KINGS COLLEGE OF ENGINEERING
An Autonomous Institution
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ISTE STAFF CHAPTER (TN 205)
ACADEMIC YEAR 2023-24(EVEN SEMESTER)

Staff Seminar Report

A one day seminar titled "**Microgrids: A Comprehensive Overview"** was organized by ISTE Staff Chapter [TN 205] on **05.04.2024** from 3.00p.m. to 4.00p.m. to the faculty members of Kings College of Engineering with an objective to offer a better understanding of Microgrids: A Comprehensive Overview. Welcome address was delivered by **Mrs.T. Gnanajeya**, Coordinator / ISTE Chapter. The session was handled by the resource person **Dr. S. Naveen Prakash,** Assistant Professor / Department of Electrical and Electronics Engineering**.**

Microgrids are small-scale, localized power systems that can operate independently or in conjunction with the main electrical grid. They consist of distributed energy resources (DERs) such as solar panels, wind turbines, batteries, and generators, along with smart control systems to manage energy production, consumption, and storage.

Components of Microgrids: Energy Sources: These include renewable sources like solar and wind, as well as conventional generators such as diesel or natural gas. The mix of energy sources depends on factors like location, resource availability, and energy requirements.

Energy Storage: Batteries are commonly used for energy storage in microgrids. They store excess energy generated during periods of low demand and release it when demand is high, ensuring a stable and reliable power supply.

Control Systems: Smart control systems manage the operation of the microgrid by monitoring energy production, consumption, and storage in real-time. They optimize energy flows, prioritize critical loads, and ensure grid stability and resilience.

Grid Interconnection: Microgrids can operate in both grid-connected and islanded modes. In grid-connected mode, they interact with the main grid, buying or selling excess energy as needed. In islanded mode, they operate autonomously, disconnected from the main grid during outages or emergencies.

Benefits of Microgrids: Resilience: Microgrids enhance resilience by providing backup power during grid outages or natural disasters. Critical facilities like hospitals, military bases, and remote communities can benefit from uninterrupted power supply.

Energy Independence: By integrating renewable energy sources and storage technologies, microgrids reduce dependence on fossil fuels and centralized power generation, promoting energy independence and sustainability.

Efficiency: Microgrids optimize energy use through advanced control algorithms, reducing waste and improving overall energy efficiency.

Cost Savings: Depending on factors like energy prices and local incentives, microgrids can offer cost savings compared to traditional grid electricity, especially in remote or off-grid areas.

Applications of Microgrids:

Remote Communities: Microgrids provide reliable and affordable power to remote communities located far from the main grid, improving their quality of life and socioeconomic development.

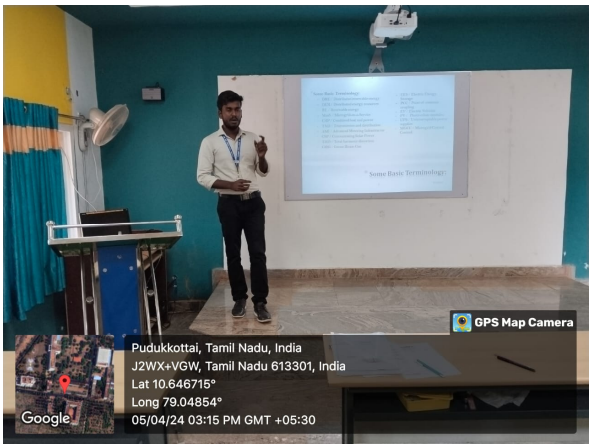
Industrial and Commercial Facilities: Microgrids offer businesses increased energy reliability, cost savings, and environmental benefits, making them attractive for industrial and commercial applications.

Military and Defense: Microgrids enhance the resilience and security of military installations by ensuring continuous power supply even in hostile or austere environments.

Urban Environments: In urban areas, microgrids can support distributed generation, alleviate grid congestion, and facilitate the integration of electric vehicles and renewable energy sources.

In conclusion, microgrids represent a flexible and resilient approach to energy management, offering numerous benefits across various sectors. As technology advances and energy markets evolve, microgrids are poised to play an increasingly significant role in the transition towards a more sustainable and decentralized energy future.

Totally 14 faculty members actively participated in this session and gained knowledge about Microgrids: A Comprehensive Overview. Vote of thanks was given by **Mrs.T. Gnanajeya**, Coordinator / ISTE Chapter.



Resource Person's Talk

Audience listening the seminar

Coordinator / ISTE Chapter 8/4/24

PRINCIPAL 08/4/2024

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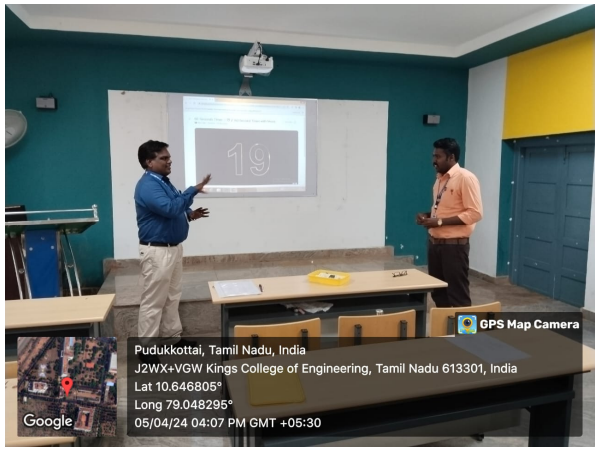
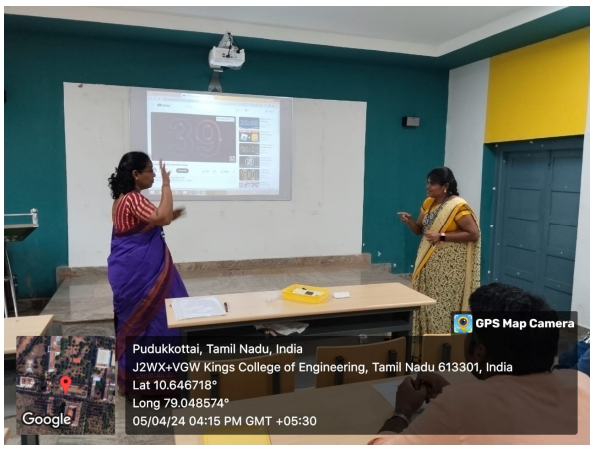
The ISTE Staff Chapter, Kings College of Engineering, organized a competition on **Mono Acting** on **05.04.2024** between 3.45pm and 4.20pm for the faculty members of the institution.

Prize Winners

POSITION	STAFF NAME WITH DESIGNATION
1	Mr.R. Sathyaraj, AP/ECE Ms.M. Vidhya, AP/CSE
2	Mrs.S. Puvaneswari, AP/CSE Mrs.B. Bavithra, AP/CSE





Staff members actively participating in Mono Acting competition

Coordinator / ISTE Chapter 8/4/24

PRINCIPAL 8/4/2024