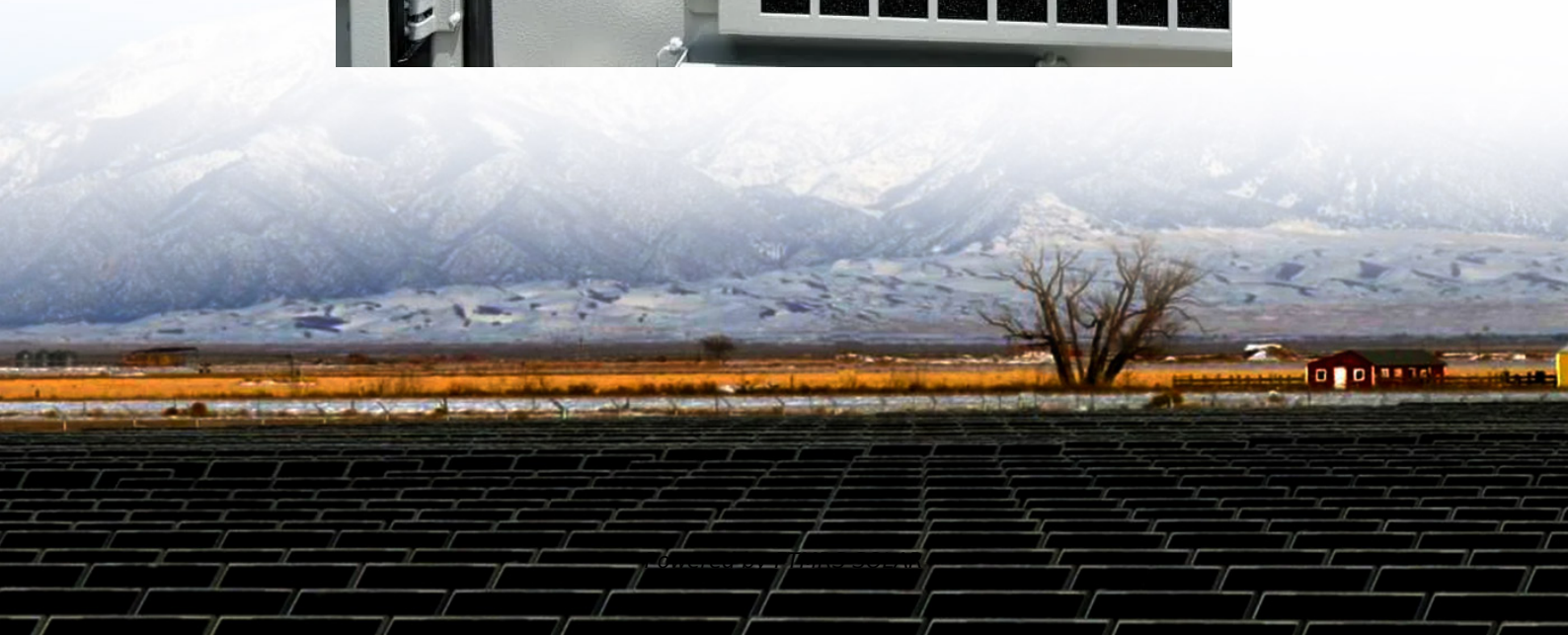


Solar Intelligent Sprinkler System





Overview

Is a smart irrigation system a cost-effective solar-powered water pump with IoT integration?

The smart irrigation system includes a NodeMCU microcontroller, moisture and temperature/humidity sensors, and a relay board. The main contribution of this study is to design and fabricate a cost-effective solar-powered water pump with IoT integration for the smart irrigation system.

What is a sustainable smart irrigation system?

The project aims to develop a sustainable smart irrigation system (SIS) for the indoor plant irrigation by integrating photovoltaic (PV), internet of things (IoT), and rainwater harvesting techniques. The addressed problem involves the inconsistency and tediousness of manual watering, emphasizing the need for a sustainable design for a SIS.

How does a solar-powered smart irrigation system work?

The flowchart illustrates the operation of a solar-powered smart irrigation system designed to maximize water and energy efficiency. The process begins with a soil moisture sensor monitoring the moisture level in the soil. If the moisture falls below a predefined threshold, the system evaluates the availability of solar energy.

Can a solar-powered portable water pump control IoT-enabled smart irrigation system?

An IoT smart irrigation system (IoT-SIS) is developed to monitor the surroundings and control the pump over the Internet. The IoT-SIS-SPWP system is implemented in a real environment for practical analysis and functionality testing. This paper proposes a solar-powered portable water pump (SPWP) for IoT-enabled smart irrigation system (IoT-SIS).



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