



Loyola-ICAM College of Engineering and Technology (LICET)
Department of Electrical and Electronics Engineering
Electrical Engineers League (EEL)

Under

AICTE – Scheme for Promoting Interests, Creativity and Ethics among Students
(SPICES)

Event Report

Category: Workshop

Title of the Event: Building and Programming Pure Sinewave and Square wave Inverters with
230-12V Ended Transformer Design and Fabrication

Date: 13-09-2022 to 15-09-2022 & 17-09-2022 (FOUR Days)

Venue: J13 (Classroom), F01 & F02 (Lab Venues)

Details of Participants

- Total No. of Participants: 60
- II EEE (Batch: 2021 – 2025) : NIL
- III EEE (Batch: 2020 – 2024): 58
- IV EEE (Batch: 2019 – 2023): NIL

Technological/ Academic/ Other Benefits generated by conducting the event with respect to:

(a) the institution	<ul style="list-style-type: none">● Establish thought leadership● Promote industry-institute collaboration● Showcase the facilities at the institution by bringing practicing engineers and entrepreneurs.
(b) the faculty	<ul style="list-style-type: none">● Support in teaching-learning process by promoting doing by learning● Practice Industrial strength listening● Clarifying faculty's image on the avenues of entrepreneurship in the field of electrical application circuits
(c) Students	<ul style="list-style-type: none">● Test an idea and generate an application circuit by designing blocks from scratch.● Skill Advancement and academic engagement/ engagement in scholarly activities
(d) Industry/ Society	<ul style="list-style-type: none">● Clarifying the image of the avenues of entrepreneurship● Contributing to make the literacy rate go higher thereby helping build a more educated, empowered and aware society

Proceedings of the event

Category: **Workshop**

Report on **Building Audio Amplifier through Transformer Design and Fabrication**

Date: 13-09-2022 to 15-09-2022 & 17-09-2022

Time: 09:00 am to 05:00 pm

Venue: J13 (Classroom), F01 & F02 (Lab Venues)

Resource Person: Mr. S. V. Sreeraj, Director, EmCog Solutions, Chennai &

Mr. Akshay, Product Developer and Trainer, EmCog Solutions, Chennai

Audience: III EEE (Batch: 2020 – 2024)

The Department of Electrical and Electronics Engineering has successfully organized a four Days Hands-on workshop on “Building and Programming Pure Sinewave and Square wave Inverters with 230-12V Ended Transformer Design and Fabrication” held from September 13th to 15th & 17th, 2022 for the Batch 2020-2024 Third Year V Semester EEE students at F01 and J13, LICET from 10 am to 5 pm. The following topics are covered with practical exposure during the four days hands-on workshop and the same was handled by Mr.SV.Sreeraj, Director and his Team, EmCog Solutions, Chennai.

Totally 15 batches are formed to develop their own prototype with hands-on training. The outcomes of the 4-days hands-on workshop have provided, students with the ability to design and fabricate their own prototypes for inverters with transformers controlled by PIC 16786FF microcontroller. These fundamental concepts and practical exposure will definitely help the students while doing the mini-projects and final-year projects. The Hands-on workshop delivered the conversion of fundamental theoretical concepts into design and fabrication of prototype development. This hands-on workshop enhanced the practical exposure to the real-time applications of power electronic converters using PIC microcontrollers.

Relevant Courses in the current semester

EC3301 Electronic Devices and Circuits

- Devices – Characteristics
- Amplifier

EE3303 Electrical Machines – I

- Transformers

EE3301 Electromagnetic Fields

- Electromagnet
- Magnetic field – flux

EE3251 Electric Circuit Analysis

- Voltage division Circuit
- Application of circuit laws and theorems

Relevant Program Outcomes

- PO1 – Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2 – Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3 – Design/development of solutions: Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4 – 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.
- PO5 – Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO9 – Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10 – 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.
- PO11 – 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.
- PO12 – Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

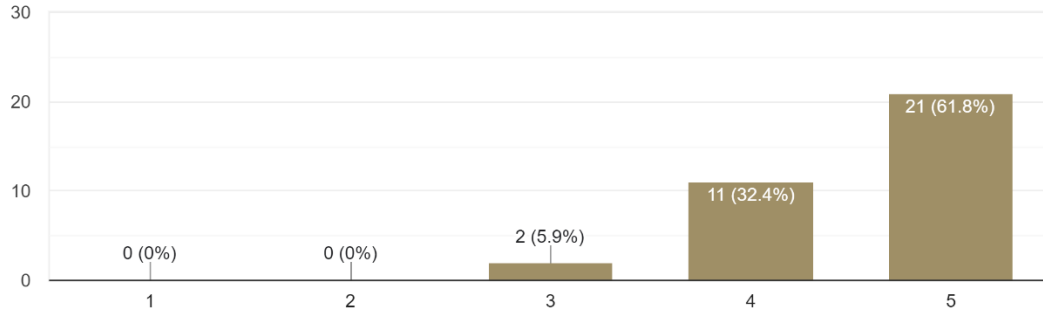
Schedule

Day	Date	Topics covered
Day-1	13.09.2022	Transformer Design and Development
Day-2	14.09.2022	Inverter Hardware Design
Day-3	15.09.2022	Developing Firmware for Sinewave Inverter
Day-4	17.09.2022	Fabrication of the whole setup, test, and troubleshooting

Feedback

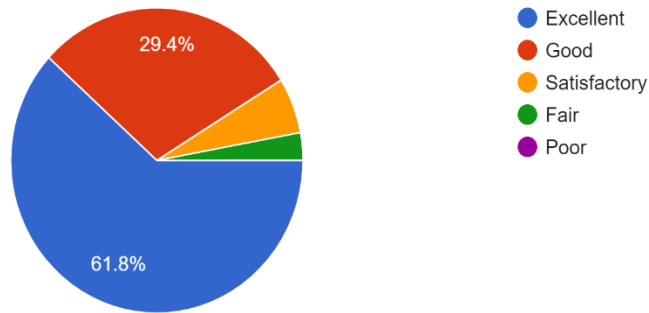
Rate the quality of the audio & video on a scale of 5. (5-Excellent; 4- Good; 3- Satisfactory; 2- Fair; 1-Poor)

34 responses



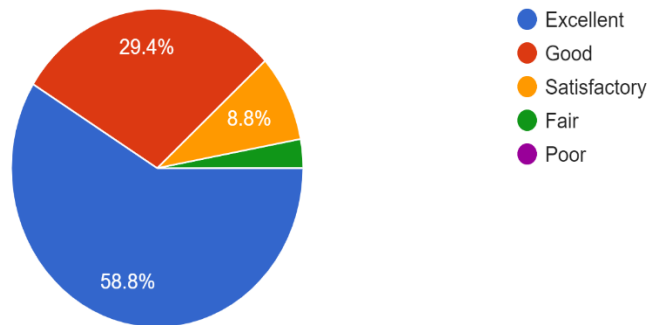
How effective was the VAC in enhancing your professional knowledge and skills?

34 responses



How effective was the VAC in achieving its learning objective?

34 responses



Your feedback on the resource person

