

# **Report on Hands on Training for PCB Design**

## Workshop Overview: Hands-On Training for PCB Design

The hands-on training workshop for PCB Design was organized by the SRM MTS Student Chapter in Association with the Department of Electrical and Electronics Engineering at SRM Institute of Science and Technology, Kattankulathur.

The workshop, conducted over a span of two days, featured MEF. Murugan. V who specializes in embedded systems and PCB designing, and Mr. Vadivelan R, Research Scholar EEE with specialization in Power Electronics.

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The event attracted a total of 24 registered participants, all of whom engaged in intensive learning and participation in the simulation and creation of a PCB design.

### Agenda of the Workshop

12/09/24

Forenoon

- KiCAD introduction, Circuit design
  - LED,5V,12V,General Purpose Band (Gerber file generation)

Afternoon

- PCB design PPT
- Dot board soldering and desoldering (LED circuit)
- Various PCB boards (component engineering)

#### 13/09/24

Forenoon

- PCB board making

Afternoon

- Testing and verification

# <u>Day 1:</u>

The first day commenced with an inaugural session, during which the keynote speaker was introduced and the initial session was initiated. This opening session provided an overview of the basics of KiCad, a software that facilitates the design and simulation of electronic hardware for PCB manufacturing. Attendees practiced the simulation of a basic LED circuit on KiCAD, with guidance from the speaker.

Post-lunch, attendees engaged in hands-on practice with soldering of a basic LED circuit, which they had previously simulated on KiCAD software.







#### Day 2:

The second day began with a session on the fabrication of PCB boards. The fabrication is a process in which a Clad PCB board first is cleaned with acetone, then has a given circuit drawn on to it using permanent marker. The board is then placed in distilled water (just enough to cover it) then mixed with Ferric chloride. This is done untill the solution turns orange. Next, after 30 - 40 minutes the top layer of the board will have dissolved revealing the green board. At this stage, we must clean the board with acetone to clear the permanent marker. After this, holes are drilled in the required places, (where components like ICs and LEDs are placed), after

which components of the circuit are soldered onto the board. Then the power supply was added allowing the LED circuit to be functional.











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