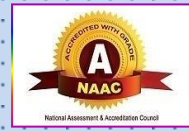




# ERODE SENGUNTHAR ENGINEERING COLLEGE



(An Autonomous Institution)

(Approved by AICTE, New Delhi Permanently Affiliated to Anna University - Chennai)

Accredited by NAAC & National Board of Accreditation (NBA), New Delhi.)

PERUNDURAI, ERODE – 638 057

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### Vision

- ✦ To provide competent and ethical electrical engineers finding solution to problem related to society, environment and industry using innovative technologies.

### Mission

- ✦ To make a positive difference among electrical and electronics engineering students through innovative teaching learning methods
- ✦ To provide electrical and electronics engineering knowledge base at large for the upliftment of different background people
- ✦ To instill research oriented mindset and to develop well-furnished electrical and electronics engineering research labs
- ✦ To inculcate the moral and ethical values among students in order to make them competent and quality electrical and electronics engineers

### Program Educational Objectives (PEOs)

- ✦ **CORE COMPETENCE:** To impart fundamental electrical and electronics engineering knowledge through collaborative and case study methods of teaching learning process
- ✦ **BREADTH:** To produce quality electrical and electronics engineering graduates with in-depth technical knowledge including current issues and challenges in this field
- ✦ **LEARNING ENVIRONMENT:** To develop and enhance research based facilities so as to address the industrial issues and challenges
- ✦ **PROFESSIONALISM:** To imbibe effective communication, interpersonal and other managerial skills for the holistic development of EEE students

### 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 Outcomes (PSOs)

**PSO1: Real World Knowledge-** Apply the knowledge in solving the real time problems and solutions to issues and challenges in Electrical and Electronics Engineering technologies.

**PSO2: Interdisciplinary Skill-** Design and develop interdisciplinary and innovative system.

**PSO3: Personality Development** – Imparting effective communication, team work and leadership skills for a successful career in industry and R&D.

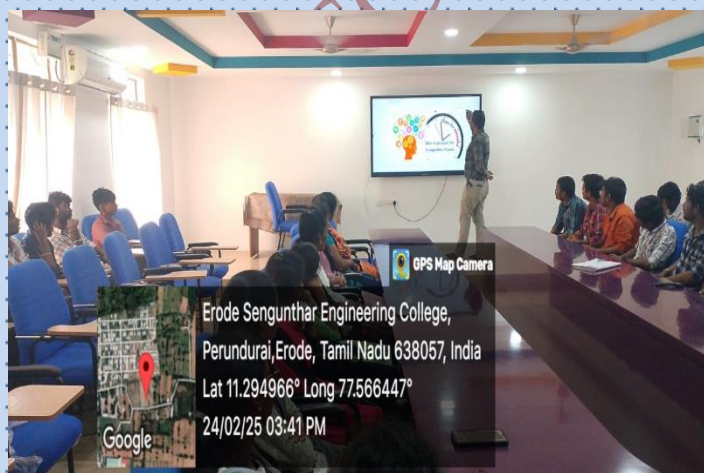
## CAREER GUIDANCE ACTIVITIES



Awareness Program on “Higher Education in India and Abroad”” was conducted on 03.02.2025. Edwin Bros D S, Branch Manager, Bluestone Overseas Consultants, Salem and Coimbatore was the resource person. More than 200 students were participated in this function.



Guidance Program on “Aspirants Guide to Excelling in competitive exams” was conducted on 17.02.2025. Mr. Arun Kumar Kandasamy, Assistant Professor, ECE, ESEC IAS Academy In-Charge was the resource person. More than 200 students were participated in this function.



Guidance Program on “Aspirants Guide to Excelling in competitive exams” was conducted on 24.02.2025. Mr. Arun Kumar Kandasamy, Assistant Professor, ECE, ESEC IAS Academy In-Charge was the resource person. More than 200 students were participated in this function.





Personality Development Program on “Time and Priority Management & Stress Management” was conducted on 07.03.2025. Jc. D. Navaneethakrsishnan, Jc.B.Abraham Anand, Zonal Trainer, Zone 17, JCI, India was the resource person. More than 200 students were participated in this function.

