About the Workshop:

This workshop is structured to offer participants an in-depth understanding of modern electrical machines and their intelligent control methodologies. It covers the fundamentals, working principles, and advanced control strategies of DC motors, induction motors, synchronous motors, reluctance motors, and their associated drive systems. A key focus of the program is on the integration of embedded systems for real-time machine control, utilizing platforms such as ESP-32 for IoT-based applications and FPGA (BASYS-3) for hardware-accelerated control implementations.

The workshop features interactive laboratory sessions, providing participants with hands-on experience using real hardware setups, embedded controllers, and FPGA boards. By the conclusion of the program, participants will have developed essential skills in the design, analysis, and intelligent control of electrical machines and drives skills that are highly relevant to today's industry demands.

In addition to technical knowledge, the workshop aims to foster problem-solving skills and innovative thinking in the field of electrical drive systems. Sessions will be handled by experienced faculty members ensuring both academic and practical perspectives. This program serves as an ideal platform for faculty members, Research Scholars and Students to bridge the gap between conventional electrical engineering concepts and modern intelligent applications.

Participants will also have opportunities to interact with resource persons for career guidance and research discussions.

Program Schedule:

Day 1: 15th Sept 2025
FN Session : Embedded Systems for Machines
AN Session : Introduction to FPGA

Day 2: 16th Sept 2025
FN Session : Demonstration on Real Time Projects
AN Session : Demonstration on Real Time Projects

Day 3: 17th Sept 2025
FN Session : DC Motors
AN Session : Lab Session for DC Motors

Day 4: 18th Sept 2025
FN Session : Induction Motors
AN Session : Synchronous Motors

Day 5: 19th Sept 2025
FN Session : Synchronous Motors ;Reluctance Motors and Drives
AN Session : Lab Session for Induction & Synchronous Motors

Day 6: 20th Sept 2025
FN Session : Reluctance Motors and Drives
AN Session : Lab Session for Electrical Drives

Course Objectives:

- Understand and operate various electrical machines and their drives.
- Learn embedded systems and FPGA applications in machine control.
- Gain exposure to real-time project demonstrations.

A Six-Day Workshop on Insights of Intelligent Electrical Drives (I^2ED)

15th Sept – 20th Sept, 2025

Organized by

Department of Electrical and Electronics Engineering
National Institute of Technology Tiruchirappalli
Tamil Nadu – 620 015.

Sponsored by

Ministry of Electronics and Information Technology

Coordinator:
Dr. P. Raja,
Associate professor,
NIT Tiruchirappalli.
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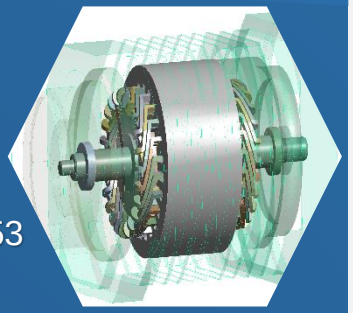

Venue:
Department of EEE,
NIT Tiruchirappalli.

Registration Details:

Participants : Faculty members, Research Scholars, PG and UG (Final year) students.
Registration Fee : Rs. 500/-
Registration (First come, First served) Link:
https://forms.gle/Ev64D464hUcMafFs7

Shortlisted candidates will receive the payment link via registered email.

Important Dates:

Last Date of Registration	: **08-09-2025**
Confirmation to the Participants	: **09-09-2025**
Payment last date	: **10-09-2025**

Any Queries:

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About EEE:

The Department of Electrical and Electronics Engineering, NIT, Tiruchirappalli was started in the year 1964. It offers one Under-Graduate programme (B.Tech.), two Post-Graduate programmes (MTech. in Power Systems and Power Electronics) and also research programmes (M.S. and Ph.D.) in the various fields of Electrical and Electronics Engineering. After the institute became NIT, the department has grown not only in terms of student and faculty strength, but also in improving the laboratory facilities for the teaching and research purposes. Thus, the department has dedicated and state of the art teaching / research laboratories. The department is recognized for excellence in research (First Department in NIT-T to be accorded QIP status for Ph.D. program), teaching and service to the profession.

The faculty members have strong sense of responsibility to provide the finest possible education for both graduate and undergraduate students. The academic strength of the faculty is reflected by the alumni, many of whom are in the top echelons of industry and academia both in India and abroad.

About NITT:

National Institute of Technology Tiruchirappalli (NIT Trichy) is one of India's premier public technical institutions, established in 1964 as the Regional Engineering College and elevated to National Institute of Technology status in 2003. Recognized as an Institute of National Importance, NIT Trichy is known for its excellence in engineering, science, architecture, and management education. Located on an expansive 800-acre campus in Tamil Nadu, it offers a range of undergraduate, postgraduate, and doctoral programs across 20+ departments. It consistently ranks among the top 10 engineering institutes in India, with the NIRF 2024 placing it 9th in engineering and 31st overall. The institute has a stellar placement record, with top recruiters like Microsoft, Google, Morgan Stanley, and L&T, and B. Tech packages reaching up to ₹52 LPA. NIT Trichy is also a hub for advanced research and innovation, housing Centers of Excellence in areas like power systems, AI, IoT, and sustainable energy. It has received substantial funding from DST, MHRD, and DRDO, and maintains strong national and international collaborations.

The academic environment is supported by a flexible curriculum, high-quality faculty, and a strong emphasis on interdisciplinary learning and global engagement. In addition to academics, NIT Trichy fosters holistic student development through national-level technical and cultural fests like *Pragyan* and *Festember*, along with over 20 student-run clubs and societies. Facilities like smart classrooms, PARAM PORUL supercomputing lab, modern hostels, healthcare, and eco-friendly infrastructure ensure a vibrant and inclusive campus life. With its strong academic foundation, industry connections, and global outlook, NIT Trichy continues to play a vital role in shaping future-ready engineers, innovators, and leaders.