LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF MECHANICAL ENGINEERING

One Week online Faculty Development Programme on

"***Emerging Trends in Thermal and Renewable Energy Systems"***

from 28th June 2021 to 2nd July 2021 ; Timings 5PM to 7PM.

The online Faculty program was conducted through Microsoft Teams Platform. The registrations for the online FDP was opened on 23-6-2021 at 5.00pm and closed on 26-6-2021 at 5.00pm. There was a good response from the faculty and research scholars and a total 266 registrations from the participants across the country and overseas. There was 1 faculty member from Saudi Arabia. The total number of participants were limited to 250 members in Microsoft Teams after short listing process is done based on first cum first serve.

Registration link: https://forms.gle/tN7yC3WGaJaQGCWE9

Registration Fee: Free

Registration Deadline: 26-06-2021

Details of Resource Persons:

DEPARTMENT OF MECHANICAL ENGINEERING

One Week online Faculty Development Programme on

"*Emerging Trends in Thermal and Renewable Energy Systems"*

from 28th June 2021 to 2nd July 2021 ; Timings 5PM to 7PM.

Name of the Resource Person	Designation and Institute
Dr.M.V.Rane	**Professor and In-charge Heat Pump Laboratory, Department of Mechanical Engineering Indian Institute of Technology, Bombay**
Dr. S.V.Kota Reddy	**Vice-Chancellor and Professor Department of Mechanical Engineering Vellore Institute of Technology, Amaravati Campus, A.P**
Dr. E.Anil Kumar	**Professor and Dean Consultancy Department of Mechanical Engineering Indian Institute of Technology, Tirupati**
Dr. T.Srinivas	**Associate Professor Department of Mechanical Engineering National Institute of Technology, Jalandhar**
Dr. M.Pulla Rao	**Assistant Professor Department of Mechanical Engineering Indian Institute of Information Technology Design and Manufacturing, Kurnool**
Dr. B.Ashok	**Associate Professor Department of Mechanical Engineering Vellore Institute of Technology, Vellore**

Inauguration Function: The inauguration function of the FDP started on 28-06-2021 at 5PM, with the welcome address by the Convener, Dr.S.Pichi Reddy, Professor & HoD, Department of Mechanical Engineering followed by the key note address by the distinguished guest and resource person, Dr.M.V.Rane, Professor, Department of Mechanical Engineering, Indian Institute of Technology, Bombay. The inaugural function concluded at 5.20PM. The session on day-1 started with Dr.M.V.Rane on Multi utility heat pumps. There were total 6 sessions conducted and the details are as given below.

Table 1: Details of Resource Persons and topic delivered

Dates	Name of the Resource Person	Topic Covered

28.6.2021	Prof.M.V.Rane, Indian Institute of Technology, Bombay. Topic Delivered: **Multi Utility Pumps**
29.6.2021	Dr.E.Anil Kumar, IIT Tirupati Topic Delivered: **Hydrogen based energy conversion and storage systems**
30.6.2021	Dr. T.Srinivas, NIT Jalandhar Topic Delivered: **Thermal Poly-generation**
1.7.2021	Dr.B.Ashok, VIT, Vellore Topic Delivered: **Role of electronics in modern engine control applications**
2.7.2021	Dr.M.Pulla Rao, IIITDM, Kurnool. Topic Delivered: **Thermal management of electronics using impinging jets**
2.7.2021	Dr.S.V.K.Reddy, Vice-Chancellor, VIT, Amaravati Campus, A.P. Topic Delivered: **Desicant based Humidification/Dehumidification systems.**

Outline of the topics covered in FDP

Multi utility heat pumps application for domestic, commercial and industrial applications, energy conservation using renewable energy sources, plastic solar panels, sorption cooling systems development of hybrid cooling systems.

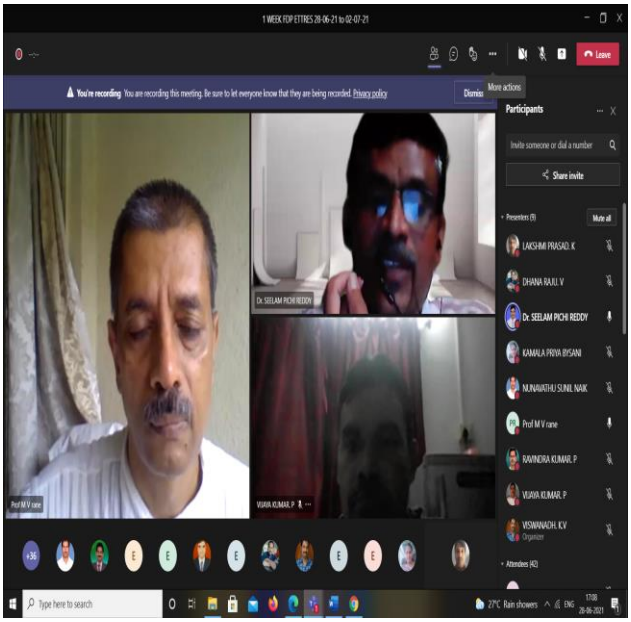
Hydrogen based energy conversion and storage technologies, challenges, energy crisis, requirements of energy storage, methods, different methods of hydrogen storage, metal hydride hydrogen storage systems.

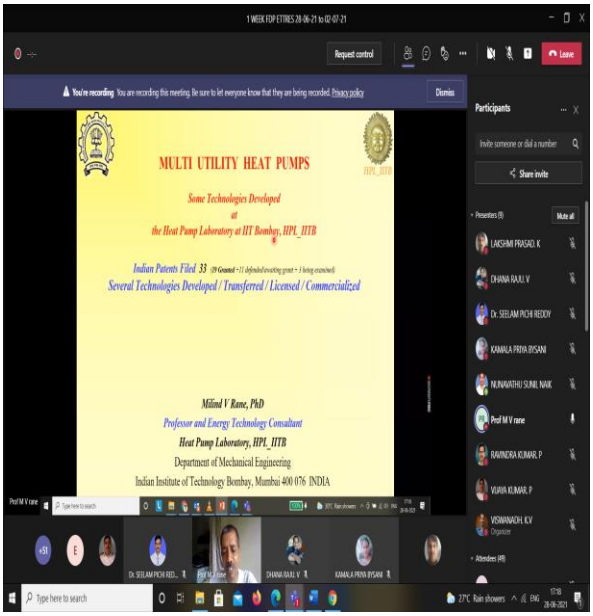
Thermal poly generation models, integration, modeling, development of poly generation systems for a thermal power plant, refrigeration and air conditioning, thermodynamic cycles

