

Energy storage device for receiving electromagnetic waves



Overview

The consumption of the energy comes with serious environmental penalties such as global warming and environmental damages. A system and methods are disclosed to allow capturing, storage.

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A system and methods are disclosed to allow capturing, storage, conversion and release of electromagnetic waves and their energy. The present application claims the benefit of and priority to U.S. Provisional Patent Application Ser. No. 63/279,077, filed on 13 Nov. 2021, the entirety of which is.

A technology of electromagnetic energy and power supply device, which is applied in the direction of circuit device, electric energy storage system, electrical components, etc. It can solve the problems of poor broadband absorption effect and achieve the effect of stable and reliable operation.

Radio frequency energy harvesting (RF-EH) is a potential technology via the generation of electromagnetic waves. This advanced technology offers the supply of wireless power that is applicable for battery-free devices, which makes it a prospective alternative energy source for future applications.

Atsugi, Japan — Sony Semiconductor Solutions Corporation (SSS) today announced that it has developed an energy harvesting*1 module that uses electromagnetic wave noise energy. The new module applies technology that SSS has cultivated in the tuner development process to generate power from.

Energy storage device for receiving electromagnetic waves



A pendulum-based nanogenerator for high-entropy wave energy ...

Here, the authors develop a pendulum-based nanogenerator that efficiently converts disordered waves into electricity for self-powered, distributed marine monitoring ...

Harvesting Ocean Wave Energy via Magnetoelastic ...

Extracting energy from ocean waves for electrolysis, while highly desirable, poses significant challenges, especially in achieving high ...



WO/2025/147919 METHOD FOR SENDING OR RECEIVING ...

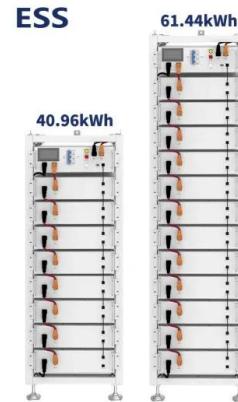


A method for sending or receiving continuous electromagnetic waves, an apparatus, a device, and a storage medium. A method for sending continuous electromagnetic ...

Efficiency in RF energy harvesting systems: A comprehensive ...

One of the most important research areas searches for new sources of energy and for the

highest efficiency from existing energy sources.
Radio frequency (RF) energy ...



[KR20150096862A](#)

An electromagnetic wave energy conversion and storage device is provided. The apparatus includes a rectifying unit for rectifying an alternating current generated by converting an

...

Ambient Electromagnetic Wave Energy Harvesting Using Human ...

In this study, we worked on improving the performance of ambient electromagnetic wave (AEMW) energy harvesting using a human body antenna (HBA), which ...



[Antenna - Need and Parameters](#)

Antennas are considered to be the fundamental part of a wireless communication system. An Antenna is a device that changes the RF signal into an equivalent ...

Harvesting Ocean Wave Energy via Magnetoelastic Generators

...

Extracting energy from ocean waves for electrolysis, while highly desirable, poses significant challenges, especially in achieving high current generation for sustainable ...



How Waves Transfer Data, Explained , by steven ...

What Are Electromagnetic Waves?

Electromagnetic waves, or EM waves for short, transmit energy through a vacuum -- a space empty of ...

Advanced Energy Harvesters and Energy Storage for ...

Energy harvesters, wireless energy transfer devices, and energy storage are integrated to supply power to a diverse range of WIMDs, ...



Wireless Charging Technology or Wireless Transmission of ...

According to the classification presented in Fig. 1, WCH technology is based on non-wave propagating effects of magnetic induction and wave propagating effects due to ...

RF Energy Harvesting: Systems, Components, and Applications

Explore RF energy harvesting systems: how they capture and convert ambient radio frequency signals into electrical power for low-power devices and IoT.



Advanced Energy Harvesters and Energy Storage for Powering ...

Energy harvesters, wireless energy transfer devices, and energy storage are integrated to supply power to a diverse range of WIMDs, such as neural stimulators, cardiac ...

Sony Semiconductor Solutions Develops Energy Harvesting ...

This allows it to convert electromagnetic wave noise in a range of several Hz to 100 MHz into electrical energy and supply power to low-power consumption IoT sensors and ...



ENERGY CONVERSION AND STORAGE DEVICE USING ...

[0011] Embodiments of the inventive concept is to provide an energy conversion and storage apparatus efficiently absorbing and storing an electronic wave, which is generated from a ...

Perspective Chapter: Energy Harvesting in Wireless ...

RF energy harvesting leverages ambient electromagnetic waves from sources such as cellular networks, Wi-Fi, and television broadcasts to convert RF signals into usable ...



Energy harvesting devices for harvesting energy from terahertz

Methods, devices and systems for harvesting energy from electromagnetic radiation are provided including harvesting energy from electromagnetic radiation. In one embodiment, a device ...

Flexible material perfectly receiving electromagnetic wave energy

Among them, as a kind of energy receiving technology, electromagnetic wave energy receiving technology can absorb electromagnetic waves in the surrounding air and convert its energy ...



Wearable All-Fabric Hybrid Energy Harvester to Simultaneously ...

The radiofrequency and triboelectric (RF-TE) hybrid energy harvester (HEH) concept and prototype is presented for the first time, to simultaneously capture the energy from ...

LIQUID COOLING ENERGY STORAGE SYSTEM

EMS real-time monitoring
 No container design
 flexible site layout



A mechanically tunable electromagnetic wave harvester and dual ...

Heterojunction-based energy harvesters and detectors can convert various forms of energy into electricity. Here, we report a mechanically tunable electromagnetic wave ...



Electromagnetic energy collecting and storage and power supply device

A technology of electromagnetic energy and power supply device, which is applied in the direction of circuit device, electric energy storage system, electrical components, ...

Electromagnetic wave and energy storage

The consumption of the energy comes with serious environmental penalties such as global warming and environmental damages. A system and methods are disclosed to allow capturing, ...



Electromagnetic induction energy storage system



The isotropic electromagnetic induction energy storage device further comprises two or three magnets, a filtering and rectifying circuit and an electric power storage device, wherein the two ...

WO2025147919A1

6A and 6B are schematic diagrams showing the structure of a communication device according to an embodiment of the present disclosure. Embodiments of the present disclosure provide a

...



HS

Waves and Information Technology Communicate technical information about about how some technological devices use the principles of wave behavior and wave interactions with matter to ...

Heterodimensional Structure Integrating Electromagnetic ...

Hybrid energy storage device can convert electromagnetic energy into electrical energy for storage. The multifunctional antenna shows excellent energy harvesting ...

FLEXIBLE SETTING OF MULTIPLE WORKING MODES





Radio Frequency Energy Harvesting

This paper focuses on the energy harvesting technology using electromagnetic energy captured from multiple available ambient RF energy sources, such as TV and radio transmitters, mobile ...

Scientists develop an energy harvesting technology based on

To store the electricity, they used an electron spin resonance device to pressurize the electromagnetic wave, and the electromagnet of the device for the static ...



A survey on RF energy harvesting techniques for lifetime ...

In Wireless RF Energy Harvesting System, RECTENNA stands for RECTifying AntENNA that is designed to convert electromagnetic radiation received from various energy ...

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