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# Intelligent Mobile Energy Storage Container for Agricultural Irrigation

Can intelligent irrigation systems improve irrigation efficiency and agricultural productivity? These systems utilize real-time sensor data to improve irrigation efficiency and agricultural productivity. This paper presents an automatic, low-cost intelligent irrigation system based on a fuzzy rule-based inference approach and an energy-aware routing algorithm.

What is intelligent irrigation system?

The proposed intelligent irrigation system introduces a novel integration of fuzzy logic-based irrigation control, deep neural networks (DNNs) for decision-making, and an energy-efficient Open Shortest Path First (OSPF)-based routing mechanism to optimize water usage and enhance network lifetime.

Can solar photovoltaic-thermal irrigation be used in agricultural systems?

Author to whom correspondence should be addressed. This research focuses on developing an intelligent irrigation solution for agricultural systems utilising solar photovoltaic-thermal (PVT) energy applications. This solution integrates PVT applications, prediction, modelling and forecasting as well as plants' physiological characteristics.

Is AI-enabled irrigation a viable solution for climate adaptation?

Moreover, the study discusses economic feasibility, system interoperability, sensor calibration protocols, and ethical considerations related to data governance. Findings reveal that AI-enabled irrigation offers scalable and cost-effective solutions for climate adaptation, especially in drought-prone and infrastructure-limited regions.

The agriculture of tomorrow is being shaped today: With intelligent energy storage solutions, we ensure self-sufficiency, efficiency and climate ...

This paper firstly constructs a PLC-based intelligent irrigation control system, analyzes the requirements of its system functions, and ...

This review systematically examines recent advancements in AI-driven irrigation systems and their role in achieving sustainable water management under climate-resilient ...

Topband's innovative mobile energy storage solutions for agricultural irrigation and small commercial applications. Explore scalable Smart Mobile ESS matrices, renewable ...

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Coordination of pumped-storage unit and irrigation system with intermittent wind generation for

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intelligent energy management of an agricultural microgrid

This project is aimed at designing a system that harnesses solar energy for smart irrigation and allows for more efficient way to ...

The foundation of a solar-powered smart irrigation system is its ability to harness renewable energy sources to power IoT devices and agricultural machinery. Solar energy, ...

In conclusion, this paper presents an intelligent irrigation management system that leverages advanced technologies such as 1) embedded systems, 2) the Internet of Things ...

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