MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS)
Affiliated to JNTUA, Anantapuramu& Approved by AICTE, New Delhi
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A Report on

"Impact of Electric Vehicle's on Distribution Systems"

Organized by
Department of Electrical & Electronics Engineering (EEE), MITS Madanapalle
19.08.2023

Convener: Dr. AV Pavan Kumar, Professor and Head, Department of EEE, MITS.
Co-ordinator: Mr. Ch Srinivas
Attendees: 18 members
Venue: WB120
Platform: **Google Meet**

The Department of Electrical & Electronics Engineering (EEE), MITS Madanapalle, successfully organized workshop titled "**Impact of Electric Vehicle's on Distribution Systems** " on 19th Aug 2023.

Workshop Schedule

Time	Session	Resource Person
9:30 AM - 10:00 AM	Inauguration & Welcome Address	Host & Coordinator
10:00 AM - 11:30 AM	Introduction to EV Distribution Systems	Prof. Mallu Rama Prasad Reddy
11:30 AM - 11:45 AM	Break	-
11:45 AM - 1:15 PM	AI Applications in EV Distribution Systems	Prof. Mallu Rama Prasad Reddy
1:15 PM - 2:00 PM	Lunch Break	-
2:00 PM - 3:30 PM	Power Flow & Optimization in EV-Integrated Networks	Prof. Mallu Rama Prasad Reddy
3:30 PM - 4:30 PM	Q&A and Discussion	Open Session

Faculty attended:

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

The online one-day workshop was inaugurated on 19th August 2023 at 9:30 AM with a welcome address to all the audience by the **Dr. A.V. Pavan Kumar HoD**, EEE, MITS Madanapalle, and followed by inaugural address by **Dr. Mallu Rama Prasad Reddy**, Professor, Department of Electrical Engineering, G Pullaiah College of Engineering and Technology through google meet. The brief introduction about the workshop and the resource person was addressed by **Mr. Ch Srinivas**.

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
(UGC-AUTONOMOUS INSTITUTION)
Madanapalle-517325, Annamayya Dist., Andhra Pradesh

Online Workshop on

Impact of Electric Vehicle's on Distribution Systems

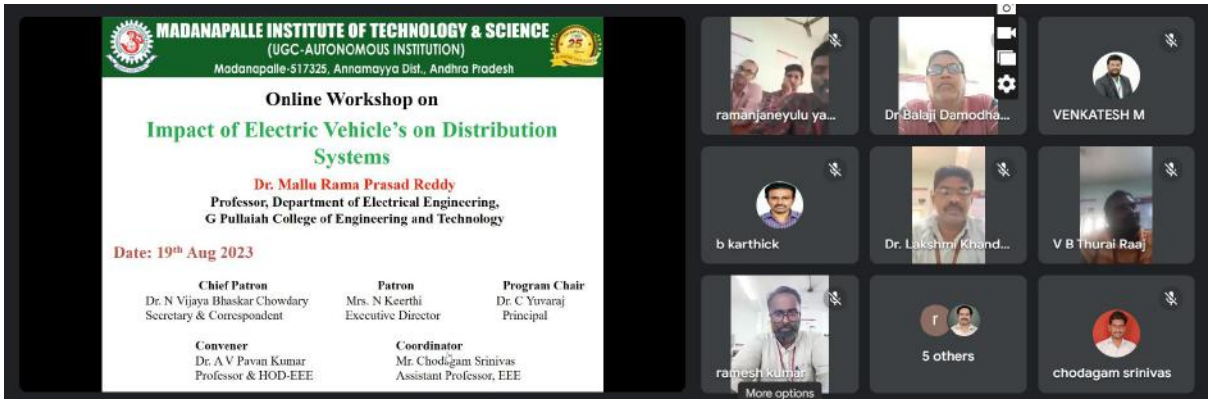
Dr. Mallu Rama Prasad Reddy
Professor, Department of Electrical Engineering,
G Pullaiah College of Engineering and Technology

Date: 19th Aug 2023

Chief Patron	Patron	Program Chair
Dr. N Vijaya Bhaskar Chowdary	Mrs. N Keerthi	Dr. C Yuvaraj
Secretary & Correspondent	Executive Director	Principal

