Simulation of Electrical Systems

June 8th to 13th 2026

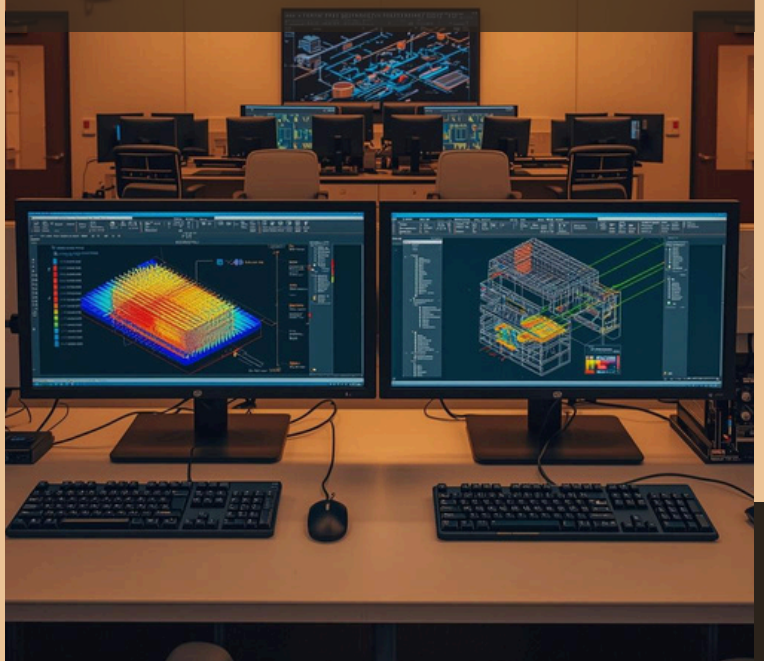
॥ सा विद्या या विमुक्तये ॥

भारतीय प्रौद्योगिकी संस्थान धारवाड

Indian Institute of Technology Dharwad

VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE V.J.T.I. ESTD 1887 MUMBAI 400019

Master the art of finite element simulations for electrical systems



WORKSHOP OVERVIEW

This intensive workshop provides hands-on training in Finite Element Method simulations for electrical systems analysis.

TOPICS COVERED

1. FEM Fundamentals
2. Mathematical foundations, variational principles, and weak formulations for electromagnetic problems.
3. Electrical System Modeling
4. Component representation, boundary conditions, and material property assignment.
5. Mesh Generation
6. Structured and unstructured meshing techniques, adaptive refinement strategies.
7. Solver Techniques
8. Direct and iterative solvers, convergence criteria, and computational optimization.
9. Post-Processing
10. Field visualization, data extraction, and results validation methods.

SCAN TO REGISTER

COURSE SCHEDULE

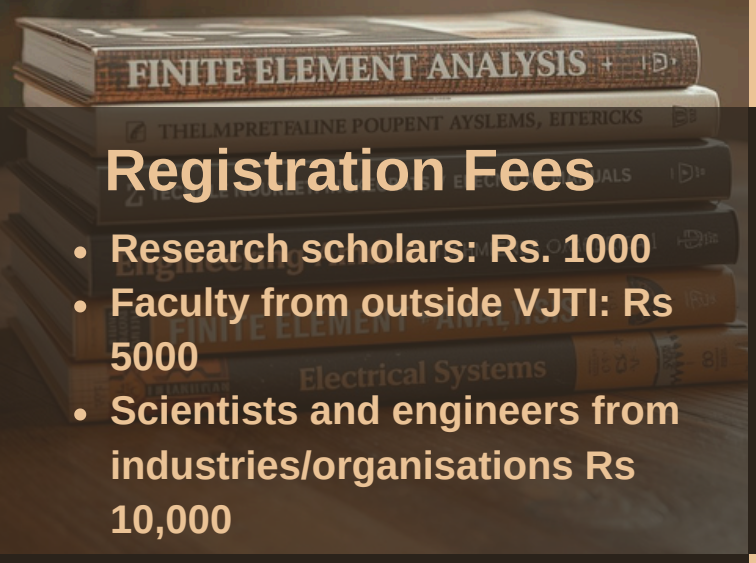
Day 1:
9:00 AM - Fundamentals of Electromagnetics for Electrical Applications
2:00 PM - Fundamentals of FEM Methodology
Day 2:
9:00 AM - Intro to Modelling of Low Frequency EM Problems
2:00 PM - Hands-on: Transformer with Circuit Coupling and Loss Calculation
Day 3:
9:00 AM - Modelling of Soft Magnetic Materials and Power Magnetics
2:00 PM - Hands-on – Modelling of power magnetics
Day 4:
9:00 AM - Modelling electromechanical devices and rotating machines
2:00 PM - Hands-on: Permanent Magnet Machines and Actuator
Day 5:
9:00 AM: Modelling of Induction Machines
2:00 PM: Hands-on: Torque Speed Characteristics of an Induction Motor
Day 6:
9:00 AM: Case studies on Advanced Multiphysics Analysis
2:00 PM: Exam on the usage of an FEM Tool for Sample Problems and the Valedictory Function

WORKSHOP DETAILS

Total Duration: 6 Days (36 Hours)
Daily Sessions: 9:00 AM - 5:00 PM
Hands-on: 12 Hours
Theory Sessions: 21 Hours
Location:
Max Participants: 35

Simulation of Electrical Systems

Advanced Engineering Training



Limited seats available. Secure your spot in this comprehensive hands-on workshop. Contact us for custom corporate training packages.

REGISTER TODAY

Registration Fees

- **Research scholars: Rs. 1000**
- **Faculty from outside VJTI: Rs 5000**
- **Scientists and engineers from industries/organisations Rs 10,000**

- Accommodation will be available, subject to availability
- Coordinators, CoE-AI will have final say in the selection of participants
- Payment has to be made using a Demand Draft (DD)
- Please send the DD to the following address

Krishna Kanakgiri
CoE-AI,
Simulation Lab,
Electrical Engineering Department,
VJTI, H.R. Mahajani Marg, Matunga,
Mumbai, 400019

Lead Instructor

Dr. Sai Ram Boggavarapu,
Assistant Professor, IIT Dharwad
10+ years of experience in FEM simulations and electromagnetic analysis.
More details: https://iitdh.ac.in/~sairam/

Co-Instructors:

Prof. S. V. Kulkarni
Professor and Dean R&D, IIT Bombay.
35+ years of experience in power transformer design and FEM analysis of electrical equipment.
More details: https://www.ee.iitb.ac.in/wiki/faculty/svk

Dr. Rahul K Bhat
Senior Simulation Engineer
10+ years in electromagnetic analysis. Specialises in motor design and power electronics modelling.

Coordinators

Krishna Kanakgiri & Dr. Sandeep Udmale

Centre of Excellence in Artificial Intelligence

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