

Introduction:

The rapid adoption of Electric Vehicles (EVs) and the growing integration of distributed renewable energy resources are transforming today's power systems into dynamic, decentralized networks. Microgrids play a pivotal role in enabling resilient, flexible, and sustainable energy infrastructures, while advanced Energy Storage Systems (ESS) are essential to ensure stability, reliability, and efficiency.

Artificial Intelligence (AI) is emerging as a critical enabler in this transition. From optimizing EV charging and discharging schedules to enhancing microgrid control, predictive maintenance, demand forecasting, and real-time energy management, AI-driven solutions unlock new opportunities for efficiency and sustainability.

This workshop aims to bring together researchers, industry practitioners, and policymakers to explore the convergence of AI, microgrids, EVs, and storage technologies. Discussions will focus on innovative AI methodologies, practical case studies, deployment challenges, and future directions toward building intelligent, sustainable, and resilient energy ecosystems.

The proposed 2-days skill development workshop on *AI for Microgrids & Sustainable EVs (AIMS-2025)*, is designed to equip Electrical, Electronics and Computer Science Engineering students (both urban and rural) across Odisha, India with the competencies and skills needed to thrive in the future AI-powered world.

The workshop contributes to the achievement of United Nations (UN) Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action), while aligning with SDG 4 (Quality Education) through its integration with UNESCO's ESD framework. The whole workshop is designed to incorporate skill development learning approaches to engage participants and enable them to upskill themselves.

Participants will engage in experiential learning through real-world challenge in the areas of Microgrids, EVs along with hands-on prototyping, and interdisciplinary collaboration. The workshop emphasizes the development of key sustainability competencies, including systems designing, planning, and ethical decision-making. By connecting with the UN SDGs, the initiative advances technical knowledge while nurturing social responsibility and worldwide relevance.

By fostering collaboration among academia, industry, and community innovators, the workshop seeks to drive scalable, community-led solutions in clean energy, EVs, AI and climate resilience. Expected outcomes include practical prototypes, improved preparedness for future challenges, and stronger innovation ecosystems that link education with real-world impact.

Skill Development Workshop *on* **AI for Microgrids & Sustainable EVs (AIMS-2025)**

14th - 15th November 2025
Hybrid Mode

Sponsored by
IEEE PES MDI Committee, USA



Organized By
IEEE Kolkata Section Jt.
Chapter, IA34/PE31-Rourkela
(CH11091), India.



Coordinators

Prof. Monalisa Pattnaik
Prof. Pravat Kumar Ray
Prof. Indrajit Sarkar
Prof. Arnab Ghosh
Dept. of Electrical Engineering
National Institute of Technology
Rourkela, Odisha – 769008.

Technically Co-sponsored by:



Key Coverage:

- Decoding India's Electric Mobility Policy Framework: Lessons, Gaps, and Opportunities
- Dual Active Bridge - Integral Power Exchange Port in EV Systems
- Design, Sizing and Simulation of PV Fuel Cell based Microgrid
- 2012 Debacle... A game Changer for Smart Grid Concept (An application on AI for Microgrid)
- Hybrid Solar-Wind-Battery based DC Microgrid for Distributed Power Supply
- Demonstration of power management, control & protection in DC microgrid
- Prototype development of DAB converter-based EV charging

Key Speakers:

- Dr. VSK Murthy Balijepalli, *LUCES Innovation Consulting; Secretary, IEEE PES Region 10*
- Dr. Dipankar De, *IIT Bhubaneswar*
- Er. P. K. Pattnaik, *Director, OPTCL Odisha*
- Prof. Premalata Jena, *IIT Roorkee*

Registration Details:

Category	Online Registration Fee
Research Scholars/ PG / UG Students	₹ 500.00
Faculty from Engineering Institutes	₹ 800.00
Engineers from Industry and R&D Organizations	₹ 1200.00
Participant from Abroad	\$ 100.00

No registration fee for students / staffs of NIT Rourkela and need to register separately.



Panel Discussion on "Role of Artificial Intelligence in a Sustainable Energy Future"

Panelist:

- Dr. VSK Murthy Balijepalli, Promoter, *LUCES Innovation Consulting; Secretary, IEEE PES Region 10*
- Dr. Ajith Gopi, *Founder & CEO, ZONERGIA Services Ltd.*
- Dr. V. V. S. Pradeep Kumar, *Analog Devices Inc.*
- Dr. Sumit K. Chattopadhyay, *IIT Delhi*
- Dr. Suman M., *NIT Trichy*

About the Institute:

The course will be organized by the Dept. of Electrical Engineering at National Institute of Technology (NIT), Rourkela. It is one of the premier national level institutions for technical education in the country and is funded by the Government of India.

Please visit <https://www.nitrkl.ac.in>

34 NIRF Overall	13 NIRF Engineering	30 NIRF Research	396 QS Asia
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About the Department:

The department of Electrical Engineering is established with the vision to design technologies and nurture technologists for diverse and sustainable growth in electrical engineering, leading to wealth and welfare of humanity. The department offers various UG and PG programmes with the mission to develop a platform for forging students as technocrats in line with cutting-edge academic, research and modern industrial practices, and enhancing their aptness in any technical sectors across the globe. Please visit <https://nitrkl.ac.in/EE/>

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Important Dates:

Registration Deadline: 12st November 2025

Workshop Date: 14th-15th November 2025

Online Registration Form:

Scan to Register:



Internal



External



Scan to Pay [UPI]

Contact us:

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