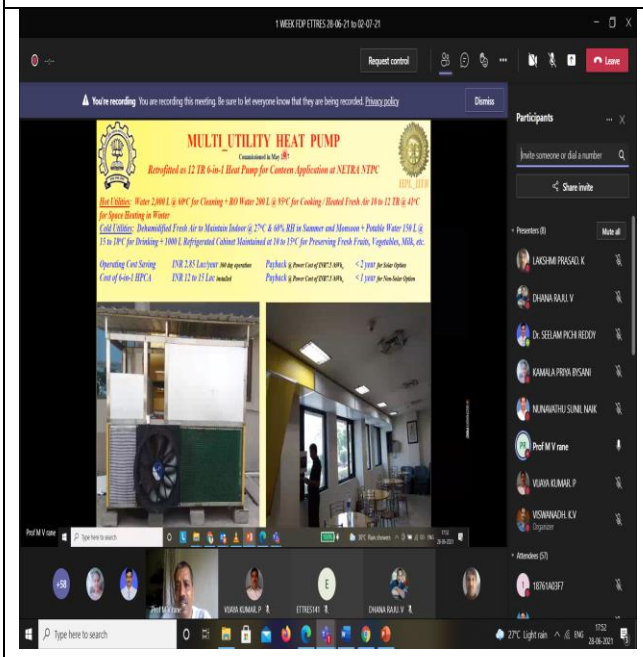
Modern IC engine control using electronics, different methods, engine electronics, integration of electronics in engine, engine control system/algorithms

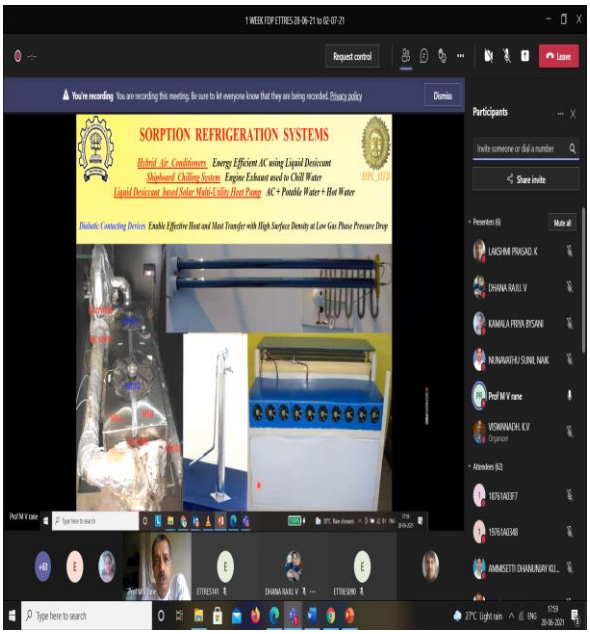
Desicant based systems, liquid and solid desicants, humidification and dehumidification, cross flow humidification systems, case studies with experiments

