Resource Person

All technical sessions will be handled by experts from leading institutions such as IITs, NITs, VIT etc.

Topics to be covered

Track A: Condition monitoring and Insulation Diagnostics for HV assets

Track B: Nano-dielectrics and New Dielectric Materials

Track C: Application of Artificial Intelligence and Machine Learning in condition monitoring of HV assets

Under each track, following sub-tracks will be covered.

- Condition monitoring of rotating machines (PD, dielectric spectroscopy etc.)
- Condition monitoring of transformers (Dielectric spectroscopy, PD etc.)
- Condition monitoring of HV switchgears (Vibration-based monitoring, leakage current, dielectric spectroscopy etc.)
- Condition monitoring of Insulators (Contamination, PD)
- Condition monitoring of HV cables (space charge, dielectric spectroscopy, PD).

Registration Process

- Prospective participants are requested to register for the workshop through the following web link.
  https://events.vit.ac.in/
- Certificate will be issued to all registered participants.
- Attendance is mandatory for all sessions.

Registration Fees (Excluding GST)

- External Faculty/ Industry Experts   Rs. 1300
- Internal Faculty   Rs. 1000
- Students / Research Scholars   Rs. 800

Registration fees include workshop kit, 2 day working lunch and high tea.

Important Dates

Last date for registration   06th Sep 2023

Organizing Committee

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Dr. G. Viswanathan, *Chancellor*

Patrons

Mr. Sankar Viswanathan, Vice President
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VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

2-day workshop on

Artificial Intelligence and Machine Learning in Condition Monitoring for High Voltage assets

AiMCoM-2023

08-09, September 2023

Organized by

**Department of Electrical Engineering
School of Electrical Engineering
VIT, Vellore –632 014**

About the Institution

VIT was established with the aim of providing quality higher education on par with international standards. It persistently seeks and adopts innovative methods to improve the quality of higher education on a consistent basis.The campus has a cosmopolitan atmosphere with students from all corners of the globe. Experienced and learned teachers are strongly encouraged to nurture the students. The global standards set at VIT in the field of teaching and research spur us on in our relentless pursuit of excellence. In fact, it has become a way of life for us. The highly motivated youngsters on the campus are a constant source of pride. Our Memoranda of Understanding with various international universities are our major strength. They provide for an exchange of students and faculty and encourage joint research projects for the mutual benefit of these universities. Many of our students, who pursue their research projects in foreign universities, bring high quality to their work and esteem to India and have done us proud. With steady steps, we continue our march forward. We look forward to meeting you here at VIT.

About School of Electrical Engineering

The School of Electrical Engineering (SELECT) has over 93 faculty members who pursued their UG, PG and Doctoral degrees from top-notch universities. The faculty members are consistently performing well in teaching and research. Faculty members and students frequently receive awards, laurels and prizes for outstanding research contributions in their respective fields.

The school offers 3 B.Tech. programmes (Electrical and Electronics Engineering, Electrical and Computer Science Engineering and Electronics and Instrumentation Engineering), and 2 M.Tech. programmes (Power Electronics and Drives & Control and Automation), Ph.D and Integrated Ph.D in Engineering. Both B.Tech. and M.Tech. programmes attract the Intelligent students from the country and abroad. The B.Tech. Electrical and Electronics Engineering and B.Tech. Electronics and Instrumentation Engineering Programmes are accredited by the Engineering Accreditation Commission of ABET. All UG & PG programmes of the school are accredited by the Institution of Engineering and Technology (IET), U.K.

The placement record of the school has always been impressive. Almost 100% of the students secure job from the campus placement and many of them are recruited in core companies. We encourage our students to carry out industry based projects during their B.Tech and M.Tech degrees. The School has state-of-the art laboratories in almost all the areas of Electrical, Electronics and Instrumentation Engineering. The School has the latest simulation tools to cater various specializations and is equipped with facilities for measurement, characterization and synthesis of experimental as well as theoretical results. SELECT has industry sponsored advanced laboratories for performing world class research and consultancy. Danfoss Advance Drives Lab, Schneider Electric Smart Energy Monitoring Lab, Fluke Testing and Calibration Lab, Q-Max Automated Test Engineering Lab (Alumni Sponsored Lab) and NxP Semiconductors, India, have established Centre of Excellence for students R&D activities under the guidance of faculty members and industry experts.

The students are encouraged to take advantage of the growing opportunities by incorporating an international internship experience in their final year undergraduate and postgraduate education. Students are also motivated to opt twin degree program with various reputed universities across the globe. Every year, students get scholarships to do their final year projects abroad under the Semester Abroad Program (SAP).

About Workshop

The basic objective of this 2-day workshop is to impart knowledge on the application of Artificial Intelligence and Machine Learning in condition monitoring and insulation diagnostics of high voltage equipment testing.

During recent years the owners and operators of electrical networks have become increasingly interested in condition monitoring of high voltage electrical equipment. Major benefits have been obtained through preventing failures, reducing maintenance, reducing operating costs and, ultimately, extending plant life. The use of testing, diagnostics and condition monitoring systems has enabled assessment of the condition of existing distribution equipment by using a number of applied techniques during routine inspection, maintenance, or during initial commissioning phases. It has also been recognized that simply increasing the frequency of maintenance can have a negative effect and increase failure rates.

Artificial Intelligence (AI) has emerged as a crucial technology for the future of industries and infrastructure. This article discusses the impact of AI on the market of high voltage (HV) and medium voltage (MV) electrical equipment, with a particular focus on the switchgear. The following sections will highlight the advantages of AI-enhanced switchgear, the integration of AI in the manufacturing process, and the potential challenges associated with AI implementation in this market.