## FACULTY PRESENTATION IN NATIONAL / INTERNATIONAL CONFERENCE

- ❖ Dr.P.Selvan, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI-based control system for wireless EV charging with real-time battery monitoring ”, in 2<sup>nd</sup> International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024), Organized by Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru, 13<sup>th</sup> & 14<sup>th</sup> December 2024.
- ❖ Dr.P.Selvan, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI-Powered Wireless EV Charging with Real time Battery Monitoring and Optimization ”, in 6<sup>th</sup> International Conference on Computing Intelligence and Industry 5.0 (ICCI – 2025) , Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Dr.P.Selvan, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Solar Wireless Power Bank with USB Facility ”, in National Conference on Innovation in Engineering and Technology NCIET 2025, Organized by Department of Electrical and Electronics Engineering, R P Sarathy Institute of Technology, Salem, 19<sup>th</sup> April 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Multi-Version Yolo Approaches for Robust Image Identification: Exploring V3, V5, and V8 ”, in 4th International Conference on Intelligent Systems and



Sustainable Computing (ICISSC-2024) , Organized by Department of Electrical and Electronics Engineering, Malla Reddy University, Hyderabad, 20<sup>th</sup> & 21<sup>st</sup> December 2024.

- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Thermal Analysis of EV Power train: Winding and IGBT Temperatures under varying conditions ”, in 9th International Conference on Engineering Technology and Science (ICETS’25), Organized by Department of Electrical and Electronics Engineering, Muthayammal College of Engineering, Rasipuram , 28<sup>th</sup> March 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Analysis of Solar Photovoltaic System Shading ”, in 9th International Conference on Engineering Technology and Science (ICETS’25), Organized by Department of Electrical and Electronics Engineering, Muthayammal College of Engineering, Rasipuram , 28<sup>th</sup> March 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Integration of ANN-Based MPPT and SEPIC Converter for Improved Efficiency in Solar-Powered BLDC Motor Drives”, in IEEE Technical Cosponsored International Conference on "Computational Innovations and Engineering Sustainability , Organized by Department of Electrical and Electronics Engineering, PSG College of Technology, Coimbatore, 24<sup>th</sup> to 26<sup>th</sup> April 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI-Integrated Solar Powered Autonomous Electric Vehicle and a Zero Tailpipe Emission Analysis ”, in IEEE Technical Cosponsored International Conference on "Computational Innovations and Engineering Sustainability , Organized by Department of Electrical and Electronics Engineering, PSG College of Technology, Coimbatore, 24<sup>th</sup> to 26<sup>th</sup> April 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Cascaded Interleaved DC to DC Converter for Bidirectional Electric Vehicle Charging Station ”, in 5th International Conference on Computer Vision and Robotics (CVR2025) , Organized by Department of Electrical and Electronics Engineering, National Institute of Technology, Goa , 25<sup>th</sup> & 26<sup>th</sup> April 2025.
- ❖ Dr.M.Shyamalagowri, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Waste-to-Energy: A Sustainable Solution for Environmental Conservation. ”, in Fifth National Conference on “Recent Advancements in Science, Engineering

& Technologies (RASET 2025), Organized by Department of Electrical and Electronics Engineering, Bannari Amman Institute of Technology, Sathy, 5<sup>th</sup> & 6<sup>th</sup> May 2025.

- ❖ Dr.R.Muthukumar, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Current Protection Based High Gain DC-DC Converter For EV Charging Applications ”, in International Conference on Power Electronics and Renewable Energy Systems , Organized by Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai, 20<sup>th</sup> & 21<sup>st</sup> December 2024.
- ❖ Dr.R.Muthukumar, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Face Tracking Mini Drone ”, in 5th International Conference on Artificial Intelligence, 6G Communications and Network Technologies (ICA6NT – 2025) , Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 27<sup>th</sup> & 28<sup>th</sup> March 2025.
- ❖ Dr.P.Karuppusamy, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Automatic Railway Gate Control and Track Crack Detection System using IOT ”, in National Conference on Renewable and sustainable Energy technologies (RESET 2025), Organized by Department of Electrical and Electronics Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, 28<sup>th</sup> th & 29<sup>th</sup> January 2025.
- ❖ Dr.P.Karuppusamy, Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Fault Detector in Transmission Line ”, in First National Conference on Green and Sustainable Innovations in Electrical, Electronics and Biomedical Engineering (GSIEEB 25), Organized by Department of Electrical and Electronics Engineering, Vivekanandha College of Engineering for Women, Tiruchengode, Namakkal, 9<sup>th</sup> April 2025.
- ❖ Dr.L.Anbarasu, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI based system for real time electric theft identification ”, in 2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024), Organized by Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru, 13<sup>th</sup> & 14<sup>th</sup> December 2024.
- ❖ Dr.L.Anbarasu, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ IoT Based Smart Energy Meter With Theft Detection ”, in 5<sup>th</sup> International Conference on Artificial Intelligence, Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 27<sup>th</sup> & 28<sup>th</sup> March 2025.