Day-1: 28-06-2021, Prof.M.V.Rane, IIT, Bombay

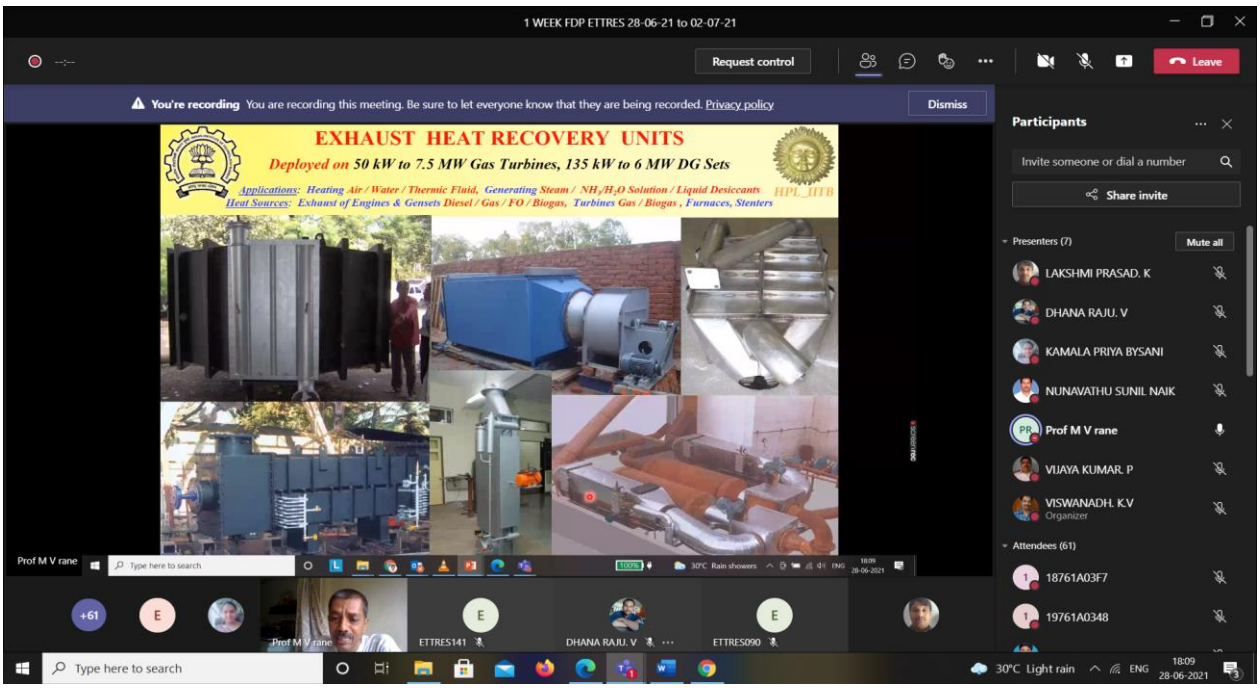




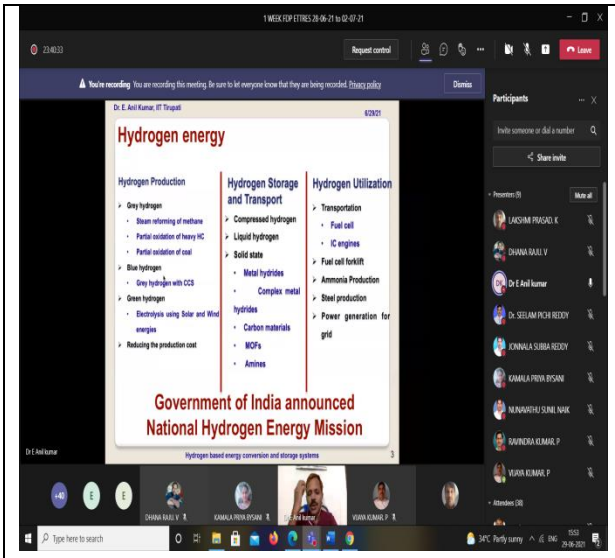


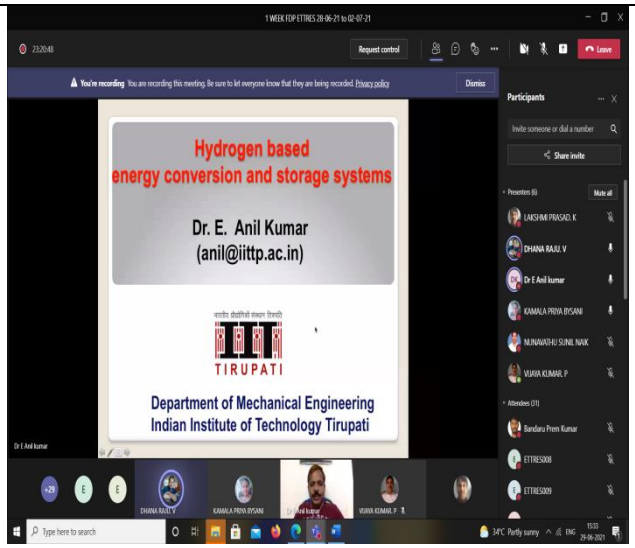


Lakireddy Bali Reddy College of Engineering- MED_ Online FDP: 28-06-2021 to 2-07-2021

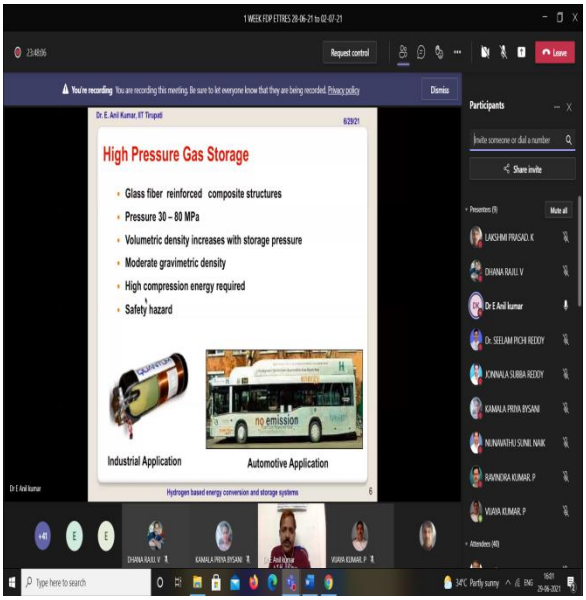


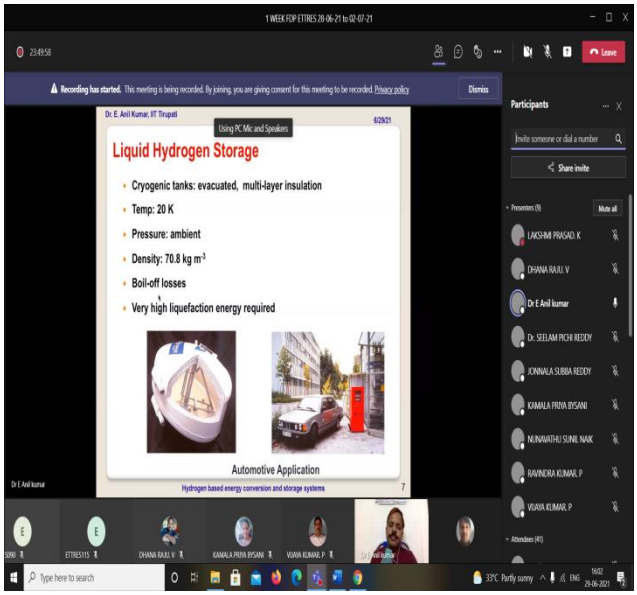
Day-2: 29-06-2021, Dr.E.Anil Kumar, IIT, Tirupati



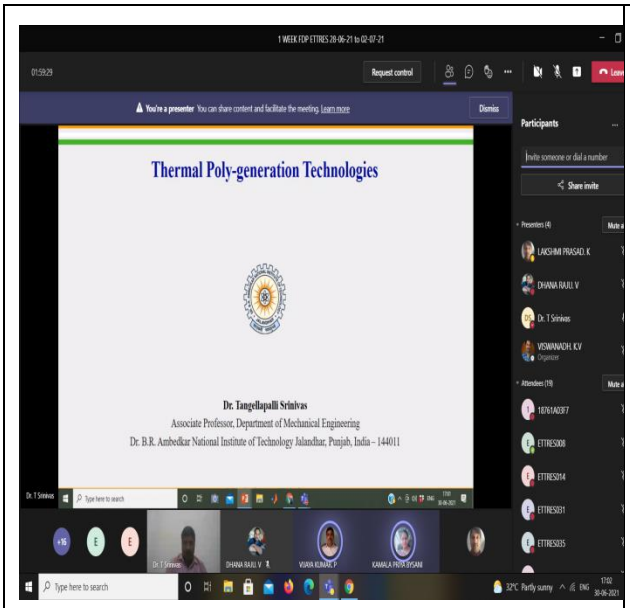


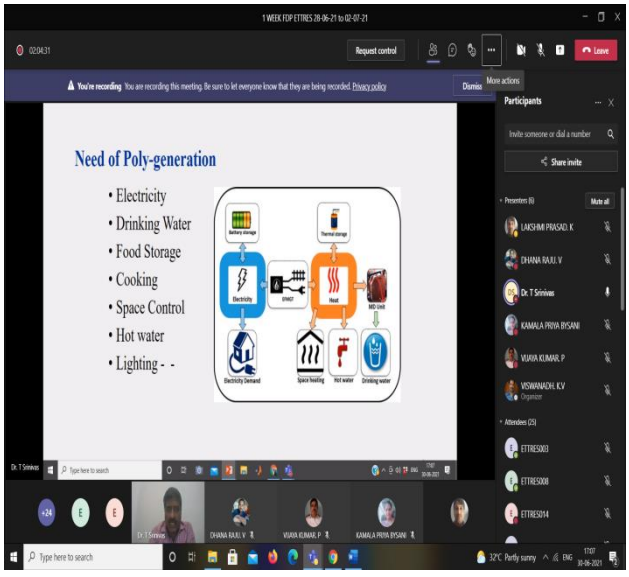
Lakireddy Bali Reddy College of Engineering- MED_ Online FDP: 28-06-2021 to 2-07-2021



