

# DEPARTMENT OF ECE E-CHRONICA 2023 MAGAZINE



NH-67, Karur – Trichy Highway, Puliyur CF, Karur, Tamilnadu – 639114. https://chettinadtech.ac.in/index.php

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## HoD'S DESK

#### Dear Students, Faculty, and Readers,

It is with great pleasure that I extend my warm greetings to you through this edition of our E-Chronica magazine. Our department has been making remarkable strides in academics. Students have interests in various technical competitions, faculty members have contributed to the projects and activity based learning.

Looking ahead, we aim to introduce more hands-on learning opportunities, strengthen our research initiatives, and encourage students to take up innovative projects. I urge every student to explore beyond textbooks, engage in interdisciplinary learning, and build problem-solving skills. Our faculty continues to be the backbone of this growth, and I sincerely appreciate their unwavering dedication.

I am confident that, with our collective efforts, we will continue to achieve new milestones. I extend my gratitude to the editorial team and all contributors who made this magazine possible.

Wishing you all success in your academic and professional journeys! – Dr.M.Kumar, HoD/ECE



## ABOUT THE DEPARTMENT

Department of Electronics and Communication The Engineering was established in the year 2007. The department has an intake of 60 students in B.E. course. The department possesses the most advanced equipment in its laboratories. It also provides opportunities to grow and excel in the technical world by conducting regular programs in various fields. workshops and The department is highly active in research work in the fields of broadband communications, VLSI Design, image processing etc. The students are provided adequate of signal processing, training in the field image processing and digital communication. Students are highly motivated to attend in-plant training in some of the most prestigious organizations during their time with the institution.

> Department of ELECTRONICS & COMMUNICATION ENGINEERING

## VISION

To provide the quality education in the field of Electronics and Communication Engineering which caters the needs of the society in line with the technological revolution

## MISSION

- To upgrade the technical knowledge of the continuously students by providing industrial exposure and innovative projects establish creative learning  $\circ$  To а environment for the students by active learning of the techniques in the electronics and communication engineering field
- To nurture career improvement by facilitating skill development and training in the recent technologies

## PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

- To provide the students with a strong foundation in the required sciences in order to pursue studies in Electronics and Communication Engineering
- To gain adequate knowledge to become good professional in electronics and communication engineering associated industries, higher education and research

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- To develop attitude in lifelong learning, applying and adapting new ideas and technologies as their field evolves
- To prepare students to critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented methodologies to solve the problems identified
- To inculcate in the students a professional and ethical attitude and an ability to visualize the engineering issues in a broader social context

## PROGRAM SPECIFIC OUTCOMES (PSOs)

- PSO1: Design, develop and analyze electronic systems through application of relevant electronics, mathematics and engineering principles
- PSO2: Design, develop and analyze communication systems through application of fundamentals from communication principles, signal processing, and RF System Design & Electromagnetics
- PSO3: Adapt to emerging electronics and communication technologies and develop innovative solutions for existing and newer problems

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II'nd Year	ECE	III'rd Year EC	E	IV <sup>'th</sup> Year ECE	;
<b>II</b> ' <sup>nd</sup> <b>Yea</b> r Name	ECE CGPA	III' <sup>rd</sup> Year EC Name	CGP A	<b>IV<sup>'th</sup> Year ECE</b> Name	CGPA
<b>II'<sup>nd</sup> Year</b> Name Divya K	<b>ЕСЕ</b> СGРА <b>8.57</b>	III'rd Year EC Name Devadharshini M	CGP A 8.63	<b>IV</b> <sup>'th</sup> <b>Year ECE</b> Name Swetha R	CGP/ 9.27
<b>II'<sup>nd</sup> Year</b> Name Divya K Varni S	ECE CGPA 8.57 8.38	III'rd Year EC Name Devadharshini M Shalini S	CGP A 8.63 8.58	IV <sup>'th</sup> Year ECE Name Swetha R Rasika M	CGP/ 9.27 9.09

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## **STUDENT'S FOLIO**

#### Piezoelectric Power Generation for Smart Roads

-Mr. D. Dhanushkarthick from 3<sup>rd</sup> year ECE

#### **INTRODUCTION:**

With the rising demand for sustainable energy solutions, piezoelectric power generation has emerged as a promising technology for smart infrastructure. Smart roads equipped with piezoelectric sensors can harness energy from vehicle movement and vibrations, converting mechanical stress into electrical energy. This concept supports renewable energy production while enhancing the efficiency of smart cities and IoT-integrated transport systems. By embedding piezoelectric materials within road surfaces, the system can generate power for streetlights, traffic signals, and IoT devices, fostering a self-sustaining energy ecosystem.

