



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)

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REPORT ON “Recent Advances in Electrical Energy Management, Control and Automation”

Event Type	:	Five-Day online Faculty Development Programme
Date / Duration	:	08-06-2021 to 12-06-2021
Resource Persons	:	1.Dr. Ch.Ramulu ,Assistant Professor, NIT Warangal 2. Dr.J.Sreedevi, Joint Director, CPRI, Bengaluru 3. Mr.Ramesh Babu Darla, Sr. Engineer,Cisco systems, Bengaluru 4. Dr. K. Srikumar, Assoc.Professor, Dept.EEE, JNTU Kakinada 5. Dr. T.Anil Kumar, Architect, BMW, Germany
Names of Coordinators	:	Dr. P.Sobha Rani, Professor Mrs.R.Padma, Asst.Professor
Target Audience	:	Engineering Colleges Faculty
Total no of Participants	:	200
Objective of the event	:	The main objective of this Five-Day Faculty Development Program is to enhance the knowledge of participants in the area of energy management and renewable energy integration concepts.
Outcome of event	:	<ul style="list-style-type: none">➤ Faculty got knowledge regarding research challenges in renewable energy integration➤ Understand the different converter topologies.➤ Awareness about intelligent energy management system

Description / Report on Event:

The EEE Department organized a Five-Day online Faculty Development Programme on “Recent Advances in Electrical Energy Management, Control and Automation” during 08-06-2021 to 12-06-2021.

Inaugural Session:

- The Chief guest Dr. K.Appa Rao Principal, LBRCE inaugurated the Five day Online Faculty Development Program.
- Dr. K. Appa Rao in his inaugural address encouraged the faculty to participate in these types of events to enhance their knowledge. Finally he congratulated the participants who have registered for this Five day Online FDP Program.
- Program Convenor, HOD of EEE, Dr. J.Sivavara Prasad in his address welcomed the Participants, Resource person and Chief Guest. In his welcome address he spoke on importance of energy management and automation.
- Coordinator Dr.P.Sobha Rani presented the schedule of event and importance of topic.

First Day: Session was engaged by Dr. Ch.Ramulu, Asst.Professor,NIT, Warangal. He has given complete overview of solar PV powered standalone water system. He elaborately discussed multi level inverters and different inverter topologies and presented one case study regarding PV source powered pumping system applications. The total registered participants are 200 and 100 attended for live session.

Second Day: On second day Dr. J.Sreedevi, Joint Director, Power system Division, CPRI discussed challenges in renewable energy integration to grid at transmission and distribution level through two case studies viz: wind and solar energy. She discussed various research topics in this area.

Third Day: Third day session was engaged by Mr. Ramesh Darla, Sr.Engineer, CISCO System, Bengaluru. He discussed the topic “Recent advances in power supply technologies”. He clearly explained various converter topologies and reliability concepts. The reliability concepts are elaborately discussed and are much helpful for faculty doing research in this area.

Fourth Day: On fourth day Dr. K.Srikumar, Assoc.Professor, Dept.EEE, JNTU Kakinada discussed the topic “Restructuring in power system” which is one important research area. He discussed the importance of restructuring at generation, transmission and distribution levels and presented different models.

Fifth Day: Fifth day session was engaged by Dr.T.Anil Kumar, Architect,BMW,Germany. Dr. T.Anil Kumar presented topic on “Advances in connected and autonomous e-vehicles: Machine learning applications” which is interdisciplinary topic. He gave a clear picture of e-vehicles and different technologies in e-vehicles. He also discussed intelligent energy management system and use of renewable in electric vehicles. He also focussed on research topics in this area.

During the valedictory session Dr.K.Harinadha Reddy , Vice Principal motivated the faculty members to make use of the things which are learnt in these five days and improve research skills.

During the valedictory session, coordinators Dr.P.Sobha Rani, Mrs R.Padma thanked all the dignitaries and participants and finally issued the participant certificates.

Feedback / Suggestions from the participants:

1. Conduct many more FDPs in the emerging areas of EEE.
2. The sessions are well organized.
3. The resource persons have good knowledge over the topic.

Photographs :



A screenshot of a Zoom meeting displaying a slide titled "Solar PV Overview". The slide content includes:

- Title:** Solar PV Overview
- Diagram:** A flowchart showing "Solar PV Grid Water Pumping System" branching into "Solar PV fed DC Motor" and "Solar PV fed Induction Motor". The DC motor path includes a "DC Motor (30-40)" and a "Two-Stage System" (with sub-components: DC/DC Converter, DC/AC Inverter, and DC Motor). The Induction motor path includes a "Single-Stage System" (with sub-components: DC/AC Inverter and AC Motor). A note states: "Results in poor performance and lesser efficiency".
- Comparison:** A section titled "In literature" lists:
 - Six Step quasi square wave inverter [25]
 - Control loop Vector Control PV Pumping system [2002]
 - PV Pumping system with MPPT & Maximum Power point tracking [109]
- Proposed Systems:** A list of three systems:
 - Conventional VVVF
 - Controlled Three level
 - Grid Inverter with feedback control
- Handwritten note:** "from controller to CPU" in red ink.
- Metadata:** "6/8/2021" and "6" are visible at the bottom of the slide.

The Zoom meeting interface at the bottom shows a control bar with a "+50" button, a "Request control" button, and several participant icons, including "Dr.Ch.Ramulu", "EEEFFOP37", and "MARTHANDA, A.V/GA".

A screenshot of a Zoom meeting displaying a slide titled "Connected Car Big Picture". The slide content includes:

- Title:** Connected Car Big Picture
- Text:** "Vehicle control related functionality is moving into cloud. Computational resources, storage, agility, cost effectiveness etc."
- Diagram:** A diagram showing a car on the left connected to a cloud icon labeled "Backend". Below the car, four IoT devices are shown: a smartphone, a smartwatch, a house icon, and a charging station icon. Arrows indicate data flow between the car, the IoT devices, and the cloud.
- Metadata:** "6/12/2021" and "4" are visible at the bottom of the slide.

The Zoom meeting interface at the bottom shows a control bar with a "+39" button, a "Request control" button, and several participant icons, including "Dr.T.Anil Kumar", "Dr. J. Siva Varaprasad", and "Dr. Jagan Mohan Red...".