

SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ECEBYTE - 23 Technical Magazine I am delighted to introduce the ECE BYTE, our technical magazine. This publication serves as a platform to showcase the hidden writing talents of students, helping them refine their skills and contribute to their overall personality development. I extend my heartfelt congratulations to all the contributors for their dedication and effort in bringing this magazine to life.



Thiru.K.C.Karupanan MLA

Secretary/SVHEC

SVHEC has made impressive strides, accomplishing notable milestones in a short period. It brings me great joy to see the students and faculty of the ECE department introducing ECE BYTE, the department's technical magazine. This publication serves as a platform to highlight the literary and technical talents of both students and faculty while nurturing leadership skills and intellectual growth.



Rtn.P.Venkatachalam,MPHF

Chairman/SVHEC

I extend my heartfelt congratulations to the Department of ECE and the ECE BYTE team for successfully publishing the first issue of this prestigious technical magazine. I am confident that this magazine will serve as a valuable platform for students and faculty to enhance their technical knowledge and showcase their literary talents. A special appreciation goes to the editorial board for their dedication and hard work in bringing this publication to life.



Dr.P.Thangavel ME MBA PhD

Principal/SVHEC

Dr.V.Saminathan

Head of the Department

Electronics and Communication Engineering



I appreciate to the faculty members and students for the magazine committee of ECEBYTE23 to successful completion of this magazine

As the Head of the Electronics and Communication Engineering department, it's my pleasure to see our students showcase their talents and achievements in this magazine. This publication highlights the innovative projects, research work, and extracurricular activities of our students, demonstrating their dedication and passion for the field.

Our department is committed to providing a nurturing environment that fosters academic excellence, creativity, and innovation. We strive to equip our students with the knowledge, skills, and values necessary to succeed in their careers.

I commend the editorial team for their hard work and initiative in bringing out this ECEBYTE magazine. It's a testament to the department's spirit and enthusiasm. I hope this publication inspires and motivates our students to pursue their goals with dedication and perseverance.

I wish the magazine all the best and look forward to seeing future editions. I believe it will become a valuable platform for our students to express themselves, share their ideas, and showcase their talents.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING ABOUT ELECTRONICS AND COMMUNICATION DEPARTMENT

The Electronics and Communication Engineering Department was established in the year 2008. The department offers Undergraduate (BE-ECE), & Post Graduate (ME-Applied Electronics) programmes, that provide students with the knowledge and Tools they need To succeed in the ECE. After the completion of the course, lots of opportunities are there in various fields of Telecommunication Networks and Embedded System, Signal & Image Processing, VLSI Design etc. To expose the students To the world of technology and produce graduates fully equipped To achieve the highest personal and professional standards for Industry application and in higher studies. The Department has built an excellent reputation for its graduates in terms of placements

VISION

► Produce competent Electronics and Communication Engineering professionals with scientific temper, values, ethics, team spirit and capabilities To face new challenges

MISSION

Provide conducing learning environment with state-of-the-art infrastructure facilities, laboratories and teaching learning systems.

Produce skilled Electronics and/or Communication Engineers with skills Towards employability, leadership, communication skills with social responsibilities and ethical values

► Inculcate Professional skills to function as proficient engineers and designers capable of building sustainable equipment/systems and infrastructure for the society.

Promote research and development activities in the rapidly changing technologies related To Electronics and Communication Engineering and allied domains.

- 1. Successful career To enable graduates have a successful career in academia or industries associated with Electronics and Communication Engineering, or as entrepreneurs
- 2. Foundational concepts To provide students with strong foundational concepts and also advanced techniques and Tools in order To enable them To build solutions or systems of varying complexity.
- **3. Analyze Methodology** To prepare students To critically analyze existing literature inan area of specialization and ethically develop innovative and research oriented methodologies To solve the problems identified.

Program Outcomes (POs)

- **1. Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization To the solution of complex engineering problems.
- 2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **3. Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information To provide valid conclusions.
- **5.** Modern Tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT Tools including prediction and modeling To complex engineering activities with an understanding of the limitations.
- **6.** The engineer and society: Apply reasoning informed by the contextual knowledge To assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant To the professional engineering practice.
- **7.** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **8.** Ethics: Apply ethical principles and commit To professional ethics and responsibilities and norms of the engineering practice.