#### PROBLEMS ON TRADITIONAL POWER SOURCES:

- Dependence on Fossil Fuels Most traffic-related energy sources rely on non-renewable fuels, leading to environmental concerns.
- Grid Dependency Urban infrastructure depends heavily on traditional power grids, increasing energy consumption and costs.
- Energy Wastage The kinetic energy from moving vehicles is lost as heat and vibrations instead of being utilized.
- High Maintenance Costs Conventional road lighting and traffic systems require frequent power supply and maintenance.

#### IOT CHALLENGES IN PIEZOELECTRIC SMART ROADS:

- Real-time Data Processing Large amounts of sensor data need to be efficiently collected and processed.
- Wireless Communication Ensuring seamless connectivity between sensors, IoT gateways, and cloud platforms.

- Durability and Weather Resistance Piezoelectric materials must withstand heavy traffic loads and harsh environmental conditions.
- Energy Storage & Efficiency Efficient energy storage solutions (e.g., supercapacitors, batteries) are required for a stable power supply.
- Cost of Implementation The initial infrastructure costs for embedding sensors and developing IoT frameworks are high.

#### CHARACTERISTICS OF PIEZOELECTRIC SMART ROADS:

- Self-Powered Infrastructure Generates electricity from vehicle motion without relying on external power sources.
- Sustainable & Eco-Friendly Reduces reliance on fossil fuels and supports green energy initiatives.
- Smart Traffic Management Powers IoT-enabled road monitoring and traffic lights using generated energy.
- Durability & Low Maintenance Designed to withstand heavy loads and harsh environmental conditions.
- Scalability Can be deployed on highways, urban roads, and pedestrian pathways.

#### THE IMPACT OF PIEZOELECTRIC POWER GENERATION:

- Reduced Carbon Footprint Minimizes CO<sub>2</sub> emissions by utilizing clean energy.
- Cost Savings Reduces electricity expenses for road lighting and IoTenabled traffic management systems.
- Enhanced Smart City Development Integrates renewable energy with urban infrastructure.
- Real-time Monitoring & Analytics IoT-enabled roads can provide real-time data on traffic density, road conditions, and energy production.
- Increased Energy Efficiency Maximizes energy harvesting from millions of daily vehicle movements.

#### CONCLUSION:

Piezoelectric power generation for smart roads is a revolutionary step toward sustainable energy solutions in urban infrastructure. By utilizing vehicleinduced vibrations, this technology converts mechanical energy into usable electricity, reducing dependence on traditional power sources.

When integrated with IoT and smart city initiatives, these roads can enhance energy efficiency, traffic monitoring, and eco-friendly urban development. While challenges such as cost, durability, and storage efficiency remain, advancements in piezoelectric materials and IoT connectivity will drive future innovations in self-sustaining energy systems.

# INDUSTRIAL SAFETY MONITORING USING IOT AND NODEMCU

-Mr.K.Sunil Prasad from 4th year ECE

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#### **INTRODUCTION:**

Industrial safety is a critical aspect of maintaining a secure working environment for employees and preventing hazardous incidents. With rapid advancements in Internet of Things (IoT) technologies, there is a growing trend toward incorporating smart solutions for monitoring and ensuring safety in industrial setups. The integration of NodeMCU (a WiFi-enabled microcontroller) with IoT enables real-time data collection, analysis, and reporting on environmental conditions, equipment status, and worker safety in industrial settings. By continuously monitoring parameters such as temperature, gas levels, smoke, vibration, and motion, industries can promptly detect risks and take preventive actions. This paper focuses on safety monitoring system that utilizes IoT and NodeMCU to ensure real-time safety monitoring in industrial environments.

#### PROBLEMS IN INDUSTRIAL SAFETY:

Industrial environments are often prone to various safety hazards, including:

- Fire accidents due to overheating, electrical faults, or flammable materials.
- Gas leaks from pipelines or equipment failures, posing health and explosion risks.
- Worker accidents involving heavy machinery, manual handling, or inadequate protective equipment.
- Toxicity or chemical spills, leading to health risks, environmental hazards, and operational shutdowns.
- Lack of real-time monitoring, often resulting in delayed responses to dangerous situations, exacerbating the risk of fatalities or property damage.

