



KONERU LAKSHMAIAH EDUCATION FOUNDATION

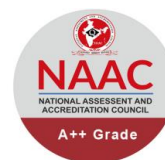
(Deemed to be University estd, u/s, 3 of the UGC Act, 1956)

(NAAC Accredited "A++" Grade University)

Green Fields, Guntur District, A.P., India – 522502

Department of Electronics and Communication Engineering

(DST - FIST Sponsored Department)



FACULTY DEVELOPMENT PROGRAMME - REPORT

Ref. No: KLEF/RO/HOD-ECE/2020-21

Date: 01.06.2021

Name of the department : Electronics and Communication Engineering

Title of the FDP : "INTEGRATION OF RENEWABLE ENERGY AND SMART GRIDS FOR SMART CITIES"

Organized dates : From **14.06.2021** To **19.06.2021**

Mode : Virtual mode (Online)

Level National/International : International

Name of the Coordinator(s) :

Chair Persons	Conveners	Co-conveners
Dr. V. K. Mittal, Department Chair Dr. M. Suman, HoD, ECE, KLEF Dr. L. Koteswararao, Principal, College of Engineering, KLH Dr. M. Goutham, HoD, ECE, KLH Dr.D.Venkata Ratnam, HoD (Research), ECE, KLEF Dr. K. Srinivasarao, MERG Group Head Dr. P. Satyanarayana, IoT stream Head, ECE, KLEF	Dr. Arunmetha S Co-conveners DR.Lakshman Pappula Dr.Sai Krishna Santosh G Dr. C. Santhosh	Dr. S. Sunithamani Dr. Bhanu Chandra Dr.Sd.Inthiyaz Dr. Biswajit Jena Dr. Atul Kumar Ms.Lakshmi Prasanna

No. of Participants : In-house: **61** Outside: **51** (3 Abroad)

No. of faculty members benefited by the FDP

Within the department : **46**

Other department : **15**

Total amount allotted for FDP : 70,000/-

Total Income from external participants : 29,200/-

Total expenditure incurred for the FDP : 83,000/-

Amount generated for Corpus fund (if any) : Nil

Recorded Session and Details :

https://drive.google.com/drive/folders/1mayo5TZRRbHu6p0SqIud_-Hg6cgsyHG0?usp=sharing

Signature of the Convener

Signature of the department

Forwarded by

HOD

Encl: a/a



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



SUMMARY OF TECHNICAL REPORT

A One-week Faculty Development Program (FDP) on "Integration of Renewable Energy and Smart Grids for Smart Cities" Organized by IoT and Renewable Energy & Smart Cities Sub Stream under Micro Electronics Research Group (MERG), Department of ECE, KLEF along with ECE, KL Hyderabad in association with IETE Vijayawada Chapter.

As per the calendar of events for this Academic year, an international level FDP program has been organized during 14th to 19th June 2021 under MERG.

OBJECTIVE:

This FDP aims to provide a platform for academicians, engineers, and researchers to learn present technologies in the areas of renewable energy, solar power systems, wind energy, the integration of distributed generation, smart grids and energy storage form the model of a smart grid to ensure high-efficiency and high-performance operation in smart cities. To make aware the participants in power sector about the concepts of smart city. This FDP aims to put together the speakers from these areas to disseminate their knowledge and experience for the listeners to work in years to come, which will also be useful for the development of the country. The ideas on operation of centralized and decentralized control, forecasting, and evaluation of different market policies may be highlighted through case study. It is expected that this course will be suitable for engineering professionals from academia, R&D organizations as well as industries.

CONTENT COVERED

- Importance and Recent Challenges in Renewable Energy Sources
- Solar Photovoltaic cells and solar power system
- Wind energy and other renewable energy
- Grid Integration, Renewable energy sources, and storage
- Introduction to Smart Grid
- Challenges in implementing Smart Grid Technologies in India
- Role of IoT in smart grids and smart cities

- Importance of the emerging role of Smart Grids for smart cities.
- Hands-on Sessions in relevant topics

SCOPE OF THE PROGRAM

The modern society is heavily dependent on the electric power supply. The quality and continuity of the electric power supplied is also very important for deployment of resilient and efficient energy systems. Advanced power electronic systems, affordable high-performance devices and smart energy management principles are deemed to be an integral part of renewable, green, and efficient energy systems. The Initiative to make the future grid intelligent has redefined the way the energy is distributed and consumed. At the heart of this revolution, energy suppliers and retailers are investing in wireless Internet of Things (IoT) technologies to re-imagine the power grid into smart grids. The Smart Grid is confluence of information, communications & electrical technologies for efficient grid operations. The Smart Grid training programs will help the participant to understand the fundamentals of main components, operation, management, security, planning and different hierarchical control levels. The evolution of the Smart Grid has now become critical to the development of sustainable energy provision. The uptake of Smart Grid requires the complex integration of communications and information systems with the conventional power grids and networks.

RESOURCE PERSONS

The sessions are delivered by eminent professors from IIT, NIT, NIWE, NISE, Foreign Universities, Central Universities, and Industrialists.

Brochure



Electronics & Communication Engineering



One Week Faculty Development Program **INTEGRATION OF RENEWABLE ENERGY AND SMART GRIDS FOR SMART CITIES**

June 14th - 19th, 2021

Organized by
Department of ECE
(DST - FIST Sponsored Department)

In Association with
The Institution of Electronics and Telecommunication Engineers (IETE)
Vijayawada Chapter



Registrations Link

<https://forms.gle/f6uiSFad3xepkduH9>

E-Certificate will be provided to all the participants

www.kluniversity.in

OBJECTIVE OF THE PROGRAM

This FDP aims to provide a platform for the academicians, engineers, and researchers to learn present technologies in the areas of renewable energy, solar power systems, wind energy, the integration of distributed generation, smart grids and energy storage form the model of a smart grid to ensure high-efficiency and high-performance operation in smart cities. This FDP create the opportunity to put together the speakers from these areas to disseminate their knowledge and experience for the listeners to work in years to come, which will also be useful for the development of the country. The ideas on operation of centralized and decentralized control, forecasting, and evaluation of different market policies may be highlighted through case study.

ABOUT THE INSTITUTION

The Koneru Lakshmaiah Charities was established as a trust in the year 1980 with its official address at Museum road, Governerpet, Vijayawada and started KL College of Engineering in the Academic year 1980-81. KLEF was established in 1980-81, as KL College of Engineering, which was upgraded to KL College of Engineering Autonomous in 2006 by UGC, and was declared as a Deemed to be University in 2009 by UGC, MHRD Govt. of India. In 2012 as a Deemed to be University the institution was accredited by NAAC with A Grade and later in 2018, was re-accredited by NAAC with A++ grade. In 2019 UGC, MHRD declared this intuition as Category I. The university was also ranked 41 under NIRF 2020.

ABOUT THE DEPARTMENT

Department of ECE was established in 1983. The department has strong back-up of 234 faculty members, specialized in core areas of ECE. Among 87 faculty members are PhD holders and 121 faculty members are pursuing PhD. Department houses several rich industry experience faculties to cater the industry needs into academics. The Department has a total of 7 State of the Art laboratories, 2 Centers of Excellence and 8 Research Centers which are well equipped to the highest level of sophistication and cater to the needs of UG, PG and PhD students. These labs have specific emphasis on Research and Development activities. The Department has 12 Crores worth of Sponsored projects from DST, DLRL, ISRO, DEAL etc. 2000+ International Journal papers, 600+ International Conference papers and 150+ National Conference papers by the faculty. Faculties from Foreign universities are involved in regular teaching activity. Department's academic calendar is highlighted by regular seminars, group discussions, student paper contests, Industry Alliance and Student Personality Development programs for all round development of students in National & International events. Student associations namely 'Pulse' to conduct technical events and 'Hope' to conduct social service activities. Placement in leading core communication companies like Amphenol Antennas, BSNL, MTNL, Reliance Communications, Tata Telecom, Hutch, Bharti Telecom, Nokia, CISCO, IBM, Intel, Agilent, Alcatel, AT & T Ericsson, Honeywell, Bosch, National Instruments, Texas Instruments, HCL and others.

CONTENT OF FDP TO BE COVERED

- ✓ Importance and Recent Challenges in Renewable Energy Sources.
- ✓ Solar Photovoltaic cells and solar power system.
- ✓ Wind energy and other renewables.
- ✓ Grid Integration, Renewable energy sources, and storage
- ✓ Introduction to Smart Grid.
- ✓ Challenges in implementing Smart Grid Technologies in India.
- ✓ Smart Grid Technologies and its Applications.
- ✓ Role of IoT in smart grids & smart cities.
- ✓ Smart Grid and Electric Vehicle (EV) Technologies.
- ✓ Hands-on Sessions in relevant topics.

RESOURCE PERSONS

The sessions will be delivered by eminent professors from IIT, NIT, NISE, CSIR, Foreign Universities, Central Universities, and Industrialists.

