

**Online  
Faculty Development Programme on  
“Smart grid monitoring and  
stability: a microgrid  
perspective”  
24<sup>th</sup> to 28<sup>th</sup> July 2021**



**College of Engineering Vadakara  
(Under CAPE, Est. by Govt of Kerala)**

**Sponsored by  
TEQIP-II**

**Coordinators  
Dr. Rohikaa Micky R.  
Ms. Thasnimol C. M.**

**Organised by  
Department of  
Electrical & Electronics Engineering  
College of Engineering Vadakara  
Mandarathur P O, Vadakara,  
Kozhikode - 673 105  
KERALA - INDIA**

### About the College

The first Engineering College under the Co-operative Academy of Professional Education (CAPE), Thiruvananthapuram, established by Govt. of Kerala, started functioning in June 1999.

The college is affiliated to Kerala Technological University (KTU) and approved by All India Council for Technical Education (AICTE).

The site at Kakkoramala surrounded by lush greenery is bounded by green fields and silvery clouds.

The CEV is located at Vadakara, a region lying in the northern part of Kozhikode district in Kerala. The CEV owns a 26-acre campus at Kakkoramala in Kurunthodi, in the Maniyoor panchayat of Vadakara.

### About the Department

The department of Electrical and Electronics Engineering was established in the year 2009. Since its commencement, the primary objective of the department has been to impart quality education and training at the under graduate in various area of Electrical and Electronics Engineering with broad emphasis on design aspects of Electrical system. We aim at producing engineers with sound knowledge in Electronics Engineering and a strong background in Electrical.

### About the Programme

Owing to rapid development of microgrids promoting non-dispatchable renewable energy sources (NDRES) worldwide due to the envisioned economic and environmental benefits, problems like voltage variations, reverse power flow, power fluctuations and power quality issues are encountered in the power system. The operational stability of the emerging smart power grids necessitates sophisticated real-time monitoring and control technologies. For enhanced grid security and stability, time synchronised data from phasor measurement units (PMU) is utilised. With synchronized measurements from numerous PMU sites, embedded with advanced communication technologies in the smart grid, wide area monitoring and control is made possible. However, with integration of NDERs, the stability assessment application need to handle a large number of data points in real time. Data driven applications are being developed for better planning, monitoring and operation of smart grids.

This Faculty Development Programme aims at delivering the fundamental and advanced knowledge in smart grid, microgrid stability and security, data analytics of microgrid using phasor measurement units and multi agent based control of smart grids.

## The Topics include:

- Wide area technologies for enhanced resiliency of power grids with microgrids
- Big data analysis in power systems
- Practical experiences in operationalizing WAMS in the control room
- Multi-agent system for distributed control in smart grid
- Optimal placement of synchrophasor measurement unit for smart grid
- Frequency control and security in future smart grids
- Solar grid integration simulation and demo

## Target Audience

Faculty members from various AICTE approved Engineering Colleges /Institutions, Senior undergraduate students, post graduate students, research scholars, engineers, scientists etc.

## Resource Persons

- **Dr. John McDonald,**  
Smart grid business development leader, GE Solutions, Duluth, Georgia, United States.

- **Dr. Bhavesh Kumar R. Bhalja,**  
Professor, Department of Electrical Engineering, Indian Institute of Technology, Roorkee.
- **Dr. Rajesh Kumar,**  
Professor, Malaviya National Institute of Technology, Jaipur.
- **Dr. R. Rajeswari,**  
Professor, Govt. College of Technology, Coimbatore.
- **Dr. Amer Al-Hinai,**  
Associate Professor, Electrical and Computer Science department, Sultan Qaboos University.
- **Dr. Gopakumar P.,**  
Assistant Professor, Electrical Engineering Department, National Institute of Technology Calicut.
- **Dr. Hassan Haes Alhelou,**  
Post-Doc, University College Dublin (UCD), Ireland and Assistant Professor, Tishreen University, Lattakia, Syria.
- **Dr. Manas Kumar Jena,**  
Assistant Professor, Electrical Engineering Department, IIT Palakkad.
- **Entuple Technologies Pvt. Ltd.,**  
Bangalore.
- **Power Research Development Centre Pvt. Ltd.,** Bangalore.

## Registration

Registration is free for all participants. The **Registration form** must be completed at: <https://forms.gle/KYn7P9iaaWYMaw6D7>

## Sessions through



## Chief Patron

**Dr. R. Sasikumar,** Director, CAPE

## Patron

**Dr. O. A. Joseph,** Principal, CEV

## Convener

- **Mr. Nithin T.**  
HOD, Dept. of EEE  
College of Engineering, Vadakara

## Coordinators

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