#### IOT CHALLENGES IN INDUSTRIAL SAFETY:

While IoT brings numerous benefits to industrial safety, its implementation presents specific challenges:

- Data Privacy and Security Ensuring that sensitive information transmitted by sensors is protected from unauthorized access or cyberattacks.
- Integration with Legacy Systems Many industries use outdated equipment and systems that may not be compatible with modern IoT solutions.
- Network Reliability IoT devices rely on internet connectivity, and network disruptions can hinder timely safety monitoring.
- Power Supply and Energy Efficiency Industrial IoT devices must operate continuously, requiring efficient power management solutions.
- Scalability As industries expand, the IoT system should be scalable to accommodate more sensors and devices without compromising performance.

CHARACTERISTICS OF AN IOT BASED INDUSTRIAL SAFETY MONITORING SYSTEM:

- Real-Time Monitoring Continuous data collection from various sensors such as gas detectors, smoke sensors, and temperature sensors.
- Remote Access Allows users to monitor the safety status from anywhere via web or mobile applications.
- Automated Alerts Immediate notifications (via SMS, email, or app alerts) when critical safety parameters exceed predefined thresholds.
- Data Logging Storing historical data for future analysis and reporting.
- Scalability Can be expanded to include more sensors or integrate additional safety protocols as needed.
- Cost-Effective IoT solutions, particularly with NodeMCU, are relatively inexpensive and accessible for large-scale industrial deployment.

#### THE IMPACT OF IOT ON INDUSTRIAL SAFETY:

- Enhanced Safety IoT enables proactive monitoring, reducing the likelihood of accidents and improving overall safety in industrial environments.
- Faster Response Times Automated alerts enable rapid intervention by safety personnel, potentially saving lives and minimizing damage.
- Data-Driven Decision-Making Access to real-time and historical data allows for informed decisions to improve safety standards and operational efficiency.
- Reduced Operational Downtime Preventive measures based on IoT insights can help avoid accidents, reducing unplanned downtime and maintenance costs.
- Improved Compliance IoT helps industries stay compliant with safety regulations and standards by providing continuous monitoring and reporting capabilities.

#### CONCLUSION:

The integration of IoT with NodeMCU offers an innovative solution to industrial safety challenges, enabling continuous, real-time monitoring of safety parameters and prompt responses to hazardous situations. By ensuring a safer work environment, industries can minimize the risk of accidents, protect workers' health, and avoid financial losses. However, while the advantages of IoT-based industrial safety monitoring are significant, challenges related to security, integration, and scalability must be carefully addressed for effective implementation. Ultimately, this approach to safety monitoring is a key step toward achieving a safer, more efficient, and resilient industrial environment.

## MINI PROJECT EXPO'22 – A SHOWCASE OF INNOVATION

Chettinad College of Engineering & Technology organized an Intra-College Technical Meet, Mini Project Expo'2022, on 28th November 2022, to enhance students' technical knowledge and inspire them to compete in the global engineering landscape. The event featured over 132 innovative projects presented by students from various departments. Additionally, 10 projects from government and private school students were exhibited, attracting more than 700 school students who explored the expo and gained valuable insights.

All projects were thoroughly evaluated by expert judges, who selected the best project from each department, with winners receiving cash prizes. The Electronics and Communication Engineering (ECE) department emerged as the overall winner, securing the Best Project Trophy for their outstanding innovation and technical excellence.



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Mrs. N. Geetha, the Chief Educational Officer of Karur district inaugurating the Project Expo'2022



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The Department of ECE receiving the Winner's Trophy

Our students innovated their ideas as projects and few projects are presented here.

#### Wireless Notice Board Using Arduino

Batch Members	Title of the Project
Abarna K Jeevitha D Megarnisha Begum M	Wireless Notice Board Using Arduino

#### Abstract

In the modern era, efficient communication is essential across various sectors, including educational institutions, industries, and public places. This project presents a Wireless Notice Display System using an Arduino Uno, designed to update messages remotely via a WiFi or Bluetooth module. The system eliminates the need for conventional paper-based notices and manual updates, offering a cost-effective, eco-friendly, and real-time communication solution.

The display unit consists of a P10 LED matrix controlled by an Arduino Uno, ensuring clear and visible message presentation. Wireless connectivity is established using an ESP8266 WiFi module or a Bluetooth module (HC-05/HC-06), enabling users to send messages via a smartphone or computer. The system is user-friendly and can be integrated into schools, colleges, offices, railway stations, and shopping malls to display important announcements and advertisements.

