



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS)

Affiliated to JNTUA, Anantapuramu & Approved by AICTE, New Delhi
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A Report on

“Empowering Electric Vehicles through Smart Grid Technologies”

Organized by

Department of Electrical & Electronics Engineering (EEE), MITS Madanapalle

11.03.2024

Convener: Dr. AV Pavan Kumar, Professor and Head, Department of EEE, MITS.

Co-ordinator: Mr. B Vijayakumar

Attendees: 19 members

Venue: WB120

Platform: Google Meet

The Department of Electrical & Electronics Engineering (EEE), MITS Madanapalle, successfully organized workshop titled "Empowering Electric Vehicles through Smart Grid Technologies " on 11th March 2024.

Workshop Schedule

Time	Session	Resource Person
9:30 AM - 10:00 AM	Inauguration & Welcome Address	Host & Coordinator
10:00 AM - 11:30 AM	Power electronic converters for EV charging infrastructure	Dr. Rushi Santhosh Singh Thakur
11:30 AM - 11:45 AM	Break	-
11:45 AM - 1:15 PM	Bidirectional converters for Vehicle-to-Grid (V2G) applications	Dr. Rushi Santhosh Singh Thakur
1:15 PM - 2:00 PM	Lunch Break	-
2:00 PM - 3:30 PM	Battery management and fast charging technologies	Dr. Rushi Santhosh Singh Thakur
3:30 PM - 4:30 PM	Q&A and Discussion	Open Session

Faculty attended:



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1. Dr. A V PAVAN KUMAR
2. Dr. K. ARUL KUMAR
3. Dr. LAKSHMIKHANDAN K
4. Dr. BALAJI DAMODHAR T S
5. Mr. IBRAHIM ZAFAR
6. Dr. V B THURAI RAAJ
7. Dr. SUMAN YADAV
8. Dr. GOURAV KUMAR SUMAN
9. Mr. N SRIDHAR
10. Mr. RAJESH K S
11. Mr. CHODAGAM SRINIVAS
12. Mr. SARAVANAN D
13. Mr. G MALLIKARJUNA
14. Mr. BONDU VIJAYAKUMAR
15. Mr. EJJIROTU RAGHU BABU
16. Mr. VENKATESH M
17. Mr. RAMESH KUMAR R
18. Ms. KODURI REVATHI
19. Ms. REVATHY GOPINATH

The online one-day workshop was inaugurated on 22nd March 2024 at 9:30 AM with a welcome address to all attendees by, Dr. A V Pavan Kumar Head of the Department, EEE. This was followed by an inaugural address delivered by Dr. D. Pradeep, emphasizing the importance of “Advanced Power Electronics and Control Strategies for Electric Vehicle Integration” in modern power systems. The workshop agenda and the introduction of the resource person were presented by Ms. Revathy Gopinath.



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Online Workshop on
Empowering Electric Vehicles through Smart
Grid Technologies

Dr. Rushi Santhosh Singh Thakur

Professor & Head, Department of E.E.E.,
RISE Krishna Sai Prakasam Group of Institutions

Date: 11th March 2024

Chief Patron

Dr. N Vijaya Bhaskar Chowdary
Secretary & Correspondent

Patron

Mrs. N Keerthi
Executive Director

Program Chair

Dr. C Yuvaraj
Principal

Convener

Dr. A V Pavan Kumar
Professor & HOD-EEE

Coordinator

Mr. B Vijayakumar
Assistant Professor, EEE

The first session was led by Dr. Rushi Santhosh Singh Thakur on the topic “challenges and opportunities associated with large-scale EV adoption”. He provided a comprehensive overview of how power electronics enable efficient EV charging and grid interaction.

The session covered:

- Types of power electronic converters used in EV charging.
- Bidirectional converters for Vehicle-to-Grid (V2G) applications.
- Fast charging and power quality challenges in EV charging stations.



In the second session, the discussion focused on “Control Strategies for EV Power Flow Management”, covering:

- Challenges in integrating EVs into the power grid.
- AI-based optimization techniques for EV load balancing.