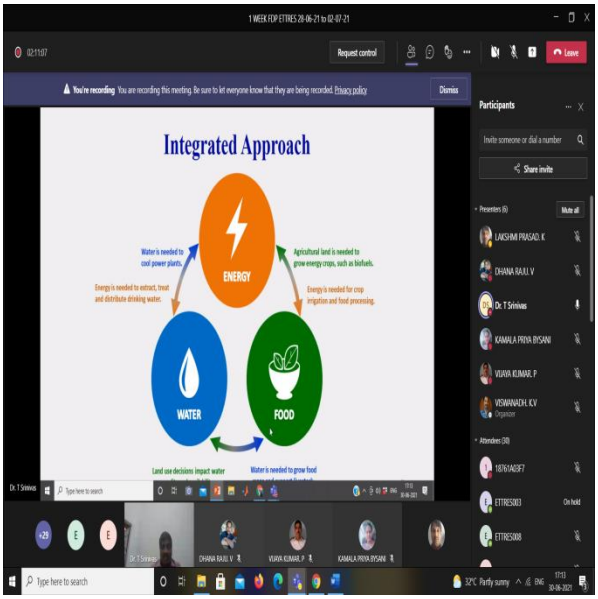


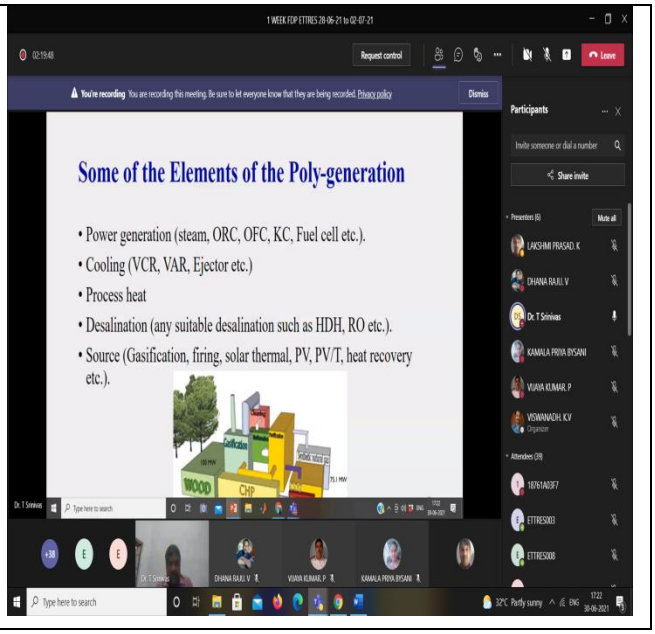
Day-3: 30-06-2021, Dr.T.Srinivas, NIT, Jalandhar





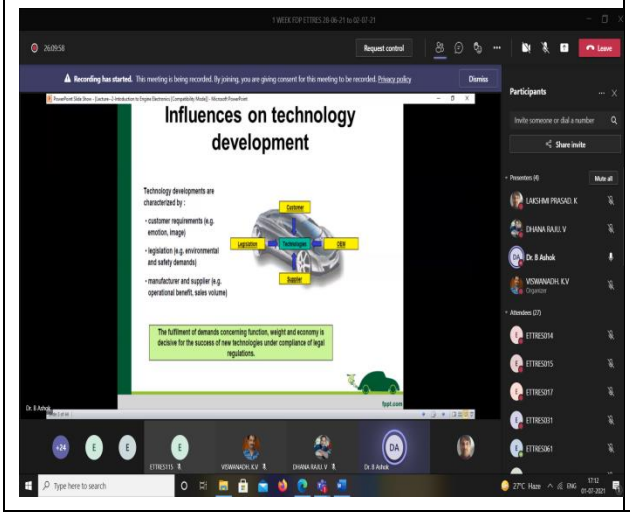
Lakireddy Bali Reddy College of Engineering- MED_ Online FDP: 28-06-2021 to 2-07-2021