- ❖ Dr.L.Anbarasu, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Enhanced Efficiency In Three-Phase Grid-Connected Solar PV Systems Using Streamlined Power Regulation Techniques”, in 5<sup>th</sup> International Conference on Artificial Intelligence, Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 27<sup>th</sup> & 28<sup>th</sup> March 2025.
- ❖ Dr.L.Anbarasu, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI based system for real time electric theft identification, in 6<sup>th</sup> international conference on Computational Intelligence and Industry 5.0 – ICCII 2025 (ISBN Number 978-81-967851-2-3), Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Dr.A.Johny Renoald, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Real-Time Monitoring And Alert System For Earthing Integrity In Electrical Installations ”, in 2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024), Organized by Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru, 13<sup>th</sup> & 14<sup>th</sup> December 2024.
- ❖ Dr.A.Johny Renoald, Associate Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ IoT based Real time monitoring and Fault Isolation System for Street light, in 6<sup>th</sup> international conference on Computational Intelligence and Industry 5.0 – ICCII 2025 (ISBN Number 978-81-967851-2-3), Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Mr.E.Immanuvel Bright, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Current Protection Based High Gain DC-DC Converter For EV Charging Applications ”, in International Conference on Power Electronics and Renewable Energy Systems , Organized by Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai, 20<sup>th</sup> & 21<sup>st</sup> December 2024.
- ❖ Mr.E.Immanuvel Bright, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Enhancing Electric Vehicle Performance Through Advanced Metaheuristic MPPT Based PV System and PMSM Control ”, in International Conference on Power Electronics and Renewable Energy Systems , Organized by Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai, 20<sup>th</sup> & 21<sup>st</sup> December 2024.



- ❖ Mr.E.Immanuvel Bright, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Synergistic Energy Intergeration, Power Generation, Biofuel Production and Methane Pyrolysis”, in IEEE International Students Conference SCEECS’25, Organized by Maint, Bhopal , 18<sup>th</sup> & 19<sup>th</sup> January 2025.
- ❖ Mr.E.Immanuvel Bright, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ AI based Morpho-Class Net Classifier with HOG Approach for Bone Marrow Cell Classification ”, in International Conference on Information and Communication Systems (ICICS-2025), Organized by Department of Electrical and Electronics Engineering, Vidyavardhaka College of Engineering, Mysuru , 4<sup>th</sup> & 5<sup>th</sup> February 2025.
- ❖ Mr.E.Immanuvel Bright, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Automated Breast Cancer Detection Using Advanced Preprocessing and Improved VGG - 16 Model ”, in International Conference on Information and Communication Systems (ICICS-2025), Organized by Department of Electrical and Electronics Engineering, Vidyavardhaka College of Engineering, Mysuru , 4<sup>th</sup> & 5<sup>th</sup> February 2025.
- ❖ Mr.E.Immanuvel Bright, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “ Hybrid Energy generation System Harnessing Waste Energy with Boost Converter and Inverter Based Control , in 6<sup>th</sup> international conference on Computational Intelligence and Industry 5.0 – ICCII 2025 (ISBN Number 978-81-967851-2-3), Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Solar Powered Electric Vehicles: High Gain Sepic Converter with Neural Network MPPT”, in International Conference on Power Electronics and Renewable Energy Systems , Organized by Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai, 20<sup>th</sup> & 21<sup>st</sup> December 2024.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Intelligent Transformer Monitoring: An IoT Based Approach to improving Transmission Reliability and Efficiency”, in International Conference on Power Electronics and Renewable Energy Systems , Organized by Department of Electrical and Electronics Engineering, Rajalakshmi Engineering College, Chennai, 20<sup>th</sup> & 21<sup>st</sup> December 2024.

- ❖ Mrs.S.Tamil Selvi, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Innovative Storage Solution for Reliable Renewable Energy Source Grid Integration ”, in National Conference on Renewable and sustainable Energy technologies (RESET 2025), Organized by Department of Electrical and Electronics Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, 28<sup>th</sup> & 29<sup>th</sup> January 2025.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Modified Recurrent Neural Network with Firefly Optimization for. IoT Network Intrusion Detection ”, in International Conference on Information and Communication Systems (ICICS-2025), Organized by Department of Electrical and Electronics Engineering, Vidyavardhaka College of Engineering, Mysuru , 4<sup>th</sup> & 5<sup>th</sup> February 2025.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Innovative Storage Solution for Reliable Renewable Energy Source Grid Integration ”, in 2025 Second International Conference on Emerging Trends in Electrical Machines, Power and Energy Systems- EMPOWER 2025, Organized by Department of Electrical and Electronics Engineering, SRM Institute of Science and Technology, Ramapuram , 25<sup>th</sup> & 26<sup>th</sup> February 2025.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Efficient Energy Storage System for Renewable Energy Source Integration to Grid”, in 3rd IEEE International Conference on Device Intelligence Technologies (DICCT-2025), Computing, and Communication, Organized by Graphic Era, Deemed to be University, Dehradun, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Mrs.S.Tamil Selvi, Assistant Professor,Department of Electrical and Electronics Engineering has presented a paper on the topic “ Performance Analysis of Resonant Converter FED Drive For An Electric Vehicle”, in 5th international Conference on Trends in Material Science and Inventive Materials(ICTMIM-2025), Organized by Rohini College of Engineering and Technology, Kanyakumar, 7<sup>th</sup> to 9<sup>th</sup> April 2025.
- ❖ Mrs.N.Jothipriya, Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ IoT Powered Farming with Multipurpose Robot using Renewable Energy ”, in National Conference on Renewable and sustainable Energy technologies (RESET 2025), Organized by Department of Electrical and Electronics Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, 28<sup>th</sup> & 29<sup>th</sup> January 2025.

