Report

Online Guest Lecture
On
"A rudimentary overview of Microgrids and their role in the global energy landscape"
Organized
by
Department of Electrical & Electronics Engineering
Date: 25.02.2025 (Tuesday)
Time: 10:00 A.M. to 12:00 Noon
Venue: Virtually at Seminar Hall C

Organized in association with: **IETE Students Forum (ISF), MITS, Madanapalle**

Submitted by: Dr. Satish Kamar Ramoji, Assistant Professor, Dept. of EEE
Co-Coordinator: Mr. M. Venkatesh, Assistant Professor, Dept. of EEE

Attendance: 61 participants including faculty members.

Faculty attended:

1. Dr A V Pavan Kumar - HoD/EEE
2. Mr. M. Venkatesh - Assistant Professor/EEE
3. Dr. Satish Kamar Ramoji - Assistant Professor/EEE
4. Dr. R. Saravana Kumar - Assistant Professor/EEE
5. Mr. N. Sridhar - Assistant Professor/EEE
6. Dr. K. Lakshmikhandan - Assistant Professor/EEE
7. Mr. B. Karthik - Assistant Professor/EEE
8. Mr. Ibrahim Zafar - Assistant Professor/EEE
9. Dr. T. S. Balaji Damodhar - Assistant Professor/EEE

Students Attended: EEE: 52

Venue: **Virtually at Seminar Hall C**

The program commenced at **10.00 A.M.** with a warm **welcome address** to all the participants and the resource person**, Dr. Loka Renuka**, **Post Doctoral Scholar**, **University of St. Thomas, St. Thomas Center for Microgrid Research, 2115 Summit Ave, OSS 100, St. Paul, Minnesota 55105, USA**., delivered by **Dr. Satish Kamar Ramoji**, from the Department of EEE, MITS, Madanapalle.

Following this, **Dr. Satish Kamar Ramoji, AP/EEE** introduced the resource person and invited **Dr. A. V. Pavan Kumar, HoD/EEE** & **Dr. P. Ramanathan, Vice principal Academics** to share a few words about the event. He emphasized the importance of Microgrids in modern industries and encouraged students to focus on updating their knowledge in this domain. Subsequently, the session was handed over to **Dr. Loka Renuka**, **Post Doctoral Scholar**, **University of St. Thomas, St. Thomas Center for Microgrid Research, 2115 Summit Ave, OSS 100, St. Paul, Minnesota 55105, USA**.

Dr. Loka Renuka began his session by expressing his gratitude to the participants, organizing members, HoD, Principal, and the Management of MITS, Madanapalle for the opportunity to share his expertise on "**Microgrids.**"

Session Highlights

The session covered career opportunities in the Microgrids, focusing on Operations of Microgrids, and provided insights into the skills required to enter and sustain in the field. The discussion progressed from fundamental job requirements in the Hardware industry to advanced strategies for career growth.

During the session, the following topics were discussed to help students enhance their skill sets and meet corporate industry requirements:

1. Definition and Basic Concepts of Microgrids
2. Distributed Energy Resources (DERs):
3. Energy Storage Systems:
4. Control and Management Systems
5. Role of Microgrids in the Global Energy Landscape
6. Enhancing Energy Resilience
7. Integrating Renewable Energy
8. Improving Energy Efficiency
9. Supporting Grid Modernization
10. Challenges and Future Trends
11. Technological Advancements: Future trends in microgrids include the integration of advanced technologies such as the Internet of Things (IoT), artificial intelligence (AI), and machine learning
12. Increasing Adoption in Remote and Underserved Areas:
13. Case Studies and Examples

