.Ishrath Rehana (2015-2019), Ms.Indhumathi (2018-2022), Mr.Guganesh (2019-2023), Ms.Reshma (2019-2023), Ms.Krishna Priya (2019-2023), Mr.Siva Subramanian (2019-2023), Mr.Siddique Afraaz (2019-2023), Mr.Hari Prasad (2019-2023), Mr.Sangeeth Kanna (2019-2023), Mr. Deepak Akash (2019-2023)**



### PALS

- One student visited the Exhibit of Finalists teams of PALS Innowah on the topic “**Start up Solutions for Sustainability Challenges**” at IIT Campus, Chennai on 23.03.2024.
- **Two Faculty Members** have participated in the Faculty Development Program by the Teaching Learning Centre of IIT Madras in VIRTUAL MODE during 26<sup>th</sup>, 27<sup>th</sup> and 28<sup>th</sup> of March 2024.

### NATIONAL SERVICE SCHEME

- **NSS-Annual Special Camp 2024** was held at Government High School, Mevalurukuppam, Sriperumbudur and St.Anne’s High School, Valarpuram during 26<sup>th</sup> February to 03<sup>rd</sup> March 2024. Thirty Volunteers participated from ECE Department and Mrs.S.M.Abinaya, AP/ECE,

Program officer took part in NSS. Volunteers involved in different activities like educating the Illiterates, Environmental Rally, Temple cleaning, Tree Sapling, Health and Hygiene Awareness.



- On the Seventh day, All NSS volunteers were gathered in Valarpuram for the closing ceremony. Dr.S.Ganesh Vaidyanathan, Principal, SVCE addressed the volunteers. A spokesperson for each unit read out the reports for each of the units. All NSS volunteers received certificates for their active engagement.



### PARENTS TEACHER MEETING

- Parent Teacher Meeting was held on 23.03.2024 in the ECE department for I, II, III and IV Year. Around 79 parents actively attended the meeting. Respected HOD addressed the meeting in the department. All faculty advisors and subject handling faculties discussed about the wards performance individually. Finally the meeting ended at 1.30 pm. Tea and biscuits are provided to all the parents who attended the PTM Meeting.



Some feedback from parents are listed below:

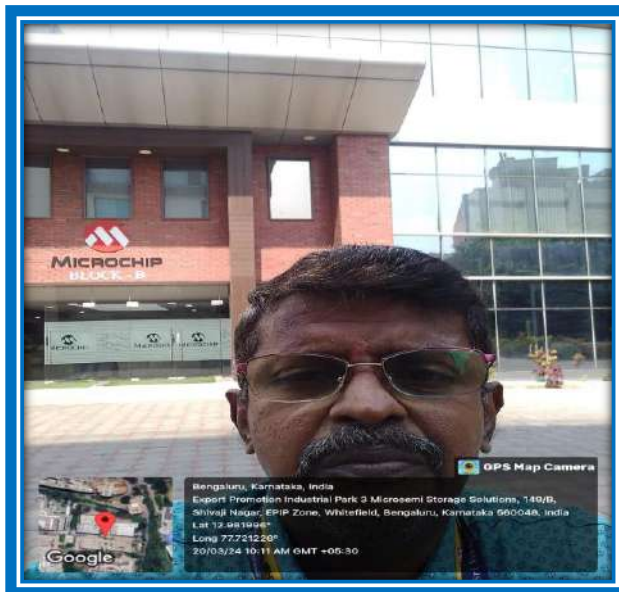
- Parents said Parents Teacher Meeting was very useful and faculty advisors are maintaining their wards records as of date.
- Parents felt great about their interaction with all subject-handling faculties regarding their ward's discipline and subject understanding inside their respective classes.
- Parents noted that the remedial class was very useful for slow learners.

### INDUSTRIAL VISIT

#### Microchip Technology India Private Limited, Bangalore

- **Dr.G.A.Sathishkumar, Professor and HoD-ECE** attended the **Microchip Academic Program Meet** with executives of Silicon microsystems and Microchip Technology IndPrivate Limited was held on 20.03.2024 at Microchip Corporate Office, Bangalore.





### 5G Test Bed Visit at IIT-Chennai and CeWIT-IITM Research Park

- Visit was organized by HoD of ECE to the “Indigenous 5G Test Bed” at IIT-M campus on 27.03.2024. The following Faculties **Dr.G.A.Sathishkumar, Professor and HoD-ECE, Dr.N.Kumaratharan, Professor/ECE** and **Dr.M.Bindhu, Associate Professor/ECE** visited the place.

- Formal meeting with Project head Ms.Sampoorna briefed about The Department of Telecommunications (DoT) funded a large scale 5G testbed project to encourage Indian startups.
- The goal of the project is to deliver an end-to- end 5G testbed consisting of 5G BS and UE nodes that support enhanced mobile broadband (eMBB), Ultra low latency communication (URLLC), and massive MTC including NB IoT services.
- The operating frequency includes both sub 6 GHz and mmwave frequencies. The system will exceed IMT 2020 5G performance requirements including Low Mobility Large Cell (i.e., LMLC) targets introduced by India at ITU.



- Also visited CeWIT at IIT-M Research Park. Project officer Ms.Ankita presented about the facilities there and it was open to industry, academia, research institutions and government bodies for various R&D, product development and capacity building activities. The place encourages Faculties, Research scholars, Students to come and avail their facility for testing the projects done.



- Also discussion occurred on the topic of Training facilities for Faculties and Students. They do welcome smart, dedicated, and enthusiastic students who want to work on cutting edge research problems and build hands-on experience with the latest tools and hardware as part of Internship for 6 months duration. Our students can utilize the opportunity for one semester as a Student Industry Program.



## **EDITORIAL BOARD**

### **CHIEF EDITOR**

**Dr.G.A.Sathish Kumar**  
**Professor & Head**  
**Department of ECE**

### **CO-EDITORS**

**Dr.A.Prasanth**  
**AP/ECE**

**Mr.L.K.Balaji Vignesh**  
**AP/ECE**

## PROGRAMMES OFFERED BY THE DEPARTMENT

- B.E. in Electronics and Communication Engineering
- M.E. in Communication Systems
- Ph.D / MS (by Research)

## TOP RECRUITERS