This project enhances communication efficiency by enabling real-time updates, reducing human effort, and providing a flexible and automated solution for information dissemination.





#### Motion Capture

<b>Batch Members</b>	Title of the Project
Balamurugan K	
NaveenKumar S	Motion Capture
Raghul B	

#### Abstract

Motion capture technology plays a crucial role in various applications, including animation, virtual reality (VR), sports analysis, and healthcare. This project focuses on developing a cost-effective and efficient motion capture system using inertial measurement units (IMUs) and Arduino. The system is designed to track body movements in real-time and convert them into digital data for further analysis.

The project utilizes accelerometers, gyroscopes, and magnetometers to capture motion parameters. These sensors are integrated with an Arduino microcontroller, which processes the raw data and transmits it wirelessly to a computer or mobile application using Bluetooth or WiFi. The collected data can be visualized in a graphical interface, allowing users to monitor and analyze movements accurately.

This motion capture system can be applied in gaming, rehabilitation, sports training, and human-computer interaction. It provides an affordable alternative to expensive optical motion capture systems, making motion analysis more accessible for researchers, developers, and enthusiasts.

![](_page_16_Picture_0.jpeg)

#### Drowsyness detection using python

Batch Members	Title of the Project
Kamali C	Drowsyness detection
Malathi G	using python
Gayathri P	

#### Abstract

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Drowsiness while driving is a major cause of road accidents, leading to serious injuries and fatalities. This project focuses on developing a Drowsiness Detection System using Python and OpenCV, aimed at preventing accidents by monitoring the driver's eye activity in real time.

The system employs a computer vision-based approach with a pre-trained deep learning model (such as a CNN-based facial landmark detector) to

detect eye movements and blinking patterns. By analyzing the Eye Aspect Ratio (EAR), the system determines if the driver is drowsy and triggers an alert, such as a warning sound or notification, to prevent potential accidents.

This project is implemented using Python, OpenCV, dlib, and machine learning techniques for accurate facial landmark detection. It is a costeffective, non-invasive, and real-time solution that can be integrated into vehicles to enhance driver safety and reduce accident risks.

Batch Members	Title of the Project
Arun Prasath B SaravanaKumar P	Military Based Bomb Diffuser Node MCU
Dhanush Karthick D	

#### Military Based Bomb Diffuser Using Node MCU

#### Abstract

Bomb detection and disposal are critical operations in the military and defense sectors, requiring precision and minimal human risk. This project presents a Military-Based Bomb Diffuser System using a NodeMCU ESP8266, designed to remotely control a robotic arm for bomb disposal. The system enhances safety by minimizing direct human intervention in hazardous environments.

The project integrates a robotic arm controlled via NodeMCU, enabling realtime remote operation through a WiFi-based interface. Servo motors ensure precise movement, while an optional camera module provides live video feedback to assist operators in defusing tasks. The entire setup can be controlled using a smartphone or computer, ensuring flexibility and efficiency in operation.

![](_page_18_Figure_0.jpeg)

#### IoT Industry Protection System

Batch Members	Title of the Project
Ashok Kumar R	IoT Industry Protection
Sakthi S	System
Sudhan R	System
Surya K	

#### Abstract

The system integrates multiple sensors, including temperature sensors, gas sensors (MQ-2/MQ-135), motion detectors (PIR sensors), and smoke detectors, to continuously monitor the industrial environment. The collected data is wirelessly transmitted to a cloud platform (such as Firebase, ThingSpeak, or an MQTT-based server), enabling real-time monitoring and instant alerts via mobile notifications or emails.

In the event of a detected threat, automatic protective actions—such as triggering an alarm, activating fire extinguishers, or shutting down equipment—can be executed. This cost-effective, scalable, and real-time monitoring solution enhances industrial safety and security by minimizing human intervention and enabling remote supervision. The system can be deployed in factories, power plants, and warehouses to prevent potential disasters and ensure worker safety.

![](_page_19_Picture_0.jpeg)

#### Solar Based Smart Security System for Home

Batch Members	Title of the Project
Bubalakannan R	Solar based smart security for home
Kiran G	
Miall U	

#### Abstract

The increasing demand for sustainable and energy-efficient solutions has led to the development of a solar-powered smart security system for homes, designed to integrate renewable energy with advanced security features. This system harnesses solar energy to power smart security devices, including surveillance cameras, motion sensors, and alarm systems, ensuring continuous operation even during power outages.