- ❖ Mrs.N.Jothipriya, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “ Design and Development of a Multi-Purpose Agricultural Robot Using Arduino Powered Internet of Things (IoT) Technology”, in International Conference , Organized by Department of Electrical and Electronics Engineering, SRM Institute of Science and Technology, Chennai, 25<sup>th</sup> & 26<sup>th</sup> February 2025.
- ❖ Mrs.N.Jothipriya, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Voice Based Home Automation”, in National Conference, Organized by Department of Electrical and Electronics Engineering, Er.Perumal Manimekalai College of Engineering, Hosur, 22<sup>nd</sup> April 2025.
- ❖ Mrs.N.Jothipriya, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Arduino Based Multipurpose Agricultural Robot Power by Internet of things (IoT) Technology”, in 5th international Conference on Trends in Material Science and Inventive Materials (ICTMIM-2025), Organized by Rohini College of Engineering and Technology, Kanyakumar, 7<sup>th</sup> to 9<sup>th</sup> April 2025.
- ❖ Mr.P.Karthikeyan, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Battery management system for electric vehicle using AI”, in 2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024), Organized by Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru, 13<sup>th</sup> & 14<sup>th</sup> December 2024.
- ❖ Mr.P.Karthikeyan, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Thermotwin Water Controller”, in 5<sup>th</sup> International Conference on Artificial Intelligence, Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 27<sup>th</sup> & 28<sup>th</sup> March 2025.
- ❖ Mr.P.Karthikeyan, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “ Artificial Intelligence Based Battery Monitoring System For Electric Vehicle” , in 6<sup>th</sup> international conference on Computational Intelligence and Industry 5.0 – ICCH 2025 (ISBN Number 978-81-967851-2-3), Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Mrs.K.Preetha, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Soft Switching Converter based EV Fast Charging StationDeploying Sustainable Energy ”, in 2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024), Organized by Department of Electrical



and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru, 13<sup>th</sup> & 14<sup>th</sup> December 2024.

- ❖ Mrs.K.Preetha, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “ Sustainable Energy Powered EV Fast charging station with soft switching converter” , in 6<sup>th</sup> international conference on Computational Intelligence and Industry 5.0 – ICCII 2025 (ISBN Number 978-81-967851-2-3), Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 21<sup>st</sup> & 22<sup>nd</sup> March 2025.
- ❖ Mrs.K.Preetha, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Development of a Hybrid Energy Storage System with Batteries and Super capacitors”, in 5<sup>th</sup> International Conference on Artificial Intelligence, Organized by Department of Electrical and Electronics Engineering, Velammal Institute of Technology, Chennai, 27<sup>th</sup> & 28<sup>th</sup> March 2025.
- ❖ Mr Nivedhan V S , Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ IoT enabled smart energy meter for power theft prevention and cost Optimization using ESP8266 ”, in National Conference on Renewable and sustainable Energy technologies (RESET 2025), Organized by Department of Electrical and Electronics Engineering, Bannari Amman Institute of Technology, Sathyamangalam, Erode, 28<sup>th</sup> & 29<sup>th</sup> January 2025.
- ❖ Mr Nivedhan V S , Assistant Professor ,Department of Electrical and Electronics Engineering has presented a paper on the topic “ IoT enabled smart energy meter for power theft prevention and cost Optimization using ESP8266”, in SERB sponsored International Conference on Sustainable Electrical Engineering and Intelligent Systems, Organized by Department of Electrical and Electronics Engineering Sri Venkateshwara College of Engineering, Tirupati, 10<sup>th</sup> & 11<sup>th</sup> March 2025.
- ❖ Mr Nivedhan V S , Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Hybrid Footstep Electricity Generator for Standalone application”, in National Conference, Organized by Department of Electrical and Electronics Engineering, Er.Perumal Manimekalai College of Engineering, Hosur, 22<sup>nd</sup> April 2025.
- ❖ Mr Nivedhan V S , Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Automatic Fan Speed Control based on Temperature”, in National Conference, Organized by Department of Electrical and Electronics Engineering, Er.Perumal Manimekalai College of Engineering, Hosur, 22<sup>nd</sup> April 2025.