REGISTRATION AND PARTICIPATION DETAILS

- ✓ This FDP is for Faculty members, Scientists, Research scholars, PG Scholars, Students and participants from Government and Industry. **(Both India and Abroad)**
- ✓ **Platform:** The FDP will be conducted in Online mode (webex).
- ✓ **Certificate:** On completion of the course, all participants will be receive a digital certificate.
- ✓ Participants interested to attend this program should register online in the below mentioned links:
<https://forms.gle/f6uiSFad3xepkduH9>
- ✓ Seats are limited (only 250) and the participants are selected by organizers on first come first serve basis.
- ✓ **Last date for registration:10.06.2021**

REGISTRATION FEE

	Indian	Foreign
Industry	Rs. 500/-	10 USD
Faculty Member / Scientist	Rs. 300/-	8 USD
Research Scholar and Student	Rs. 200/-	5 USD

WIRE INFORMATION

Account Name : Registrar, KLEF
Account Number : 62310916292
IFSC Code : SBIN0021361
Bank Name : SBI, K L University
Vaddeswaram

ORGANISING COMMITTEE

GENERAL CHAIRS

Dr. V. K. Mittal, Professor & Chair, ECE, KL
Dr. L Koteswara Rao, Principal, Engineering, KLH

PROGRAM CHAIR

Dr. Suman Maloji, Professor & Hod, ECE, KL
Dr. M. Goutham, Associate Professor & Hod, ECE, KLH
Dr. D. Venkata Ratnam, Professor & Hod(Research),ECE, KL

TECHNICAL CHAIR

Dr. K. Srinivasa Rao, Professor & Mems Group Head,ECE,KL
Dr. P. Satyanarayana, Professor & Iot Steam Head,ECE,KL

CONVENER

Dr. S. Arunmetha, Associate Professor, Dept. of ECE, KL

CO-CONVENER

Dr. Lakshman Pappula, Associate Professor, Dept.of ECE,KL
Dr. Sai Krishna Santosh G, Associate Professor, ECE, KL
Dr. C. Santhosh, Associate Professor, Dept. of ECE, KL

COORDINATORS

Dr. Sunithamani, Associate Professor, Dept. of ECE, KL
Dr. Bhanu Chandra, Associate Professor, Dept. of ECE, KLH
Dr. Sd. Inthiyaz, Associate Professor, Dept. of ECE, KL
Dr. Biswajit Jena, Assistant Professor, Dept. of ECE, KL
Dr. Atul Kumar, Associate Professor, Dept. of ECE, KL
Ms. Lakshmi Prasanna, Assistant Professor, Dept. of ECE,KL

GUEST & EMINENT SPEAKERS

Inaugural Function

Chief Guest



Dr. R.K. Kotnala, FNASc, FIGU
Chairman, (NABL)
National Accreditation Board of T&C Labs
Raja Ramanna Fellow
Department of Atomic Energy (DAE)

Valedictory Function

Chief Guest



Dr. N. Sundararajan
Professor (Retd.), EEE, NTU
Singapore

Hands on Training & Demo Session

DAY-6
19th JUNE 2021

Dr. Yogesh Kumar Singh
Ex Senior Research Scientist
National Institute of Solar Energy Gurgaon Haryana India
Topic:
"Solar Power System Design Using PVSYST and PVSOL"



Yoga and Stress Management Sessions



Sri. A. Venkateswalu
Principal and Chairman
VTJM&IVTR Degree College
Topic: "Yoga and Stress Management"

DAY - 2 to 5
15th to 18th JUNE 2021

DAY-1 - 14th JUNE 2021

SESSION-I



Prof. Anil Kottantharayil
HAL Chair Professor, IIT Bombay
Topic: "A Tutorial on Photovoltaic Technology"

SESSION-II



Dr. Mustafa Alkhusheiny
CEO, Silicon Valley for Nanotechnology Co
Saudi Arabia
Topic: "Business and implementing best development strategies for operational excellence"

SESSION-III



Dr. Senthilarasu Sundaram
Senior Lecturer
Renewable Energy University of Exeter, UK
Topic: "A Third Generation Photovoltaic System"

DAY-4 - 17th JUNE 2021

SESSION-I



Er. Ramcharan Nirudi
Associate professor &
Consultant Solar & EV projects
Topic: "Best practices in operation & maintenance of solar systems with case study"

SESSION-II



Dr. V. Mayivelnathan
Professor & Head,
Mohamed Sathak Engineering College
Topic: "Microgrid & Solar Thermal Power plants"

SESSION-III



Er. Sharda Jadon
Product Development Engineer
LM Wind Power (GE Renewable), Bangalore
Topic: "Design and Development of Wind Energy System"

DAY-2 - 15th JUNE 2021

SESSION-I



Prof. Chetan Singh Solanki
Professor, IIT Bombay
Founder, Energy Swaraj Foundation
Topic:
"Energy Swaraj: Essence of Sustainability"

SESSION-II



Dr. S. N. Karthick
Assistant Professor, Department of Chemistry
Bharathiar University, Coimbatore
Topic: "Recent Trends in Solar Energy Harvesting"

SESSION-III



Er. Christie Fernandez
Founder, Soorya EV Pte Ltd., Singapore
Topic:
"Powering Electric Vehicles with Solar Energy"

DAY-5 - 18th JUNE 2021

SESSION-I



Dr. M. Venkateshkumar
Asst. Prof. (Sr.G), Amrita School of Eng.,
Amrita Vishwa Vidyapeetham
Chennai Campus
Topic: "AI based Smart Grid Integration of Renewable Energy System"

SESSION-II



Dr. Pierluigi Siano
Scientific Director
Smart Grids and Smart Cities Laboratory
University of Salerno, Italy
Topic: "Scalability and Privacy Issues of an Extreme-Scale Distributed Parallel Optimization"

SESSION-III



Dr. Imayavaramban Munuswamy
President and CTO - IC Tech Puducherry
Topic: "Trends in EV Technology"

DAY-3 - 16th JUNE 2021

SESSION-I



Dr. Dipankar Debnath
Assistant Professor, IIT Kharagpur
Topic: "Challenges of grid integration of Single-phase solar inverter"

SESSION-II



Dr. M. Sathish
Senior Scientist
Electrochemical Power Sources Division
CSIR-CECRI, Karaikudi
Topic: "Recent Trends in Energy Storage System"

SESSION-III



Er. Vijay Kumar
Sr Design Engineer, Green Cubes
Technology Corporation, Bangalore
Topic: "Electric vehicle batteries"

**"Registrations are on a first-come,
First-served basis...
So register early"**

For Further Correspondence

Convenor
Renewable Energy FDP
Department of ECE

Mobile: +91 99948 31313

E- Mail: sarunmetha@kluniversity.in;

klefecfdp@gmail.com

KONERU LAKSHMAIAH EDUCATION FOUNDATION

K L Deemed to be University

Green Fields, Vaddeswaram

Guntur District, Andhra Pradesh, Pin: 522 502

Ph: 08645-350200 | www.kluniversity.in

Session-I: 10am to 11.30am; **Session-II:** 12pm to 1.30pm; **Session-III:** 3pm to 4.30pm



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Time Schedule

Time Days	9.00-10.00	10.00-11.30	11.30-12.00	12.00-1.30	1.30-3.00	3.00-4.30
DAY-1 14.6.2021	Inauguration Chief Guest Dr.R.K.Kotnala, FNASc, FIGU Raja Ramanna Fellow (Dept. of Atomic Energy) Chairman, National Accreditation Board for Testing & Calibration Laboratories (NABL)	Prof. Anil Kottantharayil HAL Chair Professor, IIT Bombay A Tutorial on Photovoltaic Technology	Tea Break	Dr. Mustafa Alkhusheiny CEO, Silicon Valley for Nanotechnology Co Saudi Arabia Business and implementing best development strategies for operational excellence	Lunch Break	Dr Senthilarasu Sundaram Senior Lecturer Renewable Energy University of Exeter, UK A Third Generation Photovoltaic System
DAY-2 15.6.2021	Sri. A. Venkateswalu Principal and Chairman VTJM&IVTR Degree College Yoga and Stress Management Session-1	Prof. Chetan Singh Solanki Professor, IIT Bombay and Founder, Energy Swaraj Foundation Energy Swaraj: Essence of Sustainability	Tea Break	Dr. S. N. Karthick Assistant Professor Department of Chemistry Bharathiar University Coimbatore Recent Trends in Solar Energy Harvesting	Lunch Break	Er. Christie Fernandez Founder/ Soorya EV Pte Ltd. Singapore Powering Electric Vehicles with Solar Energy
DAY-3 16.6.2021	Sri. A. Venkateswalu Principal and Chairman VTJM&IVTR Degree College Yoga and Stress Management Session-2	Dr. Dipankar Debnath Assistant Professor, IIT Kharagpur Challenges of grid integration of Single-phase solar inverter	Tea Break	Dr. M. Sathish Senior Scientist Electrochemical Power Sources Division CSIR-CECRI, Karaikudi Recent Trends in Energy Storage System	Lunch Break	Er. Vijay Kumar Sr Design Engineer Green Cubes Technology Corporation Bangalore Urban Electric vehicle batteries
Time Days	9.00-10.00	10.00-11.30	11.30-12.00	12.00-1.30	1.30-3.00	3.00-4.30
DAY-4 17.6.2021	Sri. A. Venkateswalu Principal and Chairman VTJM&IVTR Degree College Yoga and Stress Management Session-3	Er. Ramchander Nirudi Associate professor & Consultant Solar & EV projects Best practices in operation & maintenance of solar systems with case study	Tea Break	Dr. V. MAYILVELNATHAN Professor & Head, Mohamed Sathak Engineering College Microgrid & Solar Thermal Power plants	Lunch Break	Er. Sharda Jadon Product Development Engineer LM Wind Power (GE Renewable), Bangalore Design and Development of Wind Energy System
DAY-5 18.6.2021	Sri. A. Venkateswalu Principal and Chairman VTJM&IVTR Degree College Yoga and Stress Management Session-4	Dr. M. Venkateshkumar Assistant Professor (Sr.G), Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Chennai Campus. "AI based Smart Grid Integration of Renewable Energy System"	Tea Break	Dr. Pierluigi Siano Scientific Director, Smart Grids and Smart Cities Laboratory, University of Salerno, Italy Scalability and Privacy Issues of an Extreme- Scale Distributed Parallel Optimization	Lunch Break	Dr. Imayavaramban M President and CTO - IC Tech Puducherry Trends in EV Technology
DAY-6 19.6.2021	Final Online Test	Industry Hands on Session (Demo & Training) Solar Power System Design Using PVSYSY and PVSOL Dr. Yogesh Kumar Singh Ex Senior Research Scientist National institute of Solar Energy Gurugram Haryana India				Feedback & Valedictory Chief Guest Dr. N. Sundararajan Professor (Retd.), EEE, NTU Singapore

