**Session Title**: Applications of Energy Harvesting in Advancing AIoT

**Introduction**:

The advent of the Artificial Intelligence of Things (AIoT) has led to a significant transformation across a range of sectors, including healthcare, smart cities, manufacturing, and agriculture. AIoT networks, which combine AI, IoT, and machine learning, promise to bring about smarter, more autonomous systems. However, a critical challenge in deploying AIoT devices at scale is ensuring their long-term energy sustainability. Conventional power sources, such as batteries, often fall short in providing continuous and reliable energy for remote, small-scale IoT devices due to their limited lifespan and the substantial maintenance costs associated with battery replacement. Energy harvesting technology presents a promising solution to this issue. By converting ambient environmental energy—such as wind, vibration, tides, and waves—into electrical power, energy harvesting technologies can provide sustainable, self-sufficient power for AIoT systems. These technologies play an essential role in enabling the autonomy of AIoT devices, particularly in remote and difficult-to-access locations where traditional power solutions are impractical. This session aims to explore the emerging applications and integration of energy harvesting techniques within AIoT systems. By showcasing cutting-edge research, real-world applications, and the latest advancements in both energy harvesting technologies and AIoT, we will provide a comprehensive overview of how these technologies can contribute to the development of autonomous, energy-efficient, and intelligent IoT devices.

**Topics**:

* Energy Harvesting Circuit Design and Integration for Low-Power AIoT Devices
* AI and Machine Learning for Energy Harvesting Optimization
* Integration of Energy Harvesting in Wearable AIoT Devices
* Low-power Sensor Development and Power Management Strategies
* System-Level Design and Integration for Low-Power, Energy-Efficient Devices
* Case Studies and Applications of Low-Power Energy Harvesting Systems
* Design Challenges and Considerations for Energy Harvesting in AIoT Systems
* Challenges in Deploying Energy Harvesting in Large-Scale AIoT Networks
* Future Trends and Innovations in Energy Harvesting for AIoT

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