- **9. Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- **10.Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able To comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **11.Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these To one's own work, as a member and leader in a team, To manage projects and in multidisciplinary environments.
- **12.Life-long learning**: Recognize the need for, and have the preparation and ability To engage in independent and life-long learning in the broadest context of technological change.

Program Specific Program Outcomes (PSOs)

- **1. Foundational concepts**: To analyze, design and develop solutions by applyingfoundational concepts of electronics and communication engineering.
- **2. Design and Develop:** To apply design principles and best practices for developingquality products for scientific and business applications
- **3. Innovation and solutions:** To adapt To emerging Information and Communication Technologies (ICT) To innovate ideas and solutions To existing/novel problems.

Editor-in-Chief

Staffs: Mrs.M.Sunandini, AP/ECE

Students: G.G Dharmendhira - IV ECE N. Vasanth - IV ECE D. Darmaraj- III ECE S.Varshini- III ECE R.Chithambaram - II ECE M. Janani - II ECE

Dr.V.Saminathan HOD/ECE

SOLAR REACTOR CONVERTS PLASTIC AND GREENHOUSE GASSES TO FUEL

Researchers at the University of Cambridge have developed a system that can transform plastic waste and greenhouse gasses into sustainable fuels and other valuable products— using just the energy from the Sun. It can convert two waste streams into two chemical products at the same time—the first time this has been achieved in a solarpowered reactor. The reactor converts the carbon dioxide and plastics into different products which can be utilised in a variety of industries. Researchers were able to convert carbon dioxide into syngas, a key building block for sustainable liquid fuels, and plastic bottles were converted into glycolic acid, which is widely used in the cosmetics industry. They also designed different catalysts, which were integrated into the light absorber. Changing the catalyst enabled researchers to then change the end product.



DARMARAJ D III ECE

COBOTS AND AUTONOMOUS DELIVERY SYSTEMS

Cobots or collaborative robots are basically robots that are safe to interact with people, in close proximity. They are not bulky, super powerful robots that have to be confined to cages in the shop floor. They are sweet, friendly, AI-powered robots that can work along with human workers, to increase their efficiency. Cobots are becoming increasingly popular across industries to deliver food in restaurants, to assist doctors and caregivers at hospitals (digital nurses), to move goods on a factory floor, to relieve human workers of repetitive and unergonomic tasks, and so on. Universal Robots, ABB and Fanuc are some of the leading international players in this almost-mainstream technology, while Systemantics is a completely indigenous maker of collaborative robots.



DHILIP N II ECE

INDIA SEMICONDUCTOR MISSION - FUTURE OF INDIA IN ZLECTRONICS

The India Semiconductor Mission (ISM) is a strategic initiative launched by the Indian government in 2010 to establish India as a global hub for semiconductor design and manufacturing. The mission is aimed at fostering innovation and promoting the growth of the electronics industry in India, with a focus on developing new technologies and creating high-value jobs. The ISM has three main objectives: to build a strong semiconductor ecosystem in India, to promote innovation and R&D in the semiconductor industry, and to encourage collaboration and partnerships between industry, academia, and government. To achieve these objectives, the government has invested heavily in research and development, infrastructure, and talent development.



JANANI M II ECE

WEARABLE PRESSURE SENSOR FOR POSTURAL DEFORMITY MONITORING

Researchers at the Indian Institute of Technology Delhi (IIT Delhi) have unveiled a scalable and wearable pressure sensor that revolutionises how one addresses gait and postural deformities. The nano composite-based sensor offers a cost effective alternative to traditional treatments, addressing issues such as splay foot, flat foot, and related deformities impacting balance, mobility, and joint health. Crafted from a blend of light-sensitive polymers and piezoelectric nanoparticles, this versatile sensor adapts to various deformities, providing vital data for machine learning algorithms and enabling the design of custom insoles. Its versatility extends to detecting different human activities and aiding in rehabilitation, making it a promising tool for various industries, including healthcare, sports, and defence



