SureCell
Specification and Claims

Title: SureCell: Quantum-Dot Photovoltaic System with Arc-Assist and LOC-Enhanced Energy Control

Background of the Invention

[0001] Current photovoltaic systems suffer from limited energy capture due to surface inefficiencies, angular loss, and inability to manage waste heat. SureCell addresses these limitations by combining Quantum-Dot (QD) funneling technology, Arc-Assisted excitation, and real-time control using Lab-on-Chip (LOC) and AI-driven logic.

Summary of the Invention

[0002] SureCell is an advanced Photovoltaic (PV) system composed of a structured QD matrix, shaped into a conical funnel configuration. This shape channels photons and ambient light into a highly concentrated collection point. The system includes an Arc-Assist mechanism that energizes the QD layer to enhance quantum excitation and energy conversion.

[0003] Control is managed by a LOC embedded system that dynamically adjusts arc timing, excitation pulses width, and PV load balance in real-time, increasing efficiency under varying light conditions and minimizing thermal degradation.

Detailed Description of the Invention

[0004] The SureCell system consist of:

- A conical or domed photovoltaic structure with a QD-coated inner funnel layer
- An Arc-Assist excitation system surrounding or embedded within the funnel geometry
- LOC-based control hardware programmed to modulate energy capture variables
- Heat-dissipating substrate or reflective shell to redirect or convert excess thermal energy

[0005] This architecture captures photons more efficiently by directing incoming light toward the PV conversion joint using angular geometry and reflective layering. The Arc-Assist system temporarily excites the QDs to create a cascade of electron activity, enhancing conversion rates.

Claims:

Claim1: A photovoltaic energy capture device comprising:

- a funnel-shaped geometry;
- a quantum-dot coated inner surface
- an arc-emitter positioned to excite said surface;
- and a Lab-on-Chip controller configured to dynamically regulate excitation and capture behavior based on real-time environmental conditions.

Claim 2: The system of Claim 1, wherein the funnel comprises a conical or domes geometry optimized to reflect light inward.

Claim 3: The system of Claim 1, further comprises a heat transfer structure or shell configured to recycle thermal buildup into usable energy.

Claim 4: The system of Claim 1, wherein LOC controller is further integrated with AI Logic trained to modulate arc frequency, angle of incidence, and QD activation thresholds.

Claim 5: The system of claim 1, wherein the arc-assist is formed of plasma, electrical discharge, or directed energy pulses.

Claim 6: The system of claim 1, wherein the QD layer is tuned to specific photon energy ranges to maximize absorption.

Claim 7: The system of claim 1, wherein the entire unit is modular and designed for surface mounting on mobile or stationary energy systems, including drones, vehicles, or buildings.

Abstract

SureCell is an advanced modular photovoltaic capture system that uses a newly designed funnel-shaped Quantum-Dot matrix, enhanced by our Arc-Excitation emitter system, and regulated by our AI-driven Lab-on-Chip technology. The system increases photon absorption, energy yield, and heat control for mobile and fixed solar power and waste heat retrieval applications.