The integration of Internet of Things (IoT) technology enables remote monitoring and control through a smartphone or web application, providing real-time alerts and notifications. Additionally, the system employs machine learning algorithms to enhance threat detection accuracy by analyzing patterns in sensor data.

This innovation not only promotes energy conservation but also provides homeowners with a cost-effective and eco-friendly security solution. The solar-powered design ensures that the system is self-sufficient and scalable, making it suitable for a wide range of residential settings. This project explores the architecture, components, and potential benefits of implementing such a system, while also addressing security challenges and reliability concerns in smart home environments.

#### Output

![](_page_20_Picture_2.jpeg)

#### Automation Wastage Segregation Using Arduino and GSM

Batch Members	Title of the Project
Durga Devi A	Automation wastage
Sneka L	segregation using Arduino
Thamaraiselvi S	and GSM

#### Abstract

With the growing concern for environmental sustainability, effective waste management has become a critical challenge. In this project, an Automated Waste Segregation System is developed using Arduino and GSM technology to streamline waste sorting in households and commercial spaces.

The system employs sensors to identify and classify waste materials such as organic, plastic, and metallic waste. An Arduino-based microcontroller controls the sorting mechanism by activating motors to segregate the waste into designated bins. To enhance efficiency and enable real-time monitoring, a GSM module is integrated, sending automatic notifications to users when bins are full or require attention. This innovative solution minimizes human intervention, optimizes waste collection processes, and promotes sustainable waste management practices. The GSM-based alert system ensures timely action, preventing waste overflow and contributing to cleaner surroundings. This project demonstrates a practical and scalable approach to waste management, reinforcing the commitment to technological advancements that address real-world challenges.

#### Output

![](_page_21_Picture_2.jpeg)

#### Skill/Job Recommender Application

Batch Members	Title of the Project
Kavin A	Skill / Job Recommender
Sunil Prasad K	Application
Govindaraj V	
Nithish B	

#### Abstract

In response to the rapidly evolving job market and the increasing complexity of career paths, a Skill/Job Recommender Application is developed. This innovative application aims to bridge the gap between individuals' skills and available job opportunities by leveraging machine learning algorithms for intelligent career recommendations.

The system analyzes users' profiles, including their skills, qualifications, interests, and work experiences, to suggest suitable job roles and career

paths. Additionally, it provides personalized skill enhancement recommendations, guiding users toward acquiring the necessary competencies to qualify for desired roles. By integrating real-time job market data, the application ensures that recommendations are accurate, up-to-date, and relevant.

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This solution empowers job seekers and professionals by offering targeted career guidance, reducing job search time, and improving job satisfaction. Moreover, it supports companies by facilitating efficient talent acquisition. The Skill/Job Recommender Application demonstrates the potential of technology-driven career solutions, reinforcing innovation and practical learning.

Output

![](_page_22_Figure_3.jpeg)

#### Raspberry Pi based Hand Gesture Recognition

Batch Members	Title of the Project
Deva Dharshini M Anusiya M Mariya Dhivya M	Raspberry Pi based Hand Gesture Recognition

#### Abstract

Hand gesture recognition is an innovative technology that enables humancomputer interaction (HCI) without physical contact. This project presents a Raspberry Pi-based Hand Gesture Recognition System designed to detect and interpret hand movements for controlling various applications such as smart home automation, robotic control, and assistive technologies.

The system employs a camera module connected to a Raspberry Pi, which processes real-time video feed using OpenCV and machine learning algorithms. Pre-trained deep learning models are utilized to recognize different hand gestures. These recognized gestures are then mapped to specific actions, such as controlling devices, navigating interfaces, or interacting with virtual environments.

This project offers a cost-effective, efficient, and user-friendly solution for gesture-based control, eliminating the need for physical controllers. It has applications in smart homes, gaming, robotics, and accessibility solutions for individuals with disabilities, making technology more intuitive, interactive, and inclusive.

#### Output

![](_page_23_Picture_7.jpeg)

![](_page_24_Figure_0.jpeg)

#### Smart Secured Door Lock System

Batch Members	Title of the Project
Manirathinam S	Smart Secured Door Lock
Harish R	System
Nithishkumar P	

#### Abstract

Traditional door lock systems are vulnerable to security threats such as key duplication, unauthorized access, and physical break-ins. To address these challenges, this project presents a Smart Secured Door Lock System that enhances home and office security using IoT and biometric authentication.