- ❖ Mr.P.Karputha Pandi, Assistant Professor, Department of Electrical and Electronics Engineering has presented a paper on the topic “Lagrange Key Management System For Data Transmission In Hybrid Cloud Security System”, in Global Conference in Emerging Technology (GINOTECH), Dr.D.Y.Patil Institute of Technology, Pune, IEEE Pune Section, 9<sup>th</sup> to 11<sup>th</sup> April 2025.

### **FACULTY PUBLICATIONS IN BOOK / BOOK CHAPTER**

- ❖ Dr.P.Selvan, Professor & Head of Electrical and Electronics Engineering has published a book chapter entitled “Electrical power Systems”, Book published in RK Publication, ISBN:978-93-48655-37-0.
- ❖ Dr.P.Selvan, Professor/HOD of Electrical and Electronics Engineering has published a book chapter entitled “AI-Based Control System for Wireless EV Charging with Real-Time Battery Monitoring and Management”, Book chapter published in Taylor and Francis, CRC press.
- ❖ Dr.M.Shyamalagowri, Professor of Electrical and Electronics Engineering has published a book chapter entitled “Nano coating for energy generation and conservation”, Recent Trends in Multidisciplinary Research, ISBN:978-1-304-61718-7, DOI: #10.25215/1304617181.06.
- ❖ Dr. R. Muthukumar, Professor of Electrical and Electronics Engineering has published a book chapter entitled “Integrating IoT and Machine Learning for Advanced Nuclear Structure Analysis." Integrating Machine Learning into HPC-Based Simulations and Analytics”, IGI Global Scientific Publishing. PP. 383-408, <https://doi.org/10.4018/978-1-6684-3795-7.ch015>.
- ❖ Dr.L.Anbarasu, Associate Professor of Electrical and Electronics Engineering has published a book chapter entitled “AI Based System for Real-Time Electric Theft Identification", Book chapter published in Taylor and Francis, CRC press.
- ❖ Dr.A.Johny Renoald, Associate professor of Electrical and Electronics Engineering has published a book chapter entitled “Real-Time Monitoring and Alert System for Earthing Integrity in Electrical Installations”, Book chapter published in Taylor and Francis, CRC press.
- ❖ Mrs.S.Tamilselvi, Assistant professor, “Text book of Electric Vehicle Technology” Book published in Scientific International Publisher. ISBN:978-93-6674-820-7.
- ❖ Mrs.K.Preetha, Assistant Professor of Electrical and Electronics Engineering has published a book chapter entitled “Soft Switching Converter-based EV Fast Charging Station Deploying Sustainable Energy”, Book chapter published in Taylor and Francis, CRC press.
- ❖ Mr.P.Karthikeyan, Assistant Professor of Electrical and Electronics Engineering has published a book chapter entitled “Battery Management System for Electric Vehicle Using AI ", Book chapter published in Taylor and Francis, CRC press.

## FACULTY PATENT PUBLICATIONS

- ❖ Dr.R.Muthukumar, Professor of Electrical and Engineering has published a patent on “ AI-driven Autonomous Drone Communication and Coordination System for Enhanced Aerial” on 21/03/2025 Application No. 202541019530 A, The Patent Office Journal No.21/2024 Dated 21.03.2025.
- ❖ Dr.R.Muthukumar, Professor of Electrical and Engineering has published a patent on “ Adaptive Neural Network System for Real-time Anomaly Detection in Dynamic Environments” on 14/03/2025 Application No. 20254108961 A, The Patent Office Journal No.14/2024 Dated 14.03.2025.

