Solar power generation system patent

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Electrical Power Generation Or Distribution System Patents (Class 700/286)

What is a solar thermoelectric generator?
Abstract: Solar thermoelectric generators (STEGs) are solid state heat engines that generate electricity from concentrated sunlight. A novel detailed balance model for STEGs is provided and applied to both state-of-the-art and idealized materials. STEGs can produce electricity by using sunlight to heat one side of a thermoelectric generator.

What is next-generation smart sensor technology?
An innovative next-generation smart sensor technology includes a measurement unit embedded with sophisticated analytics for power grid online surveillance and situational awareness. The smart sensor brings additional levels of smartness into the existing phasor measurement units (PMUs) and intelligent electronic devices (IEDs).

What is patent number 11653187?
Patent number: 11653187 Abstract: Disclosed herein are system, apparatus, article of manufacture, method and/or computer program product embodiments, and/or combinations and sub-combinations thereof, for a device including a functional circuit, a power monitor circuit, and a controller.

the computer system 105 can use the solar power generation data from meters 102 to generate solar power estimates and forecasts for the electricity distribution system, as described in further detail below. Communications of data between the solar source meters 102 and computer system 105 may be through wireless connections, wires, power lines, or any combination thereof in ...

Interconnected solar power generation system with solar cell module abnormality check function JP3732942B2 (en) 1998-03-30: 2006-01-11: : Solar power plant CN2328122Y (en) * 1998-05-29: 1999-07-07: : Special converter for wind and solar power generation JP2000181555A (en) *

A heat pump power generation system is provided that can generate electricity by efficiently using solar energy in a wide wavelength range including a visible light range and an infrared range. The heat pump power generation system includes a collector 1 for collecting solar light and solar heat; a power generation panel 8 for generating electricity by receiving the solar ...

The granting of patents, however, remains under the control of national or regional patent Offices. Increasing the use of renewable energy is key to limiting global warming to 1.5?C. Under the PCT system, a patent

applicant can file an international application, which triggers the process of seeking to acquire rights in multiple jurisdictions.

The photovoltaic service data of solar photovoltaic battery component, direct current header box and combining inverter is measured, shows and stored to the described grid-connected photovoltaic power generation system of the utility model through increasing by a supervising device; Realized real-time monitoring, for abundant reasonable use regenerative resource ...

A low earth orbit system for beaming energy to earth includes a solar reflector that collects and focuses solar light onto a solar panel, transforming it into electricity to drive a diode pumped laser, which then produces a high-power laser beam that is directed to a receiver on the surface of the Earth via a diffractive lens. A steering system of optics and automated hardware controls the ...

The space-based solar power generating system is comprised of a flexible thin film photovoltaic sheet supported as a sail in the solar wind. The solar wind provides pointing support, deployment support, and structure stiffness without a heavy backup structure. A high Isp electric propulsion system is used to counteract the force exerted on the sail by the solar wind.

solar power generation system (57) This photovoltaic system is composed of a plurality of units of photovoltaic apparatuses collected together, each performing an operation ...

Further, in a grid interconnection type solar power generation system in which a solar cell panel is connected to a load, there is proposed MPPT control using the so-called "hill-climbing method" of searching for the maximum output power of the solar cell panel (for example, PLT 1, Japanese Patent Publication No. 7-234733 A1).

The present disclosure provides an agrivoltaic forecasting modeling system that can assess solar power yields and crop yield produced by an agrivoltaic system. The system may include a weather information providing component providing weather information; an agrivoltaic facility comprising a cultivation area for a crop and a structure with a solar panel and being ...

The present invention relates to a generating device using a solar cell which is installed on the water like a lake, a reservoir, etc. and, more specifically, to a floating photovoltaic system having a rotation means to improve generation efficiency by rotating a solar cell array according to an azimuth and an altitude of the sun. The floating photovoltaic system is characterized in that: an ...

The solar power generation system disclosed in JP 2004-280220 A has a solar module, a power conversion circuit, a control circuit, and a load. The solar module is configured by arranging a ...

Abstract: In various embodiments, a process for configuring or commissioning a solar power system includes receiving, at a controller, hardware identifiers of a plurality of power electronics modules to be configured.

Each of the plurality of power electronics modules of at least a portion of the plurality of power electronics modules is associated with a corresponding ...

Abstract: An electrical transmission system has solar electrical generation stations mounted directly to existing utility poles along a transmission line. Solar panels and ...

A mechanical/thermo-voltaic solar power system (MeTSoPoS) that uses a thermopile generator, instead of the photovoltaic panel commonly in use today, is disclosed. The system is comprised of three major subsystems: (1) a light collector array, (2) a thermopile thermo-voltaic generator, and (3) a storage and retrieval system. At the center of the system is the light collection array ...

This paper implements an efficient way to power generation system, using solar power. Solar energy system is used to collect maximum power from sun. this proposal is to use the solar panels ...

Table 1. There are advantages and disadvantages to solar PV power generation. Grid-Connected PV Systems. PV systems are most commonly in the grid-connected configuration because it is easier to design and typically ...

A solar power generation system is provided for more efficiently and cost-effectively generating and delivering power. The solar power generation system includes a plurality of distributed ...

A trailer mounted, self contained solar power system having a plurality of solar panel sections that are arranged to fold about the sides and top of the trailer. The panel sections unfold and lock together through slide rams that are contained within a rack structure supporting the panel sections to form a planar array that is easily deployable at a desired angle to the horizontal.

A particularly promising enhancement would involve integrating coolant pipelines into the system, which could facilitate the utilization of cooling power and waste heat from the solar panel in next-generation heating, ventilation, and air-conditioning systems; this could reduce the energy requirements for air conditioning and water heating in residential settings.

Initial analysis show that many patents focus on solar hydropower storage systems, transferring light generated power to waterpower gravity systems. Batteries are also used but have several ...

Three-dimensional solar power generation systems have a plurality of solar panels configured to include pole and equator facing panels and, in various embodiments additional top and/or side panels that form a segmented and dome-shaped assembly. The systems have improved efficiencies particularly with respect to early morning and evening power generation that enable ...

In the year 1982, the Japanese patent entitled "Floated on water surface solar-ray power generation apparatus" assigned by Mitsui Engineering and Shipbuilding Co. Ltd., Mitsui Zosen KK, is presumed to be the

commencement of FSPV systems .

This chapter presents the important features of solar photovoltaic (PV) generation and an overview of electrical storage technologies. The basic unit of a solar PV generation system is a solar cell, which is a P-N junction diode. The power electronic converters used in solar systems are usually DC-DC converters and DC-AC converters. Either or both these converters may be ...

The present invention relates to a water floating type solar power generation system. The water floating type solar power generation system according to an embodiment of the present invention includes a floating structure installed on the water and receiving a plurality of solar power generation modules on a top end thereof, one or more distance measuring sensors attached to ...