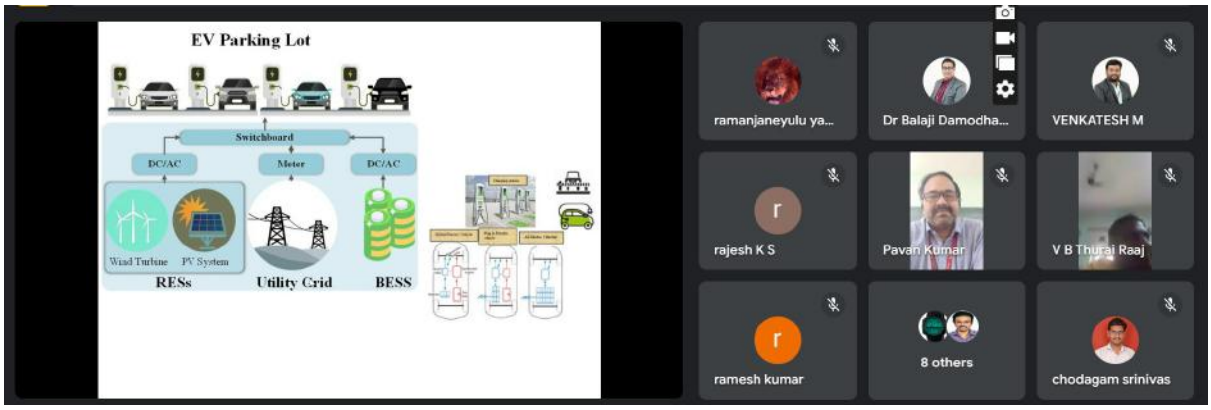
Convener	Coordinator
Dr, A V Pavan Kumar	Mr. Chodagam Srinivas
Professor & HOD-EEE	Assistant Professor, EEE

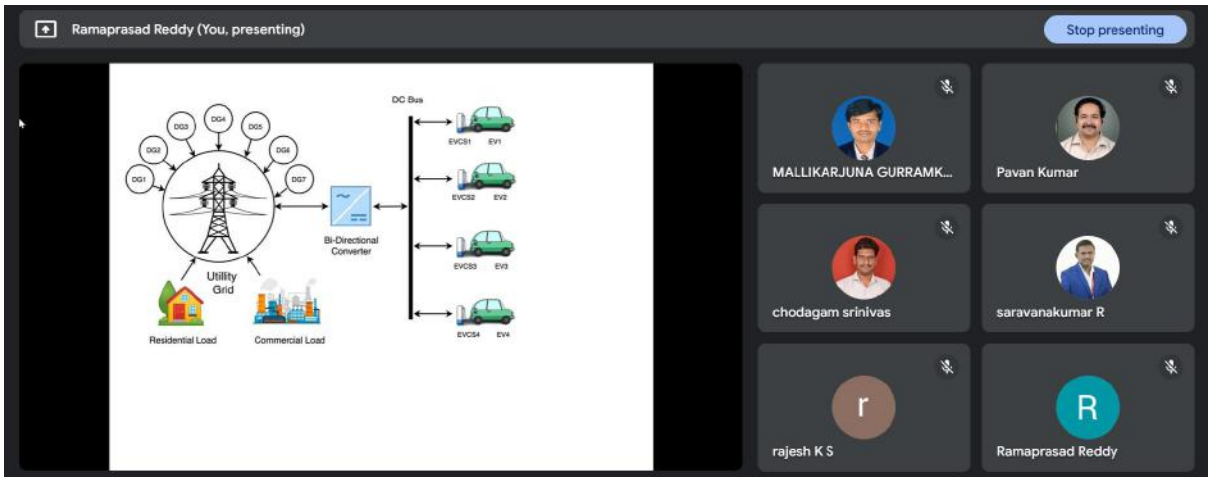
The session was initiated by **Dr. Mallu Rama Prasad Reddy** on the topic **"Introduction to EV Distribution Systems"**. He provided an in-depth overview of the transformation occurring in power distribution networks due to the integration of electric vehicles (EVs). The modern energy grid is undergoing significant changes and faces several challenges that must be addressed to ensure sustainable, efficient, and reliable electricity distribution.