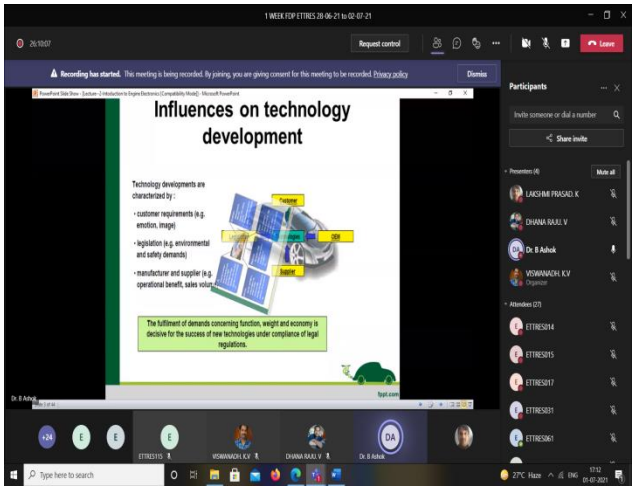


Day-4: 1-07-2021, Dr.B.Ashok, VIT, Vellore

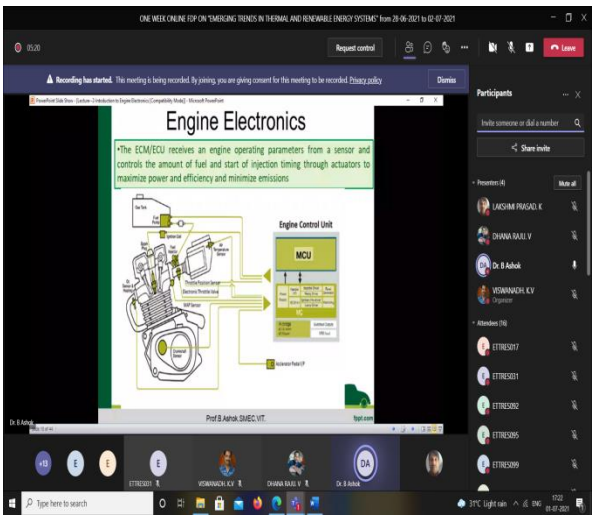
PCM based bandage for heat treatment

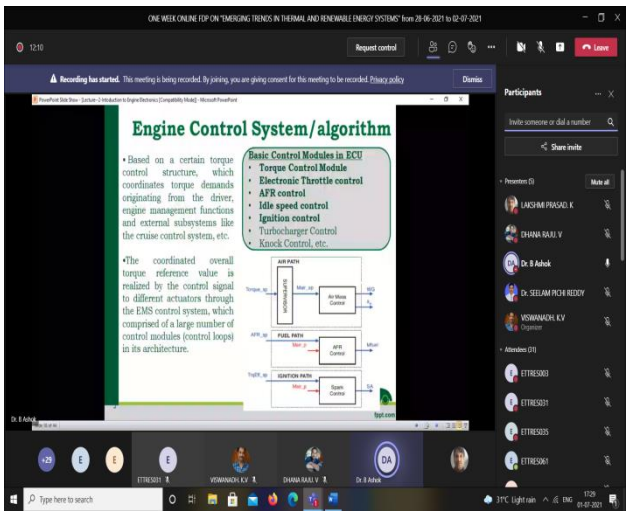


PCM for Medical application in orthopaedic device

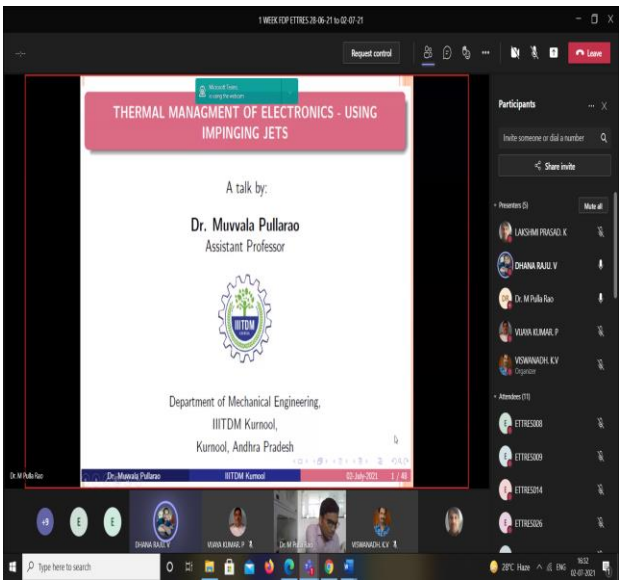


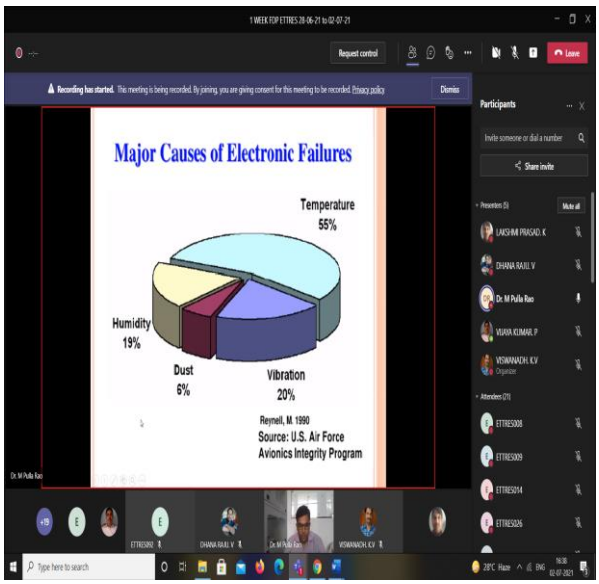
Lakireddy Bali Reddy College of Engineering- MED_ Online FDP: 28-06-2021 to 2-07-2021

