

European Solar Energy Storage

A wireless soil moisture sensor powered by solar energy



Overview

For the necessity of monitoring soil water dynamics at field scale, this study presents a wireless soil moisture sensor based on the impedance transform of the frequency domain. The sensor system is powered by solar energy, and the data can be instantly.

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This paper presents a comprehensive design and implementation of a Sunward Solar-Powered Wireless Soil Moisture Sensor, which combines cutting-edge technology to enable energy-efficient soil moisture measurement and wireless data transmission. The proposed sensor system employs capacitance-based.

In this study, we developed a solar-powered integrated wireless soil moisture meter that can easily measure in situ soil moisture, soil temperature, and hydrogen potential (pH) using nature's solar energy. Knowledge of soil moisture content and other relevant soil-specific parameters is essential.

This PLOS ONE article reports the development of a wireless soil moisture sensor, and validation data collected using soil samples under laboratory conditions [1]. However, the study rationale and sensor design reported in the PLOS ONE article by Jiang et al. overlaps substantially with a design.

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Retraction: A wireless soil moisture sensor powered by solar energy

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A Wireless Soil Moisture Sensor Powered by Solar Energy

A Wireless Soil Moisture Sensor Powered by Solar Energy by Mingliang Jiang, Mouchao Lv, Zhong Deng, Guoliang Zhai published in PLoS ONE

Retraction: A wireless soil moisture sensor powered by solar energy

Examples are Soil nutrient detector using Electrochemical Sensors that can detect different nutrients such as Nitrogen and Potassium, Solar Power Soil Moisture Sensor ...



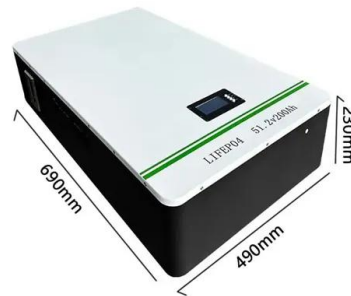
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The sensor system is powered by solar energy, and the data can be instantly transmitted by wireless communication. The sensor electrodes are embedded into the bottom of a supporting ...



Retraction: A wireless soil moisture sensor powered by solar energy

Retracted: A wireless soil moisture sensor powered by solar energy 0 references solar energy 1 reference based on heuristic inferred from title soil moisture 1 reference based on heuristic ...



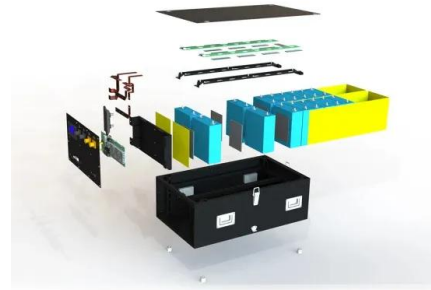
A Comparative Analysis between Battery

This study provides a comparative analysis between battery and solar energy harvesters for sensor nodes used for soil water monitoring. Experimental results show that small-sized solar panels with low-power energy ...



Welcome to Yang Yang Lab

Congratulations to Jingbi, his paper on long lifetime perovskite solar cells has published online in the Nature Nanotechnology. (10/2015)
Congratulations to Letian (PhD 2014), his paper on 2D ...

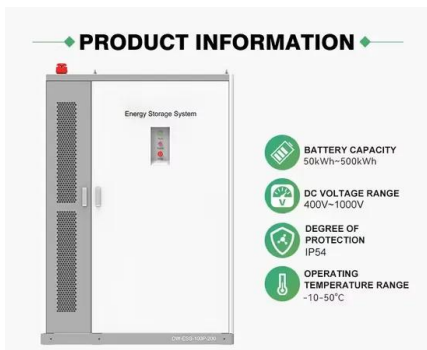


Retraction: A wireless soil moisture sensor powered by solar energy

The experimental results showed that the wireless soil moisture sensor based on the impedance transform of the frequency domain is a promising tool for monitoring moisture in large-scale ...

Retraction: A wireless soil moisture sensor powered by solar ...

The authors and PLOS ONE Editors retract this article due to concerns about plagiarism and authorship issues. This PLOS ONE article reports the development of a wireless soil moisture ...



Smart Agriculture Using Wireless Sensor Monitoring Network Powered ...

Every single life in this world depends on agriculture to reside. People are cultivating plants in a traditional way of agriculture since from thousands of years. In this era of development there is ...

Retracted: A wireless soil moisture sensor powered by solar energy

Evolution of soil wetting patterns preceding a hydrologically induced landslide inferred from electrical resistivity survey and point measurements of volumetric water content and pore water ...



Development of a Solar-Powered Integrated Wireless ...

In this study, we developed a solar-powered integrated wireless soil moisture meter that can easily measure in situ soil moisture, soil temperature, and hydrogen potential (pH) using nature's



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A Comparative Analysis between Battery

This network was based on several solar-powered wireless acquisition stations suitable for soil moisture monitoring in green-houses and open-field crops to save water and energy.



Wirelessly Powered Buried Soil Moisture Sensor System

This work presents a wirelessly powered, buried soil moisture sensing system. The system is electrically charged by a low-frequency electrodynamic wireless power





Best Wireless Sensors for Smart Garden Systems

3. Parrot Flower Power Plant Sensor Overview: Parrot Flower Power is an early pioneer in smart plant sensors that use Bluetooth to relay data on sunlight exposure, ...

Development of a Solar-Powered Integrated Wireless

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Energy storage(KWh)
102.4kWh
 Nominal voltage(Vdc)
512V

Outdoor All-in-one ESS cabinet



Innovative Design of a Solar-Powered Wireless Soil Moisture Sensor ...

This paper presents a comprehensive design and implementation of a Sunward Solar-Powered Wireless Soil Moisture Sensor, which combines cutting-edge technology to ...

A Soil Moisture Sensing System Powered by Self-Harvesting Soil Energy

To address the growing demand for self-sustaining sensing systems powered by renewable energy for environmental monitoring, this article proposes a double-helical structure ...



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