Inaugural Function



Department of
Electronics & Communications



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Inaugural Invitation

**14th June 2021
9.00 am - 10.00 am**

Cordially Invites You to the Inauguration of FDP

Inaugural Function



Department of
Electronics & Communications



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Inaugural Function

**14th June 2021
9.00 am - 10.00 am**

Cordially Invites You to the Inauguration of FDP

9.00-9.02 : *Prayer Song*

9.02-9.05 : *Lighting of Kuthuvilakku*

9.05-9.10 : *Welcome speech by Dr. M. Suman, HOD, ECE, KLEF*

9.10-9.15 : *Welcome address by Dr. K. Subba Rao, Principal, KLEF*

9.15-9.20 : *Welcome address by Dr. A. Srinath, Dean Skill Development & Principal, ASC, KLEF*

9.20-9.25 : *Welcome address by Dr. Vinay Kumar Mittal, Chair, ECE, KLEF*

9.25-9.30 : *Welcome address by Dr. M. Goutham, HOD, ECE, KL Hyd.*

9.30-9.50 : *Inaugural Address by Chief Guest*

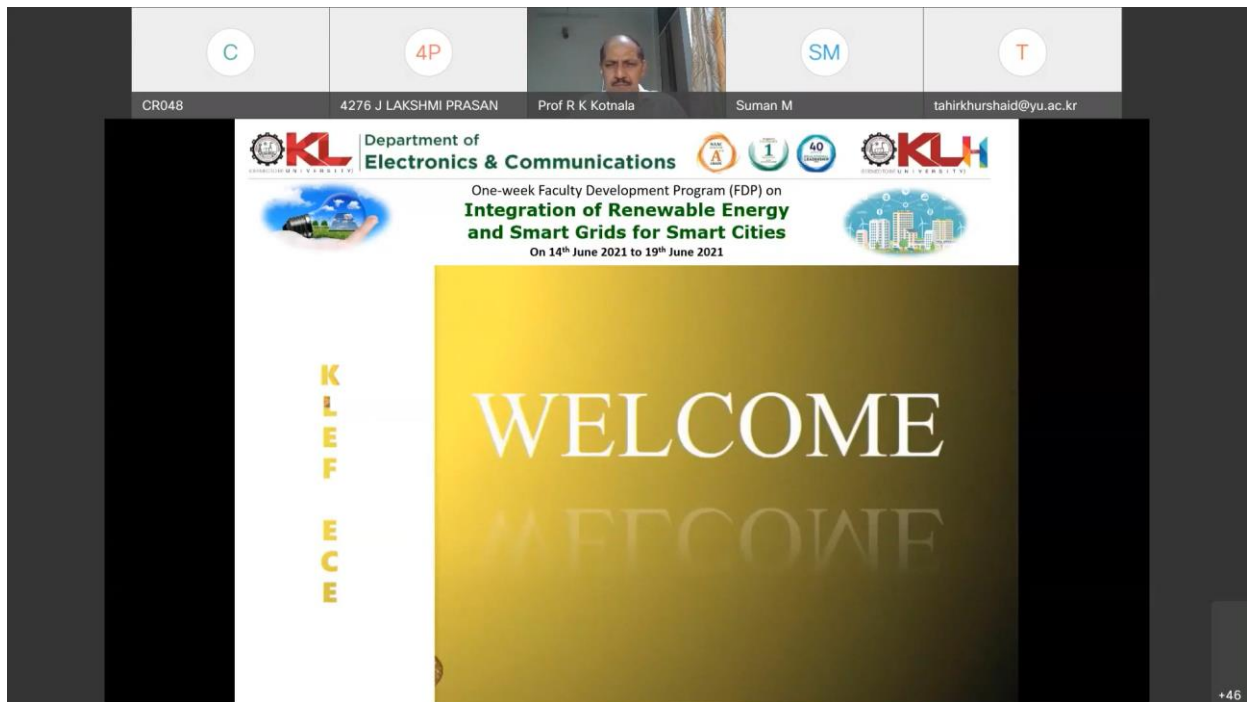
Dr. R. K. Kotnala, FNASC, FIGU, Chairman, NABL

9.50-9.55 : *Welcome address by Dr. K. Srinivasa Rao, MERG Head, KLEF*

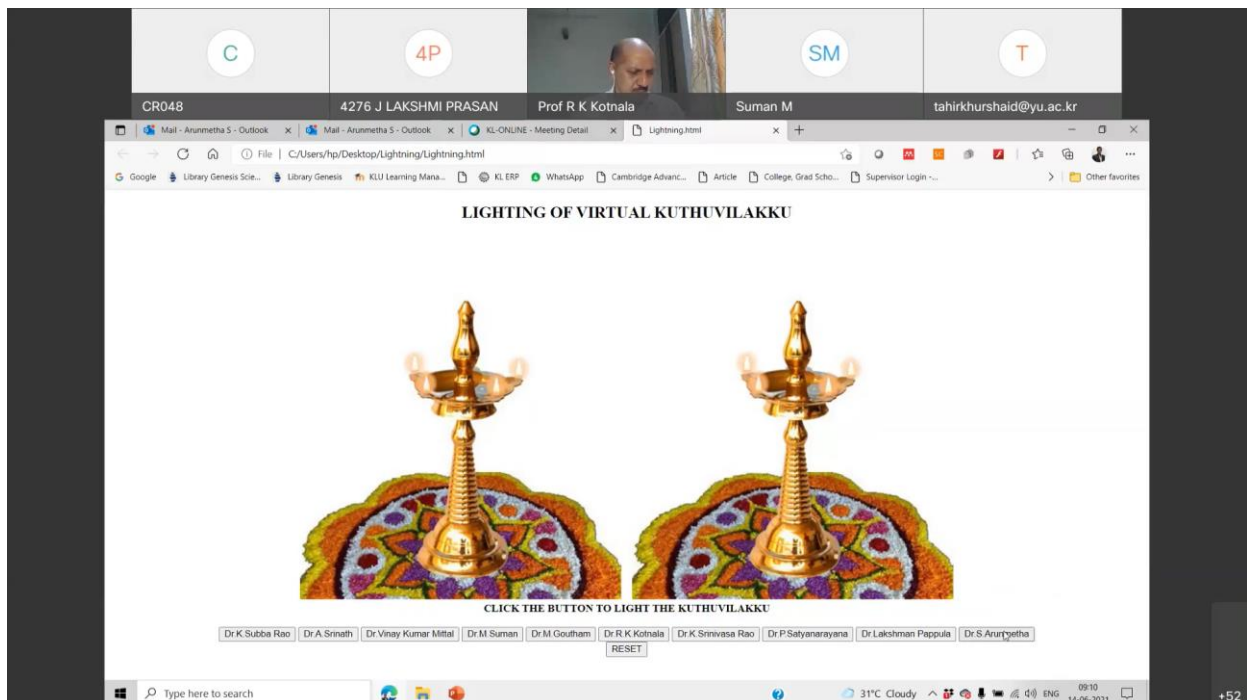
9.55-10.00 : *Vote of thanks by Dr. S. Arunmetha, Convenor of the FDP, KLEF*

Inaugural Function

Prayer Song



Lighting of Kuthuvilakku





One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Inaugural Function

**14th June 2021
9.00 am - 10.00 am**

Inaugural Address

Hydroelectric Cell - Green Electricity

Chief Guest





Dr. R.K. Kotnala, FNASc, FIGU

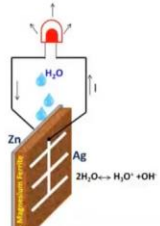
Chairman, (NABL)

National Accreditation Board of T&C Labs

Raja Ramanna Fellow

Department of Atomic Energy (DAE)

T	4P			DB
tahirkhurshaid@yu.ac.kr	4276 J LAKSHMI PRASAN	Prof R K Kotnala	Dr. Vinay Kumar Mittal	Dr ANNALURU BALAJIRAV



Hydroelectric Cell
– generates energy
using water only

- Twenty First Century's Biggest Invention on Green Energy- **HYDROELECTRIC CELL INVENTION** - Pride of Scientific Fraternity !!!
- Unbelievable Path Breaking Invention of Water Splitting to Generate Green Electricity by Hydroelectric Cell: Pride of India Invented in 2016.
- Hydroelectric cell generates electricity instantly using few drops of water only with no acid/alkali/light/temperature.
- Dr Kotnala and Dr Shah have invented Nano-porous oxygen deficient magnesium ferrite, which splits water molecules spontaneously at room temperature by hydroelectric cell device generates electricity & hydrogen gas.
- Hydroelectric Cell is the biggest invention of the 21st Century in the Green Energy as an alternative to Solar Cell & Fuel Cell and it is patented [US10752515B2](#)
- Water Splitting by non-photocatalytic process to generate Green Electricity few drops of water by Hydroelectric Cell an alternative to Solar Cell & Fuel cells.

The FDP addresses the various aspects of Advances in Renewable Energy Technologies and promotes student centric effective teaching-learning pedagogy among the participants. This course was aimed for teachers who are teaching various disciplines of science and engineering subjects in colleges or Universities. There were 112 number of participants registered for this program from different Universities, Colleges, and Industries of all the parts of India including few abroad participants.

The Inaugural function start with the formal prayer song and all the dignitaries take part in the Lighting of Kuthuvilaku Ceremony. On behalf of Management and all the dignitaries Prof. M Suman, HoD, ECE, KLEF inaugurated the program. In his inaugural address, Prof. V. Mittal stressed upon the progress and importance of Renewable Energy and Smart grids changes from conventional method to modern technologies towards the development of Smart cities. Prof. A. Srinath, Dean Skill Development & Principal, ASC, KLEF address the gathering by welcoming all the Guest, participants and motivating the participants to take these latest technologies to the growing students.