The system enables keyless entry through multiple authentication methods, including fingerprint scanning, RFID and PIN-based access. It is built using Arduino, which interfaces with fingerprint sensors, RFID readers, and PIN Module for access control.

This secure, efficient, and user-friendly solution provides an advanced level of security, making it ideal for homes, offices, and restricted areas. By integrating IoT and biometric authentication, the system ensures enhanced security, real-time monitoring, and remote accessibility, offering a modern and reliable smart lock solution.

### Output

![](_page_25_Picture_1.jpeg)

![](_page_25_Picture_2.jpeg)

## ART WORK

✓ Our ECE students C.Kamali from III Year have a talent for artwork..

![](_page_25_Picture_5.jpeg)

Art by C.Kamali III Year ECE

![](_page_26_Picture_0.jpeg)

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Art by C.Kamali

III Year ECE

✓ Our III Year ECE student, Dhanush Karthick D, has demonstrated exceptional artistic talent through his creative and expressive artwork.

![](_page_26_Picture_3.jpeg)

Art by D. Dhanush karthick III Year ECE  Our II Year ECE student, Bubalakannan R, showcases remarkable artistic talent through his unique and expressive creations.

Art by Bubalakannan.R II Year ECE

![](_page_27_Picture_2.jpeg)

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✓ Our II Year ECE student, Megarnisha Begum M, showcases remarkable artistic talent through his unique and expressive creations.

![](_page_27_Picture_4.jpeg)

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Art by Megarnisha Begum M II Year ECE

## **PHOTOGRAPHY**

Natural Photography captures the raw beauty of nature, highlighting landscapes, wildlife, and serene moments.

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 $\checkmark\,$  Captured by Dhanush Karthick D III ECE

![](_page_28_Picture_3.jpeg)

A timeless black and white capture of Chennai's iconic Marina Beach, showcasing its serene beauty and essence.

- ✓ Captured by Arun Prasath B III ECE

## VALUE ADDED COURSES

Value-added courses are designed to offer learner-centric, skill-oriented technical training, with the primary objective of enhancing students' employability skills while also providing opportunities to develop interdisciplinary competencies. Our department organized value-added courses for all students, equipping them with industry-relevant knowledge and practical skills.

#### NETWORKING USING CISCO PACKET TRACER

The Department of Electronics and Communication Engineering conducted a three-day Value Added Course on "Networking using CISCO Packet Tracer" from January 19, 2023, to January 21, 2023. The course aimed to provide a platform for gaining in-depth knowledge of computer networks and their functionalities using connecting devices. Additionally, it offered hands-on training on creating networks using CISCO Packet Tracer.

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![](_page_29_Picture_5.jpeg)

#### 2 VALUE ADDED COURSE ON VLSI DESIGN USING XILINX

The ECE Department successfully conducted a Three-Day Value-Added Course on VLSI Design from 24.07.2023 to 26.07.2023. The primary objective of this course was to provide students with a fundamental understanding of VHDL coding and various modeling techniques such as structural, behavioral, dataflow, and schematic-based VLSI design using Xilinx tools.

All III-year ECE students actively participated in the sessions. By the end of the course, they had acquired practical knowledge of digital circuits, VHDL programming and simulation techniques enhancing their skills in VLSI design and implementation.

![](_page_30_Picture_3.jpeg)

## **GUEST LECTURES**

Guest Lecture on "Design and Manufacturing in Automotive Audio Systems"

The Department of Electronics and Communication Engineering organized a guest lecture on "Design and Manufacturing in Automotive Audio Systems" on 15.06.2022. The session was delivered by Mr. M. Mothish Kumar, Manager, Fluke Corporation, Bangalore.

During the lecture, he provided insights into various testing stages of audio systems in the automobile industry and explained the product lifecycle essential for automobile manufacturing. The session enriched students' understanding of automotive audio system design, testing, and production processes.

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![](_page_31_Picture_1.jpeg)

![](_page_31_Picture_2.jpeg)

#### Inauguration of ECE Department Association & IoT Workshop

The Electronics and Communication Engineering Department Association was inaugurated on 17.08.2022 by the Chief Guest, Mr. M. Vignesh, Senior Technical Engineer, Livewire, Karur. The event was attended by Heads of various departments, faculty members, and students of the ECE department.

