

IEEE International Conference on Smart Technologies for Smart Nations (IEEE SmartTechCon – 2023)

Special Session Proposal

Title of the special session:

**Intelligent controller-based grid integration of Renewable Energy
sources and EV applications**

Description:

Intelligent controller-based grid integration of renewable energy sources and EV applications is an important area of research that aims to improve the efficiency and reliability of power systems. This approach involves the use of advanced control techniques to manage the flow of power between renewable energy sources, electric vehicles, and the grid.

One of the key benefits of this approach is that it can help to address some of the challenges associated with the integration of renewable energy sources into the grid, such as variability and intermittency. By using intelligent controllers, it is possible to optimize the operation of renewable energy sources, such as wind turbines and solar panels, and ensure that they operate in a way that is compatible with the grid.

Another benefit of this approach is that it can help to support the growth of electric vehicles by providing a more efficient and reliable charging infrastructure. By integrating electric vehicles into the power system, it is possible to balance the load on the grid and ensure that charging occurs at times when renewable energy sources are available.

Overall, intelligent controller-based grid integration of renewable energy sources and EV applications is an important area of research that has the potential to play a key role in the transition to a more sustainable and resilient energy system.

Subtopics:

- Applications of artificial intelligence in renewable energy systems (RESs)
- Solar PV cells using smart materials
- RES grid integration challenges
- AI-based power quality enhancement in RESs
- Grid-connected smart inverters powered by IoT
- Smart grids and cities
- advanced microgrid control of renewable energy sources
- AI-powered battery management systems
- microgrid and its challenges
- Artificial Intelligence (AI)-based power system stability enhancement
- Renewable energy power management solutions based on artificial intelligence
- Internet of Things (IoT) for smart and microgrids
- AI-powered energy management systems for electric vehicles

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