Active devices for photoelectric conversion



Overview

A photovoltaic (PV) cell, commonly called a solar cell, is a nonmechanical device that converts sunlight directly into electricity. Sunlight is composed of photons, or particles of solar energy. This technologyrelates to photoelectric conversion devices, and in particular to photoelectric conversion devices that can reduce power consumption while ensuring a wide dynamic range. The advances in materials, devices, and equipment that employ these technologies represent a rapidly evolving frontier that bridges fundamental research. At their core, photoelectric converters are devices that convert light energy into electrical energy, a process pivotal to numerous applications ranging from solar energy systems to advanced sensor technologies.

Article Content

Bio-hybrid photoelectrochemical catalysis for solar fuels

Bio-hybrid photoelectrochemical systems integrate microbial components with abiotic conductors/semiconductors for solar fuels and chemical

Artificial light-driven ion pump for photoelectric energy conversion

In this work, as a proof of concept, we also show that such a set-up can be used for high-performance photoelectric energy conversion based on the active transport of the ion pump.

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Dual-polarity output response-based photoelectric devices

Here, development of these devices is summarized with a focus on working mechanisms, strategies to control the polarity of photocurrents, general performance, and potential applications,

Photo-Assisted Flexible Energy Storage Devices: Progress ...

Photo-assisted flexible energy storage devices, combining photoelectric conversion and electrochemical energy storage, emerge as an innovative solution for sustainable energy systems.

WO2025060490A1

The photoelectric conversion device provided by the present application can effectively prevent external water and oxygen invasion, thereby ensuring the stability.

WO/2025/150480 PHOTOELECTRIC CONVERSION ELEMENT AND

The present invention addresses the problem of providing a photoelectric conversion element that exhibits an improved photoelectric conversion efficiency.

Advances in Next Generation Photoelectric Conversion Materials,

This Special Issue aims to present the most recent advances in materials, devices, and equipment employing next-generation photoelectric conversion technologies.

Understanding Photoelectric Converters: A Comprehensive Guide

Photoelectric converters, particularly in the form of photovoltaic cells, have become essential in solar panel technologies, enabling homeowners and businesses to generate clean,

Photovoltaics and electricity

Photovoltaic cells convert sunlight into electricity A photovoltaic (PV) cell, commonly called a solar cell, is a nonmechanical device that converts sunlight directly into electricity. Some PV cells can convert

(PDF) Principles of Photoelectric Conversion

This chapter discusses the principles of photoelectric conversion, emphasizing the role of semiconductors in the process. It introduces key concepts related to electromagnetic energy

Mechanism and Verification of Photoelectric Regulation

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Two-dimensional photodetectors have an important property that can improve the optical effect by adjusting the Fermi level, and have outstanding development prospects in the field of visible-infrared

What is Photoelectric Transducer?

What is Photoelectric Transducer? The photoelectric transducer is a light-sensitive device used to convert light energy into electrical energy. It is made up of semiconductor material that emits

Recent Progress in Photodetectors: From Materials to

Hong et al. developed a flexible ultrathin single-crystalline perovskite photodetector to enhance performance in wearable optoelectronic devices

Photoelectric Devices and Their Applications | Electrical A2Z

Photoelectric Key Takeaways Photoelectric devices are essential in various applications due to their ability to detect and convert light into electrical signals. These devices, such as

Photoelectric Conversion Based on Proton-Coupled Electron Transfer ...

In conclusion, photoelectric conversion using proton-coupled electron transfer reactions was introduced here for the first time. In order to utilize the PCET reactions, spiropyrans that showed

US20210159258A1

A photoelectric conversion device includes a semiconductor substrate, a photoelectric conversion unit, an amplification transistor, and an insulating isolation portion. The photoelectric conversion unit is

Photoelectric Conversion and Device Stability of PM6:PY-IT Solar

Our research indicated that the micromorphology of active layers could be influenced by the interfacial layer material, consequently determining the photoelectric conversion process of all-PSCs.

Photoelectric transducers and its classification | PPTX

The document discusses photoelectric transducers, which convert light energy into electrical energy, highlighting their components, working principles, and types, such as phototubes, photomultipliers,

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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