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Following the inauguration, a two-day workshop on "Real-Time Applications on IoT" was conducted by Mr. M. Vignesh for III-year ECE students from 17.08.2022 to 18.08.2022. The workshop provided hands-on training on interfacing microcontroller boards for real-time applications using the online simulation platform Tinkercad. The session enhanced students' practical knowledge and technical skills in IoT-based implementations.

![](_page_32_Picture_2.jpeg)

### Guest Lecture on "Wireless Sensor Network Management using Lora Technology"

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The Department of Electronics and Communication Engineering conducted a guest lecture entitled Wireless Sensor Network Management using Lora Technology on 17.10.2022. The session was handled by Mr. M. Parthiban, Technical Product Manager, Caliber Embedded India Pvt. Ltd., Salem. The guest discussed on electronics with its real time applications, node MCU and its usage in various applications, sensor connections in a network, forming a mesh network and managing it.

![](_page_33_Picture_1.jpeg)

## **ALUMNI INTERACTION**

# Chitchat with Alumna on "Career opportunities in Communication Engineering"

A session titled "Chit-Chat with Alumnus" was conducted for II, III, and IV year ECE students on 19th April 2023. Mr. Hari M. Rajkumar delivered an insightful talk on Career Opportunities in Communication Engineering, sharing his industry experience and providing valuable tips on job opportunities in core and IT-based companies. The session was highly informative and benefited students in understanding career prospects in the field.

![](_page_33_Picture_5.jpeg)

![](_page_34_Picture_0.jpeg)

![](_page_34_Picture_1.jpeg)

## **VUYHAA '23**

Our ECE students enthusiastically participated in various events at "VYUAA'23" conducted on February 10, 2023, demonstrating their creativity and skills in Solo Dance, Short Film, Cooking Without Fire, Mimicry, Face Painting, Craftwork, Mime, Solo Singing, Instrumental Music, and Group Dance. A moment of immense pride for the department came when our III year ECE girls secured the First Prize in the Dance Competition with their outstanding performance, showcasing remarkable talent and dedication.

![](_page_34_Picture_4.jpeg)

## **STUDENT ACHIEVEMENTS**

GRANT RECEIVED FROM TNSCST STUDENT PROJECT SCHEME

The project "Self-Charging E-Bike", developed by B. Nitish, A. Kavin, V. Govindaraj, and K. Sunilprasad from the ECE department, under the guidance of Dr. M. Kumar, has been successfully funded under the TNSCST project scheme. This achievement highlights the students' innovative approach and technical expertise, bringing recognition to the department.

![](_page_35_Picture_3.jpeg)

## **INDUSTRIAL VISIT**

On April 6th and 7th, 2023, II, III, and final-year ECE students participated in an industrial visit to Traco Cable Company Limited, Kochi, and Kanan Devan Hills Plantations Company Limited, Munnar Tea Factory. A total of 97 students and 4 faculty members from the ECE department took part in this enriching experience. At Traco Cable Company Limited, Kochi, visited on April 6th, students gained valuable insights into the cable manufacturing process, materials used, and various types of cables used in different applications. The visit to Kanan Devan Hills Plantations Company Limited, Munnar, on April 7th, provided students with a detailed understanding of the tea powder manufacturing process.

![](_page_36_Picture_1.jpeg)

![](_page_36_Picture_2.jpeg)

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![](_page_36_Picture_3.jpeg)

## **PLACEMENTS**

We are proud to announce that our final-year ECE students have secured placements in various esteemed companies. Their success reflects the department's commitment to excellence in technical education and career development.

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NAME OF THE COMPANY		NO. OF STUDENTS
Æ	ZF Global Technology	03
PEGATRON	Pegatron Technology India Pvt Ltd	14
RENAULT NISSAN MITSUBISHI	Renault Nissan Technology & Business Centre India Pvt Ltd	03
	Mallow Technologies Pvt Ltd	01
VDart	VDart Technologies Pvt Ltd	01
KGiSL	KGiSL technologies private limited	02
Amphenol Omniconnect India Private Limited	Amphenol Omniconnect India Pvt Ltd	05
C.R.I. PUMPS Pumping trust. Worldwide.	C.R.I. Pumps Private Limited	03
	The Chennai Mobiles	01
TVS Training Services	TVS Training and Services Ltd.	01