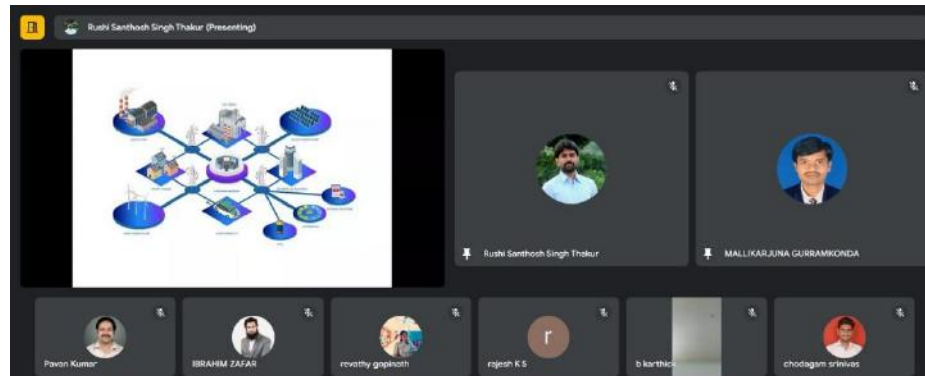


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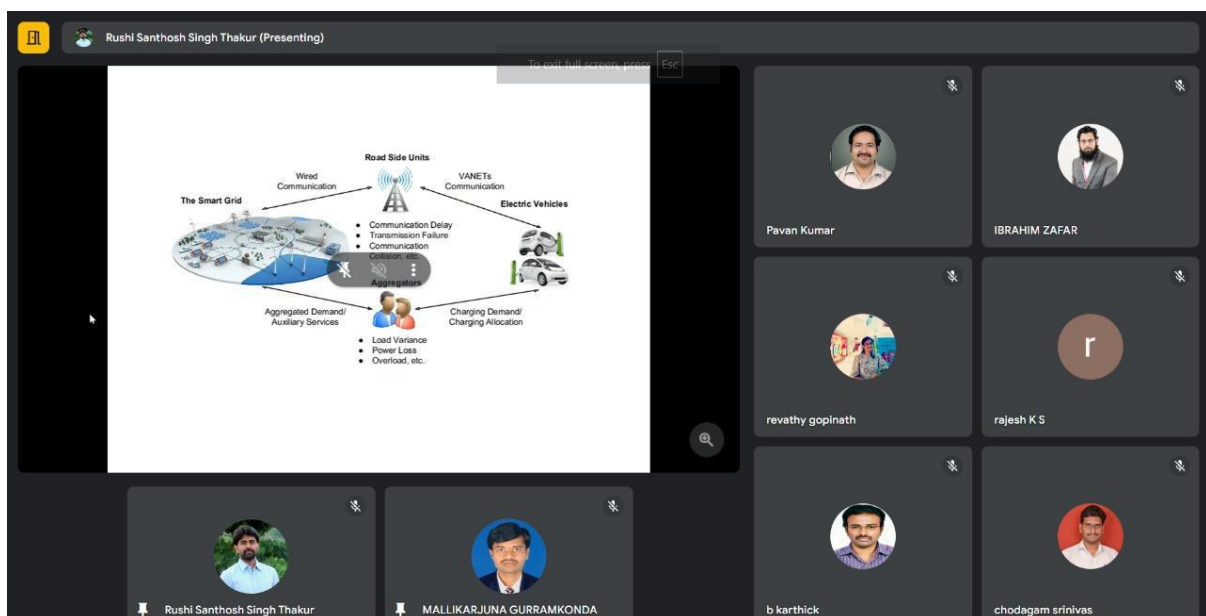


- Grid-to-Vehicle (G2V) and Vehicle-to-Grid (V2G) interaction for stability enhancement.



After a lunch break, the afternoon session focused on “AI-Based Predictive Control for EV Charging and Power Management”. This session provided practical insights into:

- Using machine learning algorithms for EV charging demand forecasting.
- Case studies on adaptive control for EV-grid interaction.
- Optimization of power electronic interfaces for improved energy efficiency.



The workshop concluded with a Q&A and discussion session, where participants actively engaged with the resource person on real-world implementations, policy frameworks, and advancements in power electronics for electric vehicle integration.



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A vote of thanks was delivered by Mrs. K Revathi, expressing gratitude to the Principal of MITS for fostering a culture that encourages such events, the Head of the EEE Department, Dr. A.V. Pavan Kumar, for his unwavering support and guidance in organizing the event, as well as to the faculty members, guest speakers, and student volunteers for their valuable contributions in making the event a grand success.

B. vijayakumar

Mr. B Vijayakumar
Assistant Professor,
Department of EEE
MITS, Madanapalle.

Pavan

Signature of HOD-EEE