Key Takeaways

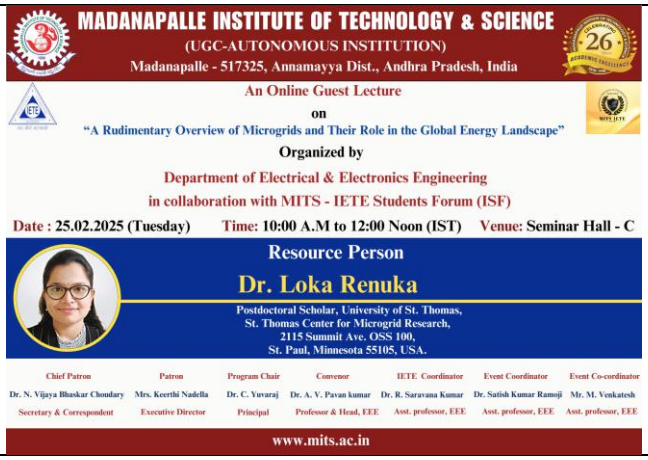
By the end of the session, students were able to:

1. Enhanced Understanding of Microgrid Concepts.
2. Students learned to evaluate the benefits and challenges of microgrids,
3. Students were exposed to emerging technologies (IoT, AI, machine learning)
4. The lectures highlighted the cross-disciplinary nature of microgrids, involving engineering, policy, economics, and environmental science.
5. Students were encouraged to explore career opportunities in microgrid design, energy policy, renewable integration, and smart grid technologies.
6. Students left with actionable knowledge to discuss microgrids confidently in academic or professional settings.
7. They were motivated to stay informed about advancements in the field and advocate for sustainable energy solutions
8. The lecture reinforced the idea that microgrids are a key enabler of decentralized energy systems, aligning with global goals for sustainability, resilience, and equity

Conclusion

The session concluded with a vote of thanks delivered by **Dr. Satish Kamar Ramoji, Assistant Professor, Dept. of EEE**. He extended his gratitude to the Management, Principal, Vice-Principals, HoD, and all contributors who played a role in organizing this successful event.

Photos:


MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)
Madanapalle - 517325, Annamayya Dist., Andhra Pradesh, India
An Online Guest Lecture
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Resource Person
Dr. Loka Renuka
Postdoctoral Scholar, University of St. Thomas,
St. Thomas Center for Microgrid Research,
2115 Summit Ave. OSS 100,
St. Paul, Minnesota 55105, USA.
Chief Patron
Dr. N. Vijaya Bhaskar Choudary
Patron
Mrs. Keerthi Nadella
Program Chair
Dr. C. Yuvaraj
Convenor
Dr. A. V. Pavan kumar
IETE Coordinator
Dr. R. Saravana Kumar
Event Coordinator
Dr. Satish Kumar Ramoji
Event Co-ordinator
Mr. M. Venkatesh
Secretary & Correspondent
Executive Director
Principal
Professor & Head, EEE
Asst. professor, EEE
Asst. professor, EEE
Asst. professor, EEE
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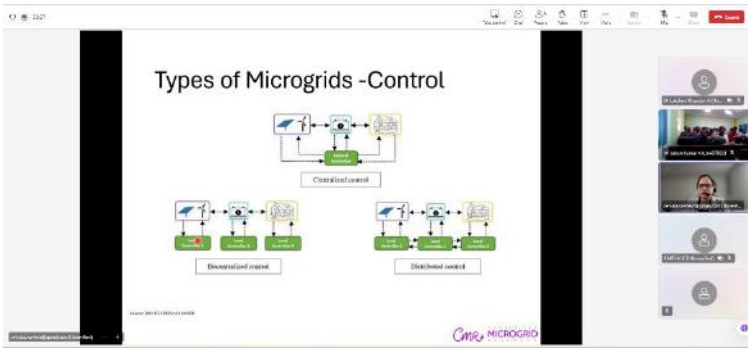
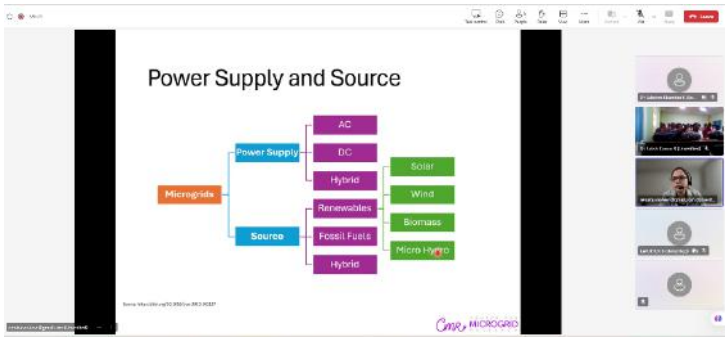