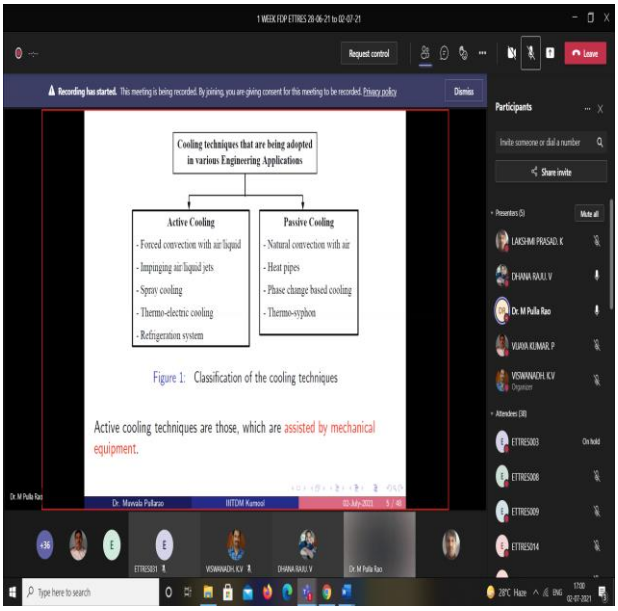


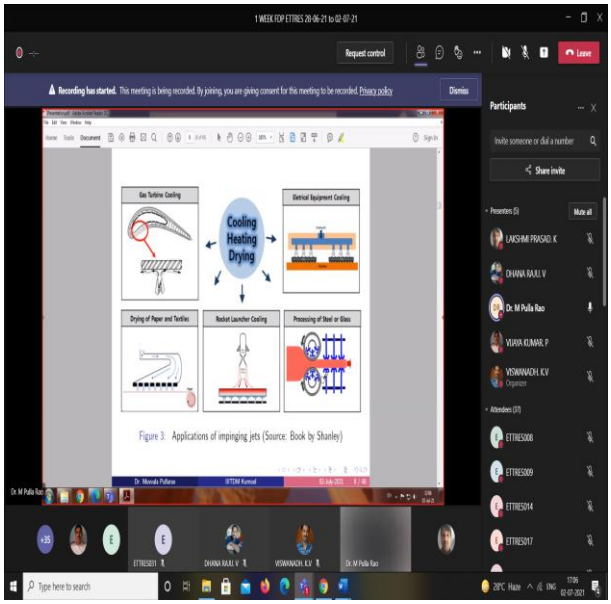


Day-5: 2-07-2021 Session-1, Dr.M.Pulla Rao, IIITDM , Kurnool



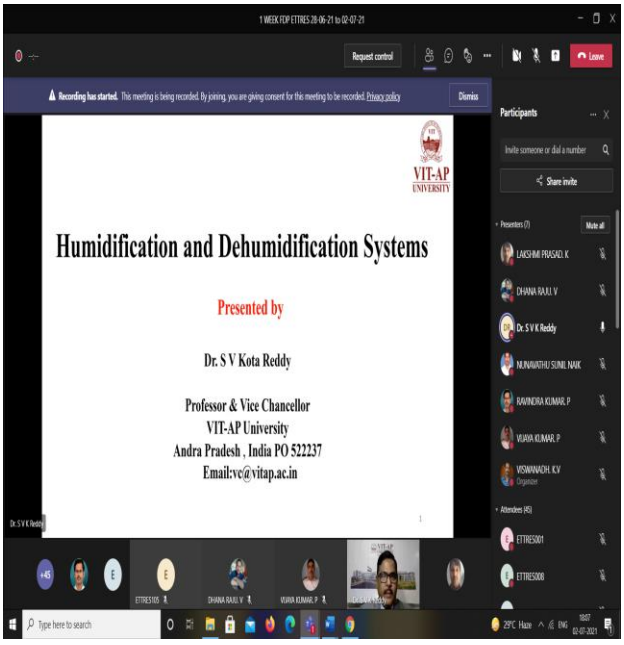


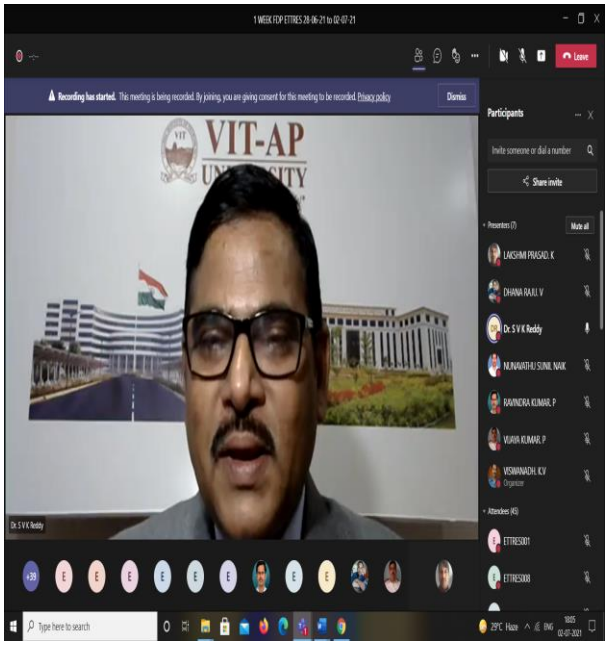


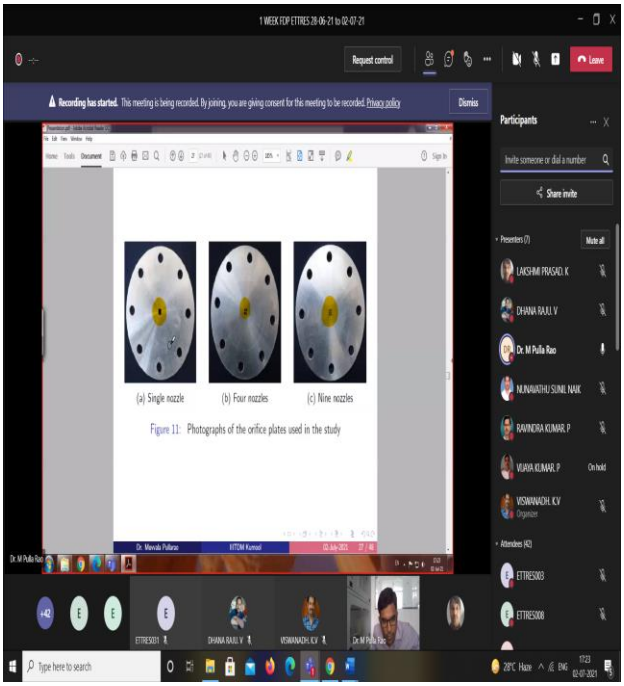


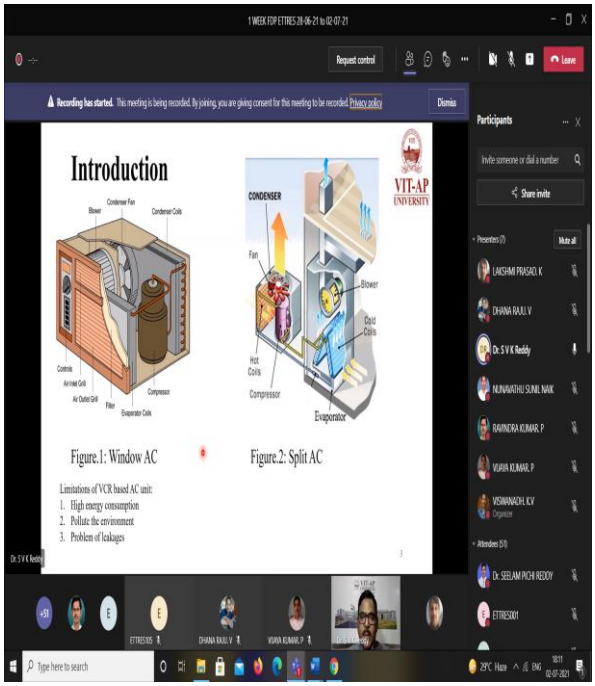
Day-5: 2-07-2021 Session-2

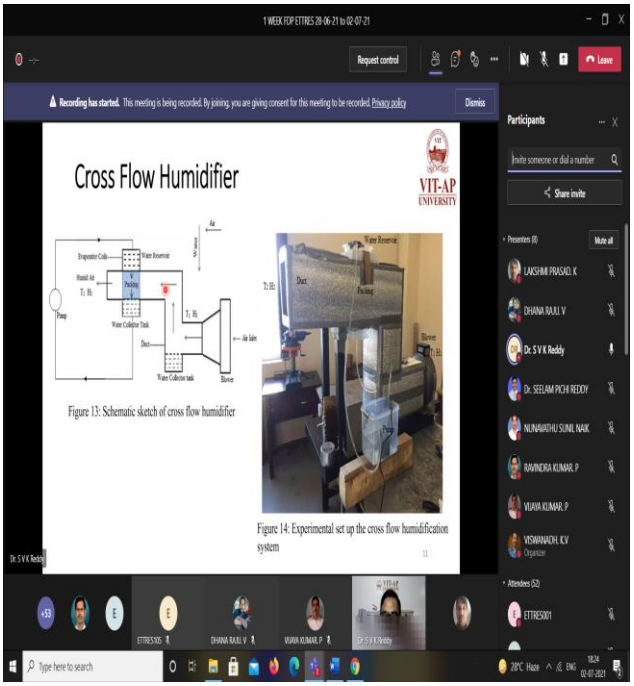
Dr.S.V.K.Reddy, VIT, Vellore






(a) Single nozzle
(b) Four nozzles
(c) Nine nozzles
Figure 11: Photographs of the orifice plates used in the study