Prof. R K Kotnala, Chairman NABL was the Chief Guest in the inaugural function. Prof Kotnala spoke about the Hydroelectric Cell for the Green Electricity by Few Drops of Water and explain the working principle and the mechanism of the cell with the practical demonstrations. It was really motivating the young faculties to take part in this kind of requirement, which need to be on the path of Make in India. He also addressed the participants to work on the integration of Renewable energy and Smart grids towards the development of Energy sustainable smart cities. Prof K. Srinivasarao deliberations creates the curiosity on Smart grids approach in near future among the participants. Dr. S. Arunmetha, Convenor of the FDP, Prof. Kaviya, Prof. Habibulla Khan and IoT and Renewable Energy & Smart Cities Stream Faculties also graced the inaugural function of the program.

Day-1 (14-06-2021) Session – I (10.00 -11.30)

 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 1
14th June 2021

Session-I
10.00 am - 11.30 am

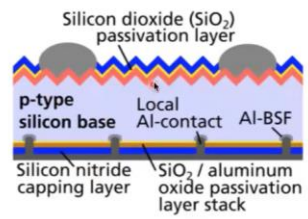
Topic
A Tutorial on Photovoltaic Technology

 **Prof. Anil Kottantharayil**
HAL Chair Professor
IIT Bombay
Mumbai

Anil Kottantharayil | Dr ANNALURU BALAJIRAV | mumtha.C | Dr. Priyanka Chaudhary | 5439 Dr Santhosh C

Silicon Solar Cells

- Saw Damage Removal (KOH)
- Alkali Texturization (front side)
- Diffusion (front side)
- PSG Removal
- Edge Isolation
- Anti Reflective Coatings (ARC)
- Backside passivation layer
- Backside contact opening (laser)
- Back Aluminum Printing/Drying
- Front Silver Printing/Drying
- Metallization or Co-firing (RTP)



Front | Back

KL University FDP: A Tutorial on PV Technology - Anil Kottantharayil

Prof. Anil Kottantharayil, HAL Chair Professor, IIT Bombay, has delivered keynote address on “A Tutorial on Photovoltaic Technology” In this session participants were learned about the state of art of the PV materials, device structure and Band gap of silicon measurements and find efficiency of the PV.

Day-1 (14-06-2021) Session – II (12.00 -1.30)

 Department of **Electronics & Communications**    

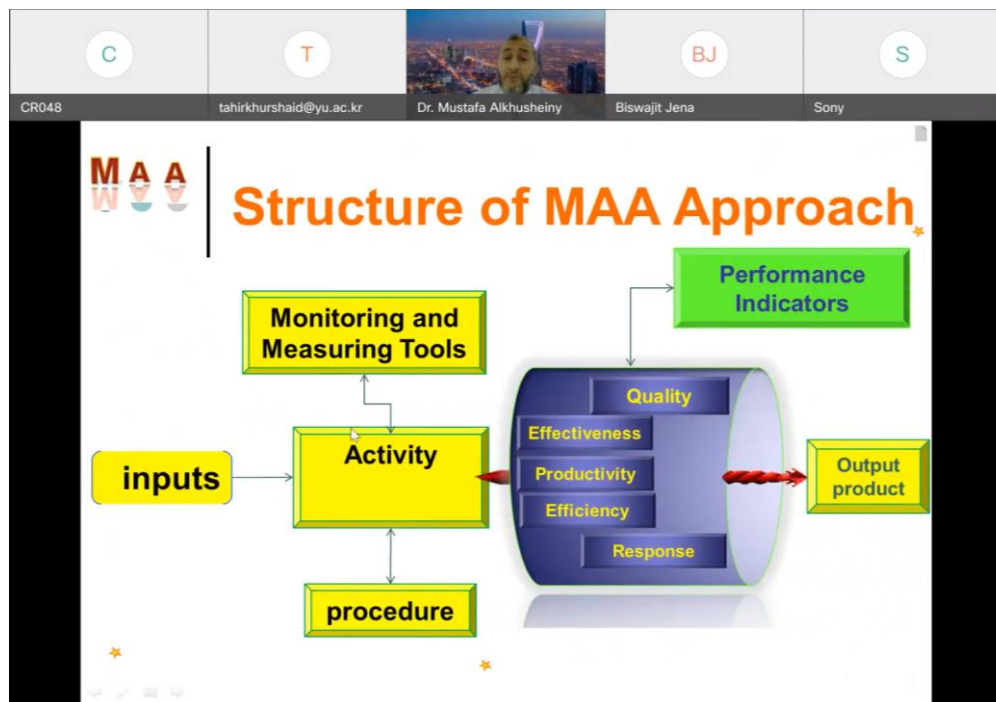
One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 1
14th June 2021

Session-II
12.00 pm - 1.30 pm

Topic
Business and implementing best development strategies for operational excellence


Dr. Mustafa Alkhusheiny
CEO
Silicon Valley for Nanotechnology Co
Saudi Arabia



Dr. Mustafa Alkhusheiny, CEO, Silicon Valley for Nanotechnology Co, Saudi Arabia, has delivered a keynote address on “Business and implementing best development strategies for operational excellence” This session was flooded with theoretical ideas of MAA approach and newer field implemented projects of either Energy or water or transportation in Saudi Arabia is given and including the Manufacturing and Management Systems.

Day-1 (14-06-2021) Session – III (3.00 -4.30)


 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
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On 14th June 2021 to 19th June 2021

Day – 1
14th June 2021

Session-III
3.00 pm - 4.30 pm

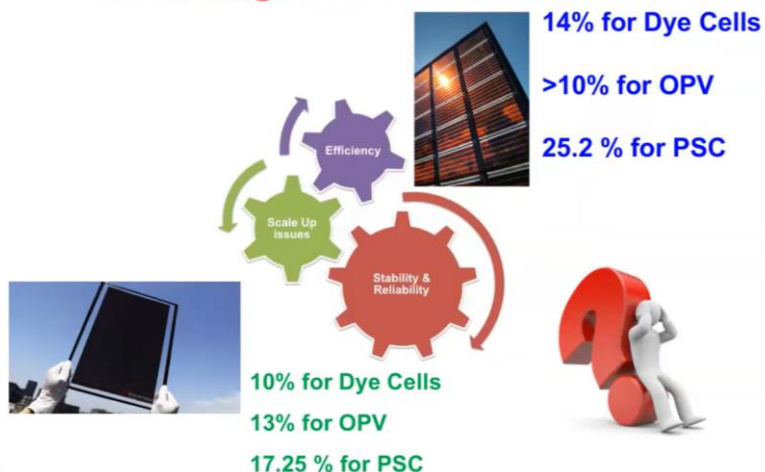
Topic
A Third Generation Photovoltaic System


Dr Senthilarasu Sundaram
Senior Lecturer
Renewable Energy
University of Exeter, UK

4P C AC SR

4276 J LAKSHMI PRASAN CR048 Senthilarasu Sundaram Alessia Cimarelli Samiur Rehman.S

Challenges- 3G solar cells



14% for Dye Cells
>10% for OPV
25.2 % for PSC

10% for Dye Cells
13% for OPV
17.25 % for PSC

Environment and Sustainability Institute 9 www.exeter.ac.uk/esi

Dr Senthilarasu Sundaram, Senior Lecturer, Renewable Energy University of Exeter, UK, has delivered a keynote address on “A Third Generation Photovoltaic System”. He Explained about the Insights and Techniques of Photovoltaic Systems with the possibility of future research aspects. The session was more informative, Knowledge shared about the different generation of solar cells.

Day-2 (15-06-2021) Session – I (10.00 -11.30)

Department of Electronics & Communications

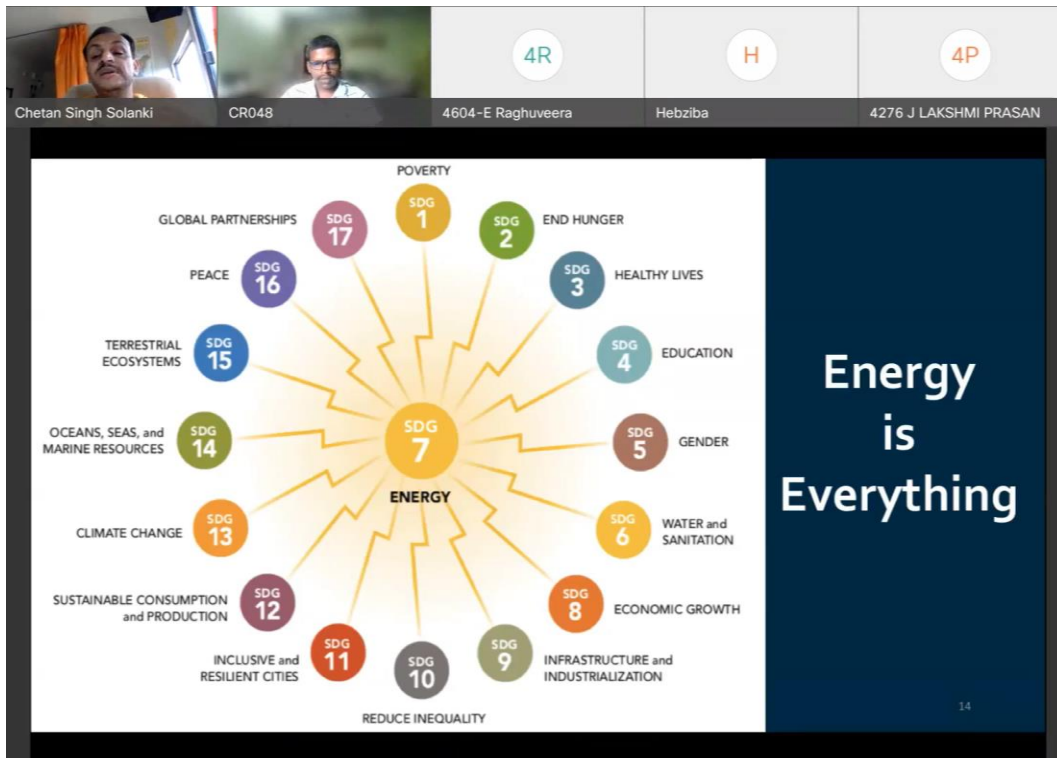
One-week Faculty Development Program (FDP) on **Integration of Renewable Energy and Smart Grids for Smart Cities**
On 14th June 2021 to 19th June 2021