Types of Microgrids -Control
Centralized control
Decentralized control
Distributed control
CMR MICROGRID


Power Supply and Source
Microgrids
Power Supply
Source
AC
DC
Hybrid
Renewables
Fossil Fuels
Hybrid
Solar
Wind
Biomass
Micro Hydro
CMR MICROGRID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SHREE PANDEY
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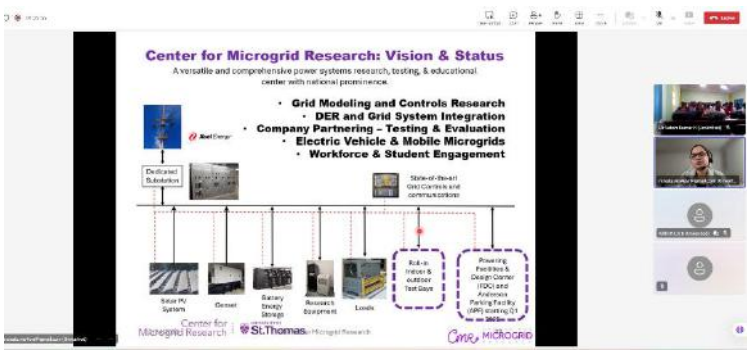
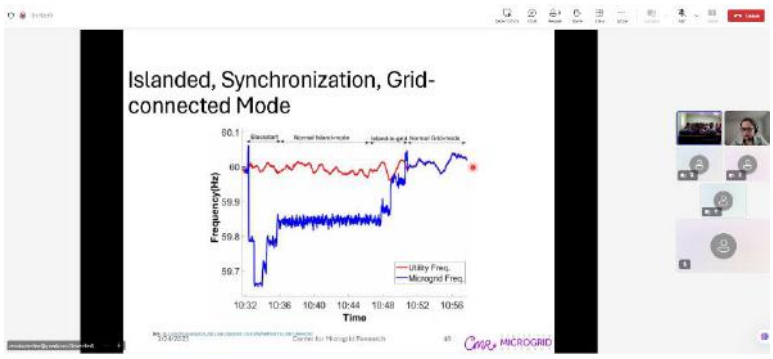
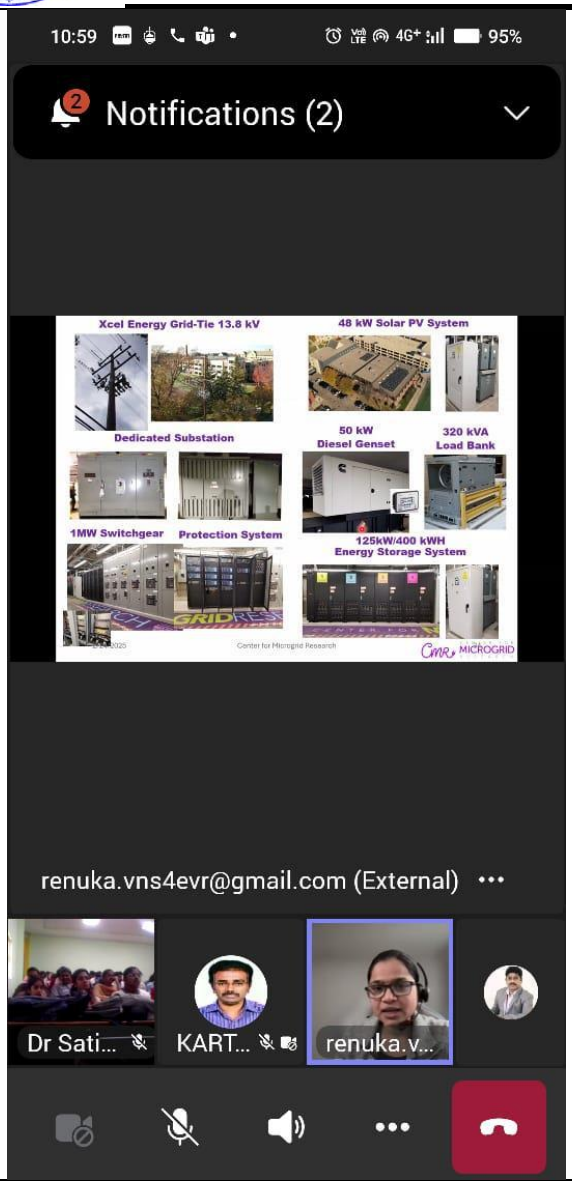