## FACULTY JOURNAL PUBLICATIONS

- ❖ Dr.R.Muthukumar, Professor of Electrical and Electronics Engineering has published a paper on,” A novel compact flower shaped antenna array for sub-6 GHZ and UWB applications. Wireless Networks, Vol 31,PP. 2925–2938 (2025). <https://doi.org/10.1007/s11276-025-03923-5>.
- ❖ Dr.L.Anbarasu, Associate Professor of Electrical and Electronics Engineering has published a paper on,” Certain investigations on performance analysis of different converter designs for smart micro-grid systems,” International Journal of Power Electronics and Drive Systems, Vol. 16, No. 1, March 2025, pp. 431–439, <http://doi.org/10.11591/ijpeds.v16.i1.pp431-439>.
- ❖ Dr. P. Karuppusamy, Professor of Electrical and Electronics Engineering has published a paper on “Automatic Railway Gate Crossing Control And Track Crack Detection System using IoT” IEEE Explore conference, DOI:10.1109/ICMCSI64620.2025.10883595. March 2025.
- ❖ Dr. P. Karuppusamy, Professor of Electrical and Electronics Engineering has published a paper on “Nine Level Double Boost Inverter with Modified PWM Control.” IEEE Explore conference, DOI:10.1109/ICMSCI62561.2025.10894437. April 2025.
- ❖ Dr.A.Johny Renoald, Associate professor of Electrical and Electronics Engineering has published a paper on “Enhancing energy efficiency in power looms: utilizing regression machine learning for electro-kinetic energy assessment.”, in Journal of the Textile Institute, vol.116, Issue no 6, June 2025, pp.1036–1061. <https://doi.org/10.1080/00405000.2024.2365753>
- ❖ E. Immanuvel Bright, Assistant professor of Electrical and Electronics Engineering has published a paper on "An Efficient Grid Integrated Hybrid Renewable Energy System with Battery Storage Using SEPIC Converter," SSRG International Journal of Electrical and Electronics Engineering, vol. 11, no. 9, pp. 333-343, Dec 2024.<https://doi.org/10.14445/23488379/IJEEE-V11I9P130>.



- ❖ E. Immanuvel Bright, Associate professor of Electrical and Electronics Engineering has published a paper on ,”Performance improvement of grid-connected PV systems using modified Cuk-Landsman converter and hybrid PI controller strategy. Electr. Eng 107, 6669–6691 (2025). <https://doi.org/10.1007/s00202-024-02884-w>.

### RESEARCH GRANTS / FUNDS RECEIVED

- ❖ Dr.L.Anbarasu, Associate Professor of Electrical and Electronics Engineering received sum of Rs.10,000/- from Tamilnadu skill development corporation, Nan Mudhalvan Niral Thiruvizha, Project titled “Intelligent system for perishable goods monitoring”.



**ERODE SENGUNTHAR  
ENGINEERING COLLEGE**

(An Autonomous Institution)

PERUNDURAI, ERODE.



Department of Electrical and Electronics Engineering



**TAMILNADU SKILL DEVELOPMENT CORPORATION**  
**Naan Mudhalvan Niral Thiruvizha**

### INTELLECTUAL SYSTEM FOR PERISHABLE GOODS MONITORING

SUPERVISED BY: DR. L.ANBARASU, ASP/EEE.

PRESENTED BY:  
ABISHAKE S, SAKTHIVEL A, SARAVANAN A, VIGNESH R

#### OBJECTIVES

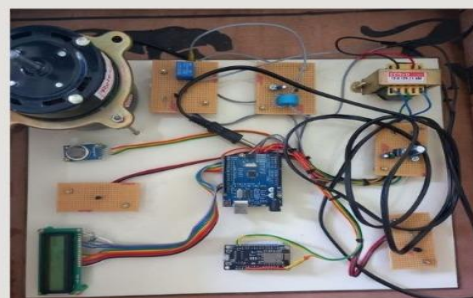
- The cold storage system continuously monitoring by IoT.
- Maintain optimal temperature and humidity conditions within a cold storage facility.
- Preventing from food spoilage and Preserving product quality.

#### ABSTRACT

- The cold storage system is monitoring and controlling using IoT. The microcontroller collect the real time data on critical parameters such as temperature, humidity, gas range from a respected sensors.
- The collected data are transfer wirelessly to a cloud platform. The LCD display the parameter values.
- If there is any deviations in parameters the microcontroller give alert message to users and also the relay module control the motor.

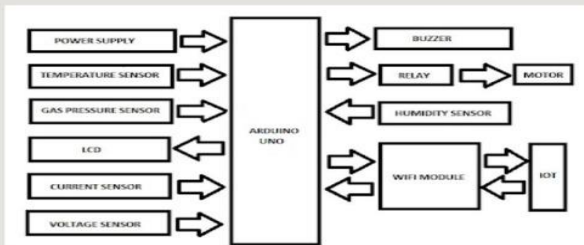
#### PROPOSED SYSTEM

- The microcontroller initially connected to the LCD .The Arduino Uno collects the sensors real time data. The Arduino Uno processes the data, comparing it to predefined thresholds. The sensor readings are displayed on the LCD.
- If any parameter exceeds its critical value, the Arduino Uno activates the buzzer and the relay to control the motor for cooling system.
- The Arduino Uno sends the sensor data to the WiFi Module. The WiFi Module transmits the data to the IoT platform (Ubidots).
- Users can monitor the cold storage environment through the IoT platform. The sensors continuously monitor the environment inside the cold storage. We set the critical values for temperature and gas level ,humidity range in the program.
- If temperature, humidity or gas level range is out of its critical values the relay module turn of the compression process. Then microcontroller send the alert message to authority person through the ESP8266wifi module.