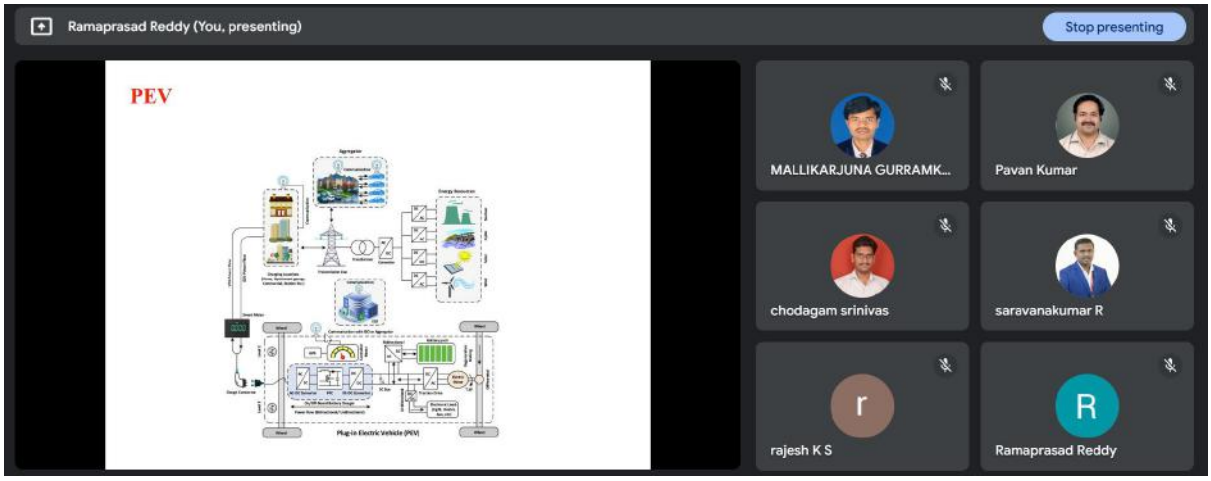


One of the primary challenges discussed was the **increasing demand for electricity**. As electric vehicle adoption continues to rise globally, the burden on existing power infrastructure grows. Traditional power grids, which were designed decades ago, were not built to accommodate the additional load imposed by widespread EV charging. This surge in

demand necessitates advancements in grid management strategies, enhanced energy storage solutions, and intelligent load-balancing techniques.







Another key issue highlighted was the **need to integrate more renewable energy sources**. The transition toward clean energy is critical to reducing carbon footprints and achieving sustainability goals. However, the intermittent nature of renewables, such as solar and wind

power, presents a major challenge in maintaining grid stability. EVs, with their bidirectional charging capabilities, can serve as mobile energy storage units, supporting grid flexibility through **vehicle-to-grid (V2G) technology**. The session explored strategies for leveraging AI-based predictive analytics and smart charging stations to ensure the smooth integration of renewable energy with EV distribution systems. Furthermore, **improving grid reliability and resilience** was emphasized as a crucial aspect of modernizing EV distribution systems. Uncontrolled EV charging can lead to voltage fluctuations, power quality issues, and transformer overloading. Dr. Reddy discussed the implementation of **advanced distribution management systems (ADMS)** and **artificial intelligence (AI)-driven predictive maintenance** to proactively address grid disturbances. The importance of smart grid technologies, real-time monitoring, and distributed energy resources (DERs) in enhancing grid resilience was also discussed.

The session concluded with an engaging discussion on policy frameworks, incentives for smart grid development, and the role of academia in driving research and innovation in AI-based EV distribution systems. Participants gained a comprehensive understanding of the challenges and opportunities in modern EV-integrated power networks, setting the stage for deeper exploration in subsequent sessions.

A vote of thanks was delivered by Mr. M Venkatesh, expressing gratitude to the Principal of MITS for fostering a culture that encourages such events, the Head of the EEE Department, Dr. A.V. Pawan 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.

Mr. Ch. Srinivas
Assistant Professor,
Department of EEE
MITS, Madanapalle.

Signature of HOD-EEE