

PROVISIONAL PATENT APPLICATION

TITLE: SYSTEM AND METHOD FOR RESONANT ENERGY EXTRACTION VIA MULTI-VECTOR SYNCHRONIZATION IN NANOSCALE CAVITIES

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1. BACKGROUND OF THE INVENTION

The present invention relates generally to the field of quantum electrodynamics and energy harvesting. Specifically, it relates to the extraction of energy from quantum vacuum fluctuations (Zero-Point Energy) utilizing the Casimir effect within nanopore membranes. Current energy harvesting systems often suffer from low power density and lack of efficient coupling between vacuum modes and macroscopic circuits. There exists a need for a system that can actively stimulate and synchronize these fluctuations to produce measurable thermal or electrical output.

2. SUMMARY OF THE INVENTION

The present invention provides an apparatus and method for enhancing energy extraction from a quantum vacuum. The system utilizes a membrane comprising a plurality of nanoscale pores (cavities), preferably in the range of 10 nm to 200 nm, through which a working fluid (such as a noble gas) is passed. A critical innovation of this system is the application of a multi-vector (e.g., 8-vector) phase-synchronized electromagnetic signal to the membrane environment. This resonant signal is configured to stimulate vacuum modes and synchronize electron transitions in the working fluid, leading to an amplified release of energy in the form of heat, infrared radiation, or electrical potential.

3. DETAILED DESCRIPTION

The system comprises three primary components: a nanostructured membrane, a fluid delivery system, and a multi-vector resonant controller.

The Nanostructured Membrane: The membrane consists of an array of nanopores, ideally Anodic Aluminum Oxide (AAO) or a similar dielectric/conductive substrate. In the preferred embodiment, pore diameters are approximately 50 nm to 100 nm. These dimensions are selected to suppress specific electromagnetic modes of the quantum vacuum, creating a Casimir-active environment.

The Working Fluid: A gas, such as Argon, Xenon, Krypton, or Helium, is flowed through the membrane. As atoms enter the suppressed vacuum environment of the pores, their electron orbital energy levels are modified. Upon exiting or during the transition, the atoms release energy.

The 8-Vector Resonant Controller: The system includes a signal generator capable of producing multiple synchronized electromagnetic vectors (preferably eight). These signals are phase-locked at a specific frequency (e.g., [INSERT FREQUENCY, e.g., 2.14 MHz]) and directed at the membrane. This multi-vector synchronization creates a "resonant shake" or "driving force" on the vacuum fluctuations within the pores. This active stimulation increases the probability of energy-releasing transitions compared to passive Casimir systems.

Operation: In operation, the fluid is pressurized through the membrane while the 8-vector controller is active. Sensors (such as IR detectors or thermocouples) measure the anomalous energy output. The phase synchronization of the 8 vectors is tuned to maximize the resonance between the controller frequency and the geometric modes of the 50-100nm pores.