#### NOVELTY OF THE PROJECT

- Use IoT to monitoring and controlling the smart cold storage system. The IoT sensors enable parameters like temperature ,humidity, gas levels, power supply conditions. The data transmission to Ubidots to allow the remote access and immediate alerts in case of deviations preventing spoilage.
- The automated control systems adjust cooling operations based on real time data, reducing energy consumption and costs. Users can monitor and control the Ubidots dashboard from any location with internet access providing flexibility and convenience.



## STUDENTS ACHIEVEMENTS AND AWARDS

- ❖ Selvi Vaisha. R, Selvi Subhashree. P of Second Year Electrical and Electronics Engineering has participated the event Silent Screams organized by Kongu Engineering College, Perundurai on 13.02.2025 and won II Prize.
- ❖ Selvan Logesh. R, Selvan Kavin. C of Second Year Electrical and Electronics Engineering has presented a project titled “Offline voice automation” organized by Vidiyal Welfare committee, Chennimalai on 16.02.2025 and won I Prize.
- ❖ Selvan Arinseyan. A, Selvan Dharsan. M, Selvan Nitheeskumar. M.G, Selvan Thomasraj. A of Third year Electrical and Electronics Engineering has presented a project titled “Smart organic air coolant” organized by Vidiyal Welfare committee, Chennimalai on 16.02.2025 and won II Prize.
- ❖ Selvan Arinseyan. A, Selvan Dharsan. M, Selvan Nitheeskumar. M.G, Selvan Thomasraj. A of Third year Electrical and Electronics Engineering has presented a project titled “IOT Welcome Lamp” organized by Vidiyal Welfare committee, Chennimalai on 16.02.2025 and won II Prize.
- ❖ Selvan Arinseyan. A, Selvan Rohith. G. of Third Year Electrical and Electronics Engineering has presented a project titled “IOT Rower” organized by Vidiyal Welfare committee, Chennimalai on 16.02.2025 and won III Prize.
- ❖ Selvan Gokul. S, Selvan Gopi. V, Selvan Mahesh raj. M of Second Year Electrical and Electronics Engineering has presented a project titled “Solar power bank” organized by Vidiyal Welfare committee, Chennimalai on 16.02.2025 and won III Prize.

## WORKSHOP / SEMINAR / PAPER PRESENTATION BY THE STUDENTS

- ❖ Selvi PujaSri. N of II Year Electrical and Electronics Engineering has participated in one-day Workshop on “Artificial Intelligence in Anti-Drone Systems for Defence Security Applications” organized by Karpagam institute of Technology, Coimbatore on 28.01.2025.
- ❖ Selvi Subhashree. P, Selvi Vaishnavi. M, Selvi Sandhiya. M, Selvi Jayavarthini. V, Selvi Vaisha. R, Selvi Aswini. M of II Year Electrical and Electronics Engineering has participated in one-day Workshop on “Revolutionizing Agriculture with Machine Learning” organized by Karpagam institute of Technology, Coimbatore on 12.02.2025.



- ❖ Selvan Gokul. G of II Year Electrical and Electronics Engineering has participated in one-day Workshop on “Design and Installation of Solar PV System” organized by Shree Venkateshwara Hi-Tech Engineering College, Gobi on 18.02.2025.
- ❖ Selvi Kanimozhi. R, Selvi Ilamathi. R of III Year Electrical and Electronics Engineering has participated in one-day Workshop on “Innovation in Royal Enfield Powertrains” organized by Hindusthan College of Engineering and Technology, Coimbatore on 04.03.2025.
- ❖ Selvi Subhashree. P, Selvi Sandhya. M, Selvi Pujasri. N, Selvi Vaisha. R, Selvi Aswini. M of II Year Electrical and Electronics Engineering has presented in Paper Presentation by Kongu Engineering College, Perundurai on 13.02.2025.
- ❖ Selvi Kanimozhi. R, Selvi Ilamathi. R of III Year Electrical and Electronics Engineering has presented in Paper Presentation by Hindusthan College of Engineering and Technology, Coimbatore on 04.03.2025.
- ❖ Selvan Naveenbalaji S of IV Year Electrical and Electronics Engineering has participated in Event of “Kanam’ 25” by Dr.N.G.P.Institute of Technology, Coimbatore on 08.02.2025.
- ❖ Selvan Raja. G, Selvan Pravanjan. D, Selvan Pugazhenth. N, Selvan Kannan. A, Selvan Bharath. R of II Year Electrical and Electronics Engineering has participated in Event of “Mind Morph / Web genix” by Karpagam Academy of Higher Education, Coimbatore on 13.02.2025.
- ❖ Selvan Gokul. G of II Year Electrical and Electronics Engineering has participated in Event of “TECHNOVANZA 2024-2025” by Jerusalem College of Engineering, Chennai on 15.02.2025.
- ❖ Selvan Arun Kumar. C, Selvan Suman Kumar Thakur, Selvan Sriramanujan S, Selvan Anuj Kumar of IV Year Electrical and Electronics Engineering has presented a paper in titled “IoT Based Smart Energy Meter for Power Theft Prevention and Cost Optimisation Using ESP8266” on National Conference by Bannari Amman Institute of Technology, Sathyamangalam on 28.01.2025 & 29.01.2025.
- ❖ Selvan Sabarishwaran. D, Selvan Naveenbalaji. S, Selvan Angamuthu. G, Selvan Gokul. K of IV Year Electrical and Electronics Engineering has presented a paper in titled “IoT-Powered Farming with Multipurpose Robot using Renewable Energy” on National Conference by Bannari Amman Institute of Technology, Sathyamangalam on 28.01.2025 & 29.01.2025.
- ❖ Selvan Sabarishwaran. D, Selvan Naveenbalaji. S, Selvan Angamuthu. G, Selvan Gokul. K of IV Year Electrical and Electronics Engineering has presented a paper in titled “Design and Development of a Multi-Purpose Agricultural Robot using Arduino Powered Internet of Things