VARSHINI III ECE

FIRST PIEZOELECTRIC SENSOR FOR AUTOMOTIVE INTERFACES

UltraSense TouchPoint Q from Ultra- Sense Systems is the first piezoelectric strain sensor developed to enhance the touch experience in automotive interfaces. It offers calibratable force thresholds for instant robustness and is immune to temperature sensitivity, mechanical stresses, and ageing. Additionally, it remains stable against signal drift caused by adhesive thermal expansion mismatch, a common issue in other forcesensing technologies. The sensor's unique micro-electro-mechanical system (MEMS)-based QuadForce architecture incorporates four strain sensors in each component. This enables differential sensing and pattern recognition capabilities, especially when integrated with machine learning. The sensor is also fully qualified to AEC Q100 Grade 2 standards, ensuring reliability in temperatures ranging from -40 to +105°C.



R.CHITHAMBARAM II ECE

STUDENTS PROJECTS

Title: ELECTRIC VEHICLE BATTERY MONITORING SYSTEM WITH CHARGE MONITOR AND TEMPERATURE DETECTOR THROUGH BATTERY OPTIMIZER FOR TWO VEHICLERS

This paper explores the design and implementation of an Electric Vehicle Battery Management System (EVBMS) with Charge Monitoring and Fire Protection. Developed for Li-ion battery packs in electric vehicles, the system ensures continuous monitoring and protection. Utilizing hardware components such as Li-ion batteries, monitoring systems, microcontrollers, LCD displays and sensors, the EV-BMS facilitates safe charging and proactively prevents accidents. Integrated fire protection utilizes advanced sensors and algorithms to detect and mitigate fire hazards. Through microcontrollers and user-friendly interfaces, the project offers a comprehensive solution, contributing to the safety and efficiency of electric vehicles.



Done by,

- Jai Krishnan A.P
- Mangaiyarkarasi. E

Rahul M

Title : DATA TRANSMISSION USING LIGHT FIDELITY

In recent days, underwater communication has been used to keep track of obstacles and ocean species. Underwater communication cannot be used because in water the radio waves get absorbed. Li-Fi can be used underwater because light can penetrate deep water. In this project, we'll present a real-time video transmission using a Li-Fi (Light Fidelity) transmitter. The audio and video transmission achieve a maximum distance of 200m.The Li-Fi transmitter and receiver are used to analyze the performance and various conditions such as quality, intensity, and distance. The key advantages of Li-Fi are low power consumption and very high data rates. The aim of this project is to transfer text, audio, and image underwater using VLC technique



Done by, Dharmendhira G G Gokul K Jebastin J Meenakshi s

Title: SMART BOREWELL CHILD MONITORING SYSTEM WITH AI-ENABLED WIRELESS TECHNOLOGY

The Smart Drilling Child Rescue System (SBCRS) is a revolutionary intelligencedriven wireless monitoring application designed to solve critical drilling-related safety issues, especially where drilling poses serious risks to children. This new system combines advanced sensors and wireless communications to provide real-time and continuous monitoring. Through artificial intelligence systems, SBCRS can quickly detect unauthorized access to dangerous areas or the presence of children. The system notifies authorities and doctors immediately when detected, enabling rapid intervention and reducing the possibility of accidents. Additionally, SBCRS uses practical skills training to improve rescue operations and rescue children who have fallen into water wells. Leveraging the power of artificial intelligence in wireless surveillance, SBCRS offers effective solutions to ensure the safety and well-being of children in hostile environments, ultimately saving lives and preventing adverse events.