Introduction
CONDENSER
Figure.1: Window AC
Figure.2: Split AC
Limitations of VCR based AC unit:
1. High energy consumption
2. Pollute the environment
3. Problem of leakages


Cross Flow Humidifier
Figure 13: Schematic sketch of cross flow humidifier
Figure 14: Experimental set up the cross flow humidification system

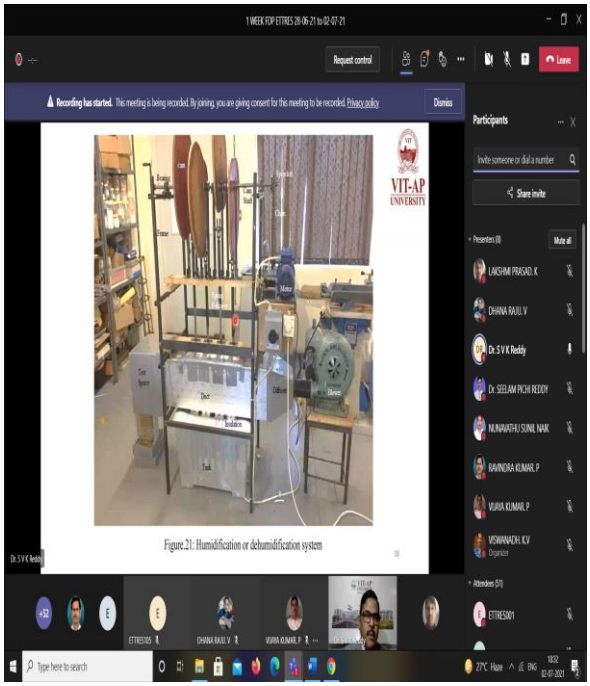


Figure.21: Humidification or dehumidification system

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DEPARTMENT OF MECHANICAL ENGINEERING

One Week online Faculty Development Programme on

"***Emerging Trends in Thermal and Renewable Energy Systems***"

from 28th June 2021 to 2nd July 2021 ; Timings 5PM to 7PM.

Program Objective: To impart the knowledge of emerging trends and research in the area of thermal and renewable energy systems happening around the globe.

Program Outcomes: The participants able to

1. Understand the importance of developing the thermo-economic thermal and renewable energy systems
2. Comprehend the variety of thermal and renewable energy storage systems
3. Identify the novel thermal poly-generation systems
4. Know the role electronics in modern engine control applications.
5. Apply the jet impingement methods for electronic cooling.
6. Develop the Desicant Humidification and Dehumidification systems, cross flow humidifier

COORDINATORS

1.Dr.P.Vijay Kumar
Professor

2.Dr.V.Dhanaraju
Assoc.Professor

CONVENER

Dr.S.Pichi Redd
Professor and Head

Valedictory Function Images, Conversation of Dr.K.AppaRao, Principal and Dr.S.V.K.Reddy, Vice-Chancellor, VIT, Amaravati Campus, A.P.

One Week online Faculty Development Program on

EMERGING TRENDS IN THERMAL AND RENEWABLE ENERGY SYSTEMS

(28 June - 02 July 2021)

WELCOME TO Resource Persons and Participants

Dr. P. Vijaya Kumar
Dr. V. Dhanaraju
(Co-ordinators)

Dr. S.Pichi Reddy
(Convenor)

Dr. K.Appa Rao
(Principal)

DEPARTMENT OF MECHANICAL ENGINEERING

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

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LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME) under Tier - I

Approved by AICTE and Permanently Affiliated to JNTUK, Kakinada

DEPARTMENT OF MECHANICAL ENGINEERING

Five Day online Faculty Development Programme on

Emerging Trends in Thermal and Renewable Energy Systems

28th June – 2nd July 2021

Programme Schedule

S.No	Day	Date & Time	Resource Person	Topic to be delivered
DAY-1				
1	MONDAY	28-06-2021 5PM - 6.30PM	Dr. M.V.Rane, Professor of Mechanical Engineering, Indian Institute of Technology, Bombay.	Multi utility heat pumps
DAY-2				
2	TUESDAY	29-06-2021 5PM - 6.30PM	Dr. E.Anil Kumar, Professor Department of Mechanical Engineering, Indian Institute of Technology, Tirupathi.	Hydrogen based energy conversion and storage systems
DAY-3				
3	WEDNESDAY	30-06-2021 5PM - 6.30PM	Dr. T.Srinivas, Associate Professor Department of Mechanical Engineering, National Institute of Technology, Jalandhar.	Thermal Poly generation
DAY-4				

4	THURSDAY	01-07-2021 4PM -5PM	Dr. B.Ashok, Associate Professor Department of Mechanical Engineering, Vellore Institute of Technology, Vellore.	Role of electronics in modern engine control application
DAY-5				
5	FRIDAY	02-07-2021 5PM -6PM	Dr.M.Pulla Rao, Assistant Professor Department of Mechanical Engineering, Indian Institute of Information Technology Design and Manufacturing, Kurnool.	Thermal management of electronics using impinging jets
6	FRIDAY	02-07-2021 6PM -7PM	Dr. S.V.K.Reddy, Vice-Chancellor, VIT Amaravathi Campus, A.P and Professor in Mechanical Engineering	Dessicant humidification/dehumidification systems

Lakireddy Bali Reddy College of Engineering- MED_ Online FDP: 28-06-2021 to 2-07-2021

About the Institute& Department

The Lakireddy Bali Reddy CollegeofEngineering (LBRCE) was established in the year 1998 by Er. Lakireddy Bali Reddy garu. The institute is established with the sole aim ofproviding high quality educational opportunities in the field of science, engineering, technology and management. It isapproved by AICTE, affiliated to JNTUK,Kakinada and attained autonomous status in the year 2010. It attained NAAC accreditation.The institute is certified by ISO: 9001-2015. The Department of Mechanical Engineering was started in the year 1998. The Departmentis accredited by NBA (Tier-I). The Dept. is recognized as a Research centre by JNTUKKakinada.

About the FDP

The present challenges for the researchers looking at the ever growing energy demand to develop efficient thermal and renewable systems with thermo-economic and energy conservation consciousness.The objective of this FDP is to address the above mentioned objectives and provide solutions in terms of expert deliberations by eminent speakers on the advancements in thermal and renewable energy systems covering all the latest research works happening in this area.