Day – 2
15th June 2021

Session-I
10.00 am - 11.30 am

Topic
Energy Swaraj: Essence of Sustainability

Prof. Chetan Singh Solanki
Professor,
IIT Bombay
Founder,
Energy Swaraj Foundation



The screenshot shows a Zoom meeting interface with a presentation slide. The slide features a central diagram of the 17 Sustainable Development Goals (SDGs) arranged in a circle around a central 'SDG 7 ENERGY' node. Lines connect the central node to various other SDGs, including SDG 1 (POVERTY), SDG 2 (END HUNGER), SDG 3 (HEALTHY LIVES), SDG 4 (EDUCATION), SDG 5 (GENDER), SDG 6 (WATER and SANITATION), SDG 8 (ECONOMIC GROWTH), SDG 9 (INFRASTRUCTURE and INDUSTRIALIZATION), SDG 10 (REDUCE INEQUALITY), SDG 11 (INCLUSIVE and RESILIENT CITIES), SDG 12 (SUSTAINABLE CONSUMPTION and PRODUCTION), SDG 13 (CLIMATE CHANGE), SDG 14 (OCEANS, SEAS, and MARINE RESOURCES), SDG 15 (TERRESTRIAL ECOSYSTEMS), SDG 16 (PEACE), and SDG 17 (GLOBAL PARTNERSHIPS). To the right of the diagram, a dark blue box contains the text 'Energy is Everything'. The Zoom interface shows participants: Chetan Singh Solanki, CR048, 4604-E Raghuvveera, Hebziba, and 4276 J LAKSHMI PRASAN. The interface also displays icons for 4R, H, and 4P.

Prof. Chetan Singh Solanki, Professor, IIT Bombay and Founder, Energy Swaraj Foundation Energy Swaraj: Essence of Sustainability. Great Lines (Energy Swaraj) and Great Philosophy!... Greatly Explained. The real time challenges in solar technology, session with present day energy wastages and the importance of conservation of energy. Learned a lot on current solar scenario, the importance and advantages of solar energy.

Day-2 (15-06-2021) Session – II (12.00 -1.30)

 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 2
15th June 2021

Session-II
12.00 pm - 1.30 pm


Topic
Recent Trends in Solar Energy Harvesting

**Dr. S. N. Karthick**
Assistant Professor
Department of Chemistry
Bharathiar University
Coimbatore

KS C DC 4D S

Karthick SN CR048 Dr. Priyanka Chaudhary 4291 Dr.S.Sunithamani Sony

PHOTOSYNTHESIS IN PLANTS



Principles and Configuration of Dye-sensitized Solar Cells

Photosynthesis Provided a Hint

Electrons generated by chlorophyll

Carbon dioxide + CO₂ + Light -> Carbon + Oxygen + Hydrogen




Water H₂O

Soil

Legend: Titanium oxide, Pigment, Catalyst, Electrolyte, Battery electrolyte

Dr. S. N. Karthick, Assistant Professor Department of Chemistry, Bharathiar University Coimbatore, has delivered a keynote address on “Recent Trends in Solar Energy Harvesting” This session was flooded with basics of solar cells and well Explained about the mechanisms of Dye Sensitized Solar Cells. The use of chemical engineering aspects in the design and fabrication of solar cells.

Day-2 (15-06-2021) Session – III (3.00 -4.30)


 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**
On 14th June 2021 to 19th June 2021

Day – 2
15th June 2021

Session-III
3.00 pm - 4.30 pm



Topic
Powering Electric Vehicles with Solar Energy

 **Er. Christie Fernandez**
Founder
Soorya EV Pte Ltd.
Singapore

C DJ SR D5

CR048 Christie Fernandez Dr. Biswajit Jena Samiur Rehman.S Dr. K. Praghash 5675

Powering Transport with Solar EV Charging Infrastructure

**Electric Forecourt®
Gridserve UK**

Super-fast, reliable charging
for up to 36 cars at the same
time

- 12 DC Chargers – up to 350kW
- 12 DC Chargers – up to 90kW
- 6 AC Chargers – up to 22kW
- 6 TESLA Superchargers

The Electric Forecourt® is
powered by clean solar
energy and clever battery
storage technology

Er. Christie Fernandez, Founder Soorya EV Pte Ltd, Singapore, has delivered a keynote address on “Powering Electric Vehicles with Solar Energy”. He Explained about the different type of vehicle using solar energy with examples and animation, which helps in understanding the concepts. The session was informative and in synchronization with current trends towards solar power in e mobility.

Day-3 (16-06-2021) Session – I (10.00 -11.30)



Department of
Electronics & Communications





One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

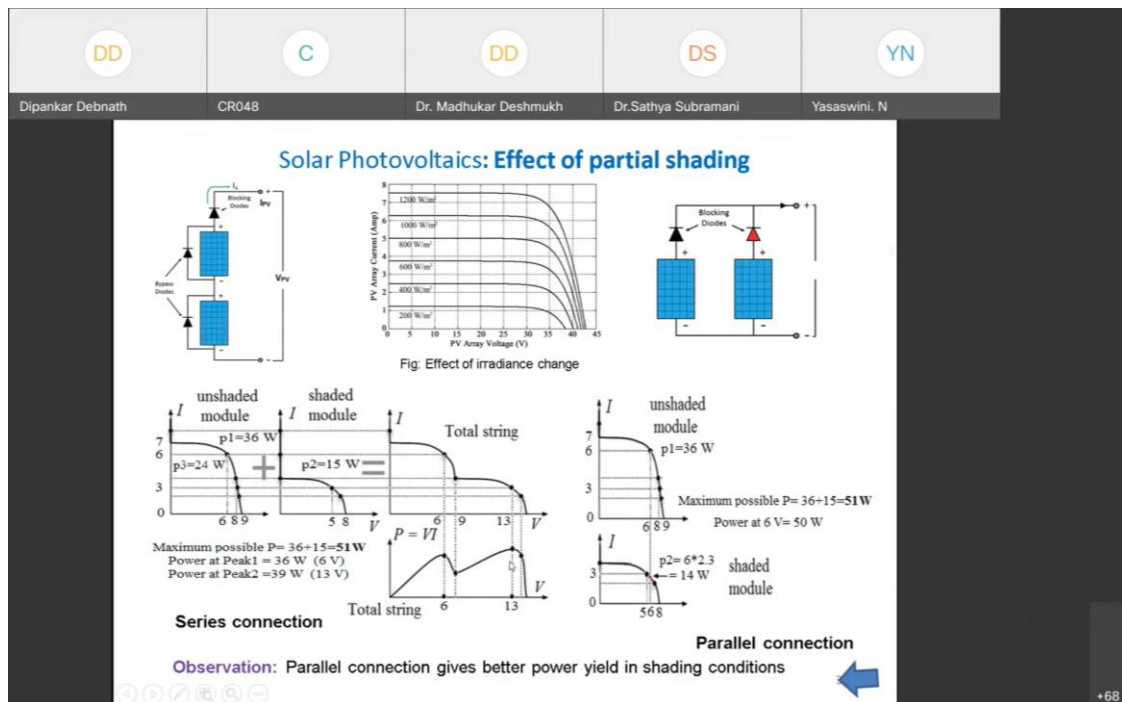
Day – 3
16th June 2021

Session-I
10.00 am - 11.30 am

Topic
Challenges of grid integration of Single-phase solar inverter





Dr. Dipankar Debnath
Assistant Professor
IIT Kharagpur



Dr. Dipankar Debnath, Assistant Professor, IIT Kharagpur, has delivered a keynote address on “Challenges of grid integration of Single-phase solar inverter”. In the session, explained about the details of solar power system and Different PV architecture of Solar Panels. Demonstrated about the design of the solar system, Single phase solar inverter, Grid connected Inverter and Analytical power analysis as well PV grid integration challenges.

Day-3 (16-06-2021) Session – II (12.00 -1.30)

 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 3
16th June 2021

Session-II
12.00 pm - 1.30 pm

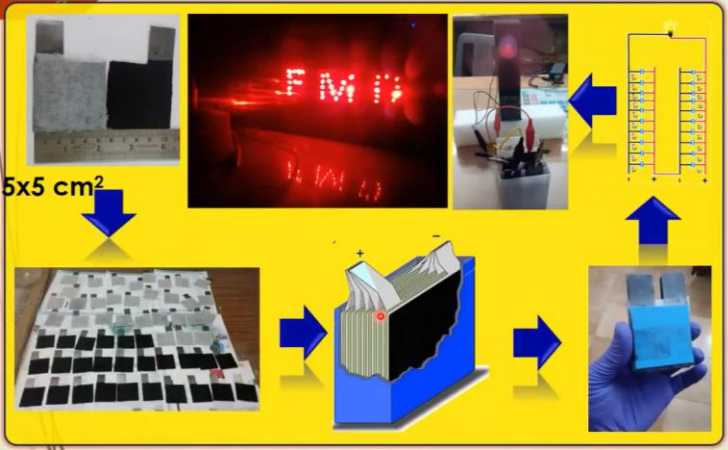
Topic
Recent Trends in Energy Storage System


Dr. M. Sathish
Senior Scientist
Electrochemical Power Sources Division
CSIR-CECRI
Karaikudi

MS DJ AY C KR

M. Sathish Dr. Biswajit Jena Anami Yadav CR048 K. HIMAJA REDDY

Fabrication of Asymmetric Supercapacitors



5x5 cm²

Asymmetric Supercapacitors 59

Dr. M. Sathish, Senior Scientist, Electrochemical Power Sources Division, CSIR-CECRI, Karaikudi, has delivered a keynote address on “Recent Trends in Energy Storage System” This session was Insights about the Technicalities and Applications of Energy storage devices like Supercapacitors and batteries. As well explained the combination of latest trends are being presented in grid technology and Storage systems.