Center for Microgrid Research: Vision & Status
A versatile and comprehensive power systems research, testing, & educational center with national prominence.
Grid Modeling and Controls Research
DER and Grid System Integration
Company Partnering – Testing & Evaluation
Electric Vehicle & Mobile Microgrids
Workforce & Student Engagement
Dedicated Substation
Solar PV System
Genset
Battery Energy Storage
Research Equipment
Loads
Roll-in Indoor & outdoor Test Bays
Center for Microgrid Research
St. Thomas
CMR MICROGRID

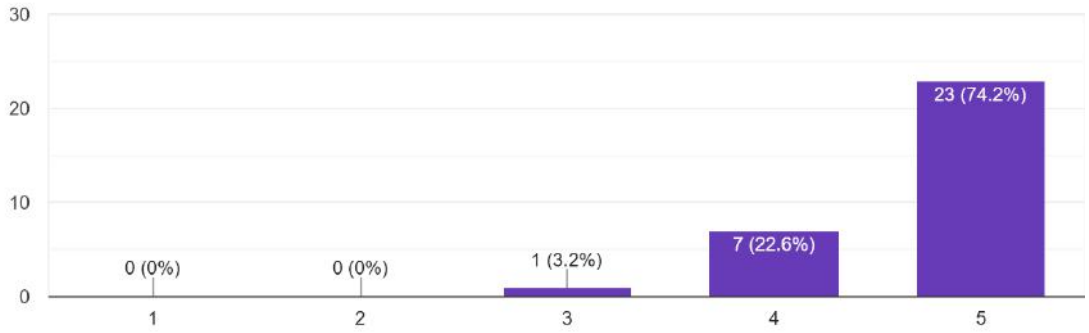

Islanded, Synchronization, Grid-connected Mode
Frequency(Hz)
60.1
60
59.9
59.8
59.7
10:32
10:36
10:40
10:44
10:48
10:52
10:56
Time
Utility Freq.
Microgrid Freq.
CMR MICROGRID



Feedback:

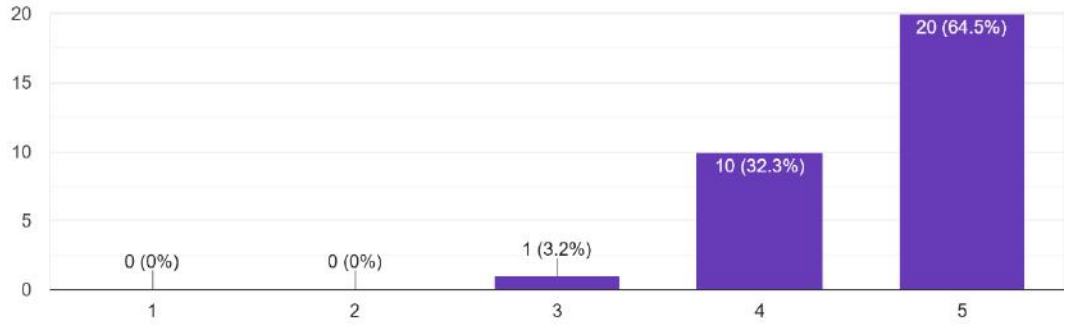
1. The interactive session was scheduled at a suitable time