Registration and Fee Particulars:

https://forms.gle/tN7yC3WGaJaQGCWE9

Registration and Fee Particulars:

- There is **no registration fee**

Important Dates:

- Submission of Application: **26/06/2021**
- Confirmation : **27/06/2021**
- The selected candidates will be intimated through email only.
- All the sessions are conducted online through **Microsoft Teams App**.
- E-certificate will be given to the participants that satisfy the criteria set by the organising committee

COMMITTEE MEMBERS

Chief Patrons:

1. **Er. Lakireddy Bali Reddy,** Chairman
2. **Sri L. Jaya Prakash Reddy,** Co-Chairman
3. **Sri L.R.N.K. Prasad Reddy,** Vice-Chairman

Patrons:

1. **Sri G. Srinivasa Reddy,** President
2. **Er. K. Thimma Reddy,** Director Infra
3. **Dr. K. Appa Rao,** Professor & Principal
4. **Dr. K. Haranadha Reddy,** Prof. & Vice-Principal

Convener:

Dr. S.Pichi Reddy, Professor & HOD

Coordinators:

1. **Dr. P. Vijaya Kumar,** Professor
2. **Dr. V.Dhana Raju,** Associate Professor

Co-Coordinators:

1.Dr.N.Sunil Naik, Associate Professor
2.Mr.K.V.Viswanadh, Sr.Asst Professor
3.Mr.K.Lakshmi Prasad, Asst Professor

Resource persons:

1.Prof. M.V.Rane, IIT Bombay
2.Dr.E.Anil Kumar, IIT, Tirupathi
3.Dr.T.Srinivaa, NIT, Jalandhar,
4.Dr.M.Pulla Rao, IIITDM, Kurnool.
5.Dr.B.Ashok, VIT, Vellore

Contact Person(s):

1. **Dr. P.Vijaya Kumar,** Professor, ME pjoel2013@gmail.com, Cell **9381245195**
2. **Dr. V.Dhanaraju,** Assoc. Professor, ME dhanaraju1984@gmail.com, Cell 9848363670

ONE WEEK ONLINE FACULTY DEVELOPMENT PROGRAM
ON

EMERGING TRENDS IN THERMAL AND RENEWABLE ENERGY SYSTEMS

(28 June - 2 July 2021)

FDP Timings: Evening 5 PM-7 PM

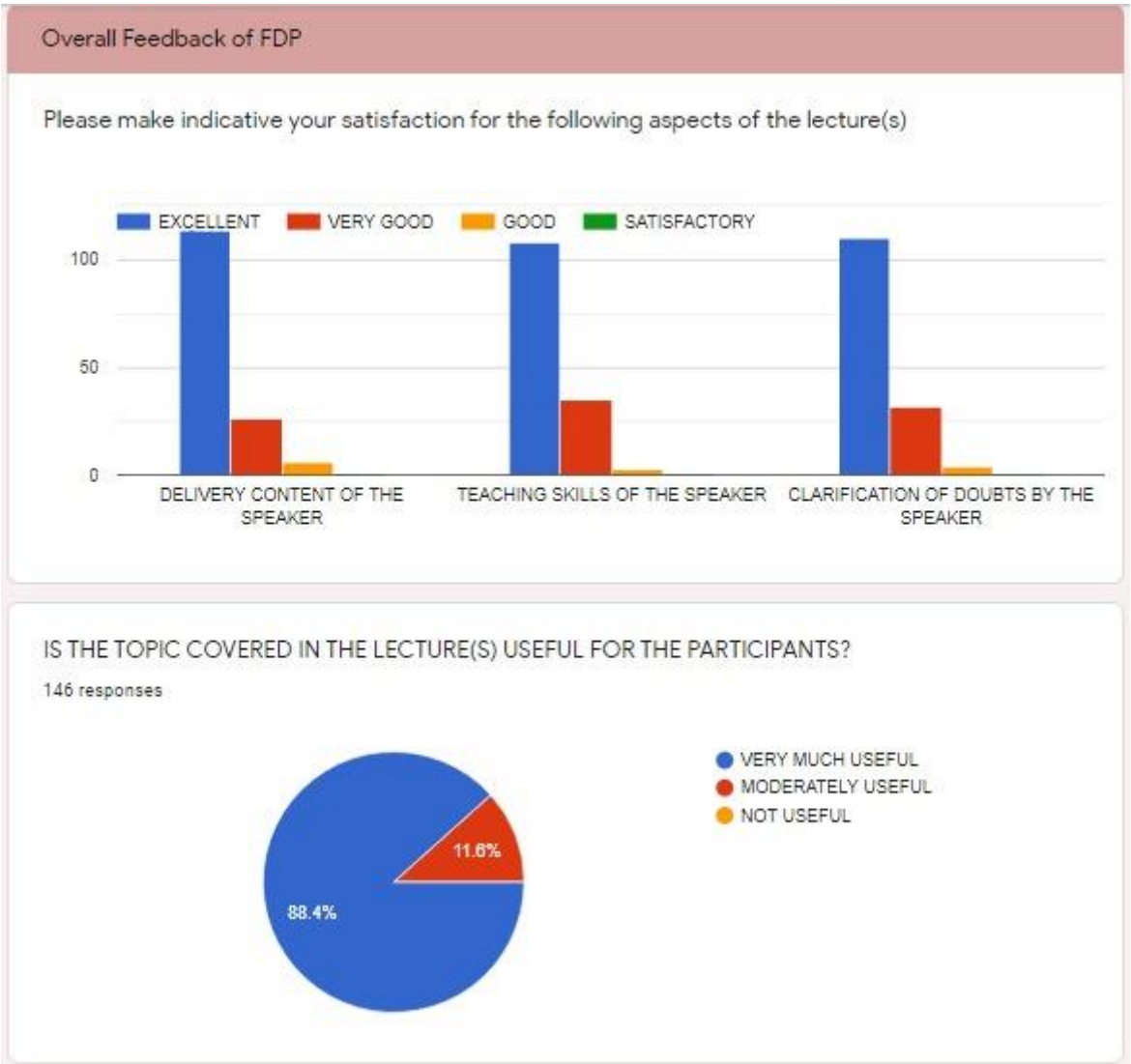
Organized by

DEPARTMENT OF MECHANICAL ENGINEERING

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

(Accredited by NAAC & NBA (CSE,IT,ECE,EEE, MECH), ISO 9001:2015 Certified Institution Approved by AICTE, New Delhi and Affiliated to JNTUK,Kakinada
L.B.REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P. 521 230.

The overall Feedback of FDP" EMERGING TRENDS IN THERMAL AND RENEWABLE ENERGY SYSTEMS"



HEAD
Dept of Mechanical Engineering
LAKIREDDY BALI REDDY COLLEGE OF ENGG
MYLAVARAM - 521 230, Krishna Dt, A.P.

HoD