(IOT) Technology” on International Conference by SRM Institute of Science & Technology, Chennai on 25.02.2025 & 26.02.2025.

### FACULTY AWARDS RECEIVED

- ❖ Dr.P. Selvan, Professor & Head of Electrical and Electronics Engineering received an award in the category of NPTEL motivated learner April 2025.
- ❖ Mrs.K.Preetha, Assistant Professor of Electrical and Electronics Engineering received an award in the category of NPTEL Believer April 2025.
- ❖ Mrs.K.Preetha, Assistant Professor of Electrical and Electronics Engineering received an award in the category of NPTEL discipline star April 2025.
- ❖ Mrs.K.Preetha, Assistant Professor of Electrical and Electronics Engineering received an award in the category of NPTEL enthusiast April 2025.



## FACULTY ACTED AS A JOURNAL REVIEWER

- ❖ Dr. P. Karuppusamy, Professor of Electrical and Electronics Engineering reviewed a paper “Applications of Artificial Neural Networks in Power Electronics” for Reviewer in Springer nature – Scientific Report, Jan 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Hybrid Beluga Whale Optimization (HBWO) for MPPT in PV-Powered Open-End Winding Induction Motor Drives” for Editor and Reviewer in Springer nature – Scientific Report, June 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Legal and Technical Ambiguities of Photovoltaic Integration in Multi- Family Buildings: A Case Study of the Polish Energy Grid” for Editor and Reviewer in Springer nature – Scientific Report, Jan 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Multimorbidity and High Risk of a Heart Disease in India: Application of Machine Learning Methods of Network Analysis and Classification and Regression Tree (CART).” for Editor and Reviewer in Springer nature – Scientific Report, Jan 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Direct Torque Control for a Six Phase Induction Motor Using a Fuzzy Based and Sliding Mode Controller” for Editor and Reviewer in Springer nature – Scientific Report, Jan 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Privacy-Preserving Federated Learning in Hyperledger Fabric Blockchain for Energy-Efficient Speed Control in Autonomous Vehicles.” for Reviewer in Computers and Electrical Engineering, Elsevier publication, May 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Resilient Sub-Synchronous Oscillation Damping Controller for Photovoltaic-Electric Vehicle Integration Under Variable Grid Conditions.” for Reviewer in Computers and Electrical Engineering, Elsevier publication, June 2025.
- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Adaptive Virtual Inertia Emulation Based on Policy Gradient Clipping for Low-inertia Microgrids with Phase-Locked Loop Dynamics.” for Reviewer in Computers and Electrical Engineering, Elsevier publication, April 2025.



- ❖ Dr. A.Johny Renoald, Associate Professor of Electrical and Electronics Engineering reviewed a paper “Optimized Intelligent Power Quality Control Strategy for Hybrid Alternating Current-Direct Current Microgrid with Electric Vehicle Charging.” for Reviewer in Computers and Electrical Engineering, Elsevier publication, Jan 2025.
- ❖ Ms. K. Preetha, Professor of Electrical and Electronics Engineering reviewed a paper “Applications of Artificial Neural Networks in Power Electronics” for Reviewer in Reviewer in IGI Global Scientific Publishing, Jan 2025.







**Dr P Selvan and Dr L Anbarasu**

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**Erode Sengunthar Engineering College, Perundurai, Erode - 638 057**

**Phone: 04294-232701, 702**