31 responses



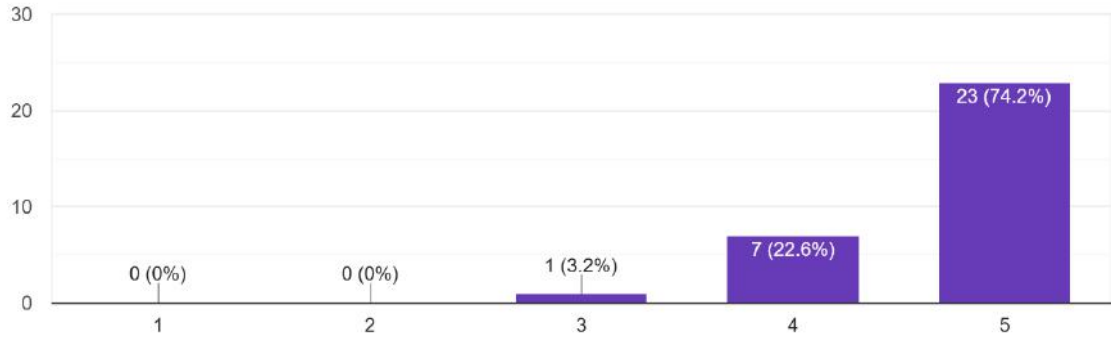
2. The interaction was useful and resource person explanation.

31 responses



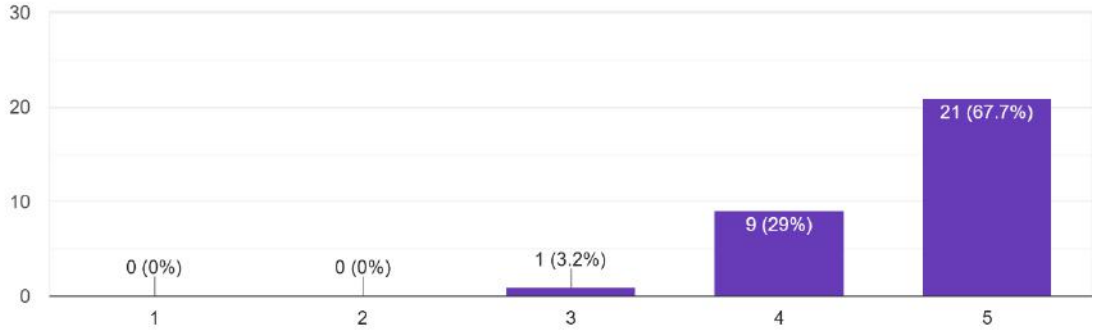
3. The information in the interaction was presented in a clear and organized manner.

31 responses



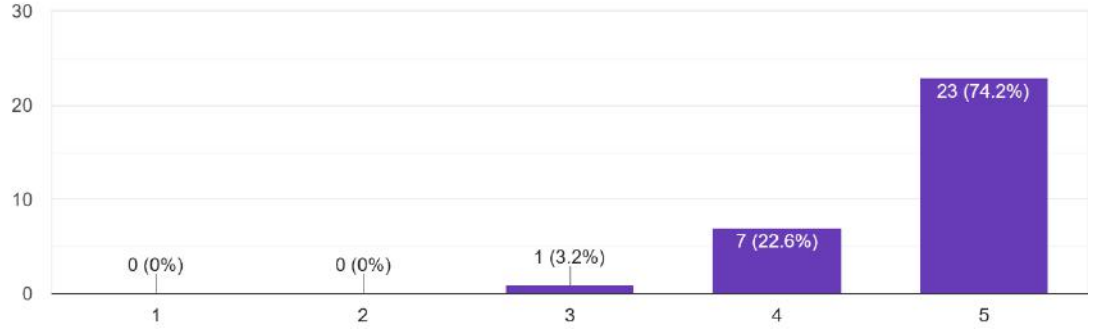
4. The presenter responded to questions an informative, appropriate and satisfactory manner.