Day-3 (16-06-2021) Session – III (3.00 -4.30)

 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 3
16th June 2021

Session-III
3.00 pm - 4.30 pm

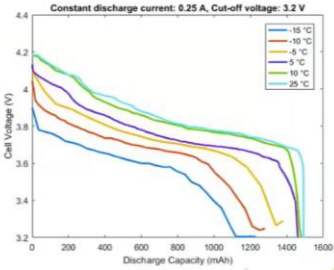
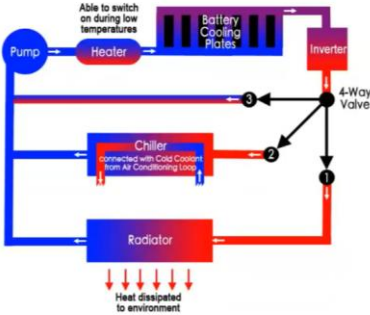
Topic
Electric vehicle batteries

 **Er. Vijay Kumar**
Sr Design Engineer
Green Cubes Technology Corporation
Bangalore

VK	C	2M	AP	2P
Vijay Kumar-GCT	CR048	2721_Dr Nagesh M	A V PRABU	2812- Dr.MVD Prasad

Battery pack thermal management

- Lithium ion battery operate the best between the temperature range of 10-30 degree C.
- However the climatic conditions in many places of the world might have a range between -30 to +50 degree C
- Li Ion thermal management hence is a crucial design criteria in designing the battery pack system.
- Battery management system (BMS) will take the inputs from the thermocouples placed at strategic locations after CFD simulations will govern the discharge current rates from the cells
- Vehicle HVAC will be used to maintain the temperature of the cells in the battery pack into the desired range in 4 wheelers.
- Different Epoxy and Phase change materials will be used in case of Non-HVAC vehicles (2 and 3 Wheelers)



Er. Vijay Kumar, Sr Design Engineer at Green Cubes Technology Corporation, Bangalore, has delivered a informative session on “Electric vehicle batteries”. Lucid explanation to all parts of BMS irrespective of discipline of science and engineering. In this session participants were taught batteries elements, Battery pack mechanical design, benefits and thermal management in industrial perspective.

Day-4 (17-06-2021) Session – I (10.00 -11.30)

 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 4
17th June 2021

Session-I
10.00 am - 11.30 am


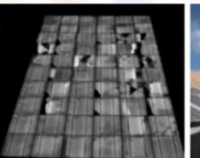
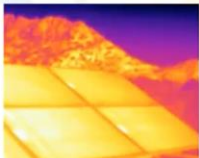


Topic
Best practices in operation & maintenance of solar systems with case study


Er. Ramchander Nirudi
Associate professor &
Consultant
Solar & EV projects

RN	US	C	SS	T
Ramchander Nirudi	UDAYA SHAKAR	CR048	Sandeep Sinhmar	tahirkhurshaid@yu.ac.kr

Equipment Failures: Modules

- Cell Short Circuit
- Cell Open Circuit
- Interconnect Open Circuit
- Open circuit
- Short Circuit
- Glass Breakage
- Delamination
- Hot spot (Reverse-Biased)
- DC Arc Fault
- By-Pass Diode
- Encapsulant
- Bonding Path Resistance
- Reverse Current Overload
- Corrosion
- Strain Relief
- Insulation
- Weather



Dr. Ramchander Nirudi, Solar & EV Consultancy/Training/Testing of PV Modules & Systems, Telangana, India, has delivered a keynote address on “Best practices in operation & maintenance of solar systems with case study”. In the session, explained about the importance of renewable energy system and Different approaches for Solar System Maintenance and performance testing and monitoring. The detailed explanation of operation and maintenance employment opportunities to be provided for a smart city.

Day-4 (17-06-2021) Session – II (12.00 -1.30)

Department of Electronics & Communications

One-week Faculty Development Program (FDP) on Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

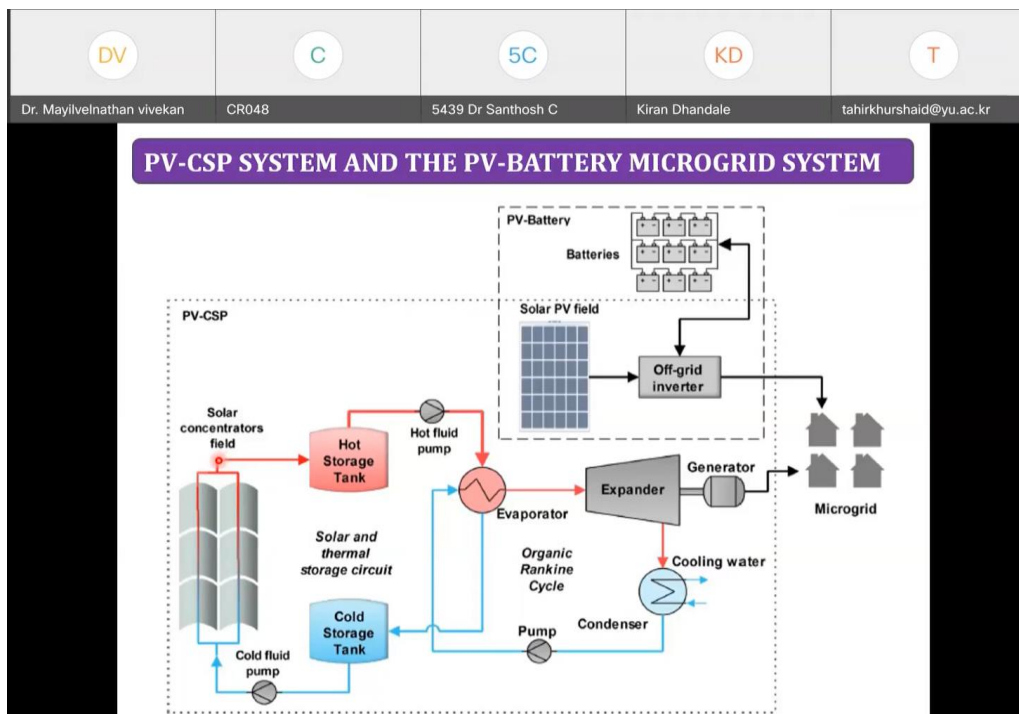
Day – 4
17th June 2021

Session-II
12.00 pm - 1.30 pm

Topic
Microgrid & Solar Thermal Power plants






Dr. V. Mayilvelnathan
Professor & Head
Mohamed Sathak Engineering College



Dr. V. Mayilvelnathan, Professor & Head, Mohamed Sathak Engineering College, has delivered a keynote address on “Microgrid & Solar Thermal Power plants” This session was Insights about the Technicalities and Applications of Concentrated solar power storage systems. As well explained the Internal Details of Micro Grid being presented in importance of role of thermal storage system in the solar thermal systems.

Day-4 (17-06-2021) Session – III (3.00 -4.30)


 Department of **Electronics & Communications**    

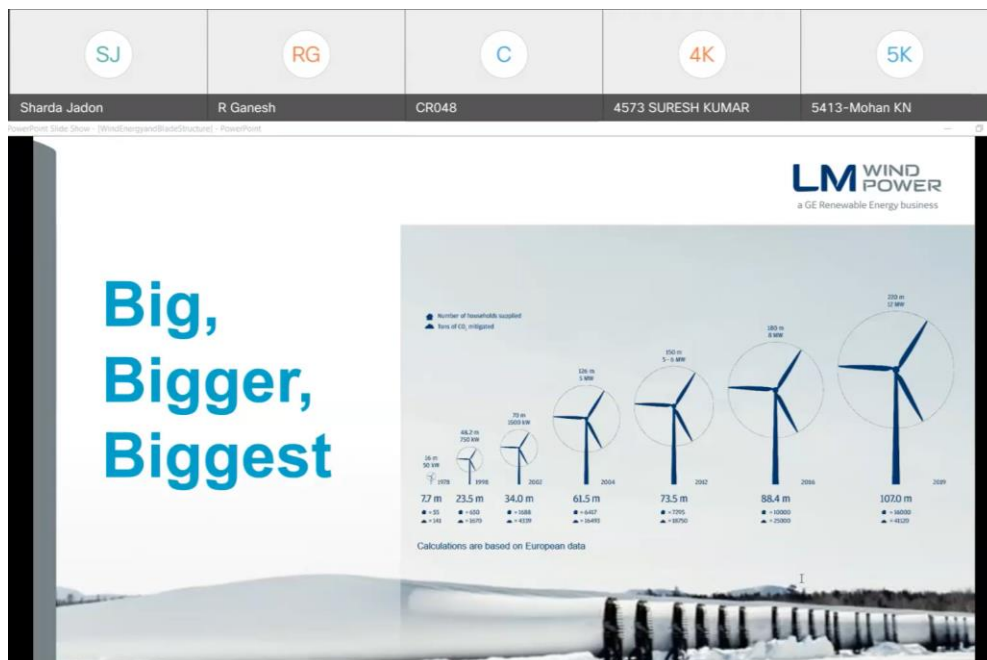
One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 4
17th June 2021

Session-III
3.00 pm - 4.30 pm

Topic
Design and Development of Wind Energy System

 **Er. Sharda Jadon**
Product Development Engineer
LM Wind Power (GE Renewable)
Bangalore



Er. Sharda Jadon, Product Development Engineer, LM Wind Power (GE Renewable), Bangalore, has delivered an informative session on “Design and Development of Wind Energy System”. The role of wind energy in the Renewable energy resources, harnessing wind power and its technical details. Basics of wind blade structure and design of Blades leading to Aerodynamics. Wind energy characteristics, participants realized that no competitors for wind blades other than GE.

