Controllable superconducting solar container experimental device

What is a superconducting plasma wall interaction linear device?
Chinese scientists have unveiled a superconducting linear plasma device designed to test materials for nuclear fusion reactors. The Superconducting Plasma Wall Interaction Linear Device (SWORD) boasts a sleek design inspired by Chixiao,a legendary ancient Chinese sword.

Can high-temperature superconductor cable be used in space solar power stations?
Abstract: Compared to traditional metal cable,high-temperature superconductor (HTS) cable is a promising candidatefor the energy transmission in space solar power stations due to its great advantage in high power density and efficiency.

What are superconducting devices?
Superconducting devices are electronic devices that harness the zero-resistance properties of superconductors. Superconducting devices are used for highly sensitive optical sensors,detectors of magnetic fields and low-noise amplifiers. Superconducting circuits are one possible type of qubit,the building blocks of quantum computers.

Are transparent superconductor oxides a viable solution for photon absorption?
Transparent superconducting oxides would be an ideal solutionto avoid substantial losses caused by photon absorption of the superconducting components. Here we present design principles for such materials and discuss the foreseeable prospects of transparent superconductor electronics.

Can superconducting cable power transmission reduce spacecraft energy transfer?
These cables can reduce energy lossesand simplify the conventional cable transmission by eliminating the need for voltage conversion equipment,thus reducing the launch weight and costs of spacecraft. This paper analyzes the feasibility of superconducting cable power transmission in space spacecraft energy transfer.

What is a superconducting qubit?
By driving a phase transition into the Yu-Shiba-Rusinov regime, they achieve a fivefold boost in thermoelectric power, enabling advances in cryogenic heat recovery and quantum cooling. Superconducting qubits operate at microwave frequencies, but it is much more efficient to transmit information optically.

We present a model of a perfect superconducting diode based on a superconducting quantum interference device made with multiple superconducting nanowires (MW-SQUID). The ...

Our experiment may pave the way for the application of a mechanical oscillator with its resonance frequency controlled by the electromagnetic and/or optical fields, such as a microwave-optical ...

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Our fully controllable superconducting quantum sim- ulator consists of seven transmon qubits in 1D con guration, with each pair of neighbouring qubits mediated via a frequency-tunable coupler, as ...

Multifunctionality: Discuss how solar containers can power various applications, making them a versatile energy solution. Section 4: Applications of ...

Coherently coupling two Josephson junctions breaks time-reversal and inversion symmetries, giving rise to a device with a controllable superconducting diode effect.

Semantic Scholar extracted view of "Container and superconducting devices for superconducting equipment" by ?? ? et al.

In this role, you will conduct simulations, design, and experimental work on superconducting quantum devices to perform quantum-noise-limited measurements at elevated ...

Unfortunately, this device has yet to be validated for operation under relevant usage conditions. This paper establishes an implementation scheme and research findings for a conduction ...

A digital low level radio frequency controller for the superconducting third harmonic cavity has been designed and satisfies the requirements for SSRF.

This study presents a novel solar collector system developed by integrating CPC with all-glass superconducting heat pipes (SHP), and it investigates the synergy between CPC and SHP. ...

There were many problems in designing LH2 cooled superconducting device. There was no experience in introducing large current and magnetic energy into LH2 Bath. proof at a quench of LH2 cooled ...

The conventional approach for studying the quantum Hall effect in experiments involves utilizing the existing structure and properties of specific materials to prepare the quantum Hall state, ...

Controllable structural phase transition presents a unique approach to achieving topological JJs in atomically thin 2D topological superconductors. In this work, we report the ...

Integrating the superconducting magnet power supply with energy storage devices results in a novel superconducting magnet power supply configuration. Fig. 1 illustrates the total ...

We fabricate a microscale electromechanical system, in which a suspended superconducting membrane, treated as a mechanical oscillator, capacitively couples to a ...

Chinese scientists have unveiled a superconducting linear plasma device designed to test materials for nuclear

fusion reactors. The ...

Building upon my previous video, I try something closer to the original experiment of Dr. Podkletnov in the 1990"s involving the physical rotation of a YBCO superconducting puck, and the immersion ...

In order to couple a mechanical oscillator to a superconducting qubit, we fabricate a superconducting capacitor using the diluted photoresist or electron beam photoresist as a sacrificial layer. The upper ...

The Experimental Advanced Superconducting Tokamak (EAST), commonly known as China"s "artificial sun," has achieved a remarkable scientific ...

Disclosed is a circulating device for cooling and heating superconducting magnet components at controllable rate, including a liquid nitrogen tank and a vacuum container. A container for ...

The demonstration of coherent control of a superconducting qubit in 1998 helped trigger the development of quantum computing platforms using solid-state devices and circuits. ...

In today"s dynamic energy landscape, harnessing sustainable power sources has become more critical than ever. Among the innovative solutions paving the way forward, solar energy ...

Two papers report advances in high-efficiency superconducting diodes and multiple-diode rectifiers, which are required for the development of power management systems in scalable ...

10-qubit superconducting circuit Zhen Wang1, Hekang Li2, Wei Feng1, Chao Song1, Wuxin Liu1, Qiujiang Guo1, Xu Zhang1, Hang Dong1, Dongning Zheng2;3, H. Wang1,y and Da ...

Request PDF | On May 18, 2023, Hans Johnson and others published Exploration of Optimizing FPGA-based Qubit Controller for Experiments on Superconducting Quantum Computing Hardware | Find, ...

This article reviews the research on dynamic characteristics analysis of superconducting EDS, focusing on modeling and experimental methods. Firstly, it revisits the development history of ...

Here, we demonstrate controllable superconductivity in suspended NbSe 2 thin layers, achieved through local strain and thermal modulation of the superconducting state.

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