31 responses



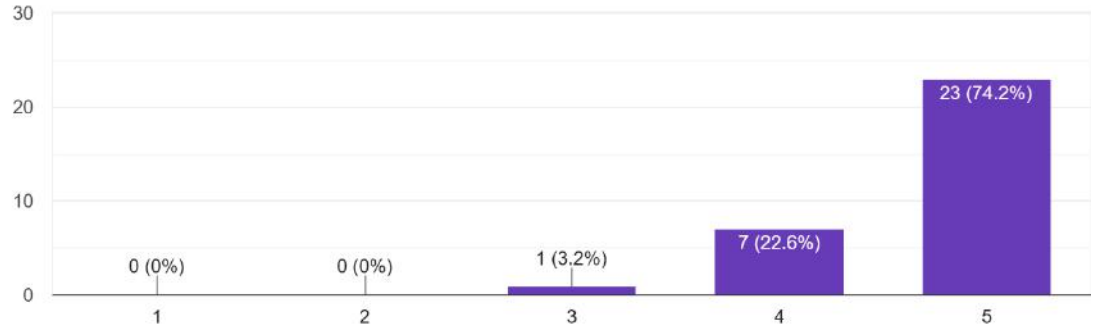
5. your impression of facilities provided by the institute for interaction.

31 responses



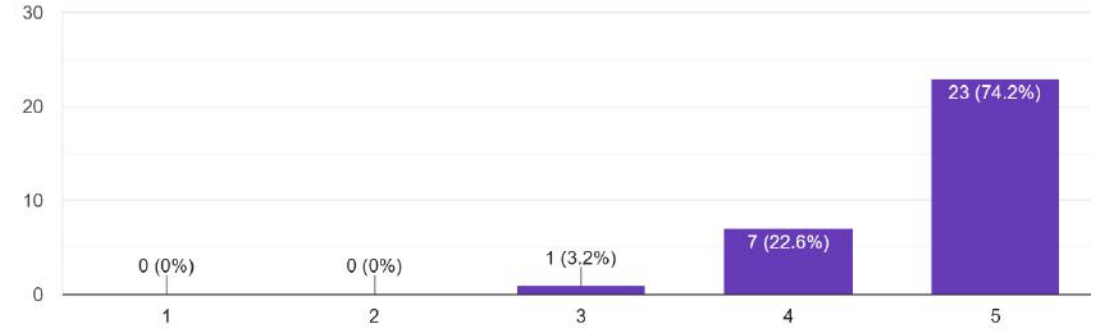
6. Overall, the session was informative and valuable.

31 responses



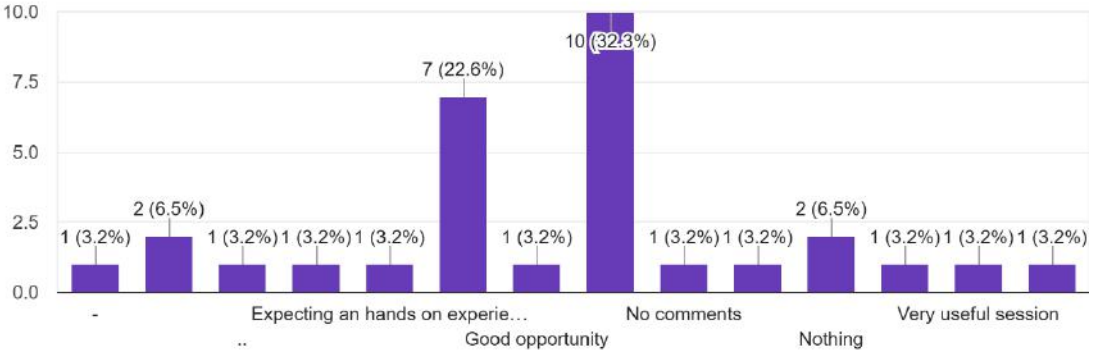
7. In what ways could this interaction have been improved to better suit your needs?

31 responses



8. Any Other Comments/Suggestions

31 responses



Signature of the Coordinator

Signature of HoD, EEE