ABI-SHOWATECH	ABI Showatech India Pvt Ltd	01
FACE Prep	Face Prep	01
TaSa IT Services Creating Better place to Work	TASA IT Services	01
SmartDV	SmartDV Technologies India Private Limited	01
MAXimum Value for You	MAXVY Technologies Pvt Ltd	01

## FACULTY CONTRIBUTIONS AND PARTICIPATIONS

#### Dr. M. Kumar

- Dr. M. Kumar published a research paper titled "Analysing the Performance Tradeoffs of Parameterized VLSI Architecture Using Tree-Learning System" in the ICTACT Journal on Microelectronics, Vol. 9, Issue 1, pp. 1498-1502, April 2023 (ISSN: 2395-1680). DOI: 10.21917/ijme.2023.0259.
- Dr. M. Kumar published a research paper titled " An Improved Segmentation Method for Brain Cancer using Capsule Neural Networks" in the ICTACT Journal on Image & Video Processing, Vol. 13, Issue 4, pp. 2987-2994, May 2023 (ISSN: 0976-9102). DOI: 10.21917/ijivp.2023.0425.

Dr. M. Kumar successfully completed the NPTEL course on "Introduction to Machine Learning" from January to March 2023, gaining insights into fundamental and advanced concepts in machine learning.

#### Dr. B. Deepa

- Dr. B. Deepa participated in the FDP on "Inculcating Universal Human Values in Technical Education", organized by AICTE, from November 14 to 18, 2022. Additionally, she completed a certification course on "CCNAv7 - Introduction to Networks" through Cisco Networking Academy, further strengthening her expertise in networking.
- Dr. B. Deepa presented a research paper titled "A Machine Learningbased Accurate Localization Technique for 5G Networks" at the 2023 Third International Conference on Artificial Intelligence and Smart Energy (ICAIS), published in IEEE Xplore (ISBN: 978-1-6654-6216-7, Part Number: CFP23OAB-ART), pp. 622-626, February 2023. DOI: 10.1109/ICAIS56108.2023.10073924.
- Dr. B. Deepa's research work "Multimode Textile Array Antenna for Millimeter Wave Wearable Applications" was published in the Journal of Communications, Vol. 17, Issue 11, pp. 941-947, November 2022 (ISSN: 1796-2021 Online, 2374-4367 Print). DOI: 10.12720/jcm.17.11.941-947.

#### Mr. P. Selvan

Mr. P. Selvan attended an FDP on "Powering IoT using Arduino/Raspberry Pi" under the Naan Mudhal Scheme (SkilsDA) from September 26 to 30, 2022. Additionally, he participated in an FDP on "Intellectual Property Rights and Patent Filing" organized by M. Kumarasamy College of Engineering, Karur, from December 1 to 7, 2022.

#### 4 Ms. D. Ragavi

Ms. D. Ragavi enriched her expertise by attending multiple FDPs, including "Emerging Trends in Machine Learning and Deep Learning Techniques" at Madanapalle Institute of Technology & Science from January 2 to 6, 2023, and "Inculcating Universal Human Values in Technical Education" conducted by AICTE from April 3 to 7, 2023. . . . . . . . . . . . . . .

#### Mr. M. Prabhakaran

- Mr. M. Prabhakaran contributed to mentoring students by engaging in the "Professional Readiness for Innovation, Employability, and Entrepreneurship Program on Emerging Technologies" (Artificial Intelligence, Applied Data Science, Data Analytics, IoT, Cloud App Development), organized by IBMCEP, from February 13 to 17, 2023.
- Mr. M. Prabhakaran and S. T. P. Senthil Kumar published the paper "Smart Car Parking System using IR Sensor," published in the International Research Journal of Engineering and Technology (IRJET), Vol. 09, Issue 12, pp. 1166-1169, December 2022 (e-ISSN: 2395-0056). Link: IRJET-V9I12195.

#### 5 Mr.S.T.P.Senthil Kumar

Mr. S. T. P. Senthil Kumar and Mr. M. Prabhakaran published the paper "Smart Car Parking System using IR Sensor," published in the International Research Journal of Engineering and Technology (IRJET), Vol. 09, Issue 12, pp. 1166-1169, December 2022 (e-ISSN: 2395-0056). Link: IRJET-V9I12195.

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**Faculty Editors** 

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1. Mr.P.Selvan, ASP/ECE 2. Mrs.A.Karthikeyani, AP/ECE

#### **Student Coordinators**

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