Done by, Gokulakrishnan M Keerthana V Nagalogeshwari M Raja Rajeshwari D

Title: Green House Monitoring And Controlling System Using IOT

Focusing on making a smart greenhouse-controlled environment area to grow plants. By using a low cost more efficient programmable module to detect the climatic behavior inside the greenhouse and controlling the parameters according to their crop production need, through various techniques with the use of board ESP32 Node MCU module. The parameters that need optimization are the water content of the soil, the light intensity coming from the natural or artificial sources, the temperature and humidity of the field area. The design proposes monitoring by soil moisture sensor, LDR sensor, and DHT22(temperature and humidity) sensor; all these sensors collected the data and given to the ESP module, and then after processing the data all the parameters are controlled via water pump, motors, exhaust system, and light system as per the data calculations. With the help of HTTP protocol, the module ESP 32 is connected to the wireless internet connection or through IOT platforms like telegram bot. The collected environmental parameters data sent to smart phones via online mode to the farmers to make the proper overlook on their fields, no matter how far they are just by using the IOT platform. In the field of agriculture and food production, the technology has paced up very quickly and is still furnishing its way, to optimize and achieve maximum plant growth in the field of agriculture. An accurate system would surely bring the change in this world of Android/IOS smart phone applications. Index Terms Greenhouse, ESP32 Module, Monitoring, Controlling, IOT (Internet of Things).



Kokilavani P Prasanth A K Umaabirami Vasanth N

Title: Voice Controlled Robot Using Artificial Intelligence

This project aims to design a Voice Controlled Robot using Artificial Intelligence. The robot is expected to be able to perform tasks such as navigation, obstacle avoidance and object detection using AI techniques. The robot will be able to interact with its environment using voice commands as input. The robot will also be able to learn and adapt to its environment, enabling it to better understand voice commands and act accordingly. The project will be implemented using a pic controller and open source software. It deals with one of the application of vehicles. In this project one moving object is developed such that it is moved as per commands given by the voice recognition module and that command is received by microcontroller using wireless communication. This project is equipped with DC motor, bluetooth module, Micro controller along with the Power supply unit. Vehicle finds it applications in the real time. And it can moves forward, backward, right and left respectively. HC-05 module can be used to communicate with robot.



Madhan D Soundarya M Srimathi K

S.No	Name of the Student	Title	Name of the Event	Name of the College
1	Jai Krishnan A.P	Electric Vehicle Battery Monitoring System With Charge Monitor And	National Conference on	
2	Mangaiyarkarasi. E Rahul M	Temperature Detector Through Battery Optimizer For Two Vehiclers	Technologies in Engineering and Management Sciences (I- STEMS2023)	Excel Engineering College, Komarapalayam
4	Dharmendhira G G		National Conference on	
5	Gokul K	Data Transmission	Innovative Smart	
6	Jebastin J	Using Light Fidelity	Technologies in Engineering and Management Sciences (I- STEMS 2023)	Excel
7	Meenakshi S			Engineering College, Komarapalayam
8	Gokulakrishnan M	Smart Borewell Child Monitoring System With AI-Enabled Wireless Technology	National Conference on	
9	Keerthana V		Innovative Smart	
10	Nagalogeshwari M		Technologies in Engineering and Management Sciences (I- STEMS 2023)	Excel
11	Raja Rajeshwari D			Engineering College, Komarapalayam
12	Kokilavani P		National Conference on	
13	Prasanth AK	Greenhouse Monitoring And	Innovative Smart	
14	Umaabirami A	Controlling System Using IOT	Technologies in Engineering and Management Sciences (I- STEMS 2023)	Excel
15	Vasanth N			Engineering College, Komarapalayam
16	Madhan D	Voice Controlled Robot Using Artificial Intelligence	National Conference on	
17	Soundarya M		Innovative Smart	
18	Srimathi K		Technologies in	Excel Engineering College, Komarapalayam
19	Nivetha P		Management Sciences (I- STEMS 2023)	

Student Participation in Conferences

Prize Awarded

S.No	Name of the Student	Name of the event	Organized by	Date
1	Vanipriya V	Technical Quiz	MPMNJ Engineering College,Chennimalai	01.06.2022
2	R.Kaviya	Multimedia Presentation	Saurie College of Engineering, Vijayamangalam	24.02.2023 to 25.02.2023
3	V.Disha	Fireless Cooking	JKK Munirajah College of Technology, T N Palayam.	31.03.2023
4	N.Gayathri	Fireless Cooking	JKK Munirajah College of Technology, T N Palayam.	31.03.2023
5	R.Chithambaram	Short Film	JKK Munirajah College of Technology, T N Palayam.	31.03.2023
6	S.Janasarathi	Short Film	JKK Munirajah College of Technology, T N Palayam.	31.03.2023
7	S.Arthi	Mr & Ms Rj	JKK Munirajah College of Technology, T N Palayam.	31.03.2023