Day-5 (18-06-2021) Session – I (10.00 -11.30)

 Department of
Electronics & Communications    

One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**
On 14th June 2021 to 19th June 2021

Day – 5
18th June 2021

Session-I
10.00 am - 11.30 am

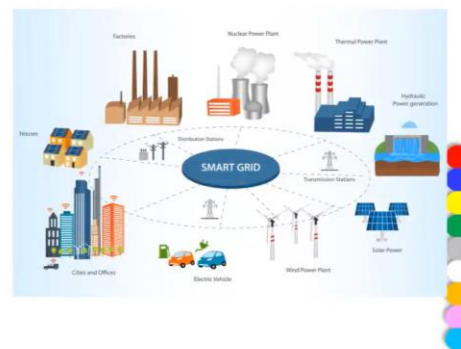
Topic
**AI based Smart Grid Integration of Renewable
Energy System**


Dr. M. Venkateshkumar
Assistant Professor (Sr.G)
Amrita School of Engineering
Amrita Vishwa Vidyapeetham
Chennai Campus

M	BJ	C	5K	S
m_venkateshkumar@ch.a	Biswajit Jena	CR048	5413-Mohan KN	Sibichackravathy

Smart Grid

- In short, the digital technology that allows for **two-way communication** between the utility and its customers, and the sensing along the transmission lines is what makes the grid smart.
- Like the Internet, the Smart Grid will consist of **controls, computers, automation, and new technologies and equipment** working together, but in this case, these technologies will work with the electrical grid to **respond digitally** to our **quickly changing electric demand**.



https://www.smartgrid.gov/the_smart_grid/smart_grid.html



Dr. M. Venkateshkumar, Assistant Professor (Sr.G), Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Chennai Campus, has delivered a keynote address on “AI based Smart Grid Integration of Renewable Energy System”. In the session, explained about the AI technology used for power distribution and Excellent Perspective towards AI & ML with mor informative slides. The detailed explanation of Multilevel Inverter topic and DC Converter for smart technologies.

Day-5 (18-06-2021) Session – II (12.00 -1.30)

 Department of **Electronics & Communications**    

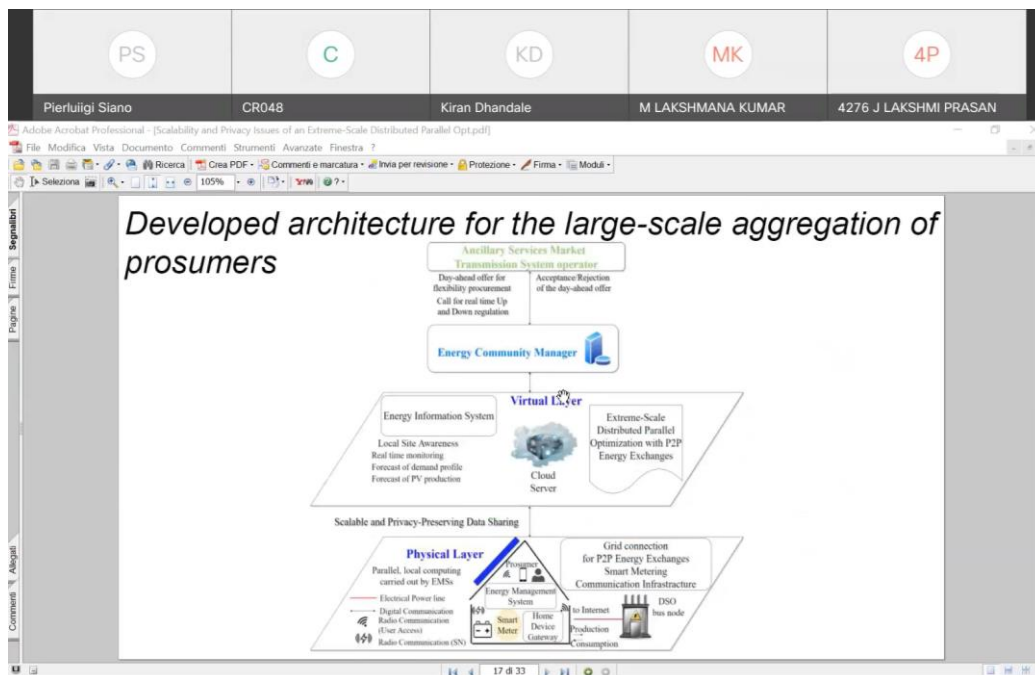
One-week Faculty Development Program (FDP) on
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On 14th June 2021 to 19th June 2021

Day – 5
18th June 2021

Session-II
12.00 pm - 1.30 pm






Topic
Scalability and Privacy Issues of an Extreme-Scale Distributed Parallel Optimization

 **Dr. Pierluigi Siano**
Scientific Director,
Smart Grids and Smart Cities Laboratory
University of Salerno, Italy



Dr. Pierluigi Siano, Scientific Director, Smart Grids and Smart Cities Laboratory, University of Salerno, Italy, has delivered a keynote address on “Scalability and Privacy Issues of an Extreme-Scale Distributed Parallel Optimization” This session was insights about the Technicalities and Applications of Smart Grids. As well explained the designing of large scale smart grids and optimization, being presented in necessity of smart grids in future.

Day-5 (18-06-2021) Session – III (3.00 -4.30)


 Department of **Electronics & Communications**    

One-week Faculty Development Program (FDP) on
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On 14th June 2021 to 19th June 2021

Day – 5
18th June 2021

Session-III
3.00 pm - 4.30 pm

Topic
Trends in EV Technology


Dr. Imayavaramban M
President and CTO - IC Tech
Puducherry

				
Dr. Imayavaramban M	CR048	928 Sri Kavya Korada	Mratyunjay Singh	Kiran Dhandale

Trends in EV Technology



- Battery
- Power electronics
- Charging
- Traction systems / Hybrids
- Telematics
- Thermal management
- Battery Management
- EV testing
- Grid balancing
- Battery Solutions

Dr. Imayavaramban M, President and CTO - IC Tech Puducherry, has delivered an informative session on “Trends in EV Technology”. In this session deliver a dissemination of information especially in electronics and mechanical inter disciplinary way from the Basics, construction, research of EV and Future Trends and Technologies in EVs.

Day-5 (19-06-2021) Session – I & II (10.00 - 1.30)
Industry Hands on Session (Demo & Training)



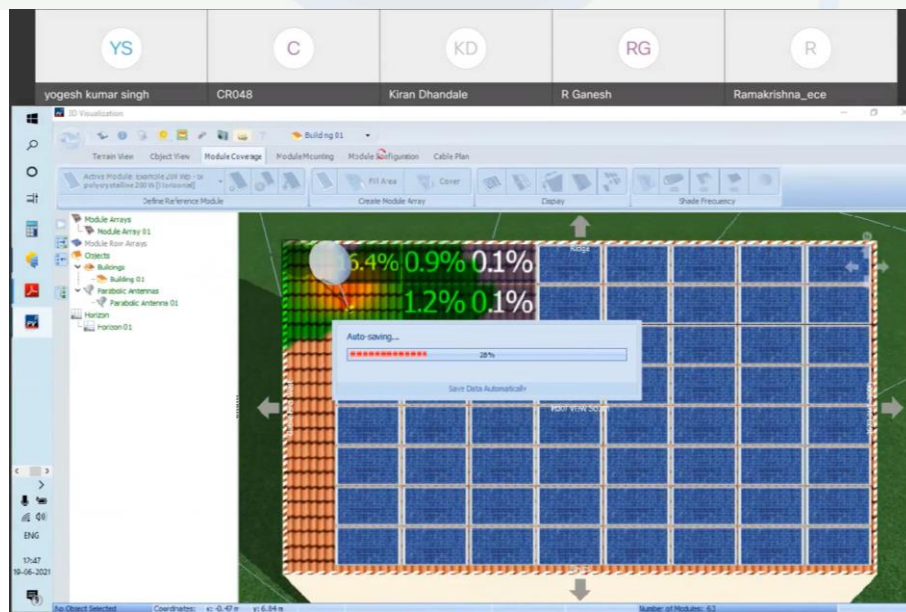
One-week Faculty Development Program (FDP) on
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On 14th June 2021 to 19th June 2021

Day – 6
19th June 2021

Session-I & II
10.00 am - 1.30 pm

Hands on Training & Demo Session
Solar Power System Design Using PVSYST and PVSOL


Dr. Yogesh Kumar Singh
Ex Senior Research Scientist
National Institute of Solar Energy
Gurugram Haryana India



Dr. Yogesh Kumar Singh, Ex Senior Research Scientist, National Institute of Solar Energy, Gurugram Haryana India, has delivered an Industry Hands on Session (Demo & Training) on Solar Power System Design Using PVSYST and PVSOL. This session was an insight into the PVSYST and PVSOL software design for PV modules, Off Grid System Layout Details and Hands on Demo Solar energy Realtime demo session. Solar PV modules Technicalities and Applications of simulation tool to Designing the solar power system. As well explained the designing of large-scale solar power system and optimization, being presented in more Exercise in tool.

