

## ELIGIBILITY FOR PARTICIPATION

Teachers in Engineering colleges and Engineers in Industry with minimum Bachelor's degree in EEE/ ECE/ E&I or equivalent. Final year students in the above disciplines.

## REGISTRATION FEES

Faculty members in Universities and Engineering colleges

Full programme 5 Days Rs 2000

Electrical Machines & Power Systems only

3 Days Rs 1500

Lightning Protection & Electromagnetic Compatibility only

2 Days Rs 1000

Engineers from Industry

5 Days Rs 4000

Students 5 Days Rs 1000

Registration fee will cover cost of course material, lunch and refreshments.

Fee should be remitted in the form of Demand Draft in favour of Amrita School of Engineering, Amrita Vishwa Vidyapeetham payable at Coimbatore.

## ACCOMMODATION

Food and accommodation if required will be provided in the campus on payment @ Rs 150 per head per day.

## COORDINATORS

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Dept. of Electrical and Electronics Engineering

Amrita School of Engineering

Amrita Vishwa Vidyapeetham

Ettimadai Coimbatore

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Send requests for registration to one of the coordinators on or before 25<sup>th</sup> November 2009.



**AMRITA**  
VISHWA VIDYAPEETHAM  
UNIVERSITY

Established u/s 3 of the UGC Act 1956  
Ettimadai, Coimbatore - 641 105  
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## INTERNATIONAL WORKSHOP ON

# Advances in Electrical and Electronics Engineering

7-11 Dec. 2009

Dept. of Electrical and Electronics Engineering

AMRITA VISHWA VIDYAPEETHAM

Amrita School of Engineering  
Coimbatore - 641 105

## ABOUT AMRITA

Amrita Vishwa Vidyapeetham, established under the guidance of Satguru Mata Amritanandamayi Devi, with its head quarters at Ettimadai, Coimbatore is one of the youngest educational institutions in India to have been granted the University status (a University under Section 3 of U.G.C Act). This status was conferred on it by the Ministry of Human Resources, Government of India after meticulous inspection by teams from UGC, AICTE and IMC (Indian Medical Council). Amrita Vishwa Vidyapeetham is one of the very few Universities to have a multi-campus, multi disciplinary character, offering under graduate, post graduate and research programmes in fourteen disciplines including Arts and Science, Engineering, Management & Medicine. Amrita is the nation's first multi-campus university interlinked via satellite facilitating E-learning that transcends limitations of time & space. The international advisory board and the academic council comprising eminent academicians and industry stalwarts guide Amrita in its efforts to achieve excellence in research and education. NAAC has accredited A Grade to Amrita University early this year.

Amrita School of Engineering (ASE) is a grooming ground for the future engineering and IT professionals of the country. ASE, Coimbatore is located in a sprawling 350 acre campus at Ettimadai, a serene village at the foothills of the Western Ghats. It is 20 km away from Coimbatore and 2 km from Ettimadai piriuvu on the Coimbatore-Palakkad national highway.

## COURSE OBJECTIVE

The gap between supply and demand of electricity, the increase in the number of air polluting vehicles, and, the hazardous interference of electromagnetic waves, are a few among the global concerns today and hence challenges before an electrical engineer. Responding to the need of the hour eminent electrical/electronic engineers from universities located in different countries have enriched the engineering knowledge to equip the humanity to attain sustainable development. Engineering academia in India should be exposed to such advancements in technology through international interaction.

In this workshop, we bring together a few experts in advanced fields of electrical/electronic engineering on a common platform to address the issues and discuss the developments in their fields. Electric drives, hybrid vehicles, distributed generation systems; design and maintenance of power system with focus on diagnostics, intentional electromagnetic interference, lightning location and protection etc. are some of the areas selected for this interaction.

## COURSE CONTENT

### Electrical Machines and Power systems (3 Days)

**Electric drives** - Energy savings, Life-Cycle Costs, material and software development and material recycling in the area of electric drives.

**Hybrid Electric Drives** - Different topologies (series, parallel, power-split and plug-in hybrids) and their advantages and disadvantages, innovative concepts and present status. Permanent Magnet Drives - Overview of development, design aspects of line-start and inverter-fed applications, rotor design and construction of surface-mounted, buried and inserted magnet types and their advantages and disadvantages. Applications.

**Power Transmission And Distribution** - Main T&D prerequisites. Production sources, load centre, export. Electricity market Regulation. Transmission system capability and constraints. Hydro-Nuclear-Wind power

HVDC link to improve transfer capability. The transmission system of today and its properties. Design criteria. Research in power transmission and distribution.

**Power Systems Design** - Power transfer capability, Transmission line and cable characteristics, Transformers, Substations, Switchgear, Instrument transformers. Over voltage protection and insulation coordination.

**T&D Systems Maintenance and Insulation Diagnostics**- Reliability centered maintenance, Insulation diagnostic techniques - on line and off line, transformers and cable insulation diagnostics, variable frequency diagnostics, dielectric loss measurements, partial discharge measurements.

**Distributed generation**- Energy generation under new environment: motivation, structure, challenges, technical issues and possible solutions, policy and economic considerations.

### Lightning Protection and Electromagnetic Compatibility (2 Days)

Types of lightning and associated parameters, measurement of time correlated current and radiated field, Lightning Location System - methods and performance parameters,

Characteristics and statistics of lightning generated currents and electric fields; Health hazards, recommendations for outdoor workers, safety devices and lightning warning systems; Designing of air-termination and down conductor systems; Materials, installation technologies and costing of protection devices IEC 62305 standard.

The threat of intentional electromagnetic interference, Electromagnetic interference in electrified railways; Inspection and analysis of risk environment of various installations, Calculation of lightning risk factors and recommendation of the level of protection.

## RESOURCE PERSONS

**Prof. Em. Roland Eriksson** Dept. of Electrical Eng.

**Prof. Chandur Sadarangani** Royal Institute of Technology (KTH)

Stockholm, Sweden

**Prof. Rajeev Thottappillil** Austrian Electrotechnical

Association (OVE), Vienna, Austria

**Dr. Gerhard Diendorfer** Dept. of Physics, University of

Colombo, Sri Lanka

**Prof Chandima Gomes**

Faculty, Amrita Schools of Engineering