Day-5 (15-06-2021 to 18.06.2021) 09.00 – 10.00
Yoga and Stress Management

Department of Electronics & Communications

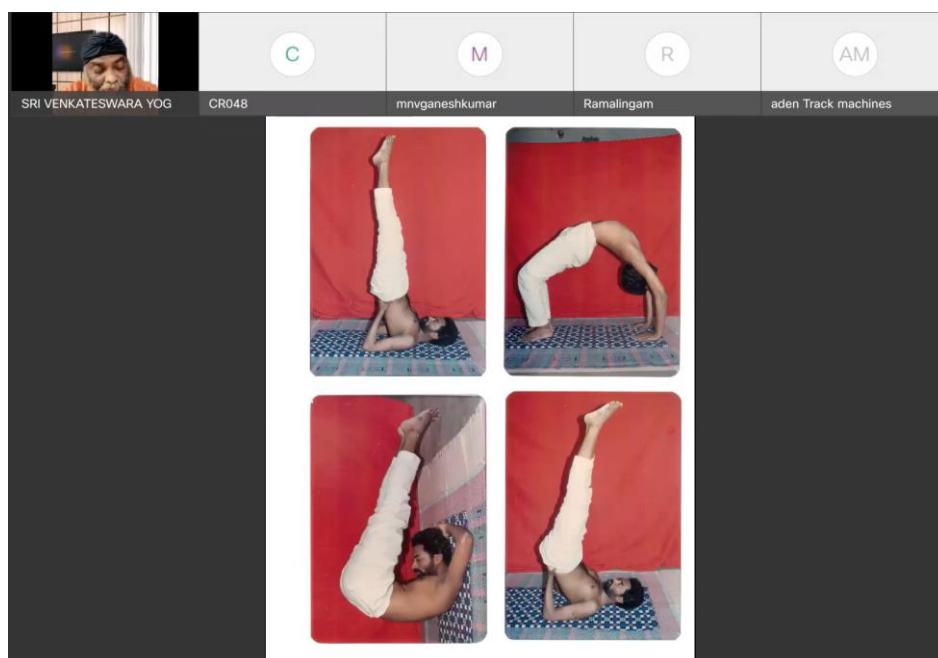
One-week Faculty Development Program (FDP) on
Integration of Renewable Energy and Smart Grids for Smart Cities
On 14th June 2021 to 19th June 2021

Day – 2-5
15th to 18th June 2021

Sessions
9.00 am - 10.00 am

Yoga and Stress Management Sessions

Sri. A. Venkateswalu
Principal and Chairman
VTJM&IVTR Degree College
Mangalgiri



Sri. A. Venkateswalu, Principal and Chairman, VTJM&IVTR Degree College, Yoga and Stress Management. A Well-known yoga acharya and the State Government award recipient Sri Venkateswara Yogi Guruji is spending his precious time for us for the last three days. On the first day he explained the diet rules that yoga practitioners should follow. The procedures for doing yoga asanas on the second day, explained using pictures. On the third day he explained the procedure of pranayama in detail. The benefits of pranayama are explained. Fourth day he explains in demonstration how to do yoga practice in 30 minutes. The participants take advantage of this opportunity.

Day-6 (19-06-2021)
Valedictory Function (3.00 - 4.30)



Department of
Electronics & Communications



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Cordially Invites You to the Valedictory of FDP

19th June 2021
3.00 pm- 4.30 am

- 3.00-3.05 : Welcome speech by **Dr. M. Suman**, HOD, ECE, KLEF
- 3.05-3.10 : Valedictory address by **Dr. L Koteswara Rao** Principal, KL Hyd.
- 3.10-3.15: Valedictory address by **Dr. Vinay Kumar Mitta**, Chair, ECE, KLEF
- 3.15-3.20 : Valedictory address by **Dr. M. Goutham**, HOD, ECE, KLHyd
- 3.20-3.25 : Valedictory address by **Dr. D. Venkata Ratnam**, HOD (Research), ECE, KLEF
- 3.25.-3.30 : Valedictory address by **Dr. P. Satyanarayan**, IoT Stream Head, KLEF
- 3.30-3.50 : Valedictory Address by Chief Guest
Dr. N. Sundararajan, Professor (Retd.), EEE, NTU, Singapore
- 3.50-3.55 : Valedictory address by **Dr. Lakshman Pappula**, Deputy HOD, ECE, KLEF
- 3.55-4.15 : **Feedback from the Participant and Certificate Distribution**
- 4.15-4.30: Vote of thanks by **Dr. S. Arunmetha**, Convener of the FDP, KLEF



Department of
Electronics & Communications



One-week Faculty Development Program (FDP) on
**Integration of Renewable Energy
and Smart Grids for Smart Cities**

On 14th June 2021 to 19th June 2021



Valedictory Function

19th June 2021
3.00 pm- 4.30 pm

Valedictory Address


Chief Guest



Dr. N. Sundararajan
Professor (Retd.), EEE
Nanyang Technological University
Singapore

Day-6 Valedictory Address

C	S	P	C	VD
CR048	sundararajan	PK.V.S.SUBRAMANYESW	CR045	Venkata Ratnam Devanabo



- Community microgrids: How storage and other resources could be shared?. Uberize energy resources.
- Integration of movable storage (e-vehicles), hydrogen cells, and other storage technologies.
- Grid digitization for digital twins.
- Grid resilience: extreme events.
- . Grid stability with renewables with low inertia.

N.Sundararajan, (Retd.) EEE, NTU, Singapore

FEEDBACK BY THE PARTICIPANTS –A GLANCE

The great success of A One-week Faculty Development Program (FDP) on "Integration of Renewable Energy and Smart Grids for Smart Cities" was reflected through the feedback given by the speakers and delegates. Following are the some of the comments received:

- ✓ Well organized, all sections are useful and informative. Thank you to all Resource persons and Organizers committee
- ✓ Resource person's knowledge and presentation
- ✓ Resource persons from various industry and academia
- ✓ It was all good Thanks to team and their efforts appreciated
- ✓ Every concept explained keeping future aspects in research
- ✓ Overall selection of speakers and the management
- ✓ Perfection & time keep up
- ✓ The information presented effectively
- ✓ The selective resources and arrangement of sessions in sequence.
- ✓ Talks covered a broad spectrum of the FDP theme
- ✓ New technology, Informative talk and thank you for all organizers
- ✓ we need more like this type of FDPS
- ✓ It's always interactive and engaging, learnt a lot from subject matter experts please share the videos for the future review it will be very helpful
- ✓ Time schedule was excellent. Really appreciated.
- ✓ Gained knowledge which would be helpful for me in my final year project
- ✓ The detailed explanation of O&M is an eye opener for employment opportunities to be provided for a smart city.
- ✓ Scheduling, way of intimation, nice resource persons selection- everything good
- ✓ Learned a lot on current solar scenario and its a privilege to attend the lecture of Chetan singh solanki sir. Thanks.
- ✓ Excellent session with present day energy wastages and the importance of conservation of energy.
- ✓ Topics selected and practical implemented concepts
- ✓ It was very informative and in synchronization with current trends.
- ✓ Passionate dissemination of knowledge especially in electronics and mechanical-inter disciplinary way
- ✓ Practical knowledge shared session is very interesting
- ✓ Concepts explained with simulation results helped gain more knowledge on the topics covered
- ✓ Very well presentation of the basic concepts and design procedures were good

LIST OF PARTICIPANTS

S. No.	Title	Full Name	Designation	Department	Institution	State	Country
1	Mr.	M Lakshmana Kumar	Assistant Professor	ECE	K L E F Deemed to be University	Andhra Pradesh	India
2	Mr.	MOHAMED JAVITH S	STUDENT	MECHANICAL ENGINEERING	ANNA UNIVERSITY/ARASU ENGINEERING COLLEGE	Tamil Nadu	India
3	Mr.	SANTHOSH KUMAR B	Assistant Professor	ECE	VITS	India	India
4	Mr.	ANNAM SIVA NAGA RAMA GOPAL	Assistant professor	EEE	Sasi institute of technology and engineering	Andhra Pradesh	India
5	Mr.	AJAY SANKAR	Assistant Professor	Electronics and Communication Engineering	Aditya Engineering College	Andhra Pradesh	India
6	Mr.	RAJAPUTRA SUBHAKARAN SINGH	Research Scholar	Centre for Advanced Energy Studies (CAES)	Koneru Lakshmaiah Education Foundation (KLEF)	Andhra Pradesh	India
7	Mr.	GUDIMETLA VEERA KANAKA RAO	Research Scholar	Electrical Engineering	Andhra University	Andhra Pradesh	india
8	Dr.	Dr. G. China Satyanarayana	Associate Professor	ECE	K L University	Andhra Pradesh	India
9	Dr.	OM KANT	ASSISTANT PROFESSOR	PHYSICS	CHINMAYA DEGREE COLLEGE, HARIDWAR	UTTARAKHAND	India
10	Ms.	N. YASASWINI	Student	ECE	KLEF - Vijayawada	Andhra Pradesh	India
11	Ms.	K.HIMAJA REDDY	Student	ECE	KLEF - Vijayawada	Andhra Pradesh	India
12	Dr.	SANAGAPALLEA KOTESWARA RAO	Professor	ECE	KLEF	ANDHRA PRADESH	India
13	Mr.	LALITH PANKAJ RAJ G N	RESEARCH SCHOLAR	CENTRE FOR RURAL ENERGY - RENEWABLE ENERGY	THE GANDHIGRAM RURAL INSTITUTE-DEEMED TO BE UNIVERSITY	TAMIL NADU	INDIA
14	Dr.	G Radhika	Senior Assistant Professor	EEE	VNRVJIET	Telangana	India
15	Ms.	HEBZIBA JEBA RANI S	Assistant Professor	Computer Science and Engineering	Sri Ramakrishna Institute of Technology	Tamil Nadu	India
16	Mr.	SAMIUR REHMAN.S	Associate Professor	Architecture	KL University	ANDHRA PRADESH	INDIA
17	Mrs.	ANIE JOSEPHIN E	Assistant Professor	ECE	Grace college of Engineering	Tamilnadu	India
18	Prof.	KRUTI RAJESH LAVINGIA	ASSISTANT PROFESSOR	COMPUTER SCIENCE AND ENGINEERING	NIRMA UNIVERSITY	Gujarat	India
19	Mr.	NAVEEN KUMAR ELANGOVAN	Senior Research Fellow	EEE	ANNA UNIVERSITY	Tamil Nadu	India
20	Dr.	TAHIR KHURSHAID	Assistant Professor	Electrical Engineering	Yeungnam University	Gyeongsanbukdo	South Korea
21	Dr.	PRIYANKA CHAUDHARY	Assistant Professor	Electrical Engineering	Noida International University, Greater Noida UP, India	Uttar Pradesh	India
22	Mr.	SANDEEP SINGH	Assistant Professor	Electrical Engineering	VAISH COLLEGE OF ENGINEERING	HARYANA	INDIA


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